



**Stantec**

July 20, 2009

Doug Dunbar  
Assistant to the Commissioner  
ME Department of Professional and Financial Regulation  
[doug.dunbar@maine.gov](mailto:doug.dunbar@maine.gov)

**Subject: MAWS Support of LD 1240**

Dear Mr. Dunbar:

The Department of Professional and Financial regulation was directed to perform a Sunrise Review for LD 1240, a resolve regarding a proposal to license wetland scientists. The Maine Association of Wetland Scientists (MAWS) has been active in the process, and this cover letter will serve to summarize our recommendations.

**Purpose of LD 1240**

The intent of licensure is to:

- Protect public health, safety, and welfare;
- Prevent both short- and long-term environmental harm;
- Provide currently lacking board oversight or disciplinary recourse;
- Set standard for minimum competency; and
- Decrease inconsistencies in performance of work and increase oversight.

**Administrative Costs Associated with LD 1240**

MAWS envisions approximately 200 individuals will apply for licensure. The program will carry two substantive fees.

- \$225 Exam fee (one-time if exam passed)
- \$140 License fee (on-going)

The existing administrative structure of the Board of Certification for Soil Scientists and Geologists should be utilized to the maximum extent possible to limit overhead costs. By utilizing this Board, costs would not be increased by licensure of wetland scientists. Revenue would actually increase with exam fees and license fees.

**Qualifications**

The exam developed should contain two components to demonstrate proficiency. The first exam should deal with the U.S. Army Corps of Engineers 1987 Manual. The second exam should focus on conditions that are unique and specific to Maine and possible regulation set forth by the Maine Department of Environmental Protection.

Requirements to sit for the examination should reflect current regional trends and require the following.

- BA/BS Environmental Science, Natural Resources, Soil Science, Botany, Forestry or similar discipline where the applicant has successfully completed 30 semester hours in environmental, biological, physical, or earth sciences. Including, but not limited to, botany, soil science, hydrology, wetland science, biology, forestry, wildlife, ecology, water resources, plant science, agronomy, geology.
- Minimum of 1 or more years experience in the practice of wetland science.

Each of the above recommendations is discussed in much greater detail in the body of the response. All recommendations held within may be adapted with input from the Department. We are willing to participate in the process as needed.

Please do not hesitate to contact me for clarity or additional supporting documentation.

Sincerely,  
Stantec Consulting

*Dale F. Knapp*

Dale F. Knapp  
Director, Water Resources Division



**Survey Response for**  
**Sunrise Review for LD 1240**  
**“Resolve, Directing the Commissioner of Professional and Financial Regulation**  
**to Conduct a Sunrise Review Regarding a Proposal to License Wetland**  
**Scientists”**

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Survey Information Provided By

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On behalf of the Maine Association of Wetland Scientists

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July 20, 2009

**MAWS**

**Maine Association of Wetland Scientists**  
P.O. Box 361; Augusta, Maine; 04330    [www.mainewetlands.org](http://www.mainewetlands.org)



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**1.0 GENERAL INFORMATION**

1.1 GROUP OR ORGANIZATION YOU REPRESENT

The Maine Association of Wetland Scientists  
 P.O. Box 361  
 Augusta, Maine 04330  
[www.mainewetlands.org](http://www.mainewetlands.org)

The Maine Association of Wetland Scientists (MAWS) was founded in 1990 to promote the profession and understanding of wetland science in Maine and to protect the public interest by maintaining high professional standards. The organization promotes and participates in educational programs pertaining to the study of wetland science for the MAWS membership and the public. To that end, the organization supports and contributes to the expansion of wetland science research and development and promotes policies that contribute to the protection and sound stewardship of wetland resources.

1.2 POSITION ON PROPOSED LEGISLATION

MAWS supports state regulation of wetland scientists in Maine.

**2.0 EVALUATION CRITERIA**

2.1 DATA ON GROUP PROPOSED FOR REGULATION

Entities subject to the proposed regulations for licensing wetland scientists would include those proposing to delineate wetlands that are currently regulated by Maine laws and their supporting regulations, as well as those entities who depict wetland boundaries on plans used for the purpose of purchase or sale of property, or for filing local, state, or federal regulatory documents or applications.

Professional Organization	Mailing Address	Estimated Membership <sup>1</sup>	Percent Membership Likely to Seek Licensing <sup>2</sup>	Estimated Licensees
ME Association of Wetland Scientists Dale Knapp, President Stantec (formerly Woodlot Alternatives) 30 Park Drive Topsham, ME 04086 (207) 729-1199 <a href="mailto:dale.knapp@stantec.com">dale.knapp@stantec.com</a>	MAWS PO Box 361 Augusta, ME 04330 website: <a href="http://www.mainewetlands.org">www.mainewetlands.org</a>	180	85	153
ME Association of Professional Soil Scientists Kenneth Stratton, President P.O. Box 375 Winthrop, ME 04364 <a href="mailto:fernancier@hotmail.com">fernancier@hotmail.com</a> (207) 485-0738	MAPSS c/o Kenneth G. Stratton P.O. Box 375, Winthrop, ME 04364 website: <a href="http://www.mapss.org">www.mapss.org</a>	70	50	35
ME Association of Site Evaluators Kenneth Stratton, President P.O. Box 375 Winthrop, ME 04364 <a href="mailto:fernancier@hotmail.com">fernancier@hotmail.com</a> (207) 485-0738	MASE c/o Kenneth G. Stratton P.O. Box 375, Winthrop, ME 04364 website: <a href="http://www.maineese.com">www.maineese.com</a>	200	25	50

Professional Organization	Mailing Address	Estimated Membership <sup>1</sup>	Percent Membership Likely to Seek Licensing <sup>2</sup>	Estimated Licensees
Maine Society of Land Surveyors President: Robert Libby, PLS <a href="mailto:president@msls.org">president@msls.org</a> (207) 882-5200	MSLS c/o Robert Libby, PLS PMB 211 Augusta, ME 04330 website: <a href="http://www.msls.org">www.msls.org</a>	354	10	35
<b>Total</b>				<b>273</b>

1. Estimated number of organization members was based on membership lists accessed on publicly available websites on July 16, 2009.
2. Percent of each membership organization likely to seek licensure is a subjective estimate formulated by the MAWS Certification Subcommittee.

Members of MAWS have the highest probability of seeking licensure in accordance with this proposal. Also, there are many instances where practicing professionals are members of more than one of the above listed organizations. The MAWS Certification Subcommittee believes 200 is a reasonable estimate for individuals likely to seek licensure immediately, with others likely to see licensure as they join the profession.

## 2.2 SPECIALIZED SKILL

The general public can identify obvious types of wetland communities, such as open water swamps; however, the public does not have the technical ability to identify where the boundary of a wetland is located. Wetlands are complex interconnected systems that do not necessarily terminate where cattails and open water end. Currently, there is no minimum qualification in the state of Maine required to delineate wetlands. To that end, anyone in the general public can *legally* map wetland boundaries and could promote their services for wetland delineation. Wetland science requires a specialized skill set in terms of both education and experience. The practice of wetland delineation requires and a great deal of technical knowledge, which is further described below.

The basis and criteria for wetland identification and delineation is the *1987 U.S. Army Corps of Engineers Wetlands Delineation Manual* (the 1987 Manual). The Maine Department of Environmental Protection (MDEP) uses this guidance in their regulatory framework. The 1987 Manual defines wetlands as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” For an area to be identified as a wetland, it must possess three parameters (factors) outlined in the 1987 Manual. These parameters are wetland hydrology, wetland soil, and wetland vegetation. A wetland determination as defined in the 1987 Manual is “the process or procedure by which an area is adjudged a wetland or nonwetland.” In order to determine if an area is a wetland, one must have the ability to accurately identify these three parameters. The definitions of the three parameters follow.

Wetland hydrology “is the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation.” Examples of wetland hydrology are listed in the 1987 Manual. The delineator must be capable of both understanding and identifying these indicators.

Wetland soil “is a soil that has characteristics developed in a reducing atmosphere, which exists when periods of prolonged soil saturation result in anaerobic conditions. Hydric soils that are sufficiently wet to support hydrophytic vegetation are wetland soils.” In Maine, hydric soils determinations are made by comparing soil characteristics to indicators listed in the *Field Indicators for Identifying Hydric Soils in New England, Version 3*. Soils of different origin or materials (i.e., clay versus sand) may have different

indicators. Therefore, the delineator must possess the ability to identify soil type, and then through the soil taxonomy, the profile must be run through the key. This requires education and field experience.

Wetland vegetation “is the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. As used herein, hydrophytic vegetation occurring in areas that also have hydric soils and wetland hydrology may be properly referred to as wetland vegetation.” Hydrophytic vegetation determinations are made using the *1996 National List of Vascular Plant Species that Occur in Wetlands* or an equivalent regional list. This document has an assigned indicator status for nearly every known vascular plant that describes which type of habitat it typically inhabits. The delineator must possess the ability to identify vegetation to the species level to determine its status. Some plants that typically do not grow in wetlands are known to develop morphological adaptations to persist in wetlands. These adaptations must also be recognized in order for a correct determination to be made.

Ultimately, a wetland scientist must be part soil scientist, part botanist, part hydrologist and part ecologist. While the three parameters of wetland identification are well documented and outlined in the 1987 Manual, the U.S. Army Corps of Engineers (Corps) is currently finalizing a regional supplement to the 1987 Manual that further describes the process. In many areas of the original document and the supplement, there are references to problem areas (i.e., areas that may not meet the criteria described above but may still be considered wetlands). Problem areas could be the result of past and present land uses, removal of vegetation, or disturbed soils. In these cases, it is the responsibility of the delineator to utilize his or her best professional judgment to make a wetland determination.

Once a determination has been made that an area does possess all three parameters, then a wetland delineation can be performed to map the wetland boundary. This boundary is a trigger for local, state, and federal jurisdiction with significant importance. Wetland scientists in Maine perform many tasks for clients. These include, but are not limited to, wetland identification, wetland delineation, wetland functional assessments, environmental permitting, and mitigation sequencing. Typically, identification of a wetland is only the first step in a process to determine suitability of a site for development, siting of development, or habitat management. To determine permitting requirements for a specific project, the wetland scientist must be current with all local, state, and federal permitting requirements. This can involve the Maine Natural Resources Protection Act (NRPA), Site Location of Development Act, or Shoreland Zoning, and may require the identification of Wetlands of Special Significance (WSS) such as Significant Vernal Pools.

### 2.3 THREAT TO PUBLIC HEALTH, SAFETY, OR WELFARE

The threats to the public are in a wide range of interrelated categories, including health, fiscal impacts, and environmental impacts.

#### Health Impacts

Some wetlands provide the function of trapping impurities in water (i.e., sediments, toxicants, and nutrients). If such wetlands are filled or otherwise impacted due to negligent delineations, drinking water sources could be contaminated or degraded. Additionally, the degradation of surface waters can have a significant, negative fiscal impact on surrounding property values and recreational opportunities.

#### Fiscal Impacts

Incorrect wetland determinations can change property values. If a developable site is mapped incorrectly and categorized as non-developable, the property owner may lose the price of a saleable lot. This can be significant, especially in coastal areas and on inland waterfront properties. Conversely, if a non-developable site is incorrectly identified as developable, there could be significant repercussions on the owner when they attempt to develop the site (i.e., they could be unable to develop the site or be faced with fines for illegally impacting a wetland). Finally, incorrect determinations that are identified during planning phases of a project can result in the wetlands being remapped at the cost of the developer.

### Environmental Impacts

Development in unmapped wetlands located in floodplains causes damage to the landowner's property and can increase the risk of downstream floods and property damage. Incorrect wetland determinations can also lead to the destruction or degradation of wetland wildlife habitats.

The licensure of wetland scientists would reduce the threat to the public by:

- Demonstrating to the landowner or client that an individual is qualified to provide wetland services;
- Implementing a minimum level of competency and qualifications;
- Providing assurance that a licensed wetland scientist must adhere to a clear standard of conduct and practice;
- Keeping professionals honest and diligent about their work because there is the threat of license revocation for improper work or conduct;
- Protecting the public (landowners, clients) through a Board of Licensure, thereby giving landowners or clients an avenue to seek recourse for poor services before an impartial board;
- Speeding up the permitting process for the applicant by avoiding unnecessary review of incorrect or inadequate wetland boundaries, thus saving the client both time and money;
- Reducing the risk to employers hiring wetland scientists because the potential employee's qualifications have been rigorously outlined; and
- Reducing costs to state regulators who must spend additional time reviewing wetland survey work.

Examples of evidence of harm to the public can be difficult to document. One reason is the current structure of environmental permitting in the State of Maine. Due to an NRPA exemption, the MDEP does not require notification or a permit to fill less than 4,300 square feet of a non-WSS. A Tier 1 NRPA permit is required to fill between 4,300 and 15,000 square feet of non-WSS wetland. It is theorized that some exemptions and Tier 1 permits are improperly pursued due to incorrect estimations of wetland size and/or unidentified WSS. Wetland delineations for projects pursuing NRPA exemptions and Tier 1 permits are not required to be made by a qualified professional. Another reason wetland impacts are going undocumented is because municipal governments sometimes do not require a wetland delineation to be performed for local permitting. This can be the case even when state law requires the delineation, such as for subdivision permitting. In these instances, there is no record of the wetland losses and/or infringement of regulations. There will be no record of complaints filed with a professional occupational board for wetland scientists because such a board does not exist.

MAWS contacted the Maine Attorney General's Office on July 16, 2009, in an attempt to ascertain the number and range of complaints against wetland scientists/delineators in the state. The Consumer Protection Division does not categorize complaints by subject area; therefore, it was not possible to gather a list of complaints.

## 2.4 VOLUNTARY AND PAST REGULATORY EFFORTS

Prior to 1990, the wetland scientist community in Maine lacked a single voice. MAWS was formed in 1990 to allow a diverse array of wetland professionals to act in the best interest of Maine's wetland resources, to foster consistency in wetland service providers, and to further the protection of the public. In addition to developing minimal qualifications to become an active member, MAWS has made efforts to forward professionalism and quality control by wetland professionals, most of whom see each other as marketplace competitors. To overcome these natural constraints, and having realized the inherent limitations of a voluntary professional association on the way towards achieving its lofty goals, MAWS leaders and its membership have explored various methods of self-regulation. Summarizing, MAWS has adopted (1) a *Code of Ethics*; (2) authored a *Resolution Regarding Minimum Qualifications*, and (3) explored In-House Certification.

## 2.4.1 MAWS Code of Ethics

In 1992, MAWS adopted the following Code of Ethics

### **Code of Ethics**

Active and Affiliate Members shall conduct their activities in accordance with the Code of Ethics of the Maine Association of Wetland Scientists.

Regular and Affiliate Members have a responsibility for contributing to humankind's proper relationship with wetlands, and in particular to promoting an understanding of wetland ecosystems and policies that contribute to the sound stewardship of wetland resources. Members of MAWS will strive to meet this obligation through the following goals:

- I. They will subscribe to the Standards of Professional Conduct outlined below.
- II. They will accurately represent the characteristics of wetland ecosystems to the best of their knowledge.
- III. They will disseminate information to promote understanding of wetland functions and values.
- IV. They will strive to increase their knowledge and skills to advance the practice of wetland science.
- V. They will promote competence in the field of wetland science by supporting high standards of education, and performance, and represent those standards to the public.
- VI. They will support fair and uniform standards of employment and treatment of those professionally engaged in the practice of wetland science.

### Standards of Professional Conduct

Members of MAWS shall at all times:

1. Act with the authority of professional judgement based on sound scientific data, and avoid actions or omissions that may compromise scientific validity or accuracy. They shall respect the competence, judgement, and authority of the professional community. They shall adhere to current wetland laws and regulations and endeavor to communicate those laws to clients and the public.
2. Avoid performing any professional services for any client or employer when such service is judged to be contrary to the Code of Ethics or Standards of Professional Conduct.
3. Provide maximum possible effort in the interests of each client/employer accepted within the limits of this Code of Ethics. They shall exercise sound professional judgment when conflicts between this tenet and others arise.
4. Accept employment to perform professional services only in areas of their own competence, and consistent with the Code of Ethics and Standards of Professional Conduct described herein. They shall seek to refer clients or employers to other natural resource professionals when the expertise of such professionals shall best serve the interests of the client/employer.
5. Maintain a confidential professional-client/ employer relationship, except when specifically authorized by the client/employer or required by due process of law or this Code of Ethics and Standards to disclose pertinent information. They shall not use such knowledge to their personal advantage or to the advantage of other parties, nor shall they permit personal interests or other client/employer relationships to interfere with their professional judgment.
6. Refrain from advertising in a self-laudatory manner, beyond statements intended to inform prospective clients/employers of qualifications, or in a manner detrimental to fellow professionals or the wetland resource.

7. Refuse compensation or rewards of any kind intended to influence their professional judgment or advice. They shall not permit a person who recommends or employs them, directly or indirectly, to regulate their professional judgment. Similarly, they shall not offer a reward of any kind or promise of service in order to secure a recommendation, a client, or professional treatment of public officials.
8. Avoid all conflict of interest, or when unavoidable fully disclose the circumstances to the client. They shall not accept compensation for the same professional services from any source other than the client/employer without the prior consent of all clients/employers involved.
9. Uphold the dignity and integrity of the profession of wetland science. They shall endeavor to avoid even the suspicion of dishonesty, fraud, deceit, misrepresentation, or unprofessional demeanor.

Over time, the Code of Ethics has been invoked when certain individuals have violated one or more of the points presented. It has contributed to the public good by setting a standard to follow. The Code of Ethics likely has not reduced violations by those who practice wetland science but who are not MAWS members. A weakness of this Code is the fact that it is not enforceable on the working community as a whole. The state does not have the power of law behind the Code of Ethics, and a board would be necessary to handle complaints and disciplinary issues. The Code does not provide offenders to state their case before a Chair of Ethics. Instead, the Code presents guidelines for the honorable amongst us, who are the least likely to “misbehave,” while the dishonorable few are able to ignore it without consequence.

#### 2.4.2 Resolution Regarding Minimum Qualifications

MAWS approved the following resolution in 1996.

##### **Resolution Regarding Minimum Qualifications for Practicing Wetland Delineators in Maine**

*WHEREAS*, wetlands are important ecological resources, the protection of which is in the best interest of the people of Maine, and

*WHEREAS*, local, state, and federal land use regulations require the delineation of wetland boundaries for the purposes of establishing limits of jurisdiction, and

*WHEREAS*, the locations of wetland boundaries can be of economic importance to landowners, and

*WHEREAS*, the delineation of wetlands for the purposes of determining jurisdiction is a science that requires technical proficiency in the multiple disciplines of botany, soils, and hydrology, and

*WHEREAS*, the Maine Department of Environmental Protection Chapter 310 (Wetland Rules) and Chapter 460 (An Act to Streamline Permit Procedures for Freshwater Wetlands in the State), require that wetland assessments be conducted by a “*qualified individual*,” and a “*knowledgeable professional experienced in wetland science*,” respectively, and

*WHEREAS*, broadly accepted criteria do not presently exist for recognizing a “*qualified individual*” or “*knowledgeable professional* ... in wetland delineation,

*THEREFORE*, be it resolved that the Maine Association of Wetland Scientists (MAWS) recommends the following minimum qualifications for persons professionally engaging in the practice of wetland delineation in the State of Maine:

- A. Certification under the U.S. Army Corps of Engineers Wetland Delineator Certification Program when it is established in Maine; or
- B. A combination of education and work experience which has led to proficiency in the interpretation of vegetation, soils, and hydrology parameters as required for the sound application of the 1987 Corps of Engineers Wetland Delineation Manual (the Manual), its revisions, supplements, and replacements, including Field Indicators for Identifying Hydric Soils in New England (NEIWPC 1995). Education and experience may include a combination of relevant college-level courses; professional training courses, workshops, and seminars; and professional experience under the direct supervision and guidance of a certified, licensed, or otherwise recognized professional having demonstrated proficiency in wetland delineation.

The Resolution does not provide for certification of delineators, nor does it provide for any formal review proposed for judging individuals' qualifications. The intent is mainly to publish MAWS' position. In addition, the Resolution depends on the adoption of the Wetland Delineator Certification Program (WDCP). The Corps discontinued the WDCP in 1997 due to insufficient funding and currently has no plans to revive the program.

In addition to the Resolution, MAWS surveyed individuals and consulting/engineering/surveying firms throughout the state in order to gain a better understanding of concerns within the industry. The results have consistently addressed the need for certification. For instance, in a 2005 survey, 67 percent of respondents indicated a need for a wetland certification/licensing program in Maine; 17 percent indicated that there is no need; and the remainders were unsure. These results, and others before it, continue to make MAWS aware of the need to license wetland professionals.

#### 2.4.3 In-House Certification

In 2007, the MAWS Certification Subcommittee submitted a "white paper" to the membership entitled "Exploratory Paper on the Issue of Credentialing Wetland Scientists In Maine" (Appendix A). This document addresses the pros and cons of In-House Certification, using as a basis of comparison three wetland and/or wetland-related professional associations that currently certify, but do not license, its qualified members. These other associations include the Society of Wetland Scientists (SWS), which awards a Professional Wetland Scientist (PWS) certification; the Soil Science Society of America (SSSA), which awards a Certified Professional Soil Scientist (CPSS) certification as a Soil Classifier; and The Wildlife Society (TWS), which awards a Certified Wildlife Biologist (CWB) certification. These associations award certification to only those individuals who are able to provide qualifications over and above those that are required for routine, non-credentialed membership. The following Table 1 lists typical criteria required to obtain certification within these associations, and compares criteria with existing MAWS equivalents.

**TABLE 1  
TYPICAL PROFESSIONAL ASSOCIATION CERTIFICATION REQUIREMENTS<sup>1</sup>**

CRITERIA	SWS	SSSA	TWS	MAWS	COMMENTS
Academic Transcript (T) and/or Resume (R) required	T, R	T, R	T	No	MAWS does not require a transcript or resume.
Bs / BA, MS or PhD Degree required	Yes	Yes	Yes	Yes	
Minimum No. semester hours core Biological Sciences	15	-	36	30; See comments	Requires a combination of Biology, Geophysical and/or Hydrological courses totaling 30 hours <sup>2</sup>
Minimum No. semester hours core Physical Sciences	≥ 15	≥ 15	≥ 9	See above	See above
Minimum No. semester hours core Quantitative Sciences	≥ 6	-	≥ 9	-	
Minimum No. semester hours core Social Sciences	-	-	≥ 9	-	
Minimum No. semester hours core Communications	-	-	≥ 12	-	
Minimum No. semester hours core Policy, Law, Admin.	-	-	≥ 6	-	
Additional education, workshops etc required	Yes	No	No	Yes	
Related professional work experience	≥ 5 Yrs	≥ 5 Yrs	≥ 5 Yrs	≥ 2 Yrs	
Total No. of Reference Letters	5	5	3	2	
No. of Personal Reference Letters	1	0	0	0	
No. of Professional Reference Letters	4	5	3	2	
Pass a written examination	No	Yes	No	No	
Pass a field examination	No	No	No	No	
Examination fee (Note: fees documented in Table 1 apply only to members; non-members pay higher fees)	N/A	\$125	N/A	N/A	
Certification fee	\$200	\$50	\$130	N/A	MAWS Active Membership annual fee is \$25 per year
Apprentice status required prior to Professional Cert. <sup>3</sup>	No	No	No	N/A	
Duration of Certification before renewal	1 Yr	1 Yr	5 Yrs	N/A	
Certification renewal fees	\$35	\$50	-	N/A	
Continuing Education Units required for renewal	No	Yes	Yes	No	CEU's not required for year-to-year membership
Sign adherence to a written Code of Ethics	Yes	Yes	Yes	No	MAWS Code approved in 1992

As illustrated in Table 1, MAWS' criteria for in-house certification mirrors the basic certification requirements of the SWS, SSSA, and TWS. However, MAWS membership requirements address a

<sup>1</sup> For MAWS, the listed requirements are for Active Membership, not certification.

<sup>2</sup> This can be waived if individual is certified as a wetland scientist or related field at the federal or state level.

<sup>3</sup> Apprentice status is a requirement if an individual does not possess the minimum requirements for full certification as a CWB, CPSS, or PWS.

broader membership base; therefore, MAWS requirements are apt to be understandably less stringent than those of other associations. Further, MAWS does not require (1) submittal of transcript(s); (2) submittal of a list of academic core requirements in specific course types; and (3) submittal of letters of reference. Only the SSSA requires an applicant to take a written examination prior to certification. None of the four organizations listed in Table 1 require a field examination. The SWS, SSSA, and the TWS place special emphasis on signing an oath to adhere to a Code of Ethics. MAWS has a Code of Ethics, but there is no requirement to signing an oath document. The TWS makes an effort to assess a candidate's "intent" as a means to identify legitimate candidates with a purposeful history to achieve a professional goal, as opposed to those candidates who may have accumulated minimally qualifying experience but only through means that appear to be secondary to that individual's primary career. In addition, the SWS, SSSA, and the TWS all require at least \$130 as an initial fee for certification, along with a relatively smaller fee for each certification renewal period. It should be noted that the certificates listed are for demonstrative purposes. These national certifications are not intended nor capable of addressing the issue raised in Section 2.3.

During the MAWS Annual Meeting in March 2007, members voted against pursuing In-House Certification.

#### 2.4.4 Private Certifications

Over time, some MAWS members have served as officers of the nationally-based SWS, including one member who served on its PWS Certification Panel from 2002 to 2008. Duties for that position involved reviewing applications for either Wetland Professional in Training or PWS certifications. The application was based on submitted and written materials, but these materials did not always paint a complete picture of a candidate's qualifications to practice wetland science in the State of Maine. During this individual's tenure on the Certification Panel, he reviewed education criteria, additional education in the form of workshops and courses, work duties and functions, and letters of recommendation. There was no mechanism to check the content of the work duties or the actual quality of the duties and deliverables. There was no standardized or peer-reviewed test of knowledge of wetland science, and only occasionally did candidates submit wetland review reports that indicated their proficiency of analysis.

### 2.5 COSTS AND BENEFITS OF REGULATION

The annual cost of licensure for wetland scientists will be comprised of an approximately \$140 annual license fee, similar to licensed soil scientists and geologists in Maine. There will be an additional examination fee of \$225. This is an acceptable expense for individuals or larger firms employing wetland scientists.

The regulation (licensing) of Wetland Scientists will decrease the cost of services to the public. As discussed in earlier sections, there is evidence of substandard wetlands work occurring at present in Maine. The costs to property owners of bearing the time and expense of hiring a second (or in some cases, a third) "wetland scientist" are substantial. The wetland work should be done in accordance with regulated standards the first time. Closely allied with these increased costs to property owners are the increased costs to town, state, and federal regulators who must make site visits due to inaccurate wetlands work. Other costs are absorbed by Planning Boards, who must spend additional time reviewing missing or inaccurate wetland data. Delaying (or tabling) applications before Planning Boards increases the time and expense for other contractors (e.g., real estate appraisers, engineers, land surveyors, landscape architects, geologists) who may be involved with the property in question.

A wetland determination (i.e., a wetland is determined to exist) and/or delineation (i.e., the actual boundaries of the wetland are determined) can make or break a proposed project. In Maine, larger projects can have budgets exceeding \$25 million (e.g., Bangor SuperWalMart, which contained wetlands on the land parcel). The wetland determination and delineation will guide where the project is ultimately located on a parcel of land, or if the project can even fit within the upland portion of the property. Thus, the wetland determination/delineation can have a very large economic impact on a property's value.

Incorrect wetland determination/delineation on a property can have grave economic considerations for the property owner or client.

Secondly, wetlands have been protected at the federal level since 1972 by the Clean Water Act, Section 404, as well as at the state level. Incorrect determination/delineation of wetlands affects these valuable public resources, which the State of Maine has determined to have broad public health, safety, and welfare values. Indeed, Maine's wetland protection statutes exceed the federal standards for protection.

There is no cost involved in adopting the already existing federal and state wetland protection statutes.

Please see Appendix B for testimony from Christopher C. Dorion (Maine Certified Soil Scientist #454; Maine Certified Geologist #485; New Hampshire Certified Wetland Scientist #251) regarding his experience with unnecessary expenses incurred by property owners, regulatory agency staff, and engineers.

The overall cost-effectiveness and economic impact of the proposed licensing of "wetland scientists" will lower both direct and indirect costs to consumers (clients). Direct costs were addressed in the preceding paragraph. Indirect costs will be lowered because all licensed wetland scientists will be listed on the Board's website. Property owners or other clients looking to hire a wetland scientist will have quick and accurate access to the State database. In contrast, at present, a property owner or other potential client must "ask around" for a qualified individual or firm, or just use "blind faith" and pick a name from a website or other advertising medium. This process is time-consuming and does not guarantee that the hired wetland scientist will have the education, training, and experience to complete the work accurately.

Without licensure, additional indirect costs are incurred by property owners or clients when the wetland work is substandard. There is little recourse for the property owner or client because a Board of Licensure does not exist.

Conversely, when a wetland scientist does a satisfactory job, but the property owner or client doesn't believe so, it comes down to a "he said... she said" situation. A hearing before the Board of Licensure can act as an impartial arbitration, protecting both parties when a dispute arises.

## 2.6 SERVICE AVAILABILITY UNDER REGULATION

Licensing wetland scientists would not result in a loss or decrease of service to the public. At present, and at least since the major revisions to the NRPA in 1995 that began regulating all wetlands regardless of size, there have been only those problems identified above with clients trying to hire wetland scientists. Accessibility will only increase due to a publicly available database.

Most individuals and firms in Maine that provide wetland services for clients do not solely depend on this work. They are also engaged in the disciplines of soil science (high intensity soil surveys), site evaluation (septic design and inspection), botany (rare plant surveys), wildlife (significant wildlife surveys), civil engineering, or other closely allied fields. Thus, the public can easily contract with a wetland scientist on a short time frame. This availability would not change with the advent of licensing.

## 2.7 EXISTING LAWS AND REGULATIONS

As stated in Section 2.2, a fundamental difficulty in formulating salient arguments for licensing of wetland scientists is the lack of empirical "harm" data. The current regulatory framework allows for impacts to wetlands (as long as they are not WSS) up to certain threshold levels (i.e., 4,300 square feet of impact). Therefore, anyone in Maine can fill up to 4,300 square feet of wetlands without consulting MDEP, filing a permit application, or consulting professionals trained to 1) confirm the subject wetland is not a WSS, 2) quantify the extent of the proposed fill, or 3) delineate the boundaries of the regulated resource. It is our belief that potentially the greatest harm being done is in the form of lost (filled) wetland resources that are "falling through the cracks" in the regulatory system.

The potential scale of an error is great when any member of the general public can be entrusted to determine what would be classified as a wetland and a WSS, determine the limits (boundaries) of the regulated wetland resource, and measure the extent of the impact.

To illustrate this point, the definition of a WSS from MDEP NRPA Chapter 310, *Wetlands and Waterbodies Protection Rules*, is provided below.

**4. Wetlands of Special Significance.** All coastal wetlands and great ponds are considered wetlands of special significance. In addition, certain freshwater wetlands are considered wetlands of special significance.

**A. Freshwater Wetlands of Special Significance.** A freshwater wetland of special significance has one or more of the following characteristics.

(1) Critically imperiled or imperiled community. The freshwater wetland contains a natural community that is critically imperiled (S1) or imperiled (S2) as defined by the Natural Areas Program.

(2) Significant wildlife habitat. The freshwater wetland contains significant wildlife habitat as defined by 38 M.R.S.A. § 480-B(10).

(3) Location near coastal wetland. The freshwater wetland area is located within 250 feet of a coastal wetland.

(4) Location near GPA great pond. The freshwater wetland area is located within 250 feet of the normal high water line, and within the same watershed, of any lake or pond classified as GPA under 38 M.R.S.A. § 465-A.

(5) Aquatic vegetation, emergent marsh vegetation or open water. The freshwater wetland contains under normal circumstances at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, unless the 20,000 or more square foot area is the result of an artificial ponds or impoundment.

(6) Wetlands subject to flooding. The freshwater wetland area is inundated with floodwater during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Management Agency or other site-specific information.

(7) Peatlands. The freshwater wetland is or contains peatlands, except that the department may determine that a previously mined peatland, or portion thereof, is not a wetland of special significance.

(8) River, stream or brook. The freshwater wetland area is located within 25 feet of a river, stream or brook.

In order for an individual to accurately apply these regulatory requirements, the following technical information would be required.

1. Knowledge that the MDEP Chapter 310 Rules exist and that the regulatory filing exemptions do not apply for WSS.
2. Definition of a coastal wetland and ability to establish the boundary of a coastal wetland and accurately measure a horizontal distance of 250 feet.
3. Regulatory definition of a great pond in Maine.
4. Natural Areas Program definition of critically imperiled or imperiled communities.
5. Knowledge that there is a Natural Areas Program in Maine.
6. Definition of significant wildlife habitat 38 M.R.S.A. § 480-B(10).
7. Ability to establish normal high water line and watershed boundaries of any lake or pond classified as GPA under 38 M.R.S.A. § 465-A.
8. Ability to determine if a freshwater wetland contains, under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, unless the 20,000 or more square foot area is the result of an artificial ponds or impoundment.
9. Understanding of what would be considered normal circumstances.
10. Understanding of the difference between aquatic vegetation and emergent marsh vegetation.
11. Ability to identify wetlands subject to flooding.
12. Knowledge of what would be considered a 100-year floodplain and how to accurately overlay FEMA mapping onto project drawings.
13. Regulatory definition of peatlands.
14. Regulatory definitions for what would be considered a river, stream or brook and how to interpret those definitions to the resources in the field.

The accurate application of these regulatory criteria often poses challenges for even experienced wetland scientists. Practitioners of wetland science spend, in some cases, substantive amounts of personal resources to improve skills in making these regulatory determinations. It is unrealistic to expect the general public to understand not only the complexity of the regulations, but the nuances of how they are applied to the natural environment in the field.

The resultant "harm" to the people of Maine resulting from continued non-regulation is best summarized in the Findings and Purpose statement of the NRPA, 38 Maine Revised Statutes Annotated (M.R.S.A) §§ 480-A to 480-FF.

480-A. Findings; purpose; short title

The Legislature finds and declares that the State's rivers and streams, great ponds, fragile mountain areas, freshwater wetlands, significant wildlife habitat, coastal wetlands and coastal sand dunes systems are resources of state significance. These resources have great scenic beauty and unique characteristics, unsurpassed recreational, cultural, historical and environmental value of present and future benefit to the citizens of the State and that uses are causing the rapid degradation and, in some cases, the destruction of these critical resources, producing significant adverse economic and environmental impacts and threatening the health, safety and general welfare of the citizens of the State. [1987, c. 809, §2 (NEW).]

The Legislature further finds and declares that there is a need to facilitate research, develop management programs and establish sound environmental standards that will prevent the degradation of and encourage the enhancement of these resources. It is the intention of the Legislature that existing programs related to Maine's rivers and streams, great ponds, fragile mountain areas, freshwater wetlands, significant wildlife habitat, coastal wetlands and sand dunes systems continue and that the Department of Environmental Protection provide coordination and vigorous leadership to develop programs to achieve the purposes of this article. The well-being of the citizens of this State requires the development and maintenance of an efficient system of administering this article to minimize delays and difficulties in evaluating alterations of these resource areas. [1987, c. 809, §2 (NEW).]

The Legislature further finds and declares that the cumulative effect of frequent minor alterations and occasional major alterations of these resources poses a substantial threat to the environment and economy of the State and its quality of life. [1987, c. 809, §2 (NEW).] This article is known and may be cited as "the Natural Resources Protection Act."

The existing legal remedy for the handling of unauthorized wetland impacts requires first that someone identify that a violation has occurred. This person would notify the MDEP, who would then assign the appropriate personnel to review the details of the case. If after review of the details it is determined the alteration or fill was in violation of the applicable regulations, an "after the fact" permit application may be required and/or the landowner may be required to restore (remove the fill, reestablish hydrology and hydric soils and replant hydrophytic vegetation) and/or pay compensation for the lost wetland functions and values. This can be a very expensive and time consuming process that is typically the responsibility of the current landowner.

In many scenarios encountered, a landowner may have purchased a property from a developer not knowing wetlands were present that would constrain their intended use for the property. Yet the developer was paid full market value for the land based on it being unconstrained (without wetlands), fully-developable land, and real estate agents brokering the sale received a commission based on the sale price of the property. As illustrated in this example, there are financial motives for some under the existing system to avoid having wetlands appropriately identified on a piece of land.

In order for typical existing legal remedies to prevent the unmitigated loss of wetlands, our current regulatory authority with jurisdiction over these resources (MDEP) would have to assume oversight for all wetlands related activities in the state. This would require MDEP regulatory staff to review virtually every property proposed for purchase, sale, or proposed for development.

Alternatively, we believe that licensing wetland scientists in Maine would establish a clear professional entity (currently absent) responsible for the identification of state jurisdictional wetlands and waterbodies. Our goal would be to establish review of land for state jurisdictional wetland and waterbody resources as

standard due diligence (similar to site evaluations and land surveys) prior to the purchase or sale of land in Maine. This would protect both the landowners and the interests of the People of the State previously cited from the NRPA.

In situations where substandard wetlands work has been performed, there currently is no board of licensure to evaluate claims and no means to prevent an unqualified individual from doing more harm to others. Again, the licensing of wetland scientist would remedy this situation.

MAWS believes that the licensing of wetland scientists could be implemented similarly and possibly in conjunction with, the process currently used for the licensing of Soil Scientists in Maine.

## 2.8 METHOD OF REGULATION

It is noted that the Maine Attorney General's Office favors licensure over any other method of regulation given the opinion that registration, certification, license to use the title, or any other form of regulation would inadequately protect the public and ensure competence. Licensure would provide all entities with assurance of minimal competence and access to a licensing board that can hold a practitioner accountable.

This alternative was chosen to provide a viable solution to the issues raised with the threat to public health, safety, and welfare.

## 2.9 OTHER STATES

Most states, including Maine, have regulatory wetland programs overseen by local, state, and federal agencies. Only four states within the U.S. actively regulate and oversee wetland scientists. These states are Minnesota, New Hampshire, Virginia, and Wisconsin. Following is a brief synopsis of each program;<sup>4</sup> more detailed information can be found in Appendix C.

To accompany the 1987 Manual, the Corps set up a pilot program to offer certification in the mid 1990's in Seattle, Washington, Jacksonville, Florida, and Baltimore, Maryland. Wetland scientists earned their certificate after passing a two part regional exam that was based on the 1987 Manual. The Corps program was terminated before reaching the national stage, and the issuance of professional certificates ended in the late 90's. While wetland regulation has continued to evolve, regulation of those completing the work has moved forward as well. State sponsored certification programs are being looked to as a solution.

Virginia was the first state to certify wetland scientists. Stakeholders accomplished getting the program instituted after approximately 10 years. The state had an existing certification program in place, as Maine does, for soil scientists. The Virginia Association of Professional Soil Scientists merged with the Virginia Association of Wetland Scientists (VAMP) to streamline board procedures and reduce overall cost, while increasing fee revenue. The Associations indicate the program has been a success.

New Hampshire followed suit in a similar fashion, mirroring their wetland scientist certification after the existing Certified Soil Scientist program that is administered by the New Hampshire Joint Board of Licensing and Certification. There was a one-year period where currently practicing scientists could be "grandfathered" into the program. The New Hampshire Association of Natural Resource Scientists (NHANRS) has been a partner in providing continuing education required by the program, as well as supplemental supporting expertise. Some wetland scientists in Maine are currently licensed in NH; feedback from regulatory agencies and practicing scientists has been positive.

In 2001, Minnesota began developing statutes after a push from builders and developers called for a solution to improve the quality of wetland delineations for permitting purposes. A study was conducted by the Board of Water and Soil Resources in partnership with the Minnesota Association of Professional Soil

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<sup>4</sup> Derived from State Wetland Delineator Certification Programs, Leah Stetson, *Wetland News*, July 2007.

Scientists and the Minnesota Wetland Professionals Association (MWPA). While the state does not currently provide funding for the program, the University of Minnesota funds the program with course fees collected during continuing education, which is a requirement of the program. Grandfathering was not part of the program; the outcome of the program has been positive.

Wisconsin has a slightly different approach than the previous three discussed here. The Wetland Delineation Professional Assurance Initiative is a pilot program spearheaded by the Department of Natural Resources. The program began with the goal of enhancing wetland protection, as well as the certainty of defined wetland boundaries as they pertain to project planning and permitting. This would save time in the review process for the state. The pilot program is using the word assurance during the exploratory phase of the pilot program prior to pursuing legislative action to initiate a formal certification process.

There are currently two states pursuing certification through the legislative process, Oregon and Washington. More information is presented in Appendix D.

In response to this review, MAWS has contacted and is currently pursuing written comments from state regulatory agencies, as well as VAMP, NHANRS, MWPA, and other involved parties who can provide feedback and substantiate data to support the discussion item of before-and-after analysis. These documents will be forwarded upon receipt.

#### 2.10 PREVIOUS EFFORTS TO REGULATE

We are not aware of any previous efforts to regulate wetland scientists in the state going since wetland regulations have been in existence. While the certification of wetland scientists in the state has long been a goal of MAWS, it is only now that our efforts have matured to the point where we are formally submitting our efforts to the state.

An attempt by the federal government was made to certify wetland scientists in 1990 via the WDCP. The purpose of the nationwide WDCP, as established under authority of the Federal Water Resources Development Act of 1990, was to (1) improve the quality and consistency of wetland delineations submitted to the Corps and (2) stream-line the regulatory process by developing procedures for expediting review and consideration of delineations submitted by certified delineators. Participation in the WDCP, however, was intended to be voluntary. A pilot program was initiated in 1993 with field and written testing of applicants' knowledge and skills as they pertained to the 1987 Manual, but the program was abandoned by the Corps in 1997 due to insufficient funding. Currently there are no plans underway to revive the program. Following

#### 2.11 MINIMAL COMPETENCE

The standard for minimal competence for wetland scientists who make wetland determinations and delineations is the 1987 Manual, with amendments and Regulatory Guidance Letters: (<http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf> ). This is a comprehensive and complex manual requiring practitioners to have competence across three disciplines, soil science, botany, and hydrology. To properly interpret the methodologies in this manual, several years of field experience are mandatory under the supervision of a senior wetland scientist. To maintain one's relevancy, continuing education workshops are necessary, as the fields of soil science, botany, and hydrology evolve. In addition, state and federal statutes are continually evolving, requiring close attention and understanding to regulatory updates.

However, at present, wetland scientists are able to work for the public without having to demonstrate any minimum level of education, training, or experience. If a "wetland scientist" can convince their client that they are qualified to do the work, then they will, in all probability, be retained by the client. The client assumes, incorrectly, that there must be regulatory oversight of "wetland scientists."

There exist voluntary standards in Maine from two organizations (both of which are private entities): MAWS and the SWS. The latter is a national organization.

MAWS Constitution Articles II and III require certain minimum standards (experience and education), membership by “wetland scientists” in MAWS is, of course, voluntary. Further, MAWS has no provisions for enforcement of standards either inside or outside their organization. There is neither a written nor field test required, nor are official college transcripts or a criminal background check required.

Similarly, the SWS requires certain standards be met by members in regards to experience, education, and peer references, but it is still just a private organization without enforcement or arbitration abilities. In addition, it encompasses the entire U.S., so a “wetland scientist’s” education, experience, and training is not necessarily transferable across all 50 states. In other words, a “wetland scientist” from the Atlantic Coastal Plain would not necessarily be qualified to work in the Glaciated Northeast, despite having the SWS’s “Professional Wetland Scientist” certification. This fact is amply demonstrated by the U.S. Department of Agriculture’s 25 “Land Resource Regions” in the U.S.<sup>5</sup> Each region can vary substantially in soils, plants, and hydrology. Please also refer to the *National List of Plant Species that Occur in Wetlands*.<sup>6</sup> This compilation of tree, shrub, and herbaceous plant species is specific to each region of the U.S. Again, using the above argument, a “wetland scientist” from the southeastern U.S. would not be qualified to identify vegetation from Maine (and the reverse also holds true).

MAWS recommends review of the following New Hampshire Qualifications for Certification.

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<sup>5</sup> [tp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric\\_Soils/FieldIndicators\\_v6\\_0.pdf](ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/FieldIndicators_v6_0.pdf)

<sup>6</sup> <http://www.usace.army.mil/CECW/Documents/cecwo/reg/plants/list96.pdf>

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:84

##### **310-A:84 Qualifications for Certification. –**

I. To be eligible for certification as a soil scientist, a person shall be of high ethical professional standards, have successfully passed an examination designed to determine the person's proficiency and qualifications, including references to soil characteristics in the New England region, to be engaged in the practice of soil science, and shall have one of the following qualifications:

(a) Be a graduate of an accredited 4-year college curriculum leading to a baccalaureate degree, where the applicant successfully completed 30 semester hours in biological, physical and earth science, including 15 semester hours in soil science, and have a specific record of an additional 3 or more years experience in the practice of soil science.

(b) Be a graduate of an accredited college curriculum leading to a baccalaureate or an associate degree, where the applicant has successfully completed 15 semester hours in soil science, and have a specific record of an additional 4 or more years experience in the practice of soil science.

(c) Be a graduate of an accredited college curriculum leading to a baccalaureate or associate degree, or have earned the equivalent number of credits, and have a specific record of an additional 6 or more years in the practice of soil science.

II. Experience in the practice of soil science shall be of a grade and character that indicates to the board that the applicant is competent to practice as a soil scientist. Experience shall be determined as follows:

(a) Teaching soil science courses or performing research in soil science at an accredited college, university, or institution offering an approved soil science or agronomy curriculum shall be considered as experience in the practice of soil science.

(b) Educational training shall not be considered as experience. Summer employment shall be considered experience for purposes of this section.

(c) Actual field mapping experience in an acceptable apprenticeship program shall count as experience time and shall account for a minimum of one year of the experience requirement.

(d) Each advanced degree in a related field shall be counted as one year of experience.

II-a. To be eligible for certification as a wetland scientist, a person shall meet high ethical and professional standards, have successfully passed an examination designed to determine the person's proficiency and qualifications, including references to wetland characteristics in the New England region, be engaged in the practice of wetland science, and shall have one of the following qualifications:

(a) Be a graduate of an accredited college curriculum leading to a baccalaureate or an associate degree, where the applicant has successfully completed a minimum of 24 semester hours in any of the following environmental sciences: botany, soil science, hydrology, wetland science, biology, forestry, wildlife, ecology, water resources, plant science, agronomy, geology, or earth science, and have one or more years experience in the practice of wetland science.

(b) Have a minimum of 12 combined credit or non-credit semester hours in any of the environmental sciences under subparagraph (a), and have 3 or more years experience in the practice of wetland science.

II-b. (a) Experience in the practice of wetland science shall be of a quality and character that indicates to the board that the applicant is competent to practice as a wetland scientist. Experience shall be defined as one or more of the following:

(1) Teaching wetland science courses or performing research in wetland science at an accredited college, university, or institution offering an approved wetland science or wetland ecology curriculum.

(2) Actual field experience gained in an acceptable apprenticeship program.

(3) Actual field mapping experience, defined as the delineation of wetland boundaries and the preparation of wetland maps in accordance with standards for the identification of wetlands adopted by the department of environmental services or the United States Army Corps of Engineers or its successor.

(b) For the purposes of this paragraph, educational training shall not be considered as experience; summer employment shall be considered experience.

(c) For the purposes of this paragraph, each advanced degree in a related field may be counted as one year of experience, however, a minimum of one year of actual field experience shall be required for all candidates.

III. A candidate failing an examination may apply for a re-examination upon payment of an additional fee as determined by the board in its rules and shall be re-examined on the next regularly scheduled semi-annual examination date. A candidate failing the examination 3 consecutive times shall be required to furnish evidence of additional experience, study, or education credits acceptable to the board before being allowed to proceed with the examination.

**Source.** 1988, 281:1. 1995, 136:34. 1997, 240:15, 16, 17. 2004, 116:3, eff. May 17, 2004.

## 2.12 FINANCIAL ANALYSIS

Due to dedicated revenue mechanisms already in place, we anticipate that adoption of a bill to license Wetland Scientists in Maine will more than repay any State expenditures by the State within the first year. We estimate that adoption of a bill to certify wetland scientists will generate \$82,200 per year to the State. Currently, Certified Geologists and Certified Soil Scientists have a budget that amounts to about \$140 per professional. We anticipate that, if dedicated revenue mechanisms stay the same, that monies brought in by CWSs to the Board of Geologists and Soil Scientists (the "Board") will amount to \$156 per professional (that is, Certified Geologists, Certified Soil Scientists, and CWSs). After the second year, we anticipate that CWSs will bring in \$29,500 to the state treasury, which will be about \$141 per professional on the Board. These figures equal or exceed monies that the Board is awarded through its current dedicated revenue mechanism each year. The reasoning behind our projections follows.

Based on our conservative projections of the anticipated number of wetland scientists who we expect will pursue licensure, about 200 individuals will apply to become a Maine Certified Wetland Scientist.

Based on on-line research of the Maine Department of Professional & Financial Regulation's website for the Board of Geologists and Soil Scientists, which is the Board we anticipate we are most likely to become a part of, required fees to become and maintain status as a Certified Soil Scientist include a one-time application fee of \$25.00, plus a criminal background check fee of \$21.00. If the applicant goes on to take the General Practice exam and then the Professional Practice exam (\$225.00), he/she must then pay an annual License fee of \$140.00. Therefore, if individual wetland scientists who will seek licensure that first year have to face the same expenses, we anticipate that about **\$82,200** will be raised the first year of implementation

According to an interview we had with a sitting member of the Board of Geologists and Soil Scientists, the Board oversees 245 Certified Geologists and 76 Certified Soil Scientists for a total of 321 professionals. We learned during the interview that the annual budget for the Board ranges from \$30,000 to \$50,000 per year, but is typically about \$45,000 per year. Therefore, the typical budget for the Board for 321 professionals represents a dedicated revenue mechanism of about \$140 per member per year.

Assuming that 200 wetland scientists become newly certified under the Board, it will raise the total number of Professionals overseen by the Board from 321 to about 521. If certification does in fact bring in about \$82,200 the first year, it will effectively raise the Board's total budget from the current \$45,000 to about \$127,200. This budget would represent a dedicated revenue mechanism after initial setup of about \$244 per member per year.

After the first year, we anticipate that while the number of first-time applicants will decrease (as would be expected) from that first year spike, the total dedicated revenue mechanism will nevertheless remain at or above the current Board revenue of about \$140 per person.

To justify that statement, we anticipate that the Board may see an estimated, but probably conservative, 15 percent increase of new applications each year for the first few years after implementation. At the same time, there will be an estimated three to five percent decrease of license holders who, for one reason or another, will drop their licenses each year.

We justify our 15% increase of candidates to apply for licensing by considering the sheer pool of potential candidates listed in Section 2.1, including qualified individuals who may not be MAWS members but who are members of the Maine Association of Professional Soil Scientists; the Maine Association of Site Evaluators; and the Maine Society of Land Surveyors. In addition, we believe that it is reasonable to expect that qualified members of The Wildlife Society, Maine Licensed Foresters, and environmental consultants from out-of-state, particularly New Hampshire and Massachusetts, will express interest in becoming a Maine CWS. Additionally, we estimate that many less experienced individuals who are currently employed by the larger environmental consulting firms and practicing under the supervision of more experienced wetland scientists will accumulate the required experience each year. They will then

apply for licensure themselves. Finally, we anticipate that licensure will create a new prestige amongst college students who may want to seek a career as a CWS.

Meanwhile, we are aware that approximately three percent of current license holders drop their licenses each year, as explained to us over an interview we had with a current member of the Board who stated that “a few” people “are lost” each year. Given that the Board currently licenses 245 Certified Geologists and 76 CSSs, we suspect that “a few” people implies a number no greater than 10.

Using these figures, we estimate that the total annual revenue generated by licensure of wetland scientists during year 2 after implementation will be about \$29,500.

#### 2.13 MANDATED BENEFITS

MAWS does not intend to apply for mandated benefits.

Appendix A  
Exploratory Paper on the Issue of Credentialing  
Wetland Scientists in Maine



**Maine Association of Wetland Scientists (MAWS)**

***Exploratory Paper on the Issue of Credentialing Wetland  
Scientists in Maine***

Prepared by: MAWS Certification Subcommittee

Prepared for: MAWS Executive Committee and Membership

Final Report  
February 2007

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## EXECUTIVE SUMMARY

The MAWS Subcommittee was formed to explore the Need for potential credentialing of wetland scientists in the state; identified the current attitude with respect to establishing wetland certification and/or licensing by practitioners and other stakeholders; then prepared a report stating the advantages and disadvantages of credentialing wetland scientists. If credentialing is pursued, two options are discussed: 1) pursuing licensing through the State of Maine; and 2) pursuing an in-house certification program. A third option discussed is 3) taking no action. The report does not recommend a course of action, but provides documentation to assist members with the decision making process. Findings of the Subcommittee follows.

The Subcommittee identified 8 perceived *Needs* to support wetland credentialing. These needs can generally be placed into, but not necessarily limited to, four categories including 1) protecting our environment; 2) improving the consistency of wetland delineations; 3) ensuring a high level of professional standards of practice; and 4) protecting our clients' interests.

A MAWS questionnaire distributed in 2005 found that 67% of respondents support credentialing of some kind, while 17% indicated they would not support it. While relatively few members responded, results of the questionnaire generally mirror that of similar surveys that have been distributed by MAWS in recent years.

Pros and Cons of pursuing *state recognized Licensing* were identified. Advantages include, but are not limited to: a higher confidence that wetlands and their attendant functions and values will receive a higher level of protection and concurrently help curtail wetland loss; a higher level of confidence that the land development community would have in wetland delineations; and a perceived greater efficiency to process land development permitting. Disadvantages include, but are not limited to: a still unrealized but high economic cost of establishing licensing; no guarantee that the public and/or environment can be better protected; and a still unrealized greater cost to hire licensed versus unlicensed wetland scientists that would be borne by the land development community.

Pros and Cons of pursuing *In-House Certification* were identified. Advantages include, but are not limited to: a greater degree of confidence that MAWS would be in control of establishing some kind of credentialing as opposed to a legislative vote to approve licensing; wetlands are likely to receive greater protection; and confidence that MAWS already has in place most of the elements required for in-house certification by other professional groups such as the Society of Wetland Scientists, Soil Science Society of America, and The Wildlife Society. Disadvantages include, but are not limited to: no guarantee that the public and/or environment can be better protected; and a still unrealized greater cost that would be borne by the land development community to hire certified versus uncertified wetland scientists.

Pros and Cons of *Taking No Action* were identified. Advantages include, but are not limited to: maintaining a status quo with respect to current membership fees; and a faster response to changes that can be made to respond to future areas of weakness by utilizing the existing framework of MAWS. Disadvantages include, but are not limited to: the realization that the historic topic of credentialing may not be adequately addressed; and current rates of wetland loss and/or degradation due to inadequate wetland delineations and assessments may continue.

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## ACKNOWLEDGEMENTS

On behalf of the Maine Association of Wetland Scientists, the Certification Subcommittee would like to thank everyone who contributed to the preparation of this document. This product would not have been possible without the many hours of volunteer time and vast breadth of knowledge contributed by the authors. This paper is a major accomplishment that is the result of dedicated effort from very busy people! Listed in alphabetical order below are the names of the people who spent considerable time and energy discussing the issue of certification, and researching and writing this paper for the MAWS membership.

Ben McDougal  
Chris Dorion  
Cole Peters  
David Rocque  
Don Phillips  
Douglas Stewart  
Eugenie Francine  
Gary Emond  
Gil Paquette  
Jim Boyle  
Karol Worden  
Kathleen Miller  
Lauren Stockwell  
Mary Pierce  
Norm Famous  
Peter Tischbein

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## 1.0 INTRODUCTION

The MAWS membership totals around 140 people and is composed of wetland scientists, soils scientists, planners, consultants, engineers, surveyors, government personnel, botanists, wildlife biologists, students, and environmentalists. Of this total, approximately 100 people are of active member status and the majority of MAWS members describe themselves as wetland and/or soil scientists. The credentialing of wetland scientists has been an issue of discussion of the Maine Association of Wetland Scientists (MAWS) since the founding of the association in 1990. Throughout the duration of MAWS' history, constructive arguments have been made both for and against the certification of wetland scientists in Maine. Furthermore, the issue of credentialing continues to be an important item of discussion amongst the MAWS membership. In response to this on-going debate, in 2005 the MAWS Executive Committee formed a subcommittee of experienced wetland scientists recruited from within its ranks to explore the current attitude regarding wetland certification/licensing in Maine, its possible implications if pursued, and to submit an unbiased written report of its findings to the membership no later than the date of the 2006 MAWS Annual Meeting. This report summarizes the Subcommittee's findings, as described in the following report. It is composed of eight sections including the Introduction. Sections 2.0 through 8.0 are described below.

- **Section 2.0, *Background***, discusses MAWS role (including information obtained from various questionnaires distributed to MAWS members and others ; MAWS Resolution to set minimum qualifications for wetland scientists (Appendix C); the former “Wetland Delineator Certification Program” that the Corps of Engineers unsuccessfully tried to establish in the 1990’s; and New Hampshire’s experience developing its certification program.
- **Section 3.0** presents the *Goals and Objectives* of this paper.

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- **Section 4.0**, *Discussion of Possible Need*, describes the issue of potential need for certification and/or licensing of wetland scientists in Maine.
  - **Section 5.0**, *Problems and Opportunities*, generally discusses how wetland resources are currently protected in Maine, potential obstacles to the establishment of a wetland certification / licensing program, and how these obstacles may be overcome, and the potential benefits and detriments associated with a certification or licensing program.
  - **Section 6.0** provides a discussion of the *General Implementation Processes Associated with Credentialing Options*. Specifically, Section 6.1 discusses the processes required to establish a State program for a potential Maine Certified Wetland Scientist registration, and Section 6.2 discusses related Certification programs that are offered by various nationally based professional societies, along with criteria required to earn these Certifications. Section 6.3 discusses a “Take No Action” option.
  - **Section 7.0** summarizes the findings and recommendations of the Subcommittee and presents topics that should be discussed by the membership prior to a formal vote to guide the 2006 MAWS Executive Committee regarding how to proceed.
  - **Section 8.0** is a list of references that were reviewed during the preparation of this paper.

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## **2.0 BACKGROUND**

### ***2.1 History of the Certification Issue***

Certification for wetland scientists as professionals has been an ongoing issue of discussion for the Maine Association of Wetland Scientists (MAWS) since its inception in 1990. Much of the certification discussion within MAWS mirrored those which were on-going in similar organizations and state/federal agencies across the U.S. beginning about **1989**.

One of the early leaders addressing the issue was the national Society of Wetland Scientists (SWS), which formed a Certification Committee and queried their membership of 400 in the spring of **1989** regarding the need for professional certification (the results presented in Appendix A)

The fledgling MAWS undertook the initiative on this issue at the August **1990** organization meeting, by listing as agenda topics the “need for certification” and “minimum qualifications for wetland scientists”. The legitimacy of this issue was confirmed shortly thereafter with the results of a MAWS questionnaire (9/1990) sent to 85 individuals. Under GOALS FOR MAWS; Professional consistency/quality control & Certification received the highest responses at 27 and 15 percent, respectively. The survey also revealed that 12 percent of the respondents felt certification was of benefit to members and 17 percent felt that a certification committee should be formed within MAWS.

In **1991** the idea of formally having a legislator introduce a bill on behalf of MAWS requesting that the state institute a licensing program was tabled by the Executive Committee.

The advent of the federal Corps of Engineers Wetland Delineator Certification Program (WDCP) re-kindled certification discussions. The purpose of the nationwide WDCP

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established under authority of the Federal Water Resources Development Act of 1990 was to (1) improve the quality and consistency of wetland delineations submitted to the Corps and (2) stream-line the regulatory process by developing procedures for expediting review and consideration of delineations submitted by certified delineators. Participation in the WDCP was to be voluntary. A pilot program was initiated in **1993** with field and written testing of applicants' knowledge and skills as they pertained to the 1987 Corps of Engineers Wetland Delineation Manual. The program was abandoned in **1997** due to insufficient funding. Currently there are no plans underway to revive the program (The Obligate 1997; National Wetlands Newsletter 1997).

In the summer of **1993** MAWS sent out a more specific questionnaire regarding certification to members of MAWS, MAPSS, Maine Landscape Architects, Maine Licensed Engineers, and the environmental departments of the state's larger law firms. The results to 12 questions were cited in the January 1994 MAWS newsletter, The Obligate. Of the 92 responses (a 20% return rate), 74% stated that they felt there was a need for a certification program; of the respondents who were MAWS members, 85% felt the same.

In the summer of **1995**, the Executive Committee, and representatives from MAWS formulated a Resolution entitled: "Minimum Qualifications for Practicing Wetland Delineators in Maine" (Appendix C). This Resolution was passed by the membership at the February **1996** annual meeting. Although the Resolution clearly articulates "*minimum qualifications for persons professionally engaging in the practice of wetland delineation in Maine*" the Resolution did not provide for certification of delineators, nor was there a formal review established for judging the qualifications of individuals. The intent of the Resolution was to make MAWS' position known and provide guidance to those interested in judging qualifications.

Elsewhere, the state of New Hampshire adopted rules for the Certification of Wetland Scientists by the Board of Natural Scientists in November 1998 with certification beginning in 1999. Attempts for state administrated certification began back in May

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1991. The Society of Wetland Scientists (an international organization of wetland scientists) initiated certification for their members beginning in 1994. Criteria to earn standing as a SWS Professional Wetland Scientist, and for other certifications offered by related professional associations, are discussed in Section 6.2.

## **2.2 Recent Survey Results**

In March **2005** a MAWS Certification Subcommittee formed to reexamine credentialing of wetland scientists and make recommendations to the Executive Committee. At the 2005 MAWS annual meeting, this subcommittee handed out surveys on the issue of wetland scientist certification to all meeting attendees (included non MAWS members but did not include all MAWS members). This survey consisted of 21 questions and was completed by 36 of the 62 respondents (58%). Of the 36 total respondents, 67% indicated that there is a need for a wetland certification/licensing program in Maine, 17% indicated that there is no need, and the remainders were unsure. The overall results of this survey are presented in Appendix A.

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## **3.0 GOALS AND OBJECTIVES**

The goal of this report is to provide a documented summary of both historic and contemporary discussions regarding the topic of credentialing wetland scientists in Maine. The Subcommittee's objective (defined in Section 1.0) is to provide a written summary of advantages and disadvantages of credentialing wetland scientists from the perspective of various stakeholders (i.e., developers, regulators, wetland scientists, the people of the State of Maine). Once identified, a mindful weighing of advantages and disadvantages will be possible.

The ultimate goal of this report is to provide the MAWS membership with documentation to initiate formal decision-making on the subject of credentialing wetland scientists in Maine. We prepare this report with the expectation that, as with nature, things will change. However, this report and documentation of the decision making process that will follow will enable MAWS to grow as an organization. As variables in the decision making equation change, it is our hope that documentation presented in this report will also facilitate decision making for MAWS in the future.

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## 4.0 DISCUSSION OF POSSIBLE NEED

The purpose of this section is not to establish or advocate that there is, or is not, a need to credential wetland scientists in Maine. Rather, its purpose is to present a bulleted list of possible needs for credentialing that have been previously discussed by MAWS members and others. This bulleted list is not intended to be “all inclusive”. Beyond the simple need for having Wetland Scientists perform a technical service, it is equally important to have dedicated Wetland Scientists who value, and pledge to uphold, the highest professional standards of practice related to wetland issues. To this end, most of the past discussions that have taken place regarding the issue of certification have focused on delineation and the lack of consistency and/or inaccuracies in wetland delineations and mapping. This section focuses on that particular aspect of wetland science.

Some of the possible needs for certification that have been previously discussed include [these are not listed in any order of importance]:

- Needed to increase stability to the implementation of the NRPA and Section 404 of the Clean Water Act;
- Needed to protect the profession of wetland science by increasing public and regulatory confidence and helping enhance the quality/consistency of wetland delineations;
- Needed to reduce the potential for “bad” work by ensuring that individuals conducting wetland delineations meet minimum educational (both past and continuing) and experience requirements;
- Needed to make the regulatory process more efficient, thereby saving money for clients and the taxpayers of Maine;
- Needed to provide a mechanism for encouraging good, thorough work through the possibility of being reprimanded for conducting sub-par work;
- Needed to protect water resources, water quality, and the human and natural environments by reducing the number of erroneous wetland delineations

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(assuming that certified individuals are, on average, more qualified than those who are not certified);

- Needed to prevent abuses in the practice of wetland science by untrained or unprincipled individuals;
- Needed to provide the land development community reasonable expectation that individuals hired to conduct wetland delineations will be qualified to do quality work.

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## 5.0 PROBLEMS AND OPPORTUNITIES

### 5.1 *Regulation of Wetland Resources*

Activities in and near wetlands (freshwater and coastal) in the State of Maine are regulated at the three levels of government: federal, state, and local. Primary jurisdiction at each of these levels respectively is headed by the US Army Corps of Engineers (Corps), the Maine Department of Environmental Protection (MDEP) or in unorganized municipalities of the State, the Land Use Regulation Commission (LURC) and local Planning Boards (Plng Bds). To varying degrees other regulatory agencies (Environmental Protection Agency; Maine Department of Inland Fisheries and Wildlife, etc.) and voluntary Boards (Municipal Conservation Commissions, etc.) provide additional input for the three main governmental entities.

At the federal level activities in wetlands or “waters of the United States” are regulated by the Corps under the provisions of Section 404 of the Clean Water Act, which defines wetlands as:

*“those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”.*

At the state level, activities in or adjacent to wetlands in organized municipalities are regulated by the MDEP under the provisions of the Natural Resources Protection Act. In unorganized territories, wetlands are regulated by the Land Use Regulation Commission. The definition of wetlands at the state level is similar to the federal definition.

At the local level, activities in certain wetlands designated on maps adopted for individual municipalities are regulated under the provisions of the Shoreland Zoning Ordinance (SZO). Requirements of a local SZO must address minimum guidelines

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developed by the MDEP but, subject to local approval, may be more stringent than these guidelines. Under the minimum guidelines wetlands are defined as:

*“freshwater swamps, marshes, bogs and similar areas, other than forested wetlands, which are: (1) of ten or more contiguous acres; or of less than 10 contiguous acres and adjacent to a surface water body, excluding any river, stream, or brook, such that in a natural state, the combined surface area is in excess of 10 acres; and (2) inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils”.*

Although not regulatory bodies per se, various non-governmental organizations (NGO’s) play differing advocacy, educational, professional, protective or stewardship roles that also contribute to increasing the public awareness for wetlands in the State of Maine. Roles of these NGO’s extend beyond ecologic aspects and can also encompass regulatory considerations. Although not intended to be complete, examples of NGO’s routinely involved in wetland related issues include: Maine Audubon, local and regional land trusts, the Nature Conservancy, the Natural Resources Council of Maine, and MAWS.

While typically not considered to be NGO’s, without doubt academia involved in the fields of biology, earth sciences, ecology, environmental, and wildlife programs also contribute to raising an awareness of wetlands as regulated resources throughout the State of Maine. Finally, some elementary, middle, and high school programs teach about the value of wetland resources.

Therefore awareness and protection of wetlands as regulated resources in Maine occur at a wide variety of levels. With respect to regulatory credentialing of individuals that delineate wetlands as regulated resources, ultimately the impact on the resource is controlled by the regulated community or resource stakeholders involved with wetlands.

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## **5.2 Possible Benefits/Detriments Certification or Licensing**

The following section outlines the benefits and detriments of having some form of certification or licensing program for wetland scientists in Maine. For purposes of this section, “certification” is to mean a formal recognition by a *non-governmental* entity (i.e. Society of Wetland Scientists) that a given individual has met, and perhaps demonstrated, certain minimum requirements of the profession. This certification is typically voluntary.

Licensing is the same; however, the license is issued by a *governmental* licensing board or agency (i.e. NH Board of Certification for Natural Scientists) and is required for an individual to perform certain activities within the profession.

Within the paper, the word “credentialing” is used to address “certification” and “licensing” collectively.

### **5.2.1 Potential Benefits to:**

#### Land Development Community

- Assures that there is an identifiable and acceptable level of knowledge and diligence by those working in the profession (i.e., certified individuals would likely have the responsibility of maintaining and enhancing their skills);
- Provides a vehicle for selecting consulting services from those with proven credentials;
- Minimizes the financial, time, and legal risk of incurring professional negligence by using unqualified consultants.

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### Consultants

- Promotes a level “playing field” between competing service providers which promotes a higher level of service to the regulated community;
- The profession of wetland science better recognized as a distinct skill set with economic value in the marketplace;
- Allows for better communication and education within this professional community whereby changes in the science/industry are better distributed for general consumption. For example, certification/license review or CEU requirements helps ensure that everyone is aware of technical changes to the delineation manual, regulations, documentation requirements, etc.;

### Government (federal, state, and municipal)

- Can help facilitates review of wetland documentation submitted to the regulators and makes the overall regulatory process more efficient and cost-effective;
- Helps improve the quality and consistency of wetland documentation submitted to the regulators.

### MAWS

- Affords professional integrity in the science as administered. Allows for internal control (i.e. revocation of certification or an accounting before the Ethics Committee).

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### General Public

- Provides some assurance that the natural resource is being accurately characterized and by a method that ensures repeatability by others;
- Provides for a broader level of protection for the resource.

### **5.2.2 Potential Detriments to:**

#### Land Development Community

- May incur higher fees/billing rates for services provided by certified/licensed wetland scientist;
- Credentialing will not entirely eliminate the risk of receiving an inferior work product.

#### Consultants

- Employers may have to pay higher wages to employ those holding a professional certification/license;
- Employers may incur professional development costs related to the certification or License of the employee in the form of application fees, renewal fees, and CEUs to maintain the credential;
- May restrict/limit out-of-state consulting firms or otherwise qualified individuals from performing work in Maine, thus resulting in the land development

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community having a smaller pool and/or availability of qualified individuals to provide wetland services.

### Government

- Credentialing will not entirely eliminate the risk of receiving an inferior work product, and may instill a sense of “false security” amongst regulators that work conducted by credentialed individuals is being done correctly.

### MAWS

- Certification program may be an administrative burden in the form of time allocation (review panel, revision of certification standards, record keeping) and expenses;
- Attempting to implement a certification program could incur retribution from individuals and organizations in opposition of such a program<sup>1</sup>.

### General Public

- May instill a misconception that certification/licensing offers a “guarantee”;
- If licensing is conducted by a state entity, non-recoverable program costs may be passed onto the taxpayer;
- Not an end-all solution to all problems identified within the profession.

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<sup>1</sup> This occurred in Minnesota where a proposed voluntary certification program was challenged in court by practicing soil scientists. However, the certification program ultimately prevailed (Greg Larson 2006). In addition, the New Hampshire certification effort was originally opposed by septic designers, engineers, and soil scientists. However, the now defunct New Hampshire Association of Wetland Scientists met with these groups and resolved differences regarding the proposed certification program (NHAWS Board of Directors 1995).

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## **6.0 CREDENTIALING OPTIONS/IMPLEMENTATION**

### **6.1 *State of Maine License***

In the State of Maine, the Department of Professional and Financial Regulation (DPFR) oversees the regulation of many professions and occupations that provide services to the general public. Within DPFR, the Office of Licensing and Registration houses 41 professional licensing boards, commissions, and registrations without boards dedicated to public protection through licensure, inspection, enforcement/complaint handling, and discipline. In Maine, soil scientists and geologists are licensed through DPFR, as are professional engineers. A proposal to add a new licensing board for wetland scientists would require a statutory change to Title 32: Professions and Occupations. Alternatively, rather than seeking to add another licensing board specifically to administer the certification of wetland scientists, another option could include exploring the possibility of administering the certification of wetland scientists under the existing State Board of Certification for Geologists and Soil Scientists. This Board, as established by Title 5, section 12004-A, subsection 19, currently administers Title 32, Chapter 73.

The following is a simplified list of steps to license wetland scientists through the process of adding a licensing board for wetland scientists:

1. Preliminary steps include formally defining the need for licensing of wetland scientists, and deciding whether wetland scientists will go on their own or try to work with existing licensing boards such as the soil scientists and geologists. Title 5, Section 12015 provides guidance in statute for establishing new boards. These guidelines would have to be adhered to, as would Title 32, Sections 60-J, 60-K, and 60-L. Section 60-J lists 13 evaluation criteria for which research and answers must be provided. These evaluation criteria would need to be answered during the spring and summer in order to have the bill heard during the following legislative session. The criteria include: data on group, specialized skill, public health; safety; welfare,

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voluntary and past regulatory efforts, cost; benefit, service availability of regulation, existing laws and regulations, method of regulation, other states, previous efforts, mandated benefits, minimal competence, and financial analysis.

2. Identify a leader who will be the contact person and in charge of organizing the legislative process. If funding is available, hire a lobbyist<sup>2</sup> who will be able to find politicians receptive to sponsoring or supporting a bill, and who knows the legislative process. This particular task would likely cost thousands of dollars (possibly tens of thousands). For example, immediately following the passage of the certification bill by the New Hampshire legislature in 1997, the New Hampshire Association of Wetland Scientists (NHAWS) owed a lobbying firm \$9,000 (NHAWS 1997). The cost could have been more; however, NHAWS had signed a lump-sum contract with the lobbying firm, and it was suspected that this firm had conducted *pro bono* work after the lump-sum money had been exhausted. As an additional example of potential lobbying costs, according to the Soil Science Society of America, some states have spent from \$15,000 to \$25,000 (2004 dollars) to get licensure for soil scientists approved during the first legislative session. Some states have had to go through multiple legislative sessions before achieving licensure (SSSA 2005). Getting a bill passed takes months, if not years. To have a bill heard during the ensuing legislative session, legislators should be contacted and a sponsor confirmed during the spring.
3. Identify state agencies and other organizations that are supportive of a bill to license wetland scientists and are willing to testify in favor of it. The schedule within legislative committees can change suddenly - identify individuals within those agencies and organizations who are available at a moment's notice to testify.
4. Develop a draft bill that addresses, among other things, the Board, qualifications for licensing, registration fees, disciplinary actions, continuing education requirements,

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<sup>2</sup> It is not absolutely necessary to hire a lobbyist. However, minus a professional lobbyist, a MAWS representative(s) would have to devote significant time to work with the legislature and "lobby" for the cause of certification.

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grandfathering, and seals. The language developed for soil scientists and geologists would provide a good template. Obtain input from a variety of professionals during this process. To be considered in the next ensuing legislative session, the bill should be drafted during the summer and then submitted to the Reviser's Office to be prepared in the proper technical form during the fall.

5. The bill will go before the legislature, where it would most likely be considered in the Business, Research, and Economic Development Committee. According to Title 5 Section 12015, to evaluate proposed legislation to establish a new board, the joint standing committee considering the legislation will first have an informal review of the proposed legislation and the answers to the evaluation criteria. Following the informal review, the committee will:

- A. Hold a public hearing to accept information addressing the evaluation criteria listed in Title 32, Section 60-J from any interested party who is a proponent or opponent of the legislation;

- B. Request that the Commissioner of Professional and Financial Regulation or a technical committee formed by the commissioner conduct an independent assessment of the applicant's answers to the evaluation criteria listed in Title 32, section 60-J, and report the commissioner's findings back to the committee by a specific date.

6. The joint standing committee will consider this information and hold a vote to determine a recommendation to the full Legislature. If the bill passes through both chambers of the legislature in identical form, it has received final legislative approval and will go before the Governor who must either approve or veto the bill.
7. If the bill is not approved, then the process must start all over again.
8. If the bill is approved and becomes a law, wetland scientists from academic, consulting, and regulatory fields who are willing to serve on the licensing board are

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appointed as board members following guidance in Title 5, Section 12015 and in the new section within Title 32. From there, licensing of wetland scientists will begin. Overhead costs for running the licensing program depend in part on the number of wetland scientists who are licensed and, therefore, are highly variable. Presented in Appendix E is an example of costs associated with the certification of wetland delineators in Minnesota. Although this example may have limited applicability in Maine, it is provided as an example of the potential scope of costs associated with running a certification program.

## **6.2 *In-House Certification***

The Subcommittee researched several non-legally binding certification programs and Associations awarded to qualified individuals who are members of wetland and wetland-related professional associations. These Associations included: (1) the Society of Wetland Scientists, which awards a Professional Wetland Scientist (PWS) certification; (2) the Soil Science Society of America (SSSA), which awards a Certified Professional Soil Scientist (CPSS) certification as a Soil Classifier; and (3) the Wildlife Society (TWS), which awards a Certified Wildlife Biologist (CWB) certification. We note that these professional associations award certification to only those individuals who are able to provide qualifications over and above those that are required for routine, non-credentialed membership.

Table 1 below lists typical criteria that are required for these certifications, and compares each with existing MAWS equivalents.

<b>TABLE 1</b>					
<b>TYPICAL PROFESSIONAL ASSOCIATION CERTIFICATION REQUIREMENTS<sup>3</sup></b>					
CRITERIA	SWS	SSSA	TWS	MAWS	COMMENTS
Academic Transcript (T) and/or Resume (R) required	T, R	T, R	T	No	MAWS does not require a transcript or resume.
Bs / BA, MS or PhD Degree required	Yes	Yes	Yes	Yes	
Minimum No. semester hours core Biological Sciences	15	-	36	30 See comments	Requires a combination of Biology, Geophysical and/or Hydrological courses totaling 30 hours <sup>4</sup>
Minimum No. semester hours core Physical Sciences	≥ 15	≥ 15	≥ 9	See above	See above
Minimum No. semester hours core Quantitative Sciences	≥ 6	-	≥ 9	-	
Minimum No. semester hours core Social Sciences	-	-	≥ 9	-	
Minimum No. semester hours core Communications	-	-	≥ 12	-	
Minimum No. semester hours core Policy, Law, Admin.	-	-	≥ 6	-	
Additional education, workshops etc required	Yes	No	No	Yes	
Related professional work experience	≥ 5 Yrs	≥ 5 Yrs	≥ 5 Yrs	≥ 2 Yrs	
Total No. of Reference Letters	5	5	3	2	
No. of Personal Reference Letters	1	0	0	0	
No. of Professional Reference Letters	4	5	3	2	
Pass a written examination	No	Yes	No	No	
Pass a field examination	No	No	No	No	
Examination fee (Note: fees documented in Table 1 apply only to members; non-members pay higher fees)	N/A	\$125	N/A	N/A	
Certification fee	\$200	\$50	\$130	N/A	MAWS Active Membership annual fee is \$25 per year
Apprentice status required prior to Professional Cert. <sup>5</sup>	No	No	No	N/A	
Duration of Certification before renewal	1 Yr	1 Yr	5 Yrs	N/A	
Certification renewal fees	\$35	\$50	-	N/A	
Continuing Education Units required for renewal	No	Yes	Yes	No	CEU's not required for year-to-year membership
Sign adherence to a written Code of Ethics	Yes	Yes	Yes	No	MAWS Code approved in 1992 (Appendix D)

<sup>3</sup> For MAWS, the listed requirements are for Active Membership, not certification.

<sup>4</sup> This can be waived if individual is certified as a wetland scientist or related field at the federal or state level.

<sup>5</sup> Apprentice status is a requirement if an individual does not possess the minimum requirements for full certification as a Certified Wildlife Biologist, Certified Professional Soil Scientist, or, Professional Wetland Scientist.

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Table 1 indicates that MAWS has most of the basic elements that the SWS, SSSA and TWS have adopted as criteria for in-house certification. However, MAWS membership requirements are intended to address a broader membership base and are therefore apt to be understandably less stringent than those for certification. To that end, under existing conditions MAWS does not have requirements for: (1) submittal of transcript(s); (2) submittal of a list of academic core requirements in specific course types; and (3) submittal of letters of reference. Only one Association (SSSA) requires an applicant to take a written examination prior to certification. None of the four organizations listed in Table 1 require a field examination. The SWS, SSSA, and the TWS place special emphasis on signing an oath to adhere to a Code of Ethics. MAWS has a Code of Ethics, but there is no requirement to signing an oath document. The TWS makes an effort to assess a candidate's "intent" as a means to identify legitimate candidates with a purposeful history to achieve a professional goal, as opposed to those candidates who may have accumulated minimally qualifying experience but only through means that appear to be secondary to that individual's primary career. In addition, the SWS, SSSA, and the TWS all require at least \$130 as an initial fee for certification, along with a relatively smaller fee for each certification renewal period.

Copies of the general SWS, SSSA and TWS criteria for certification are included in Appendix B.

If the MAWS membership elects to proceed with in-house certification, it should be a simple matter for MAWS to adopt any missing minimum requirements perceived as being critical for a certification program, and possibly creating a new position on the Executive Committee for the sole purpose of administering a certification program.

### **6.3 Status Quo ("No Action")**

Just as the "No Build Alternative" must be considered by all parties during the wetland permitting process, the existing condition, or Status Quo - the option of "No Action" -

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must be evaluated during an analysis of the need for credentialing wetland scientists in Maine. This option should not be construed as inaction. As demonstrated by its 16-year history (Section 2.1) of discussing, researching, surveying, debating and re-reviewing this topic, MAWS has by no means been passive regarding credentialing wetland scientists who practice in Maine.

Possible Needs for credentialing wetland scientists have been identified (Section 4.0) through the course of MAWS most recent review. Outcomes intended to be addressed by these identified Possible Needs include: 1) improved regulatory stability and efficiency, 2) increased public confidence, 3) providing quality control of services performed by wetland scientists and 4) protecting wetland resources along with their associated functions and values. Possible Benefits/Detriments to credentialing wetland scientists in Maine have also been identified in this review (Section 5.0).

In order to accept the No Action option, MAWS must evaluate and decide whether these outcomes can also be achieved within the framework of the Status Quo. In other words, by the presence of these Possible Needs are: “Things Going to Hell in a Hand Basket” and thereby require some form of corrective action to be achieved by credentialing; or might the case be: “If It Ain’t Broke Don’t Fix It” (with “tweaking”/routine maintenance is, of course, always necessary for any system).

Regulation of wetland resources in Maine (Section 5.1) is broad (Federal, State, Local) and has evolved from recognizing just “10-acre wetlands” to all wetlands and recently encompasses protecting vernal pools. Wetland Scientists and thereby MAWS certainly have a role in these regulatory processes as emphasized in Maine’s Natural Resources Protection Act (38 M.R.S.A §480-X7A3<sup>6</sup>), but in the end, while its open membership includes regulatory staff, MAWS is not a regulatory body with promulgated authority.

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<sup>6</sup> “Written certification by a knowledgeable professional experienced in wetland science that the project will not alter, or cause to be altered, a wetland described in subsection 4 or 5” - (from: Application process for Tier 2 review)

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Public confidence, if only evidenced by political polls, is fleeting and cannot be static. Here too wetland scientists have a role in shaping public confidence throughout the breadth of wetland science. MAWS' role in this identified Possible Need is also evidenced within the Purpose Statement of the organization (Article II.2, 3). However, in the end MAWS' role is based on its appearances and presence before the public.

QA/QC, part of the foundation of any science, may be reinforced by the regulatory process but is fostered by adequate education, experience and an underlying commitment to ethics. Here too MAWS' role in this Possible Need is evidenced within the Association's Purpose Statement (Article II.1, 2, 3). This role is also emphasized within its *Ethics Statement* (Appendix D), and the *Resolution Regarding Minimum Qualifications for Practicing Wetland Delineators in Maine* (Appendix C). MAWS' commitment to this role is further demonstrated by regular workshops commonly hosted with MAPSS (Maine Association of Professional Soil Scientists) and is an element of basic "tweaking" and routine maintenance.

Protecting wetland resources along with their associated functions and values in the State of Maine – Can this come about by inaction? Of course not! The question to be resolved is whether credentialing wetland scientists, in the form of State of Maine license or in-house MAWS certification, or by working within the framework of the status quo, is the best means for MAWS to address these Possible Needs.

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## 7.0 FINDINGS AND RECOMMENDATIONS

Based on a review of historic newsletters and other documents, it is evident wetland certification has been an on-going topic of discussion since the inception of MAWS in 1990. Most recently, results from a questionnaire developed by the MAWS Wetland Certification Subcommittee in 2005, and handed out to 2005 annual meeting attendees, indicate that most (67%) questionnaire respondents are in favor of certification or licensing.

Based on review of literature, discussions amongst certification subcommittee members, and other research on the issue of certification, the certification subcommittee offers the following findings and recommendations:

- Pursuing formal state certification/licensing for wetland scientists could be a time consuming and expensive (particularly if a professional lobbyist is hired) endeavor. It is possible that contracting with a professional lobbyist could cost tens of thousands of dollars. In addition, it is probable that state certification would result in increased MAWS membership fees, and a new certification application and renewal fees. This would be particularly true if licensing similar in scope to that currently held by State of Maine licensed geologists and soil scientists was implemented for wetland scientists. However, overall costs (for achieving certification and administering and maintaining it) and time commitments still need to be researched further;
- The entire MAWS membership needs to be queried if they would seek certification if such a program was available for wetland scientists. This likely would need to be broken down into several questions specific to different possible certification types including state mandatory, state voluntary, MAWS voluntary, etc. This information would be useful in calculating estimated costs for the different types of possible certification programs;

- 
- Establishing wetland certification (particularly at the state-level) could help underscore the legitimacy of the profession of wetland science;
  - The need for certification should be discussed further by the MAWS membership and needs to be more firmly established and, if possible, backed up with quantifiable evidence. Lack of such evidence may indicate that there is no current pressing need for certification. Conversely, such evidence would help legitimize the need for certification; particularly if or when the issue of certification is discussed with the legislature and others outside of MAWS. Comparable, quantitative evidence may be available from the State of New Hampshire and/or the Minnesota, and would be useful in determining if certification programs in those states have improved the quality of wetland delineations or other wetland-related work;
  - MAWS has most of the necessary requirements to establish a voluntary “in-house” certification program. In-house certification administered entirely by MAWS is apt to be less expensive, simpler and faster to implement (given a dedicated effort), but would require more voluntary input from many members. Also, it is not certain if type of certification would help reduce/solve any perceived problems associated with wetland-related work currently being conducted in Maine. In addition, the MDEP would not be empowered to legally require land developers to contract with certified MAWS wetland service providers to conduct wetlands fieldwork nor to prepare wetland-related permit applications;
  - It is the opinion of the certification subcommittee that, based on the contents of this paper and the inherent complexity associated with the issue of credentialing of wetland scientists, that the MAWS membership should conduct a formal vote to decide if the issue should be tabled (for the time being) or researched further. This paper could serve as a “base document” for further research on the issue should the membership vote to choose that particular approach;
  - Should the membership choose to continue researching the issue of credentialing wetland scientists, the effort should involve extensive outreach

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and consultation with currently certified or licensed professionals including engineers, soil scientists, geologists, land surveyors, and septic system designers. This should be done to identify any concerns or perceived implications/negative effects to the above-referenced professions that could result from the implementation of a credentialing program for wetland scientists in Maine. Only through such a process could concerns be adequately addressed to benefit all of the above-referenced professions, particularly if a wetland scientist credentialing program is pursued in the future.

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## 8.0 REFERENCES

Environmental Law Institute. 1997. National Wetlands Newsletter.

Larson, G., State Soil Specialist, Minnesota Board of Water & Soil Resources. Personal communication.

Maine Association of Wetland Scientists. 1997. The Obligate.

Minnesota Board of Water & Soil Resources. 2001. A Plan for the Certification of Wetland Delineators in Minnesota. [www.mnwetlands.umn.edu/cert/](http://www.mnwetlands.umn.edu/cert/).

New Hampshire Association of Wetland Scientists. 1997. Facts WET; Volume 6, Issue 2

Society of Wetland Scientists. 2002. Professional Certification Program, Inc.; Professional Wetland Scientist Requirements. <http://www.wetlandcert.org/requirements.html>.

Soil Science Society of America. 2004. Certified Professional Soil Scientist, Soil Classifier. [www.agronomy.org/certification](http://www.agronomy.org/certification).

Soil Science Society of America. 2005. Steps to Achieving Soil Science Licensing in Your State. [www.soils.org/certification/pdf/how\\_to\\_soil\\_cert.pdf](http://www.soils.org/certification/pdf/how_to_soil_cert.pdf).

The Wildlife Society. 2005. Program for Certification of Professional Wildlife Biologists. <http://www.wildlife.org/certification/index.cfm>.

Appendix B  
Testimony from Christopher C. Dorion (ME Certified Soil Scientist #454;  
ME Certified Geologist #485; NH Certified Wetland Scientist #251)  
and  
David Marceau (Maine Certified Soil Scientist; Maine Licensed Site  
Evaluator)

**(Testimony from Christopher C. Dorion, Maine Certified Soil Scientist #454; Maine Certified Geologist #485; New Hampshire Certified Wetland Scientist #251)**

1.) I worked on a conservation / residential house lot development project on a coastal island recently. We (the “wetland scientists”) were called to several public hearings to defend our work. At the public hearings, several members of the audience stood up to speak about wetlands on the property, and because there is no licensing in Maine, their comments carried as much weight as our detailed surveys and reports. They may have lived near the property in question for many years, and that seemed to carry as much or more weight than our survey and reports. I pointed out during the public hearing, when it was my turn to speak, that I am licensed as a SOIL SCIENTIST, have passed all written and field exams, as well as had my wetland survey plans approved by regulatory agencies, and had my professional and business experience vouched for in references submitted and on file. Those members of the audience that continually stood up and claim we “missed” wetlands or vernal pools cost my client (who was also the landowner) huge amounts of money, probably tens of thousands of dollars, and also required duplication from MDEP to “inspect” our wetland work. Our attorney at the time found it deficient that we had no wetland licensing in Maine. If they felt, justifiably, that our work was deficient and in error, they could have filed a formal complaint with a Board of Licensure, if one had existed for “wetland scientists”. This would have prevented hearsay testimony.

2.) I advise a conservation organization in the greater Bangor area. A proposed residential subdivision was under review by the City of Bangor. It abutted a conservation zoning district that contained protected Wetlands of Special Significance as determined by MDEP. At the first meeting in which the proposal was presented, the wetland survey on the plan seemed inaccurate to several members of the group reviewing the plan. They asked me to look at the plan several days after their meeting concluded. Indeed, the applicant had not conducted a wetland delineation according to the standards of practice from MDEP (following the US Army Corps of Engineers 1987 Delineation Manual). I advised them of this. Two more meetings ensued with the City Engineering Department and other professionals. The third meeting of this group determined that a correct wetland methodology and delineation was needed for this site, with a final resolution by the group to hire a “wetland scientist” to delineate the wetlands properly. So, there were 3 meetings lasting several hours in total that cost the City and other professionals time and money. This should never have happened. Licensing of “wetland scientists” would have prevented this waste of money and time for everyone involved.

3.) I recently was asked to inspect a prior wetland delineation on coastal property near Mount Desert Island. The property owner was in the process of selling the property and needed to know if a house could be sited near the ocean side of the property. When I arrived at the site, the property owner explained to me that I was the THIRD private environmental firm to examine the property, and that MDEP and the Town’s Code Enforcement Officer had already made one site visit. I spent most of the day re-delineating the wetland boundary, using the methodologies in the U.S. Army Corps of Engineers Wetland Delineation Manual (1987). Most of the following day was spent

drafting a new wetland delineation plan and preparing the accompanying report. Color photos were included, and two species of sedges were carefully keyed out under a microscope. In summary, the job cost the client \$905. This should not have happened. Based on my work at the property, it appeared that the earlier wetlands work had not examined the soils carefully, nor keyed out the sedges to the species level, as required by the US Army Corps of Engineers Wetland Delineation Manual (1987). This property owner was extremely frustrated with the “Wetland Profession”. They had spent considerably more time and money than was necessary.

**(Testimony from David Marceau, Maine Certified Soil Scientist; Maine Licensed Site Evaluator)**

1.) During the initial environmental permitting work for a natural gas lateral pipeline project in the Millinocket area, a group of “wetland scientists” from Virginia were contracted to delineate wetlands. They were NOT qualified or knowledgeable of Maine’s glaciated soils, vegetation, or hydrology. After one week with very little progress on the job, they were sent home. Besides costing the client substantial money, the overall job progress was delayed, and a crew from Maine had to be hired to “redo” their work.

It is examples such as this that exemplify why individual states in the U.S. have their own licensing regulations for professionals. In addition, each state has its own distinct environmental statutes and rules. It takes several years of experience to be able to apply these regulations to wetlands and other protected natural resources.

Appendix C  
Minnesota, New Hampshire, Virginia, and Wisconsin Regulations and  
Supporting Information

STATE OF MINNESOTA

# Journal of the Senate

EIGHTY-THIRD LEGISLATURE

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SEVENTY-FOURTH DAY

St. Paul, Minnesota, Monday, March 15, 2004

The Senate met at 11:00 a.m. and was called to order by the President.

## CALL OF THE SENATE

Senator Betzold imposed a call of the Senate. The Sergeant at Arms was instructed to bring in the absent members.

Prayer was offered by the Chaplain, Rev. Douglas Mitchell.

The members of the Senate gave the pledge of allegiance to the flag of the United States of America.

The roll was called, and the following Senators answered to their names:

Anderson	Frederickson	Koering	Neuville	Ruud
Bachmann	Gaither	Kubly	Nienow	Sams
Bakk	Hann	Langseth	Olson	Saxhaug
Belanger	Higgins	Larson	Ortman	Scheid
Berglin	Hottinger	LeClair	Ourada	Senjem
Betzold	Johnson, D.E.	Limmer	Pappas	Skoe
Chaudhary	Johnson, D.J.	Lourey	Pariseau	Skoglund
Cohen	Jungbauer	Marko	Pogemiller	Sparks
Day	Kelley	Marty	Ranum	Stumpf
Dibble	Kierlin	Metzen	Reiter	Tomassoni
Dille	Kiscaden	Michel	Rest	Vickerman
Fischbach	Kleis	Moua	Robling	Wergin
Foley	Knutson	Murphy	Rosen	Wiger

The President declared a quorum present.

The reading of the Journal was dispensed with and the Journal, as printed and corrected, was approved.

## REPORTS OF COMMITTEES

Senator Rest moved that the Committee Reports at the Desk be now adopted, with the exception of the report on S.F. No. 2077. The motion prevailed.

### Senator Betzold from the Committee on Judiciary, to which was referred

**S.F. No. 2131:** A bill for an act relating to legislation; correcting erroneous, ambiguous, and omitted text and obsolete references; eliminating certain redundant, conflicting, and superseded provisions; making miscellaneous technical corrections to statutes and other laws; amending Minnesota Statutes 2002, sections 3.971, subdivision 8; 13.07; 13.461, by adding a subdivision; 13.465, subdivision 1, by adding a subdivision; 13.475, subdivision 4; 13.4967, by adding a subdivision; 13.7411, subdivision 5; 15.0591, subdivision 2; 18F.02, subdivision 2a; 60A.23,

**Senator Marty from the Committee on Environment and Natural Resources, to which was referred**

**S.F. No. 2363:** A bill for an act relating to the environment; natural resources; wetlands; wetland delineations; providing specifications for review and waivers of 401 certification under the federal Clean Water Act; modifying environmental review to take into account relevant local plans; appropriating money; amending Minnesota Statutes 2002, sections 103G.2242, subdivision 2; 115.03, subdivision 4a; 116D.02, subdivision 2; 116D.04, subdivision 5a, by adding a subdivision.

Reports the same back with the recommendation that the bill be amended as follows:

Page 2, line 19, after "(c)" insert "By January 15, 2005, the board shall implement a voluntary professional wetland delineator certification program. By January 15, 2006, the board shall report to the legislature on the implementation of the voluntary professional wetland delineator certification program." and delete "June 1, 2006" and insert "January 15, 2007"

Page 2, line 24, delete everything after "of" and insert "up to \$75 for professional wetland delineator"

Page 6, line 30, strike "15" and insert "14"

Page 6, line 34, delete "1" and insert "15"

Page 7, line 3, after "action" insert "and, by January 15, 2005, relevant plans approved by local governmental units,"

Page 7, lines 4 and 5, delete the new language

Page 7, line 31, delete "1" and insert "15"

Page 8, line 10, delete "1" and insert "15"

Page 8, line 15, delete "3" and insert "2"

And when so amended the bill do pass and be re-referred to the Committee on Finance. Amendments adopted. Report adopted.

**Senator Scheid from the Committee on Commerce, to which was referred**

**S.F. No. 1922:** A bill for an act relating to insurance; regulating nonrenewals and underwriting of homeowner's insurance; prohibiting various discriminatory practices in automobile and homeowner's insurance; amending Minnesota Statutes 2002, sections 65A.29, subdivisions 8, 11; 65A.30; 72A.20, subdivisions 13, 23.

Reports the same back with the recommendation that the bill be amended as follows:

Pages 1 to 3, delete sections 1 and 2

Page 3, line 24, delete "homeowners'" and insert "homeowner's"

Page 3, line 26, delete "as defined in this section" and insert "for five or fewer children"

Pages 3 to 6, delete sections 4 to 6 and insert:

"Sec. 2. [EFFECTIVE DATE.]

Section 1 is effective January 1, 2005, and applies to coverage applied for, issued, or renewed on or after that date."

Renumber the sections in sequence



# Minnesota Senate

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KEY: ~~stricken~~ = removed, old language. underscoring = added, new language.

[Authors and Status](#)

[List versions](#)

**S.F. No. 2363, 1st Engrossment - 83rd Legislative Session (2003-2004)** Posted on Mar 15, 2004

1.1 A bill for an act  
1.2 relating to the environment; natural resources;  
1.3 wetlands; wetland delineations; providing  
1.4 specifications for review and waivers of 401  
1.5 certification under the federal Clean Water Act;  
1.6 modifying environmental review to take into account  
1.7 relevant local plans; appropriating money; amending  
1.8 Minnesota Statutes 2002, sections 103G.2242,  
1.9 subdivision 2; 115.03, subdivision 4a; 116D.02,  
1.10 subdivision 2; 116D.04, subdivision 5a, by adding a  
1.11 subdivision.  
1.12 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:  
1.13 Section 1. Minnesota Statutes 2002, section 103G.2242,  
1.14 subdivision 2, is amended to read:  
1.15 Subd. 2. [EVALUATION.] (a) Questions concerning the public  
1.16 value, location, size, or type of a wetland shall be submitted  
1.17 to and determined by a Technical Evaluation Panel after an  
1.18 on-site inspection. The Technical Evaluation Panel shall be  
1.19 composed of a technical professional employee of the board, a  
1.20 technical professional employee of the local soil and water  
1.21 conservation district or districts, a technical professional  
1.22 with expertise in water resources management appointed by the  
1.23 local government unit, and a technical professional employee of  
1.24 the Department of Natural Resources for projects affecting  
1.25 public waters or wetlands adjacent to public waters. The panel  
1.26 shall use the "United States Army Corps of Engineers Wetland  
1.27 Delineation Manual" (January 1987), including updates,  
1.28 supplementary guidance, and replacements, if any, "Wetlands of  
2.1 the United States" (United States Fish and Wildlife Service  
2.2 Circular 39, 1971 edition), and "Classification of Wetlands and  
2.3 Deepwater Habitats of the United States" (1979 edition). The  
2.4 panel shall provide the wetland determination and  
2.5 recommendations on other technical matters to the local  
2.6 government unit that must approve a replacement plan, wetland  
2.7 banking plan, exemption determination, no-loss determination, or  
2.8 wetland boundary or type determination and may recommend  
2.9 approval or denial of the plan. The authority must consider and  
2.10 include the decision of the Technical Evaluation Panel in their  
2.11 approval or denial of a plan or determination.  
2.12 (b) Persons conducting wetland or public waters boundary  
2.13 delineations or type determinations are exempt from the  
2.14 requirements of chapter 326. ~~By January 15, 2001, the board, in~~  
2.15 ~~consultation with the Minnesota Association of Professional Soil~~  
2.16 ~~Scientists, the University of Minnesota, and the Wetland~~  
2.17 ~~Delineators' Association, shall submit a plan for a professional~~  
2.18 ~~wetland delineator certification program to the legislature.~~  
2.19 (c) By January 15, 2005, the board shall implement a  
2.20 voluntary professional wetland delineator certification  
2.21 program. By January 15, 2006, the board shall report to the  
2.22 legislature on the implementation of the voluntary professional  
2.23 wetland delineator certification program. By January 15, 2007,  
2.24 the board shall develop rules for implementing the professional

2.25 wetland delineator certification program. The rules shall  
2.26 establish specific standards for education, experience, testing,  
2.27 ethics, and performance for persons conducting regulatory  
2.28 delineations. The board shall charge an annual fee of up to \$75  
2.29 for professional wetland delineator certification. Money  
2.30 collected under this subdivision shall be deposited in the  
2.31 special revenue fund and is appropriated to the board for the  
2.32 purpose of the wetland delineator certification program.

2.33 Sec. 2. Minnesota Statutes 2002, section 115.03,  
2.34 subdivision 4a, is amended to read:

2.35 Subd. 4a. [SECTION 401 CERTIFICATIONS.] (a) The following  
2.36 definitions apply to this subdivision:

3.1 (1) "section 401 certification" means a water quality  
3.2 certification required under section 401 of the federal Clean  
3.3 Water Act, United States Code, title 33, section 1341; and

3.4 (2) "nationwide permit" means a nationwide general permit  
3.5 issued by the United States Army Corps of Engineers and listed  
3.6 in Code of Federal Regulations, title 40, part 330, appendix A;  
3.7 and

3.8 (3) "professional review" means review of 401 applications  
3.9 by professional or technical staff experienced with 401 water  
3.10 quality certification, who will:

3.11 (i) participate actively in the review process and consider  
3.12 the comments of project applicants, affected local government  
3.13 units, cities, counties, watershed districts, watershed  
3.14 management organizations, soil and watershed conservation  
3.15 districts, state and federal agencies, and the public before  
3.16 making a decision on an application;

3.17 (ii) assess the potential impact of projects, and determine  
3.18 whether the projects will comply with all applicable Minnesota  
3.19 water quality standards;

3.20 (iii) make a decision whether to certify, deny, or waive  
3.21 review of projects after assessing their potential impact upon  
3.22 Minnesota water quality, and ensuring that they comply with all  
3.23 applicable water quality standards; and

3.24 (iv) set conditions on certifications that avoid or  
3.25 minimize any adverse impact upon state water quality.

3.26 (b) The agency is responsible for providing section 401  
3.27 certifications for ~~nationwide permits~~ all federal permits or  
3.28 licenses that require certification before issuance of the  
3.29 federal permit or license.

3.30 (c) Before making a final decision on a section 401  
3.31 certification for regional conditions on a nationwide permit,  
3.32 the agency shall hold at least one public meeting outside the  
3.33 seven-county metropolitan area.

3.34 (d) In addition to other notice required by law, the agency  
3.35 shall provide written notice of a meeting at which the agency  
3.36 will be considering a section 401 certification for regional  
4.1 conditions on a ~~nationwide permit~~ federal permit or license, at  
4.2 least 21 days before the date of the meeting to the members of  
4.3 the senate and house of representatives environment and natural  
4.4 resources committees, the senate Agriculture and Rural  
4.5 Development Committee, and the house of representatives  
4.6 Agriculture Committee.

4.7 (e) All 401 certification applications shall undergo  
4.8 professional review.

4.9 (f) The agency may waive a section 401 certification only  
4.10 after conducting a professional review and determining that the  
4.11 activity for which a federal permit or license is sought will  
4.12 have minimal or no impact upon the quality of state waters. A  
4.13 waiver decision shall include a written explanation detailing  
4.14 the significant factual, legal, methodological, and policy  
4.15 questions considered, as well as a detailed explanation as to  
4.16 how the decision to waive certification conforms with and  
4.17 satisfies all applicable Minnesota water quality standards. The  
4.18 agency shall publish the waiver decision along with the written

4.19 explanation on the agency's Internet Web site, and may also  
4.20 publish the decision and explanation in any other appropriate  
4.21 public medium as determined by the agency, such as the State  
4.22 Register, newspapers, or other applicable periodicals of general  
4.23 circulation. The agency shall publish its decision and  
4.24 explanation even if the agency finds that a federal agency or  
4.25 department has prepared and distributed or will prepare and  
4.26 distribute public notice concerning a section 401  
4.27 certification. All public comments shall be attached to the  
4.28 official public record waiver decision and maintained along with  
4.29 the waiver decision and available for review upon request.

4.30 (g) The agency shall make a final determination on 401  
4.31 certification applications within one year of the receipt of the  
4.32 application. If the agency fails or refuses to make a final  
4.33 determination within one year, the agency shall provide an  
4.34 explanation for the failure or refusal within 30 days of the  
4.35 one-year expiration date. A record of the failure or refusal,  
4.36 along with the explanation, shall be maintained as a permanent  
5.1 record and made available for review upon request.

5.2 Sec. 3. Minnesota Statutes 2002, section 116D.02,  
5.3 subdivision 2, is amended to read:

5.4 Subd. 2. In order to carry out the policy set forth in  
5.5 Laws 1973, chapter 412, it is the continuing responsibility of  
5.6 the state government to use all practicable means, consistent  
5.7 with other essential considerations of state policy, to improve  
5.8 and coordinate state and local government plans, functions,  
5.9 programs and resources to the end that the state may:

5.10 (1) fulfill the responsibilities of each generation as  
5.11 trustee of the environment for succeeding generations;

5.12 (2) assure for all people of the state safe, healthful,  
5.13 productive, and aesthetically and culturally pleasing  
5.14 surroundings;

5.15 (3) discourage ecologically unsound aspects of population,  
5.16 economic and technological growth, and develop and implement a  
5.17 policy such that growth occurs only in an environmentally  
5.18 acceptable manner;

5.19 (4) preserve important historic, cultural, and natural  
5.20 aspects of our national heritage, and maintain, wherever  
5.21 practicable, an environment that supports diversity, and variety  
5.22 of individual choice;

5.23 (5) encourage, through education, a better understanding of  
5.24 natural resources management principles that will develop  
5.25 attitudes and styles of living that minimize environmental  
5.26 degradation;

5.27 (6) develop and implement land use and environmental  
5.28 policies, plans, and standards for the state as a whole and for  
5.29 ~~major~~ local regions thereof through a coordinated program of  
5.30 planning and land use control;

5.31 (7) define, designate, and protect environmentally  
5.32 sensitive areas;

5.33 (8) establish and maintain statewide environmental  
5.34 information systems sufficient to gauge environmental  
5.35 conditions;

5.36 (9) practice thrift in the use of energy and maximize the  
6.1 use of energy efficient systems for the utilization of energy,  
6.2 and minimize the environmental impact from energy production and  
6.3 use;

6.4 (10) preserve important existing natural habitats of rare  
6.5 and endangered species of plants, wildlife, and fish, and  
6.6 provide for the wise use of our remaining areas of natural  
6.7 habitation, including necessary protective measures where  
6.8 appropriate;

6.9 (11) reduce wasteful practices which generate solid wastes;

6.10 (12) minimize wasteful and unnecessary depletion of  
6.11 nonrenewable resources;

6.12 (13) conserve natural resources and minimize environmental

6.13 impact by encouraging extension of product lifetime, by reducing  
6.14 the number of unnecessary and wasteful materials practices, and  
6.15 by recycling materials to conserve both materials and energy;  
6.16 (14) improve management of renewable resources in a manner  
6.17 compatible with environmental protection;  
6.18 (15) provide for reclamation of mined lands and assure that  
6.19 any mining is accomplished in a manner compatible with  
6.20 environmental protection;  
6.21 (16) reduce the deleterious impact on air and water quality  
6.22 from all sources, including the deleterious environmental impact  
6.23 due to operation of vehicles with internal combustion engines in  
6.24 urbanized areas;  
6.25 (17) minimize noise, particularly in urban areas;  
6.26 (18) prohibit, where appropriate, flood plain development  
6.27 in urban and rural areas; and  
6.28 (19) encourage advanced waste treatment in abating water  
6.29 pollution.  
6.30 Sec. 4. Minnesota Statutes 2002, section 116D.04,  
6.31 subdivision 5a, is amended to read:  
6.32 Subd. 5a. The board shall, ~~by January 1, 1981, promulgate~~  
6.33 adopt rules in conformity with this chapter and the provisions  
6.34 of chapter ~~15~~ 14, establishing:  
6.35 (1) the governmental unit which shall be responsible for  
6.36 environmental review of a proposed action;  
7.1 (2) the form and content of environmental assessment  
7.2 worksheets, including, by January 15, 2005, the consideration of  
7.3 relevant plans approved by local governmental units;  
7.4 (3) a scoping process in conformance with subdivision 2a,  
7.5 clause (e);  
7.6 (4) a procedure for identifying during the scoping process  
7.7 the permits necessary for a proposed action and, by January 15,  
7.8 2005, relevant plans approved by local governmental units, and a  
7.9 process for coordinating review of appropriate permits with the  
7.10 preparation of the environmental impact statement;  
7.11 (5) a standard format for environmental impact statements;  
7.12 (6) standards for determining the alternatives to be  
7.13 discussed in an environmental impact statement;  
7.14 (7) alternative forms of environmental review which are  
7.15 acceptable pursuant to subdivision 4a;  
7.16 (8) a model ordinance which may be adopted and implemented  
7.17 by local governmental units in lieu of the environmental impact  
7.18 statement process required by this section, providing for an  
7.19 alternative form of environmental review where an action does  
7.20 not require a state agency permit and is consistent with an  
7.21 applicable comprehensive plan. The model ordinance shall  
7.22 provide for adequate consideration of appropriate alternatives,  
7.23 and shall ensure that decisions are made in accordance with the  
7.24 policies and purposes of Laws 1980, chapter 447;  
7.25 (9) procedures to reduce paperwork and delay through  
7.26 intergovernmental cooperation and the elimination of unnecessary  
7.27 duplication of environmental reviews;  
7.28 (10) procedures for expediting the selection of consultants  
7.29 by the governmental unit responsible for the preparation of an  
7.30 environmental impact statement; and  
7.31 (11) any additional rules which are reasonably necessary to  
7.32 carry out the requirements of this section.  
7.33 Sec. 5. Minnesota Statutes 2002, section 116D.04, is  
7.34 amended by adding a subdivision to read:  
7.35 Subd. 10a. [GUIDANCE.] The board shall, by January 15,  
7.36 2005, develop guidance for the governmental units that are  
8.1 responsible for environmental review of proposed actions. The  
8.2 guidance must include explanations of the procedural  
8.3 requirements for environmental review, such as deadlines set out  
8.4 in statute and rules and public notice and comment requirements,  
8.5 the respective roles of governmental units, project proposers  
8.6 and consultants in environmental review, and sample lists of

8.7 mitigation measures that governmental units may consider for  
8.8 various types of projects in order to minimize the significant  
8.9 environmental effects of those projects. The list of mitigation  
8.10 measures shall provide examples of possible mitigation for  
8.11 different types of projects as well as in different impact  
8.12 areas, including, but not limited to, energy conservation  
8.13 measures, stormwater, water quality, and air quality. The board  
8.14 shall report back to the legislature by January 15, 2006,  
8.15 regarding the effectiveness of this guidance.

8.16 Sec. 6. [APPROPRIATION.]

8.17 \$..... is appropriated from the environmental fund to  
8.18 the Pollution Control Agency for the purposes of 401 water  
8.19 quality certification under section 2.

8.20 Sec. 7. [EFFECTIVE DATE.]

8.21 This act is effective the day following final enactment.

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Please direct all comments concerning issues or legislation  
to your [House Member](#) or [State Senator](#).

For Legislative Staff or for directions to the Capitol, visit the [Contact Us](#) page.

[General questions or comments.](#)

last updated: 04/15/2009

SUMMARY OF WETLAND DELINEATOR  
CERTIFICATION PROGRAM

September 9, 2008

<i>ELEMENTS</i>	<i>IN-TRAINING (1)</i>	<i>CERTIFICATION (5)</i>
EFFECTIVE DATE	January 2006	July 1, 2005
VOLUNTARY CERTIFICATION	Yes, unless directed by an employer. Certification is not required by the state of MN.	Yes, unless directed by an employer. Certification is not required by the state of MN.
EDUCATION AND TRAINING	One of the following: 1. A 4-year degree with broad coursework (2) 2. A 4-year degree in a related field <i>with</i> a 4-5 day basic delineation course 3. 1 year experience <i>and</i> a 4-5 day basic delineation course	One of the following are needed plus experience before the certification exam can be taken: 1. A 4-5 day basic wetland course concerning the 1987 CORPS manual, 1989 Interagency Manual or USDA National Food Security Act Manual 2. Broad coursework 3. 4-year degree (6)
EXPERIENCE (3)	None required	3 years of experience ( <i>as defined below</i> ); 2 years with a Masters or PhD in a related field
WRITTEN EXAMINATION REQUIRED	Yes	Yes
TYPE OF EXAMINATION	Basic exam that tests knowledge of hydric soils, vegetation, hydrology and wetland classification. Difficulty of exam is consistent with the level of knowledge of someone with recent broad coursework but little or no experience in wetland delineation.	Comprehensive-type exam that tests knowledge of delineation concepts, criteria, and methods. Difficulty of exam is consistent with the level of knowledge of someone with training and experience in wetland delineation and is based on the 1987 CORPS Manual and supplements.
FIELD EXAMINATION	No	No
ETHICS AGREEMENT	No	Yes
REVIEW GROUP (Concerning Bad Practice)	Not applicable	Not currently established
REFERENCES	None required to take the exam	Applicants for certification must provide names and contact information for two references (letters from references not needed)
CONTINUING EDUCATION (4)	Yes – 6 hours per year after passing the examination	Yes – 12 hours per year after passing the examination
FEES	\$100 exam fee \$50 re-test fee \$25 annual Continuing Education and renewal fee	\$200 exam fee \$100 re-test fee \$75 annual Continuing Education and renewal fee

- (1) Passing the in-training exam does not mean certification; it is a training and potential employment opportunity for those seeking future certification and an employment opportunity for those seeking to mentor future wetland professionals.
- (2) “Broad Coursework” would include wetland-specific courses and other classes relevant to wetland delineation drawn from physical or biological sciences and engineering.
- (3) Experience is defined as “*Where wetland management, wetland regulation, wetland delineation or wetland ecology activities are among the primary duties of their employment. A person so employed for one year would have experience equaling one year.*”
- (4) Continuing education is required after certification, and is defined as “*Pertinent seminars or training sessions totaling 12 or more hours (Professional Certification) or 6 or more hours (In-Training Certification) in duration each calendar year. The calendar year as identified by the Wetland Delineator Certification Program; September 1<sup>st</sup> – August 31<sup>st</sup> of each year. Hours may not carry over each year.*”
- (5) The certification exam can be taken by persons with education and experience, the in-training exam does not need to be taken first.
- (6) Although desirable, the “four year degree” need not be in a wetland-related field.

## **A Plan for the Certification of Wetland Delineators in Minnesota**

Senate File 83 (Chapter 382, Minnesota Laws of 2000) required the Board of Water and Soil Resources (BWSR), in consultation with the Minnesota Association of Professional Soil Scientists (MAPSS), the University of Minnesota (UM), and the Wetland Delineators Association (WDA) to submit a plan for a professional delineator certification program to the legislature by January 15, 2001.

Representatives of the aforementioned groups and individuals from state and federal agencies, local units of government and private consulting firms met several times during 2000. Staff from the BWSR chaired the meetings. The following text reflects the views of the participants and the process used to reach the recommendations which are at the end of this report.

### ***Benefits of delineator certification***

- A wetland delineator certification program would provide stability to the implementation of the Wetland Conservation Act and other wetland regulations by formally recognizing individuals uniquely qualified to perform wetland delineations.
- The regulatory process should be more efficient in that wetland delineation and typing determinations should be less frequently questioned.
- Consumers will be protected by knowing that delineations will be conducted by qualified persons operating under a code of ethics.
- The environment will be better served in that the jurisdictional boundaries of wetlands may be more precisely delineated.
- The practice of wetland delineation will be recognized as a distinct skill with economic value in the marketplace.
- Wetland delineators will have the responsibility to maintain and enhance their skills.

### ***Comparison to other certification programs***

Delineator certification programs of the U.S. Army Corps of Engineers and State of New Hampshire were reviewed. The Minnesota program for the certification of individuals involved with individual sewage treatment systems (ISTS) was also reviewed for its applicability to wetlands. This proposal reflects many aspects of those programs.

### ***General nature of the proposed certification program***

- With respect to all aspects of delineator certification, no distinction is made between public and private sector delineators.
- Certification will apply only to delineation. However, because wetland regulations often require that a wetland be classified by type (Circular 39 or Cowardin, et al.), it is expected that a certified wetland delineator be competent in wetland typing.
- Certification is required for practitioners from other states who delineate wetlands in Minnesota.

- A wetland delineator certification program would establish appropriate standards for education, experience, and performance for persons completing delineations.
- Delineator certification should become mandatory on July 1, 2004, after a three-year (voluntary) phase-in period. The effect of this is that, except for exempt persons or projects, after July 1, 2004, wetland delineations may be performed only by certified delineators.
- Exemptions: wetlands may be delineated without certification:
  - by individual landowners for projects on their property, and
  - for projects non-regulatory in nature such as wetland inventories.

***Peer review committee***

A code of conduct and ethics agreement must be developed as part of a compliance program. Compliance includes complaints, sanctions, probation, decertification, and the associated protocols and procedures, which will be developed during rulemaking. The BWSR will chair an enforcement/ethics committee with other members nominated by MAPSS, WDA, UM, and representatives of local units of government, private sector delineators, and state and federal agencies. This committee will also evaluate applications and associated documentation concerning training and experience.

***Applicability to federal agencies and regulations***

Endorsement of delineator certification will be sought from federal agencies by use of memoranda of agreement. The memoranda will address participation of federal staff in the planning and conduct of training and the applicability of delineator certification to federal regulations. The BWSR will assume responsibility for this task.

***Implementation of delineator certification***

Administrative tasks, including training, and budget estimates are provided in *Attachment A*. It must be noted that without funding a delineator certification program cannot be initiated. The parties to this report do not exist in sufficient numbers to make this program self-supporting. Regarding a location for the program, the BWSR office in St. Paul is the first choice. Other options discussed included contracting with a private vendor. The BWSR is a preferred location due to its involvement with many aspects of wetland management and regulation. Training is major component of delineator certification, both in terms of initial certification and continuing education. All parties agreed that a major effort should be made to develop a cadre of in-state trainers from among public and private sector professionals. In addition, the University of Minnesota was urged to add to its offerings a course applicable to wetland delineation.

***Specific elements of certification***

Education, training, and experience requirements are summarized in Attachment B. Considerable discussion occurred during the development of these elements. As written, they reflect a balance between stringent requirements which could exclude most

delineators currently practicing and minimal standards that would not screen out incompetent practioners.

***Enactment of the certification program***

- The program would be authorized by legislation in 2001. That legislation would frame the basic principles, establish guidelines for the voluntary (phase I) program, and authorize the BWSR to make appropriate amendments to the rules of the Wetland Conservation Act.
- Rule amendments must be completed and in effect by July 1, 2004.

***Recommendation***

Finding that the establishment of a wetland delineator certification program is in the public interest and would further the management and protection of wetlands, it is the recommendation of the undersigned parties that legislation and an associated appropriation be pursued during the 2001 legislative session.

*Signatures:*

Board of Water and Soil Resources: Ron Hamack, Executive Director



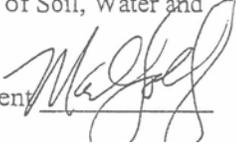
Minnesota Association of Professional Soil Scientists: Jim Arndt, President



University of Minnesota: H.H. Cheng; Head, Department of Soil, Water and Climate



Wetland Delineators Association: Mark Kjolhaug, President



Note: Letters of support and a list of meeting dates and attendees are attached

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**Attachment A**  
**BUDGET: Wetland Delineator Certification Program**

	Estimated Annual Costs		
	Phase I (Prior to 7-01-2004)	Phase II (After 7-01-2004)	In-kind contributions
<ul style="list-style-type: none"> <li>• Administrative               <ul style="list-style-type: none"> <li>○ Record keeping</li> <li>○ Enforcement                   <ul style="list-style-type: none"> <li>- Complaints</li> <li>- Investigation</li> </ul> </li> <li>• Collection of fees</li> <li>• Develop and administer exams</li> </ul> </li> </ul>	<p><u>\$100,000</u></p> <ul style="list-style-type: none"> <li>• \$75,000 professional staff (1 FTE)</li> <li>• \$25,000 clerical (0.5 FTE)</li> </ul>	\$75,000*	
<ul style="list-style-type: none"> <li>• Training               <ul style="list-style-type: none"> <li>○ Coordinate curriculum</li> <li>○ Organize and arrange training</li> </ul> </li> </ul>	\$50,000**	\$50,000**	\$50,000 (based on past contributions) <u>Sources:</u> <ul style="list-style-type: none"> <li>• BWSR</li> <li>• DNR</li> <li>• U of M</li> <li>• Corps of Engineers</li> <li>• NRCS</li> <li>• USFWS</li> </ul>

Assumptions:

- Potentially 500 people will seek to become certified prior to July 1, 2004 (Phase I). The number certified by that date will stay relatively constant thereafter (new certifications may be slightly more than those vacating their certification).
- The certification fee is proposed to be \$50.00 per calendar year.
- After July 1, 2004 (phase II), the extent to which certification fees can be considered annual revenue will be predictable. That is not true, however, before July 1, 2004 because the frequency of certification cannot be predicted. Consequently, certification fees are not budgeted as implementation revenue during Phase I. Certification fees collected during Phase I will be used for training and will subsidize participants share of training costs.

Notes:

\*Certification fees are estimated to provide \$25,000 in annual revenue (500 \* \$50.00).

\*\*Participants also pay \$50,000, or ½ of total training costs. As stated under assumptions, revenue from certifications will be used to subsidize participants share of training costs.

**Attachment B**  
**SUMMARY OF WETLAND DELINEATOR**  
**CERTIFICATION PROGRAM**

<b>ELEMENTS</b>	<b>PHASE I</b>	<b>PHASE II</b>
Date	3 years in duration, beginning July 1, 2001	Beginning July 2, 2004
Voluntary Certification	Yes	
Mandatory Certification		Yes
Education and Training	One of the following needed plus experience before exam can be taken: <ul style="list-style-type: none"> <li>• Broad coursework<sup>1</sup> <u>or</u></li> <li>• A 4-5 day delineation course</li> </ul>	Both of the following plus experience <sup>2</sup> needed before exam can be taken: <ul style="list-style-type: none"> <li>• Broad coursework <u>and</u></li> <li>• A 4-5 day delineation course or equivalent training</li> </ul>
Experience	3 years (2 years with masters or PhD degree in a related field)	3 years (2 years with Masters or PhD degree in a related field)
Written Examination	Yes	Yes
Type of Examination	Basic	Comprehensive
Field Examination	No	No
Ethics Agreement	Yes	Yes
Compliance with sanctions and other enforcement actions	No	Yes
References	Yes (names only, letters not needed)	Yes (names only, letters not needed)
Continuing education required to maintain certification	Yes	Yes

Comments:

- Certification gained during phase I carries over to phase II
- Continuing education is defined as “ *Pertinent seminars or training sessions totaling 8 or more hours in duration each calendar year.*”
- Experience is defined as “*Where wetland management, wetland regulation, wetland delineation or wetland ecology activities are among the primary duties of their employment. A person so employed for one year would have experience equaling one year.*”
- Practitioners from other states doing wetland delineations in Minnesota must also be certified.

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<sup>1</sup> Coursework would include wetland specific courses and other classes drawn from physical or biological sciences and engineering.

<sup>2</sup> “In-training” status will be granted to persons lacking experience but who pass the exam(s). Persons with “in-training” status will be eligible for certification upon proof of experience.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:75

**310-A:75 Purpose.** – The general court finds it in the best interests of the citizens of the state of New Hampshire to establish the board of natural scientists to certify and regulate the professions of soil scientists and wetland scientists. This certification is to guard the citizens of New Hampshire and the professions from unqualified practitioners of soil science and wetland science and to foster intelligent application of the knowledge of soil properties and wetland characteristics in planning and implementing land use decisions consistent with New Hampshire department of environmental services rules or standards adopted by the board.

**Source.** 1988, 281:1. 1997, 240:1, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:76

**310-A:76 Definitions.** – In this subdivision:

I. ""Board" means the state board of natural scientists authorized to certify soil scientists and wetland scientists pursuant to this subdivision.

I-a. ""Business organization" means any enterprise, whether corporation, partnership, limited liability company, proprietorship, association, business trust, real estate trust, or other form of organization; organized for gain or profit, carrying on any business activity within the state.

II. ""Certified soil scientist" means a person who, by reason of special knowledge of pedological principles acquired by professional education and practical experience, as specified by RSA 310-A:84, I and II, is qualified to identify, classify, and prepare soil maps according to the standards of the National Cooperative Soil Survey, or standards adopted by the New Hampshire department of environmental services, or standards adopted by the board, and who has been duly certified by the board.

II-a. ""Certified wetland scientist" means a person who, by reason of his or her special knowledge of hydric soils, hydrophytic vegetation, and wetland hydrology acquired by course work and experience, as specified by RSA 310-A:84, II-a and II-b, is qualified to delineate wetland boundaries and prepare wetland maps in accordance with standards for identification of wetlands adopted by the New Hampshire department of environmental services or the United States Army Corps of Engineers or its successor, and who has been duly certified by the board.

III. ""Pedological principles" means, but is not limited to, the taxonomic identification, classification, and morphological description of soils as natural bodies.

IV. ""Practice of soil science" means any professional service that requires the application of pedological principles to identify, classify, and prepare maps delineating soils according to the standards of the National Cooperative Soil Survey or other standards approved by the board.

**Source.** 1988, 281:1. 1995, 136:30; 284:43. 1997, 240:2-4, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:77

**310-A:77 Application.** – Any person, except as specifically exempted in this subdivision, who practices or offers to practice soil science or wetland science in this state shall be subject to the provisions of this subdivision.

**Source.** 1988, 281:1. 1997, 240:5. 2004, 116:1, eff. May 17, 2004.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:78

##### **310-A:78 Business Organizations. –**

I. Nothing in this subdivision shall prohibit one or more soil scientists from practicing soil science through a business organization. In any such entity engaged in the practice of soil science at least one partner, officer, or employee shall be a certified soil scientist, and all maps produced in the practice of soil science shall be signed by a certified soil scientist, who shall be responsible for the accuracy of such maps.

II. Nothing in this subdivision shall prohibit one or more wetland scientists from practicing wetland science through a business organization. In any such entity engaged in the practice of wetland science at least one partner, officer, or employee shall be a certified wetland scientist, and all delineation produced in the practice of wetland science shall be signed by a certified wetland scientist, who shall be responsible for the accuracy of such delineation.

**Source.** 1988, 281:1. 1995, 284:53. 1997, 240:6, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:79

**310-A:79 Exemption.** – This subdivision shall not be construed to prevent or to affect:

I. The practice of soil science by a nonresident having no established place of business in this state when such practice does not exceed, in the aggregate, more than 30 working days in any calendar year, provided such person is legally qualified to practice in a state or country in which the requirements and qualifications for obtaining a certificate are not lower than those specified in this subdivision. Practice for any portion of a day shall be deemed to constitute practice for an entire day.

II. The work of an employee or a subordinate of a person holding a certificate under this subdivision, or any employee of a person practicing lawfully under paragraph I, done under the direct supervision of a person holding a certificate under this subdivision or a person practicing lawfully under paragraph I.

III. The practice of officers and employees of the government of the United States or of the state of New Hampshire while engaged within this state in the practice of the profession of soil science or wetland science for the government.

IV. The determination of a hydric soil boundary or test pit evaluation to the extent permitted pursuant to RSA 485-A:35 for the purposes of septic system design or subdivision application pursuant to RSA 485-A or rules adopted under RSA 485-A. For this work, a municipality shall not require qualifications different from those established pursuant to RSA 485-A:35.

V. A homeowner from preparing a plan to provide vehicular and utility access to the homeowner's primary residence within 50 feet from the edge of a traveled way; provided, that he or she complies with rules adopted by the department of environmental services and standards adopted by the board.

**Source.** 1988, 281:1. 1995, 136:31. 1997, 240:7, 8. 2004, 116:2, eff. May 17, 2004.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:80

**310-A:80 Reciprocity.** – A nonresident of this state who is certified as a soil scientist or wetland scientist in another state may be certified under this subdivision by filing an application with the board accompanied by a copy of such certification in another state, and by paying a fee to the board, provided the applicant's qualifications meet the requirements of this subdivision and the rules adopted by the board. The board may certify applicants under this section, provided that the other state's licensing requirements are substantially equivalent to, or higher than, those of this state, and provided that the other state certifies New Hampshire soil scientists or wetland scientists under a similar provision.

**Source.** 1988, 281:1. 1995, 136:32. 1997, 240:9, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:81

##### **310-A:81 Board of Natural Scientists; Establishment; Criteria; Terms; Expenses; Meetings; Records and Reports; Roster. –**

I. A board of natural scientists is established to administer the provisions of this subdivision. The board shall consist of 7 persons appointed by the governor and council, 2 of whom shall be soil scientists, 2 of whom shall be wetland scientists who are not also soil scientists, and 3 of whom shall be public members. The initial professional board members shall meet the educational requirements of RSA 310-A:84, I(a) or II-a, respectively. The public members of the board shall be persons who are not, and never were, members of the soil science profession, members of the wetland science profession, or the spouse of any such person, and who do not have and never have had, a material financial interest in either the provision of soil science or wetland science services or an activity directly related to soil science or wetland science, including the representation of the board or profession for a fee at any time during the 5 years preceding appointment.

II. (a) Each member of the board shall be a citizen of the United States and shall have been a resident of this state for at least one year immediately preceding appointment.

(b) Each soil scientist member shall have actively practiced soil science for at least 6 years prior to appointment and shall have held a responsible position in charge of such work for at least 2 years prior to appointment, which may include the teaching of soil science.

(c) Each wetland scientist member shall have actively practiced wetland science for at least 6 years prior to appointment and shall have held a responsible position in charge of such work for at least 2 years prior to appointment, which may include the teaching of wetland science.

III. Members shall be appointed for 5-year terms, except that no more than one appointed member's term may expire in any one calendar year. Appointments for terms of less than 5 years may be made in order to comply with this limitation. No appointed member shall be eligible to serve more than 2 full consecutive terms, provided that for this purpose only a period actually served which exceeds 1/2 of the 5-year term shall be deemed a full term. Upon expiration of a member's term, the member shall serve until a successor is qualified and appointed. The successor's term shall be 5 years from the date of expiration of the predecessor's appointment, regardless of the date of the successor's appointment. Vacancies occurring prior to the expiration of a specific term shall be filled by appointment for the unexpired term. A board member may be removed for cause by the governor and council under RSA 4:1.

IV. Members of the board shall be reimbursed for mileage at the state employee rate.

V. The board shall hold at least 3 regular meetings each year and special meetings at such times as it may deem necessary. Notice of all meetings shall be given in such a manner as rules adopted by the board may provide. The board shall biennially elect or appoint a chairperson, vice-chairperson, and secretary. A quorum of the board shall consist of at least 4 members.

VI. (a) The board shall keep a record of its proceedings and a register of all applications for registration, which shall show:

(1) The name and residence of each applicant.

- (2) The date of application.
- (3) The place of business of such applicant.
- (4) The applicant's educational and other qualifications.
- (5) Whether or not an examination was required.
- (6) Whether the applicant was rejected and the reasons for such rejection.
- (7) Whether a certificate of registration was granted.
- (8) The date of the action of the board.
- (9) Such other information as may be deemed necessary by the board.

(b) The records of the board shall be prima facie evidence of the proceedings of the board, and a transcript of such records certified by the secretary of the board under seal shall be admissible in evidence with the same force and effect as if the original were produced. Biennially, as of December 31 of each even-numbered year, the board shall submit to the governor a report of the transactions of the preceding biennium, and a complete statement of the receipts and expenditures of the board.

VII. The secretary of the board shall provide, upon request, a roster listing the names and places of business of all soil scientists and wetland scientists certified under this subdivision by the board. Copies of this roster shall be placed on file with the secretary of state and furnished to the public upon request at a fee to be established by the board. The board may include in such roster any other information it deems appropriate.

**Source.** 1988, 281:1. 1995, 136:33; 284:44-46. 1997, 240:10, 11, 12, 13, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:82

**310-A:82 Rulemaking Authority.** – The board shall adopt rules, pursuant to RSA 541-A, relative to:

- I. The application procedure for obtaining a certificate to practice under this subdivision.
- II. The qualifications of applicants under RSA 310-A:84, and satisfactory evidence of good professional character.
- III. How the applicant shall be examined, including the time and place of the examination.
- IV. How a certificate to practice under this subdivision shall be renewed, including the requirement for continuing education.
- V. The establishment of all fees required under this subdivision as listed in RSA 310-A:92.
- VI. Ethical and professional standards required to be met by each holder of a certificate under this subdivision and how disciplinary actions by the board shall be implemented for violations of these standards.
- VII. Matters related to proper administration of this subdivision.

**Source.** 1988, 281:1. 1997, 240:14, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:83

**310-A:83 Additional Powers.** – The board shall adopt and have an official seal. The board shall have the power to subpoena witnesses and compel, by subpoena duces tecum, the production of books, papers, and documents in a case involving the revocation of registration. Any member of the board may administer oaths or affirmations to witnesses appearing before the board. Such subpoenas issued by any member of the board or by any justice of the peace shall have the same effect as though issued for appearance before the superior court.

**Source.** 1988, 281:1, eff. June 30, 1988.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:84

##### **310-A:84 Qualifications for Certification. –**

I. To be eligible for certification as a soil scientist, a person shall be of high ethical professional standards, have successfully passed an examination designed to determine the person's proficiency and qualifications, including references to soil characteristics in the New England region, to be engaged in the practice of soil science, and shall have one of the following qualifications:

(a) Be a graduate of an accredited 4-year college curriculum leading to a baccalaureate degree, where the applicant successfully completed 30 semester hours in biological, physical and earth science, including 15 semester hours in soil science, and have a specific record of an additional 3 or more years experience in the practice of soil science.

(b) Be a graduate of an accredited college curriculum leading to a baccalaureate or an associate degree, where the applicant has successfully completed 15 semester hours in soil science, and have a specific record of an additional 4 or more years experience in the practice of soil science.

(c) Be a graduate of an accredited college curriculum leading to a baccalaureate or associate degree, or have earned the equivalent number of credits, and have a specific record of an additional 6 or more years in the practice of soil science.

II. Experience in the practice of soil science shall be of a grade and character that indicates to the board that the applicant is competent to practice as a soil scientist. Experience shall be determined as follows:

(a) Teaching soil science courses or performing research in soil science at an accredited college, university, or institution offering an approved soil science or agronomy curriculum shall be considered as experience in the practice of soil science.

(b) Educational training shall not be considered as experience. Summer employment shall be considered experience for purposes of this section.

(c) Actual field mapping experience in an acceptable apprenticeship program shall count as experience time and shall account for a minimum of one year of the experience requirement.

(d) Each advanced degree in a related field shall be counted as one year of experience.

II-a. To be eligible for certification as a wetland scientist, a person shall meet high ethical and professional standards, have successfully passed an examination designed to determine the person's proficiency and qualifications, including references to wetland characteristics in the New England region, be engaged in the practice of wetland science, and shall have one of the following qualifications:

(a) Be a graduate of an accredited college curriculum leading to a baccalaureate or an associate degree, where the applicant has successfully completed a minimum of 24 semester hours in any of the following environmental sciences: botany, soil science, hydrology, wetland science, biology, forestry, wildlife, ecology, water resources, plant science, agronomy, geology, or earth science, and have one or more years experience in the practice of wetland science.

(b) Have a minimum of 12 combined credit or non-credit semester hours in any of the environmental sciences under subparagraph (a), and have 3 or more years experience in the practice of wetland science.

II-b. (a) Experience in the practice of wetland science shall be of a quality and character that indicates to the board that the applicant is competent to practice as a wetland scientist. Experience shall be defined as one or more of the following:

(1) Teaching wetland science courses or performing research in wetland science at an accredited college, university, or institution offering an approved wetland science or wetland ecology curriculum.

(2) Actual field experience gained in an acceptable apprenticeship program.

(3) Actual field mapping experience, defined as the delineation of wetland boundaries and the preparation of wetland maps in accordance with standards for the identification of wetlands adopted by the department of environmental services or the United States Army Corps of Engineers or its successor.

(b) For the purposes of this paragraph, educational training shall not be considered as experience; summer employment shall be considered experience.

(c) For the purposes of this paragraph, each advanced degree in a related field may be counted as one year of experience, however, a minimum of one year of actual field experience shall be required for all candidates.

III. A candidate failing an examination may apply for a re-examination upon payment of an additional fee as determined by the board in its rules and shall be re-examined on the next regularly scheduled semi-annual examination date. A candidate failing the examination 3 consecutive times shall be required to furnish evidence of additional experience, study, or education credits acceptable to the board before being allowed to proceed with the examination.

**Source.** 1988, 281:1. 1995, 136:34. 1997, 240:15, 16, 17. 2004, 116:3, eff. May 17, 2004.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:85

###### **310-A:85 Apprentice. –**

I. To be eligible for recognition as an apprentice soil scientist, a person shall have the following qualifications:

- (a) Be of responsible character;
- (b) Have completed the formal education under RSA 310-A:84, I; and
- (c) Be in training to become a certified soil scientist and be engaged in the practice of soil science under the direct supervision of a certified soil scientist who is performing soil science work.

II. To be eligible for recognition as an apprentice wetland scientist, a person shall have the following qualifications:

- (a) Be of responsible character;
- (b) Have completed the formal education under RSA 310-A:84, II-a; and
- (c) Be in training to become a certified wetland scientist and be engaged in the practice of wetland science under the direct supervision of a certified wetland scientist who is performing wetland science work.

**Source.** 1988, 281:1. 1997, 240:18, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:86

##### **310-A:86 Certification Procedure. –**

I. Application for certification shall be on forms prescribed and furnished by the board. Such forms shall include the applicant's educational background, including transcripts from educational institutions attended, a detailed work experience history, and such other information as the board may by rule require. All applications shall be signed under oath by the applicant.

II. Any person who has successfully passed the examination or has otherwise qualified as a certified soil scientist, apprentice soil scientist, certified wetland scientist, or apprentice wetland scientist, shall, upon payment of a fee, be issued a certificate attesting that the applicant is a certified soil scientist, apprentice soil scientist, certified wetland scientist, or apprentice wetland scientist.

III. Applications that meet the requirements of RSA 310-A:84 shall be approved.

**Source.** 1988, 281:1. 1997, 240:19, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:87

**310-A:87 Certificates.** – Certificates shall show the full name of the certified soil scientist, apprentice soil scientist, certified wetland scientist, or apprentice wetland scientist, have a serial number, and be signed by the chairperson and the secretary of the board under seal of the board. Each certified soil scientist or certified wetland scientist shall obtain a seal of the design authorized by the board bearing the name of the certified individual, the legend ""Certified Soil Scientist" or ""Certified Wetland Scientist," as appropriate, and a place for the certified individual's signature. Plans and reports prepared by a certified individual shall be stamped with the seal and signed by the certified individual during the life of the certificate.

**Source.** 1988, 281:1. 1995, 136:35. 1997, 240:20, eff. July 1, 1997.

# **TITLE XXX**

## **OCCUPATIONS AND PROFESSIONS**

### **CHAPTER 310-A**

#### **JOINT BOARD OF LICENSURE AND CERTIFICATION**

##### **Natural Scientists**

###### **Section 310-A:88**

**310-A:88 Expiration.** – A certification shall expire on the last day of the certificate holder's month of birth in the year 2 years following the year of issuance.

**Source.** 1988, 281:1. 1989, 247:25, eff. July 1, 1989.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:89

**310-A:89 Certificate Renewal.** – Certificates may be renewed by written application prior to the expiration date and by payment of the prescribed renewal fee. The secretary shall notify each certified individual one month prior to expiration of such certificate.

**Source.** 1988, 281:1. 1995, 136:36. 1997, 240:21, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:90

**310-A:90 Failure to Renew.** – Failure to remit the biennial renewal fee when due shall automatically cancel the certification. If properly renewed, a certification shall remain in effect continuously from the date of issuance, unless suspended or revoked by the board for just cause. A person whose certification is cancelled for such failure may reinstate such certification by paying, within one year of cancellation, all fees due, plus a late fee as established by the board.

**Source.** 1988, 281:1. 1995, 136:36, eff. July 23, 1995.

**TITLE XXX**  
**OCCUPATIONS AND PROFESSIONS**

**CHAPTER 310-A**  
**JOINT BOARD OF LICENSURE AND CERTIFICATION**

**Natural Scientists**

**Section 310-A:91**

**310-A:91 Waiver.** – [Repealed 1997, 240:28, II, eff. July 1, 1997.]

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:92

##### **310-A:92 Fees. –**

I. The board shall adopt rules under RSA 541-A which establish fees for the following:

- (a) Application for certification without examination.
- (b) Application for certification by reciprocity.
- (c) Application for certification upon examination.
- (d) Biennial renewal for individuals certified under this subdivision.
- (e) Application for certification as an apprentice soil scientist or apprentice wetland scientist.
- (f) Late reinstatement fee for a late renewal.
- (g) Replacement of lost or mutilated certificate.

II. The fees established by the board shall be sufficient to produce estimated revenues equal to 125 percent of the direct operating expenses of the board for the previous fiscal year.

**Source.** 1988, 281:1. 1997, 240:22, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:93

##### **310-A:93 Disciplinary Action. –**

I. The board may undertake disciplinary proceedings:

- (a) Upon its own initiative; or
- (b) Upon written complaint of any person which charges that a person certified by the board has committed misconduct under paragraph II, and which specifies the grounds therefor.

II. Misconduct sufficient to support disciplinary proceedings under this section shall include:

- (a) The practice of fraud or deceit in procuring or attempting to procure a certificate to practice under this subdivision.
- (b) Conviction of a felony or any offense involving moral turpitude.
- (c) Any unprofessional conduct, or dishonorable conduct unworthy of, and affecting the practice of soil science or wetland science.
- (d) Unfitness or incompetency by reason of negligence or willful misconduct by a certified soil scientist or certified wetland scientist in the performance of professional duties.
- (e) Addiction to the use of alcohol or other habit-forming drugs to a degree which renders the person unfit to practice under this subdivision.
- (f) [Repealed.]
- (g) Willful or repeated violation of the provisions of this subdivision.
- (h) Suspension or revocation of a certificate, similar to one issued under this subdivision, in another jurisdiction which was not reinstated.

III. The board may take disciplinary action in any one or more of the following ways:

- (a) By reprimand.
- (b) By suspension, limitation, or restriction of certificate for a period of up to 5 years.
- (c) By revocation of certificate.
- (d) By requiring the person to participate in a program of continuing education in the area or areas in which the person been found deficient.

**Source.** 1988, 281:1. 1995, 136:37. 1997, 240:23, 28, I, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

#### Section 310-A:94

**310-A:94 Hearings.** – The board shall take no disciplinary action without a hearing. At least 14 days prior to a hearing, all parties to a disciplinary proceeding shall be served, either personally or by certified mail, return receipt requested, with a written copy of the complaint filed and notice of the time and place for hearing. All complaints shall be objectively received and fairly heard by the board, but no complaint shall be acted upon unless in writing. A hearing shall be held on all written complaints received by the board within 3 months of the date of notice of a complaint received by the accused, unless otherwise agreed to by the parties. Written notice of all disciplinary decisions made by the board shall be given to both parties to the proceeding upon their issuance. Orders of the board shall be subject to rehearing and appeal in the manner prescribed by RSA 541.

**Source.** 1988, 281:1. 1995, 284:55, eff. Jan. 1, 1996.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:95

**310-A:95 Violations; Penalties.** – Any person who practices or offers to practice soil science or wetland science in this state for others without a certificate in accordance with this subdivision, or any person presenting or attempting to use the certificate or seal of another, or any person who gives any false or forged evidence of any kind to the board or to any board member in obtaining or attempting to obtain a certificate, or any person who falsely impersonates any other certified soil scientist or certified wetland scientist, or any person who attempts to use an expired or nonexistent or revoked certificate or authorization, or any person who violates any of the provisions of this subdivision, shall be guilty of a class B misdemeanor if a natural person, or guilty of a felony if any other person.

**Source.** 1988, 281:1. 1995, 284:47. 1997, 240:24, eff. July 1, 1997.

# TITLE XXX

## OCCUPATIONS AND PROFESSIONS

### CHAPTER 310-A

#### JOINT BOARD OF LICENSURE AND CERTIFICATION

#### Natural Scientists

##### Section 310-A:96

**310-A:96 Restraint of Violations.** – The superior court shall have jurisdiction in equity to restrain violations of RSA 310-A:95 on proceedings brought by the attorney general, the board, or any society of certified soil scientists or certified wetland scientists duly incorporated under the laws of this state.

**Source.** 1988, 281:1. 1997, 240:25, eff. July 1, 1997.

**TITLE XXX**  
**OCCUPATIONS AND PROFESSIONS**

**CHAPTER 310-A**  
**JOINT BOARD OF LICENSURE AND CERTIFICATION**

**Natural Scientists**

**Section 310-A:97**

**310-A:97 Title.** – [Repealed 2007, 300:7, I, eff. July 1, 2007.]



**STATE OF NEW HAMPSHIRE  
BOARD OF CERTIFICATION  
OF NATURAL SCIENTISTS**

N.H. Joint Board of Licensure  
57 Regional Drive  
Concord, N.H. 03301

[www.state.nh.us/jtboard/ns.htm](http://www.state.nh.us/jtboard/ns.htm)

Appl.# \_\_\_\_\_  
**For Office Use Only**

Cert.# \_\_\_\_\_

**Application for Certification as a  
WETLAND SCIENTIST**

**1. INSTRUCTIONS FOR FILING APPLICATION**

- a. Each applicant for certification shall fill out the application blanks, in every detail
- b. Money Order, Bank Draft or Check in payment of fee must accompany the application, made payable to: **Treasurer, State of N.H.** (Non-refundable)
- c. The Application **shall be typewritten** and submitted to the Board office.
- d. The applicant is requested to read thoroughly and understand Chapter 310-A:75 thru 97, Revised Statutes Annotated, Laws of N.H., and Code of Administrative Rules for Board of Natural Scientists, before filing application.

Enclosed herewith is the Application Fee, in the amount of \$100.00 payable to: **TREASURER, STATE OF N.H.**

**2. GENERAL INFORMATION**

- a. Name in Full \_\_\_\_\_ Soc.Sec.# \_\_\_\_\_
- b. Usual Written Signature (typed) \_\_\_\_\_
- c. Residence Address\* \_\_\_\_\_ ( )
- d. Present Position (Organization & Title) \_\_\_\_\_
- e. Business Address\* \_\_\_\_\_ ( )
- f. Place of Birth \_\_\_\_\_ Date \_\_\_\_\_
- g. Telephone \_\_\_\_\_ E-Mail \_\_\_\_\_

\* Indicate mailing address by marking X in parenthesis.

### 3. REGISTRATION/CERTIFICATION IN OTHER STATES

(Do not include Certification by a Technical, Scientific, or any other non-Government Body)

State in which first registered or certified as a Wetland Scientist \_\_\_\_\_  
Date of Certificate \_\_\_\_\_ Certificate # \_\_\_\_\_  
Registered by examination? \_\_\_\_\_ If not, how? \_\_\_\_\_  
Is Certificate now in force? \_\_\_\_\_ If not, why? \_\_\_\_\_  
Other States in which registered-if by exam, specify \_\_\_\_\_

Has any Certificate ever been revoked? \_\_\_\_\_ If so, why? \_\_\_\_\_

Are you currently registered as a Wetland Scientist apprentice? \_\_\_\_\_  
If so which state(s)? \_\_\_\_\_  
Have you ever been disciplined as a Wetland scientist apprentice? If so why? In which states? \_\_\_\_\_

Please give the name(s) and license number(s), if applicable, of the Certified Wetland Scientist that you apprenticed under \_\_\_\_\_

### 4. CURRENT MEMBERSHIP IN PROFESSIONAL OR SCIENTIFIC ASSOCIATIONS

Name of Organization	Location	Grade of Membership	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

### 5. EDUCATION REQUIREMENTS

Qualifications for certification as a wetland scientist are set forth in RSA 310-A:84 II-a, RSA 310-84 II-b and administrative rule Soil 302.04, 302.05. ***The completion of a minimum of 24 combined credit or non-credit semester hours in environmental sciences per Soil 302.04 (a) (b) (in addition to one (1) year of experience) OR 12 combined credit or non-credit semester hours in environmental sciences per Soil 302.04 (a) (b) (in addition to three (3) years of experience) is required of all applicants.*** A college degree is not required. 12.5 hours of the workshops in any of the environmental sciences shall be equivalent to one semester hour. Successful completion and documentation of the required combined credit or non-credit semester hours of course work in environmental sciences (with or without a degree) will satisfy the educational requirement. The environmental sciences include: botany, soil science, hydrology, wetland science, biology, forestry, wildlife, ecology, water resources, plant science, agronomy, geology or earth science. A copy of evidence of completion of the education requirement must be attached to the application.

#### 5-A. SEMESTER HOURS – Environmental Sciences



Below please list all related Wetland Science professional experience including teaching experience. Use this page as a summary and submit detailed and complete information on enclosed supplemental experience record sheet identifying each experience with the ID#. Attach evidence of experience as defined in Administrative Rule Soil 302.04 of the NH Code of Administrative Rules for the Board of Natural Scientists.

**Professional Experience**

ID#	Dates of Employment	Name and Address of Employer Title of Position	Name and address of someone familiar to whom applicant reported or with whom he/she was associated.

## 6-B. WETLAND DELINEATION PLANS

A minimum of one year of actual, wetland field delineation experience AND (6) plans, is required of applicants per Administrative Rule **Soil 302.04 (a) (b) OR three years** of actual, wetland field delineation experience AND (18) plans, is required of applicants per Administrative Rule **Soil 302.04 (c) (d)**. Documentation of that experience consists of the presentation the required number of plans, each indicating a wetland delineation determined by the applicant. **If the name of the delineator is not on the plan, a witness from the company who performed the delineation must indicate that the applicant did the delineation.** Three (3) of the six (6) **OR** nine (9) of the eighteen (18) wetland delineation's must have been conducted pursuant to the standards of the Corps of Engineers Wetland Delineation Manual, Technical Report 4-87-1, (January, 1987). The remaining wetland delineation plans must meet the requirements of a state or federal agency. All plans submitted for purpose of documenting the experience requirement must be listed on the following **Plan Summary** as Plan ID Numbers one (1) through six (6) **OR** (1) through (18) as required. Each plan listed on the Plan Summary **must include on the plan:**

- 1) The citation of the delineation standard that was utilized;
- 2) The agency to which they were submitted; and
- 3) The applicable owner information.
- 4) The stamp of a Certified Wetland Scientist is required on all NH plans.
- 5) Contour lines and wetland flags will expedite the review process.

All plans must be submitted and include a copy of the United States Geological Survey quad sheet with the site located.

### WETLAND DELINEATION PLAN SUMMARY

Plan ID	Date	Standard	Agency	Owner's Name and Address
---------	------	----------	--------	--------------------------

1.

2.

3.

4.

5.

6.

Additional sheet to be utilized for candidates applying per Administrative Rule Soil 302.04 (c) and (d) which requires 18 plans.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

## 7. REFERENCES OF CHARACTER AND QUALIFICATIONS



I have read the contents hereof and clearly understand that the correctness and truth of my statements as recorded in this application are material, not only to the issuance of the certificate of licensure, as applied for, but also to the retention of said certificate, if issued.

---

(Signature of Applicant)

---

(Date)

Please send completed application and all communications to:

**N.H. JOINT BOARD OF LICENSURE  
57 REGIONAL DRIVE  
CONCORD, N.H. 03301**

Revised 4/15/09

**SUPPLEMENTARY EXPERIENCE RECORD IN DETAIL**

Affix your signature and date to this and each additional sheet. Add additional sheets as required. Use plain white pages and number consecutively. Type on one side only. Number each wetlands science engagement to correspond with the engagement ID# listed in your application. In a chronological order, starting with your **first wetland science engagement**, list and identify your wetlands science projects and/or assignments. Be specific in identifying the portion of the work you personally did. In describing your experience avoid using such terms as: involved with, responsible for, participated in, taken part/assisted in, coordinated, coordination of, in charge of, was assigned or other similar forms: I calculated, I analyzed, I recommended, I evaluated, etc. After you have prepared your first draft, read it critically. Does it show a reviewer, who is not familiar with your work you applied and verify time-wise the experience claimed in your application.

Read instructions carefully. The Supplementary Experience Record is a most important part of your application.

Signature \_\_\_\_\_ Date \_\_\_\_\_  
(ALSO SIGN AND DATE EACH ADDITIONAL SHEET)

**RETURN THIS CHECKLIST WITH YOUR APPLICATION**

**APPLICATION CHECKLIST**

\_\_\_\_\_  
Candidate Name

Before you mail your application to the Board, please check the following items carefully. Your attention to these details will make it possible for the Board Staff to process your application without delay.

Have you:

\_\_\_\_\_ Marked the box on the application form indicating which address you want us to use?

\_\_\_\_\_ Requested your college/university to send us your transcript directly?

\_\_\_\_\_ Completed the "References" portion of the application, sent reference forms and Board addressed and stamped envelopes to each of your references, and kept a blank copy of the form for yourself?

\_\_\_\_\_ Filled in the detailed experience summary sheets? (copy if needed)

\_\_\_\_\_ Included the correct fee with the check made payable to **Treasurer, State of NH**?

\_\_\_\_\_ Enclosed your **six** (6) or **eighteen** (18) wetland delineation maps ?

\_\_\_\_\_ Included this Checklist with your application?

Date \_\_\_\_\_

College or University Registrar

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Dear Registrar:

Enclosed please find my fee in the amount of \$ \_\_\_\_\_ in payment for a certified transcript of my scholastic record. I attended college during the years \_\_\_\_\_ to \_\_\_\_\_. I received my degree on \_\_\_\_\_. My Social Security number is \_\_\_\_\_ and my date of birth is \_\_\_\_\_.

My student identification number was \_\_\_\_\_.

Please send the transcript ***directly*** to the following address:

New Hampshire Joint Board of Licensure  
57 Regional Drive  
Concord, New Hampshire 03301-8518

The Board of Natural Scientists have informed me that they will treat the transcript in accordance with the provisions of the Education Rights Privacy Act and that no unauthorized person will have access to the transcript.

Sincerely,

---

(Signature)

---

---

---

(Printed Name and Address)

THE STATE OF NEW HAMPSHIRE  
BOARD OF NATURAL SCIENTISTS  
57 REGIONAL DRIVE  
CONCORD, NEW HAMPSHIRE 03301

Dear Sir/ Madam:

\_\_\_\_\_ of \_\_\_\_\_  
applied to this Board for Certification in the State of New Hampshire as a Certified Wetland Scientist and has given your name as a reference and/or has stated that he/ she has worked for you or with you. The Board would appreciate your sending the information requested on the reverse side of this letter. We assure you that such information as you give will be treated in the strictest confidence.

The Board is required by law to obtain evidence of good character of the applicant and his/ her qualifications as a Wetland Scientist before issuing a certificate of licensure. Statements made on this form by responsible persons with actual knowledge of the applicant's character and qualifications will be considered by the Board as evidence and filed with the application.

The Board asks that evidence submitted on this form not be perfunctory, but be considered carefully. The Board, in making decisions, must rely to a great extent on the evidence submitted by references. Since these decisions may have serious public consequences, you have a grave responsibility to provide the Board with a fair and honest appraisal of the applicant.

Since the Board cannot process the application for certification until the reference forms are returned, a prompt reply is appreciated.

Sincerely,

Bobbie Carter  
License Clerk

Re: Application of \_\_\_\_\_ No. \_\_\_\_\_

THIS IS CONFIDENTIAL INFORMATION - FOR USE OF BOARD MEMBERS ONLY

1. What is your full name \_\_\_\_\_  
(Please print)

2. What is your address \_\_\_\_\_  
(Street and number) (City or Town)

3. What is your present business or profession? \_\_\_\_\_

4. Are you a Certified or Practicing Wetland Scientist? \_\_\_\_\_

5. How long have you known the applicant? \_\_\_\_\_

6. Are you in any way related to the applicant? \_\_\_\_\_

7. Do you have any business connection with the applicant? \_\_\_\_\_

8. Do you know anything reflecting adversely on the integrity or general good character of the applicant? \_\_\_\_\_

9. Would you employ the applicant in a position of trust? \_\_\_\_\_

10. If the applicant is connected with a firm, partnership or corporation please give its name and address: \_\_\_\_\_

Position he/ she fills with the firm? \_\_\_\_\_

11. Is the applicant qualified to be placed in responsible charge of wetland science work?  
\_\_\_\_\_

12. If the applicant is in individual practice, please indicate the nature of such practice.  
\_\_\_\_\_

13. Do you recommend the applicant for Certification as a Wetland Scientist? \_\_\_\_\_

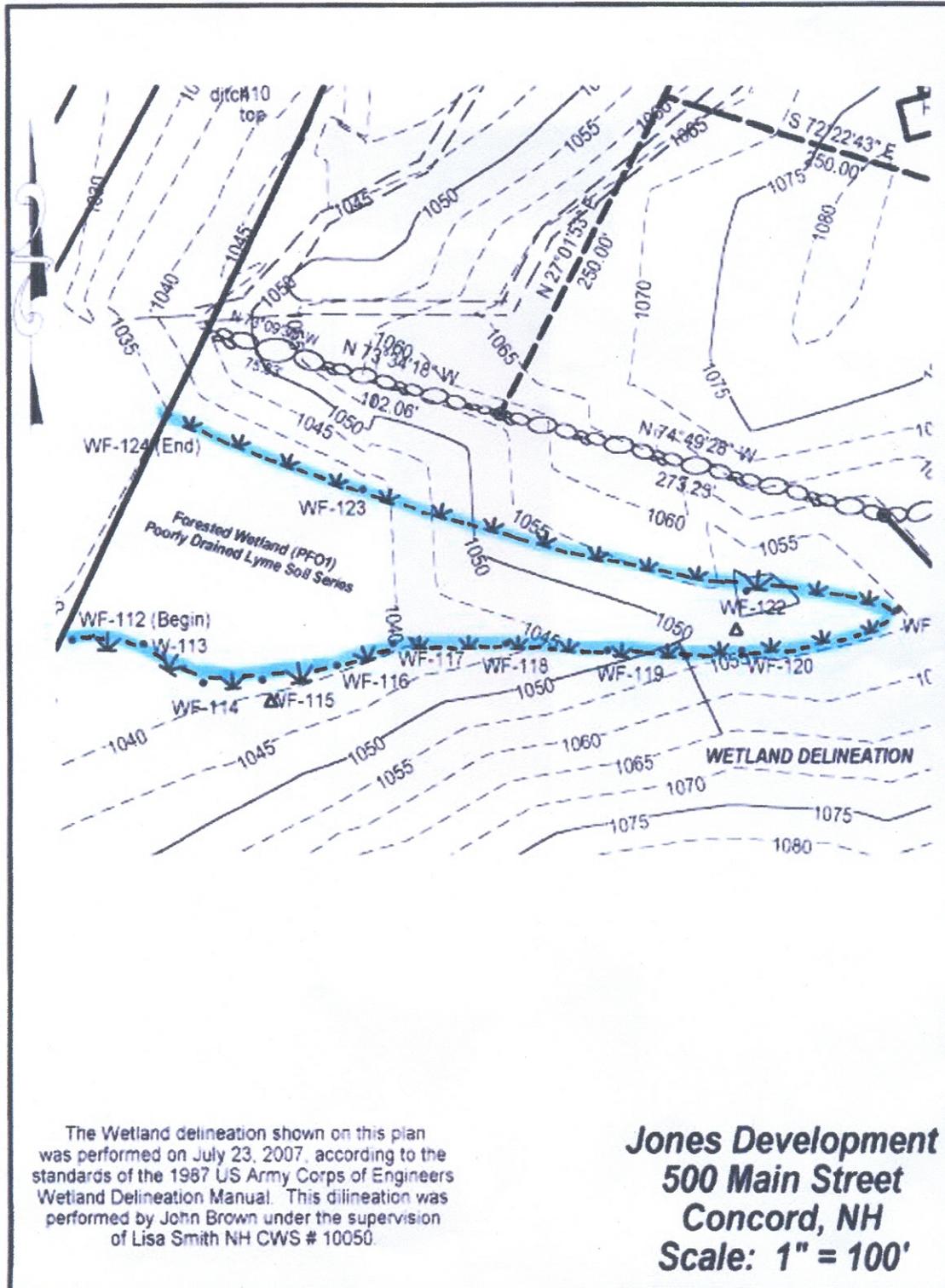
14. Additional remarks: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

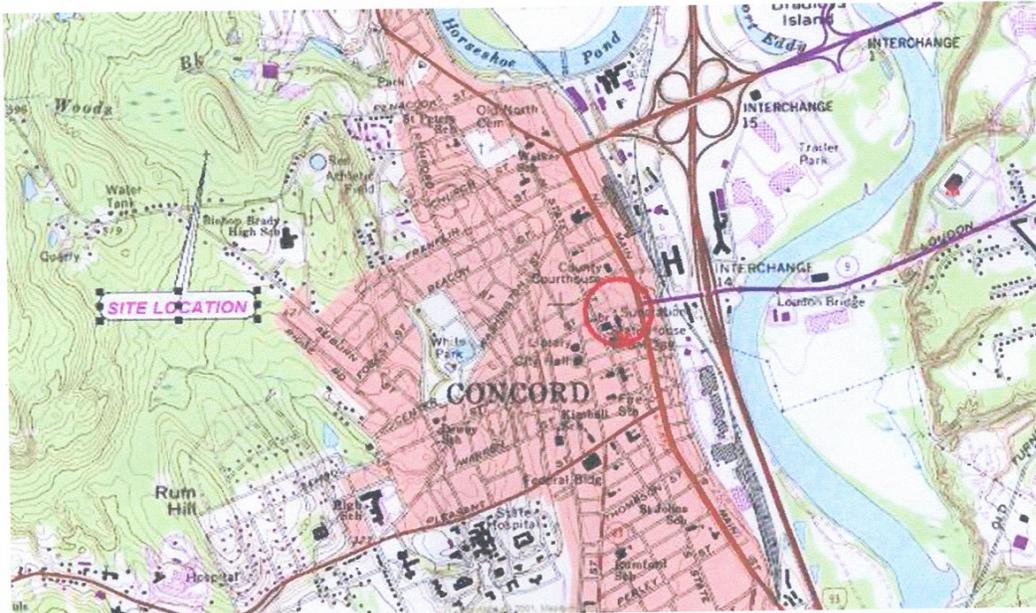
I make the above statements with full knowledge that the person referred to is making application for Certification by the State of New Hampshire as a Certified Wetland Scientist and after reading the information given in the letter on the reverse side of this form.

Date \_\_\_\_\_ Written Signature \_\_\_\_\_

EXAMPLE OF WETLAND DELINEATION FOR SUBMISSION WITH AN APPLICATION FOR NH-CERTIFIED WETLAND SCIENTIST



The Board of Natural Scientists prefers a USGS Topographic Quadrangle map, like the example below to identify the location of each wetland delineation or soil map submitted with applications for Certified Wetland Scientists or Certified Soil Scientists.



**Location Map:**

**USGS – Concord Topographic Quadrangle Scale: 1:25,000**



STATE OF NEW HAMPSHIRE  
BOARD OF CERTIFICATION  
OF NATURAL SCIENTISTS

N.H. Joint Board of Licensure  
57 Regional Drive  
Concord, N.H. 03301

Appl.# \_\_\_\_\_

Cert.# \_\_\_\_\_

Application for Certification as a  
WETLAND SCIENTIST  
APPRENTICE

**1. Instructions for Filing Application**

- a. Each applicant for certification shall fill out the application blanks, in every detail
- b. Money Order, Bank Draft or Check in payment of fee must accompany the application, made payable to: **Treasurer, State of N.H.** (Non-refundable)
- c. The Application **shall be typewritten** and submitted to the Board office.
- d. The applicant is requested to read thoroughly and understand Chapter 310-A:75 thru 97, Revised Statutes Annotated, Laws of N.H., and Code of Administrative Rules for Board of Natural Scientists, before filing application.

Enclosed herewith is the Application Fee, in the amount of \$50.00 payable to: **Treasurer, State of N.H.**

**2. General Information**

- a. Name in Full \_\_\_\_\_
- b. Usual Written Signature (typed) \_\_\_\_\_
- c. Residence Address\* \_\_\_\_\_ ( )
- d. Present Position (Organization & Title) \_\_\_\_\_
- e. Business Address\* \_\_\_\_\_ ( )
- f. Place of Birth \_\_\_\_\_ Date \_\_\_\_\_
- g. Telephone \_\_\_\_\_

\*Indicate mailing address by marking X in parenthesis.

### 3. Registration/Certification in Other States

(Do not include Certification by a Technical, Scientific, or any other non-Government Body)

State in which first registered or certified as an Apprentice Wetland Scientist \_\_\_\_\_

Date of Certificate \_\_\_\_\_ Certificate # \_\_\_\_\_

Registered by examination? \_\_\_\_\_ If not, how? \_\_\_\_\_

Is Certificate now in force? \_\_\_\_\_ If not, why? \_\_\_\_\_

Other States in which registered-if by exam, specify \_\_\_\_\_

Has any Certificate ever been revoked? \_\_\_\_\_ If so, why? \_\_\_\_\_

### 4. Current Membership in Professional or Scientific Associations

Name of Organization	Location	Grade of Membership	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

### 5. Education

1. Education-Supervised-List College or University Credits Obtained (A certified copy of all college transcripts must be requested to be sent directly to the joint board office)

Name of Institution Completed	Years Attended		Graduation Date	Credits
	From	To		
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

2. Education-Unsupervised-State nature of home study and correspondence school work related to Wetland Science.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**6. Professional Experience Related To Wetland Science**

This information must be in detail, and should start with your present employment. Use this page as a summary and place detailed information pertaining to Education and Experience on enclosed supplemental experience record sheet. Attach evidence of experience as defined under Section Soil 302:04 of N.H. Code of Administrative Rules for Board of Natural Scientists.

Key	Date From To Year	Name and address of employer Title of Position	Name and address of someone familiar With each position preferably a person to whom applicant reported or with whom he/she was associated.

No action will be taken on this application unless the information requested above is comprehensive and complete.

I have read the contents hereof and clearly understand that the correctness and truth of my statements as recorded in this application, are material, not only to the issuance of the certification, as applied for, but also to the retention of said certificate, if issued.

\_\_\_\_\_  
Signature of Applicant

**7. Name of Apprenticeship Supervisor**

**Name**

**Certificate Number**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

No action will be taken on this application unless the information requested above is comprehensive and complete.

I have read the contents hereof and clearly understand that the correctness and the truth of my statements as recorded in this application, are material, not only to the issuance of the certification, as applied for, but also to the retention of said certificate, if issued.

\_\_\_\_\_  
Signature of Applicant

**8. Affidavits**

I have read the contents hereof and clearly understand that the correctness and the truth of my statements as recorded in this application, are material, not only to the issuance of the certification of licensure, as applied for, but also to the retention of said certificate, if issued.

\_\_\_\_\_  
(Signature of Applicant)

\_\_\_\_\_  
(Date)

Address all communications to: **N.H. JOINT BOARD OF LICENSURE**  
**57 REGIONAL DRIVE**  
**CONCORD, N.H. 03301**

# BOARD FOR PROFESSIONAL SOIL SCIENTISTS AND WETLAND DELINEATORS



## REGULATIONS GOVERNING CERTIFIED PROFESSIONAL WETLAND DELINEATORS

Last Updated July 12, 2007

### STATUTES

Title 54.1, Chapter 22

*Virginia*

**DPOR**

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION

9960 Mayland Drive, Suite 400  
Richmond, Virginia 23233  
(804) 367-8500  
[www.dpor.virginia.gov](http://www.dpor.virginia.gov)

**NOTICE**  
**SUMMARY OF SIGNIFICANT CHANGES**

These regulations are effective July 14, 2004, and replaced all previous versions of the regulations for the regulation of certified professional wetland delineators. As a regulant of the Board, you are responsible for following all regulations and therefore you should read and become familiar with all regulations printed in this booklet. These regulations should be thoroughly reviewed. Following is a brief summary of the regulations to assist you in your review.

- Conform the end date of the waivers contained in 18 VAC 145-30-40 to match the end date as modified by HB 2839 which was passed during the 2007 General Assembly Session and became law on March 13, 2007.

## **STATEMENT OF PURPOSE**

This booklet contains the information you will need to obtain your certification as a wetland delineator. The law that governs your profession is found in the *Code of Virginia*, 1950, as amended, in Title 54.1, Chapter 22. That law permits the Department of Professional and Occupational Regulation to issue regulations that tell you more about what is expected of you in your profession. This booklet contains a copy of the law and regulations that you will need to know and obey to obtain and keep your certification. **BE SURE YOU READ AND UNDERSTAND THE STANDARDS OF PRACTICE AND CONDUCT. YOUR FAILURE TO OBEY THESE STANDARDS COULD RESULT IN A MONETARY PENALTY OR THE LOSS OF YOUR CERTIFICATE.**

It is the goal of the Department of Professional and Occupational Regulation to provide you with the information you need to comply with the law and regulations. If you have a question and cannot find the answer to it in this booklet, please write to:

Board for Professional Soil Scientists and Wetland Delineators  
Department of Professional and Occupational Regulation  
9960 Mayland Drive, Suite 400  
Richmond, Virginia 23233

or call the Agency at (804) 367-8500.

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**PART I.**

**GENERAL**

**18 VAC 145-30-10. Definitions.**

All terms defined in Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia, as amended, are incorporated in this chapter.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

**“Tidal wetlands”** means those wetlands as defined by § 28.2-1300 of the Code of Virginia, as amended.

**“Non-tidal wetlands”** means wetlands except those as defined by § 28.2-1300 of the Code of Virginia, as amended.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

## **PART II.**

### **ENTRY**

#### **18 VAC 145-30-20. Qualifications for certification.**

Applicants for certification shall meet the requirements specified in Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia, as amended, and this chapter.

#### ***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

#### **18 VAC 145-30-30. Receipt of Application.**

The date the completely documented application and fee are received in the board's office shall determine if the application has been received by the established deadline.

#### ***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

#### **18 VAC 145-30-40. Qualification for examination.**

A. In order to qualify for the examination, an applicant shall provide three written references that comply with subsection B and satisfy one of the following criteria:

1. Hold a bachelor's degree from an accredited institution of higher education in a wetland science, biology, biological engineering, civil and environmental engineering, ecology, soil science, geology, hydrology or any similar biological, physical, natural science or environmental engineering curriculum that has been approved by the board; have successfully completed a course of instruction, in state and federal wetland delineation methods, that has been approved by the Board; and have at least four years of experience in wetland delineation, which meets the requirements of 18 VAC 145-30-50.1 or 18 VAC 145-30-50.2, under the supervision of a certified professional wetland delineator, the quality of which demonstrates to the Board that the applicant is competent to practice as a certified professional wetland delineator; or
2. Have a record of at least six years of experience in wetland delineation, which meets the requirements of 18 VAC 145-30-50.1 or 18 VAC 145-30-50.2, under the supervision of a certified professional wetland delineator, the quality of which demonstrates to the Board that the applicant is competent to practice as a certified professional wetland delineator; or

3. Have a record of at least four years of experience in wetland science research or as a teacher of wetlands curriculum in an accredited institution of higher education, which meets the requirements of 18 VAC 145-30-50.3, the quality of which demonstrates to the Board that the applicant is competent to practice as a certified professional wetland delineator.

B. Every applicant shall provide three written references, on a form provided by the board, from wetland professionals with at least one from a certified professional wetland delineator. Individuals who provide references shall not be related to the applicant and shall have known the applicant for at least one year. Individuals who provide references may not also verify experience, including research or teaching experience.

C. Notwithstanding the requirements of subsection A and B, the requirement for a reference from and supervision by a certified professional wetland delineator shall be waived provided a complete application is received by the board on or before July 13, 2010.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004; amended Virginia Register Volume 23, Issue 20, eff. July 12, 2007*

**18 VAC 145-30-50. Qualifying experience in wetland delineation.**

An applicant shall demonstrate experience in one of the following areas:

1. For those individuals applying pursuant to the provisions of 18 VAC 145-30-40.A.1 or 18 VAC 145-30-40.A.2, the experience in wetland delineation must be as a wetland professional and include the preparation of no less than ten delineations, which must be no more than ten years old at time of receipt by the board office, delineating wetlands in accordance with applicable state and federal regulations which include the proper identification of vegetation, soil and hydrology indicators. At least six of the ten delineations must be for non-tidal wetlands; or
2. For those individuals applying pursuant to the provisions of 18 VAC 145-30-40.A.1 or 18 VAC 145-30-40.A.2, the experience in wetland delineation must be as a wetland professional and include the inspection, review or confirmation of no less than thirty delineations as an employee of a federal, state or local governmental body which is authorized to review or approve such delineations, which must be no more than ten years old at time of receipt by the board office, delineating wetlands in accordance with applicable state and federal regulations which include the proper identification of vegetation, soil and hydrology indicators. Such experience must include the performance of field verifications of a portion of those wetland

delineations which were inspected, reviewed or confirmed. At least six of the thirty delineations must be for non-tidal wetlands, or

3. For those individuals applying pursuant to the provisions of 18 VAC 145-30-40.A.3, the experience as a wetland science researcher must include the preparation of a minimum of three field studies focused on wetland delineation practice and issues, which includes the proper identification of vegetation, soil and hydrology indicators, and the experience as a teacher of wetlands curriculum must have been acquired in an accredited institution of higher education as a field or laboratory instructor of quarter or semester length classes for a minimum of six semester hours, or equivalent, within the past ten years prior to the receipt of the application by the board office, and the curriculum must have included the proper identification of vegetation, soil and hydrology indicators.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**18 VAC 145-30-60. Course Requirements.**

The education required pursuant to 18 VAC 145-30-40.A.1 of this chapter must include the following:

- A. For a bachelors degree in any similar biological, physical, natural science or environmental engineering curriculum to be approved by the board, it shall, at a minimum, contain the following:
  1. Fifteen semester hours, or equivalent, in biological sciences including courses such as general biology, botany or zoology; general ecology; plant, animal, aquatic or wetlands ecology; invertebrate zoology; taxonomy; marine science; fisheries biology; plant physiology, plant taxonomy, plant pathology, plant morphology; relevant environmental sciences, and similar courses;
  2. Fifteen semester hours, or equivalent, in physical sciences including courses in soils, chemistry, hydrology, physics, geology, sedimentology, oceanography, coastal processes, environmental engineering, and similar courses; and
  3. Six semester hours, or equivalent, in quantitative sciences including courses in math, computer sciences, basic statistics, population dynamics, experimental statistics, and similar courses.
- B. The applicant must have successfully completed a course of instruction, of a minimum of thirty-two hours, in state and federal wetland delineation methods which

includes the proper identification of vegetation, soil and hydrology indicators and a field component.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**18 VAC 145-30-70. Examination.**

- A. Once approved by the board, an applicant shall be eligible to sit for a board approved examination.
- B. An applicant must meet all eligibility requirements as of the date the completely documented application and fee is received by the board's office. For examination candidates, the completely documented application and fee must be received by the board's office at least 90 days prior to the examination.
- C. A candidate approved to take an examination shall do so within one year of the date of approval or submit a new application and fee in accordance with these regulations. If an applicant should not pass the board approved examination within one year of being approved, the applicant shall be required to submit a new application and fee in accordance with this chapter in order to take the examination.
- D. A candidate who is unable to take the examination at the time scheduled must notify the department in writing prior to the date of the examination; such a candidate will be rescheduled for the next examination without additional fee. Failure to so notify the department will result in forfeiture of the examination or reexamination fee.
- E. Candidates will be notified of passing or failing the examination.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**18 VAC 145-30-80. Waiver from examination.**

An applicant shall be granted a Virginia certificate without examination, provided that:

1. The applicant holds an unexpired professional wetland delineator certificate or equivalent issued on the basis of equivalent requirements for certification in Virginia, by a regulatory body of another state, territory or possession of the United States or has been provisionally certified under the U.S. Army Corps of Engineers Wetland Delineator Certification Program of 1993 and is not, nor has been, the subject of any disciplinary proceeding before such regulatory body,

and such other regulatory body recognizes the certificates issued by this board provided all other requirements of Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia, as amended, and this chapter are satisfied; or

2. Applicants who submit a complete application so that it is received by the board on or before June 30, 2006, and are found to be qualified pursuant to § 54.1-2206.B (effective July 1, 2004) of the Code of Virginia, as amended, provided all other requirements of Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia, as amended, and this chapter are satisfied.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

### **PART III.**

#### **FEES, RENEWAL AND REINSTATEMENT REQUIREMENTS**

##### **18 VAC 145-30-90. Fees.**

All fees required by the board are nonrefundable and shall not be prorated.

<b>Fee Type</b>	<b>Amount</b>
Application	\$300
Renewal fee	\$260
Late renewal fee	\$25
Reinstatement fee	\$300
Examination fee	\$150

##### ***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

##### **18 VAC 145-30-100. Expiration.**

Certificates issued under this chapter shall expire two years from the last day of the month in which they were issued, as indicated on the certificate.

##### ***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

##### **18 VAC 145-30-110. Renewal.**

- A. The department shall send a renewal notice to the certificate holder at the last known address of record at least 30 days prior to expiration. Failure to receive this notice does not relieve the certificate holder from the requirement to renew the certificate. If the certificate holder fails to receive the renewal notice, a copy of the certificate shall be submitted with the required fee in lieu of the renewal notice.
- B. If the renewal fee is not received by the department within 30 calendar days following the expiration date noted on the certificate, a late renewal fee of \$25 shall be required in addition to the regular renewal fee. If the certificate is renewed after 30 days from the expiration date and prior to 180 days of the expiration date, the effective date of the

renewal shall be the original renewal date. No certificate may be renewed more than 180 days following the date of expiration noted on the certificate.

- C. The date a fee is received by the department or its agent shall determine whether a late renewal fee or the requirement for reinstatement or reapplication is applicable.
- D. A certificate suspended by board order shall not be renewed until the period of suspension has ended and all terms and conditions of the board's order have been met. Individuals renewing certificates within 30 days after the suspension is lifted will not be required to pay a late fee.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**18 VAC 145-30-120. Reinstatement.**

- A. If the renewal fee and late renewal fee are not received by the department within 180 days following the expiration date noted on the certificate, the certificate holder shall no longer be considered a certificate holder and will be required to apply for certificate reinstatement. The applicant shall meet the current eligibility standards for certification as a Virginia certified professional wetland delineator. The board may require examination or reexamination. The fee for reinstatement shall include the regular renewal fee plus the reinstatement fee.
- B. If the reinstatement application and fee are not received by the department within one year following the expiration date noted on the certificate, the applicant shall apply as a new applicant and shall meet all current entry requirements as may be required by the board.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**18 VAC 145-30-130. Denial of Application or Renewal.**

The board may, in its discretion, refuse to grant, renew or reinstate a certificate of any person for any of the reasons specified in Chapters 1, 2 or 22 of Title 54.1 of the Code of Virginia, as amended, and this chapter, including, but not limited to, Part IV of this chapter.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

## **PART IV.**

### **STANDARDS OF PRACTICE AND CONDUCT**

#### **18 VAC 145-30-140. Standards of practice and conduct.**

A Virginia certified professional wetland delineator:

1. Shall not submit any false statements, make any misrepresentations or fail to disclose any facts requested concerning any application for certification or recertification.
2. Shall not engage in any fraud, deceit or misrepresentation in advertising, in soliciting or in providing professional services.
3. Shall not knowingly sign any plans, drawings, blueprints, surveys, reports, specifications, maps or other documents not prepared or reviewed and approved by the certificate holder.
4. Shall not knowingly represent a client or employer on a project on which the certificate holder represents or has represented another client or employer without making full disclosure thereof.
5. Shall express a professional opinion only when it is founded on adequate knowledge of established facts at issue and based on a background of technical competence in the subject matter.
6. Shall not knowingly misrepresent factual information in expressing a professional opinion.
7. Shall immediately notify the client or employer and the appropriate regulatory agency if the certificate holder's professional judgment is overruled and not adhered to when advising appropriate parties of any circumstances of a substantial threat to the public health, safety, or welfare.
8. Shall exercise reasonable care when rendering professional services and shall apply the technical knowledge, skill and terminology ordinarily applied by practicing wetland professionals.
9. Shall sign and date all plans, drawings, blueprints, surveys, reports, specifications, maps or other documents prepared or reviewed and approved by the certificate holder. The certified wetland professional delineator shall also indicate that he is a Virginia Certified Wetland Professional Delineator on all plans, drawings, blueprints, surveys, reports, specifications, maps or other

documents prepared or reviewed and approved by the certificate holder and include his certificate number.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**18 VAC 145-30-150. Grounds for suspension, revocation or other disciplinary action.**

The board has the power to fine any certificate holder, and to suspend or revoke any certificate issued under the provisions of Title 54.1, Chapter 22 of the Code of Virginia, as amended, and the regulations of the board, where the certificate holder has been found to have violated or cooperated with others in violating any provision of Chapters 1, 2 or 22 of Title 54.1 of the Code of Virginia, as amended, or any regulation of the board.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**18 VAC 145-30-160. Change of Address**

A certificate holder shall keep the department informed of his current mailing address. Change of address shall be reported to the department in writing within 30 calendar days of the change.

***Historical Notes:***

*Virginia Register Volume 20, Issue 20, eff. July 14, 2004*

**Included in this booklet are relevant excerpts from the *Code of Virginia*. Please note that the Virginia General Assembly is responsible for creating and amending the *Code*, not the Auctioneers Board. The version contained herein contains all changes, if any, that have been made by the General Assembly through the 2007 session. Any changes made during the 2007 session became effective July 1, 2007, unless otherwise noted. It is your responsibility to stay informed of revisions to the regulations and the statutes governing your profession or occupation. Please consult the General Assembly or your local library for annual changes.**

## **§§ 54.1-2200 THROUGH 54.1-2208**

### **§ 54.1-2200. (Effective July 1, 2004) Definitions.**

As used in this chapter, unless the context requires a different meaning:

"Board" means the Board for Professional Soil Scientists and Wetland Professionals.

"Department" means the Department of Professional and Occupational Regulation.

"Eligible soil scientist" means a person who possesses the qualifications specified in this chapter to become certified.

"Eligible wetland professional" means a person who possesses the qualifications specified in this chapter to become certified.

"Practice of soil evaluation" means the evaluation of soil by accepted principles and methods including, but not limited to, observation, investigation, and consultation on measured, observed and inferred soils and their properties; analysis of the effects of these properties on the use and management of various kinds of soil; and preparation of soil descriptions, maps, reports and interpretive drawings.

"Practice of wetland delineation" means the delineation of wetlands by accepted principles and methods including, but not limited to, observation, investigation, and consultation on soil, vegetation, and hydrologic parameters; and preparation of wetland delineations, descriptions, reports and interpretive drawings.

"Soil" means the groups of natural bodies occupying the unconsolidated portion of the earth's surface which are capable of supporting plant life and have properties caused by the combined effects, as modified by topography and time, of climate and living organisms upon parent materials.

"Soil evaluation" means plotting soil boundaries, describing and evaluating the kinds of soil and predicting their suitability for and response to various uses.

"Soil science" means the science dealing with the physical, chemical, mineralogical, and biological properties of soils as natural bodies.

"Soil scientist" means a person having special knowledge of soil science and the methods and principles of soil evaluation as acquired by education and experience in the formation, description and mapping of soils.

"Virginia certified professional soil scientist" means a person who possesses the qualifications required for certification by the provisions of this chapter and the regulations of the Board and who has been granted certification by the Board.

"Virginia certified professional wetland delineator" means a person who possesses the qualifications required for certification by the provisions of this chapter and the regulations of the Board and who is granted certification by the Board.

"Wetland delineation" means delineating wetland limits in accordance with prevailing state and federal regulatory guidance and describing wetland types.

"Wetland professional" means a person having special knowledge of wetland science and the methods and principles of wetland delineation as acquired by education and experience in the formation, description and mapping of wetlands.

"Wetland science" means the science dealing with the physical, chemical, and biological properties of wetland systems integrated through ecological and morphological relationships.

"Wetlands" means the same as that term is defined in §§ 62.1-44.3 and 28.2-1300.

**§ 54.1-2201. (Effective July 1, 2004) Exceptions.**

A. The certification programs set forth in this chapter are voluntary and shall not be construed to prohibit:

1. The practice of soil evaluation or wetland delineation by individuals who are not certified soil scientists or certified professional wetland delineators as defined in this chapter;
2. The work of an employee or a subordinate of a certified soil scientist or of an individual who is practicing soil evaluation without being certified;
3. The work of an employee or a subordinate of a certified professional wetland delineator or of an individual who is practicing wetland delineation without being certified;
4. The work of any professional engineer, certified landscape architect, or land surveyor as defined by § 54.1-400 in rendering any of the services that constitute the practice of wetland delineation or the practice of soil evaluation; or

5. The practice of any profession or occupation which is regulated by another regulatory board within the Department of Professional and Occupational Regulation.

B. Nothing in this chapter shall authorize an individual to engage in the practice of engineering, the practice of land surveying or to use the title of landscape architect, unless such individual is licensed or certified pursuant to Chapter 4 (§ 54.1-400 et seq.) of this title.

**§ 54.1-2202. Board; membership; quorum.**

Notwithstanding the provisions of § 54.1-200, the Board for Professional Soil Scientists and Wetland Professionals shall be composed of seven members as follows: three certified professional soil scientists, three certified professional wetland delineators and one citizen member. The professional soil scientist members shall have experience in at least one of the following areas (i) soil mapping and classification, (ii) soil suitability and land use, (iii) teaching and research in soil science, and (iv) environmental protection regulations. Of the wetland professional members, one shall have experience in wetland delineation and description, one shall have experience in teaching and research in wetland science and one shall have experience with natural resource regulations. For the initial appointments of the wetland professionals the terms shall be as follows: one member shall serve a term of two years, one member shall serve a term of three years, and one member shall serve a term of four years. Initial appointments of wetland professional members to the Board shall not be certified professional wetland delineators but shall have a record of at least ten years of experience in wetland delineation. Subsequent terms of the members shall be for four years.

The Board shall annually elect a chairman from its membership. Four board members, consisting of two soil scientists and two professional wetland delineators, shall constitute a quorum.

The Governor may select the professional soil scientist members from a list of at least three names for each vacancy submitted by the Virginia Association of Professional Soil Scientists. The Governor may notify the Virginia Association of Professional Soil Scientists of any professional vacancy other than by expiration among the professional soil scientist members of the Board and nominations may be made for the filling of the vacancy.

The Governor may select the wetland professionals from a list of at least three names for each vacancy submitted by the Virginia Association of Wetland Professionals. The Governor may notify and request nominations from the Virginia Association of Wetland Professionals of any professional vacancy other than by expiration among the wetland professional members.

**§ 54.1-2203. (Effective July 1, 2004) Eligibility for certification.**

A. Any person practicing or offering to practice as a soil scientist in the Commonwealth may submit to the Board evidence of qualification to be certified as provided in this chapter. The Board may certify any applicant who has satisfactorily met the requirements of this chapter and its regulations and shall specify on the certificate the appropriate endorsement.

B. Any person practicing or offering to practice as a wetland professional in the Commonwealth may submit to the Board evidence of qualification to be a certified professional wetland delineator as provided in this chapter. The Board may certify any applicant who has satisfactorily met the requirements of this chapter and its regulations and shall specify on the certificate the appropriate endorsement.

C. Any individual who allows his certification to lapse by failing to renew the certificate or failing to meet professional activity requirements stipulated in the regulations may be reinstated by the Board upon submission of satisfactory evidence that he is practicing in a competent manner and upon payment of the prescribed fee.

**§ 54.1-2204. Requirements for application for certification.**

The Board may certify any applicant as a Virginia certified professional soil scientist who has submitted satisfactory evidence verified by affidavits that the applicant:

1. Is eighteen years of age or more;
2. Is of good moral character; and
3. Has successfully completed such educational and experiential requirements as are required by this chapter and the regulations of the Board.

**§ 54.1-2205. Requirements for certification.**

A. In order to be certified as a professional soil scientist, an applicant shall achieve a score acceptable to the Board on an examination in the principles and practice of soil evaluation and satisfy one of the following criteria:

1. Hold a bachelor's degree from an accredited institution of higher education in a soils curriculum which has been approved by the Board and have at least four years of experience in soil evaluation, the quality of which demonstrates to the Board that the applicant is competent to practice as a professional soil scientist; or
2. Hold a bachelor's degree in one of the natural sciences and have at least five years of experience in soil evaluation, the quality of which demonstrates to the Board that the applicant is competent to practice as a professional soil scientist; or
3. Have a record of at least eight years of experience in soil evaluation, the quality of which demonstrates to the Board that the applicant is competent to practice as a professional soil scientist; or
4. Have at least four years of experience in soil science research or as a teacher of soils curriculum in an accredited institution of higher education which offers an approved four-year program in soils and at least two years of soil evaluation experience, the quality of which

demonstrates to the Board that the applicant is competent to practice as a professional soil scientist.

B. Notwithstanding the requirements in subsection A, any person appointed to serve on the Board as a professional soil scientist member prior to July 1, 1991, shall be deemed certified for the purposes of this chapter.

**§ 54.1-2206. Waiver of examination.**

A. The Board may waive the requirement for examination pursuant to § 54.1-2205 upon written application from an individual who holds an unexpired certificate or its equivalent issued by a regulatory body of another state, territory or possession of the United States and is not the subject of any disciplinary proceeding before such regulatory body which could result in the suspension or revocation of his certificate, if such other state, territory or possession recognizes the certificates issued by the Board.

B. The Board shall waive the requirement for examination pursuant to § 54.1-2206.2 upon the written application from an individual who (i) holds an unexpired certificate or its equivalent issued by a regulatory body of another state, territory or possession of the United States or has been provisionally certified under the U.S. Army Corps of Engineers Wetland Delineator Certification Program of 1993 and is not the subject of any disciplinary proceeding before such regulatory body, which could result in the suspension or revocation of his certificate or (ii) has a record of at least 10 years of experience in wetland delineation the quality of which demonstrates to the Board that the applicant is competent to practice as a certified professional wetland delineator. This provision shall expire two years after initiation of the program.

**§ 54.1-2206.1. (Effective July 1, 2004) Requirements for application for professional wetland delineator certification.**

The Board may certify any applicant as a Virginia certified professional wetland delineator who has submitted satisfactory evidence verified by affidavits that the applicant:

1. Is eighteen years of age or older;
2. Is of good moral character; and
3. Has successfully completed such educational and experiential requirements as are required by this chapter and the regulations of the Board.

**§ 54.1-2206.2. (Effective March 13, 2007) Requirements for professional wetland delineator certification.**

A. In order to be certified as a professional wetland delineator, an applicant shall achieve a score acceptable to the Board on an examination, which may include a field practicum, in the principles and practice of wetland delineation, provide three written references from wetland professionals with at least one from a certified professional wetland delineator, and satisfy one of the following criteria:

1. Hold a bachelor's degree from an accredited institution of higher education in a wetland science, biology, biological engineering, civil and environmental engineering, ecology, soil science, geology, hydrology or any similar biological, physical, natural science or environmental engineering curriculum that has been approved by the Board; have successfully completed a course of instruction, in state and federal wetland delineation methods, that has been approved by the Board; and have at least four years of experience in wetland delineation under the supervision of a certified professional wetland delineator, the quality of which demonstrates to the Board that the applicant is competent to practice as a certified professional wetland delineator;
2. Have a record of at least six years of experience in wetland delineation under the supervision of a certified professional wetland delineator, the quality of which demonstrates to the Board that the applicant is competent to practice as a certified professional wetland delineator; or
3. Have a record of at least four years of experience in wetland science research or as a teacher of wetlands curriculum in an accredited institution of higher education, the quality of which demonstrates to the Board that the applicant is competent to practice as a certified professional wetland delineator.

B. Notwithstanding the requirements of subsection A, the requirement for a reference from and supervision by a certified professional wetland delineator shall be waived for the first six years of the program.

**§ 54.1-2207. (Effective July 1, 2004) Unprofessional conduct.**

Any professional soil scientist or wetland delineator who is certified as provided in this chapter shall be considered guilty of unprofessional conduct and subject to disciplinary action by the Board, if he:

1. Obtains his certification through fraud or deceit;
2. Violates or cooperates with others in violating any provision of this chapter, the Code of Professional Ethics and Conduct or any regulation of the Board;
3. Performs any act likely to deceive, defraud or harm the public;

4. Demonstrates gross negligence, incompetence or misconduct in the practice of soil evaluation or wetland delineation; or

5. Is convicted of a felony.

**§ 54.1-2208. (Effective July 1, 2004) Unlawful representation as a certified professional soil scientist or wetland delineator.**

A. No person shall represent himself as a certified professional soil scientist unless he has been so certified by the Board. Any person practicing or offering to practice soil evaluation within the meaning of this chapter who, through verbal claim, sign, advertisement, or letterhead, represents himself as a certified professional soil scientist without holding such a certificate from the Board shall be guilty of a Class 1 misdemeanor.

B. No person shall represent himself as a certified professional wetland delineator unless he has been so certified by the Board. Any person practicing or offering to practice wetland delineation within the meaning of this chapter who, through verbal claim, sign, advertisement, or letterhead, represents himself as a certified professional wetland delineator without holding such a certificate from the Board shall be guilty of a Class 1 misdemeanor.



*Virginia*

**DOR**  
DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION

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Richmond, Virginia 23233**

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## NOTICE

PLEASE REFER TO FIRST PAGE OF BOOKLET FOR NOTES ON IMPORTANT CHANGES.

Board for Professional Soil Scientists and Wetland Professionals  
Professional Wetland Delineator Certification  
Introduction

### Application Requirements

All applicants must meet the current eligibility requirements at the time the completed application package is received at the Board office. Completed application packages must include all required documentation, references, certifications/registration verification, and fees. All forms must be legible. All correspondence should be directed to:

Board for Professional Soil Scientists and Wetland Professionals  
9960 Mayland Drive, Suite 400  
Richmond, VA 23233  
Telephone: (804) 367-8506/8512  
Facsimile: (804) 527-4294

Applications must be submitted with the appropriate fee no later than 90 days prior to a scheduled examination. The date the completed application and fees are received in the board office determines whether the applicant meets the application deadline. It is the applicant's responsibility to ensure that the Virginia Board receives the completed package prior to the established deadline. Submission of applications just prior to the deadline date may result in late notification of eligibility to sit for the scheduled examination. Review of incomplete applications and applications received after the examination application deadline will be deferred to the next examination cycle.

Applicants deemed ineligible may request further consideration by submitting, in writing, evidence of additional qualifications, training, or experience. No additional fee will be required, provided the requirements for certification are met within 12 months of the date the original application was received.

### REQUIRED DOCUMENTATION (including candidates that were previously approved and are reapplying for the examination)

- a completed *Professional Wetland Delineators Certification Application* and fee;
- three current *Professional Wetland Delineator Reference Forms* (less than one year old) completed by wetland professionals;
- completed *Experience Logs* to document all required experience;
- Certified/official transcript or other notarized document verifying the completion of the required courses and/or degrees.

### Examination Notices and Fees

Each candidate will be sent a written notice of the time and place of the examination for which the candidate is eligible. Candidates shall promptly notify the board as to whether they intend to appear for the examination. Failure to notify the board may result in loss of eligibility for that particular examination. Each examination fee shall be applied to the next scheduled examination and shall be forfeited for failure to notify the board or failure to appear. Examination and reexamination fees must be received in the board office no later than 30 days prior to the next scheduled examination.

### Application for Certification Program

The voluntary certification program for Professional Wetland Delineators as set forth in Chapter 22, Title 54.1 of the *Code of Virginia* shall not be construed to prohibit:

1. The practice of wetland delineation by individuals who are not certified wetland delineators as defined in the *Board for Professional Wetland Delineators Regulations*.
2. The work of an employee or a subordinate of a certified wetland delineator or of an individual who is practicing wetland delineator evaluation without being certified.
3. The practice of any profession or occupation which is regulated by another regulatory board within the Department of Professional and Occupational Regulation.



6. Mailing Address (PO Box accepted) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

7. E-mail Address \_\_\_\_\_

8. Contact Numbers \_\_\_\_\_  
 \_\_\_\_\_ Primary Telephone \_\_\_\_\_ Alternate Telephone \_\_\_\_\_ Facsimile \_\_\_\_\_

9. Have you passed a wetland delineation examination in any other state or jurisdiction of the United States?

No

Yes  If yes, list the jurisdiction and the month/year the examination was administered.

\_\_\_\_\_

10. Which of the following education/experience\* requirements are you using to qualify for the Virginia Professional Wetland Delineator exam? Select only **one**.

- Bachelor's degree from an accredited institution of higher education in a wetland science or other related curriculum (see 18 VAC 145-30-40.A.1 in the *Board for Professional Soil Scientists and Wetland Professionals Regulations*); successful completion of a course of instruction in state and federal wetland delineation methods (see 18 VAC 145-30-60.B) **and** at least four years of experience in wetland delineation; **Required Documentation:** a certified/official transcript or other notarized document verifying the completion of the required courses (18 VAC 145-30-60) and/or degrees must be submitted to the Board for Professional Soil Scientist and Wetland Professionals.
- Six years of experience in wetland delineations (see 18 VAC 145-30-40.A.2); or
- Four years of experience in wetland science research or as a teacher of wetlands curriculum in an accredited institution of higher education (see 18 VAC 145-30-40.A.3).

\* You are required to complete and attach a *Professional Wetland Delineator Experience Log* documenting your wetland delineator evaluation experience, the quality of which must demonstrate to the Board that you are competent to practice as a Professional Wetland Delineator. The wetland delineator evaluation experience must meet the requirements in 18 VAC 145-30-50 of the *Regulations Governing Certified Professional Wetland Delineators*.

11. Education (excluding high school) used to meet educational requirements or convert to experience pursuant to 18 VAC 145- 30-50 of the *Regulations Governing Certified Professional Wetland Delineators*. List in chronological order.

Name of Institution	Beginning MM/YY	Ending MM/YY	Major	Hours Completed	Degree Received

A certified/official transcript or other notarized document verifying the completion of the required courses and/or degrees must be submitted to the Board for Professional Soil Scientists and Wetland Professionals.

12. Do you hold an **expired** Professional Wetland Delineator license, certification or registration issued by a regulatory body of another state, territory, jurisdiction or possession of the United States?

No

Yes  If yes, complete the following table. You are also required to submit an original Certification of Licensure/Letter of Good Standing♦ dated within the last 60 days, from each state, territory, jurisdiction or possession of the United States.

State/Jurisdiction	License, Certification or Registration Number	Expiration Date

♦ Certifications/Letters must include: 1) the license/certification/registration number; 2) the initial date of licensure; 3) the expiration date of the license or renewal fees; 4) the means of obtaining licensure (i.e., exam, reciprocity, etc.) and the minimum requirements that were met to qualify for licensure; 5) all closed disciplinary actions resulting violations or undetermined findings; and an original authorized signature and board/department seal.

13. Have you ever been subject to a disciplinary action imposed by any (including Virginia) local, state or national regulatory body?

No

Yes  If yes, provide a certified copy of the final order, decree or case decision by a court or regulatory agency with lawful authority to issue such order, decree or case decision.

14. Have you ever been convicted in any jurisdiction of **any felony or misdemeanor**? *Any guilty plea or plea of nolo contendere must be disclosed on this application. Do not disclose violations that were adjudicated as a minor in the juvenile court system.*

No

Yes  If yes, list the misdemeanor and/or felony conviction(s). Attach your original criminal history record; a certified copy of the final order, decree, or case decision by a court or regulatory agency with lawful authority to issue such order, decree, or case decision; and any other information you wish to have considered with this application (e.g., information on the status of incarceration, parole or probation; reference letters; documentation of rehabilitation). If additional space is needed, attach a separate sheet of paper.

*Certified copies of court records may be obtained by writing to the Clerk of the Court in the jurisdiction in which you were convicted. The address is available from your local police department. Original criminal history records may be obtained by contacting the state police in the jurisdiction in which you were convicted. Virginia residents must complete a criminal history record request form in the presence of a notary public and mail it to the Department of State Police, Central Criminal Records Exchange, Post Office Box 27472, Richmond, VA 23261-7472.*

15. I, the undersigned, certify that the foregoing statements and answers are true, and I have not suppressed any information that might affect the board's decision to approve this application. I certify that I will notify the Department if I am subject to a disciplinary action or convicted of a felony or misdemeanor (in any jurisdiction) prior to receiving the requested certification. I certify that I understand and have complied with all the laws of Virginia related to professional wetland delineator certification under the provisions of Title 54.1, Chapter 22 of the *Code of Virginia* and the *Virginia Board for Professional Soil Scientists and Wetland Professionals Regulations Governing Certified Professional Wetland Delineators*.

Signature \_\_\_\_\_ Date \_\_\_\_\_

**Notarization**

In the State of \_\_\_\_\_, City/County of \_\_\_\_\_, subscribed and sworn before me, The undersigned Notary Public in and for the City/County aforesaid this \_\_\_\_\_, day of \_\_\_\_\_, 20 \_\_\_\_ . My commission expires the \_\_\_\_\_, day of \_\_\_\_\_, 20 \_\_\_\_ .

*Affix official seal here.*

\_\_\_\_\_  
Signature of Notary Public



## Commonwealth of Virginia Wetland Delineator Examinations

### INTRODUCTION

The Candidate Information Bulletin (CIB) is intended for your use in the preparation for and understanding of the process and procedure pursuant to your certification. The CIB pertains to the Virginia Wetland Delineator Examination Program.

The Virginia Department of Professional and Occupational Regulation (DPOR), Board for Professional Soil Scientists and Wetland Professionals is responsible for certification and regulation of the profession.

The Board through DPOR requires an application for certification, as well as, the use of a variety of other forms for Board review and approval. You may download this information at [www.dpor.virginia.gov/licenseapp\\_main.htm](http://www.dpor.virginia.gov/licenseapp_main.htm). Please follow the procedures as outlined or contact the Board office for the necessary forms, and questions concerning the application or eligibility process at:

DPOR  
Perimeter Center, Suite 400  
9960 Mayland Drive  
Richmond, VA 23233  
804.367.8506 or 804-367-8512  
Fax: 804-527-4294

### EXAMINATION PROCESS

#### Steps to Testing

1. Download Application Form from DPOR web site at [www.dpor.virginia.gov](http://www.dpor.virginia.gov) or contact the Board at 804-367-8512.
2. Complete Application Form with other requirements and forward to the Board office at least 90 days prior to the examination.
3. If approved for the exam, you will receive an Approval Letter from the Board.
4. Schedule/Admission Letter will be mailed to the candidate approximately five (5) days following the examination fee deadline.

#### Special Accommodations

If you have a disability under the Americans with Disabilities Act (ADA) and may require some accommodation in taking this examination, please follow the procedures as outlined in your approval letter. ADA Accommodation Request Forms must be returned to the Office of Education and Examinations with supporting documentation explained in the ADA Accommodation Request Form. Request for accommodations must be received not later than 30 days prior to the examination date.

You will be notified by DPOR of the accommodations granted. In making your request, please allow sufficient time for your paperwork to be evaluated and a determination to be made.

Please note: A language barrier is not considered a disability.

### **Examination Schedule**

The following table lists the examination dates and examination fee deadlines.

Exam Date	Deadline Date
February 13, 2009	November 13, 2008
August 14, 2009	May 14, 2009

Deadline dates are based on receipt of completed application and fee and not by postmark date. Once approved, examination fees are due 30 days prior to the exam date.

### **Test Site and Reporting Time**

Examinations are administered at the Department of Professional and Occupational Regulation, Perimeter Center, Suite 400, 9960 Mayland Dr., Richmond, VA. Exact test reporting time will be provided in your admission documentation. A map to the site with a memo on parking will also be provided. It is also suggested that you visit a web site for driving directions from where you are in relation to the test site.

### **Refund and Rescheduling Policy**

Candidates will have until the exam fee deadline to request to cancel an examination without forfeiting the examination fee. The request must be in writing and forwarded to the Office of Education and Examinations. Requests after the deadline will only be approved if there is an extenuating circumstance and proper documentation is provided, such as military orders, illness, death in the family, etc. Job requirements, planned vacations, lack of study time, etc. are not considered extenuating circumstances.

It is your responsibility to contact DPOR prior to the test date if you have not received your admission documentation. DPOR has no control over the U.S. mail.

If you do not appear for testing, you will forfeit your examination fee.

### **Environmental Distractors**

Although every attempt is made to provide a quiet and comfortable test environment, noise and room temperatures may be an unforeseen distractor. It is suggested that if you are sensitive to noise or temperature variations, you may want to bring earplugs and wear types of dress that can help you to adapt to a cooler or warmer climate in the examination room.

### **Emergency Policy**

In the event of inclement weather or another emergency, an examination may be cancelled or delayed. If cancelled, the examination will be rescheduled as soon as possible and candidates will be notified.

### **Admission Requirements**

1. You must present your admission letter and one form of identification with a photograph and your signature (i.e. drivers license, school or work identification card, or passport) in order to be admitted to the examination room.
2. The identification must be current and clearly recognizable or you may not be admitted to test.
3. Candidates are required to complete and sign the Examination Site Conduct Agreement Form prior to taking the examination.
4. It is your responsibility to be at the examination site on time. Candidates will not be permitted into the examination room after the announcements have begun. It is strongly suggested that you visit the site before the day of the exam so you are familiar with the route and the needed time.

5. There is ample, free parking in the lot in front of the building. Parking is on a first-come, first-served basis. Several handicap access parking spaces, with no time limit, are available to vehicles displaying the appropriate handicapped parking access signage or license plates.

### **Items for Use in Examination Room**

The Wetland Delineator Examination is a closed book examination.

You should bring #2 pencils with an eraser.

Calculators are to be non-printing, battery-operated or self-powered calculators. Calculators must be quiet and must not require an electrical outlet.

Calculators that might compromise the security of the examination or the examination process are not permitted. Calculators with word-processing capability (QWERTY keyboards) are not permitted. A calculator is to be used primarily for addition, subtraction, multiplication, division, and square root calculations. The calculator, if it has the capability, may be used to obtain trigonometric and logarithmic functions in lieu of using tables. No other additional formulas or study material or information may be programmed or stored in the memory of the calculator before, during or after the examination. Examiners will check calculators. Please take time before arriving at the examination to see that your calculator is working properly.

All items brought to the test site will be the candidate's sole responsibility. The Board and the facility will not be held responsible for any lost, misplaced and/or stolen items.

### **Items Prohibited in Examination Room**

You may not have alcoholic beverages, electronic devices such as cameras, walkmans, radios, tape players, portable fax machines, cellular telephones, calculator watches, reproduction equipment, computers, or pagers in the examination room.

If any of the aforementioned items are found in the possession of a candidate, the Examiner will collect it until the end of the examination and a report will be written documenting the incident to the Board.

Smoking is prohibited. Wearing hats is prohibited.

You may not have pens, or highlighters.

### **Security Guidelines**

The Commonwealth of Virginia copyrights all test questions. Copying, reproducing or taking any action to reveal the contents of an examination in whole or in part is unlawful. Removal of an examination booklet, answer sheet or other confidential material supplied to you at the test site is prohibited.

Any irregularity such as an act of impersonation, creating a disturbance, giving or receiving unauthorized information or aid to other candidates, attempting to remove test information by any means, possession of unauthorized notes or equipment is sufficient cause for you to be expelled from the examination room. All such irregularities will be reported to the Board and may affect certification.

No visitors, guests or children are permitted in the examination room.

## EXAMINATION CONTENT

### Wetland Delineator Examination

The examination will contain 100 multiple-choice test questions and is closed book. The test will be 3 hours in length. The Content Outline is as follows:

Content Area	Percentage of Questions
<b>Hydric Soils</b>	<b>15</b>
A soil that is formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.	
<b>Hydrophytic Vegetation</b>	<b>15</b>
The sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.	
<b>Wetland Hydrology</b>	<b>15</b>
Ponded, flooded or saturated for long to very long periods of time during the growing season.	
<b>Atypical/Problem Area Situations</b>	<b>15</b>
As used herein, this term refers to areas in which one or more parameters (vegetation, soils, and/or hydrology) have been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators of the parameter.	
<b>Synthesis</b>	<b>40</b>
Real world applications, problem solving skills, techniques, charts, graphs, maps, situational groupings. To include Wetland Determination: the process or procedure by which an area is adjudged a wetland or non-wetland.	

Within the above Content Areas, approximately 15-20 questions will refer to Tidal Concepts with the balance of the questions referring to Non-Tidal Concepts.

Candidate comment forms will be available at the test site in the event that you wish to comment on a particular test question. Please request a form from the proctor at the completion of your testing session.

### Scoring and Reporting

There is no penalty for guessing so it is to your advantage to guess if you are unsure of the correct response. A minimum scaled score of 75 must be obtained in order to achieve a passing score. Candidates will be notified of passing or failing the examination, but shall not be notified of actual scores. The Office of Education and Examinations will notify you of your results approximately four weeks following the examination.

Examination results are confidential and will not be released over the phone.

### References

It is strongly recommended that all candidates download the current codes and regulations.

The **PRIMARY** and first source reference is as follows:

Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-I), Document # ADA 176 734. NTIS: Order Department, Springfield, Virginia 22161. Phone: 703.487.4650, Fax Order: 703321.8547. U.S. Army Corps of Engineers. Online Manual may be obtained at [www.wetlands.com/regs/tlpge02e.htm](http://www.wetlands.com/regs/tlpge02e.htm)

January 1987 Final Report and Clarification and Modifications to the Manual issued 1991, 1992 and 1997:

- (1) Memo on Reverting to 1987 Manual – 23 Aug 91
- (2) Notes on Implementing the 197 Manual – 27 Aug 91
- (3) Questions and Answers on 1987 Manual – 07 Oct 91
- (4) Clarification and Interpretation of the 1987 Manual – 20 Feb 92 and 06 Mar 92
- (5) Memo on NRCS Field Indicators of Hydric Soils – 21 Mar 97

Other strongly recommended **SECONDARY** references include:

Virginia Department of Professional and Occupational Regulations. This reference is available at [www.dpor.virginia.gov](http://www.dpor.virginia.gov). Access Boards/Soil Scientists/Regulations

Code of Virginia §28.1-1300 to §28.2-1320

Code of Virginia §54.1-2200 to §54.1-2208

Board for Professional Soil Scientists and Wetland Professionals, Statutes and Regulations, 18VAC145-30-140 to 18VAC 145-30-150  
[www.leg1.state.va.us/000/src.htm](http://www.leg1.state.va.us/000/src.htm)

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.  
[www.npwrc.usgs.gov/resource/1998/classwet/classwet.htm](http://www.npwrc.usgs.gov/resource/1998/classwet/classwet.htm)

National List of Plant Species That Occur in Wetlands: Northeast (Regional 1). U.S.

Department of the Interior, Fish and Wildlife Service, Washington D.C. 20240. Also referred to as Reed 1988.

[www.nwi.fws.gov/bha](http://www.nwi.fws.gov/bha)

Wetland Soils: Genesis, Hydrology, Landscapes, and Classification. James L. Richardson and M.J. Vepraskas, editors. 9/2000, ISBN: 1566704847,  
[www.crcpress.com](http://www.crcpress.com)

Field Indicators of Hydric Soils in the Mid-Atlantic United States, Mid-Atlantic Hydric Soils Committee. (Excerpts from Field Indicators of Hydric Soils in the United States, Version 5.0)  
[www.epa.gov/reg3esd1/hydricsoils/book.htm](http://www.epa.gov/reg3esd1/hydricsoils/book.htm)

Wetlands Guidelines, Prepared by The Department of Wetlands Ecology, Virginia Institute of Marine Science, College of William and Mary and The Habitat Management Division, Virginia Marine Resources Commission. Developed Pursuant to Chapter 13 of Title 28.2, Code of Virginia. Reprinted September 1993

Field Book for Describing and Sampling Soils. Shoeneberger et al. National Soil Survey Center, Natural Resources Conservation Service, USDA, Lincoln, Nebraska  
<http://soils.usda.gov/technical/fieldbook>

Hydric Soils List. National Technical Committee for Hydric Soils, Natural Resources Conservation Service, P. O. Box 2890, Washington, D.C. 20013  
<http://soils.usda.gov/use/hydric/intro.html>

Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting

Soil Surveys, Natural Resources  
Conservation Service, P. O. Box 2890,  
Washington, D.C.  
<http://soils.usda.gov/technical/classification/taxonomy>

WRP Technical Note HY-IA-3.1, August  
1993, Installing Monitoring  
Wells/Piezometers in Wetlands

Munsell Soil Color Charts, Hollmgren  
Corporation

## **Professional Assurance Initiative: Wetland Delineation Apply At Any Time**

You may apply at any time to have your wetland delineation work reviewed for assurance by the Department of Natural Resources for purposes of state permit decisions and state-required shoreland-wetland zoning.

Please supply the following:

1. Resume including education, training and work experience, relevant to wetland delineation
2. Reports of six (6) wetland delineations completed within the last 24 months of which four are problem or atypical sites and for which you are shown on field data sheets as field investigator and report author

Submit materials to   Ms. Roberta Lund, WT/4  
                                  P.O. Box 7921  
                                  101 S. Webster Street, Madison, WI 53707- 7921

### **Education, Experience & Performance Criteria**

Materials must demonstrate that the individual has the following minimum educational, training and experience requirements as well as the performance parameters for wetland delineations:

#### **A. Education**

Wetland delineation is an applied science that requires education, training, and experience to accurately assess the presence or absence of three parameters – hydric soils, hydrophytic vegetation, and wetland hydrology. Based on the three-parameter nature of wetland delineation, WDNR recognizes that Professionally Assured Wetland Delineators will likely have a broad range of technical specialties. In order to maintain the highest level of environmental protection, the integrity of the profession, and the integrity of the program in the eyes of the public the following minimum educational, training, and experience requirements will apply for those seeking professional assurance:

1. Completion of the educational requirements leading to a college or university degree of Bachelor of Science, Bachelor of Arts, or equivalent or higher degree that includes sufficient emphasis on one or more of the wetland parameters. For example:
  - a. Biological Sciences (Ecology, Botany, Limnology, Wildlife Biology, Fisheries Biology, Conservation Biology, etc.);
  - b. Soil Science, Geology or other similar physical science;
  - c. Hydrology; or
  - d. Other similar programs which may include but not be limited to Natural Resource Management, Biological Sciences, Physical Sciences, Engineering, Urban and Rural Planning and Landscape Architecture, provided the applicant submits documentation of coursework in botany, biology, soil science and/or hydrology. Documentation needs to include course titles, names of institutions, and years completed. Coursework includes introductory and mid-level or advanced courses.

2. Completion of a 40-hour wetland delineation training course that is based on the 1987 COE Manual and related guidance, e.g., “Reg IV” training or an equivalent course offered by a government agency or a reputable private firm, as long as the course focuses on Wisconsin wetlands. Due to the uniqueness of, and delineation challenges created by the Wisconsin landscape, the State of Wisconsin Basic and Advanced Wetland Training Workshops or Army Corps of Engineers Regulatory IV held in Wisconsin are strongly recommended.

### **B. Experience**

Professional assurance requires a minimum of five (5) years of full-time professional experience during which the applicant’s primary focus was wetland science. Experience begins following conferral of the FIRST relevant degree at a baccalaureate or higher level. Full-time work experience is defined as a minimum 75% of daily/weekly/monthly duties devoted specifically to wetland science. Work experience below the 75% threshold will be credited on a pro-rated basis. Relevant experience must be gained within ten (10) years prior to applying for professional assurance.

### **C. Work Product**

For work to be assured, delineations must demonstrate proficiency in applying the 1987 COE Manual and related guidance. Delineations will be evaluated as follows:

The individual who is applying must be shown as the primary individual who conducted the fieldwork and authored the report. Delineations must have been completed within the 24 months preceding the application. The sample delineations must include two of each of the following types of sites as defined by the 1987 COE Manual, and the sites chosen should reflect wetlands commonly found within the geographical range(s) where the delineator works.

- 1) Atypical Situations are areas where one or more field indicators of wetlands have been obscured by some recent change.
- 2) Problem Area wetlands are wetlands that are inherently difficult to identify because field indicators of one or more wetland parameters may be absent or misleading, at least at certain times of the year.

Field delineations must consistently demonstrate proper application of the 1987 COE Manual and related guidance documents. Reports must contain enough technical information to completely and accurately reflect field conditions and methodology used to interpret soils, hydrology and plant species information gathered as part of a boundary determination according to the 1987 COE Manual and related guidance documents. Significant mistakes or omissions, including missing wetlands on a particular site, will result in a decision not to assure wetland delineation work.

Delineation reports of individuals who meet the education, training and experience criteria, and who submit six delineation reports of the appropriate types, will be reviewed by a panel of state, federal or local agency experts in wetland delineation with a range of specialized expertise in botany, soils and hydrology. The panel may not include members who compete for clients with consultants. The panel follows specific written instructions to achieve consistent review.

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# Wetland Delineation Professional Assurance Initiative

To advance Wisconsin's goals of protecting wetlands and increasing government efficiency, the Department of Natural Resources is piloting a program to review training and delineation reports from professionals who conduct wetland delineation - and assure the work of individuals meeting established criteria. The goal of this program is to provide a high level of certainty about wetland boundaries for project planning, and save time in state review of wetland boundaries, while enhancing protection for Wisconsin's wetlands through more accurate wetland boundaries overall.

When consultant services are needed to locate wetland boundaries, you may want to see if you can use an individual whose work is assured – or you can [use the education, experience and performance criteria \[PDF 16KB\]](#) to help you select a consultant.

Wetland professionals may submit a request for assurance at any time they feel they can meet the criteria. It's our hope that many individual's work will be assured over time, but assurance is voluntary, not in any way a requirement to conduct wetland delineation work, or a requirement of state permitting.

The work of professionals listed as assured is spot checked annually to ensure that the criteria continue to be met. Professionals whose work is assured are also taking wetland related course work to stay abreast of new scientific information and methods.

Assurance does not change the need for or decisions about [wetland fill permits](#). Assurance can't guarantee accuracy or relieve landowner responsibility in the event an error occurs and wetlands are filled. While it is unlikely for professional whose work is assured, inadvertent wetland fill that may result from errors must be remedied.

The assurance system will be evaluated over the next several years to determine whether it meets the goals of protecting wetlands, increasing certainty in land development decisions, and increasing government efficiency. The Wisconsin Builders Association-Development Council, Wisconsin Wetlands Association, 1000 Friends of Wisconsin, American Transmission Company and the Wisconsin Department of Natural Resources helped develop the system and will evaluate it.

## Wetland Professionals Delineation Work Assured

The wetland delineation work of the following individuals is assured for purposes of State of Wisconsin permits and state-mandated local programs. Concurrence from DNR is not needed and wetland delineation issues are unlikely to cause delays in state permit decisions for sites at which these individuals are the lead field delineator and report author.

Tim King  
Natural Resources Consulting, Inc.  
610B West Avenue  
Rice Lake WI 54868  
(715) 736-1438

Jeff Kraemer  
Natural Resources Consulting, Inc.  
PO BOX 128  
Cottage Grove, WI 53527-0128  
(608) 839-1998

Rachel Lang  
Brookfield, WI  
rlang.bluemarl@gmail.com

Ann Michalski  
Northern Environmental Technologies, Inc.  
330 South Fourth Avenue  
Park Falls WI 53552  
(715) 762-1544

Alice Thompson  
Thompson & Associates  
1514 Menomonee Avenue  
South Milwaukee WI 53172  
(414) 571-8383

Assurance does not change decisions about wetland fill. Assurance is not a guarantee of accuracy or relief from landowner responsibility in the event an error occurs and wetlands are filled. While it is unlikely for professional whose work is assured, inadvertent wetland fill that may result from errors must be remedied.

## **To Seek Assurance of Your Work**

### **New Candidates**

DNR welcomes requests at any time from professionals interested in having their wetland delineation work assured. Professional assurance is given for individuals (rather than firms). Each person interested in professional assurance must submit a resume including education, training and work experience, relevant to wetland delineation, and must include six wetland delineations, for which the individual was the primary field observer and report author, completed within the last 24 months. A Wetland Delineation Review Panel of interagency experts in Soil Science, Plant

Taxonomy, Hydrology and wetland delineation methods will evaluate the applications based on a specific set of parameters. To have your wetland delineation work reviewed for assurance, submit all [required materials \[PDF 16KB\]](#) to the address shown in the materials.

## Continuing Assurance

Once professionally assured, a wetland delineator must follow instructions in their decision letter to continue their assured status, including sending copies of all delineations and taking [continuing education coursework](#). Wetland delineations randomly selected from among those submitted will be reviewed annually using the wetland delineation review criteria.

Continuing education courses of value might include, but are not limited to: Wetland Plant Taxonomy; Advanced Plant Taxonomy; Wetland Hydrology; General Hydrology; Soil Morphology, Classification, and Mapping; Hydric Soil Identification; Wetland Restoration and Creation; Wetland delineation/Evaluation/Classification; Applied Wetland Ecology and Management; Wetland Creation/Mitigation; Wetland Ecology.

## Contact Information

For more information on the professional assurance initiative, please contact:

[Pam Biersach](#)

Regional Aquatic Habitat Expert  
(608) 275-3282

Last Revised: Monday April 27 2009



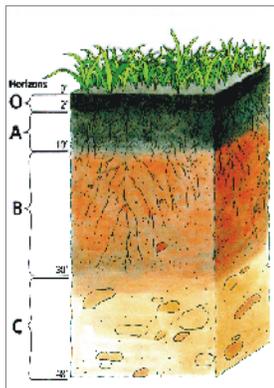
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## Appendix D Washington and Oregon Proposed Certification Process



## Soil and Wetland Scientist Certification in WA

[Home](#)
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*We will work on the bill over the summer and intend to come back in 2010.*

*Contact [Lisa Palazzi](#) with your ideas and feedback.*

### Support for the proposed legislation

[Association of Women Soil Scientists](#)

[Consulting Soil Scientists of the Carolinas, Inc.](#)

[Far West Agribusiness Association](#)

[Inland Empire Chapter of the Soil and Water Conservation Society](#)

[National Society of Consulting Soil Scientists](#)

[National Technical Committee for Hydric Soils + page 2](#)

[Soil Science Society of America](#)

[United States Consortium of Soil Science Associations](#)

[Washington Association of Conservation Districts](#)

[Washington Society of Professional Soil Scientists](#)

[WA State Department of Ecology](#)

[What is soil science?](#)
[What is a wetland?](#)
[What is hydric soil?](#)

**Substitute Bill 5698 (current draft)**

SSB 5698 is our current draft. It passed out of the Senate on March 11 by a margin of 35 to 13, and was reviewed by the House Commerce and Labor Committee on March 24, 2009.

**Final session update: 3/26/09**

Description of actions taken and changes made to the bill during the 2009, 2008, and 2007 legislative sessions. [3/26/09](#)

**1/30/09 Code Reviser's Text**

Code Reviser's version of our bill from 1/30/09, which has been replaced by SSB 5698.

**2008 Sunrise Review Report**

The 2008 Sunrise Review Report recommends state certification of wetland and soil scientists. [1/16/08](#)

**Request: New Sunrise Review**

Formal request for a new Sunrise Review. [5/31/08](#)

**2005 Sunrise Review Report**

The 2005 Sunrise Review Report indicates that soil scientist licensing is needed. [12/05](#)

Please contact [Lisa Palazzi](#) with questions or comments about the proposed legislation.

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Contact Webmaster

# SENATE BILL REPORT

## SSB 5698

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As Passed Senate, March 11, 2009

**Title:** An act relating to soil and wetland scientists.

**Brief Description:** Regulating soil and wetland science professions.

**Sponsors:** Senate Committee on Labor, Commerce & Consumer Protection (originally sponsored by Senators Murray, Kohl-Welles and Delvin).

**Brief History:**

**Committee Activity:** Labor, Commerce & Consumer Protection: 2/12/09, 2/19/09 [DPS, DNP].

Passed Senate: 3/11/09, 35-13.

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### SENATE COMMITTEE ON LABOR, COMMERCE & CONSUMER PROTECTION

**Majority Report:** That Substitute Senate Bill No. 5698 be substituted therefor, and the substitute bill do pass.

Signed by Senators Kohl-Welles, Chair; Keiser, Vice Chair; Franklin and Kline.

**Minority Report:** Do not pass.

Signed by Senators Honeyford and King.

**Staff:** Kathleen Buchli (786-7488)

**Background:** A soil scientist studies the upper few meters of the earth's crust in terms of its physical and chemical properties; distribution, genesis and morphology; and biological components. Soil science is the science dealing with soils as a natural resource on the surface of the earth, including soil formation, classification, and mapping; physical, chemical, biological, and fertility properties of soils; and these properties in relation to the use and management of the soils. The state has no set requirements to become a soil scientist.

A wetlands scientist studies primarily the upper meter of the earth's surface in terms of its physical and hydrological properties. To be considered a wetland, an undisturbed area must have wetland hydrology, wetland vegetation, and wetland soils. Wetland scientists determine where a wetland begins and ends. The state has no set requirements to become a wetland scientist.

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*This analysis was prepared by non-partisan legislative staff for the use of legislative members in their deliberations. This analysis is not a part of the legislation nor does it constitute a statement of legislative intent.*

In 2007 the Legislature requested the Department of Licensing (DOL) to conduct a sunrise review of soil and wetland scientists. DOL was asked to revisit a previous review of soil scientists that it conducted in 2005, which recommended that soil scientists be regulated but did not specify the type of regulation. The 2008 sunrise review of soil and wetland scientists recommends that the Legislature pursue certification of soil and wetland scientists.

**Summary of Substitute Bill:** Soil scientists and wetland scientists must be certified. It is unlawful for a person to use, assume, or advertise the title soil scientist, soil classifier, wetland scientist, wetland delineator, wetland biologist, wetland ecologist, or a title conveying the impression that the person is a state-certified soil or wetland scientist unless that person has received the appropriate certification. The Director of DOL may adopt fees, adopt rules, establish the minimum qualifications for applicants for certification, adopt standards of professional conduct and practice, and take disciplinary action for violations. The Director must require certificate holders to obtain continuing education or professional development and must establish certificate renewal dates and fees.

To become a certified soil scientist, an applicant must be a certified professional soil scientist or a certified professional soil classifier through the Soil Science Society of America, or must be a registered professional soil scientist through the National Society of Consulting Soil Scientists or other similar organization established by the Director in consultation with the advisory committee. To become a certified wetland scientist, an applicant must be a certified professional wetland scientist through the Society of Wetland Scientists Professional Certification Program or other similar organization established by the Director in consultation with the advisory committee.

The application fee for initial certification must be determined by the Director and must be in an amount so that the costs of certification are fully borne by the soil scientists and wetland scientists. Fees for initial certification are nonrefundable. Maintaining membership in a certifying organization is not a requirement.

Certificate holders must obtain a seal bearing the holder's name, certification number, and the legend "Washington State Certified Soil Scientist" or "Washington State Certified Wetland Scientist." Reports, plans, and other technical documents prepared by the certificate holder must be signed, dated, and stamped with the seal.

Applicants from another state may be issued a certificate by the Director if they meet the requirements of the act and rules adopted by the Director.

Conduct, acts, and conditions that constitute unprofessional conduct are established. These include violating the provisions of the act or the rules adopted by the Director; suspension, revocation, or restrictions of certification through a certifying group; committing an act contrary to normal professional conduct; failing to comply with the terms and conditions of the Director; failing to respond to inquiries from clients or other professionals regarding conflicts with the certificate holder's work; modifying another certificate holder's work without notifying the certificate holder; offering or accepting money, goods, or other favors in order to receive favorable consideration for a professional assignment; soliciting or accepting gratuities; using privileged information to make a personal profit; accepting

professional commissions on a contingency basis under circumstances in which the holder's integrity may be compromised; interfering with a Director's investigation; or willfully attempting to suborn another person to violate the law, public policy, or the code of professional ethics.

**Appropriation:** None.

**Fiscal Note:** Available. New fiscal note has been requested on February 17, 2009. [OFM requested ten-year cost projection pursuant to I-960.]

**Committee/Commission/Task Force Created:** No.

**Effective Date:** Ninety days after adjournment of session in which bill is passed except for sections 3, 4, 10-12, and 15-19 which take effect July 1, 2011.

**Staff Summary of Public Testimony:** PRO: We want to make sure soil and wetland scientists are properly educated and certified and this program does that. This is a title act and only applies to those who want to call themselves a soil scientist or wetland scientist. We have had two sunrise review reports and both found that there are public safety and welfare issues that this program would address. This bill will simplify the certification program and does not have the DOL create its own program. This bill is much less expensive than other bills.

Soil scientists possess a wide variety of knowledge, skills, and expertise. We work with soils in forestry, agriculture, and water resources. We deal with farmers, local citizens, city and county planners, and engineers. We provide farmers with information on soil fertility and soil erosion management. We want to ensure that people who call themselves wetland scientists do have credentials. Sometimes wetlands are missed or over delineated; if someone had better credentials, they would be more accurate. Certification would provide a way for people to report concerns about individuals. This bill only affects those who call themselves soil scientists or wetland scientists. This should not result in confusion in the marketplace. Public safety problems include groundwater contamination and people not being able to develop their property.

As far as confusion in the marketplace, the soil scientists will direct people to architects and engineers as necessary; we are clear about professional boundaries. There is no consumer recourse for poor work right now. Wetland scientists were added because of the problems of wetland delineations. We are here because we want to address the problems and other technical disciplines have requested this review. The Department of Natural Resources has conditional support. We are concerned about foresters and geologists and the bill needs clarifying language to ensure that it does not impact those professions.

CON: This is a step in the right direction when compared to proposals of previous years. We are concerned that this title act will become a practices act in two or three years. We are worried about confusion and friction between regulated professions. If they must be certified by a national organization, the need for the bill is not clear. This does not meet the test of regulating only those businesses when not regulating them results in harm to public safety and health. Adding wetland scientists to the bill to reduce costs is not good public policy.

We are worried about confusion in the marketplace and someone hiring the wrong person, resulting in higher costs in the long run. If this is a matter of public safety, we should not just stop with these groups but look at hydrologists, fisheries biologists, and coastal scientists. It is arbitrary to look at these two disciplines as opposed to other technical disciplines. We are concerned about the need for this bill and unintended consequences.

OTHER: Boards are used to access technical expertise with regard to evaluating complaints and helping DOL determine whether competency is achieved.

**Persons Testifying:** PRO: Allen Miller, Law Offices of Allen T. Miller; Eric Choker, Spokane County Conservation District; Jim Wiggins, Karla Van Leaven, Aqua-Terr Systems, Inc.; Toby Rodgers, Washington Society of Professional Soil Scientists; Chuck Turley, Department of Natural Resources; Lisa Palazzi, Pacific Rim Soil and Water.

CON: Heather Hansen, Washington Friends of Farms and Forests; James Curry, Architects and Engineers Legislative Council; Jerry Smedes, Northwest Environmental Business Council.

OTHER: Joe Vincent, Jr., DOL.

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**BILL REQUEST - CODE REVISER'S OFFICE**

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BILL REQ. #: S-1799.3/09 3rd draft

ATTY/TYPIST: AL:cro

BRIEF DESCRIPTION: Regulating soil and wetland science professions.

1 AN ACT Relating to soil and wetland scientists; amending RCW  
2 18.235.020 and 43.24.150; adding a new chapter to Title 18 RCW;  
3 creating a new section; and providing an effective date.

4 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

5 NEW SECTION. **Sec. 1.** The legislature intends to regulate soil  
6 science and wetland science as professions by establishing minimum  
7 standards of ethical conduct and professional responsibility and by  
8 establishing professional education and experience requirements for  
9 those persons representing to the public that they are soil scientists  
10 or wetland scientists certified by the state. This chapter may not be  
11 construed to require a farmer or rancher to seek clearance from a soil  
12 scientist in order to undertake an agricultural activity.

13 NEW SECTION. **Sec. 2.** The definitions in this section apply  
14 throughout this chapter unless the context clearly requires otherwise.

15 (1) "Certifying organizations" means the two national organizations  
16 that certify soil scientists and the one national organization that  
17 certifies wetland scientists. For soil scientists, the certifying  
18 organizations are the soil science society of America and the national

1 society of consulting soil scientists. For wetland scientists, the  
2 certifying organization is the society of wetland scientists  
3 professional certification program.

4 (2) "Department" means the department of licensing.

5 (3) "Director" means the director of the department of licensing.

6 (4) "Holder" means a person who has been issued a certificate under  
7 this chapter.

8 (5) "Responsible charge" means the exercise of fully independent  
9 control and direction of soil science or wetland science work, or both,  
10 or the supervision of such work, and being fully responsible,  
11 answerable, accountable, or liable for the results.

12 (6) "Soil" means a living ecosystem that is composed of living and  
13 once-living organic materials combined with inorganic mineral materials  
14 derived from the break down and weathering of rocks at the earth's  
15 surface. Soil develops as a result of weathering processes that  
16 reflect effects of climate, topography, and biology acting on the  
17 original parent material over time. Soil extends from the surface of  
18 the earth down to undifferentiated or unweathered parent material.

19 (7)(a) "Soil science" means the science that:

20 (i) Involves the study of various aspects of the living soil  
21 ecosystem and includes the following focused subject areas:

22 (A) Soil physics;

23 (B) Soil chemistry and mineralogy;

24 (C) Soil biochemistry;

25 (D) Soil fertility; and

26 (E) Soil genesis, morphology, and classification; and

27 (ii) Can be used to provide information for projects including, but  
28 not limited to, the following:

29 (A) Management of water quantity by utilizing infiltration and  
30 percolation capabilities on a soil-specific basis;

31 (B) Treatment of polluted water using soil microbial populations  
32 working in concert with natural soil chemistry and mineralogy;

33 (C) Treatment of polluted soils using soil biochemical and physical  
34 applications;

35 (D) Interpretation of soil morphology that indicates a wetland  
36 condition; and

37 (E) Preparation of detailed soil maps that can be used for site-  
38 specific soil management, such as erosion control plans.

1 (b) "Soil science" does not include the study, description, and  
2 amelioration of all unconsolidated materials above bedrock or soils as  
3 defined by the unified soil classification system of American standard  
4 testing method and performed by foresters, geologists, and engineers.

5 (8) "Soil scientist" means a person who, by reason of the person's  
6 knowledge of soil science, mathematics, the environment, and the  
7 supporting physical and life sciences, acquired by education and  
8 practical experience, has met the qualifications established under this  
9 chapter, and has been issued a certificate as a soil scientist by the  
10 director.

11 (9) "Wetland" means an area that:

12 (a) Predominantly supports wetland vegetation;

13 (b) Has hydric soils; and

14 (c) Has wetland hydrology, as defined in RCW 90.58.030.

15 (10) "Wetland science" means the science that:

16 (a) Studies wetland systems and includes, but is not limited to,  
17 the following focused subject areas:

18 (i) Wetland delineation, which is the formal identification and  
19 marking of the wetland boundary on the land surface;

20 (ii) Wetland mitigation, which describes compensation to offset  
21 wetland or wetland buffer losses as required by federal, state, or  
22 local regulations;

23 (iii) Wetland classification, which defines and groups wetlands  
24 into discrete ecologically or geomorphically based units which are used  
25 to create management plans or to rate wetlands;

26 (iv) Wetland rating, which is used to evaluate a wetland's quality  
27 based on individual functions and values; and

28 (v) Wetland ecology, which evaluates the interrelationship of  
29 organisms and their wetland environments; and

30 (b) Can be used to provide information for projects including, but  
31 not limited to, the following:

32 (i) Defining legally developable portions of a property, as might  
33 be limited by wetland or stream presence; or

34 (ii) Assessing wetland type for purposes of compensation or  
35 mitigation.

36 (11) "Wetland scientist" means a person who, by reason of the  
37 person's knowledge of wetland science, mathematics, the environment,  
38 and the supporting physical and life sciences, acquired by education

1 and practical experience, has met the qualifications established under  
2 this chapter, and has been issued a certificate as a wetland scientist  
3 by the director.

4 NEW SECTION. **Sec. 3.** (1) Except as provided in subsection (2) of  
5 this section, it is unlawful for a person to use in connection with the  
6 person's name or otherwise assume or advertise the title soil  
7 scientist, soil classifier, wetland scientist, wetland delineator,  
8 wetland biologist, or wetland ecologist, or a title conveying the  
9 impression that the person is a state-certified soil scientist or  
10 state-certified wetland scientist unless the person has received the  
11 appropriate certification under this chapter.

12 (2) Subsection (1) of this section does not apply to:

13 (a) Officers and employees of the United States using the title of  
14 soil scientist or wetland scientist solely as such officers or  
15 employees;

16 (b) Persons using the title of soil scientist or wetland scientist  
17 on manuscripts or reports resulting from research at an academic  
18 institution; and

19 (c) Persons using the title of soil scientist or wetland scientist  
20 while teaching soil science or wetland science or related physical or  
21 natural sciences in an academic institution.

22 NEW SECTION. **Sec. 4.** Whether a person or entity hires or does not  
23 hire a person certified under this chapter is not admissible in an  
24 action for damages or negligence.

25 NEW SECTION. **Sec. 5.** The director has the following authority in  
26 administering this chapter:

27 (1) To adopt fees as provided in RCW 43.24.086;

28 (2) To adopt rules necessary to carry out this chapter;

29 (3) To establish the minimum qualifications for applicants for  
30 certification as provided by this chapter, including establishing  
31 additional certifying organizations;

32 (4) To adopt standards of professional conduct and practice;

33 (5) To review and investigate complaints made under this chapter  
34 and take disciplinary action for violations of this chapter as provided  
35 in chapter 18.235 RCW.

1        NEW SECTION.    **Sec. 6.**    (1) To become a certified soil scientist or  
2 certified wetland scientist, an applicant must meet the requirements of  
3 this section:

4        (a) For a soil scientist, the applicant must be a certified  
5 professional soil scientist or a certified professional soil classifier  
6 through the soil science society of America, or a registered  
7 professional soil scientist through the national society of consulting  
8 soil scientists or other similar organization established by rule by  
9 the director;

10       (b) For a wetland scientist, the applicant must be a certified  
11 professional wetland scientist through the society of wetland  
12 scientists professional certification program or other similar  
13 organization established by rule by the director.

14       (2) The director shall periodically evaluate the certification  
15 programs in subsection (1) of this section to assure standards of  
16 eligibility and performance are maintained in accordance with rules  
17 adopted under this chapter.

18       NEW SECTION.    **Sec. 7.**    An application for certification must be  
19 filed with the director on a form provided by the director and must  
20 contain evidence demonstrating the applicant's certification with the  
21 certifying organizations described in section 6 of this act.    The  
22 director may require any information and documentation that reasonably  
23 relates to the need to determine whether the applicant meets the  
24 criteria for certification.    The application fee for initial  
25 certification must be determined by the director as provided in RCW  
26 43.24.086.    The application, together with the fee, must be submitted  
27 to the department prior to the application deadline established by the  
28 director.    Fees for initial certification include issuance of a  
29 certificate and are nonrefundable.    Nothing in this section requires  
30 applicants to maintain membership in any of the certifying  
31 organizations.

32       NEW SECTION.    **Sec. 8.**    (1) The director shall issue a certificate  
33 to any applicant who has satisfactorily met all of the requirements of  
34 this chapter for certification as a soil scientist or wetland  
35 scientist.    The certificate must show the full name of the holder, have  
36 a unique certification number, and be signed by the director.    The

1 issuance by the director of a certificate to an individual is prima  
2 facie evidence that the person is entitled to all the rights and  
3 privileges of a Washington state certified soil scientist or a  
4 Washington state certified wetland scientist while the certificate  
5 remains unrevoked or unexpired.

6 (2) Each holder must obtain a seal of the design authorized by the  
7 director, bearing the holder's name, certification number, and the  
8 legend "Washington state certified soil scientist" or "Washington state  
9 certified wetland scientist." Soil science or wetland science reports,  
10 plans, and other technical documents prepared by or under the  
11 responsible charge of the holder must be signed, dated, and stamped  
12 with the seal or facsimile of the seal. Each signature and stamping  
13 constitutes a certification by the holder that the document was  
14 prepared by or under the holder's responsible charge and that, to the  
15 holder's knowledge and belief, the document was prepared in accordance  
16 with the requirements of this chapter.

17 NEW SECTION. **Sec. 9.** The director may, upon application and  
18 payment of a fee determined by the director as provided in RCW  
19 43.24.086, issue a certificate to any person who holds valid  
20 credentials issued by the proper authority of any state, territory, or  
21 possession of the United States, District of Columbia, or any foreign  
22 country, if the applicant's qualifications, as evaluated by the  
23 director, meet the requirements of this chapter and the rules adopted  
24 by the director.

25 NEW SECTION. **Sec. 10.** The director shall require persons  
26 certified under this chapter to obtain continuing professional  
27 development or continuing education. The director may also require  
28 these certificate holders to demonstrate maintenance of knowledge and  
29 skills as a condition of certificate renewal, including peer review of  
30 work products.

31 NEW SECTION. **Sec. 11.** Certificates issued under this chapter must  
32 be renewed periodically on a date to be set by the director. Fees for  
33 renewals must be set by the director by rule as provided in RCW  
34 43.24.086. Any holder who fails to pay the prescribed fee must have  
35 his or her certificate classified as invalid. Certificate holders who

1 fail to pay the renewal fee within thirty days of the due date shall  
2 pay a penalty fee equal to one year's renewal. Any certificate that  
3 has been expired for five years or more may be reinstated in  
4 conformance with rules adopted by the director.

5 NEW SECTION. **Sec. 12.** All receipts from fees and fines collected  
6 under this chapter must be deposited into the business and professions  
7 account described in RCW 43.24.150. Expenditures from the fees and  
8 fines collected under this chapter deposited in the account may be used  
9 only for the purposes of administering this chapter.

10 NEW SECTION. **Sec. 13.** In addition to the unprofessional conduct  
11 described in RCW 18.235.130, the following conduct, acts, and  
12 conditions constitute unprofessional conduct:

13 (1) Violating any of the provisions of this chapter or the rules  
14 adopted under this chapter;

15 (2) Suspension, revocation, or restrictions of certification  
16 through the certifying groups described in section 6 of this act;

17 (3) Committing any other act, or failing to act, in a manner  
18 contrary to normal professional conduct or contrary to a standard  
19 generally expected of those practicing soil science or wetland science;

20 (4) Failing to comply with the terms and conditions of an order  
21 issued by the director;

22 (5) Failing to respond to inquiries from clients or other  
23 professionals regarding conflicts with the holder's work, opinions, or  
24 procedures, in a manner that would be expected from a prudent  
25 practitioner;

26 (6) Modifying another holder's work without notifying that holder  
27 and clearly describing the modifications in writing and signing the  
28 report describing the modifications. However, this subsection does not  
29 apply when the plans, maps, or documents are modified by the owner to  
30 reflect changes over time for the owner's own purposes and are not used  
31 for submittals or bid documents;

32 (7) Offering or accepting money, goods, or other favors as  
33 inducement to receive favorable consideration for a professional  
34 assignment or as an inducement to approve, authorize, or influence the  
35 granting of a professional assignment;

1 (8) Soliciting or accepting gratuities, directly or indirectly,  
2 from contractors, their agents, or other parties dealing with clients  
3 or employers in connection with work for which the holder is  
4 responsible;

5 (9) Using privileged information coming to the holder in the course  
6 of his or her assignments as a means of making personal profit beyond  
7 their professional compensation;

8 (10) Requesting, proposing, or accepting professional commissions  
9 on a contingent basis under circumstances in which the holder's  
10 integrity may be compromised;

11 (11) Willfully attempting to interfere with a director's  
12 investigation by falsifying records, making false statements, or  
13 intimidating or influencing witnesses; or

14 (12) Willfully attempting to suborn another person to violate the  
15 law, public policy, or his or her code of professional ethics.

16 NEW SECTION. **Sec. 14.** The director shall immediately suspend the  
17 certificate of a person who has been certified pursuant to RCW  
18 74.20A.320 by the department of social and health services as a person  
19 who is not in compliance with a child support order. If the person has  
20 continued to meet all other requirements for a certificate under this  
21 chapter during the suspension, reissuance of the certificate must be  
22 automatic upon the director's receipt of a release issued by the  
23 department of social and health services stating that the holder is in  
24 compliance with the child support order. The procedure in RCW  
25 74.20A.320 is the exclusive administrative remedy for contesting the  
26 establishment of noncompliance with a child support order, and  
27 suspension of a certificate under this section, and satisfies the  
28 requirements of RCW 34.05.422.

29 NEW SECTION. **Sec. 15.** The director shall suspend the certificate  
30 or registration of any person who has been certified by a lending  
31 agency and reported to the department for nonpayment or default on a  
32 federally or state-guaranteed educational loan or service-conditional  
33 scholarship. Prior to the suspension, the agency must provide the  
34 person an opportunity for a brief adjudicative proceeding under RCW  
35 34.05.485 through 34.05.494 and issue a finding of nonpayment or  
36 default on a federally or state-guaranteed educational loan or service-

1 conditional scholarship. The person's certificate or registration may  
2 not be reissued until the person provides the director a written  
3 release issued by the lending agency stating that the person is making  
4 payments on the loan in accordance with a repayment agreement approved  
5 by the lending agency. If the person has continued to meet all other  
6 requirements for certification or registration during the suspension,  
7 reinstatement is automatic upon receipt of the notice and payment of  
8 any reinstatement fee the director may impose.

9 NEW SECTION. **Sec. 16.** The uniform regulation of business and  
10 professions act, chapter 18.235 RCW, governs the issuance and denial of  
11 certificates, and the discipline of holders under this chapter.

12 **Sec. 17.** RCW 18.235.020 and 2008 c 119 s 21 are each amended to  
13 read as follows:

14 (1) This chapter applies only to the director and the boards and  
15 commissions having jurisdiction in relation to the businesses and  
16 professions licensed under the chapters specified in this section.  
17 This chapter does not apply to any business or profession not licensed  
18 under the chapters specified in this section.

19 (2)(a) The director has authority under this chapter in relation to  
20 the following businesses and professions:

- 21 (i) Auctioneers under chapter 18.11 RCW;
- 22 (ii) Bail bond agents and bail bond recovery agents under chapter  
23 18.185 RCW;
- 24 (iii) Camping resorts' operators and salespersons under chapter  
25 19.105 RCW;
- 26 (iv) Commercial telephone solicitors under chapter 19.158 RCW;
- 27 (v) Cosmetologists, barbers, manicurists, and estheticians under  
28 chapter 18.16 RCW;
- 29 (vi) Court reporters under chapter 18.145 RCW;
- 30 (vii) Driver training schools and instructors under chapter 46.82  
31 RCW;
- 32 (viii) Employment agencies under chapter 19.31 RCW;
- 33 (ix) For hire vehicle operators under chapter 46.72 RCW;
- 34 (x) Limousines under chapter 46.72A RCW;
- 35 (xi) Notaries public under chapter 42.44 RCW;
- 36 (xii) Private investigators under chapter 18.165 RCW;

1 (xiii) Professional boxing, martial arts, and wrestling under  
2 chapter 67.08 RCW;

3 (xiv) Real estate appraisers under chapter 18.140 RCW;

4 (xv) Real estate brokers and salespersons under chapters 18.85 and  
5 18.86 RCW;

6 (xvi) Security guards under chapter 18.170 RCW;

7 (xvii) Sellers of travel under chapter 19.138 RCW;

8 (xviii) Timeshares and timeshare salespersons under chapter 64.36  
9 RCW;

10 (xix) Whitewater river outfitters under chapter 79A.60 RCW; (~~and~~)  
11 (xx) Home inspectors under chapter 18.280 RCW; and  
12 (xxi) Soil scientists and wetland scientists under chapter 18.--  
13 RCW (the new chapter created in section 20 of this act).

14 (b) The boards and commissions having authority under this chapter  
15 are as follows:

16 (i) The state board of registration for architects established in  
17 chapter 18.08 RCW;

18 (ii) The cemetery board established in chapter 68.05 RCW;

19 (iii) The Washington state collection agency board established in  
20 chapter 19.16 RCW;

21 (iv) The state board of registration for professional engineers and  
22 land surveyors established in chapter 18.43 RCW governing licenses  
23 issued under chapters 18.43 and 18.210 RCW;

24 (v) The state board of funeral directors and embalmers established  
25 in chapter 18.39 RCW;

26 (vi) The state board of registration for landscape architects  
27 established in chapter 18.96 RCW; and

28 (vii) The state geologist licensing board established in chapter  
29 18.220 RCW.

30 (3) In addition to the authority to discipline license holders, the  
31 disciplinary authority may grant or deny licenses based on the  
32 conditions and criteria established in this chapter and the chapters  
33 specified in subsection (2) of this section. This chapter also governs  
34 any investigation, hearing, or proceeding relating to denial of  
35 licensure or issuance of a license conditioned on the applicant's  
36 compliance with an order entered under RCW 18.235.110 by the  
37 disciplinary authority.

1       **Sec. 18.** RCW 43.24.150 and 2008 c 119 s 22 are each amended to  
2 read as follows:

3       (1) The business and professions account is created in the state  
4 treasury. All receipts from business or professional licenses,  
5 registrations, certifications, renewals, examinations, or civil  
6 penalties assessed and collected by the department from the following  
7 chapters must be deposited into the account:

8       (a) Chapter 18.11 RCW, auctioneers;

9       (b) Chapter 18.16 RCW, cosmetologists, barbers, and manicurists;

10       (c) Chapter 18.96 RCW, landscape architects;

11       (d) Chapter 18.145 RCW, court reporters;

12       (e) Chapter 18.165 RCW, private investigators;

13       (f) Chapter 18.170 RCW, security guards;

14       (g) Chapter 18.185 RCW, bail bond agents;

15       (h) Chapter 18.280 RCW, home inspectors;

16       (i) Chapter 19.16 RCW, collection agencies;

17       (j) Chapter 19.31 RCW, employment agencies;

18       (k) Chapter 19.105 RCW, camping resorts;

19       (l) Chapter 19.138 RCW, sellers of travel;

20       (m) Chapter 42.44 RCW, notaries public; (~~and~~)

21       (n) Chapter 64.36 RCW, timeshares; and

22       (o) Chapter 18.-- RCW (the new chapter created in section 20 of  
23 this act).

24       Moneys in the account may be spent only after appropriation.  
25 Expenditures from the account may be used only for expenses incurred in  
26 carrying out these business and professions licensing activities of the  
27 department. Any residue in the account (~~shall~~) must be accumulated  
28 and (~~shall~~) may not revert to the general fund at the end of the  
29 biennium.

30       (2) The director shall biennially prepare a budget request based on  
31 the anticipated costs of administering the business and professions  
32 licensing activities listed in subsection (1) of this section, which  
33 (~~shall~~) must include the estimated income from these business and  
34 professions fees.

35       NEW SECTION.   **Sec. 19.** If any provision of this act or its  
36 application to any person or circumstance is held invalid, the

1 remainder of the act or the application of the provision to other  
2 persons or circumstances is not affected.

3 NEW SECTION. **Sec. 20.** Sections 1 through 16 of this act  
4 constitute a new chapter in Title 18 RCW.

5 NEW SECTION. **Sec. 21.** Sections 3, 4, 8 through 10, and 13 through  
6 17 of this act take effect July 1, 2011.

7 NEW SECTION. **Sec. 22.** The director of the department of licensing  
8 may take the necessary steps to ensure that sections 3, 4, 8 through  
9 10, and 13 through 17 of this act are implemented by July 1, 2011.

--- END ---



WASHINGTON STATE DEPARTMENT OF  
**LICENSING**

# Sunrise Review Report



## Soil and Wetland Scientists

January 2008

[www.dol.wa.gov](http://www.dol.wa.gov)

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## Executive Summary

The Department of Licensing (DOL) was asked to conduct a sunrise review of soil and wetland scientists on May 31, 2007 by State Representative Conway and State Representative Wood. The request was for DOL to revisit the previous review conducted in 2005. Legislation was proposed following the prior review that constituted a practices act. The current effort in seeking regulation has shifted to consideration of a title act for certification of practitioners as opposed to a full practices act.

In light of the following issues, DOL recommends that the Legislature pursue a title act of voluntary certification of soil and wetland scientists in Washington State. This recommendation is due to:

- Testimony on public harm to both the individual and large scale,
- The potential for long term environmental damage,
- The current lack of recourse for consumers,
- The lack of state standards for entry-level professionals,
- Testimony of the inconsistency in the application and oversight of the work done.

Outreach to the stakeholders was made in several manners. Two public hearings for each discipline were widely publicized, with over 650 practitioners from the two professions notified in advance through electronic mail. Additionally, related professions were contacted and solicited for input. The hearings were conducted in Burien and Wenatchee, with relatively low turnout. There was however a fairly good response in written testimony, which is included in the body of the report.

Membership organizations for each profession were reviewed and analyzed as to their entry requirements, practices, and membership numbers within the state. It was found that about 375 practitioners reside in Washington. The number of non-member practitioners was not available through the Department of Revenue, as the codes given their businesses are “other professionals” which encompass a multitude of occupations.

Public harm, a key factor in sunrise reviews, was problematic to identify. As with most unregulated professions, no agency is responsible to collect and keep records of complaints. There was evidence found of some large scale public harm instances in Cowlitz county septic systems and eastern Washington agricultural wastewater applications. Testimony by practitioners of cases of harm where individual landowners experienced harm due to poor work done by unqualified scientists and complaints received by the Attorney General’s office are provided in the report.

Testimony, both verbal and written, was split on the question of regulation. Wetland comments were, on the whole, slightly more than 50% in favor. Soil debate overall was stronger, with about 75% in favor of regulation. When the pro/con tally was viewed by the occupation of those testifying, it was found that opposition was more likely from related professions than from soil or wetland practitioners. With the concerns expressed during the last legislative session over the proposed practices act and the concerns

provided to DOL, it is clear that those in related professions have concerns about potential affects on the work they customarily do. The intent of the applicant's proposed title act is, in part, an attempt to mitigate some of those concerns. Clarification of this factor, should certification be pursued, would be perhaps beneficial to those with practices concerns.

## Two Professions—Common Ground

The directive provided to DOL was to include both the wetland and soil scientist professions in this review process. While each discipline provides a distinct set of services, the overlapping common practice is the identification of *hydric soils*, otherwise known as wetland soils (see definition below). This commonality between the two professions allows for their grouping in the consideration for joint regulatory enactment. The first few sections will deal with the two individually for familiarization purposes. Following that, the report will address the industries in a more uniform manner.

## Hydric Soils<sup>1</sup>

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Most soils are aerobic. This is important because plant roots consume oxygen and carbohydrates while releasing carbon dioxide and there must be sufficient air -- especially oxygen -- in the soil to support most forms of soil life. Air normally moves through interconnected pores by forces such as changes in atmospheric pressure, the flushing action of rainwater, and by simple diffusion.

In addition to plant roots, most forms of soil microorganisms need oxygen to survive. This is true of the more well-known soil animals as well, such as ants, earthworms and moles. But soils can often become saturated with water due to rainfall and flooding. Gas diffusion in soil slows (some 10,000 times slower) when soil becomes saturated with water because there are no open passageways for air to travel. When oxygen levels become limited, intense competition arises between soil life forms for the remaining oxygen. When this anaerobic environment continues for long periods during the growing season, quite different biological and chemical reactions begin to dominate, compared with aerobic soils. In hydric soils where saturation with water is prolonged, unique soil properties usually develop that can be recognized in the field.

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<sup>1</sup> Definition from *Wikipedia*

# Soil Scientist Services

## What is a soil scientist?<sup>2</sup>

A soil scientist studies the upper few meters of the earth's crust in terms of its physical and chemical properties; distribution, genesis and morphology; and biological components. A soil scientist needs a strong background in the physical and biological sciences and mathematics.

## What is soil science?

Soil science is the science dealing with soils as a natural resource on the surface of the earth including soil formation, classification, and mapping; physical, chemical, biological, and fertility properties of soils; and these properties in relation to the use and management of the soils.

Soils play multiple roles in the quality of life. Soils are not only the resource for food production, but they are the support for our structures, the medium for waste disposal, they maintain our playgrounds, distribute and store water and nutrients, and support our environment. They support more life beneath their surface than exists above. They facilitate the life cycle of growth, sustenance and decay. They influence the worldwide distribution of plants, animals, and people.

## What does a soil scientist do?

Soil scientists work for federal, state and local governments, universities, and the private sector. The job of a soil scientist includes collection of soil data, consultation, investigation, evaluation, interpretation, planning or inspection relating to soil science. This career includes many different assignments and involves making recommendations about many resource areas.

A soil scientist needs good observation skills to be able to analyze and determine the characteristics of different types of soils. Soil types are complex and the geographical areas a soil scientist may survey are varied. Aerial photos or various satellite images are often used to research the areas. Computer skills and geographic information systems help the scientist to analyze the multiple facets of geomorphology, topography, vegetation, and climate to discover the patterns left on the landscape.

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<sup>2</sup> Definition of Soil Scientist occupation used with permission from the US Dept. of Agriculture, Natural Resources Conservation Service. Some elements of the USDA definition which applied to Wetland Scientist are used in that section.

## Wetlands Scientist Services

### What is a wetland scientist?

A wetland scientist studies primarily the upper meter, more specifically the first 12-24 inches, of the earth's surface in terms of its physical and hydrological properties. A wetland has three criteria that must be present for an undisturbed area to be called a wetland: wetland hydrology (the way water enters, is retained and released by a wetland); wetland vegetation (specific plant life that grows mainly in wetlands); and wetland soils, commonly known as hydric soils. There are many aspects within the title of wetland scientist, some of which include wetland consultants, wetland specialists, wetland biologists, wetland ecologists, and wetland delineators. For the purposes of this report, much of the focus will be on the functions of the delineation of wetlands. A wetland delineator has the task of the identifying and determining the boundary which divides a wetland from a non-wetland, or *upland*. The process of defining these boundaries is called *delineation*.

### What is wetland science?

Wetland scientists use their skills and experience in field botany, soil science, hydrology and sampling procedures, as well as the federally and state approved wetland delineation methods, to determine and document where a wetland begins and ends. Delineators usually are private consultants, but a delineator can be anyone with the necessary skills and equipment. The result of a delineator's efforts is a wetland delineation report, which consists of a map of the wetlands and supporting data sheets, written descriptions and photographs.

A wetland delineation is performed when a planned activity will involve placing fill material in a potential wetland area. Common activities that involve placing fill include grading and leveling, the construction of malls, housing development, golf courses and roads. Project planners need to know where the wetlands are and how big they are so they can comply with federal and state laws governing work in wetlands.

### What does a wetland scientist do?

A wetland scientist also requires good observation skills to be able to analyze and determine the boundaries separating wetlands and uplands and to properly identify often difficult areas as wetlands. It is a common thought among the public that a wetland would be a pond or a marsh or any landlocked water body. However, these are only the obvious wetlands. More difficult is the determination of seasonal wetlands which may appear quite unlike a wetland during much of the year. However, the three factors of hydrology, plants, and hydric soils provide the evidence to the trained eye that a seemingly apparent upland in a dry period of the year is actually a wetland. Determining the presence of hydric soils is often complex, and the geographical areas in Washington State vary significantly by region. Recall that the determination of hydric soils is a common function practiced by both wetland and soil scientists.

## Typical Activities of Soil and Wetland Scientists

Soil and wetlands scientists work in a variety of activities. Either scientist's job may involve:

- Conducting general and detailed soil surveys
- Determining the hydric (wetness) characteristics of the soil
- Delineation of wetland boundaries
- Recommending soil management programs
- Recommending wetland mitigation strategies
- Helping to design hydrologic plans in suburban areas
- Providing site maps and technical reports on wetland delineations
- Monitoring the effects of farm, ranch, or forest activities on soil productivity
- Identifying the location of a wetland by GPS point, or marked on aerial photos/ hand-drawn map
- Giving technical advice used to help plan land management programs
- Acquire and review existing topographic maps, National Wetland Inventory maps, National Cooperative Soil Survey (NCSS) soil surveys
- Predicting the effect of land management options on natural resources
- Design and apply site specific, appropriate technologies necessary to meet project goals
- Preparing reports describing land and soil characteristics
- Advising land managers of capabilities and limitations of soils
- Conducting research in public and private research institutions
- Managing soils for crop production, forest products and erosion control management.
- Evaluating nutrient and water availability to crops
- Managing soils for landscape design, mine reclamation, and site restoration
- Investigating forest soils, wetlands, environmental endangerment, ecological status, and archeological sites
- Assessing application of wastes including non-hazardous process wastes (residue and sludge management)
- Conducting studies on soil stability, moisture retention or drainage, sustainability, and environmental impact
- Regulating the use of land, soil, and water resources by private and public interests (government agencies)

## Number of Practitioners

There are many aspects regarding the membership requirements, testing processes and continuing education mandates that exist within the Standards of Practice of the professional organizations for soil and wetland scientist that operate in this state. These elements will be outlined in subsequent sections in detail. Using the organizational

counts, we can estimate the number of practitioners in both professions, providing some idea of the number of those in a potential licensee group.

The Pacific Northwest Chapter of Society of Wetland Scientists (PNSWS) stated that as of August 2007, they have about 240 members in Washington and about 450 members in the region which also encompasses Oregon and Idaho. It's reasonable to assume that some of the members along the borders may find it practical, based on their customer base, to work in Washington, which would increase the number slightly to something greater than 240.

The Soil Science Society of America provided information to the DOL for a 2007 fiscal note that indicates about 134 applicants for license could be expected. This fiscal note took into consideration non-Washington residents from neighboring states which would likely be licensed. The soil scientist applicant report in the appendices of this review indicates they believe as many as 200 qualified soil scientists may live in Washington. If true, this would increase the number by another 66 potential licensees. For our purposes, we'll use the lower number so as to avoid an over count.

Together, these membership organization counts total at least 374, which would constitute the known population. Another consideration is the unknown number of practitioners that choose not to belong to any membership organization which is addressed in the "*Those Not in Membership Organizations*" section below.

## Requirements to Become a Soil Scientist

Washington State currently has no set requirements to be a soil scientist. However, many practitioners belong to one or more professional societies which do have membership criteria. These organizational affiliations provide added assurance to prospective employers that the soil scientist has completed an educational curriculum as well as been tested and passed the criteria of the membership organization which also requires a length of experience in field work. While this is useful to prospective employers and practitioners alike, it provides less assurance to consumers or the public in general when problems from errant work occur and no formal means of recourse is available. The membership organizations have some degree of influence over their members and can take disciplinary action up to de-certification, but they have little to no influence in arranging remedial actions for harmed consumers.

The applicant group for soil scientists references the membership qualification criteria for the Soil Science Society of America (SSSA) as a model for determining entry level competence for state certification of soil scientists. The SSSA is a nationally recognized organization that has developed and maintained a highly regarded, professional certification program.

The SSSA exam is offered in two levels, based on experience and training. The first level, Associate Professional Soil Scientist (AAPSS), is primarily for those just

graduating from college. The second level, Certified Professional Soil Scientist (CPSS), requires a second test and a minimum of 5 years field experience.

The qualifications criteria for SSSA membership are:

- Education: A minimum of a Bachelors degree in soil science or a closely allied field of science, meeting the core requirements defined in the application.
- Work Experience: No work experience required for Associate level. For Certified Professional levels, a minimum of 5 years work experience in the field for those holding a Bachelors degree is required. Those holding a PhD or Masters degree are required to have 3 years field experience. All experience must be acquired after the Bachelors degree was received.
- Examinations: Two comprehensive exams are required for membership entry: *The Fundamentals of Soil Science* and *Professional Practice*. The exams are not scored on a curve and are changed regularly. The questions are developed by the Council of Soil Science Examiners (CSSE), which is a panel of about 30 soil scientists from across the nation. The Associate level must pass only the Fundamentals test. Certified Professional level must also pass the Professional Practice exam.
- Cost: Each exam costs \$125 per attempt and they are offered twice yearly.
- Ethics: A code of ethics is maintained and applicants must subscribe to its standards.

## Requirements to Become a Wetland Scientist

Washington State currently has no set requirements to be a wetland scientist. Much like the soil scientists, the wetlands profession also has membership organizations to which many practitioners belong. The Society of Wetlands Scientists (SWS) is the national organization which has chapters branching out nationally in regions as well as chapters in Canada, Australia, Asia, Europe, and South America. They also have an International chapter comprised of 450 members from 62 countries not within the other chapters. Washington belongs to the Pacific Northwest Chapter of the Society of Wetland Scientists (PNSWS) along with Oregon and Idaho.

The SWS has developed a widely accepted certification process for its members. The SWS reports that there are not currently any other certification programs for wetland scientists nationally. The organization has, as in the soil scientist's case, some degree of authority over the wetland scientists regarding entry level competency, ethics, standards of practice and the continuation of certification status based on standards of practice, but lacks any real ability to provide relief to harmed consumers or the public.

The wetlands applicant group has referenced the SWS membership standards as a model for certification in Washington State. The SWS certification program provides entrance criteria for two levels of membership, based on education and experience. The Wetland Professional in Training (WPIT) level is designed primarily for those who have finished their educational requirements, but lack the experience needed to apply for the fully credentialed level, the Professional Wetland Scientist (PWS).

The qualifications criteria for SWS membership are:

- Education: Minimum of a Bachelors degree with course distribution of 15 semester hours each in biological and physical sciences and 6 semester hours in quantitative areas. For the PWS level, an additional 15 semester hours in wetland related courses is required.
- Work Experience: None required for the WPIT. To apply for a PWS level, a minimum of 5 years field experience is required that demonstrated the application of current technical knowledge dealing with wetland resources and activities. All work experience must be acquired after receiving the Bachelors degree.
- Exams: No exam required. Competency based on verified educational achievement and, for the PWS level, demonstrated/documented/verified work experience.
- Cost: The SWS has an application fee of \$100 for the WPIT level and \$200 for the PWS level, and a \$35 annual fee thereafter.
- References: Five listed references, three of which must be SWS members, must provide a statement in favor of your application and membership.
- Ethics: A code of ethics is required to be acknowledged and followed.

## Those not in Membership Organizations

There are some practitioners in Washington that are not members of an organization for either wetland or soil scientists. These individuals would practice their profession based on educational merit or experience gathered and be required to market their services without benefit of certification status by either a national or state chapter of a professional organization. As both disciplines are highly technical and require advanced education, the likelihood that a professional would forgo the benefit of certification through a professional society is low. However, it is known that some do and rely on their reputation to persuade employers to hire them in the private sector. In the public or governmental sector, practitioners may not be certified, as their scope of duties is decidedly different.

The Department of Revenue (DOR) was contacted regarding practitioners in the private sector in the hope that an NAICS code was available to identify wetland and/or soil

scientists. Upon review of the options, it was determined that most would fall into a catch-all code for “other professionals” and hence the DOR could not isolate them. In the end, although we can’t identify these unknowns, we can conservatively estimate the total population at approximately 134 soil scientists and 240 wetland scientists practicing in Washington.

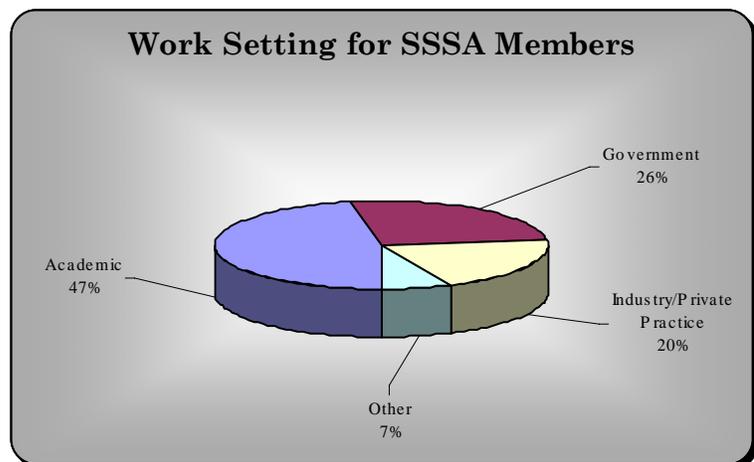
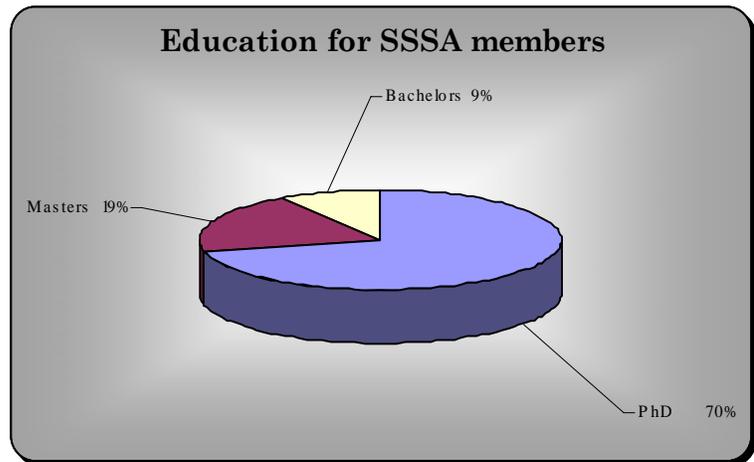
## Soil Scientist Organizations and Background Facts

### Soil Science Society of America

The Soil Science Society of America (SSSA) is the national leader in the realm of professional soil scientist membership organizations. With over 5,800 members nationally, it is the largest and most influential. The SSSA holds an annual meeting that draws an average of nearly 4,000 members in attendance. The Society was formed in 1936, as an offshoot of the American Society of Agronomists (ASA) which was founded in 1907.

In the summer of 2005, SSSA conducted a survey<sup>3</sup> of its members and gathered many important statistics regarding its membership criteria. Some of their findings are reproduced here to provide a view of what makes up the SSSA membership in terms of education, tenure, work environments, and reasons for joining SSSA.

Data was solicited over the internet from 3,291 potential SSSA members who were invited to participate and a total of 1,000 responses were received, representing 30% of the population. From these, a sample of 600 surveys was randomly chosen from which the data was derived.

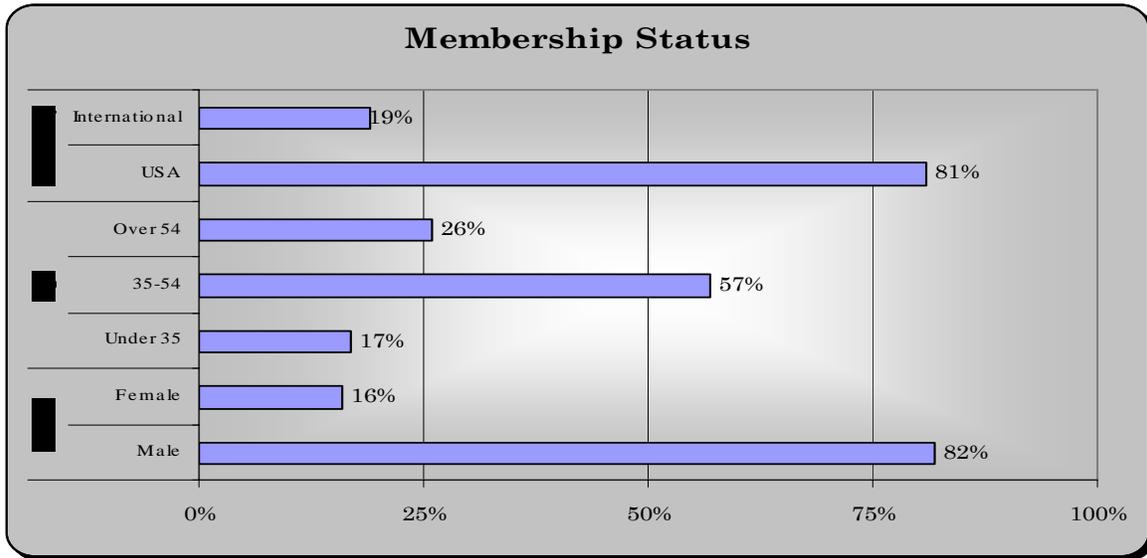


<sup>3</sup> Complete survey can be reviewed at [https://www.soils.org/pdf/SSSA\\_SurveyFindings.pdf](https://www.soils.org/pdf/SSSA_SurveyFindings.pdf)

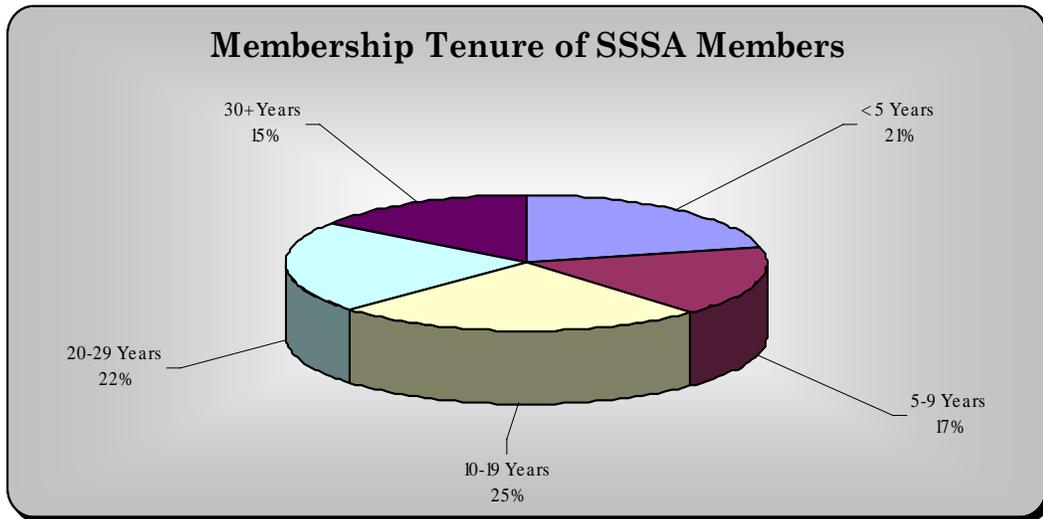
To belong to SSSA, Soil scientists must have at least a Bachelors degree to practice. The chart above indicates most have a PhD. SSSA indicated that this may be an over representation due to the members who were most likely to participate in the survey.

Regarding work location, nearly half of those that responded indicated they work in an academic environment. About a quarter indicate government employment and another quarter work in private practice or industrial employ.

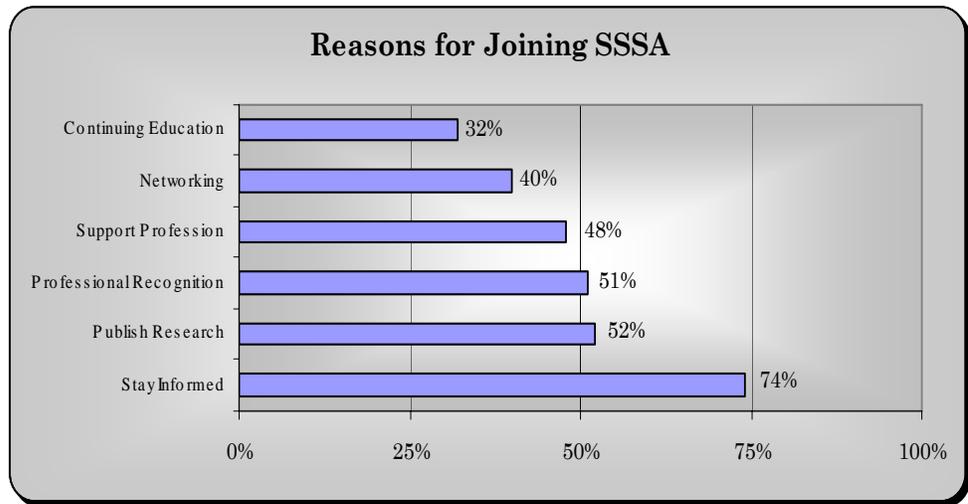
SSSA members are primarily male, with 16% indicating otherwise (2% did not respond). Memberships span the world, but over 80% are US residents. Member ages were categorized in three groups of under 35, 35-54, and over 54.



The average tenure of an SSSA member is 15 years. The distribution by age group shows that there is a good balance of long, middle, and short term members. This would indicate that the organization is successfully recruiting new members and is in a healthy position to continue in the future.



Members were asked for their reasons for joining the SSSA. Most indicated that the society afforded them an opportunity for information to help them stay informed about issues pertaining to



their profession. Over half use the certification through SSSA as a way to gain professional recognition and half use it as a vehicle to publish their research papers. Continuing education and networking, with 32% and 40% responding, were also important reasons for membership.

The SSSA requires that applicants pass both a fundamentals exam as well as a professional practices exam, have 5 years experience (3 with an MS or PhD), provide professional references and adhere to a code of ethics.

#### The National Society of Consulting Soil Scientists

The National Society of Consulting Soil Scientists (NSCSS) is another national organization with membership limited to private sector companies owned by soil scientists, with 189 member companies as of August 2007. They meet annually in the late winter when the profession is slowest and exchange experiences and insights. Business skills workshops, job referrals, and a group liability insurance option are a few of the benefits. The NSCSS maintains a professional registration program and a Code of Ethics. Their membership criteria mirrors the SSSA.

#### The United States Consortium of Soil Science Associations

The United States Consortium of Soil Science Associations (USCSSA) is a framework established to promote national communication and coordination between soil science societies and associations. There are currently 48 individual state soil science societies and/or associations. The goal of the USCSSA is for all soil science societies/associations to share information and work together in promoting common goals, objectives, and activities.

A listing of the organizations participating in the USCSSA effort provides a good example of the depth of the soil science profession and its organizational support across the nation:

Professional Soil Classifiers Association of Alabama State Board of Registration for Professional Soil Classifiers - Alabama Alaska/Yukon Society of Professional Soil Scientists Soil Science Society of America Arkansas Association of Professional Soil Classifiers Arkansas State Board for Registration of Professional Soil Classifiers Professional Soil Scientists Association of California Florida Association of Environmental Soil Scientists Soil Science Society of Georgia Idaho Soil Scientists Association Illinois Soil Classifiers Association Indiana Association of Professional Soil Classifiers Indiana Registry of Soil Scientists Board Professional Soil Classifiers of Iowa Kansas Association of Professional Soil Classifiers Kentucky Association of Soil Classifiers Maine Association of Professional Soil Scientists Mid-Atlantic Association of Professional Soil Scientists (DE, MD, DC) Soil Classifiers Association of Michigan Minnesota Association of Professional Soil Scientists Professional Soil Classifiers Association of Mississippi Missouri Association of Professional Soil Scientists National Society of Consulting Soil Scientists Nebraska Society of Professional Soil Scientists	New Hampshire Association of Natural Resource Scientists Society of Soil Scientists of Northern New England (ME, VT, NH) New Jersey Association of Professional Soil Scientists New Mexico Association of Professional Soil Scientists Empire State (New York) Pedologists Soil Science Society of North Carolina North Carolina Board for Licensing Soil Scientists Professional Soil Classifiers Association of North Dakota Association of Ohio Pedologists Professional Soil Scientists Association of Oklahoma Oregon Society of Soil Scientists Pennsylvania Association of Professional Soil Scientists Soil Science Society of South Carolina South Carolina Land Resources Commission Professional Soil Scientists Association of South Dakota Society of Soil Scientists of Southern New England (CT, MA, RI) Soil Scientists Association of Tennessee Professional Soil Scientists Association of Texas Utah Society of Soil Scientists Virginia Association of Professional Soil Scientists Washington Society of Professional Soil Scientists West Virginia Association of Professional Soil Scientists Wisconsin Society of Professional Soil Scientists Association of Women Soil Scientists
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### What's so important about soil science?

While the value of soil, relative to wetlands, has been better understood for a longer period of time, many still have difficulties comprehending the value of this thin layer of life from which all other life on earth depends. Consider the campaigns of the forestry industry on the value of “renewable resources” in reference to re-planting harvested forests. While this is certainly a step in the right direction, much of the public believes that as long as we replace the harvested trees with new saplings, all will be well and the forest will be sustained forever. Unaccounted for in this scenario is the depletion of the soil from which the forest survives, for a harvested forest is not allowed to naturally recycle itself and does not as efficiently replenish its soil with the nutrients needed to sustain it. Thus, the renewable resource will be so only as long as the life beneath it remains viable.

Not to be confused with the mineral components associated more with geology and engineering, soil is a living, breathing myriad of organisms that feed all the forms of life we know, either directly or indirectly, which, in turn, will be returned to the soil upon their deaths to become nourishment for others. Thus, when answering the question of soil's importance to the environment and society, the only responsible answer is that it is not *important*; it is *critical*.

# Wetland Scientist Organizations and Background Facts

## Society of Wetland Scientists

The Society of Wetland Scientists (SWS) is the premier national and international organization for wetland practitioners. They claim an approximate total membership of 3,500 with chapters throughout the nation. The SWS was formed in 1980 by a biologist with the US Army Corps of Engineers. Since then, they have provided a forum for scientists and managers to meet and work together. By 2005, the Society's membership was fairly evenly divided among government employees, academic scientists, and private consultants. A Code of Ethics, Strategic Plan and a set of by-laws and rules are available for review at the national website. Washington belongs to the Pacific Northwest Chapter (PNSWS), which comprises approximately 450 wetland scientists in the tri-state region and about 240 in Washington State.

Certification by the SWS as a Wetland Professional in Training (WPIT) is considered a preliminary step for persons who have completed the educational requirements but do not meet the experience requirements. Professional Wetland Scientist (PWS) certification is awarded to those meeting both educational and experience requirements. Although certification is not a requirement to practice wetland science in Washington, The PNSWS explains its value to Washington wetland scientists as such:

- “Certification is not required by any agency and has no official or legal standing. Certification signifies that your academic and work experience meet the standards expected of a practicing wetland professional and provides acknowledgment to your peers of your adherence to the professional ethics of the Society of Wetland Scientists Professional Certification Program. Certification will aid in acceptance by other disciplines, especially in multi-disciplinary work environments.”

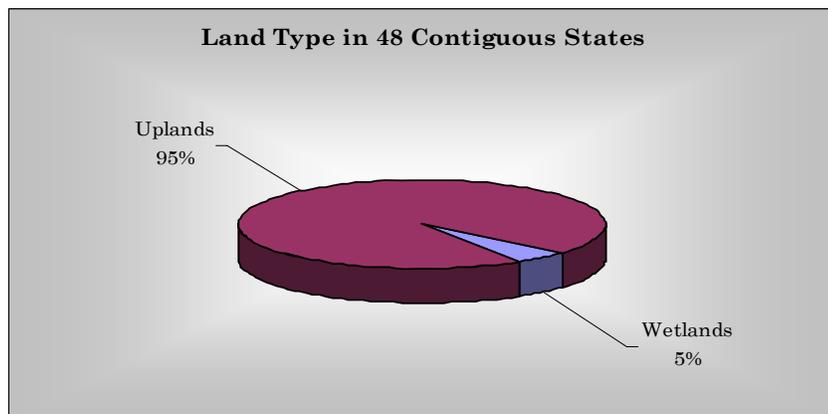
The SWS indicates that they maintain the only complete wetland certification program in the nation, noting that the US Army Corps of Engineers developed a certification pilot program specific to wetland delineation.

The SWS is a relatively new organization compared to their soil science counterpart, the SSSA. Founded in 1980, the SWS is now 27 years old at the time of this writing. Clearly wetlands science is an emerging and important aspect of our environmental and social responsibility. Facts that may be helpful in defining the importance of these two professions are outlined in the next section.

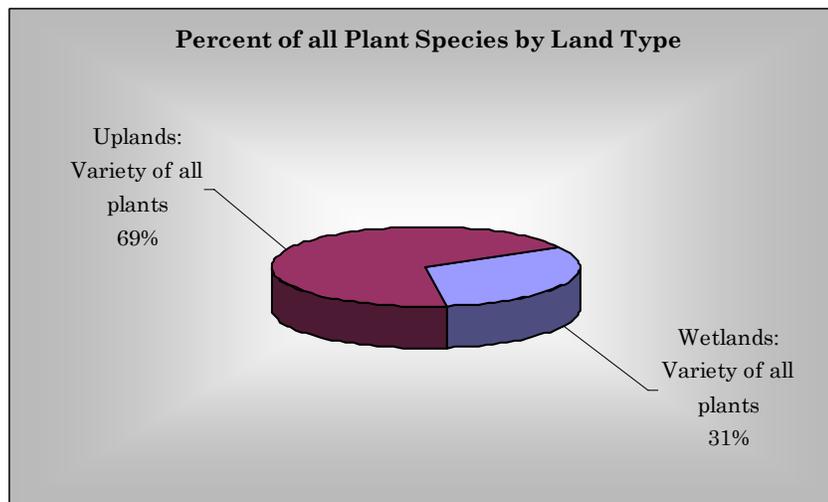
Wetlands science has recently become an important element in the management of our environment. Previous beliefs about wetlands being a nuisance and an obstacle to development resulted in significant losses. More than 220 million acres of wetlands are thought to have existed in the lower 48 states in the 1600s. Since then extensive losses have occurred, and more than half of our original wetlands have been drained and converted to other uses. The mid-1950s to the mid-1970s were a time of major national

wetland loss. Since then the rate of loss has slowed. Presently, it's estimated that the US has approximately 107.7 million acres of remaining wetlands.<sup>4</sup>

Wetlands make up a small percentage of the overall land mass, representing about 5% of the 48 contiguous states. Of those 5% which are wetlands, 95% of are freshwater.



While wetlands represent only 5% of the land, the plant diversity of life found there is remarkable. Over 30% of all plant species are found in wetlands.<sup>5</sup>



Until the very recent years, wetland losses were substantial. According to the T.E. Dahl report of 2006, between the 1780's and mid-1980's a total of 22 states lost more than 50% of their wetlands (listed below). Washington, a relatively new region in the US, has to date lost 31% of its known wetlands according to the Association of Wetland Managers<sup>6</sup>. The time is right to address the importance of appropriate qualifications of wetlands delineators and ensure we have in place the best available policies to properly identify and manage our resources.

<sup>4</sup> Dahl, T.E. 2006. Status and trends of wetlands in the conterminous United States 1998 to 2004. U.S. Department of the Interior; Fish and Wildlife Service, Washington, D.C. 112 pp

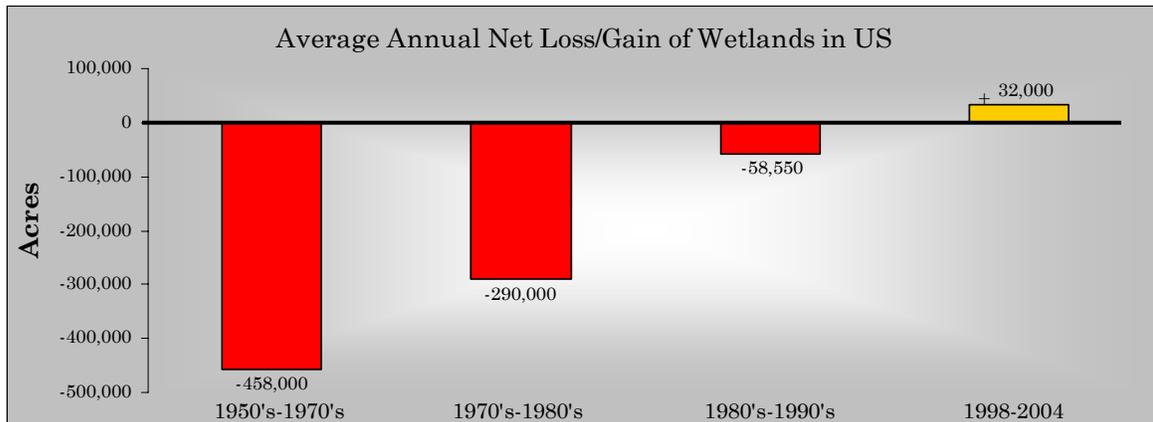
<sup>5</sup> United States Environmental Protection Agency <http://www.epa.gov/owow/wetlands/pdf/threats.pdf>

<sup>6</sup> Association of State Wetlands Managers. <http://aswm.org>

The states that have lost at least 50% of their wetlands are:

Alabama 50%	Idaho 56%	Mississippi 59%
Arkansas 72%	Illinois 85%	Missouri 87%
California 91%	Indiana 87%	New York 60%
Colorado 50%	Iowa 89%	Ohio 90%
Connecticut 74%	Kentucky 81%	Oklahoma 67%
Nevada 52%	Maryland 73%	Pennsylvania 56%
Delaware 54%	Michigan 50%	Tennessee 59%
		Texas 52%

Not all the news regarding wetlands is bad. The most recent data indicates that the nation has recognized the importance of wetlands and has taken steps to improve in our maintenance and restoration of them. Much of this has been due to an increase in understanding the value of wetlands and subsequent legislation from the state and federal levels designed to protect it. Up until about 1998, we nationally lost wetlands annually. The chart below provides a look at how our nation's efforts have changed the trend.<sup>7</sup>



As the chart indicates, for the first time in our recorded history, the US has a net annual gain of wetlands which amounts to the beginning of a successful restoration effort of this important resource. It is astounding to consider that just 40 years ago, we were losing over a half million acres of wetland a year while today we are seeing a net annual gain. While the restoration of 32,000 net acres of wetland per year is an astounding turn around for the US, it is important to keep in mind that an estimated 100+ million acres have been lost. To put this in perspective, if the US continued to recover 32,000 acres of wetland per year, it would require over 14 years to recover one (1) year's loss from the 1970's.

<sup>7</sup> Dahl, T.E. 2006. Status and trends of wetlands in the conterminous United States 1998 to 2004. U.S. Department of the Interior; Fish and Wildlife Service, Washington, D.C. 112 pp

## What's so important about wetlands?

As the chart above might suggest, our concern about the importance of wetlands has changed dramatically over several decades. Where a wetland was once considered a mosquito infested soggy plot of land that was unsuitable for farming, development, recreation, or any other human oriented activity, the value of wetlands was not clearly understood until much of it was converted to upland status. This was done by filling or draining the land, mostly for the benefit of human expansion. A detailed explanation of the benefits of wetlands is provided below.

## Importance of Wetlands<sup>8</sup>

Wetlands perform an array of ecological functions that we have only recently begun to appreciate. A century ago the president of the American Health Association promoted the idea of a national campaign to eliminate wetlands. Today scientists recognize the environmental benefits that wetlands provide, and they are now alerting us to the importance of preserving rather than eliminating our wetland resources. Wetlands perform vital ecological functions that were barely recognized a few short years ago.

Even now our understanding of the complexities of wetland ecosystems is still developing, and it seems the more that is learned, the more valuable wetlands become. Wetland ecologists have already documented the following environmental benefits of wetlands: water purification, flood protection, shoreline stabilization, groundwater recharge, and stream flow maintenance. Wetlands also provide habitat for fish and wildlife species, including endangered species.

## Water Purification

Wetlands protect water quality by trapping sediments and retaining excess nutrients and other pollutants such as heavy metals. These functions are especially important when a wetland is connected to groundwater or surface water sources (such as rivers and lakes) that are in turn used by humans for drinking, swimming, fishing, or other activities.

## Flood Protection

Almost any wetland can provide some measure of flood protection by holding the excess runoff after a storm, and then releasing it slowly. The size, shape, location, and soil type of a wetland determine its capacity to reduce local and downstream flooding. While wetlands cannot prevent flooding, they do lower flood peaks by temporarily holding water and by slowing the water's velocity. Wetland soil acts as a sponge, holding much more water than other soil types.

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<sup>8</sup> Joy P. Michaud. At Home with Wetlands: A Landowner's Guide. Washington State Department of Ecology, Ecology Publication #90-31 At Home with Wetlands (five benefits of wetlands cited)

### Shoreline Stabilization

Wetlands that occur along the shoreline of lakes or along the banks of rivers and streams help protect the shoreline soils from the erosive forces of waves and currents. The wetland plants act as a buffer zone by dissipating the water's energy and providing stability by binding the soils with their extensive root systems.

### Groundwater Recharge and Stream flow Maintenance

Aquifers and groundwater are "recharged," that is, replenished with water by precipitation that seeps into the ground and by surface waters. Those wetlands that are connected to groundwater systems or aquifers are important areas for groundwater exchange. They retain water and so provide time for infiltration to occur.

### Fish and Wildlife Habitat

Many species of birds, fish, mammals, reptiles, and amphibians rely on wetland habitat for breeding, foraging, and cover. The special wetland conditions provide unique habitat for species that cannot survive elsewhere. Migratory birds depend on wetlands, and many endangered and threatened animal species require wetlands during part of their life cycle. The high rate of wetlands loss has contributed to their demise.

### Economic Benefits

The economic benefits associated with these environmental values of wetlands also can be substantial. If, for example, a community had to build flood control or water treatment systems to replace those functions provided by wetlands, the costs could far outweigh the land purchase price of preserving the natural wetland systems.

## Related Professions

During the public hearings as well as through written comments, several related professions have voiced opinions regarding possible legislation for soil and wetland scientist regulation.

In previous legislative action, opposition to soil scientist regulation was heard from related professions who seemed focused on concerns regarding the limitation of practices common to their profession through the licensure of soil scientists. With the current effort, the applicant groups from both soil and wetland scientists have proposed a title act in the effort to mitigate the concerns regarding limitation of practices. An excerpt from the soil scientist website demonstrates their position:

“Hydro-geologists, geologists, engineers, architects, septic system designers, professional wetland scientists, or crop specialists will not have to get a soil scientist license. All state-licensed professionals are exempt from our licensing program. In addition, we exempt many unlicensed professionals that typically apply some aspects of soil science in their

day to day work. We recognize that there are other professionals that use concepts of soil science in their work. We state that and explicitly and implicitly exempt those professionals in the proposed regulation. We are not trying to regulate other professions that we respect and work with daily. We are trying to ensure that the *soil scientists* who work in this state are held to a high standard; we are not trying to carve out a separate set of practices that only we can carry out.”

While there is still opposition to regulation by some of the aforementioned professions, the reasons cited are varied. Rather than practices concerns, there is emphasis on the lack of a perceived need for licensure, a perception that the requested certification status would be ineffective, and a concern that the applicant groups are using the process to “enhance their professional status”. It is perhaps noteworthy that most of those that oppose licensure of soil and wetland scientists are currently licensed in their own profession. Examples of these concerns are found in the Comments from Practitioners, Organizations, and Citizens section.

Many of these related professions perform similar functions as performed by soil and wetland scientists in the realm of their everyday duties. However, they are also generally different in the sense that they are looking at the land in reference to a load bearing capacity, where the applicant groups are most often defining the composition of the land from a natural or environmental stance. Simply put, one looks at what the land can handle, while the other defines its composition and function. Both schools of thought are important and compliment each other, but distinct differences exist.

## Consumer/Public Related Issues

When an industry is not regulated, there normally is not a central location which maintains records of complaints or corrective measures taken. Such is the case with the soil and wetland professions. Knowing this, efforts were made to seek out consumer or public concerns through other channels.

### Attorney General’s Office

The Washington State Attorney Generals Office, Consumer Protection Division (AG) was contacted and asked if they had any consumer complaint data relative to soil or wetland scientists. Following an electronic review of their database, several instances were identified which are summarized below. It is noteworthy that the AG’s office has no authority to enforce a resolution, but will contact the parties to ask that they resolve the issue. Barring an agreement, the matter would require an action in the courts.

- In September 2007, a consumer in Clallam County complained that they were entitled to a refund from a soil scientist who they’d contracted for a perc test and septic system design. The consumer cancelled the contract and felt the contractor owed them the balance for work not yet completed. As the claimed balance due is approximately \$300, the matter is unlikely to be pursued.

- In May 2006, a land owner contracted a wetlands biologist to determine the wetlands status on their property. The land owner wished to build a home in Mason County. A \$500 initial down payment was made and the wetlands biologist determined that the property had abundant saturated soils and runoff from natural seeps. The biologist informed the land owner that development of the property for residential use would require a costly variance procedure from the Mason County Critical Area regulations. The land owner identified another wetland consultant who had offered to obtain a permit for their home at a much higher fee who had “fixed” a neighboring property which was “worse than” the land owners property in regards to wetlands. The original biologist disagreed with the other biologist’s position and determined he would refund the remaining money from the \$500 deposit. The land owner presumably used the report of the second biologist and sought return of his entire \$500 deposit from the first. Clearly the consumer in this case sought an answer that would allow him to build rather than an objective report on the condition of his land.
- In January 2004, a soil scientist was contacted and asked if he could determine where a septic system should be located on land owned by a consumer in Burlington Washington. The scientist indicated that he could do the work promptly, as it was slow during winter. He requested \$1,000 of the \$1,800 fee up front so he could “fix a broken down vehicle” and said he would bring a contract over on his next visit. The contract was never produced. After several unanswered calls, in late February the work had not been done. A complaint was filed and the scientist contacted. In mid-March, only after notification by the AG’s office, the work was completed. The land owner was held up for three months while the soil scientist failed to do work he promised could be done right away.
- In June 2005, a telephone call was placed to a soils specialty company in Sequim Washington about septic design questions on undeveloped property in Sequim owned by a school teacher in Seattle. She (land owner) advised them that she needed to have a well put in, locate a proper septic site, and planned to have a home moved on the property. She was under the assumption that the inquiry was preliminary to any work, as no contract was discussed, nor any paperwork signed. The business contacted the Clallam County Environmental Health office and designed a plan for a septic system. They then billed the land owner \$934 for the design. When the payment was not made, they sent it to collections. The owner of the business and the land owner never spoke, although she attempted to call a number of times and he was never in. The land owner filed a complaint with the AG’s office in February 2006 and the matter remains unresolved.
- In June 2007, property owners living in Union Washington filed a complaint against a soils company in Sequim (same as above) regarding their rental property in Port Townsend. The renters had cut overflow alarm wires on the septic system to silence it and the neighbors filed a complaint with the local Health Department when sewage spilled onto their property. The land owners learned of this and hired the soils company to assess the problem and develop a solution. They paid the firm \$600. The company claims they completed the work, but failed to supply the report. The contractor hired would not proceed without approval from the Health Department, and the Health Department wouldn’t approve without the

report. It was never produced. The land owners, unable to navigate this problem from their home in Union decided to sell the property “as is” and absorbed the loss.

- Perhaps one of the most compelling examples of a failure in mitigating disputes among practitioners, the public and governmental authorities began in 1998 and continues to be a concern today. Two wetlands consultants, partners in their firm, were on a site in Kirkland with a Department of Ecology (DOE) supervisor, a Kirkland Planning Department official, the potential land buyer, an attorney and a third party soil scientist hired by the buyer. The wetlands consultants had dug holes with a backhoe and were present with the aforementioned to determine wetlands status, as the land had many telltale signs in its vegetation. The wetlands consultants, angered by the positive wetland determinations made, became aggressive to the DOE supervisor, shouting in his face in an attempt to intimidate him. A complaint was filed with the American Registry of Certified Professionals in Agronomy, Crops, and Soils (ARCPACS). The DOE also notified the wetlands consultants of its intent to pursue a complaint. The language in the DOE letter to the consultants outlines the fact that their behavior was seen as intimidation of a state employee and could result in criminal prosecution. An investigation by the ARCPACS ethics board was undertaken which resulted in no determination by the ethics board. Clearly the efforts to control these behaviors by the membership association were ineffective.
- Another incident with the same wetland consultants occurred in Camas Washington in 1998. A field inspection took place with representatives from the Environmental Protection Agency (EPA), the land owners and their legal representatives, and an Army Corps of Engineers (Corps) representative. The wetlands consultants again became confrontational to the EPA and Corps representatives, challenging them openly in front of the land owners and their legal representative. As the wetland determination was contrary to the consultants view, they became verbally confrontational to the point that the EPA employee advised the attorney present that his clients would be removed from the field site by EPA criminal investigators if they continued. The Corps employee stated in her summary that she felt threatened as a federal employee and strongly recommended that all Corps employees take precautions when dealing with these two well-known consultants.
- The two wetlands consultants noted above filed suit against the State of Washington alleging harm to business reputation and loss of business (Cause # 98-2-20219-0SEA), claiming that the DOE supervisor they threatened had defamed them in a telephone conversation with a client of theirs. The suit resulted in a voluntary dismissal in April 1999 when the defendants served their interrogatories. The AAG stated that he “strongly suspected they did not want to disclose the information requested out of a fear that it might damage their reputation further or lead to other problems for them”.
- The DOE advised the two consultants that DOE staff were directed not to conduct business with either of them until they could provide assurance that they would not assault, intimidate, threaten or otherwise harm them.

- No action by the ethic boards of the membership associations to which these consultants belong occurred.

### Applicant Reports

Two large scale problems of an environmental nature and another pertaining to the lack of consumer recourse are noted in the soil scientist applicant report. They are reproduced below as evidence of public harm.

- A problem as a result of poor soil science resulted in 20 different documented failures in areas ranging from Ellensburg to Richland to Yakima that affected groundwater on 9 sites, surface water (Yakima and Columbia River) on 3 sites, individual households on 8 sites with various levels of settlements described as follows:
  - simply improving the treatment process;
  - \$12,000 settlement;
  - provision of safe dialysis water;
  - criminal investigation, water treatment and fines;
  - soil treatment;
  - trucking of wastewater;
  - closure of sprayfield;
  - closure of a facility and almost \$1,000,000.00 defense costs;
  - According to Kim Sherwood, P.E. (Ecology), many of these failures are still in cleanup mode after more than ten years of treatment. As a result of those problems and their eventual solution, which involved appropriate application of soil chemistry, soil biochemistry and soil physics, Ecology has a written policy *recommending* use of a professional soil scientist to develop sprayfield application prescriptions.
- Another large scale problem was a result of a Cowlitz County employee, a soil scientist, whose job was to evaluate soils for onsite septic system design. His assessments apparently ignored standards such as required separation to seasonal groundwater and resulted in many inadequately designed systems being installed. As a result, according to a consultant working with the county, over 200 failing systems had been identified as of the previous Sunrise Review report, and more were anticipated to come. The claims value of those failed systems at the time of the original Sunrise Review report was estimated at \$3,000,000.00. Recently updated information from Cowlitz County indicates that \$457,315.38 has been paid out to date.
- The third problem described in the previous Sunrise Review report involved events that occurred during an onsite meeting between staff from the State Department of Ecology (Ecology), Environmental Protection Agency (EPA), Corps of Engineers and a soil scientist wetlands consultant that resulted in a complaint (to the Soil Science Society of America [SSSA] Ethics Board) claiming that the consultant had behaved unprofessionally for a Soil Scientist. The Ethics

Board had no formal response to the complaint, other than saying that the information provided was inconclusive. As a result, Department of Ecology prepared a memorandum for their employees recommending and requiring certain precautions when working around this soil scientist and describing protective ground rules for data collection in the presence of this scientist. Therefore, Ecology was forced to develop protective policies for their employees in regard to one individual soil scientist rather than having the ability to effectively complain about that person's actions to an effective professional board.

### Other Testimony

“Clearly the loss of wetlands that provide water quality and hydrologic support functions have the potential to adversely affect human and environmental health, safety, and welfare. We need only look at current and ongoing funding efforts to restore Puget Sound. Part of the problem with the cultural eutrophication of Puget Sound is related to the loss of wetlands and increased nutrient loading directly related to the loss of wetlands that provided nutrient removal functions. With increasing eutrophication can also come increased populations of disease organisms, which can clearly translate to additional cases of various waterborne diseases. Similarly compelling arguments can be made in relation to losses of wetlands that provide flood control and attenuation functions. Again, part of the reason we are trying to recover so many species of federally-listed salmon is directly related to habitat modifications resulting in part from loss of wetlands.”

*Scott Luchessa, Certified Ecologist, Ecological Society of America*

“Inaccurate representations of wetland type, size, and protection requirements by wetland scientists and other unqualified persons representing themselves as wetland scientists leads to reductions in wetland functions (e.g. water storage, water quality protection, fish and wildlife habitat) and can lead to improper siting of on-site waste disposal systems, and residential and commercial development, that can have negative effects on public health, safety and welfare.”

*David S. Parks, Geologist/Wetland Scientist*

“The major concerns that triggered Oregon's SB544 centered on significant project delays and cost overruns attributable to incorrect or incomplete consultant work that does not meet state requirements.”

*Janet Morlan, Oregon State Wetlands Manager*

“One of my clients received an on-site wetland inspection from the county staff, who gave an upland determination over most of the 5-acre commercial property. He told me he then spent \$60,000 on engineering based on that determination. When he applied for a building permit, the same county department told him that he had wetland and couldn't build there. He hired me and I confirmed the existence of wetlands and informed him that his engineered site plan would require substantial changes. He lost the money on the engineering and on the purchase of the property.”

*Joseph Leyda, Wetland Scientist*

“In making these decisions, I must rely on wetland delineations and mitigation plans prepared by a “professional wetland consultant”. Unfortunately, in contrast with engineers and a host of other professions, I do not know what a “professional wetland consultant” is. I have seen delineations and mitigation plans submitted by Professional Wetland Scientists with doctorates in biology, and I have received the same thing from someone with a brand new Bachelor’s Degree in biology and no experience whatsoever. In the latter circumstance, I am usually obliged to accept the material and then arrange for third party review of that work by another trusted professional to determine if it is indeed adequate.”

*Thomas Black, Planning and Building Director for the City of Ferndale*

“A septic design was accepted for a house on Swayne Rd north of our home that put the drain field on a very steep unstable slope that slopes so the run-off goes directly into Henderson Inlet. After the drain field was put in we received heavy rain and much of the rock for the drainfield lines washed down slope and was deposited on the beach! Thus, you know where the waste water goes from this septic system. We are asked to pay higher taxes to clean up Henderson Inlet yet the County allows poorly planned development such as this to occur.”

*Tom Terry, Forest Soils, PhD*

“Thurston County’s Health Department is charged with determinations of soil suitability for septic systems. However, Thurston County does not have a certified soil scientist on its staff. The Board of Health has approved an ill conceived cluster of septic tanks in a soil that is probably too wet and too disturbed to properly receive and transport effluent. Additionally, this wet area is adjacent to a ditch which feeds into a creek that empties on to shellfish beds in Henderson Inlet.”

*Pricilla Terry, Citizen, Thurston County*

“One example of this was at the Teledyne Wah Chang CERCLA site in Albany, Oregon. Apparently there was a large plume of PCB’s that was mysteriously spreading across the site. The very first borehole I “logged” within a asphalt parking lot revealed a “gleyed” soil near the surface. To most geologists/engineers, this doesn’t mean much, however, to a soil scientist, a gleyed soil indicates extended periods of water saturation likely due to a seasonally high water table. Thus the mystery was solved on how PCB’s were transported across the site via a flowing seasonal high water-table.”

*Ken Leary, Professional Soil Scientist, Hydrogeologist/Hydrologist, Hanford*

“At the present time, the current unregulated fields of Soils and Wetland Science are not providing consistent services to the consumer for two primary reasons: (1) Practitioners in the field that either do not have the proper educational background and/or experience for the respective field in which they are practicing; (2) Incompetent or unethical practitioners that are providing inferior and/or incomplete products to the consumer.”

*Ken Leary, Professional Soil Scientist, Hydrogeologist/Hydrologist, Hanford*

## Regulation in Other States

### Soil Scientists

A review of the nation's regulated states indicates that 15 states have some form of regulation for the soils industry, be it licensure, registration or certification, for both soil scientists and soil classifiers. The definitions for scientists vs. classifiers overlap considerably and when compared among the states are nearly synonymous. One state has developed a specialized version of soil scientist which they call a geoscientist. Additionally, 2 states license soil evaluators and one requires soil scientist recognition in order to do wetlands work. A cross-reference grid is available below for detailed comparison purposes. For the purposes of comparison, we'll discuss the 15 states with a form of regulation for soil scientist or soil classifiers, noting that three other states listed separately have some standards of lesser significance (see footnoted comments).

- Of the 15 regulated states, all require a minimum of a Bachelors degree for entry into the program.
- Eight regulate by licensing, 5 have a registration system and 2 have a certification program.
- Seven states have a two-stage process where the practitioner starts out at an in-training level and progresses to the professional level after completing an experience requirement.
- Twelve require two tests, often the first being a fundamentals level and the second being a practical applications level and some have a field exam component.
- Reciprocity is granted in 12 states when equal qualification standards have been previously recognized in another state.
- Only 3 states specifically referenced continuing education as a requirement.
- Required field experience is a mandate in all states for the second, or professional, level where the in-training levels usually don't require any.
- The experience required varies from 1 to 6 years with an average among the 15 states of just over 3 years.
- Seven states have a posted code of ethics and/or standards of practice
- Thirteen states have some number of professional references required.
- The number of practitioners by state varies from 14 in Mississippi to 233 in North Carolina, with a statewide average of 77.

	Licensure	Registration	Certification	Education Bachelors degree	In-Training Option	One Exam (Fundamentals)	Second Exam (Practices)	Reciprocity	Continuing Education	Experience (years)	Code of Ethics	Standards of Practice	References Required	Approximate Number Practitioners
<b>States with regulation programs for soil scientists and soil classifiers</b>														
<b>Alabama</b> Soil Classifiers		✓		✓		✓	✓	✓		2	✓	✓	✓	67
<b>Arkansas</b> Soil Classifiers		✓		✓	✓	✓	✓	✓		2		✓	✓	59
<b>Delaware</b> Soil Scientists	✓			✓		✓	✓			6			✓	20
<b>Georgia</b> Soil Scientists	✓			✓	✓	✓		✓		4			✓	47
<b>Indiana</b> Soil Scientists		✓		✓	✓	✓	✓	✓	✓	3	✓		✓	45
<b>Maine</b> Soil Scientists	✓			✓		✓	✓	✓		3	✓		✓	74
<b>Minnesota</b> Soil Scientists	✓			✓		✓	✓			5			✓	98
<b>Mississippi</b> Soil Classifiers	✓			✓		✓		✓		1			✓	14
<b>New Hampshire</b> Soil Scientists			✓	✓	✓	✓	✓	✓	✓	1		✓	✓	38
<b>North Carolina</b> Soil Scientists	✓			✓	✓	✓		✓		3			✓	223
<b>North Dakota</b> Soil Classifiers		✓		✓	✓	✓	✓			4			✓	30
<b>South Carolina</b> Soil Classifiers		✓		✓	✓	✓	✓	✓		2	✓			35
<b>Texas</b> Geoscientists	✓			✓		✓	✓	✓	✓	5			✓	151
<b>Virginia</b> Soil Scientists			✓	✓		✓	✓	✓		4		✓		136
<b>Wisconsin</b> Soil Scientists	✓			✓		✓	✓	✓		5			✓	125
<b>States without regulation as soil scientists, but have some state program</b>														
<b>Connecticut*</b> Soil Scientists			✓	✓	✓					3	✓		✓	113
<b>Rhode Island</b> Soil Evaluators**	✓			✓	✓	✓	✓		✓	3	✓		✓	28
<b>Massachusetts</b> Soil Evaluators**	✓			✓	✓	✓	✓			3	✓		✓	52
<p>* In order to do wetlands delineation in Connecticut, one must be recognized as a soil scientist by the Society of Soil Scientists of Southern New England (SSSSNE) registry to determine qualification standards.</p> <p>** Soil Evaluators are licensed in Rhode Island and Massachusetts. They are not soil scientists and primarily focus on determining the suitability of proposed sites for on-site subsurface sewage disposal systems. The number of practitioners represents soil scientists residing in these states who belong to SSSSNE</p>														



The Corps program did not advance to the national level and stopped issuing professional certificates in the late 1990's. Partly because the Corps program did not progress beyond the pilot phase and in response to a growing need for correct wetland delineations a few state wetland agencies decided to pursue legislation to state in-state certification programs.

Virginia was the first state to certify wetland scientists. It took stakeholders ten years to establish the program, as the state already had similar programs such as soil scientists. The Virginia Association of Professional Soil Scientists had difficulty funding its certification program. It merged with the new certification program for wetland delineators and the two groups combined the boards and income. The Virginia Association of Wetland Professionals indicates that the program is a success.

New Hampshire modeled its certification program for wetland scientists after the existing Certified Soil Scientist program, which is administered by the state's Joint Board of Licensing and Certification. There was a one year grandfathering period, during which the state acknowledged approximately 200 people as Certified Wetland Scientists.

In Minnesota, builders and developers called for a certification program to improve the quality of wetland delineations for permitting purposes in 2001. A study was conducted by the Board of Water and Soil Resources in partnership with Minnesota Association of Professional Soil Scientists. And the Minnesota Wetland Professionals Association. Funding has not been provided for the program by the state, rather, the University of Minnesota funds the program from course fees for training, one of the requirements of the program. No wetland delineators were grandfathered in and they report no complaints were received.

Wisconsin's Wetland Delineation Professional Assurance Initiative is a pilot program of the state's Department of Natural Resources. The state wetland agency began to pilot this program in 2006 with the goal of enhancing wetland protection as well as the certainty of wetland boundaries for project planning and to save time in state review of those boundaries. By using the term, "assurance" instead of "certification," the Wisconsin DNR hopes to work through any issues during the pilot phase prior to pursuing a legislative process for a formal certification program.

	Licensure	Assurance	Certification	Education Bachelors	In-Training Option	One Exam (Fundamental )	Second Exam (Practices)	Reciprocity	Continuing Education	Experience (years)	Code of Ethics	Standards of Practice	References Required	Approximate Number Practitioners
Minnesota			✓	✓	✓	✓			✓	3	✓		✓	184
New Hampshire			✓		✓	✓	✓		✓	3	✓	✓	✓	209
Virginia			✓	✓		✓		✓		4		✓	✓	67
Wisconsin		✓		✓		*	*			5				6**

\* Wisconsin's exams are reviews of both field work and delineation reports by the board.

\*\* The Wisconsin Wetlands Association has a membership count of 66 professionals. The Wisconsin regulatory authority's DNR site lists six (6) delineators who are certified as "Professionally Assured" by the state.

## Outreach Efforts

The Department of Licensing made a strong effort to ensure stakeholders were engaged in the review process of soil and wetlands scientists. A summary of the efforts DOL made is listed below:

- Developed a list of approximately 200 soil scientists and related industries professionals and notified them of the study, upcoming hearings, and solicited input and opinion
- Worked with the Society of Wetlands Scientists (SWS) northwest chapter to notify approximately 450 practitioners of the study, upcoming hearings, and solicited input and opinion
- Solicited comments from the 15 states that actively regulate soil scientists and 4 states that regulate wetlands scientists
- Held two public hearings, one on the west side and one on the east side of the state
- Filed notification of the public hearings with the State Register
- Issued a statewide press release regarding the review and asked for input
- Developed an e-flyer for the hearings and distributed it throughout the state
- Posted the testimony from the public hearing on the DOL internet website

Resulting from these efforts, the DOL has received many written comments, telephone call, media inquiries, and other information from stakeholders both in favor and opposed to regulation. In addition to the DOL outreach, the soil scientist applicant group developed a very informative website<sup>11</sup> that provides the public with background information, meeting schedules, our hearing postings, and a wealth of additional information on the Sunrise Review of their profession.

The hearings were attended by both soil and wetland scientists representing both pro and con opinions on regulation. Also providing testimony were attorneys representing industry stakeholders as well as practitioners from related professions. Media representatives were in attendance as well. Excerpts from the hearings are included in the *Excerpts for Public Hearings* section and links to the entire texts are listed in the appendices.

Membership organizations from within the soil and wetlands professions as well as related professions were helpful in providing information, testimony and comment during our review of the respective industries. The Soil Science Society of America, Washington Onsite Sewage Association, Architects & Engineers Legislative Council, Washington Society of Professional Soil Scientists, American Council of Engineering Companies of Washington, the National Society of Consulting Soil Scientists, and the Pacific Northwest Chapter of the Society of Wetland Scientists are examples of organizations that have provided input on the subject of regulation. Copies of these documents are

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<sup>11</sup> Website can be viewed at: <http://www.soilscientistlicensing.com/>

included in the *Comments from Practitioners, Organizations and Citizens* section and the links to public hearing testimony.

## Excerpts from Public Hearings

The following are some excerpts from the four hearings held, two in Burien and two in Wenatchee. Minor grammatical changes may be included in the excerpts. The full text is available in the appendices and the testimony is reproduced verbatim.

### Soil Scientist Testimony, Burien, Washington, September 11, 2007

"When I first joined the ranks of county environmental inspectors, I was a restaurant inspector. One day my boss came in and said; 'Today you are switching to the onsite program.' My training at college did not include any soils classes or any other training in onsite issues. The training program was to have me ride around with various onsite professionals, both private and governmental, for a number of days and learn from them. The department where I was employed had no particular training program other than this on-the-job training".

*Soil Scientist testimony, Burien Hearing*

"But some of those concerns are centered around the actual description of the practice of soil science. And when we've seen these proposals in the past, they can include work in slope stability, erosion, surface-water runoff, and decisions for building site locations that clearly run into the practice of engineering and geology. And our concerns are about those scope-of practice issues".

*Attorney, Architects & Engineers Legislative Council*

"However, I have personal experience in the past working with wetland biologists who do not have such high standards. And things can get into gray areas of opinion, and personal belief structures can be misused as environmental regulation. They intrude. And I've seen it on both sides of the fence where you have people with a strong environmental slant and you have people with a strong development slant. And it's potluck on which one you're going to get, both as a hired expert that a developer pulls onboard on a project or on the agency side. And so I would be in favor, above all others, that agency employees should have some sort of licensing and regulations imposed over them. Too often I've gone for permit, and it's really potluck in a city who your regulator is, who your permitting reviewer is, as to whether you're going to have problems with a project or whether you're not".

*Professional Engineer, Burien Hearing*

"...one of the most conflicting and difficult interpretation issues rests in hydric soils interpretation, and that means the interpretation of a soil that's developed under wetland conditions. This has enormous problems when you apply this to vast areas of land that are highly valuable if they're non-wetland and almost not valuable at all if they are wetland. So there are very big arguments, inconsistencies between calls that range all the way

from something being called 100 percent wetland to something being called 100 percent not wetland. And the problem being that the range of knowledge and the range of how these sciences are applied is so wide that, even in the specialists, it's hard to get a concurrence.”

*Soil and Wetland Scientist, Burien Hearing*

“In a very clear example, where a site had 3 feet of permeable soil over hard glacial till -- for those of you that don't know, that basically is concrete. And we did the predevelopment soils assessment. (We) said “if you only have 3 feet of soil that's permeable, and you've got a seasonal water table sitting on top of the till at 3 feet. You need to remove as little of that soil as possible”. And they went in, and they graded it all flat. And some of those homes now have yards that have glacial till below 12 inches of what they call amended so the developer, who basically was given a one-page document that said, "Here is your prescription of how you're going to amend your soils, and had to do with bringing in some compost and tilling it in”. They didn't understand what they were trying to create. They didn't understand the purpose of it. They didn't understand a natural soil profile. And as a result they've got the homeowners are suing. The city is in the process of possibly suing the developer.' The developer's in the process of suing the city. Everybody's arguing over who's responsible and who's paying for it all. And homeowners, whose yards are flooding and their crawl spaces are flooding. So that's a great example of terrible application of soil science for low impact development, and low impact development is all about appropriate application of soil science”.

*Soil and Wetland Scientist, Burien Hearing*

“And it appears to the ACEC, the American Council of Engineering Companies, that what significantly prompts this is the change in the law with respect to geologists and then both interpretations by the geology board about scope of practice of geologists and the intrusions into that scope of practice by other professionals, licensed or otherwise, and then these critical areas ordinances adopted at the local level. And it's our view that the reason to license, either by title act or registration title act or full licensing, shouldn't be driven by the fact that some agency or organization within state government is behaving inappropriately. It should be driven by considerations of public health and safety. In fact, the consumers of the services are highly sophisticated purchasers. These are not consumers in the sense of people who might go in -- individual patients who go in to see a physician or someone who comes in to have a home designed by an architect. They are sophisticated developers, large engineering firms, large geotechnical firms, large geology firms. They are not consumers in the sense of what we generally think of as consumers. Oh, and might add also, state and local agencies, all of whom are sophisticated purchasers and, we don't think, necessitate the need for licensing under these circumstances. They are capable of discerning whether the person is competent and whether they're -- whether they, the agency, or they, the organization, is hiring a competent individual.”

*Attorney, American Council of Engineering Companies of Washington, Burien Hearing*

“I do probably 100 jobs a year, and I still don't think I've ever been hired by an engineering firm. My sophisticated customers are (indiscernible) customers, the consumer itself, the person who owns the land and wants to do something with it.”

“I did want to say one other thing in terms of our connection to engineers. I'm hired by engineers certainly, and they make sure that my contract separates their liability from me. They do not want to be responsible for my faults professionally. They hire me because they value my approach to soils, which is very different from theirs. They hire me because I treat soil as a living medium, not as a support medium. That's why they hire me.”  
*Soil/Wetland Scientist, Burien Hearing*

**Soil Scientist Testimony, Wenatchee, Washington, October 3<sup>rd</sup>, 2007**

“Soil scientists really understand soil and how it behaves. Other professions typically – from my own experience – I have a degree in geology and at that time we glossed over soil. It wasn't until I became a soil scientist that I really understood how the surface – the soil medium responds to treatment, how it responds to manipulation. What I find at this point is that established licenses, such as engineering and geology, do not recognize soil science classes as curriculum that would meet licensing requirements even though the work that is described by those courses and the work that the soil scientists are commonly doing is described as work that is commonly done by engineers and geologists.”

*President, Washington Society of Professional Soil Scientists, Wenatchee Hearing*

“Our society – the only thing we can do really to regulate our members is to revoke their membership. There is no real official way we can tell the state to keep that person from working in the state. We can just deny them membership into our society, the national organization, which is the Soil Scientist Society of America, they can also revoke membership. But they also have a certification program and it's a regimented testing structure that their members have to take to be able to pass that certification.”

*President, Washington Society of Professional Soil Scientists, Wenatchee Hearing*

“I think we are all willing to work with these other professionals; it just seems like sometimes other professionals in related fields are arguing about soils information and they may be going beyond their field of expertise when they should be actually consulting with a soil scientist. The soil is really a thin layer of skin between the atmosphere and the earth crust where all terrestrial plants and animals live and depend upon for their survival. In typical descriptions, the surveys go down to five feet, but the soils actually go down deeper than that.”

*Soil Scientist, Wenatchee Hearing*

“Would regulation of soil scientists be beneficial to our industry? Clearly yes, it would be. We would benefit – if the experience in Washington State is going to be anything like the other states that have licensed and regulated the practice, we certainly would benefit in two ways. One is that it gives folks an identity for choosing a career that they don't currently have and we would attract more people, more brain power to our profession. Secondly,, looking at these other states, there would be a higher level of professional interaction, a real dynamic where people exchange information because we have more responsibility under that – those circumstances and we rise to the challenge, like we have

done in Georgia and North Carolina. With higher responsibility comes a change in character and it is a good thing for a profession to go through. So I look forward to it and it is clearly to our benefit as a profession to be licensed.”

*Soil Scientist, Wenatchee Hearing*

“In the 10-plus years since then I have seen this repeated over and over again in public hearings, whether I’m testifying about the critical areas ordinance or wetland functions. When I agree with the folks who are in the audience, I get support and support as a soils professional. When I disagree, I’m told that I’m not qualified to make those comments. And licensing is specifically pointed out time and time again. The point is that folks like (private citizen) can’t afford to go to court the way my larger clients can. In court I get a fair shake. I get recognized by the judge, by the court as a qualified witness. But many other people – individuals who are victimized by the county staff members, by contractors that counties permit at an individual land parcel level suffer because we as a profession are not licensed.”

*Soil Scientist, Wenatchee Hearing*

“Certainly the consumer is protected by having a (recourse) process available, but our process is really geared to preserving our profession. We want to cull out the bad actors and we want to protect our members by assuring that we know what a high level of professional behavior is and we advance along those lines. Consumer protection is really secondary to that and we are very ineffective because what we do in the perspective of the consumers is we simply release that person into the free market.”

*Soil Scientist, Wenatchee Hearing*

“When you get to a land treatment system where you are using wastewater and it is not just fresh irrigation water, you want to make sure it’s right. You don’t want that excess running off. In fact, it is basically illegal to have wastewater run off the site. Soil scientists know how to go out there and honestly characterize that soil, measure intake rates, look at the profile, take soil samples, ask for the right kind of tests in the laboratory to understand the fertility and the physics and so forth of what that profile can take from a hydraulic standpoint and know how much water it can hold.”

*Certified Agronomist, Wenatchee Hearing*

#### Wetland Scientist Testimony, Burien, Washington, September 11, 2007

“I think it's unfortunate that there is no guideline, no set standard of qualifications to go do what we do because mistakes are made, continually made. And in answer to these six questions -- just saw them today. But would regulation of soil or wetland scientists be beneficiary to the industry? Well, the answer certainly is yes because you could have some standard and education requirements. Next one, would regulation solve -- for wetland scientists be beneficial to the consumer? Of course, the answer is yes because with the right training, education, and experience, you can provide accurate services. And are they consistent with the services provide to the consumers? And the answer is no and a big fat no. They're not consistent; there are differences all over the place because, in my

opinion, they're not standardized in their training and qualifications to go and do what they need to do to learn how to identify wetlands.”

*Wetland Scientist, Burien Hearing*

“I know for an example of a real estate I was working with in Grays Harbor County who were hiring us to do their wetlands assessments. And he sent his wife to a workshop, a week-long workshop, got a wetland certificate, and now she's delineating wetlands. And her previous training was basically helping him in the real estate business. So she's not a soil scientist, not an ecologist, she doesn't have a degree in botany. She has no training other than a week-long wetland workshop. But she is doing wetland delineations in Grays Harbor County based on a one-week workshop.”

*Wetland Scientist, Burien Hearing*

“The example of a problem, if a wetland is – if wetland is delineated too large, then obviously somebody loses developable ability for their property. They lose dollars. They lose lots. If it's delineated too small, then the consumer inherits the problem with flooded crawl spaces, flooded driveways, and problems with septic systems. So whether the delineation is too generous or too conservative, the consumer pays the price in eventual problems.”

*Wetland Scientist, Burien Hearing*

“Self-regulation of soil scientists in a sense is not -- is not happening, even though we do meet yearly. We have a Society of Wetlands Scientists Pacific Northwest chapter. We do talk amongst ourselves, not badmouthing people per se. But what we get together and we talk about our profession. It's not self-regulating because there is no place to issue complaints. And as Ms. Palazzi brought up earlier as far as going to the Society of Wetlands Scientists national chapter professional wetlands certification program, it has no teeth.”

*Wetland Scientist, Burien Hearing*

“As all of us in the room would agree, the main reason for this discussion is to effectively protect wetlands, which are waters of the state. However, I am not aware of published literature that points to poor wetland delineations as the main cause of wetland loss. The literature does mention a lack of wetland mitigation follow-up, poor wetland mitigation design, the historical conversion of wetlands for agricultural uses, the allowed cumulative loss of small or isolated wetlands, and a lack of enforcement as significant causes of wetland loss in our state. In any profession there will be bad apples, even with state licensing or certification requirements. My question is whether the public, be it a citizen or business groups, are asking for wetlands scientists to be licensed or otherwise regulated by the state. In other words, how big of a problem is this really? Where is the data showing that there is a dire need for state regulation of wetlands scientists? In further consideration of the public, consumers will bear the financial cost of the licensing fees as these will be passed on when wetland delineation and other wetland reports and products are prepared. This greater cost for services will not necessarily guarantee a good product.”

*Wetland Scientist, Burien Hearing*

“Although it is not a requirement, some wetlands scientists in our state have obtained a certification as a professional wetlands scientist, PWS, or a wetland professional in training from the Society of Wetland Scientists. This PWS certification requires that applicants possess the education, experience, and references desired as a foundation for performing wetland work. State certification or licensing would be duplicating this existing certification program operated by our professional association and would likely lead to its elimination.”

*Wetland Scientist, Burien Hearing*

“When you're talking about a title act, you then are regulating the individuals who, you know, claim to do work under that title. And, in fact, you can still have individuals out there doing that type of work and don't happen to call themselves wetland scientists, soil scientists, or so forth. And your main effort to protect the public safety and welfare is kind of lost in it.”

*Attorney, Architects & Engineers Legislative Council, Burien Hearing*

“And I do have one other suggestion. And that is I think basically a lot of people have pointed out that the wetland work we do is essentially adversarial, here we are hired by property owners and we present ourselves to be objective scientists and then our work is reviewed by agencies, local agencies. And what I find the weakest link in this whole system is that the local agency review is really inconsistent. I mean, I think horribly inconsistent is the way I would describe it. And if there is going to be a licensing requirement, I think that key is not so much who is practicing as who is reviewing. The people who are going to make the final decision are the reviewers. And I think we need to concentrate at the state level probably. At the very least there should be something more elaborate, akin to the model ordinance that Ecology has promoted. They've done a great deal to make wetland delineations more consistent throughout the state in consistency of interpretations by using their bully pulpit and using educational practices.”

*Wetland Scientist, Burien Hearing*

**Wetland Scientist Testimony, Wenatchee, Washington, October 3<sup>rd</sup>, 2007**

“All these things contribute to a tilted marketplace for wetland consultants. The fact is that the wetlands do not exist anywhere except where the local agencies say they do. If a certain type of wetland consultant performs delineation and sees no wetlands where others have seen them and if the agency accepts the delineations then the wetlands go away. In the Whatcom county area, building lots start around \$120,000. For a 20-acre subdivision, 80 lots, that means about 9.6 million dollars gross. If there are wetlands all over the property, the lots will disappear with the potential cash. In essence, this type of consultant makes a living by exploiting the inadequacy of regulatory agencies.”

*Wetland Scientist, Wenatchee Hearing*

“There have been some issues brought up by the soil scientists where they feel that public health and safety has been affected, where they believe if a soil scientist had been

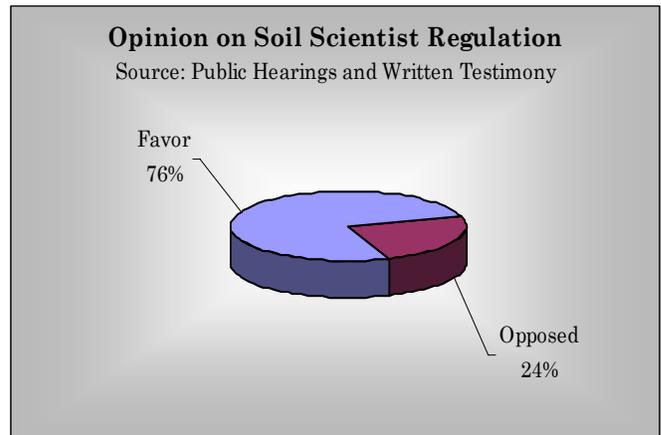
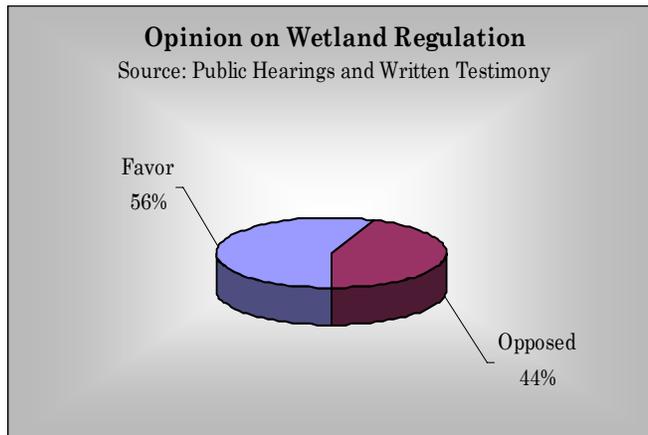
involved, then that would not have occurred. And they give examples of groundwater contamination due to spreading of agricultural wastes and some septic system failures. It seems to us that there are other licensed professionals that this really falls under their venue of what they do. If it is a groundwater contamination issue, then clearly a hydrogeologist should be involved. There may be some chemical nutrient type exchange issues that occur close to the surface and clearly a soil scientist should be retained to assist with that, but, again, we don't see that rising to the need of professional licensing to protect public health and safety whereas once it gets beyond that, to the realm of a hydrogeologist or an engineer it might. And pretty much the same is true for septic system failures, and, of course, the state already licenses sanitarians.”

*Professional Engineer, ACEC, AELC Representative, Wenatchee Hearing*

## Comments from Practitioners, Organizations, and Citizens

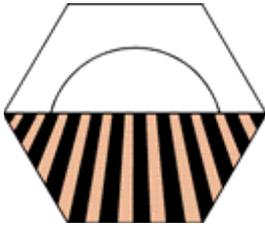
Responses via electronic and standard mail were provided by a number of individuals from the community. Several national membership organizations, practitioners from related professions, state governmental officials from within Washington and other states, and local jurisdictions were represented. In all, 58 individuals or organizations provided testimony, either verbal or written, received which provided a wealth of thoughts on regulation of wetland and/or soil scientists. Copies of the written testimony are shown below.

A quick look at the opinions for both professions in a favor/oppose format indicates that the testimony was more in favor than opposed to regulation. This accounting combines both the public hearings and written testimony received.



When looking at those who favor regulation, most were practitioners in either the wetland or soil science fields, governmental officials, and some from academia. Opposition was more centralized from practitioners in related professions, lobbyists for other professions, engineering firms, geotechnical firms, and some governmental employees who expressed concern over impacts on their livelihoods.

## Soil Scientist Written Testimony



### SOIL SCIENCE SOCIETY OF AMERICA

677 South Segoe Road • Madison WI 53711 • (608) 273-8095 • Fax (608) 273-2021 •  
[www.soils.org](http://www.soils.org)

October 17, 2006

Mr. Toby Rodgers, President  
WA Society of Professional Soil Scientists (WSPSS)

Dear Mr. Rodgers:

The Soil Science Society of America (SSSA) would like to express its support and encourage the State of Washington to pass licensing legislation for Soil Scientists.

SSSA is a 6,000 plus member, scientific society with a 75 year history of leading soil science related issues. SSSA also administers the Certified Professional Soil Scientist / Classifier (CPSS/C) programs with over 1,200 certified soil scientist/classifiers throughout the US and Canada.

The membership of SSSA includes individuals from academia, government and the private sector. Many soil scientists are now entering the private sector in fields predominantly related to environmental protection and urban issues. SSSA is committed to helping these soil scientists through the certification programs and/or licensing programs at the state level. Certification and licensing programs help to establish the profession by following a set of standards. These standards also strive to protect the public interest from substandard performance.

SSSA administers the examination process for the certification programs as well as for other states with licensing programs. There are seven other states that have enacted state licensing, NC, WI, MN, ND, ME, TX and NH. Several other states are considering licensing or a state based certification process while working with SSSA. These partnerships help to minimize costs while maintaining a creditable exam process. SSSA provides valuable national guidance through the exams and certification processes that helps to maintain consistency between state boundaries but soils related issues can

quickly become state specific. That is why it is so important to have state licensing legislation enacted.

State government is charged with protecting the public interests. Soil scientists work with land owners on environmentally related issues that may and in some situations do impact public health, safety and welfare. For example, an on-site septic system that is not sited correctly will not only negatively impact the home owner but also has the potential to contaminate the drinking water in that area endangering public safety and health. This is only one example that could be minimized through proper licensing legislation.

SSSA would like to encourage the State of Washington to pass soil science licensing legislation and where appropriate, is willing to assist in the administration of that process.

Sincerely,

Mary Collins, Ph.D.  
President, Soil Science Society of America

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**From:** Heather Hansen [heatherhh@qwestoffice.net]  
**Sent:** Friday, November 09, 2007 6:14 PM  
**To:** Chunn, Bruce (DOL)  
**Subject:** RE: Sunrise Review of Soil and Wetland Scientists



Thank-you for your efforts to gather information regarding our concerns about the effort to license soil scientists.

First and foremost, we do not believe there is a problem that needs to be solves. We are concerned that the proposed language will create more confusion than it resolves.

We understand that it is not the proponent's intent to regulate normal activities performed as a part of agricultural or timber production, however, we are concerned that language will be easy to misinterpret and difficult to enforce.

From HOUSE BILL 1318 "Sec. 3 (6) General scientific work customarily performed by... agronomists, crop scientists, horticulturists, and foresters, providing such work does not include the design and execution of soil science investigations, being in responsible charge of soil science, and the drawing of soil science conclusions and making recommendations in a way that can be shown to negatively impact the public health, safety, or welfare."

The professions named above, as well as producers who may not have specific formal education, draw conclusions about soil fertility and determine methods of working soil to maximize crop production and minimize erosion. Crop advisors, fieldmen, conservation advisors and others investigate soil, draw conclusions and make recommendations on a

daily basis. These and other activities could be construed as “the drawing of soil science conclusions.”

If the proposal is to go forward, it should be limited to urban and suburban areas only. Farm and timber land should be excluded.

Heather Hansen  
Washington Friends of Farms & Forests

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**Subject:** soil scientists in WA

Dear Mr Chunn,

As a licensed OSS designer in WA ground water is of primary concern and the main reason we are licensed here. The goal is to select waste water treatment technology based on soil and groundwater conditions at a site so the water table is not compromised. Poor wetland decisions lead to the same end as poor OSS site evaluation: flooding and polluted ground water. While I do not have the time to repeat yesterdays email, I will go out of my way here to repeat the conclusion: soil scientists are a very small contingent, probably less than 100 in private practice here in WA. However, the impact their decisions have on water quality is massive, to say the least. There is no doubt in my mind that the practice of soil science and wetland science need regulation here in the state of WA.

Thank you for your time

Ron Hansen

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## Licensing or Certification of Soil/Wetlands Scientist in WA State

By

Kevin D. Leary

ARPACs Certified Professional Soil Scientist, Hydrogeologist/Hydrologist

### 1. **Would regulation of Soil or Wetlands Scientists be beneficial to the industry?**

Regulation of Soil/Wetland Scientist would be beneficial to industry as it would foster quality control of data and interpretation, encourage sharing of data, enhance R & D of each respective field via sharing lessons learned and stimulate formal benchmarking, enhance the respective fields reputations amongst industry and the public, and improve the publics understanding of the respective fields

### 2. **Would regulation of Soil or Wetlands Scientists be beneficial to the consumer?**

The consumer, in theory, should receive a more consistent, enhanced quality product that should be somewhat standardized and more acceptable to regulatory agencies (and stakeholders) overseeing permits and various clean-up actions resulting in improved protection of human health and the environment.

**3. Are Soil or Wetlands Scientists consistent in the services provided to consumers?**

At the present time, the current unregulated fields of Soils and Wetland Science are not providing consistent services to the consumer for two primary reasons: (1) Practitioners in the field that either do not have the proper educational background and/or experience for the respective field in which they are practicing; (2) Incompetent or unethical practitioners that are providing inferior and/or incomplete products to the consumer

**4. Is self-regulation of Soil or Wetlands Scientists working sufficiently to protect the consumer?**

No. See #3 above.

**5. What do you see as the least intrusive method to ensure quality performance by Soil or Wetlands Scientists?**

Establish a code of ethics; develop a comprehensive examination for Soils and Wetlands Scientist currently not licensed and/or certified by a national recognized board, a state licensing board and/or review board; incorporate a grandfather clause for ARPACs certified Soil Scientist/Wetlands Scientist to be licensed in the state; and allow the consumer an avenue to file written complaints for inferior and/or unethical performance

**6. How does the Soil or Wetlands Scientist industry, or membership associations within it, handle complaints?**

I am unsure at the present time as I have never received any complaints for my services. However, I would suspect that individual(s) who do receive continual complaints will rapidly lose their respective client base and repeatedly be denied regulatory approval for various permit applications and regulatory document approval.

In addition to answering the questions above, I would also like to submit a few anecdotal stories regarding the need for licensing Soil/Wetlands Scientist. These examples illuminate cases where individuals from other disciplines (e.g., geology and engineering) were overseeing work that required the expertise of a Soil Scientist.

As a consultant for a large firm in Portland, OR, I was hired as a Hydrogeologist but also utilized as a Soil Scientist for land application of industrial and municipal wastes as well as constructed wetlands projects. One of my technician co-workers accused me of not being a real Hydrogeologist since my undergraduate degree was not in geology, but in Soil Science. I asked this individual that of all the multi-state groundwater projects we had in the Western US, how many projects had groundwater wells installed in actual hard-rock (versus unconsolidated material i.e., soil)? Her slow response was "one." I soon found that a Soil Scientist could "log" a borehole in much greater detail and much more accurate in unconsolidated material than a geologist or engineer. This difference in

detail and quality of borehole logging has a huge impact on accurately developing site conceptual models at hazardous waste sites that include a preliminary understanding of subsurface contaminant transport. In general, it is the small contrasting soil textural changes or even subtle changes in the physical or chemical composition in soils (that most soil scientist are trained to detect) that often control the fate, transport, and remediation options of a hazardous waste.

One example of this was at the Teledyne Wah Chang CERCLA site in Albany, Oregon. Apparently there was a large plume of PCB's that was mysteriously spreading across the site. The very first borehole I "logged" within a asphalt parking lot revealed a "gleyed" soil near the surface. To most geologists/engineers, this doesn't mean much, however, to a soil scientist, a gleyed soil indicates extended periods of water saturation likely due to a seasonally high water table. Thus the mystery was solved on how PCB's were transported across the site via a flowing seasonal high water-table.

In another example, there was a RCRA Subtitle D sanitary landfill in Oregon City, OR that had a major problem with large quantities of leachate only generated in the summer. This phenomenon baffled the "firms" geologists, hydrogeologists, and engineers. However, once I (a soil scientist) was consulted, the solution was elementary. The standard "shrink-swell" montmorillonite clay was used as the primary capping material for the landfill. The problem with this design is that when this smectitic clay is dry (like in the summer), it can form large, vertically extensive cracks that will only swell upon hydration. However, this "swelling" hydration effect can take some time to seal-off the cracks and it was during this transitional period that large quantities of leachate were generated from summer rainstorms. Hence, the barrier design had to be modified and the problem was solved.

On final example involves recent work at the Hanford site in Eastern Washington State. As the technical lead for several remediation projects, I managed the characterization and eventual remediation of Hanford's first zone closure project called the U-Zone. One of the waste sites is a former liquid waste disposal area called a "crib." In order to select a remedy, the site first has to be adequately characterized. As part of the characterization process, several shallow boreholes (50 feet or less) were drilled to assess the lateral spread of the contamination. The contractor, consisting of engineers and geologists, used spectra-gamma logging of each respective borehole to characterize the type and lateral spread of the respective contaminants. However, it took a Soil Scientist to point out several problems with this approach including the following:

- ★ Spectra-gamma logging is only useful for detecting uranium and not the other two primary contaminants of concern which are technetium and nitrates
- ★ Conceptually, the uranium will preferentially adsorbed onto the soil matrix if the contaminant wetting front is moving laterally while the technetium and nitrate would theoretically move laterally to the farthest extent of the wetting front. Bottom line is that this approach of characterization completely missed the farthest extent of the lateral spread of other contaminants causing the need for additional boreholes to be drilled. Most engineers and geologist have a limited knowledge of

soil-matrix cation exchange as well as other chemical/physical processes in the soil which affect the fate of most contaminants.

In addition to the problems cited above, the geologist and engineers did not detect the small contrasting soil textural changes in soil stratigraphy which have a huge influence on unsaturated zone contaminant transport and did not measure soil moisture content (while performing a geophysical logging of the borehole) which has a significant influence on contaminant transport unsaturated hydraulic conductivities.

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### **Response from Walt Shields on 8/14/07**

Walter J. Shields, Ph.D., C.P.S.S.  
Director, Environmental Sciences Practice  
Exponent Health and Environmental

- Would regulation of Soil or Wetlands Scientists be beneficial to the industry? YES
  - Would regulation of Soil or Wetlands Scientists be beneficial to the consumer? YES
  - Are Soil or Wetlands Scientists consistent in the services provided to consumers? NO
  - Is self-regulation of Soil or Wetlands Scientists working sufficiently to protect the consumer?  
I DON'T KNOW
  - What do you see as the least intrusive method to ensure quality performance by Soil or Wetlands Scientists? LICENSE REQUIREMENT
  - How does the Soil or Wetlands Scientist industry, or membership associations within it, handle complaints? NO PROCEDURE
- 

### Soil Scientist Public Hearing Written Testimony

My name is Dr. Michelle Miller. I am the Past-President of the Washington Society of Professional Soil Scientists (WSPSS). I have a Ph.D. in soil science and am currently licensed in the state of Washington as a Geologist and Hydrogeologist. I am also a certified Professional Soil Scientist with the nationally recognized association, Soil Science Society of America.

As a professional soil scientist, licensed geologist and one who deals with Engineers on a regular basis, I can share with you that although these disciplines compliment each other well, they are distinct. This extends to not only how one looks at the natural landscape but the specific terminology used in each discipline. As in any situation, in order to clearly communicate amongst ourselves and ultimately to the public a common language is essential. A clear example of this is how particle size in soil is described. Fine sand is defined by the United States Department of Agriculture as greater than 0.10 to 0.25 mm while the Public Roads Association defines fine sand as greater than 0.05 and less than 0.25 mm. Although this difference seems minor, without that commonality, interpretation of laboratory data and soil surveys can be misread and might ultimately result in improper citing of facilities such as septic systems.

This is just one example of the importance of regulating soil scientists that would benefit the industry and the public. Regulating soils scientists can be efficiently performed through active professional organizations that define this profession and have in place a code of ethics and disciplinary process. The Washington Society of Professional Soil Scientists is a society of professional soil scientists organized in 1974, although our profession has been active since the 1800's. WSPSS works for the public good and to safeguard life, health and property. We, as an organization, are concerned with the advancement of soil science as a profession by "...the establishment and observance of high ethical standards of conduct through commitment to ethical conduct, the practice of sound scientific principles, and affiliations . . ." (WSPSS By-Laws) with the Soil Science Society of America (SSSA).

I wanted to thank you for the opportunity to provide written testimony and I support moving forward with a title act for soil scientists.

Michelle Miller, Ph.D., LHG, CPSS, RS

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**From:** Kevin Martin [mailto:kmartin@sandec.com]  
**Sent:** Thursday, September 06, 2007 12:55 PM  
**To:** Chunn, Bruce (DOL)  
**Subject:** RE: soil scientist title, sunrise review hearing

I would strongly suggest that you pursue a practice act or nothing, Virginia has a title act and it accomplishes nothing. In NC we were in the same uphill battle but chose to go for something with some teeth over something without.

Good Luck. Kevin

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September 9, 2007

This letter is in support of having a certified soil scientist to perform work that requires in depth knowledge of soils as they relate to development generally, and in the South Sound in particular.

I am a "high rate" taxpayer in the Henderson Inlet Shellfish Protection Area, and I care what happens to the quality of the waters in South Puget Sound. I have just been through a very sad case involving a Thurston County development.

Thurston County's Health Department is charged with determinations of soil suitability for septic systems. However, Thurston County does not have a certified soil scientist on its staff. The Board of Health has approved an ill conceived cluster of septic tanks in a soil that is probably too wet and too disturbed to properly receive and transport effluent. Additionally, this wet area is adjacent to a ditch which feeds into a creek that empties on to shellfish beds in Henderson Inlet.

The county staff couldn't describe a soil profile by standard and accepted USDA soil descriptive methods, and did not have the ability to know whether the soil was derived in place nor disturbed, nor could they explain to the Board of Health why the soils in questions might not be suitable for citing a septic drainfield.

The result was that the County advised the developer to hire his own consultant (not a certified soil scientist), who presented a biased and equally non-qualified opinion as to suitability. His testimony was given more credence because he described himself as an expert, and no one knew what questions to ask him. He merely said that the "soils looked OK to him."

Henderson Inlet is a "Shellfish Protection Area," which means that the State has mandated the County to (a) tax those living on the inlet and its tributaries, presumably so that (b) the County has the funds to work on improving water quality in the Inlet.

However, doing things "right" entails having extensive knowledge of soil/water relations. The staff at Thurston County is not equipped to have this understanding, nor to make a case for or against development entailing septic systems in delicate or critical areas.

For this reason, a very high risk cluster of septic tanks will probably be built in an area that should not receive effluent.

Had the County had a certified soil scientist on its staff, this development and others probably would not go forward, thus reducing the rate of deterioration of the water quality and the shellfish beds.

A certified soil scientist could have (a) understood the nature of the soils on the site as well as the dynamics of the site, and (b) testified in a professional manner as to the suitability of the project.

Thank you for your time.

Priscilla S. Terry  
Citizen

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December 26, 2006

WOSSA is a 400 plus member organization with a 16 year history of organization, support and work in the Onsite industry in the State of Washington. WOSSA has been active in participation and support of the development and implementation of the Onsite Wastewater Designers Licensing Program with the Department of Licensing in WA.

The membership of WOSSA includes individuals from private sector, various onsite industry segments, academia, government and the manufacturing community. In

particular, our licensed designers under the DOL call out soils as it applies to treatment of wastewater. As soil scientists enter the private sector in fields related to environmental protection and growth management development issues, WOSSA supports this legislative initiative for soil scientists to become recognized and managed through a licensing program at the state level. As with the discussion and questions with the WSPSS representative who participated in our October board meeting, we see the value of licensing and certification programs to establish competency levels, ongoing education requirements and the capability for management of this body by following an agreed set of standards established by the licensing body and the people under their charge.

State government responsibility is to protect the public interests as it regards the environment and standards of professional licensure for certain types of work that come under professionally established practice. Currently, soil scientists work with land owners, developers and others on environmentally related issues that may impact public health, safety and welfare and they may work with other licensed professionals. The need to work under identified and adopted standards of practice and implementation of them through a managed license program on a state level is clear.

The Washington Onsite Sewage Association (WOSSA) would like to indicate its support and encourage the State of Washington to pass state level licensing legislation for Soil Scientists.

Sincerely,

Peter Lombardi  
President  
Washington Onsite Sewage Association

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November 7, 2007

Mr. Bruce Chunn  
Management Analyst  
Washington State Department of Licensing  
Re: DOL Sunrise Review for licensing soil scientists

Dear Mr. Chunn:

Thank you for the opportunity to comment on the proposal to license soil scientists. We sincerely appreciate our collaborative relationship with proponents of this issue and their efforts to address our concerns.

The Washington Forest Protection Association (WFPA) represents private forest landowners who grow and harvest trees on approximately 4.2 million acres in

Washington State. The goal of our Association is to advance sustainable forestry in the state and provide forest products and environmental benefits to the public. .

We understand that it is not the proponent's intent to regulate normal forestry work, and the bill introduced in the 2007 legislative session, HB 1318, included language that exempted work 'customarily' performed by foresters.

However, the language went on to state:

“providing such work does not include the design and execution of soil science investigations, being in responsible charge of soil science, and the drawing of soil science conclusions and making recommendations in a way that can be shown to negatively impact the public health, safety or welfare.”

WFPA's concern about the 2007 proposal is that the rules regulating the licensing and activities of soil scientists will have the effect of increasing the regulatory burden on the practice of commercial forestry on private lands in Washington. To understand this concern it is important to be familiar with both the current regulatory standards under which the forest industry and family forest owners operate and the economic position the forest products industry in Washington currently faces.

First the current regulatory standards: Under the Washington Forest Practices Act (Act) the Forest Practices Board has promulgated and continues to update a comprehensive set of rules for protecting private and public resources while managing state and private forests in Washington. The rules include provisions addressing two of the primary goals of the Act: protection of forest soil productivity and prevention of water quality degradation through sediment pollution. The provisions require that relatively straight forward and intuitive principles of equipment operation and soil erosion protection be used to eliminate or minimize soil compaction and sediment delivery during forestry operations. These principles are implemented by trained foresters, forest engineers and equipment operators. Compliance is monitored on the ground by Department of Natural Resources forest practices foresters with support from Department of Fish and Wildlife area habitat biologists and Department of Ecology field technicians. Forest practices in many regions of the state are also monitored by one or more of the 29 federally recognized tribes in Washington. The effectiveness of the water quality protection rules is monitored through an adaptive management research program with oversight by the Department of Ecology and others.

Nearly every aspect of harvesting a forestry crop is regulated, and there are specific rules pertaining to work around soils which require foresters to draw soil science conclusions. The Forest Practices Rules contains numerous references to soils, soil erosion and soil compaction. The word soil appears over 40 times in the forest road construction and timber harvest sections of the rules. In each of these instances foresters and forest engineers are asked to use their knowledge of soil and its erosion or compaction potential to properly implement Forest Practices Rules. Under the soil scientist licensing language proposed in 2007 any of these relatively mundane interpretations of soil properties could

be construed or interpreted in law to be the practice of “soil science.” For example road construction rules (WAC 222-24-030) require that:

“erodible soil disturbed during road construction and located where it could reasonably be expected to enter the stream network must be seeded with noninvasive plant species”

and that construction

“be accomplished when moisture and soil conditions are not likely to result in excessive erosion and/or soil movement, so as to avoid damage to public resources.”

We are concerned that a future regulator or court finding could determine that these practices are the execution of soil science investigations or the drawing of soil science conclusions. The Forest Practices Rules are designed to protect public resources which are little different than public welfare.

When operation involve streams, a hydraulic permit (HPA) is required alongside a forest practices permit. HPAs often include a requirement for a plan to eliminate or minimize soil erosion or sediment delivery. Again, these plans could be interpreted as preparation of the detailed soil maps that are included in the draft legislation as examples of the work of licensed soil scientists.

The second issue that we hope that the Department understands is relative economic position of the forest products industry in respect to costs of operation. As confirmed in a recent University of Washington study<sup>12</sup>, the industry is fundamentally a commodity producer of construction lumber products. Logs grown and harvested by WFPA member companies, family forest owners and others are the raw material entering a commodity stream where prices are controlled by world markets largely independent of any one producer or any regional economy. The high cost of growing and harvesting trees in Washington is well documented in the UW study. Despite its position as a high cost producer, Washington’s industry maintains a slim margin of profitability through extremely efficient milling operations and relative proximity to the very large U.S. lumber market. The industry is working diligently to maintain a competitive position in this difficult economic situation. The growers of timber cannot support the additional overhead cost of more regulation or more expensive implementation of the regulation already in place.

It is clear from our experience with the advent of state licensing of geologists that regulatory agencies tend to defer to, or prefer licensed practitioners for technical analysis

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<sup>12</sup> Future of Washington Forests and Forest Industries. Prepared for the Washington Department of Natural Resources as requested by the Washington State Legislature by the College of Forest Resources, University of Washington. July 31, 2007.

in forest practices situations. Although we would not anticipate any immediate response by the forest regulating agencies (DNR, the Forest Practices Board and the Fish and Wildlife Commission) to licensing of soil scientists, over time it is inevitable that the agencies would lean toward requiring more review by licensed professionals, first in higher risk situation and later in more common application of forest practices. This is a logical tendency toward risk avoidance. Requiring landowners to employ outside consultants increases cost.

At the same time, experience shows that the Geologist Licensing Board has a natural tendency to provide rules and guidance for licensed professionals in their charge. Recent work by the Board to develop standardized reporting guidelines for geological reports is an example. These efforts are part of the Board's responsibility to public service but the unintended consequence is an increased regulatory and cost burden when regulatory agencies require the use of those services.

The 2005 Sunrise Review of Soil Scientists did not contain any analysis pertaining to the effects of licensing soil scientists on forest lands. We hope this letter provides some information to support such an analysis. Given the level of rigor in the Forest Practices Rules and forest practices system, we believe it is unnecessary for persons working under or regulated under the Forest Practices Act to be subject to yet another level of regulation. If a new licensed profession of soil scientists is created, there is a high potential that necessary forestry work would fall under another state regulated profession, which would raise the cost of doing business for us, thereby increasing the difficulty of remaining competitive in a global economy. If this new licensing requirement is promulgated, we request specific language that exempts work carried out by persons working under or regulated under the Forest Practices Act.

Please do not hesitate to contact us if you have any questions.

*Debora Munquía*  
*Director of Governmental Relations*  
*Washington Forest Protection Association*

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**NATIONAL SOCIETY OF CONSULTING SOIL SCIENTISTS, INC.**

PMB #700, 325 Pennsylvania Ave., S.E. Washington, D.C. 20003 (800) 535-7148 www.nscss.org

DATE: 12 January 2007

TO: Washington Society of Professional Soil Scientists (WSPSS)  
P.O. Box 881  
Newman Lake, WA 99025

FROM: Pierre Bordenave, RPSS #054 and Board Chair of the  
National Society of Consulting Soil Scientists (NSCSS)

RE: **AN ACT Relating to licensing of soil scientists...**

The National Society of Consulting Soil Scientists represents Soil Scientist Business Owners throughout the United States and Canada. In the State of Washington, the NSCSS has 5 member business owners. An additional 5 business owners perform consulting services in the State of Washington.

The NSCSS maintains a national registry of professional consulting soil scientists (known as the Registry of Professional Soil Scientists – RPSS), which requires academic credentials, testing, experience, peer review, ethics training, and ongoing education.

NSCSS strongly supports licensing of the practice of soil science in Washington State. While NSCSS supports initiation and improvement of all state registration programs, we are particularly supportive of Washington State's proposal because of its emphasis on professionalism, and a structure that does not restrict interstate commerce.

Cc: Rick Joslyn, NSCSS President  
Kari Sever, NSCSS President-Elect  
Phil Small, RPSS #06 and NSCSS Secretary

**Sent:** Sunday, September 09, 2007 9:26 PM

**Subject:** Soil Scientist Title / Sunrise Review Hearing

I will not be able to attend the upcoming hearings on the need for state licensing or certification of soil and wetland scientists. I would like to provide two examples where the work of unqualified people made on-site decisions or gave testimony in a hearing that resulted in less than desirable outcomes. The county staff does not have qualified soil scientists yet they make decisions that affect water quality and public safety on a routine basis. A septic design was accepted for a house on Swayne Rd north of our home that put the drain field on a very steep unstable slope that slopes so the run-off goes directly into Henderson Inlet. After the drain field was put in we received heavy rain and much of the rock for the drainfield lines washed down slope and was deposited on the beach! Thus, you know where the waste water goes from this septic system. We are asked to pay higher taxes to clean up Henderson Inlet yet the County allows poorly planned development such as this to occur.

We recently listened to the hearing tapes where County staff were presenting their arguments why a large-lot subdivision should not be allowed on a given tract that has drainage that goes into Henderson Inlet. The County personnel were unable to adequately explain the soil horizons observed on the said tract. They also were not able to determine whether the soil was derived in place or was disturbed (most likely by land clearing and road spoil pushed on top of the surface horizons), which is a critical criteria for location of Glendon septic systems. Another unqualified "soils expert" testified for the developer and his only definition of disturbance was what would be caused by plowing, and he said this was too common to consider the soil to be "disturbed." He failed to explain how all the rotten wood got in the surface other than perhaps plowing. No detailed soil profile descriptions were presented by the County or the developer's "expert." And the amount of buried wood was not quantified. Both parties should have used standard Natural Resource Conservation Service protocols for describing the soils. In this case the County staff also were not able to give any reasons why they thought the soil observed was not suitable for the Glendon septic system, except they thought the disturbance criteria would be reason enough why not to allow the system. The developer's "expert," just said the soil was OK from his standpoint and no further questions were asked by the County. The County staff could have discussed the rapid flow rates that would occur through the rotten wood in the disturbed surface; the potential for soil subsidence in the drainfield when rotten wood decomposes; and the lateral flow to the drainage ditch nearby when the septic drainage water hits the glacially compacted subsoil.

South Sound pollution will continue and it will do so at a faster rate as more development will occur in the region, unless we have qualified individuals making these soil assessments and decisions. Therefore, I support the proposal that soil scientists and wetland scientists that perform tasks that affect land development and septic system location and design decisions should be licensed / certified by the state. The criteria for licensing should also be routed for public comment.

Tom Terry, Ph.D. Forest Soils



P.O. Box 24925 SEATTLE, WA 98124  
www.seattleasce.org

Mr. Bruce Chunn  
Planning and Performance  
Department of Licensing  
1125 Washington St. SE

October 2, 2007

Olympia, Washington 98507

RE: Sunrise Review of Licensing Soil Scientists and Wetland Scientists

Dear Mr. Chunn:

The American Society of Civil Engineers (ASCE) is a national trade organization representing more than 140,000 members of the civil engineering profession. Locally, the Seattle Section of ASCE represents the civil engineering community for the nine-county region in Northwest Washington. ASCE works closely with other members of the construction design industry to ensure the appropriate regulation of professions with respect to issues of public health and safety.

ASCE is opposed to the certification or licensing of soil and wetland scientists. Sufficient evidence has not been provided by the applicant groups that significant public health and safety issues exist with the unregulated practice of these professions. Additional costs would be incurred by consumers of these services through licensing and examination fees when determinations of public safety on a project are ultimately made by an engineer or architect, professions that are already licensed.

The intent of the Sunrise Act (RCW 18.118.01) is that all individuals should be permitted to enter into a business profession unless there is an overwhelming need for the state to protect the interests of the public by restricting entry. In addition, changes of existing licensed practitioner's scope of practice should benefit the public. Enhancement of professional status alone is not justification for regulation.

Sincerely,

SEATTLE SECTION ASCE



Lawrence A. Costich, PE, Esq.  
Legislative Committee Co-Chair

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October 1, 2007

I have been an active member of the Washington Society of Professional Soil Scientists (WSPSS) for the last 17 years. I am in favor of the soil scientist title licensing bill (HB 2324) that is sponsored by Representative Hunt and Representative Wood. I would like

to submit this written testimony in support of the bill and for the public hearing on the Soil Scientist profession in Washington that will be held in Wenatchee on October 3.

I do not have any large scale disaster stories to give you concerning bad soil science work that was performed by somebody who was not a soil scientist and did not know what they were doing. In my former job position as a mapping soil scientist for the NRCS for 13.5 years and my current job position as a Water & Soil Resources Technician for the Lincoln County Conservation District for the past 6 years, I have not had the opportunity to observe large scale disasters caused by any soils related work done by non-soils professionals. If I was a private consulting soil scientist, I would probably have some examples for you, but this is not the world that I work in or have ever worked in.

However, I have noted that some citizens and some contractors (in other non-soil scientist professions) that seek soils information often do not pay the proper attention to explicit information given to them by soil scientists on how the soils information should be used along with the limitations of the soils information. For example, in some cases I have gotten the impression that some landowners and contractors only want to believe that the only soils found in a given area are the soils listed for the map units on the soils map for this area, and that they do not want to be bothered with the possibility that there can and will be small areas of contrasting inclusion soils here that can adversely affect the use and management of this area. Because of this possibility, soil scientists routinely recommend that a site specific investigation be completed when any high value projects are going to be built on a piece of property.

When the general public and other professionals do not pay the proper attention to the guidelines on how soils information should be used or to the limitations of this soils information, the distributed soils information can be “abused” by these users and potential threats to the public health, safety and welfare can become a very real issue. Perhaps one of the most important services that soil scientists can provide to the general public and to other professionals is assistance with how the available soils information for a given area should be interpreted and used along with information on the possible consequences that can occur if the soils information is misinterpreted, misused or abused.

I do have some examples of how my knowledge, skills, education, and experience as a professional soil scientist has helped me on small scale soils work that I have done as an employee with the Lincoln County Conservation District.

One example was locating appropriate sites for installing guzzlers, (otherwise known as wildlife watering facilities) in CRP fields for District cooperators. The fiberglass guzzler tank is approximately 6 feet square and 26 inches deep. Good locations for guzzler sites have the following characteristics:

- 0 to 3 % slope
- easy-to-dig silt loam textures with no significant rock fragments, duripan layers, or bedrock within 30” of the soil surface,
- no high water table or significant flooding hazard, and

- preferably are in a somewhat elevated position in a draw bottom that has some protection from the wind.

In nearly all locations where the District installed a guzzler for a cooperator, and especially where the hole for the guzzler was going to be dug by shovel, I took a soil auger and made sure the site fit all the above criteria before the guzzler was installed. Sometimes I had to convince the cooperator or other District staff that the guzzler site should be moved 20 to 100 feet or more from the original site in order to have better site to install the guzzler. My knowledge and experience as soil scientist allowed me to find the subtle micro-sites on the landscape that were most favorable for guzzler location and that were also closest to the location desired by the cooperator.

Locations for several guzzlers in the Harrington area were sited at the insistence of the cooperator and when I was not able to offer my assistance in the field. These sites ended up being poor sites for guzzlers. Several of these sites were located on 8 - 15% slopes, and water was eroding the fill dirt around the outside of the fiberglass tanks after the guzzlers had been installed. I was asked to finish hand digging the bottom portion of the hole for another guzzler in this area, and I had to fight through duripan intergrade horizons (2Bkq horizons) with cemented cicada casts that were very hard to excavate by shovel. If I had been present when the guzzler sites were located, I would have insisted that the sites be shifted to nearby better locations.

In one location in northern Lincoln County, I ended up moving the initial site for a guzzler away from the border of wet depression and onto a nearby hilltop because the soil was too wet, even along the elevated boarder of the wet depression. I have heard that in Spokane County, some guzzlers were installed in soils and locations with a high water table. In the spring following the guzzler installation, the pressure of the high water table floated the fiberglass tank up out of the ground until the tank was floating on water and was jammed up against the bottom of the collecting wings on both sides of the tank. The only way to solve the floating guzzler tank is to completely remove the collecting wings, pump the water out of the tank, and reinstall the guzzler in another location that does not have a high water table. I know how much work is required to install a guzzler, and I can imagine how frustrated a landowner or operator would be if they had to redo all the work required to relocate a guzzler from an unsuitable wet location to more suitable drier location where the guzzler should have been installed in the first place.

Another example includes my time spent working with a fencing crew installing fencing to exclude livestock for riparian projects in Lincoln County. From my past experience, I know what types of vegetation will grow on “very shallow” versus “shallow” range sites as well as what vegetation is typical over similar looking stony loam range sites often found on deep skeletal flood deposits. For fencing, the “very shallow” range sites over basalt bedrock need to be drilled using an air compressor and rock drill, while the shallow and stony loam range sites can have steel fence posts installed without having to use the rock drill. The fencing crew does not have the comparable soils and vegetation knowledge. I could almost always predict what would be needed for each steel fence post site, but the fencing crew often could not predict what was needed for these sites

until after they had first tried to install the fence posts. Because it takes time and effort to pull the air compressor into range ground areas where it is needed, it saves time and money to know in advance where the steel fence posts most likely will need to be drilled into the bedrock.

For one fencing location in obviously wet reed canarygrass sites close to Crab Creek, I made sure that buckets of road gravel were available for compacting the soil around railroad ties for H braces. This was the most feasible method to insure that more solid and sturdy H braces were installed in this silt loam soil that does not have adequate strength by itself to support the railroad ties when wet (most of the year). I told the fencing crew to expect water in the hole before they were finished digging the 3 foot deep holes for the railroad ties, but they were still initially surprised and dismayed to find water in the holes at about 2.5 feet down from the surface.

Correlating the onsite vegetation with soil conditions is one example of where soil scientists commonly work with other related professionals (range conservationists, in this example) to complete the overall job in an appropriate and professional manner. The soil scientist identifies and describes the soils, interprets the use and management for the soil series that are typically found with this vegetation, and also describes the landscape positions where these soils are typically found, while the range conservationist designates what typical range site description best fits the vegetation and what the typical range production is for the site.

I believe that the vast majority of soil scientists are ready and willing to work with other professionals on jobs that require work that is outside of the expertise of the soil scientist. I sometimes wonder how many professionals in other related fields of expertise are providing soils related information on their own to their clients, when they should really be consulting with a professional soil scientist to adequately address issues and concerns that are primarily based on the soil resources!

Soils scientist are the professionals that know the most about the soils in a given area, and are the professionals that should be consulted for questions that revolve and center around the soils resources in that area. Other related professionals that do not also have the additional equivalent soils expertise (geologists and engineers, for example) are not qualified to provide the necessary soils information on issues and concerns that center around the soils resources in a given area!!! Soil scientists with experience in that local area are also one of, if not the most qualified professionals to provide input on where expensive, site specific projects that are primarily installed in the upper 5 feet or so of the soil profile should be located on the various, subtle micro-sites on the landscape for a successful and cost effective project.

Sincerely,

Dean White

Water & Soil Resources Technician, Lincoln County Conservation District

ARCPACS Certified Professional Soil Scientist #22725

Historian, Washington Society of Professional Soil Scientists (WSPSS)

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October 4, 2007

RE: Sunrise Review for Licensing Soil Scientists

Dear Mr. Chunn,

Thank you for the opportunity to comment on the Soil Scientist Licensing. I am a licensed Engineering Geologist (#468) with Washington Department of Natural Resources, Forest Practices Division and at present I am the Acting Forest Practices Science Team Lead. I understand that the new soil scientist license is shouldn't affect those of us who are already licensed geologists, etc. in Washington State; however, I have two concerns about the proposed new Sunrise Review.

1) First, I object to the definitions as written, of what geologists do.

From your website:

“REVISED text of the Soil Scientist Licensing legislation, January 31, 2007”.

(12) "Soil science" means the science that:

“b. is distinguished from geology, as defined in RCW 18.220.010, by the fact that the living soil ecosystem, which is the study focus of a soil scientist forms on the surface on the geologist's focus, which is the greater earth's crust. Geology deals with relatively undisturbed materials formed at the earth surface or within the earth's crust by large-scale tectonic or depositional processes. Soil scientists study how the surface of that material changes over time in response to weather, biology and topography on a comparative micro-scale;”

The underlined statement is only partially true. The earth is dynamic and geologists do not simply study relatively undisturbed materials. One of the underlying tenets of geology is that “the present is the key to the past”. Therefore, we study how the earth is continually changing which means that we examine recent surface processes, which in turn include weathering and erosion, as well as mass wasting.

In my field of work engineering geologists and geomorphologists predict landslides in forested basins. In order to do so, we gather information or data on not only recent (last 50 years) land use history, but the geologic history including rock type, geologic structure, topography, slope form, slope angle, geomorphology (landslides and landforms in the vicinity), aspect, hydrology, and soil, to name a few variables. “Soil” includes weathering products and composition, potential for erosion, porosity and permeability, and tendency for compaction and slumping, as well as other factors. Information about climate and weather patterns and how water travels through the soil are also important. Additionally, we are often requested to identify wetlands and channel migration zones. We do this partly by examining soil composition and depth. So we do not just deal with static conditions. We deal with every physical thing that has to do with a site or a region and that includes disturbed materials as well as depositional processes and large-scale

tectonic forces. As we use a holistic approach in terms of time and material, I would rather not have us be relegated by law or any other means, to a static world!!

My suggestion about the wording of that section is to completely take out the sentence about what geologists do and just keep the part about what soil scientists do. It could read something like this:

(12) "Soil science" means the science that:

b. "as defined in RCW 18.220.010, studies the living soil ecosystem. Soil scientists study how that living material changes over time in response to weather, biology and topography on a comparative micro-scale;"

That way, you wouldn't be misrepresenting the work that geologists do and you would be stating what, in fact, soil scientists do.

2) From the Sunrise report: "Geologically Hazardous Areas—A critical areas report for a geologically hazardous area shall be prepared by an engineer or geologist, licensed in the state of Washington, with experience analyzing geologic, hydrologic, and ground water flow systems, and who has experience preparing reports for the relevant type of hazard."

"For the most part, a geologist or engineer would be the qualified profession for preparing geologically hazardous area reports. However, erosion hazard reports are uniquely soil science."

I disagree with this last statement. Soil is important in erosion hazard reports but so are vegetation, hydrology, topography, slope gradient, slope shape. Soil erosion potential is dependent on the type and characteristics of soil present, but also the type of vegetation present, the amount and source of water affecting the site, the topography: if the site is sloping or not, or in a basin, the slope gradient, and the shape of the slope. If you turn a fire hose on soil on a steep convergent slope, the soil is going to move regardless of the type of soil. If an assessment is strictly about soil, then as far as I can tell, it is incomplete.

In my field, a geologist can make erosion hazard assessments without using the Uniform Soil Loss Equation. Perhaps however, the Sunrise Report is referring to a specific type of erosion hazard report with which I am unfamiliar.

Thank you again for the opportunity to comment.

Sincerely,

Venice Goetz  
Geologist, LEG #468  
Acting Science Team Lead  
Forest Practices Division  
WA Dept of Natural Resources

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## Gentry Consulting

**Herman R. Gentry, MS**  
ARCPAC Certified Professional Soil Scientist  
ARCPAC Certified Professional Soil Classifier  
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### Regulation of Soil Scientists

September 2, 2007

I am asking for your support.

I am a retired Soil Scientist that worked 34 years for the Natural Resources Conservation Service. I have a consulting business that has worked throughout Washington State and I feel this is an important effort to ensure protection of the citizens of Washington.

I have attached a newspaper article in regards to public hearing before the Kittitas County commissioners. State Rep. Bill Hinkle attended meeting. I gave testimony in regards to my concerns about ground water contamination. I pointed out soil interpretations did not address problem soils. This included filling in test pits before recorded high water table which occurs when the irrigation water is first turned on. That is why I think it is important that Regulated Soil Scientists should conduct soil evaluations. This will insure that correct interpretations are being made uniformly statewide.

I have been working on a job for a client on the west side that began April 29, 2007. The opposing client has a Nutrient Management Specialist making interpretations on soil properties which should be made by Soil Scientists. His interpretations are contrary to interpretation made by NRCS employees. This has resulted in extra expense for my client. I have completed extensive documentation which included photograph documents of soil conditions, soil descriptions and lengthy report covering existing conditions. The issue has not been resolved at this time. The Nutrient Management Specialist is working outside his field of expertise and it demonstrates the need for Regulated Soil Scientists.

A list of qualified Soil Scientists is needed. I have had clients tell me it is difficult to find qualified Soil Scientists.

  
Herman R. Gentry, MS, CPSS, CPSC



**Thurston  
Conservation District**  
Local Solutions to Local Problems  
2918 Ferguson St. SW  
Building #1, Suite A  
Tumwater, WA 98512

Conservation Department of Licensing Bio-engineering • Soil Analysis • Conservation Education • South Sound GREEN • Nutrient Management

**Bruce Chunn**  
PO Box 9030  
Olympia, WA 98507-9030  
Mail stop 48027

Aug. 14, 2007

Dear Mr. Chunn,

Regarding the licensing of Soil and Wetland professionals:

1 and 2. I feel that licensing Soil and Wetland scientists is probably a good idea. As far as I know, there are no requirements for these positions as this time that give a client any reliable way of determining the qualifications of the individual or company doing evaluations of soil or wetland conditions.

As a certified professional crop consultant, I feel that professional credentials are very helpful to the industry. A client at least has the confidence in his consultant that comes with that recognition by a legitimate certifying agency that he or she has demonstrated proficiency in the field of expertise.

3. Generally, a qualified professional soil or wetland scientist should be familiar with standard practices and methods for whatever service the customer requests. Of course there is a range of possible services that each of these types of scientists might be asked to perform. However a qualified professional should be prepared to provide the level of service requested by the customer.

4. My experience with soil and wetland scientists has been limited to working with professionals that were certified in their fields by an independent certifying agency. For example, my certification, Certified Crop Advisor, is provided by the American Society of Agronomists and requires a minimum of 2 years experience, a degree in an appropriate field of study, passing 2 comprehensive tests and 40 hours of continuing education credits every two years. The American Society of Soil Scientists has a similar certification program. These societies keep track of customer complaints and can remove a member from the certification lists if a member fails to provide services that meet Society standards.

I recommend that the Dept. of Licensing contact the American Society of Soil Scientists directly for more information about their certification standards and review and disciplinary processes.

5. I think the most efficient and least intrusive way to ensure quality performance in the soil and wetland scientific fields would be to accept the certification procedures of the professional organizations and to work with those organizations to insure that inferior performance is reported and appropriate disciplinary actions are taken.

I feel that if licensing is required that professional designation by a recognized professional organization should be adequate to meet licensing requirements. The Department of Licensing should be able to work with the certifying boards of appropriate professional organizations to develop a mutually acceptable memorandum of understanding about appropriate proficiency standards. Probably if a potential licensee who chooses not to be a member of a professional certifying association but can meet the standards developed by the association in consultation with the Dept. of licensing, then that person should be able to become licensed in this state.

I hope my comments are useful to you.

Brian Thompson CCA  
Resource Specialist  
Thurston Conservation District  
[bthompson@thurstoned.com](mailto:bthompson@thurstoned.com)

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Daniel R. Ufnar, CPSS  
SSSA Certified Professional Soil Scientist  
1335 Tullis St NE  
Olympia, WA 98506  
[ufnar@hotmail.com](mailto:ufnar@hotmail.com)

Bruce Chunn  
Dept. of Licensing  
PO Box 9030  
Olympia, WA 98507-9030

Mr. Chunn,

I am a certified soil scientist working as a private consultant conducting soils and wetlands work for public and private landowners in the south sound area of Washington State since 2004. Unfortunately, I was and will be unable to attend the public hearings for soil and wetland scientists seeking licensure, but I would like to offer my support for the legislation in the following written testimony.

I have some specific reasons for my support of legislation, and much of my concern revolves around a subject of importance to both soil and wetland scientists: *the proper identification of hydric soils in wetland determinations*. As a young professional, I am also interested in gaining a level of professional respect amongst my peers and colleagues in other fields as well as maintaining potential opportunities for employment in other parts of the country.

#### *Hydric Soils*

There is currently a lack of understanding and application of hydric soil terminology and field identification of hydric soils across a wide spectrum of professionals here in Washington. This includes those in the private consulting business, local jurisdictional staff, state agencies, and federal staff.

As this region continues to grow and expand, new development will be putting more and more pressures on regional wetlands, and their proper identification and interpretation of functions becomes more important. This is especially apparent in marginal or seasonal wetlands that are often difficult to identify and often become contentious between the regulator and the private land owner. This potentially could cost the land owner thousands of dollars in taxes or lost income, or cause detrimental impacts (increased flooding from runoff, increased pollution threats, etc.) to wildlife habitat and other human resources.

Due to the lack of training and limited soil experience of many local jurisdictional staff, state agencies, and private consultants—I feel like some of these cases are not being decided with the best available science. In addition, there have been some cases involving both private consultants and local jurisdictional staff who have actively misapplied, or promoted the misapplication of Hydric Soil Criteria for wetland determinations. Whether this conduct was done intentionally or not out of lack of proper training is not known; however, this does prove to me that there is a need for a State system to regulate these mistakes.

*Professional Advancement & Accountability*

Another topic that I am personally affected by as a young professional is potential advancement and accountability within my field. I am a master's degree graduate from Washington State University in soil science, and I have also worked in other states that do have state licensure of soil scientists. Although soil and wetland scientists do have national self-regulating professional certification programs, these have little influence on those who wish to not become certified or in cases of unprofessional behavior. It is very difficult to follow through with a complaint (and the client is likely unaware of who even to make the complaint to), and even if the member has their certification suspended or revoked it will have little impact on their professional career as many jurisdictions don't even recognize or require consultants and/or staff to be certified.

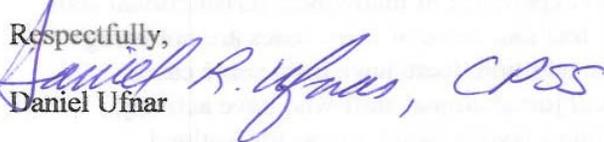
In addition, because these programs are national in scope they are not involved or up to date with issues directly concerning our state. And while the certification program is somewhat meaningful amongst our peers—it has, as mentioned, little sway over jurisdictions or other entities in the state. In fact, a fellow soil scientist recently asked me if it was worthwhile to gain certification through our national organization (Soil Science Society of America), and I told him that to be honest, if he wasn't interested in gaining status amongst his peers in the field it would have little to no impact on his day-to-day work. In essence, it becomes a choice of whether you want to spend the money every year to be called "certified" because the certification does not provide a level of protection or oversight for those hiring soil and wetland scientists.

A lack of licensure or some type of regulation may deplete the pool of new professionals in our state, as we could very well lose out on those graduating from soils and wetland programs at our universities (Washington State has a soils department) or those coming in from out of state. As more and more states have regulations regarding soil and wetland scientists it becomes harder for professionals to move from Washington and begin or work for firms or agencies in other states that requires their scientists to be licensed.

A state-wide sanctioned program would regulate those who are conducting work within Washington, hold individuals accountable, and provide a level of safety for both the public and private sectors that is just not in place currently.

Thank you for your time and consideration. Please contact me if you have any questions regarding my testimony

Respectfully,

  
Daniel Ufnar, CPSS



# Washington Society of Professional Soil Scientists

**“A nation that destroys its soil, destroys itself.” Franklin Roosevelt**

## AN OPEN LETTER FROM THE PRESIDENT OF THE WASHINGTON SOCIETY OF PROFESSIONAL SOIL SCIENTISTS

November 15, 2007

I am writing this letter to officially record the support and desire of the Washington Society of Professional Soil Scientists (WSPSS) to see the successful pursuit of licensure of soil scientists in the State of Washington. This desire for licensure has in fact been brought forward by soil scientists themselves in the interest of better protecting public health, safety, and welfare through effective oversight and regulation of professionals in the field of soil science. WSPSS was organized in 1974 and has the mission to increase the overall knowledge and awareness of soil science and the role of the Soil Scientist in the public and private sectors. Throughout our history, WSPSS has worked to fulfill this mission by demonstrating and promoting sound scientific principles, leadership, and high ethical standards. The membership of WSPSS includes individuals from academia, government and the private sector. A licensing program in our state would allow a set of standards to ensure those that practice soil science are qualified and that they maintain those qualifications.

Unfortunately, examples exist where substandard work under the guise of soil science has directly impacted the public interest with respect to water and habitat quality as well as property ownership and management. Seven other states (NC, WI, MN, ND, ME, TX and NH) have seen the need for regulation and have enacted state licensing. Many more states are in the process or are considering licensing. Although the work of soil scientists has been labeled by other professions as falling within their existing licensing programs, the education and training of soil scientists is regarded as inadequate or unrelated to the existing license. This dichotomy is troubling in that the work soil scientists specialize in appears worthy of state oversight but the professionals most suited for the work cannot seek that oversight for their work.

Soil scientists possess a unique set of skills and qualifications that make their training and experience invaluable in the field of earth science and natural resources. No other profession is *as qualified or motivated* to perform the analysis and reporting that constitutes a thorough soil investigation as it relates to the common definition of soil science. Many soil investigations are contracted out to soil scientists by other professions, owing to the lack of interest or expertise by those professions in performing the job correctly. Although soil information is required by a variety of government entities and regulations in most environmental investigations, it is all too common for professionals outside of soil science to ignore the requirement or to dismiss the information as superfluous. Research and litigation have proven this is not the case when it comes to adequately addressing environmental concerns. As such, soil scientists stand ready to effectively address soil concerns in the state of Washington and we eagerly anticipate the opportunity for complete transparency in the work we perform. We firmly believe a state program for licensure of soil scientists will provide the very best means for protecting the citizens and resources of our great state.

Sincerely,

Toby Rodgers, B.S. Geology, M.S. Soil Science  
WSPSS President

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**Subject:** Sunrise Review of Soil and Wetland Scientists

I am chair of the Council of Soil Science Examiners. This group provides national exams for the licensure and certification of professional soil scientists. Soil scientists are uniquely qualified to evaluate land for agricultural, environmental, and development activities. As such, I believe it is a very positive move to provide licensure of soil scientists to ensure that the public is protected through the work of professionals who are verified as having met high standards of ethics and practice. I look forward to the state of Washington joining the ranks of states with licensing programs.

Sincerely,

Dr. Mike Mullen  
Associate Dean - Academic Programs  
College of Agriculture  
N6 Agricultural Science Bldg N  
University of Kentucky  
Lexington, KY 40546-0091

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[www.fwaa.org](http://www.fwaa.org)

TO: Bruce Chunn Management Analyst  
Washington State Department of Licensing  
FROM: Scott McKinnie, President  
Far West Agribusiness Association  
DATE: November 8, 2007  
SUBJECT: Soil Scientist Legislation

I appreciate the opportunity to provide comment to you regarding the Soil Scientist legislation which has been introduced each of the past three Washington State Legislative sessions. Far West believes there is no necessity for such a designation to be advanced.

In reviewing the legislation each time it has been presented, and in speaking to the advocates for the legislation, it is clear to us the confusion this bill will put into the agricultural community. Our industry values highly the quality soil scientists that work within the agricultural industry, both at institutes of higher learning (e.g. Washington State University) and within industry itself. The term soil scientist has a very distinct meaning of us. It refers to professionals who hold doctorate degrees and are recognized for the particular area of agronomic expertise.

The bills I have read allow others to be licensed by the state as a soil scientist who may not necessarily hold the same educational credentials. We believe this is poor policy.

Those who are recognized as soil scientists should have earned their designation via education, not the purchase of a license. Additionally, the bill tossed a wide net over the entirety of the agronomic community, and then created exemptions for specific types of professionals who deal with soil.

Should such legislation reappear in the 2008 session, we will again challenge it's introduction. We believe that the issues associated with those who are promoting can be handled within their own governance. The State of Washington should not be involved.

The United States Consortium of Soil Science Associations is pleased to comment on your recent e-mail suggested questions concerning licensing of Soil and/or Wetland Scientists.

The USCSSA applaud the excellent awareness and work being done in the State of Washington to achieve a licensing program for Soil and/or Wetland Scientists. We certainly support this type of licensing program.

Below is our response to each of the suggested questions you offered:

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***1 -- Would regulation of Soil and/or Wetlands Scientists be beneficial to the industry?***

Regulation of Soil and/or Wetland Scientists would be a positive benefit to the industry. Regulations would require all Soil and/or Wetland Scientists to have technical skills, education, experience and etc to be competent in terms of having the technical skill to do quality work. It will ensure qualified people are in the business of providing good acceptable requested work for the consumer.

A regulation program would greatly assist in keeping all Soil and/or Wetland Scientists informed on the standards of the industry and responsive to the needs of new technology, and new state/federal guidelines/regulations.

Regulations would greatly assist in identifying training needs, problem areas and providing training opportunities for Soil and/or Wetland Scientists. Several states currently conduct technical training sessions such as phases of wetlands, hydric soils, mapping techniques and etc.

Regulation would be a definite beneficial to the industry because we (soil scientists) would have a clear process that would allow us to peer review and ensure through targeted continuing education that professional and ethical work is being carried out in the state.

***2 -- Would regulation of Soil and/or Wetlands Scientists be beneficial to the consumer?***

Regulation of Soil and/or Wetland Scientists would be of great benefit to consumer. It would provide an opportunity for the customer to have access to technical competent and qualified scientists they chose for technical advice and doing work projects as requested.

A state licensing program would essentially eliminate those individual who claim to be knowledgeable soil and wetland scientists but in reality do not have the required technical training, knowledge or know the standards to perform acceptable quality work.

State licensing of soil and/or wetland scientists will be of great value in preparing state and local ordinances and/or regulations for a variety of issues i.e. identification of wetlands, suitability of sites for septic tank absorption fields, home site evaluations and etc. Requiring a soil and/or wetland scientists who is licensed by the state or an equivalency to be used in the language of appropriate regulations/ordinances where soil and/or wetland scientists are needed to do the work will ensure the work is performed by a person who is qualified. This will be of benefit in providing quality work for the customer and a reference list of scientists for the customer to use in selecting the scientist needed to do the job.

A personal experience of people not technical qualified in making and interpreting soils occurred in Nebraska several years ago when I was a State Soil Scientists for the USDA- Soil Conservation

Service (Now Natural Resource Conservation Service). Several County Commissioners hired poorly qualified people in soils to do work on agriculture land evaluations for use in tax assessment. The soils work was poorly done, the tax assessment not accepted and the county was out an appreciable amount of money. This result ended up with County Commissioners signing agreements with University, State Department of Natural Resources and USDA to pay for State soil scientists working along with Federal soil scientists in making quality and useable soil survey which was successfully used by the County commissioner in the land evaluation process. This system was shortly expanded state wide with encouragement from the State Department of Revenue.

### ***3 -- Are Soil and/or Wetlands Scientists consistent in their services to customers?***

Yes and probably no. When Soil and/or Wetland Scientists understand and use the standards of the National Cooperative Soil Survey, it is highly probably the services to customers will be of high quality. Many of the Standards of the National Cooperative Soil Survey is included on the USDA-NRCS web site at <http://soils.usda.gov/>. Soil and/or Wetland Scientists who are members of state licensing/ certification programs, members of Soil Science Society of America - Certification Professional Soil Scientists /Classifier (CPSS) program, and state Soil Societies/Associations are required to meet minimum in terms of education – often the Federal Civil Service requirement for employing soil scientists, knowledge, skills, experience etc. It has been my experience during my over 40 years of hands on soil survey at the local, state and national levels these individuals will in general always be consistent in their mythology on how to do a job and consistent in the way they perform their work.

When Soil and/or Wetland Scientists who do not choose to become members of some type of licensing /certification program often tend to be the kinds of people who like to do work their way- often without the required education, not understanding or using the appropriate standards, questionable technical skills, and low esteem for ethics. These kinds of scientists tend to be he ones who do shoddy work resulting in problems for customers, local and state officials.

Most state that do not have some type of soil certification can cite examples of problems with inconsistent or poor work being done. Several of these kinds of problems are cited in your excellent Sunrise Review report – i.e. hydric soils interpretation; assessment of seasonal water table issues related to septic system design (and wetland issues); Land Application of agricultural vegetable and fruit processing water.

### ***4 – Is there evidence of self-protection within the respective industries and, if so is it working sufficiently to protect the customer:***

There is evidence of self-regulations is a few states. Some states such an Arkansas, South Carolina, North Dakota, Georgia, Indiana, Mississippi, Minnesota, and Texas have state soil licensing programs that do provide a level of customer protection. However, most states do not have any type of soil licensing program and the customer does not have a ready list of state licensed soil and/or wetland scientists from which to review for work selection. In these states the individual or business who needs a soil /and/or wetland scientist must use other reference sources to find a quality person. There are several good sources such as a member of the National Society of Consulting Soil Scientists and the Soil Science Society of America Certification Professional Soil Scientists /Classifier (CPSS) program.

The CPSS program is excellent in terms of identifying soil science professionals according to their education and experience. Commonly state law precludes using a certification from a national organization as a tool in local or state regulations, so the public has to be fairly sophisticated to even locate the list of those professionals since it is not provided or directly referenced by the state in any form. Lastly most people do not know these kinds of state soil society/associations and national organizations exist so they are left to their own initiative and luck as to whom they end up getting as soil and/or wetland scientist to help them.

***5 -- Is there a working mechanism within the respective industries to handle consumer complaints and, if so, is it working?***

States that do have a soils licensing program have a working mechanism within their state to handle customer's complaints. Their state licensing boards can remove soil scientists from being licensed within their state as deemed appropriate as a result of customer complains and performance problems.

A state licensing program strengthens this process. First, only licensed people could do the work specified and second, if a consumer is harmed they file a complaint and if found justified the person loses their license and can't work in soils any longer. Certification follows the same process but they can still work without the certification unless the state adds some statutory language to prevent it.

It is important to understand the difference between licensing and certification. Licensing is a mandatory process while certification is a voluntary process. In short states with a licensing program can put some teeth into what they expect and have a legal recourse to take positive action to correct any potential problems.

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We trust these comments will be of value. It is obvious in reviewing some of the background information of your work toward the licensing of soil and/or wetland scientists that a large amount of excellent work has been done in the State of Washington by several people working on this activity. Best wishes in the days ahead. The USCSSA certainly supports you work!

Best Regards,

Jim Culver – Advisory Group – United States Consortium of Soil Science Associations (USCSSA)

-- Retired Soil Scientists – USDA – Natural Resources Conservation Service

611 Jeffery Dr.  
Lincoln, NE 68505

## Wetland Scientist Written Testimony

November 6, 2007

To Whom It May Concern:

I am writing in support of the effort to formalize and make clearer the standards and certifications necessary to conduct work as a wetland consultant. I understand that this is the first of several opportunities to comment on the proposed legislation.

I have been a land use regulator for several decades, most recently as the Planning and Building Director for the City of Ferndale, Washington. In my capacity as Director and as SEPA Official I often had to make determinations regarding the nature of impacts to wetlands resulting from proposed development, as well as judge whether proposed mitigation measures were appropriate.

In making these decisions, I must rely on wetland delineations and mitigation plans prepared by a “professional wetland consultant”. Unfortunately, in contrast with engineers and a host of other professions, I do not know what a “professional wetland consultant” is. I have seen delineations and mitigation plans submitted by Professional Wetland Scientists with doctorates in biology, and I have received the same thing from someone with a brand new Bachelor’s Degree in biology and no experience whatsoever. In the later circumstance, I am usually obliged to accept the material and then arrange for third party review of that work by another trusted professional to determine if it is indeed adequate.

The problem is the lack of clear standards and requirements for wetland consultants, or any commonly accepted degree of certification for achieving professional status. Rectifying this problem will require initiatives such as the proposed legislation, before a professional standard will be set for the biological community in the same way it has been for engineers, planners, surveyors, etc. The fact is, a push is needed.

Passage of this proposed legislation would assist land use regulators such as myself immensely, in providing a yardstick by which to measure the credibility of the information being provided to us. This will make for quicker decisions and lower costs, as the need for third party review would become greatly decreased.

Thank you for the opportunity to comment on this important proposal. I look forward to providing expanded comment as some point in the review process. Please feel free to contact me if you have any questions about this communication.

Sincerely,

Thomas Black, AICP

October 3, 2007

Mr. Bruce Chunn  
Research and Planning Office  
Department of Licensing  
1125 Washington Street SE  
P.O. Box 9030  
Mail Stop 48027  
Olympia, WA 98507-9030

**RE: SOIL AND WETLANDS SCIENTIST PROFESSIONS SUNRISE REVIEW**

Dear Mr. Chunn:

I am a Professional Wetland Scientist certified through the Society of Wetland Scientist (SWS) (No. 1115), and have been a consulting wetland scientist for nearly 20 years. I was on the chapter board of the society for many years, and have been active in planning chapter and national meetings for more than a decade. I have been a Professional Wetland Scientist since 1997.

I am opposed to the proposed title act. In my opinion, the state certification process will not provide a net benefit to professional wetland biologists. The title act will cost biologists a significant sum of money on a yearly basis, especially if we are required certification in more than one state. Based on discussions I had at the SWS annual conference last week, Oregon is proposing a similar process.

It is unclear to me how the title act will be beneficial to the industry or the consumer. Because it is just a title act and not a practices act, we would be certified in title only. SWS provides a certification that allows biologist to call themselves Professional Wetland Scientists. This title act is a duplicate of the certification process that SWS already provides.

I do not see how the proposed title act protects the health, safety and welfare of the public through this certification process. While there are instances of biologists doing unethical things on occasion, the title act will not change people's behavior.

I would hope that you reconsider enacting this proposed title act.

Thank you for your time.

Sincerely,

**SHANNON & WILSON, INC.**



Katie Walter  
Professional Wetland Scientist (No. 1115)

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Re: Support of certification of wetland delineators in Washington

Dear Mr. Chunn:

I am writing this letter on behalf of the Pacific Northwest Chapter of the Society of Wetland Scientists in support of ongoing efforts to pass a Title Act in Washington that would certify wetland delineators. The PNW Chapter now has 240 active members in Washington. That number is expected to increase as more members renew membership subscriptions that have lapsed.

It is my understanding that the Washington Society of Professional Soil Scientists (WSPSS) in their pursuit for licensing/certification for soil scientists has now sought to add licensing/certification for wetland delineators to a proposed Title Act bill introduced to the Washington State Legislature. Other states, including New Hampshire, Virginia, Wisconsin and Minnesota have adopted certification programs for wetland delineators. These programs are all voluntary and have been adopted to ensure that people practicing wetland delineation meet minimum education, training, and experience requirements. All of these programs have a common goal and that is to provide reasonable assurance that properly qualified people are conducting wetland delineations and accurately identifying wetland boundaries. Such programs are in the public interest as inaccurate wetland delineations can result in the loss of wetlands and the functions and values that they provide.

It is widely recognized that wetlands provide many functions and values that are beneficial to society. These include flood storage and desynchronization, water quality protection, and wildlife habitat. Therefore, loss of wetlands that provide flood storage functions can potentially result in increased flooding, damage to public and private property, and loss of life. Similarly, loss of wetlands that provide water quality protection functions can potentially contribute to degradation of water quality.

For these reasons, the Board of Directors of the PNW Chapter voted in favor of supporting similar voluntary certification of wetland delineators in Washington.

Such a program will help to ensure that properly qualified professionals are clearly identifiable. Certification of wetland delineators will help protect the public health and welfare by more closely regulating the people that practice wetland delineation and ensuring that those holding such certification demonstrate a consistent ability to accurately delineate wetland boundaries and thereby protect the functions of these resources.

Sincerely,

Ralph Garono  
President  
Pacific Northwest Chapter of the Society of Wetland Scientists

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Joseph D. Leyda, M.A., W.P.I.T.  
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September 12, 2007

Bruce Chunn, Management Analyst  
Washington State Department of Licensing  
P.O. Box 48027  
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[bchunn@dol.wa.gov](mailto:bchunn@dol.wa.gov)

**RE: Wetland Scientist Certification Statement for D.O.L. Sunrise Review**

Mr. Chunn:

My name is Joseph D. Leyda, and I am a wetland ecologist. I have a master's degree in biology, and I am certified as a Wetland Professional in Training (W.P.I.T.) by the Society of Wetland Scientists. I will be upgrading to Professional Wetland Scientist imminently. I have worked for seven years as a private consulting ecologist, and have experience in wetland delineation, mitigation, permitting, and policy development for local shorelines and critical areas updates under the Growth Management Act. I am writing this letter to share my personal perspectives on the question of certification in Washington, and I am not representing any client or company.

I am in support of state certification, as well as licensing, for wetland scientists. Certification will create minimum standards for wetland scientists, and licensing will establish professional rules and protocols to maintain those standards. Together, licensing and certification will provide for better quality of work, for accountability of professional behavior, and for a better informed governmental advisory entity. In my opinion, these are the three most important benefits to certifying and licensing wetland scientists in Washington.

Certification and licensing will improve the quality of work done by wetland scientists. An examination requirement will ensure a common knowledge base, and more congruity between professional opinions. Too often one consultant "sees" wetlands and another consultant does not. The result is uneven regulation of the resource and a tilted marketplace for wetland consulting. Better standards will reduce liability and risk to citizens employing wetland scientists.

When a wetland scientist makes an incorrect wetland determination, or provides advice that proves to be grossly inaccurate, other parties may be adversely affected. The other party can be either the public in the case of an agency scientist, or a developer in the case of a consulting scientist. Sometimes that inaccuracy or faulty advice can have damaging consequences, particularly in the case of wetland delineation. A particular wetland delineation can change the value of a property considered for development, because the usable land area is reduced when wetlands and associated buffers predominate. Currently there is no avenue for a party perceiving damages to pursue to correct a truly negligent result.

My concern is not so much to punish those in error as much as it is to create a system that protects against such vagary. For example, one of my clients received an on-site wetland inspection from the county staff, who gave an upland determination over most of the 5-acre commercial property, which was vegetated with mowed pasture grasses. He told me he then spent \$60,000 on engineering based on that determination. Later, when he applied for a building permit, he was told by the same county department that he had wetlands all over the site and couldn't build there. He hired me, and I confirmed the existence of the wetlands, and informed him that his engineered site plan would require substantial changes based on the actual wetland locations. He lost the money on the engineering, but also on the purchase of the property, based on the government's on-site verbal wetland determination.

How can that situation be avoided? I think that we should create a system that not only allows such gross inaccuracies to be aired in a legal setting, but also prevents them from happening in the first place. Certification and licensing will establish protocols and standards to bring continuity to the profession. Land surveyors have standard methods which are required to be used in setting property corners, and if the method is not followed, the corner is not correct. My opinion is that wetland scientists should have similar legal standards, especially for wetland determination. The proposed licensing and certification will provide both professional standards and methods as well as the legal accountability for wetland scientists who behave in a less than ethical manner, and will improve the practice of wetland science in Washington.

The final reason for licensing and certification is to create a state legal entity that can advise the government on wetland science policy. The Advisory Board in the proposed code will be available to consult the legislature or governor as needed. That Advisory Board will be made up of wetland scientists with different professional backgrounds such as research, regulation, and consulting. The diversity will provide a balanced perspective on wetland science issues, and a potential alternative to Department of Ecology wetland science policy recommendations.

In closing, I would like to ask you to recommend to the legislature that professional wetland scientists be not only certified, but also licensed in Washington State. I have included a *Draft Professional Wetland Scientist Certification Act* for your review and distribution. It is a work in progress, and several wetland ecologists and lawyers will be making revisions to this text. I will present revised text for the October 3, 2007 hearing scheduled in Wenatchee. This draft *Act* is similar to the soil scientist's proposed code, and includes the suggested legislative staff edits. It also includes the items from the August 21, 2007 letter to you by wetland scientists Jim Wiggins and Scott Luchessa. My intent is to open a venue for legal discussion of the certification and licensing requirements that will produce a meaningful legislative result, and I invite your reply.

Sincerely,



Joseph D. Leyda, M.A., W.P.I.T.  
Biologist



**Oregon**

Theodore R. Kulongoski, Governor

**Department of State Lands**

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October 11, 2007

**State Land Board**

Bruce Chunn  
Research and Planning Office  
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P.O. Box 9030  
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Theodore R. Kulongoski  
Governor

Bill Bradbury  
Secretary of State

Randall Edwards  
State Treasurer

Re: Wetland Scientist Certification

Dear Mr. Chunn:

I participated on a panel last month at the Society of Wetland Scientists chapter meeting in Yakima and learned that you are conducting the analysis for possible state certification of wetland scientists. I thought it may be helpful to you to know about recent legislation in Oregon that directs the State of Oregon to investigate professional wetland scientist certification—the topic of my presentation in Yakima.

The 2007 legislative assembly passed Senate Bill 544 (copy enclosed) as a result of growing frustration on the part of the public and developers with the poor quality of work provided by many wetland consultants. The major concerns that triggered SB 544 centered on significant project delays and cost overruns attributable to incorrect or incomplete consultant work that does not meet state requirements. The state Removal-Fill Law regulates fill and removal of material in waters of the state in order to assure the best uses of the water resources of the state and protect the health, safety and welfare of the people of the state (ORS 196.805). The Department of State Lands (DSL) administers the Removal-Fill Law and, of course, wetland consultants provide much of the information necessary for making our permit decisions.

SB 544 directs DSL to investigate the feasibility of a wetland scientist certification program and come back to the legislature with a recommendation for legislation prior to the 2009 session. Though DSL did not initiate this legislation, we share the concerns raised by the public and worked with the bill sponsors during the legislative session. I have enclosed a copy of DSL's testimony in support of the bill.

We are just beginning our investigation, but I hope this information is helpful to you. Please don't hesitate to contact me if you have any questions. My phone number is 503-986-5236.

Sincerely,

Janet C. Morlan, PWS  
Wetlands Program Manager

Enclosures



**Enrolled  
Senate Bill 544**

Sponsored by Senators MORSE, AVAKIAN, BEYER, JOHNSON

CHAPTER .....

AN ACT

Relating to Department of State Lands; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

**SECTION 1.** (1) The Department of State Lands shall investigate the feasibility of establishing an Oregon certification program for professional wetland scientists. The study shall include but need not be limited to:

- (a) The feasibility of a certification program for professional wetland scientists;
- (b) The existence and validity of professional wetland scientist certification programs;
- (c) The professional methods and procedures about which a professional wetland scientist should be knowledgeable;
- (d) The scope of an initial examination for certification and any continuing education requirements that should be imposed;
- (e) A recommendation of an appropriate entity to administer the certification program; and
- (f) Recommended fees for certification as necessary to cover the expenses of operating a certification program.

(2) Not later than November 1, 2008, the department shall submit a report of the findings of the study conducted under this section, and shall include recommendations for legislation, to the interim legislative committees on environment and natural resources.

**SECTION 2.** Section 1 of this 2007 Act is repealed on the date of the convening of the next regular biennial legislative session.

**SECTION 3.** This 2007 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2007 Act takes effect on its passage.



**Oregon**

Theodore R. Kulongoski, Governor

**Department of State Lands**  
775 Summer Street NE, Suite 100  
Salem, OR 97301-1279  
(503) 378-3805  
FAX (503) 378-4844  
www.oregonstatelands.us.

**Testimony of**  
**Kevin Moynahan, Assistant Director**  
**and**  
**Janet Morlan, Wetlands Program Manager**  
**Wetlands and Waterways Conservation Division**  
**Department of State Lands**  
**On A-engrossed Senate Bill 544**  
**Before the House Agriculture and Natural Resources Committee**  
**May 15, 2007**

State Land Board

Theodore R. Kulongoski  
Governor

Bill Bradbury  
Secretary of State

Randall Edwards  
State Treasurer

Good afternoon. For the record, I am Kevin Moynahan. With me is Janet Morlan. We are here on behalf of the Department of State Lands to testify in support of A-engrossed Senate Bill 544.

What This Bill Does

- SB 544A directs the Department of State Lands to investigate establishing a certification program for wetland professionals practicing in Oregon.
- The investigation would research how well other programs are working; appropriate education and training requirements; and administration options.
- DSL would report the results of the investigation to the Legislative Assembly by January 2009.

Background/Current Situation

- Currently, there are no education, training or certification requirements for persons providing wetland consulting services in Oregon.
- Typical services include: wetland delineations; development planning; preparing permit applications; and designing & monitoring compensatory mitigation projects.
- To provide these services accurately and effectively requires interdisciplinary coursework and training including botany, soil science, hydrology and ecology.
- Many individuals who provide wetland consulting services in Oregon are highly qualified and professional. These individuals are essential partners in the removal-fill permit program—they educate applicants, handle complicated development projects, and navigate clients through multiple permit requirements.
- Unfortunately, many persons providing wetland services are not well qualified and, as a result, they create problems for their clients and for agency staff.

Why it's a Problem

- Few landowners or businesses know how to locate a highly qualified consultant.
- When they run into problems with their consultant, they're usually very surprised to learn that there are no education or certification requirements.
- A few examples of problems people run into are:
  - Multiple revisions to or rejected wetland delineations
  - Incomplete permit applications and multiple submittals
  - Cost over-runs and project delays, sometimes to the next construction season

These comments are submitted in response to the Washington Department of Licensing's request for comments regarding potential registration for wetland scientists. My academic background is in plant and soil science (M.S. degree) and I have been practicing in the field of wetland science for approximately 20 years.

I currently do not see a need for registration requirements for wetland scientists in the state of WA. Wetlands are currently regulated by the U.S. Army Corps of Engineers at the federal level. Any wetlands on public or private lands that affect Washington state residents are already confirmed, verified, or identified by the Corps' staff; it is not the decision of the wetland scientist outside of the Corps. Wetlands are also regulated at the local level through critical area ordinance regulations, which again are confirmed or verified by the local jurisdiction, not the independent/consultant wetland scientist working for the public or private entity.

Washington is unique in that the state does not issue a permit for filling wetlands. Although the state issues 401 water quality certification in association with a federal 404 wetland fill activity, there is no state permit process absent of the 404 permit process. Ecology has stated wetlands are regulated by the state under RCW 90.48, but again there is no state permit issued. Therefore, it seems regulating/registering individuals whose careers are focused on wetland sciences seems to be an unnecessary requirement.

Wetland scientists perform many activities or may specialize in only one of these activities – e.g., conduct delineations, identify and assess functions, assess impacts, develop methods for restoring or rehabilitating wetlands, etc. Wetland scientists may specialize in a specific field such as wetland botany, hydrology, soils, or wildlife biology. Wetland scientists may also focus their careers in a specific type of wetland in freshwater, estuarine, riparian, or vernal wetlands. The broad field of wetland science offers a wide range of disciplines and therefore can require a wide range of specific skills, training and education. Applying one registration to such a broad field is not a solution to ensure all disciplines of wetland science practice under an assumed threshold of competence. Wetlands occur in the landscape along a continuum of habitat types and wetland science is integrally linked to other fields such as fisheries science, wildlife biology, river geomorphology, etc. Requiring state registration for wetland sciences within the broad range of interrelated sciences the wetland scientist must participate in is not practical.

Registration will not make a significant change in the quality of services provided to the consumers. As previously noted, wetlands are regulated by three levels of government in Washington State and it is the responsibility of those governments to ensure their regulations are administered. Currently the Society of Wetland Scientists offers certification for professional scientist and I know many certified scientists that fall within a wide range of philosophies and approaches to practicing wetland science. State

registration, like SWS certification, will not likely reduce this range of philosophies and practice of wetland science.

Wetland scientists will continue to work within the industry as academics, government regulators, private consultants, environmental advocates, fundraisers, etc. Wetland registration is not needed at this time to provide benefits to the industry or consumers. Three levels of government agencies will continue to regulate wetlands and those agencies will continue to provide training to their wetland scientists, and will expect professional services from their employees. Outside of the government regulatory setting, I would hope that my undergraduate and graduate training in plant and soil science and ecology, along with my years of experience and interaction with scientists of similar background is sufficient to continue my career choice. It is my responsibility to identify to the consumer, wetland regulator, or colleague how wetland science can be held to an expected standard, or when it is being compromised.

Mark Matthies

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10-29-07

RE: Sunrise Review for Licensing Wetland Scientists

I was unable to attend the hearing in Burien recently regarding DOL's Sunrise review of licensing for Soil and Wetland Scientists. I wanted to make sure I sent in written comments for your consideration.

My comments are specific to the proposed licensing of wetland scientists and **not** to soil scientists.

In terms of background, I am a licensed geologist, engineering geologist, and hydrogeologist in the State of Washington. I am also a Professional Wetland Scientist certified by the Society of Wetland Scientists. I have twenty years of experience performing wetland science in the State of Washington both as a private consultant and as a state regulator.

**1. Would regulation of Wetland Scientists be beneficial to the industry?**

Yes. Initially, the cost of a licensing program may be expensive, and the cost of licensing will be either absorbed by the licensee or passed on to the consumer. This expense may not be beneficial to the industry initially, but over the long term, licensing will help raise the standard of practice within the industry which should lead to fewer lawsuits and better overall performance.

One of the main problems today is the practice of wetland science by unqualified persons. Licensing would help to establish minimum qualifications for wetland scientists. Licensing requirements would lead to an increase in the demand for qualified wetland scientists and that would be good for the industry.

**2. Would regulation of Wetland Scientists be beneficial to the consumer?**

Yes. Initially, the cost of licensing may raise fees for consumers of wetland science. However, licensing will give consumers an opportunity to hold wetland scientists accountable if they experience unprofessional conduct or sub-standard work products.

**3. Are Wetland Scientists consistent in the services provided to consumers?**

In the area of wetland delineation, I would say there is fairly good consistency in the services provided to consumers due to the requirements of local governments and other state and federal regulations and methods.

In other areas of wetland science such as mitigation planning and wetland restoration, I would say there is poor consistency provided to consumers.

**4. Is self-regulation of Wetland Scientists working sufficiently to protect the consumer?**

Absolutely not. Currently there is little to no self-regulation of wetland scientists in place to protect consumers. Typically, only certified wetland scientists can be held accountable by de-certification. Otherwise, it is up to local and state governments to disapprove permits on the basis of inaccurate wetland products prepared by wetland scientists.

**5. What do you see as the least intrusive method to ensure quality performance by Wetlands Scientists?**

Establish minimum education and experience qualifications for receiving a wetland science license. Make licensure of wetland scientists mandatory for all persons performing wetland delineations, wetland inventories, and wetland mitigation and restoration projects.

**6. How does the Wetlands Scientists industry, or membership associations within it, handle complaints?**

Typically, the wetland industry may refer complaints to local governments when it is noticed that sub-standard work has been performed. Membership

associations, such as the Society of Wetland Scientists has ethics and other subcommittees to review complaints of incompetence and unethical behavior.

**7. How does the lack of regulation of wetland scientists endanger the public safety, health and welfare?**

Inaccurate representations of wetland type, size, and protection requirements by wetland scientists and other unqualified persons representing themselves as wetland scientists leads to reductions in wetland functions (e.g. water storage, water quality protection, fish and wildlife habitat) and can lead to improper citing of on-site waste disposal systems, and residential and commercial development, that can have negative effects on public health, safety and welfare.

I suggest that because of the interdisciplinary nature of wetland science, regulation of wetland scientists is going to be a challenge. I recommend that the composition of the oversight committee for wetland scientists reflect this interdisciplinary characteristic by having at least one member be a soil scientist, one member be a botanist, and one member be a hydrologist. In addition, other members of the oversight body should have experience in private consulting, academia, and regulation.

Sincerely,



David S. Parks  
Geologist/Wetland Scientist  
LG, LEG, LHG #533/PWS#1623  
Forest Practices Division  
Washington Department of Natural Resources

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**Sent:** Monday, November 05, 2007 1:51 PM

**Subject:** Re: Certification of wetland scientists

With regard to whether or not to certify wetland scientists for services other than delineation, I am not unequivocally opposed, but I see no pressing need for it now. The services I listed in most situations do not have the same legal implications that delineation does. Certification would add another layer of bureaucracy, without an obvious or strongly demonstrated need. If certification is required for non-delineation tasks, the requirements should be kept much broader than for delineation. For example, require simply a college degree in an environmental field, and prior experience on related tasks.

You may find my position unusual, given the fact that I stand to gain financially from a certification requirement, partly because I teach other wetland professionals as well as college students. However, I think my position as stated is the correct path to take.

Paul Adamus, Ph.D.  
Assistant Professor  
College of Oceanic and Atmospheric Sciences,  
and Water Resources Graduate Program,  
Oregon State University

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**Subject:** Certification of Wetland Scientists

I testified at the public meeting in Burien about this topic. I noticed this morning that today is the deadline for comments for the sunrise review process.

I would like to reiterate my recommendation that the Professional Wetland Scientist certification not be made the sole basis for any state certification that is being considered. I have a B.Sc. degree in Botany from the University of Washington and a M.S. degree in Plant Pathology from Cornell University and have been a full-time wetland consultant since 1991. Although I am a U.S. Army Corps of Engineers certified wetland delineator and a member of SWS since 1991, I decided not to apply for PWS certification when it was developed because it seemed redundant, expensive and was not a requirement of any of the jurisdictions in which I worked.

I would not currently qualify for PWS certification because I was educated before formal programs in wetland science had been developed. I have more experience and knowledge in wetland science and regulations than the PWS people I have worked with. Originally, people with prior experience rather than being graduates of wetland programs could apply for PWS status but they no longer allow this.

It would be unfair to people such as myself and not in the public interest to discriminate against senior professional wetland specialists such as myself by adopting the un-amended PWS as a state licensing requirement to perform wetland delineations. Maybe I should have been politically motivated to obtain and maintain this certification when it was originally conceived, but I should not be punished retroactively because I chose not to do it.

Thanks for your consideration of these comments.

Felix Mahr, Principal Biologist

**Land-Tek Wetland Services**  
Olympia, WA

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**Subject:** Wetland Scientist Licensing

I would support licensing or some other state-sponsored certification but it is important to understand that ignorance or limited experience and skill are not the only reasons delineations may be inaccurate. Some consultants are ethically challenged so any licensing effort should also include a requirement that professional ethics be taught and adhered to. As it stands now, we often do "field verification" of consultants work when the reported results differ substantially from our understanding of the site characteristics.

**Michael N. Paine**

Environmental Planning Manager  
Department of Planning and Community Development  
City of Bellevue

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## Resource Planning Unlimited, Inc.

Shelly Gilmore • 1406 East F Street • Moscow, ID 83843 • (208) 883-1806 • [rpu@turbonet.com](mailto:rpu@turbonet.com)

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September 4, 2007

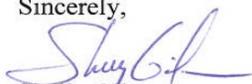
Bruce Chunn  
Research and Planning Office  
Department of Licensing  
PO Box 9030  
Olympia, WA 98507-9030

Comments for Public Hearing

I do not believe that the regulation of Wetland Scientists would be beneficial to the industry, be beneficial to the consumer, nor additionally protect the consumer.

The consumer presents a report or study performed by the wetland consultant (scientist) to their respective County and/or Washington Department of Ecology for review and final jurisdictional determination. The consumer would not further benefit from a regulation requiring a wetland consultant to be licensed. The license would not enhance the quality of the wetland consultant's report. Because the final jurisdictional determination is authorized by Ecology in the State of Washington, the additional level of regulation would not change the determination or decision that Ecology would make regarding presence and absence of wetlands, the categorization of wetlands, or wetland mitigation efforts.

Sincerely,



Shelly Gilmore

Resource Planning Unlimited, Inc.

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Department of Licensing Wetlands Scientist Public Hearing 9/11/07  
Comments by Sarah Blake, Professional Wetland Scientist (PWS) #1377  
Blake Environmental LLC 12506 Smokes Road Arlington, WA 98223  
[northfork@prodigy.net](mailto:northfork@prodigy.net)

Before starting my own environmental consulting company with my husband, I worked for nearly 5 years for the Washington State Department of Ecology as a Wetlands Specialist and previous to that worked as a Wetland Biologist for a local jurisdiction in another state.

As all of us in the room would agree, the main reason for this discussion is to effectively protect wetlands, which are “waters of the state”. However, I am not aware of published literature that points to poor wetland delineations as a main cause of wetland loss. The literature does mention the lack of wetland mitigation follow-up, poor wetland mitigation design, the historical conversion of wetlands for agricultural uses, the allowed cumulative loss of small or isolated wetlands and a lack of enforcement as significant causes of wetland loss in our state (*Washington State Wetland Mitigation Evaluation Study Phase 2 Evaluating Success*, Washington State Department of Ecology, February 2002; *Wetlands in Washington State Vol. 1: A Synthesis of the Science*, Washington State Department of Ecology, 2005).

In any profession, there will be “bad apples”, even with state licensing or certification requirements. Is the public, via citizen or business groups, asking for wetland scientists to be licensed or otherwise regulated by the State? In other words, how big of a problem is this really? Where is the data showing that there is a dire need for state regulation of wetland scientists?

In further consideration of the public, consumers will bear the financial cost of the licensing fees, as these will be passed on when wetland delineation or other wetland reports and products are prepared. This greater cost for services will not necessarily guarantee a good product. In addition, further increasing the cost for wetland delineation services may lead people to choose not to hire a consultant, doing work in wetlands without permits and leading to more wetland loss.

Although it is not a requirement, some wetland scientists in our state have obtained certification as a Professional Wetland Scientist (PWS) or a Wetland Professional in Training (WPIT) from the Society of Wetland Scientists (SWS). This PWS certification requires that applicants possess the education, experience and references desired as a foundation for performing wetland work. State certification or licensing would be duplicating this existing certification program operated by our professional association, and would likely lead to its elimination. As I know there are concerns with the administration of this PWS program, the answer lies in hiring competent managers to oversee its maintenance, which is an internal association matter.

Instead of forming a completely new bureaucracy to duplicate what the PWS program is already providing, the solution may lie in making the PWS certification a requirement to operate in the State of Washington, if a wetland consultant or other wetland professional consistently produces inadequate reports. It is my understanding that the existing PWS certification program also offers redress for complaints and possible de-certification when warranted. I am not aware whether or not this avenue has been attempted when or if problems with PWS certified practitioner has occurred. If the PWS certification was a requirement, then this would reduce the number of unqualified wetland practitioners, some of whom may be accountable for submitting inadequate wetland work. However, there are certainly many consultants that are currently operating that produce competent wetland reports and have not chosen to apply and pay dues to the PWS program. Forcing a state licensing requirement for wetland practitioners will eliminate their positive contribution to this field.

It is not clear how proposed state certification or licensing will “ensure consistency and accuracy” in wetland delineation work, as mentioned in the August 1, 2007 Sunrise review letter to DOL. Obtaining a state license does not necessarily mean a particular wetland delineation produced by a wetland practitioner will be accurate and complete. State and local law requires specific methodology and data to be included in a wetland delineation, as laid out in the *Washington State Wetlands Identification and Delineation Manual, March 1997* (Washington State Department of Ecology, 1997). If erroneous, incomplete or incorrect information is included in a wetland delineation report, it is the responsibility of the regulator reviewing a project to point out those inadequacies and require a delineation that complies with the *Manual*. Requiring state certification or licensing of wetland delineators will not erase this fundamental responsibility of local, state and federal regulators. Whether these entities have the staff or prioritize these reviews, is a separate issue that will not be resolved in this discussion.

To answer the questions posed in the meeting notice:

Would regulation of Wetlands Scientists be beneficial to the industry?

No

Would regulation of Wetland Scientists be beneficial to the consumer?

No, as explained in above comments

Are Wetland Scientists working sufficiently to protect the consumer?

Yes

Is self-regulation of Wetlands Scientists working sufficiently to protect the consumer?

Yes. It is the consumer’s responsibility, as when hiring any contractor, to check references, the status of their state business license, and for any reported complaints (under state business license). Also, the Washington State Department of Ecology has published guidance on hiring a qualified wetland professional (*Wetland Mitigation in Washington State – Part 1, Version 1*, Washington State Department of Ecology, 2006)

What do you see as the least intrusive method to ensure quality performance by Wetlands Scientists?

Continue to have the State Department of Ecology provide technical assistance to local jurisdictions and also to the public when a questionable wetland delineation is received. Also, greater support from the U.S. Army Corps of Engineers (Corps) and the Natural Resource Conservation Service (NRCS) in checking wetland delineations and answering questions from the public on wetland issues.

How does the Wetland Scientist industry, or membership associations within it, handle complaints?

See above pertinent comments.

In closing, without specific information to clarify this need, state certification or licensing of wetland scientists would seem to provide questionable benefits to the industry and consumer.

Thank you for considering my comments on this issue.

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**Subject: Wetland Scientist Certification**

I have been involved with environmental jobs that include making wetland science decisions since 1990, seventeen years.

I have reviewed the suggested topics that your office listed as pertinent to the process. Below are my comment(s):

Regulation of Wetland Scientists already exists to some extent through local government jurisdictions. However, local jurisdictions have some difficulty in determining when they are able to regulate or sanction a wetland scientist. Due to the lack of wetland scientists employed within these local jurisdictions some of the "follow through" for protecting the industry, consumer and wetland resource fails. Given that employment of wetland scientists has been on the increase due to adoption of environmental regulations and the Growth Management Act, the procedure to certify wetland scientists must include not only science but some aspects of the regulatory environment at the local level in order to benefit the industry, consumer and resource. If the state were to regulate wetland scientists, it would only be beneficial to the industry and consumer if aspects of local environmental regulations were to be a part of the certification process. Wetland scientists, are not providing quality services to the industry, resource or the consumer if they are not knowledgeable about the science and the regulations that are driving the demand for wetland scientists.

Thank you for opportunity to comment and please keep me informed of your process and decisions.

Patricia Bunting, PWS  
Graham-Bunting Associates  
Environmental & Land Use Services

Bow, WA

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Krista M. Rome, B.S.  
Bellingham, WA 98225

September 28, 2007

Re: Wetland Scientist Certification Review

I have been working as a wetland consultant in Bellingham, Washington for approximately 3 years. I have some concerns about the proposed credentialing of wetland scientists in the State of Washington. Although I believe it is important to have minimum standards for practicing wetland scientists, I am not convinced that the pros outweigh the cons in moving from the current voluntary PWS certification program to a state-mandated certification or licensing. My concerns are as follows:

However, if certification were to become a mandatory requirement for practicing wetland scientists, the state would need to require certification of all individuals involved with delineating wetlands, including those conducting third-party reviews and agency staff conducting verifications of wetland boundaries.

- **I have often observed the misapplication of wetland science by agency staff reviewing wetland delineations.** I believed that the state mandated credentialing must be required of all individuals involved with delineating wetlands, including those conducting third-party reviews and agency staff conducting verifications of wetland boundaries.
- **Licensing would not prevent differences of opinion between wetland professionals about the locations of wetland boundaries.** Wetland science and delineation manuals are vague in areas, changeable, and allow too much room for differing interpretations in marginal or difficult situations. Bias and differing interpretations would therefore remain in wetland science. There will continue to be a certain amount of marginally-wetland areas incorrectly identified as uplands and vice versa. It is my opinion that risks to the public resulting from somewhat varying wetland boundaries would therefore not be significantly reduced.
- **Licensing would not prevent wetlands from being “missed” during a site visit.** The 1987 ACOE Wetland Delineation Manual routine-on-site investigation method calls for sampling a site through the practice of walking transects, with the intention of discovering any major wetland areas on-site. It is common that small wetlands will be missed on large or brushy sites, especially during the dry season. As above, this does not result from a lack of education or experience, but rather is a normal part of wetland science.
- **Licensing would not prevent wetland scientists from acting unethically.** On the contrary, holding a license may just as likely give impunity to an unethical scientist. Proving that the behavior of a specific wetland scientist has been unethical versus the aforementioned difference of interpretation would prove costly to the taxpayer and not likely result in a license being revoked, except for in the most extreme cases.

- **Exceptions must be written into the state credentialing requirements to allow for non-licensed individuals to practice wetland science under the supervision of a licensed individual.** I don't see this item in the requirements for certification listed in the August 21, 2007 document provided to you by Jim Wiggins and Scott Luchessa of the PNW SWS Ethics Committee and I want to make sure that this fact is not overlooked. An avenue for gaining experience must be left open so that those individuals lacking 5 years of experience may continue to conduct wetland delineations and perform other wetland work under the supervision of an experienced individual.
- **Who will resolve disputes?** I am concerned about who will be sent to solve a dispute when two certified wetland scientists have drastically differing results on a site, if a complaint is made about one of the scientists to the board. In our profession, you could send 10 wetland scientists out to the same very difficult site and they could come up with 10 different boundaries. I have seen equally qualified, experienced wetland scientists disagree many times. Even the most ethical and experienced wetland scientists likely to be appointed to the review board may have different interpretations. To have the fate of an individual's certificate or license dependent on which board member reviews their "delineation in question" could easily become a nasty political issue.
- **Wetland consultants act as advisors.** Speaking from the perspective of a consultant, I am concerned that licensing does not take into account the advisory nature of those acting as consultants. Consultants are hired with the understanding that other professionals may disagree with their work. It would be very costly to the public if the state were to require licensing of all individuals performing work of an advisory nature.
- **Wetland scientists are required to follow strict standards.** The standards of wetland delineation have been set forth in state and federal manuals, the use of which are required by local, state, and federal agencies. Agencies likewise require the use of specific manuals for designing wetland mitigation plans.

I hope you will consider my concerns as you move forward with your review of the potential need for credentialing of wetland professionals. I appreciate the opportunity to contribute my thoughts.

Sincerely,

Krista M. Rome,  
Consulting Ecologist



November 1, 2007

Mr. Bruce Chunn  
Management Analyst  
Washington State Department of Licensing  
P.O. Box 48027  
Olympia, Washington

Mr. Chunn:

The purpose of this letter is to encourage the Department of Licensing to consider implementing a professional licensing program for wetland scientists. As professional practitioners in the civil engineering and land surveying fields we are obligated to work with other consultants whose work product we rely upon when making professional decisions. It is in the best interest of the public that the work product presented to us by a wetland scientist be absolutely reliable, consistent and within the guidelines established by the local, state and federal jurisdictions. The existing conditions found on any given site have a significant influence on the decisions we make from an engineering design standpoint. The presence, location, type and extent of wetlands are a paramount concern.

Based on our experience, we feel strongly that it is in the best interest of the public that wetland scientists be subject to a standardized examination process and that wetland scientists be required to obtain a prescribed level of relevant education and experience before being allowed to offer professional services to the public.

It is also in the best interest of the public that wetland consultants be subject to a professional license review board to ensure that the highest standards of practice are upheld, and that a disciplinary procedure be in place to ensure compliance with the appropriate rules, regulations and guidelines.

We would defer to the Society of Wetland Scientist's discretion as to the level of education and experience required and as to the content of the licensing exam.

Thank you for your consideration in this matter,

Darcy Jones  
PLS 41302

Jim Wilson  
PE, LS 9642

4164 Meridian Street, Suite 200  
Bellingham, Washington, 98226

(360) 733-8888 FAX (360) 671-6666

LAND USE PLANNING/CIVIL ENGINEERING/LAND SURVEYING

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**J. S. Jones and Associates, Inc.**

October 22, 2007

Mr. Bruce Chunn  
Research and Planning Office  
Department of Licensing  
1125 Washington St. S.E.  
P.O. Box 9030  
Olympia, WA 98507-9030

RE: Professional Licensing of Wetland Scientists

Dear Mr. Chunn:

I am writing in support of professional licensing of wetland scientists. Currently the National Society of Wetland Scientist certification is the only meaningful certification. I have found that wetland scientist with this certification provide consistent quality wetland determination and delineations. Unfortunately, this certification is not required to work as a wetland scientist in Washington State. Consequently, there are a number of poorly qualified and unethical consultants. I routinely am the second or third consultant on projects that had inaccurate determinations and delineations. I have also witnessed the development of sites that I previously determined to be wetland and clearly met the criteria.

I believe professional licensing would be the best way to help the consumer and protect the environment. The state needs to step in and stop real estate agents, civil engineers, and other scientists with limited expertise in wetlands from working as wetland scientists.

I was surprised that engineers oppose professional licensing of soil scientists and wetland work. Ask property owners that have gone through the permit process in Western Washington and they will tell you horror story after horror story of difficulties and costs dealing with wetland issues.

Sincerely,



Jeffery S. Jones  
Professional Wetland Scientist, No.1025

cc: Scott Luchessa, Exec. VP, NW Dist. SWS

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253-804-2645 / FAX 253-333-8584

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Please accept this testimony in response to proposed licensing of wetland scientists in Washington. It represents my personal position and not necessarily that of my company. For the past 16 years, I have been an environmental consultant in the Seattle area. Much of my practice has focused on wetland-related services for my various clients. Over the course of my career as an environmental scientist which spans more than 22 years to date, I have had the good fortune to work first in academia, the public sector for a natural resource management agency (USDA, Forest Service), and the private sector. Most of my career has been spent in the consulting service industry here in the Seattle area, but I have served clients in both the private and public sector ranging from big to small, public to private, on simple to very complex projects. As a manager and a third party reviewer of other consultants' work for local government agencies here in Washington, I have seen a clear need for licensing of wetland scientists. There is a very wide range of expertise and qualifications within the consulting industry, academia, and natural resource managers. I have personally been involved in cases where wetlands have not been accurately delineated and services have been lost. Some of these have come to my attention as a third party reviewer of code enforcement actions initiated by local government. Others have been clearly documented in both regional and national reports evaluating the trends of wetlands losses as well as critical evaluations of wetland losses resulting from the U.S. Army Corps of Engineers regulatory permitting program under the federal Clean Water Act. In the latter case, the compensatory wetland mitigation program of the Corps has continually been shown to prevent losses of both wetland acreage and function as required by current federal policy (see the National Research Council's 2001 critique at <http://books.nap.edu/openbook.php?isbn=0309074320>). Studies conducted by the Washington State Department of Ecology and King County have found similar results. There are many reasons for this failure, including lack of resources within local, state, and federal agencies for follow up enforcement. However, I maintain that part of the problem is that members in both the private and public sector (i.e., consultants and government agencies) lack the necessary qualifications and experience to identify and delineate wetlands, evaluate functions and values using established methods, prepare compensatory mitigation plans, provide appropriate construction oversight, and conduct post-construction monitoring and make appropriate adaptive management recommendations or corrective actions to ensure there is no net loss of acreage and functions of wetlands as required by local, state, and federal laws.

We know that wetlands provide widely recognized functions, including water quality protection, hydrologic support (e.g., flood control and attenuation), and wildlife habitat. These have been summarized most recently in the Synthesis of the Science published by the Washington State Department of ecology. This document is available online at <http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html>. As indicated in Ecology's synthesis, not all wetlands provide all functions. In addition, wetlands may provide various functions to varying degrees, depending on landscape position, physical and biological structure, and whether there is an "opportunity" to provide a particular function. Clearly the loss of wetlands that provide water quality and hydrologic support functions have the potential to adversely affect human and environmental health, safety, and welfare. We need only look at current and ongoing funding efforts to restore Puget

Sound. Part of the problem with the cultural eutrophication of Puget Sound is related to the loss of wetlands and increased nutrient loading directly related to the loss of wetlands that provided nutrient removal functions. With increasing eutrophication can also come increased populations of disease organisms, which can clearly translate to additional cases of various waterborne diseases. Similarly compelling arguments can be made in relation to losses of wetlands that provide flood control and attenuation functions. Again, part of the reason we are trying to recover so many species of federally-listed salmon is directly related to habitat modifications resulting in part from loss of wetlands. These are but a few examples. There are many more.

Some have suggested that this unnecessarily duplicates the Society of Wetland Scientists Professional Certification Program (PCP). As the current President of the Pacific Northwest Chapter of the Society of Wetland Scientists, I can tell you that this is an unconvincing argument and that this was a consideration before joining the Washington Society of Professional Soil Scientists' efforts to certify both soil and wetland scientists. Though I qualify to be a Professional Wetland Scientist under the current PCP program, to date I have not pursued that certification for several reasons. First, I have seen poor quality work by more than one individual that currently holds PWS certification. Though it is certainly true that many PWS holders are well qualified and do consistently good work, others do not. And if you ask anyone that knows much about the program, you will find out that it is not functioning as intended. In short, at least in the past, the program has done a poor job of policing those that have PWS certificates. While I believe that there have been positive changes to the program that will improve it, there are other short comings. Most notably that there really is not much to lose should a complaint be sustained. In other words, if someone loses their PWS, it really does not matter much because you do not need to be a PWS to practice wetland science. This is one of the major reasons why there is a need for statewide certification.

And finally, perhaps one of the most compelling pieces of evidence is the growing number of states that are requiring certification for wetland delineators and wetland scientists. Previously, I sent you the summary of these programs provided by the Association of State Wetland Managers. It does a good job of summarizing current state programs in Minnesota, Virginia, and New Hampshire. Also I would refer you to the most recent version of the Pacific Northwest Chapter of SWS' newsletter (attached) and the article on page 3 by Janet Morlan. She provides a summary of the recent directive by the Oregon state legislature for the Oregon Department of State Lands to report on the need for certification of wetland scientists.

Thank you for your diligence in investigating the need for licensing wetland scientists. If I can provide any more information to assist you in making an well-supported sunrise review, please do not hesitate to ask.

Sincerely,  
Scott Luchessa  
Certified Ecologist, M.S. | Senior Manager  
*Environ International Corporation*

## Summary of Written Testimony

### Soil Scientists

Summarizing the written testimony is best viewed when broken down into organizational and individual practitioner responses. When the organizational or agencies are grouped, those in favor of regulation are clearly affiliated with the soil science profession, while those opposed represented professions or organizations with some competing interests.

Below is a table of organizations and practitioners, page found above, Pro/Con, and key points.

<b>Organization</b>	<b>Page</b>	<b>Position</b>	<b>Key point</b>
Soil Science Society of America	37	Pro	Consistent examinations, public health/safety
Washington Friends of Farms and Forests	38	Con	Farm and timber land should be excluded
Wash. Onsite Sewage Association	44	Pro	Establish competency levels, public health/safety
Wash. Forest Protection Association	45	Con	Increase in burden on forestry on private lands
Natl. Society of Consulting Soil Scientists	49	Pro	Academic credentials, testing, professionalism
American Society of Civil Engineers	51	Con	No evidence of concern for public health/safety
Wash. Society of Professional Soil Scientists	61	Pro	Establishment of qualified practitioners
Council of Soil Science Examiners	62	Pro	Public protection, need for ethics and standards
Far West Agribusiness Association	63	Con	Any bill should require a PhD level education
US Consortium of Soil Science Associations	64	Pro	Services to consumer improve with certification
<b>Practitioners</b>	<b>Page</b>	<b>Position</b>	<b>Key point</b>
Onsite Septic designer	39	Pro	Flooding/polluted ground water
Soil Scientist/Hydro-geologist	39	Pro	Enhancement of professional standards
Certified Professional Soil Scientist	42	Pro	Inconsistent services provided to consumers now
Certified Professional Soil Scientist/Geologist	42	Pro	Improper citing of facilities such as septic systems
Soil Scientist	43	Con	Recommends licensure—not
Citizen	43	Pro	Septic discharge into Puget Sound
Certified Professional Soil Scientist	50	Pro	Poor science in septic design—unqualified “experts”
Certified Professional Soil Scientist	51	Pro	Unqualified practitioners currently
Geologist	55	Con	Disagrees with terminology of 2007 legislation
Soil Scientist (retired)	57	Pro	Unqualified persons working outside their profession
Certified Crop Advisor	58	Pro	Reporting of inferior work with disciplinary action
Certified Professional Soil Scientist	59	Pro	Need for accountability of professionals

## Wetland Scientists

Those organizations or agencies providing written testimony were primarily from wetland related organizations and in favor of regulation. Practitioners in wetland science or in affiliated organizations. Those in opposition were split, with half in favor and half not. The reasons provided were varied, ranging from a lack of problems present to reliance on local agency and/or DOE oversight as an adequate form of regulation.

<b>Organization</b>	<b>Page</b>	<b>Position</b>	<b>Key point</b>
Planning and Building Director, Ferndale	67	Pro	Inconsistent experience/competency levels
Pacific NW Chapter, Society of Wetland Scientist	69	Pro	Loss of wetlands/damage to environment
Oregon Department of State Lands	72	Pro	Poor quality work provided by wetland consultants
Environmental Planning Director, Bellevue	80	Pro	Need to correct “ethically challenged” consultants
Resource Planning agency, Idaho	80	Con	County/DOE reviews are sufficient under current law
<b>Practitioners</b>	<b>Page</b>	<b>Position</b>	<b>Key point</b>
Professional Wetland Scientist/Geo-Technical firm	68	Con	Duplication of Society Wetland Scientist program
Wetland Professional in Training	70	Pro	Inconsistent services provided, no recourse available
Wetland Scientist	75	Con	Already three levels of regulation—not needed
Geologist/Wetland Scientist	76	Pro	No self regulation/inaccurate delineations
Oregon State University/Asst Prof	78	Con	Not all opposed—wants delineators only regulated
Wetland Scientist (Army Corps of Engineers cert.)	79	Con	Opposed if SWS standards set criteria
Professional Wetland Scientist	81	Con	Not needed—regulation through DOE in place
Professional Wetland Scientist/Planning Office	83	Pro	Lack of ability to sanction at local level
Wetland Consultant	84	Con	Would not stop differences of opinion/unethical acts
Professional Land Surveyor	86	Pro	Need a review board to ensure high standards
Professional Wetland Scientist	87	Pro	Number of poorly trained/unethical consultants
Certified Ecologist	88	Pro	Lack of standardization of professional standards

A closing note to this section is that the reader should not rely solely on the summary above. These tables are useful only as a recap to the written testimony. Reading the complete text is advised in order to gather the many points made in the detailed written testimony.

## Additional Comments from Other States

States with regulatory programs were contacted and asked for comments on how their programs were operating. Some other, non-regulated state's soil and wetland associations were also contacted and solicited for comments as well. Much of the data collected was presented in the previous chapter "*Regulation in Other States*". Some states however provided additional detailed information regarding their regulatory process, which we'll summarize below.

**Texas** passed legislation in 2001 called the *Geoscience Practice Act*. They found that the relatively small population of soil scientists (approximately 150) would fit well in a licensing act that also incorporated geologists and geophysicists, whom they refer to cumulatively as "Geoscientists". In combining these disciplines, the regulatory authority was able to keep licensing costs down due to the large overall number of practitioners who share the administrative costs.

Texas had specific concerns about a number of areas that suffered due to some work performed by unqualified soil geoscientists. Some of these concerns were:

- *Misidentification of hydric soils in delineating regulated wetlands*
- *Disposal of industrial, municipal, and residential wastes in and on inappropriate soils or in levels excessive to the soil's capacity to handle such wastes*
- *Inappropriate or improper methodology in monitoring movement and quality of shallow groundwater*
- *Placement and design of septic systems in soils that could not handle the loads or properly filter the effluents*
- *Excessive soil erosion in construction projects resulting in off-site damages*
- *Inappropriate methods to remediate salt damage due to discharge of saline waters*

One of the comments in the Texas response created somewhat of an epiphany for this author during the study of soil and wetland sciences. When asked if their regulation had created a reduction in consumer harm, the Texan respondent explained that consumer harm was, in their opinion, an incorrect term. Their response explains it very clearly:

*"In our case, the term "consumer harm" may not be most appropriate. A better descriptive term might be "public harm" as, without regulation, the "consumer" paying for the services may be getting exactly what is needed to proceed with projects while the public is paid a disservice by off-site effects of poor geoscience practices. The regulation sought to ensure that only those qualified to make judgments in geosciences could practice, and to establish a framework of ethics to which professionals would adhere, and a mechanism to remove those who practice inappropriately."*

The concept of Washington's Sunrise review process is that regulation is driven by, among other things, consumer harm. Thus defining the "harm" caused by bad soil or wetland science in consumer terms becomes less accurate when incorporating all those

that are potentially negatively affected. Thinking in a more global manner, the true damage caused takes on a much bigger audience when one considers the explanation provided the State of Texas.

**North Carolina**, a regulated state with over 200 licensed soil scientists, provided us on the origins of their soil scientist licensing program. The local membership organization, The Soil Science Society of North Carolina, pursued licensure because many state regulations required soil evaluation, but the scientists who performed these tasks were not licensed or recognized by the state. Thus, geologists and engineers had to sign for certifying any soil work conducted on a project. The requirement for soil work to be signed off by a licensed individual prompted them to push for licensing of soil scientists. In turn, when licensing was enacted the liability for soil work was placed on the soil scientist instead of the geologist or engineer on the project. Licensing for North Carolina has resulted in making the job of regulators easier in assessing the soil works submitted for site assessments. They initially set the licensing fees too low (\$50 application, renewal \$80, exam \$120) and now have problems funding their program. They must go through their legislature to now raise fees to cover administrative costs. North Carolina was careful to define work practices such as hydrogeologic analysis, where the soil scientist may gather data and do analysis, but cannot design systems, as that is considered engineering work.

**California**, a non-regulated state, has an association called the California Professional Soil Scientists Association (CPSSA). They indicated that most states recognize engineers and geologists so when a registered professional is required, work goes to them by default. Soil scientists on the other hand may be just as qualified by can not do the work for lack of recognition as a registered professional. Thus, regulation of soil scientists is beneficial to the profession. The CPSSA stated that the California Regional Water Boards recognize SSSA and ASA certification as a measure of qualification for soil science competency.

**Indiana**, a state with soil scientist registration, provided a response from its Natural Resources Commission. Their response addressed the interaction between their Board of Registration for Soil Scientists and the Natural Resources Commission's oversight at the "ultimate authority" regarding administrative law reviews requested by the Board. The Judge responding to our request indicated that in her three year tenure, she had reviewed one such case at the request of the Board.

Some state systems proved to be somewhat obscure. Such was the case in **Mississippi**, where data indicated they had a soil classifier licensing program, and information was very hard to obtain. After speaking with a few related agencies such as their Professional Engineers and Department of Agriculture, we determined that a sub-division of the Department of Agriculture called the Bureau of Plant Industry had oversight of the state's 14 licensed soil classifiers. The lesson learned here was that some small regulatory organizations become hard to locate among large agencies. Making the information more accessible is probably in everyone's best interest.

**North Dakota**, a regulated state with registration of soil classifiers, passed legislation in 1973. In the early 1970's, North Dakota was undergoing an energy boom and there was speculation that large coal strip mines were going developed. The environmental impacts of these mines were a major concern of the public, especially the reclamation of expended mines. With these concerns, the legislature was convinced to regulate the profession in order to ensure proper soil classification was being completed. They state that very successful reclamation programs have resulted from this effort, which they state is one of the best programs in the nation. Services provided by soil scientists have been improved and expanded into wetland identification, septic site evaluations, and landfill siting. The North Dakota representative encouraged Washington to ensure a multi-disciplinary approach involving all earth science professionals be used in any legislative process to ensure all profession's issues were heard and infringement into other's disciplines was avoided.

## Conclusion

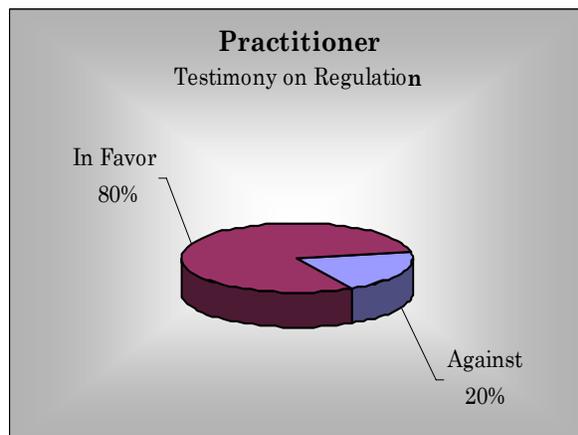
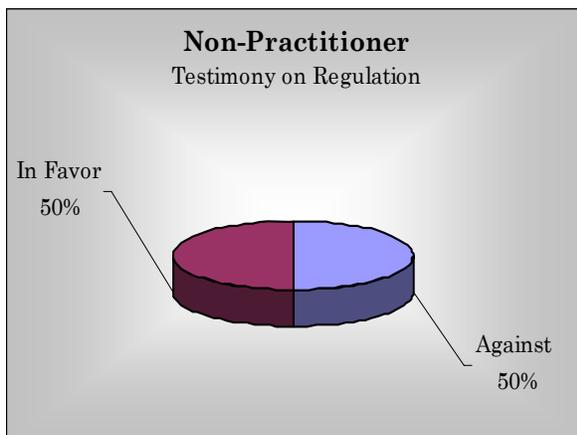
Clearly the consideration of regulation for soil and wetland scientists is not a simple decision. Washington is not the first state to struggle with this determination. When self-regulation has failed, the determining factors used by most states in any regulatory effort normally focus on consumer harm as the impetus for state controlled regulation. As noted by the state of Texas, this factor alone may not be suitable criterion for the determination of regulation, as unchecked or irresponsible work in these professions affects more than just the "consumer". In fact, when bad wetland delineations or bad soil science are applied, by either incompetence or by design, the ramifications are widespread, encompassing the entire community, as well as compounding damaging environmental factors that threaten both plant and animal life. The many factors provided in the previous sections on wetland and soil science practices clearly demonstrate that neither of these disciplines can go unchecked without drastic consequences, the results of which will endure far beyond the lifetimes of those who must now decide if regulation is the right course of action.

The depth and complexity of these professions makes consideration of regulation that much more difficult. Practitioners with entry-level minimum education are college graduates with hard science backgrounds. Most have post graduate degrees. The nature of their work is not easily defined in the limited space of a Sunrise Review. Without having to completely comprehend the technical aspects of these professions, it is perhaps useful to the reader to consider that soils and wetlands are critical factors in the survival of both humans and all that surrounds them. Soil is a thin skin of life which provides the nutrients from which all life on land survives as well as providing nutrients on which all life in our oceans depend. Disrupting this very finite resource irreparably is not just a consumer problem; it becomes an environmental problem affecting the very existence of all that we know. Wetlands have become better understood in recent history as resources that mitigate many problems for both human development and in the maintenance of nature's balance. The importance of proper stewardship of soils and wetlands cannot be underestimated and thus, our determination on regulation takes on a much more critical

importance when we decide how to ensure the management and continued good health of these resources.

Since the 1970's, the importance of proper maintenance of our soils and wetlands has become an imperative objective for government. The passage of laws since then in most states to protect wetlands is a reversal of the previous objective of filling them in or draining them to allow for continued expansion of our communities and industry. That we have come from eliminating about a half million acres of wetland annually then to a small annual net gain presently is evidence of the importance placed on our responsibility to our communities and the environment. Washington has in place certain checks and balances where local and state authorities must "buy off" on development plans, and we have trusted these authorities to ensure our soils and wetlands are protected and maintained in accordance with local and state law. Numerous testimonies by professionals in both disciplines indicate that the local oversight varies greatly in experience and staffing levels. Several practitioners testified to the disturbing reality that the desired outcomes of land owners or developers sometimes affect the way the land is mapped for review by the local authority. In the end, we see apparent inconsistencies in the application of science and interpretation of reports, resulting in questionable outcomes in the areas of adherence to the local and state regulations governing these disciplines.

Opposition to the regulation of both professions has been voiced. When looking at a tally of the pro/con testimonies the charts on page 34 show that the wetlands side indicates just over 50% favor and the soils side is about 75% in favor of regulation. Those charts represent the aggregate totals regardless of who provided the testimony. As seen in the charts below, when viewed as practitioners in soil or wetland science or those who are not, we see different outcomes regarding who is in favor and who opposes regulation. Clearly practitioners in soils or wetlands work tend to be more in favor, while those voicing opposition are more likely to be from different or related professions. This may be due to some concerns about how regulation may shape the nature of the work they may currently be doing.



Some of the concerns voiced by individuals and organizations to any regulation are more specifically addressed in the bulleted items below.

- In the public hearings, an attorney for the American Council of Engineering Companies of Washington (ACEC) indicated that consumers of soil scientist services are generally larger corporate customers and are able to determine the qualifications of the practitioner. While this may be true for large organizations accustomed to hiring such services, several soil scientists present indicated that they rarely worked for the corporate side and that nearly all their customers were private citizens who hired them in small construction related circumstances.
- The attorney for the Architects & Engineers Legislative Council (AELC) stated that their position was that a title act would allow practitioners who were not certified to practice under other titles, which is true. Their concern was that a title act would fall short of the intent of protecting the public. The position of DOL is that certified professionals from which the consumer can choose will provide a pool of practitioners with established credentials which will enhance the likelihood that quality work will be produced in wetland and soil science.
- An engineer representing the ACEC and the AELC voiced concerns that some of the reasons he'd heard for regulation seemed to fall under the responsibility of licensed professions other than soil or wetland scientists. Some examples included septic systems and groundwater contamination. While it is true these examples are customarily attended to by licensed professionals from other occupations, there are a multitude of other customary work details identified that are customarily specific to wetland or soil scientists (see pages 5-6). There was also concern that professional licensing was not required to protect the public health and safety until the work rises to the level of hydro-geologists or engineers. DOL respectfully disagrees because we feel that regulation of wetland and soil scientists would aid in improving the health and safety of the public.
- One forestry organization, The Washington Friends of Farms & Forests, identified concerns that the draft legislation may impede forestry professionals from doing their jobs. The legislation referenced was HB1318 from the 2007 session, which was the previously drafted practices act, which has been disbanded. The DOL recommendation would entail a title act which will not impact other professions, as it is entirely voluntary and does not limit any customary work done by other professionals.
- Another forestry organization, The Washington Forest Protection Association, raised the question of the impact of another level of bureaucracy for the persons working in their industry. Additionally, they are concerned that regulation may require specific work customarily done by persons in the forestry industry to be mandatorily done by regulated soil scientists and thus drive up operational costs, making it more difficult to survive in a global economy. However, the DOL

recommendation is a voluntary program and will not require the forestry industry to seek the services of any certified professionals.

- An engineer representing the American Society of Civil Engineers (ASCE) said that they are opposed to any regulation because there is not sufficient evidence that the public is threatened and that the enhancement of professional status is not justification for regulation. DOL feels that the evidence of public risk is lessened by certification of these professions and believes there is sufficient evidence that poor science in soil or wetland science does indeed threaten the public welfare. DOL agrees that regulation for professional enhancement is not appropriate and further believes that not to be the objective in the recommendation.
- The Far West Agri-Business Association stated that they believed the agricultural business can satisfactorily govern its own practitioners. They additionally indicated that a soil scientist was, to them, qualified only by holding a doctoral degree in that discipline. DOL recommends, among other criteria, a high standard in educational qualification for soil scientist certification, although setting the bar at the doctoral level is not consistent with national standards.
- A Geo-Technical firm, Shannon & Wilson, was concerned that a title act will not change behavior of the wetland practitioners, will bring additional costs to the consumer, and duplicates the Society of Wetlands Scientists (SWS) certification program. DOL acknowledges that certification will not eradicate bad science from the professions. It will however provide more opportunity for consumers to choose qualified practitioners. Certification will have some slight affect on the annual operational cost of practitioners, which is voluntary on the part of both the scientist and the consumer. Regarding duplication of the SWS program, the applicant report does mirror the qualification criteria as well as offer some additional recourse to the consumer that is lacking in SWS oversight. Additionally, the SWS supports certification of wetland scientists in Washington State (see page 69).

As noted in the directive from the Commerce and Labor Committee (appendices), the revised request for regulation consideration is a proposal for a title act, which is not intended to secure work practices for the applicant groups. The applicant groups have indicated that a certification of their occupations would result in a voluntary decision to participate and would not affect the work currently done by related professions. The obvious question, posed by many of those opposed to regulation, is “how would certification ensure that the consumer does not experience the occasional bad science that we presently see?” In short, it would not. There may always be either incompetent or unethical practitioners who will, by ineptness or by design, perform bad work.

One would logically ask the question, “why not full licensure if regulation is warranted?” The answer is multifold, and requires some discussion. Noting that the opposition from related professions was present during the last legislative session and indicates it will be again in opposition, the likelihood of the passage of a practices act is not good. There is

and will continue to be concerns about the customary work that these related professions do not wish to lose which is understandable. In a good faith attempt to make compromise that would benefit some and not damage others, the applicant groups have sought certification through a title act. This is, in the eyes of the Department of Licensing, a reasonable intermediate measure of regulation that would serve to benefit the practitioners who chose to become certified, the consumers who wished to readily identify qualified practitioners and the public by raising the standards for entry into the profession to a predictable level of competency. On the downside, certification would have less enforcement authority than would licensure. The public needs to be aware that the regulatory authority will have some limited ability to mitigate issues with certified practitioners and no authority with non-certified practitioners. However, the consumer will have options available they currently don't have and public safety can only be enhanced.

The next obvious question regarding certification is "why bother?" While outright licensure would require all who wished to practice either science to participate, certification affords both the practitioner and the consumer to choose between state certification or not. Will this eliminate bad practices in soil or wetlands science? Absolutely not, nor would full licensure, nor would doing nothing. Certification would however potentially allow for other advantages, some of which are listed below:

- Consumers, both private and governmental, could choose to hire a state certified practitioner with known minimum qualifications or hire a consultant who is not certified
- Those who became certified would be bound to a code of ethics, providing some assurance to both the consumer and the public that ethical standards would be followed
- Consumers would have a listing of practitioners available through the regulatory authority of practitioners, their location, contact information, disciplinary records, and qualification credentials
- Minimum standards in education, experience, and ongoing education would exist for those who become certified, allowing for some level of expectation of by the consumer and the public of professional qualifications and competency
- Certification would be a voluntary process, where any added costs to the practitioner or consumer are accepted of their own free will
- A advisory board, made up of qualified professionals, would exist to provide oversight for certified practitioners, ensuring ethical standards are maintained
- A method of recourse would exist for the consumer when disputes arise, allowing for mediation and resolution of matters prior to expensive legal actions
- Local and state oversight authorities would have more clear expectations in the qualifications and experience levels of practitioners who were certified

Regarding costs, the DOL completed a fiscal note for soil scientists prior to the last legislative session based on an approximation of 134 licensees. Noting that the wetlands scientists have been incorporated into this review, the pool will grow considerably. Earlier we estimated the known membership counts in Washington to be around 375,

noting that an unknown quantity of both soil and wetland scientists exist who are not members of any organization. Using only 300 as a potential certification group, we find that the costs would be in the \$450 per year range, which by discussions with practitioners is not out of reach.

In the end, we have a group of practitioners who are requesting a voluntary regulatory program that they hope will raise the qualification standards of entry level professionals and provide for continuing education to ensure their certified members are operating with the most current science available. This, in turn, is proposed to better serve the public in providing an option for employers to choose from a pool of standardized professionals. It is notable that the Department of Ecology, the statewide oversight authority for compliance to wetland and soil science regulations, provides consumers advice on how to find a competent wetland scientist (copy in appendices). In this document they state, **“There is no government sanctioned program for certifying someone as a “qualified wetland professional” or “qualified wetland specialist.”** The DOE document goes on to describe various attributes of qualified persons and even suggests that the consumer look to the Society of Wetland Scientists, a private organization, for assistance. Clearly, the consumer is left with few choices in locating competent practitioners.

With the interests of the public in mind, it is reasonable to think this self-imposed regulatory request will produce a win-win scenario where the consumer is afforded an option not previously available and the practitioners who choose to be certified can offer this credential as a symbol of their commitment to improved quality and ethical standards in their profession. Those practitioners who believe certification is unnecessary could simply opt out and rely on their reputation and marketing abilities to continue in the profession. Further, local permitting authorities could accept reports from certified practitioners with a degree of confidence in their competency, where uncertified practitioners reports may bring a higher level of scrutiny.

## Recommendations

The Department of Licensing recommends that the Legislature pursue certification of soil and wetland scientists. We justify this recommendation based on several criteria:

- Testimony provided by practitioners of the inconsistencies in the application of science in the field
- Testimony of inconsistency in oversight by local authorities
- The evidence of harm done to on large scales such as:
  - Clark county with hundreds of failed septic systems (Currently exceeding \$4,000,000 in costs)
  - At least 20 large scale ground water contaminations in eastern Washington due to misapplication of agricultural waste water (after as many as 10 years, many are still in clean up mode—cost unknown as yet)
- Testimony provided on smaller scale harm, typically to landowners, where:

- Development is delayed due to incorrect determinations of wetlands until appeals processes and subsequent correct delineations are done
- Development is forbidden based on incorrect initial wetland mapping as uplands where wetlands truly exist
- The lack of an avenue of recourse for disgruntled consumers
- The lack of any state standards of competency, education, and experience for practitioners
- The lack of any state code of ethics for practitioners of soil or wetland science
- The lack of a readily available listing of practitioners and their qualifications for consumers to review
- Incorrect soil and site evaluation of sites for ground absorption sewage treatment and disposal systems has increased the chances for spread of diseases.
- Incorrect soil and site evaluations for prospective building sites costs landowners large sums of money when the site is later determined to be unsuitable for the proposed use or worse yet when a failing system prevents the sale or refinancing of a home or business.
- Incorrect soil and site evaluations cost landowners large sums of money in lost or delayed sales of property.
- Incorrect designation of wetlands due to misidentification of hydric soils deprives landowners of their rights to use their property for its highest and best use. On the other hand, lack of hydric soils identification can result in destruction of bona fide wetlands

The applicant group request is for consideration of certification under a voluntary program. As this would not require mandatory participation, nor would it impede the work of non-certified practitioners or those in related professions, the Department of Licensing feels that certification would create more benefits to the public and sees no detrimental aspects. Full licensure is not recommended due to the lack of overwhelming evidence of widespread public harm, although evidence does exist of errors made that have run into millions of dollars in clean up costs and litigation costs. Another consideration is the potential of long term environmental damage due to poor science. While certification will not eliminate bad work, it will provide minimum qualification standards in the profession for those who participate and will afford the public an option for more informed choices in the selection of soil and wetland practitioners.

Both applicant reports, included in the appendices, outlined the recommended entry level criteria which are modeled after nationally recognized professional organizations. The Department of Licensing agrees with these standards and supports the applicant group outline in regards to:

- Board qualifications, authority, term length
- Education
- Experience
- On-going Education
- Examination standards
- Reciprocity

- Related professions issues<sup>13</sup>
- Grandfathering
- Exemptions to certification
- Prohibited Acts/Unprofessional conduct
- Ethical Standards of Practice

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<sup>13</sup> Some of the professions with concerns involve Geologists, Engineers, Anthropologists, Archeologists, and several Agricultural professions. The recommendation by DOL for voluntary certification will allow for them to continue their normal and customary work while not being affected by the certification of soil or wetland scientist.

# APPENDICIES

## Commerce and Labor Request for Sunrise Review



Washington State Legislature

May 31, 2007

Director Liz Luce  
Department of Licensing  
PO Box 9020  
Olympia, WA 98507

Dear Director Luce:

On behalf of the House Commerce & Labor Committee, we are requesting that the Department revisit the sunrise review of soil scientists conducted in 2005. We are asking that the report be updated to include wetland scientists, taking into consideration that what is now being proposed is a title protection bill (HB 2324) rather than a practices bill, and provide any additional analysis you find warranted.

The sunrise review should include an opportunity for input from all interested stakeholders. In addition to recommending whether regulation is needed, please include in the report recommendations on the specifics of the proposed regulation.

I appreciate your consideration of this request and look forward to receiving your written report before the start of the legislative session in January, 2008.

Thank you for your attention to this matter.

Sincerely,

Handwritten signature of Steve Conway in black ink.

Steve Conway  
State Representative  
Chair, Commerce & Labor Committee  
Committee

Handwritten signature of Alex Wood in black ink.

Alex Wood  
State Representative  
Vice-Chair, Commerce & Labor

cc: Barbara Sandahl, Department of Licensing  
Bruce Chunn, Department of Licensing  
Senator Jeanne Kohl-Welles  
Representative Sam Hunt

# Soil Scientist Applicant Report



## **RCW 18.118.030 Sunrise Report for Soil Scientists Licensing August 1, 2007**

*Explain each of the following factors to the extent requested by the legislative committees of reference:*

*(1) A definition of the problem and why regulation is necessary:*

*(a) The nature of the potential harm to the public if the business profession is not regulated, and the extent to which there is a threat to public health and safety;*

The nature of the potential harm is related to the fact that most applied soil science is related to either detailed mapping of a local soil based on a certain management need (surface soil erodability, soil quality, soil drainage potential), or is related to using soil as a filter or receiver of solid and liquid waste. If the soil is mapped incorrectly, the management target will fail. If waste material is inadequately treated or purified (by improperly applying natural soil processes), the result is contaminated surface water and drinking water aquifers.

The previous Sunrise Review described three different specific problems with work carried out by soil scientists that had impacts on public health safety and welfare in Washington State:

- Land Application of agricultural wastewater
- Poor soil evaluation that resulted in hundreds of failing septic systems in Cowlitz County
- Unethical conduct related to wetland delineation process and state agency review

The first problem resulted in 20 different documented failures in areas ranging from Ellensburg to Richland to Yakima that affected groundwater on 9 sites, surface water (Yakima and Columbia River) on 3 sites, individual households on 8 sites with various levels of settlements described as follows:

- simply improving the treatment process;
- \$12,000 settlement;
- provision of safe dialysis water;
- criminal investigation, water treatment and fines;
- soil treatment;
- trucking of wastewater;
- closure of sprayfield;
- closure of a facility and almost \$1,000,000.00 defense costs;
- a "large financial settlement".

According to Kim Sherwood, P.E. (Ecology), many of these failures are still in cleanup mode after more than ten years of treatment. Therefore, total costs are as yet unknown. As a result of those

problems and their eventual solution, which involved appropriate application of soil chemistry, soil biochemistry and soil physics, Ecology has a written policy *recommending* use of a professional soil scientist to develop sprayfield application prescriptions. Therefore, Ecology staff recommends use of currently unregulated professionals -- soil scientists -- for this work.

The second problem was a result of a Cowlitz County employee – a soil scientist – whose job was to evaluate soils for onsite septic system design. His assessments apparently ignored standards -- such as required separation to seasonal groundwater tables -- and resulted in many inadequately designed systems being installed. As a result, according to a consultant working with the county, over 200 failing systems had been identified as of the previous Sunrise Review report, and more were anticipated to come. The claims value of those failed systems at the time of the original Sunrise Review report was estimated at \$3,000,000.00. Recently updated information from Cowlitz County indicates that \$457,315.38 has been paid out to date. Please note that we have since verified that the County employee did have a degree in soil science, but was not a member of the state or national professional soil scientist organizations.

Please also note that one might think this problem is solved by recent legislation licensing onsite wastewater system designers; but that is not the case. The licensed designers are required to take Continuing Education courses that ensure they are adequately trained to design and understand the systems they design. And their most basic and ongoing training is in soil science – classes taught by professional soil scientists. Without that training, they would not be as effective at their work, and there would be negative impacts on public health safety and welfare. Therefore, this state-licensing program depends on and requires critical training from currently unregulated professionals -- soil scientists.

The third problem described in the previous Sunrise Review report involved events that occurred during an onsite meeting between staff from the State Department of Ecology (Ecology), Environmental Protection Agency (EPA), Corps of Engineers and a soil scientist wetlands consultant that resulted in a complaint (to the Soil Science Society of America [SSSA] Ethics Board) claiming that the consultant had behaved unprofessionally for a Soil Scientist. The Ethics Board had no formal response to the complaint, other than saying that the information provided was inconclusive. As a result, Department of Ecology prepared a memorandum for their employees recommending and requiring certain precautions when working around this soil scientist and describing protective ground rules for data collection in the presence of this scientist. Therefore, Ecology was forced to develop protective policies for their employees in regard to one individual soil scientist rather than

having the ability to effectively complain about that person's actions to an effective professional board.

In addition to those three examples, we can cite many examples in the field of wetland science where two or even three different delineations on the same site resulted in two or three very different results in terms of a legally defined wetland boundary. In particular, hydric soils interpretations are often carried out incorrectly by both soil scientists and other wetland professionals. These kinds of outcomes tend to result in legal battles and public hearings, often with highly technical, confusing, contradictory and sometimes misleading information provided during testimony. And because there is no professional oversight, in the form of local peer review through an Ethics or Complaint process, there is at least a perception in some cases of there being purposeful deception with no satisfactory process by which to determine or resolve whether a particular site is in fact legally wetland or not.

Finally, it should be noted that professional soil scientists, particularly in the private sector, often are accused of breaking state or local law when they are carrying out their "normal and accustomed" work. Soil scientists are specifically exempt from being required to get a geology license as long as the work they are carrying out falls within the standard activities of their profession. But most local Critical Areas Ordinances (CAOs) are a prototype of the State model CAO, which was drafted by the Washington State Department of Community, Trade and Economic Development (CTED) and made available for general use and adoption by November of 2003.

When drafts of that CTED model ordinance were first made available for review and revision about a year or two earlier, some soil scientists noticed that state-licensed geologists were listed as being the only professionals allowed to write reports for sediment and erosion control plans. The soil scientist community contacted Chris Parsons at CTED at that time, and suggested some alternate language that would also allow certified professional soil scientists to do that work. Ms. Parsons agreed to the change after it was verified that erosion control equations (Revised Universal Soil Loss Equation [RUSLE]) were in fact originally developed and applied most commonly by soil scientists. However, for reasons unknown at this time, the agreed upon change in language was missing from the final draft of the CTED model CAO. As a result, most local CAOs only allow sediment and erosion control reports to come from a state-licensed geologist.

When the soil scientists community contacted CTED (Tim Gates – Chris Parson's successor at CTED) ([TimG@CTED.WA.GOV](mailto:TimG@CTED.WA.GOV)) to find out what happened, CTED agreed that it was a mistake – the missing language should have been included -- and suggested that they could send out an

addendum or errata to correct the original model ordinance language. But since most local CAOs have already been formally adopted, that would have no real effect. Each local jurisdiction would have to be contacted individually and asked to update their CAOs to accommodate soil scientists – an unlikely event. Therefore, soil scientists are unable to carry out their normal and accustomed work in erosion and sediment control due to being inadvertently written out of local CAOs that only accept reports from state-licensed individuals. And there are some concerned that detailed soil mapping – clearly soil science -- could also be challenged under that same rule.

But in a more general sense, in order to fully explain the “nature of potential harm to the public” if soil scientists are not licensed, we must first define “soil science” and those who practice it. We realized during the past few years of legislative effort that few people outside of the profession were aware of what a soil scientist even does. Therefore, we will attempt to provide a definition of the science and examples of what a professional soil scientist might do at work.

We borrow heavily for the following text from <http://en.wikipedia.org> (an online encyclopedia) and other information provided by soil scientists across the nation that are interested and personally invested in our effort to be licensed in Washington State. Whenever possible, we reference the source of the information; but in no case is there any intent to plagiarize or present this material as ours alone. It is a composite of many contributors’ efforts.

Soil science is the study of a complex natural living system composed of:

- soil minerals (sand , silt and clay),
- soil atmosphere (gases),
- soil biota (microbes, insects, animals etc.) and
- plants (micro and macroflora).

This science differs greatly from the study of soil as a load-bearing material – i.e., soil engineering. Soil in its *natural* state is not static; it is living and always changing in response to changes in surface management. A soil scientist thinks of a particular soil as a something comparable to a “species” with unique characteristics requiring skills to classify and identify – comparable to how a zoologist or botanist would think of an animal or plant. But since soil is adapted and used by many different disciplines to accomplish many different things, *the diversity of professions associated with the discipline of soil science is enormous* -- engineers, agronomists, crop scientists, chemists, geologists, geographers, biologists, microbiologists, climatologists, silviculturists, sanitarians, archaeologists, wetland scientists and specialists in regional planning all borrow from soil science. And at times, every one of those groups will need to call on a soil scientist to resolve a more highly

technical argument, or to add a higher level of understanding to a certain natural soil-related problem.

The practice of soil science is basic to defining safe or prudent ways to carry out certain aspects of urban land development, agriculture and forestry. These three major industries have great environmental impacts in Washington State. Disturbed soils and related wind and water erosion have enormous impacts on water quality; badly managed soils result in greater volumes of surface runoff and resultant flooding and related pollution. Particularly with recent listing of several salmonid sub-species as well as terrestrial animals and plants that appear sensitive to soil and habitat disturbance, proper soil management is and will be of paramount importance in Washington State – particularly in the increasing efforts to clean up Puget Sound.

Academically, soil scientists tend to be drawn to one of five areas of specialization:

- Soil Microbiology (job-related fields: biochemistry, hazardous waste management, septic system function, CO<sub>2</sub> production related climate change, landscape ecology, earthworm impacts)
- Pedology (job-related fields: soil genesis, soil mapping, geomorphology, soil taxonomy and/or classification, historical assessments of climate change)
- Edaphology (job-related fields: crop science, agriculture, silviculture, horticulture)
- Soil Physics (job-related fields: soil water movement, soil heat transfer and related climate change, stormwater management, septic system drainage function, solute transfer, watershed and wetland studies, irrigation management)
- Soil Chemistry (job-related fields: biochemistry, soil fertility, hazardous waste management, mineralogy, soil chemistry analysis labs, water quality treatment, NO<sub>x</sub> production and related climate change)

Within the past 10-20 years, soil scientists have increasingly been applying their skills as consultants in environmental management – particularly around rapidly urbanizing areas or in areas with extensive agriculture. Therefore, the results of applied soil science have become an increasing concern with resultant increases in impacts on state and locally regulated activities. As a result, at least 18 states currently have some form of soil science regulation written into state law (more on this below).

With almost a century of national and international soil survey efforts behind the profession, soil scientists have developed unique insights into landscape-scale functions that are either the source of a problem or can provide a solution to a problem. These functions fall roughly into six fields of expertise:

- Land-based treatment of wastes ([septic systems](#), [manure](#) management, municipal [biosolids](#), food and fiber processing waste)

- Identification and protection of environmentally critical areas (sensitive and unstable soil surfaces, [wetlands](#), unique soil situations that support valuable [habitat](#), and [ecosystem diversity](#) -- such as bogs),
- Management for optimum land productivity ([silviculture](#), [agronomy](#), [nutrient](#) management, [water](#) management, native vegetation, [grazing](#))
- Management for optimum water quality ([stormwater](#) management, [sediment](#) and [erosion](#) control)
- Remediation and restoration of damaged lands (mine reclamation, wetland mitigation, flood and storm damage, hydrocarbon or heavy metal contamination)
- Sustainability of desired uses ([Soil](#) conservation, wetland management, habitat protection)

There are also other practical applications of soil science in cooperation with other sciences:

- [Age dating](#) (archeology): specifically a knowledge of local pedology is used to date prior activity at a site where soil formation processes and preservative qualities can help with the study of [archaeological sites](#);
- Surface soil impacts on [geological phenomena](#) ([landslides](#); evidence of [earthquake faults](#))
- Altering soils to achieve new uses ([vitrification](#) to contain [radioactive wastes](#); enhancing [soil microbial](#) capabilities in degrading contaminants [[bioremediation](#)]; and [carbon sequestration](#))

Some quotes about the value of soil (borrowed from <http://en.wikipedia.org>)

*"We might say that the earth has the spirit of growth; that its flesh is the soil."* ~ [Leonardo da Vinci](#)

*"We know more about the movement of celestial bodies than about the soil underfoot."* ~ [Leonardo da Vinci](#)

*"The thin layer of soil covering the earth's surface represents the difference between survival and extinction for most terrestrial life."* ~ ***Defining and Assessing Soil Quality*** by ***John W. Doran and Timothy B. Parkin***

*"... the Latin name for man, homo, derived from humus, the stuff of life in the soil."* ~ ***Dr. Daniel Hillel***

*"History is largely a record of human struggle to wrest the land from nature, because man relies for sustenance on the products of the soil. So direct is the relationship between soil erosion, the productivity of the land, and the prosperity of people, that the history of mankind, to a considerable degree at least, may be interpreted in terms of the soil and what has happened to it as the result of human use."* ~ ***Hugh H. Bennett and W.C. Lowdermilk, circa 1930s***

*“We are able to breathe, drink, and eat in comfort because millions of organisms and hundreds of processes are operating to maintain a livable environment, but we tend to take nature's services for granted because we don't pay money for most of them.” ~ Eugene Odum*

*“The Nation that destroys its soil destroys itself.” ~ Letter to all State Governors on a Uniform Soil Conservation Law (February 26, 1937) by Franklin Delano Roosevelt*

*(b) The extent to which consumers need and will benefit from a method of regulation identifying competent practitioners, indicating typical employers, if any, of practitioners in the profession; and*

Soil scientists in the **public** sector are typically employed by governmental agencies that manage natural ecosystems (such as forests or wetlands), or highly managed ecosystems (such as agricultural lands or urban areas). As such, these soil scientists typically carry out environmentally sensitive work. In a broad sense – the work is usually related to mapping soil, managing water quantity or water quality, or controlling erosion, but can also include providing third party review of reports or work provided to Cities or Counties (usually related to proposed development). These agencies range from federal (NRCS, USFS, EPA, COE, BLM, NPS, DOE, NWS, USBR<sup>14</sup>) to state (Universities, (Ecology, DNR, WDFW, WSP, WSDH<sup>15</sup>) to counties and cities (Planning Dept., Health Dept., Stormwater Dept.).

Soil scientists in the **private** sector are typically self-employed or employed by engineering and environmental consulting firms that provide information and assistance to public and/or private sector developers or landowners with environmental problems. Examples of their work would include:

- Wastewater quality management (sewage treatment, stormwater treatment, agricultural runoff or processing water, rain gardens...);
- Wastewater quantity management (stormwater infiltration; rain gardens; erosion control...)
- Hazardous waste management (Superfund sites, Hanford Reservation, hydrocarbon contamination...);
- Land management (Low Impact Development, soil mapping and interpretation; wetlands delineation, mitigation and permitting processes; erosion control plans; stormwater infiltration function, global warming issues ...)
- Water management (irrigation systems, erosion control)
- Soil Mapping or Interpretation (all purpose mapping and classification, septic system siting, archeology, hydric [wetland] soils, shallow water tables...)

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<sup>14</sup> NRCS: Natural Resources Conservation Service, formally Soil Conservation Service; USFS: United States Forest Service; EPA: Environmental Protection Agency; COE: Army Corps of Engineers; BLM: Bureau of Land Management; NPS: National Park Service; DOE: Department of Energy; NWS: National Weather Service; USBR: United States Bureau of Reclamation

<sup>15</sup> Ecology: State Dept. of Ecology, DNR; State Dept. of Natural Resources, WDFW; State Dept. of Fish and Wildlife, WSP; Washington State Parks, WSDH; State Dept of Health.

Both public and private soil scientists provide training in hydric soils through workshops sponsored by national organizations as well as federal and state agencies. Soil scientists also train state-licensed septic system designers through the Washington On-Site Sewage Association (WOSSA). For that reason, this licensing/certification effort has the support of WOSSA, the organization responsible for providing the bulk of the designers' CEU training requirements.

As mentioned above, soil scientists have been identified by Ecology staff as the preferred professionals for preparing prescriptions for Land Application of agricultural wastewater due to their understanding of soil chemistry (affecting the soil's ability to trap pollutant cations), soil biochemistry (microbial breakdown of pollutants), and soil physics (rate of saturated versus unsaturated water flow through the soil). This is a wastewater re-use issue that is very common in east-side agricultural settings and has a history of significant failures affecting drinking water aquifers -- public health, safety and welfare -- when mismanaged.

Soil scientists are uniquely trained to properly apply the highly technical and often mis-used hydric (wetland) soils evaluation techniques. These assessments are used to formally (legally) identify and delineate wetlands. This information (wetland boundary) is then recorded on deeds and plats, and has long-lasting economic and legal impacts. Incorrect wetland delineation can have disastrous economic impacts whether the work results in the wetlands being larger or smaller than regulations require. A larger wetland (than is legally correct) means a loss of economic gain from legally developable land; a smaller wetland (than is legally correct) means increased potential for flooding, water in crawl spaces, drainage problems, failing septic systems and loss of wildlife habitat.

As water quality and quantity impacts become a greater and greater impact on our daily lives, having incompetent or unprofessional soil scientists working on projects that affect soil erosion, hydric soils, soil stability, vegetation cover, soil chemistry, etc can only harm the public

*(c) The extent of autonomy a practitioner has, as indicated by:*

*(i) The extent to which the profession calls for independent judgment and the extent of skill or experience required in making the independent judgment; and*

*(ii) The extent to which practitioners are supervised;*

Soil scientists in general and as a profession are typically called upon to make an independent professional call and to use their best professional judgment. Therefore, even when working as a contractor for a licensed engineer/ architect, or when working as a scientist under a comparable supervisor – the soil scientist has been hired for that specific skill and level of expertise unique to their profession. It is in the nature of the soil science profession to be called upon to provide a

third-party opinion on sites with confusing soil characteristics (such as interpretation of indicators of a seasonal water table), or to make a more detailed technical assessment of a problematic natural soil condition (such as evaluating hydric soil indicators).

Engineers are not trained to evaluate a natural soil, but rather consider soil as a load-bearing material. For that reason, in the private sector, soil scientists are usually hired as separate contractors, and are both contracted and insured separately from the engineer. Moreover, having an extensive history as soil mappers of remote areas, most soil scientists are accustomed to working alone and depending only on themselves to carry out physically and mentally strenuous work under difficult working conditions.

*(2) The efforts made to address the problem:*

*(a) Voluntary efforts, if any, by members of the profession to:*

*(i) Establish a code of ethics; or*

*(ii) Help resolve disputes between practitioners and consumers; and*

The Soil Science Society of America (SSSA) ([www.soils.org](http://www.soils.org)) is a national professional association (over 5,800 members) that provides not only a way for soil scientists to maintain contact with others in their profession through annual meetings (average annual attendance 3,945), but has developed and maintained a highly regarded, professional certification program (including a professionally created and maintained certification exam<sup>16</sup>) with over 1,200 certified professional soil scientists. Through that program, the profession has developed a Code of Ethics, and has an Ethics Review Board intended to review and resolve complaints against their certified members. Unfortunately, their response to previous complaints has not elicited confidence from Washington state agencies.

The National Society of Consulting Soil Scientists (NSCSS) ([www.nscss.org/soil.html](http://www.nscss.org/soil.html)) is also a national professional soil scientist group, but membership is limited to private sector companies owned by soil scientists (189 member companies). This group is affiliated with the SSSA, but provides private sector soil scientists an opportunity to interact with others in their profession through annual meetings (average annual attendance 100-300). They have developed and maintained a professional registration program (36 registrants) that parallels that of the SSSA (same educational and professional experience requirements). The NSCSS also has an excellent

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<sup>16</sup> Although this is not formally proposed in the legislation, we are assuming that this exam can be used in WA state, as it is on other states with licensure. This will save the state thousands of dollars that would otherwise be spent on developing a professional exam.

Code of Ethics and an Ethics Review Board that is used to review and resolve complaints against their registered members. We have no records of their response to complaints against members.

However, the Ethics Review Boards of both organizations only meet periodically, as needed, and they are composed of members from all over the U.S. They have minimal local (Washington state) presence or concerns. Therefore, an ethics complaint must be in writing, and without a potential for face-to-face discourse, or question and response. There are examples from within Washington State of unresolved conflicts that were apparently inadequately addressed by the SSSA Ethics Board. ***A local review board would better serve citizens of Washington State.***

*(b) Recourse to and the extent of use of applicable law and whether it could be strengthened to control the problem;*

There is no current law that regulates soil science in Washington State. The only control is through the national professional societies. As mentioned above, although the SSSA and NSCSS do have Ethics Boards and excellent certification or registration programs, the main offices and functions for of both groups are located outside of Washington State. SSSA offices are located in Madison, Wisconsin. NSCSS's formal mailing address is Washington D.C. Therefore, these benefits and information networks are not easily available to the Washington consumer – particularly if they are less than competent at use of the internet. Having a state-administered licensing program provides the citizens of Washington with local control over their local issues, and does not force them to depend on a board of out-of state scientists (that they will never meet or talk to in person) to make decisions about the merit of their complaint.

There are WA state licensing programs that address some aspects of traditional soil science – such as interpretation of soils for septic system design (engineering and wastewater system designers programs) and erosion control plans (geology programs). But wastewater system designers are trained by soil scientists; therefore, this professional state licensing program is dependent on a non-licensed professional for critical training. In addition, although erosion control plans are traditional soil science, they are included in the list of professional geology practices along with mass wasting (landslides)<sup>17</sup>, therefore, cannot be carried out by soil scientists without challenges.

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<sup>17</sup> It should be noted that in many Counties and Cities, “state licensed geologists” are identified in local Critical Areas Ordinances as the professional allowed to prepare reports for “Landslide Hazard Areas”. As a result, soil scientists are not allowed to prepare soil and sediment erosion control plans. And erosion control is traditional soil science – not geology.

Any state-licensed professional (i.e., licensed engineers, architects, surveyors, wastewater system designers, geologists) can choose to oversee and take on liability related to results of hiring a soil scientist. However, more and more, these state-licensed professionals are unwilling to take on that liability when it involves highly technical interpretations that can have disastrous outcomes if carried out incorrectly or unethically.

The state of Tennessee is currently assessing whether to regulate soil scientists simply due to costs of a state-required surety bond for soil scientists evaluating soils for onsite septic systems. (pp 3, 6 in NSCS Summer 2007 newsletter <http://nscss.org/2007%20Newsletter%20Summer.pdf>)

“Recent requirements for soil consultants to carry a surety bond by the Tennessee Department of Environment and Conservation (TDEC) have prompted a push for legislation to be written that would grant consultants licensure. The amount of coverage required for the surety bond is \$30,000.00 which may not be quite enough to cover the consultant in the event that he or she makes an error with regards to mapping.”

*(3) The alternatives considered:*

*(a) Regulation of business employers or practitioners rather than employee practitioners;*

Many private sector soil scientists tend to be self-employed (and self-insured), but when working for others, have a wide range of potential employers. There is no practical way to regulate the potential employer group.

*(b) Regulation of the program or service rather than the individual practitioners;*

As described above, the list of potential soil science services is quite long, and sometimes overlaps into other professionals groups. More important, in order to carry out soil science interpretations, most professionals utilize combined aspects of sub-specialties. For example, a soil scientist working to evaluate a hydric soil would have to be well-versed in soil physics (study of water transfer through soil), soil biochemistry (due to microbial controls of diagnostic soil color patterns), soil chemistry (understanding both Fe and N cycles) and soil taxonomy (classification). This is not a practical alternative.

*(c) Registration of all practitioners;*

*(d) Certification of all practitioners;*

As described above, we currently have a national certification program through the SSSA and a registration program through NSCSS. Neither program is intended or able to register or certify all

soil scientist practitioners. It is a voluntary program. However, the state may choose any of these routes – including licensure -- as long as the outcome allows the managing board to evaluate whether the soil scientists can perform adequately both professionally and ethically.

*(e) Other alternatives;*

I know of none.

*(f) Why the use of the alternatives specified in this subsection would not be adequate to protect the public interest; and*

I believe this was already covered in the discussion above.

*(g) Why licensing would serve to protect the public interest;*

Licensure would enable state control of a professional group that is doing more and more work in environmental protection, particularly in relatively new fields or practices that use soils as a treatment or infiltration medium, such as Low Impact Developments (LIDs)

[www.metrokc.gov/dnrp/swd/greenbuilding/site/low-impact.asp](http://www.metrokc.gov/dnrp/swd/greenbuilding/site/low-impact.asp)

Most water quality and quantity problems, and some air quality problems, can be traced back to inappropriate or inadequate soil management in agriculture, forestry or urban-level land development. In response to the need to better define these problems as well as to offer effective solutions, soil scientists are moving into the private sector in ever increasing numbers. In recognition of this fact, soil scientists licensing, certification or registration is now in place in several states with efforts at setting up some form of regulation in at least one or two other states at this time.

*Current State Licensing or Other Regulatory Soil Science Programs (as per wikipedia and with a couple of extra states added as a result of other online searches)*

[http://en.wikipedia.org/wiki/List\\_of\\_State\\_Soil\\_Science\\_Licensing\\_Boards](http://en.wikipedia.org/wiki/List_of_State_Soil_Science_Licensing_Boards)

- [Alabama](#) Board of Registration for Professional Soil Classifiers (soil mapping)
- [Arkansas](#) Board of Registration for Professional Soil Classifiers (soil mapping)
- [Connecticut](http://www.ct.nrcs.usda.gov/Soil_Pages/ss_qualifications.html) ([http://www.ct.nrcs.usda.gov/Soil\\_Pages/ss\\_qualifications.html](http://www.ct.nrcs.usda.gov/Soil_Pages/ss_qualifications.html)) (Connecticut does not have licensing or registration, but does certify soil scientists primarily related to wetlands work)

- [Delaware](#) (uses SSSA certification<sup>18</sup> to license wastewater system designers)
- [Georgia](#) Licensing Board for Professional Soil Scientists
- [Indiana Indiana Registry of Soil Scientists](#)
- [Maine Board Of Certification For Geologists and Soil Scientists](#)
- [Minnesota Board of AELSLAGID](#) (Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience and Interior Design)
- [Mississippi Bureau of Plant Industry](#) Performs functions similar to a state licensing board.
- [New Hampshire Board of Certification for Natural Scientists](#)
- [North Carolina Board for Licensing Soil Scientists](#)
- [North Dakota Board of Registration for Professional Soil Scientists](#)
- [Rhode Island](#) (Uses proof of SSSA certification or training in soil science to license “Soil Evaluators”)
- [South Carolina Soil Classifiers Advisory Council](#) Performs functions similar to a state licensing board.
- [Tennessee](#) (currently evaluating state certification under land surveyors)
- [Texas Board of Professional Geoscientists](#)
- [Virginia Board for Professional Soil Scientists and Wetland Professionals](#)
- [Wisconsin Examining Board of Professional Geologists, Hydrologists and Soil Scientists](#)

*(4) The benefit to the public if regulation is granted:*

*(a) The extent to which the incidence of specific problems present in the unregulated profession can reasonably be expected to be reduced by regulation;*

State licensing will accomplish two tasks:

1. It will provide a method for the state to identify and control professionalism and ethics of soil scientists at a local level, and
2. It will provide consumers with a readily available list of competent practitioners (which is currently unavailable).

*(b) Whether the public can identify qualified practitioners;*

Through the internet, a knowledgeable consumer may be able to find their way to the SSSA and the NSCSS – the two national soil science societies. Of those two websites, NSCSS readily provides a list of members and registration status by region; in the SSSA, a knowledgeable consumer may be able to work their way through the website to get access, and then request the information.

Nevertheless, this information is not readily available on the SSSA website as a list. Neither the NSCSS or SSSA lists comprises a complete listing of practicing professionals, however, as each list is taken from the respective memberships which are in themselves voluntary.

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<sup>18</sup> Please note that any references to ARCPACS certification is referring to the old acronym for the certification offered through the SSSA. It stands for American Registry of Certified Professionals in Agronomy, Crop and Soil Science.

*(c) The extent to which the public can be confident that qualified practitioners are competent:*

If the public uses either a CPSS (certified by SSSA) or RPSS (registered by NSCSS), they can be assured of a certain level of education and experience, but there is little (if any) reliable, unbiased information about competency in any particular specialty field other than what the person claims as their specialty.

If state licensed or certified, the public would have that same information available about regulated individuals. In addition, we could develop local standards that could be used to define what an individual might be allowed to claim as a field of expertise or specialty.

*(5) The extent to which regulation might harm the public:*

*(a) The extent to which regulation will restrict entry into the profession:*

*(i) Whether the proposed standards are more restrictive than necessary to insure safe and effective performance; and*

The soil scientist definition in the proposed legislation (text provided in [www.soilscientistlicensing.com](http://www.soilscientistlicensing.com)) is taken directly from the national standard. A soil scientist gains that title through a certain level of experience and education – the same as what is defined in the legislation. Therefore, as defined -- this regulation would not restrict entry into the field of soil science, but rather, just recognizes the professional standard.

The past-proposed legislation was a Practices Act<sup>19</sup>, which the soil scientist community would have preferred. We were more interested in regulating the action than the title of the scientist. However, as mentioned above, there are many other professionals that carry out some aspect of soil science in their work, and many lobbying groups were concerned that their constituents would no longer be able to do that work under a Practices Act. We attempted to solve that by exempting a long list of those professionals from licensure, but to no avail. They were still convinced there would be unintended consequences. Therefore, we restructured the RCW as a Title Act, which only regulates those who want to use the title of "soil scientist".

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<sup>19</sup> A Practices Act defines a list of practices that soil scientists customarily carry out, and basically says that to do these things, one must have a state license. A Title Act instead is a state *certification* process, and defines who can *call him/herself* a soil scientist – in this case, an individual with certain education (a degree in soil science) and experience (5 years professional practice). Both Practices and Title Act allow control of the a regulated individual in terms of being responsive to public complaints and assessing whether that person is practicing professionally and ethically.

The only potentially limiting issue with the current proposed legislation is that the state (DOL) has estimated that the regulated group will only include about 130-140 individuals, which makes the fiscal note and costs associated with regulation prohibitively expensive. However, to increase our numbers (which will decrease costs), we are proposing co-licensing with wetland scientists (with the obvious professional connection being hydric soils), and we believe that the state estimated number of potential licensees is somewhat low.

The DOL estimated about 50 soil scientists would come from within the state with the balance coming from surrounding areas. However, based on data we collected from various nearby universities and national professional organizations, we believe there are at least 200 soil scientists within the state that would qualify and be interested in some form of licensure. This data indicates that there are at least a few hundred qualified individuals living in Washington, and comparable numbers in the surrounding states. The issue is rather whether those qualified individuals are interested in being identified as soil scientists when they may have been employed with other titles – environmental technician, sanitarian, etc.

Therefore, if there are too few soil scientists, the program would be prohibitively expensive, which would restrict entry into the profession. For that reason, we are seeking to formally list the in-state individuals to get a better count, and to co-license with wetland scientists to share costs.

*(ii) Whether the proposed legislation requires registered, certificated, or licensed practitioners in other jurisdictions who migrate to this state to qualify in the same manner as state applicants for registration, certification, and licensure when the other jurisdiction has substantially equivalent requirements for registration, certification, or licensure as those in this state; and*

This is described in the proposed legislation and meets the professional standard for licensing comity. The incoming practitioners would have to meet the same standard as required for licensure/certification in terms of education and experience.

*(b) Whether there are similar professions to that of the applicant group which should be included in, or portions of the applicant group which should be excluded from, the proposed legislation;*

As described above, we are proposing co-licensure with the wetland scientists. Part of that reasoning is to increase our numbers. But the other part was because that professional group (Society of Wetland Scientists and one lobbying group) was concerned that since soil scientists are the recognized specialists in two out of the three parameters used to legally delineate and classify

wetlands – hydric soils and soil hydrology – then soil scientists would become the professional of choice for carrying out wetland science, eliminating other practitioners regardless of training or expertise. This could occur either by law or by default, if a local jurisdiction chose, through law or policy, to only allow “state-licensed/certified individuals” to delineate or otherwise classify wetlands.

For that reason, we are evaluating whether it might be possible to include the wetland scientists in our proposed Title Act, but as a subspecialty with the professional connection being that we both need to be very well trained and competent in hydric soils interpretation and evaluation. More important, this lack of correct interpretation of hydric soils has been a serious problem in both professional groups for some time. Hydric soil science is a very new, rapidly developing and changing science as well as regulatory environment. Remaining well informed and trained in these changes is a great challenge in both wetland science and soil science.

*(6) The maintenance of standards:*

*(a) Whether effective quality assurance standards exist in the profession, such as legal requirements associated with specific programs that define or enforce standards, or a code of ethics; and*

There are no state laws to enforce standards of soil science or a code of ethics – other than a state law defining what will be regulated as a wetland and providing standards for how to legally delineate those wetlands. Nevertheless, there is no enforcement section in that law, and no section that defines who is qualified to carry out the work. Moreover, even with the regulatory guidance, the range of variation between delineations by different practitioners is very wide – a result of low standards in who is defined as being competent to carry out this work, and a result of poorly trained “professionals”.

Therefore, other than the state law regarding wetland definition and delineation standards, the existing “quality assurance” standards or programs for soil science are all voluntary and through national professional organizations – not regulatory programs.

*(b) How the proposed legislation will assure quality:*

*(i) The extent to which a code of ethics, if any, will be adopted; and*

*(ii) The grounds for suspension or revocation of registration, certification, or licensure;*

The details above are described in the proposed legislation and meet or exceed all professional standards.

*(7) A description of the group proposed for regulation, including a list of associations, organizations, and other groups representing the practitioners in this state, an estimate of the number of practitioners in each group, and whether the groups represent different levels of practice; and*

The description of soil scientists (and soil science), was already provided above in answer to the very first question.

The associations and organizations (national and local) include:

#### National Groups

Soil Science Society of America (SSSA) ([www.soils.org](http://www.soils.org))

About 5800 members; about 1200 certified soil scientists

National Society of Consulting Soil Scientists (NSCSS) ([www.nscss.org](http://www.nscss.org))

About 208 member companies, about 36 registered soil scientists

Association of Women Soil Scientists (AWSS) ([www.womeninsoils.org](http://www.womeninsoils.org))

Society of Wetland Scientists (SWS) ([www.sws.org](http://www.sws.org))

United States Consortium of Soil Science Societies ([www.soilsassociation.org](http://www.soilsassociation.org))

Soil and Water Conservation Society (SWCS) ([www.swcs.org](http://www.swcs.org))

#### Regional State Groups

Washington Society of Professional Soil Scientists (WSPSS) ([www.ieway.com/wspss](http://www.ieway.com/wspss))

Oregon Soil Science Society (OSSS) ([www.oss.peak.org/](http://www.oss.peak.org/))

Professional Soil Scientists Association of California (PSSAC) ([www.pssac.org](http://www.pssac.org))

Idaho Soil Scientists Association (ISSA) (no website)

State Groups

*(8) The expected costs of regulation:*

*(a) The impact registration, certification, or licensure will have on the costs of the services to the public; and*

*(b) The cost to the state and to the general public of implementing the proposed legislation.*

Some of this information must come from the DOL paperwork. Joe Vincent did this work for the last legislative session. Even with the current proposed fiscal note, which is relatively expensive compared to costs of licensure with other programs, the increase in costs to the public – born in the increase in the overhead cost for the consultant – would be minor.

As for costs to the state, that must ultimately come from the DOL fiscal note assessment. Based upon our involvement and structuring of the proposed legislation, we feel the cost of the proposed legislation would be greatly reduced through inclusion and/or modification at the state level of the

accredited and established soil science examination as currently administered by the SSSA Council of Soil Science Examiners (CSSE).

*[1987 c 514 § 6.]*

# Wetlands Scientist Applicant Report

21 August 2007

Bruce Chunn  
Planning and Performance  
Department of Licensing  
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Re: Sunrise Review and Credentialing for Wetland scientists

Dear Mr. Chunn,

Thank you for the opportunity to present you with this information regarding the development of a Sunrise Review for the credentialing of wetland scientists. The State of Washington Growth Management Act requires municipalities to adopt ordinances to protect the functions of environmentally critical areas, including wetlands. Despite the fact that state defines how to define and delineate wetlands, there are currently no standards nor requirements set forth by the State of Washington regarding those who carry out that work of defining and delineating wetlands. Therefore, we request that the State of Washington Department of Licensing set up a program for regulation of wetland scientists as outlined in this review.

We recommend that all persons working within the wetland consulting industry who make wetland determinations (define and classify wetlands) and who delineate wetland boundaries (i.e., wetland delineators<sup>20</sup>), including wetland consultants, wetland specialists, wetland biologists, wetland ecologists, and wetland scientists (hereafter collectively referred to as wetlands scientists ) have the necessary credentials to practice this profession within the State of Washington. The necessary credentials for wetland scientists are listed within this Sunrise Review. We recommend regulation of all practitioners since there is no effective way or effective reason to separate out the specialities listed above.

We believe this is necessary for at least three reasons:

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<sup>20</sup> “Wetland delineators“ means anyone, regardless of professional title, that makes a determination of wetland presence or absence and may include marking the wetland boundaries on the ground and/or on a drawing or map to be submitted to any regulator (federal, state, or local government agency) for the purposes of including but not limited to protecting the functions of a wetland as required by the Growth Management Act (RCW 36.70A), determining potential development constraints, or conserving wetland resources.

1. To bring and ensure consistency and accuracy in work of wetland scientists. Work products include but are not limited to identification and delineation of wetland boundaries using the methods specified in the Washington State Wetland Identification and Delineation Manual<sup>21</sup>; wetland reconnaissance and delineation reports; identification of wetland functions; consultation with clients regarding the regulations and the permitting and regulatory process; and,
2. Accountability. A body to bring complaints to (i.e., the Department of Licensing).
3. To require all wetland scientists to have a minimum of education and local experience in the wetlands profession.

We are pursuing this legislation because we have personally witnessed and discussed with our fellow wetland scientists, the development community, and regulatory agency staff instances where:

- wetlands were missed during a site review,
- uplands were delineated as wetlands, or
- site conditions were misrepresented either in the field or to regulatory agencies during the permitting process.

These actions have either restricted legal development through delineation inaccuracies or have allowed wetland resources to be developed and their associated valuable functions lost. In addition, clients may incur unnecessary expenses through poor work requiring the work to be redone by others.

We are also requesting that we share this legislation and certification with the soil scientists, such as those members of the Washington Society of Professional Soil Scientists. Soils scientists make up a portion of wetland scientists within the state. Our recommendation to share this legislation with the soil scientists is because one of the commonalities of the two trades is the correct identification of hydric soils<sup>22</sup>. Hydric soils are one of the three parameters<sup>23</sup> required for an area to be defined and regulated as a wetland. Hydric soils are often misidentified. This knowledge of how to correctly identify hydric soils from both a scientific and regulatory standpoint is critical to the accurate delineation of wetlands. This partnering will also enable us to increase the numbers of regulated scientists within our proposed program and therefore reduce overall costs to the practitioners who choose to become certified.

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<sup>21</sup> While state law requires use of standardized methods for delineating wetlands (i.e., the state manual), the manual or state law do not specify minimum educational background, experience, or requirements for implementation or application of these methods.

<sup>22</sup> “Hydric soils” per the Washington State Wetlands Identification and Delineation Manual are soils “that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. (USDA, NRCS 1995, Federal Register, 7/13/94, Vol. 59, No. 133, pp 35680-83).”

<sup>23</sup> The other two parameters usually required to be present for an area to be considered a wetland are hydrophytic vegetation and wetland hydrology.

Below are certain questions within RCW 18.118.030 (in bold) and our responses to those questions.

**A definition of the problem and why regulation is necessary:**

Currently there are no state standards or criteria to work as a wetland scientist in the State of Washington. Most local (city and county) jurisdictions require a minimum of a Bachelor of Science degree to work as a wetlands practitioner, and some jurisdictions require additional knowledge and/or experience such as 5 years of working locally as a wetland scientist in their jurisdiction. However, these requirements are not sufficient to prepare a wetland scientist to delineate wetlands, write wetland delineation or reconnaissance reports, accurately identify and assess wetland functions, prepare compensatory mitigation plans, or properly assist and instruct the public on the permitting process and regulatory process.

To enable a person to understand the definition of a wetland and to accurately and consistently identify the wetland/upland edge in the field (delineation), a wetland scientist needs to understand and be able to properly identify hydric soils, hydrophytic vegetation, and primary and secondary indicators of wetland hydrology. The better practitioners have certain educational backgrounds, but also have taken the time to continue their education, share information with colleagues and to increase their skills through years of experience.

We are the first to admit that there are some wetlands that are very difficult to identify. All wetlands are identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology as described in the Corps of Engineers *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Washington State Wetlands Identification and Delineation Manual, March 1997* (Washington State Department of Ecology 1997). With few exceptions, all three parameters must be present for an area to be considered a jurisdictional wetland under normal circumstances. Exceptions may include problem areas or atypical situations.

We are aware of many instances, and have knowledge of situations where wetlands and uplands have been misidentified. This has led to the loss of the resources wetlands provide, or, has led to regulation of uplands incorrectly identified as wetland. Because wetland scientists have a significant impact on usable land and the economy, we believe that it is very important that the professionals that delineate wetlands and carry out associated permitting and mitigation activities have the education and experience to be consistent with the statutory definition, and an understanding of the ecological and landscape processes that create and affect wetlands.

Furthermore, we have spoken with many local agency planning department staff, engineers, planners, and developers that want a list of qualified wetland consultants to use and trust. These individuals are also seeking accountability of the professionals when the public trust is lost by poor, unethical, or unprofessional work.

We are providing you with a list of practitioners and resources that you can contact and review or discuss their perspective on credentialing for wetland scientists (Appendix A).

The profession of wetland scientists is varied but our concern is mostly with the practitioners that delineate wetlands. This process is the field identification and physical flagging (delineation) of the wetland boundaries. It also includes associated and subsequent work related to permitting and mitigation – very costly processes. There are instances where wetlands have been either intentionally or unintentionally (through lack of knowledge) missed, or, conversely, uplands identified as wetlands. This incorrect identification of a wetland either constitutes a loss of the functions and values wetlands provide or the regulating of an upland as a wetland. Both mistakes, whether intentional or unintentional, create problems for the regulatory agencies and development industry. The regulatory agencies already understaffed and overburdened are unable to efficiently process permit applications or may make decisions based on inaccurate information. This lengthens the time necessary to obtain proper approvals and permits, causes backlog delaying timely approval of properly completed permit applications, and potentially causes economic harm to the community, loss of wetland resources, and in a worst case, property damage and loss of life.

A law to regulate the practitioners will bring consistency in the profession and greater accountability. There are currently no state or federal laws that directly regulate wetland scientists. Essentially, the practitioners of the wetland profession are autonomous. All wetlands work, whether delineating wetlands, or consulting clients on the definition of a wetland and/or the regulatory nature of wetlands, requires independent judgment and skill. Many wetland consultants are unsupervised and do not possess the education and experience required to be wetland delineators or practitioners.

### **The efforts made to address the problem**

There have been efforts to bring consistency and professionalism to the wetlands consulting industry – including a relatively recent professional certification program through the Society of Wetland Scientists – a national organization.

There is currently a certification program that was established by the Society of Wetland Scientists Professional Certification Program (SWS PCP). You may contact the SWS PCP to review their program at the Society of Wetland Scientists web site, [www.sws.org](http://www.sws.org). The certification program we are recommending within this Sunrise Review generally follows the SWS PCP certification requirements, but brings regulatory control and consistency to the state rather than to a national organization with different goals and intent.

Nationally, there are 4 states that have a wetland scientist certification program. These are New Hampshire, Virginia, Wisconsin, and Minnesota. Appendix B, an article written by Leah Stetson of the Association of State Wetland Managers, titled *State Wetland Delineator Certification Programs*, provides a good description of credentialing in other states, and provides contacts for additional information.

Another means of addressing the problem is through continuing education. The Pacific Northwest Chapter of the Society of Wetland Scientists (PNW SWS) has held annual meetings since the formation of the chapter. These meetings generally have an attendance between 200 to 400 participants. The meetings have technical sessions, workshops, and fieldtrips for participants to disseminate the best available science on wetland ecology and changes in regulatory programs. Because there are few if any formal wetland scientist education or major programs offered in colleges or universities nationwide, we recommend a continuing education program as part of this regulatory program.

There are short (1-day to 1-week) courses on wetland related topics that are offered by Western Washington University, the University of Washington, and Portland State University. And there are several national companies that offer wetland delineation courses locally such as the Wetland Training Institute ([www.wetlandtraining.com](http://www.wetlandtraining.com)) and the Richard Chinn course ([www.richardchinn.com](http://www.richardchinn.com)). But we do not know of any 2-4-year wetland science major program in any state university or college (inside or outside of WA state).

The PNW SWS is promoting and sponsoring workshops on various topics such as identification of wetland plants, amphibians, and hydric soils. Additional workshops are continually being offered based on membership interest and developing issues.

There is a lack of accountability among wetland scientists, including identification of education and experience requirements or resolving disputes regarding delineations. A mechanism needs to be set up to establish minimum education and experience requirements and resolving disputes. We trust that the Department of Licensing and the proposed certification of wetland scientists will establish this mechanism.

### **The alternatives considered**

The wetlands consulting community believes that if regulation is determined to be necessary, certification is the best form of credentialing to begin regulating the industry to ensure the professionalism of the practitioner and the protection of the consumer. Licensing could be considered in the future.

Alternatives such as the regulation of business employers or the regulation of the program or service are not practical. There are many wetland scientists that work alone in the field and the employers generally are not familiar enough with the requirements and knowledge the wetland scientists have or require. Wetland scientists require specific education and training. It is inappropriate for employers to be regulated unless those employers meet the specific qualifications to be a wetland scientists. Many wetland scientists are “single shingle” businesses. That is, most are small companies with few employees. Some wetland scientists do work with surveying and engineering companies. However surveyors and engineers are very different professions and do not have the education required to be a wetland scientist. We propose that all wetland scientists become certified.

### **The benefit to the public if regulation is granted**

There are currently no credential requirements nor accountability for wetland scientists. The requirement of credentials to practice wetlands work in the state would ensure a baseline of education, training, experience, testing, and accountability. Homeowners, developers, engineers, attorneys, planners, or agencies would then be assured that a wetland scientist would have a minimum of education and experience needed to be accountable. Furthermore, when someone hires a wetlands practitioner, the consumer or reviewing agency will now have assistance from the Washington State Department of Licensing (DOL) in the event that they have questions or concerns regarding the conduct of a specific wetland scientist.

We do not believe that the regulation of wetland scientists will instantly eliminate all incidences of specific problems, such as unprofessional conduct, the misapplication of the definition of a wetland leading to incorrect wetland delineation, or, to misleading statements regarding the regulations and/or regulatory process regarding wetlands. However, this proposed regulation of wetland scientists (i.e., requiring specific educational, experiential, and training requirements) will ensure that all practitioners are at least initially fully qualified to practice. Over time, the less competent or unethical practitioners should be weeded out through the adoption and application of these proposed standards.

### **Wetland scientist Certification Board**

We recommend that a wetland scientist certification board be created. The board would consist of seven members appointed by the director the DOL, who shall advise the director concerning the administration of the law. Of the appointments to this board, all seven shall be currently practicing and qualified (as defined in the regulation) wetland scientists, at least four from the private sector and at least two from the public sector. Board members shall also be from the various geographic regions of the state. A minimum of two from eastern Washington and three from western Washington (the disparity is due to the greater population in western Washington). One representative shall be from southwest Washington, and one from northwest Washington. In the event that representatives cannot be found from these regions and sectors, the director shall make the appointments.

### **Board's qualifications and terms**

Members of the board shall be certified by the state as a wetland scientist. Members of the board shall be appointed for three year terms. Terms must be staggered so that not more than two appointments are scheduled to be made in any calendar year. Members hold office until the expiration of the terms for which they were appointed. The director may remove a board member for just cause. The director may appoint a new member to fill a vacancy on the board for the remainder of the unexpired term. All members are limited to two consecutive terms. Members shall step aside after their second term but if a replacement board member cannot be found, the director may reappointment the board member for a third term or until a replacement is selected. A board member may reapply for a board position after 3 years.

Each board member is entitled to compensation for each day spent conducting official business and to reimbursement for travel expenses in accordance with RCW 43.04.240, 43.04.050, and 43.03.060. Because the licensing board will be established prior the certification start date, the director will establish the criteria for the initial appointments to the certification board.

### **Director's authority**

The director has the following authority in administering the law.

1. To adopt, amend, and rescind rules approved by the board as deemed necessary to carry out the law.
2. To adopt fees as provided in RCW 43.24.086.
3. To administer certification examinations or reviews of applications approved by the board and to adopt or recognize examinations or reviews of applications prepared by other organizations as approved by the board.
4. To adopt standards of professional conduct, practice, and ethics as approved by the board.

### **Board's authority**

The board has the following authority in administering the law.

1. To establish rules, including board organization and assignment of terms, and meeting frequency and timing, for adoption by the director.
2. To establish the minimum qualification for certifying applicants as provided in the law.
3. To approve the method of administration of examinations or reviews of applications required by the law or by rule as established by the director.
4. To approve the content of or recognition of examinations or reviews prepared by other organizations for adoption by the director.
5. To set the time and place of examinations or reviews of applications with the approval of the director.
6. To establish and review standards of professional conduct, practice, and ethics for adoption by the director.

### **Unprofessional conduct**

Regarding unprofessional conduct; in addition to the unprofessional conduct described in RCW 18.235.130, the following conduct, acts, and conditions, constitute unprofessional conduct.

1. Violating the law or the rules adopted within the legislation.
2. Not meeting the qualification for certification set forth in the law.
3. Failure to comply with the assurance of discontinuance entered into with the director.
4. Committing any other act, or failing to act, which act or failure are customarily regarded as being contrary to the accepted professional conduct or standard generally expected of those conducting business as a wetland scientist.

A wetland scientist shall also:

1. Only express opinions on wetland matters for which he or she is knowledgeable or familiar with the facts.

2. Refrain from attempting to injure the reputation of other scientists through the use of false, biased, or otherwise undocumented claims.
3. Accurately and adequately represent the facts and results of research and do not base decisions on theological or religious beliefs, political beliefs, political pressure, and client or supervisor pressure.
4. Reveal any conflicts of interest to their clients or the public that may interfere with full representation of the scientific facts as they can reasonably be interpreted.
5. Avoid the use of certification as a vehicle for personal or private gain.
6. Accurately convey that certification only implies certification of qualifications to conduct work in your specific area of expertise, such as wetland delineations, investigations, reports, mitigation plans, or specific related professional studies.
7. Maintain the confidentiality of information produced for a client, as required by appropriate federal and state laws.
8. Maintain original records of research, methods, results, and analyses for a minimum of three years beyond the termination of the project.
9. Keep informed of advances in the field of expertise of the member, including literature, methods of measurement and analysis, and skills for the interpretation of data.
10. Keep informed of changes in regulations, including local, state, and federal regulations.

### **Hearing before the director**

The procedures governing adjudicative proceedings before agencies under chapter 34.05 RCW govern all hearings before the director or his or her designee. Upon a finding that a certificate holder or applicant has committed unprofessional conduct, the director may issue an order providing for one or any combination of the following:

1. Revocation of the certificate.
2. Suspension of the certificate for a fixed or indefinite term.
3. Restriction or limitation of the practice.
4. Issuance of a civil fine not to exceed five thousand dollars for each violation.
5. Requiring satisfactory completion of a specific program of remedial education or treatment.
6. Monitoring of the practice by a peer approved by the director.
7. Reprimand or censure.
8. Compliance with conditions of probation for a designated period of time.
9. Withholding of a certificate request.
10. Refund of fees billed to and collected from the consumer.
11. Other corrective action.

### **Investigation of complaints**

Any person may submit a written complaint to the department charging a certificate holder or applicant with unprofessional conduct and specifying the grounds for the charge. If the director determines that the complaint merits investigation or if the director has reason to believe, without a formal complaint, that a certificate holder or applicant may have engaged in unprofessional conduct, the director may investigate to determine if there has been unprofessional conduct. A person who files a complaint under this section

in good faith is immune from suit in any civil action related to the filing or contents of the complaint.

### **Suspension of certificate**

The director shall immediately suspend the certificate or practice permit of a person who has been certified pursuant to RCW 74.20A.320 by the department of social and health services as a person who is not in compliance with a child support order. If the person has continued to meet all other requirements for a certificate under this chapter during the suspension, re-issuance of the certificate is automatic upon the board's receipt of a release issued by the department of social and health services stating that the certificate holder is in compliance with the child support order. The procedure in RCW 74.20A.320 is the exclusive administrative remedy for contesting the establishment of noncompliance with a child support order, and suspension of a certificate under this subsection, and satisfies the requirements of RCW 34.05.422.

### **Civil infractions**

The department has the authority to issue civil infractions under chapter 7.80 RCW in the following instances:

1. Conducting, offering to conduct, or represent oneself as a wetland scientist without being certified in accordance with this chapter.
2. Presenting or attempting to use as his or her own the certification of another wetland scientist.
3. Giving any false or forged evidence of any kind to the director or his or her authorized representative in obtaining a certificate.
4. Falsely impersonating any other certificate holder.
5. Attempting to use an expired or revoked certificate.

All fees, fines, and penalties collected or assessed by a court because of a violation of this section must be remitted to the department to be deposited into the wetland scientists account.

### **Relief by injunction**

The director is authorized to apply for relief by injunction without bond, to restrain a person from the commission of any act that is prohibited in the law. In such proceedings, it is not necessary to allege or prove either that an adequate remedy at law does not exist, or that substantial or irreparable damage would result from continued violation. The director, individuals acting on the director's behalf and members of the board are immune from suit in any action, civil or criminal, based on disciplinary proceedings or other official acts performed in the course of their duties in the administration and enforcement of the law.

### **Grandfather clause**

We recommend that a grandfather clause be written into certification requirements. The grandfathering clause is to forego the taking of a state test if it is determined to be required and/or specific educational requirements as determined by the board, to become certified and to give relief to those wetland scientists that may not have the additional

wetlands related course work but do not meet the minimum experience and educational requirements as expressed below.

At the date certification of wetland scientists becomes effective, any person who has been actively engaged in the business of conducting work as a wetland scientist, has at least five years of experience working as a wetland scientist in the State of Washington, or equivalent (as determined by the board), and has a minimum of a Bachelor's of Science degree, may apply to the board for initial certification without meeting the certification examination or instruction requirements. Wetland scientists that have a minimum of five years of experience working within the State of Washington and who are Professional Wetland Scientists as certified by the Society of Wetland Scientists Professional Certification Program qualify. Parties requesting to be grandfathered that do not have the above recommended credentials may submit a request to the board for review. This may include Professional Wetland Scientists from adjoining states or have sufficient professional experience in other states and are Professional Wetland Scientists that are certified by the SWS PCP.

We further recommend that any person who receives an initial certification under the grandfather clause, must, upon renewal of his or her certification, provide the board and the DOL with acceptable documentation that the applicant meets the certification renewal requirements as determined by the board and as expressed below.

### **Reciprocity**

Any reciprocity agreements with other jurisdictions shall require applicants from those jurisdictions to meet or exceed the requirements adopted by the State of Washington regarding wetland scientist certification.

### **Qualifications for Certification**

The following requirements for training, experience, and testing shall be required to become a State of Washington certified wetland scientist.

Wetland scientist certification is awarded to those meeting both educational and experience requirements. An application form, to be completed by each applicant, shall be prepared by the board and used in the processing of applications. The following are requirements to be certified as a wetland scientist in the State of Washington.

All applicants must submit information documenting completion of the educational requirements leading to a college or university degree of Bachelor of Science, Bachelor of Arts, or equivalent or higher degree, and should have the following, or equivalent, course work:

- 1) Biological Sciences: Fifteen (15) semester hours in biological sciences including courses such as general biology, botany or zoology; general ecology; plant, animal, aquatic or wetlands ecology; invertebrate zoology; taxonomy; marine science; fisheries biology; plant physiology, plant taxonomy, plant pathology, plant morphology; relevant environmental sciences; and similar courses.

2) Physical Sciences: Fifteen (15) semester hours in courses in soils, chemistry, hydrology, physics, geology, sedimentology, oceanography, coastal processes, environmental engineering, and similar courses.

3) Quantitative Sciences: Six (6) semester hours in courses in math, computer sciences, basic statistics, population dynamics, experimental statistics, and similar courses.

4) Additional Educational Requirements for wetland scientist certification: Fifteen (15) semester hours (or equivalent in short courses or continuing education courses) of wetland-related coursework. Examples of recommended courses, continuing education, and/or training needed to attain additional competency include, but are not limited to, the following:

Wetland Plant Taxonomy ; Advanced Plant Taxonomy; Wetland Hydrology; General Hydrology; Soil Morphology, Classification, and Mapping; Hydric Soil Identification; Wetland Restoration and Creation; Wetland delineation/Evaluation/Classification; Applied Wetland Ecology and Management; Wetland Creation/Mitigation; Wetland Ecology.

Attendance at professional meetings of symposia will not qualify to meet this requirement.

Applicants seeking credit for specialized wetland courses taken outside of the university setting where no official college credit was generated must provide the following information to assist the board for assessing the applicability of the course in meeting the minimum hour requirement for Specialized Wetland Courses:

- Name, date, location and sponsor of the course
- The number of classroom and/or field hours completed
- Provide CEUs if earned

#### Qualifying experience

In addition to the minimum collegiate courses required, a wetland scientist must meet specific experience and wetlands-related education as outlined below: Professional experience begins following conferral of the FIRST degree at a baccalaureate or higher level. Certification as a wetland scientist requires a minimum of five (5) years of full-time professional experience gained in the State of Washington. Relevant experience must be gained within ten (10) years prior to applying for the wetland scientist certification. Experience must demonstrate the application of current technical knowledge to problems and programs dealing with wetland resources and activities. Relevant experience may be gained while working in the private (e.g., consulting, industry, non-profit), public (e.g., local, state, federal government), and/or academic sectors.

Identification of the professional level of experience will require careful evaluation of each application. Experience is calculated based upon applicant's description and documentation of percentage of time applied to relevant wetlands work. Therefore, it is the applicant's responsibility to fully document for each experience the percentage of time devoted specifically to practitioners wetland activities, providing month/year dates for each period(s) of experience. Full-time work experience is defined as a minimum 75% of daily/weekly/monthly duties devoted specifically to wetland science. Work experience below the 75% threshold will be credited on a pro-rated basis.

Examples of qualifying experience include:

1. Engaging in research that includes field or laboratory observations, analysis of data, and preparation of a publication for recognized journals and/or published reports to private/public clients.
2. Directing a research project with supervisory responsibility over several technicians.
3. Serving as a leader or assistant leader on wetland-related projects requiring independent judgment and action.
4. Teaching a college course or equivalent in wetlands science.
5. Working as a wetland specialist, scientist, or manager in the public (local, state, or federal agency) or private (industry, consultant, developer) sector.
6. Directing a state-wide or district-wide wetlands program, conducting wetland restoration projects, wetland program planning, or conducting wetland delineation or evaluation.

Examples of **non-qualifying** experience include:

1. Teaching below the college level.
2. Carrying out routine responsibilities such as data collections without statistical analysis, professional writing of someone else's work, making routine plant identifications, conducting bioassay or other analytical laboratory determinations not related to wetlands.
3. Providing input to or review of environmental impact statements - unless as a wetland specialist.
4. Working as an undergraduate or graduate research or teaching assistant in a non-wetland related course.
5. Involvement in wetland studies as an administrative function without application of principles and concepts of wetland sciences.

Time spent obtaining advanced academic degrees may apply toward professional experience subject to the following guidelines.

1. Experience credit normally will be given only upon completion of curriculum and research judged by the board as relevant to the wetland scientist within the State of Washington.

2. Up to two (2) years of credit will be allotted for a Master's degree, up to three (3) years of credit for a Ph.D., and up to four (4) years of credit for a Master's and a Ph.D. Credit allowed will be on a case-by-case basis based on relevance to the wetland sciences and research within the State of Washington. The applicant should outline the wetlands relevance of the work leading to the degree(s) to ensure experiential credit is given.
3. When time intervals for education and employment overlap, a detailed explanation must be provided of the relevant portions of each. Experience must be gained within the ten (10) years prior to the date the application is signed.

Each application for wetland scientist certification must include the following:

A curriculum vita or resume documenting name, address, college/university degree(s), a list of relevant college/university courses, and documentation of full-time experience in wetland science.

A list of citations for wetland-related publications, technical reports, oral presentations, and other professional activities.

Names, addresses and phone numbers of three (3) references that are certified wetland scientists must accompany application for certification. Do not list personnel that you supervise.

Copies of all academic transcripts for all degrees conferred or courses taken (photocopies are acceptable).

Applicant must also certify the accuracy of application documents and certify that they agree with the certification Code of Ethics.

### **Wetland Delineator Qualifications**

To be qualified to delineate wetlands in the State of Washington a person must have the following qualifications and experience.

1. The qualifications listed above to become certified.
2. Five years of full time experience delineating wetlands in the Pacific Northwest Region. The PNWR shall be defined by the board.
3. A minimum of 10 wetland delineations must be either peer or agency reviewed.

### **Assurance that practitioners will maintain competence, i.e., certification renewal**

We recommend certificates be issued for a term of five years and expire on the last day of the month the certificate was issued. The DOL will notify the practitioners of the impending lapse of certification. As a condition of renewing a certificate under this chapter, a wetland scientist shall present satisfactory evidence to the board of having completed requirements as prescribed by the board. The board shall set up the standards for reissuance of certification to wetland scientists. We recommend at a minimum that

wetland scientists accumulate a point score that will be determined by the board. The point score shall include the following:

1. Work as a full time wetland scientist in the State of Washington.
2. Attend workshops or complete courses that constitute 40 hours of class time.
3. Attend wetland conferences or symposia that constitute 40 hours.
4. Teach wetland related courses, workshops, or sponsor symposia.
5. Complete research on wetland related topics. Topics may include scientific, applied ecology, or regulatory.
6. Course work, workshops, conferences, symposia, and research do not need to be within the State of Washington but must be wetlands related.
7. Wetland delineators must also maintain their field skills by completing a minimum of 1 wetland delineation per year. The board shall determine the scope of the wetland delineation.

### **The extent to which regulation might harm the public Restrictive Regulations**

In our opinion, the criteria for certification are not so restrictive as to limit entry into the profession. To the contrary, anything less comprehensive would have the potential of sending less qualified applicants out to practice within the state. We understand that wetland scientists will continue to have the option to expand their training and other credentials, but it is also likely that many will not pursue more education or training than the required standards. Therefore, those standards must meet the minimum bar for competency and the additional training must be part of the certification renewal process.

### **Professional exclusions to the proposed certification**

None recommended. This profession is unique and requires the credentials and experience expressed above.

### **The maintenance of standards**

As stated in an earlier section, there is a code of ethics and strict requirements to gain certification, to continue to be certified, to maintain certification, and accountability as a wetland scientist in the State of Washington.

### **A description of the group proposed for regulation, expected costs of regulation, and cost-impact.**

#### **Group Proposed for Regulation**

The group of individuals who will be considered for regulation are those who are delineating wetlands, preparing wetland/delineation reconnaissance reports, consulting clients on regulatory matters as they pertain to wetlands or other waters of the State of Washington, or represent themselves as professional wetland scientists, including but not limited to wetland consultants, wetland specialists, wetland biologists, and wetland ecologists. There are currently about 425 members of the Pacific Northwest Chapter of Society of Wetland Scientists registered in the three state area that it encompasses, Washington, Oregon, and Idaho. This does not represent all wetland scientists as many

are not members of the SWS. There are about 240 members of the PNW SWS chapter from Washington State.

We expect to share this legislation and licensing with the soil scientists such as those members of the Washington Society of Professional Soil Scientists. This will enable an increase in numbers to reduce overall costs to the practitioners.

Our recommendation to share this legislation with the soil scientists is because one of the commonality of the two trades and because one of the three criteria to be delineated as a wetland is hydric soil.

### **Expected costs of regulation**

The fiscal notes that have been provided this year, based on a governing format outlined above, estimate the cost of license to be approximately \$450 every two years, with an additional \$200 fee assessed at the time of testing.

### **Cost impact of regulation to consumers**

It can be realistically expected that the fees for wetland scientists will rise slightly following any credentialing or regulation. However, it is our belief that the overall cost to the public and the environment will be reduced by bringing consistency within the profession, and reducing poor work that is required to be redone which adds to the overall cost of a project.

Jim Wiggins MS, PWS  
President  
ATSI  
Program VP, PNW SWS  
Co-chair, PNW SWS Ethics Committee  
atsi@fidalgo.net

Scott Luchessa MS  
Certified Ecologist, Ecological Society of America  
Senior Manager  
Environ International Corporation  
Exec VP PNW SWS  
Co-chair, PNW SWS Ethics Committee  
sluchessa@environcorp.com

## APPENDIX A

Contacts for people and organizations that are willing to be contacted to discuss credentialing of wetland biologists.

Darcy Jones, PLS, AICP  
Principal, Jones Engineering  
4164 Meridian Street, Suite 200  
Bellingham, WA 98226  
360-733-8888  
[darcy@jonesengineers.us](mailto:darcy@jonesengineers.us)

Tom Black, AICP  
Planning Department, City of Blaine  
344 "H" Street  
Blaine, WA 98231  
360-332-8311  
[Black6088@comcast.net](mailto:Black6088@comcast.net)

Oliver Grah PWS  
Whatcom County Planning and Development Services  
Northwest Annex, Suite B  
5280 Northwest Drive  
Bellingham, WA 98226-9097  
[Ograh@co.whatcom.wa.us](mailto:Ograh@co.whatcom.wa.us)

Bob Thomas  
Wetland Assessment and Monitoring  
Program Manager  
Washington State Department of Transportation  
Environmental and Engineering Programs  
310 Maple Park Avenue Southeast  
PO Box 47331  
Olympia, WA 98504-7331  
[thomsabo@wsdot.wa.gov](mailto:thomsabo@wsdot.wa.gov)

Erik Stockdale and Andy McMillan  
Department of Ecology  
[ESTO461@ECY.WA.GOV](mailto:ESTO461@ECY.WA.GOV)  
ANMC461@ECY.WA.GOV

Society of Wetland Scientists Professional Certification Program (SWS PCP)  
Society of Wetland Scientists web site, [www.sws.org](http://www.sws.org).  
PNW SWS chapter for list of WA State professionals and all chapter members

## **APPENDIX B**

Leah Stetson, ASWM. State Wetland Delineator Certification Programs  
www.leah@ASWM.org

Here is a link to the web version. There is a correction that has not had a chance to make to the article, however, and it is that 1.) Wisconsin has not grandfathered any delineators and 2.) rather than a written exam, they are considering field review of delineators' work.

Please credit Association of State Wetland Managers and you may want to add, "Re-printed with permission from Association of State Wetland Managers, Inc. A prior version of this appeared in ASWM's Wetland News, July 2007."

[http://www.aswm.org/member/wetlandnews/june07/certification\\_0607.htm](http://www.aswm.org/member/wetlandnews/june07/certification_0607.htm)

## **APPENDIX C**

10 July 2007

Re: Support of certification of wetland delineators in Washington

I am writing this letter on behalf of the Pacific Northwest Chapter of the Society of Wetland Scientists in support of ongoing efforts to pass a Title Act in Washington that would certify wetland delineators. The PNW Chapter now has 240 active members in Washington. That number is expected to increase as more members renew membership subscriptions that have lapsed.

It is my understanding that the Washington Society of Professional Soil Scientists (WSPSS) in their pursuit for licensing/certification for soil scientists has now sought to add licensing/certification for wetland delineators to a proposed Title Act bill introduced to the Washington State Legislature. Other states, including New Hampshire, Virginia, Wisconsin and Minnesota have adopted certification programs for wetland delineators. These programs are all voluntary and have been adopted to ensure that people practicing wetland delineation meet minimum education, training, and experience requirements. All of these programs have a common goal and that is to provide reasonable assurance that properly qualified people are conducting wetland delineations and accurately identifying wetland boundaries. Such programs are in the public interest as inaccurate wetland delineations can result in the loss of wetlands and the functions and values that they provide.

It is widely recognized that wetlands provide many functions and values that are beneficial to society. These include flood storage and desynchronization, water quality protection, and wildlife habitat. Therefore, loss of wetlands that provide flood storage functions can potentially result in increased flooding, damage to public and private property, and loss of life. Similarly, loss of wetlands that provide water quality protection functions can potentially contribute to degradation of water quality.

For these reasons, the Board of Directors of the PNW Chapter voted in favor of supporting similar voluntary certification of wetland delineators in Washington. Such a program will help to ensure that properly qualified professionals are clearly identifiable. Certification of wetland delineators will help protect the public health and welfare by more closely regulating the people that practice wetland delineation and ensuring that those holding such certification demonstrate a consistent ability to accurately delineate wetland boundaries and thereby protect the functions of these resources.

Sincerely,

Ralph Garono

President, Pacific Northwest Chapter of the Society of Wetland Scientists

# Hiring a Qualified Wetland Professional<sup>24</sup>

## (Department of Ecology Document)

This appendix contains recommendations to help locate and select a professional who is qualified to assist with wetland issues. Wetland professionals are usually hired to identify and delineate wetlands, rate them, assess functions and values, and provide assistance with wetland regulations and permits. They often complete the necessary application forms and studies needed to meet regulations and also provide advice about designing and implementing compensatory mitigation projects that are needed to replace wetlands if they are impacted.

Wetland professionals are generally hired by landowners or developers who want to do something on their property that may affect a wetland. In addition, many local governments hire professionals to provide review as a third party. Some professionals are self-employed; others work for larger environmental or engineering consulting firms.

## What is a Qualified Wetland Professional?

There is no government sanctioned program for certifying someone as a “qualified wetland professional” or “qualified wetland specialist.” Generally, the term means a person with professional experience and comprehensive training in wetland issues, including experience performing wetland delineations, assessing wetland functions and values, analyzing wetland impacts, and recommending and designing wetland mitigation projects.

The Society of Wetland Scientists administers a professional certification program for wetland scientists that has two levels of certification: Professional Wetland Scientist (PWS) and Wetland Professional In-Training (WPIT). A person certified as a PWS would be considered a qualified wetlands expert. This program is discussed further in the shaded box at the end of this appendix.

If the person is not a certified PWS, there is no simple means of determining if they are adequately qualified to undertake the tasks listed above. However, the following criteria are indicators of someone who may be qualified to perform the wide range of tasks typically required of a wetland professional:

- At a minimum, a **Bachelor of Science or Bachelor of Arts** or equivalent degree in hydrology, soil science, botany, ecology, resource management, or related field. A graduate degree in one of these fields is usually an indication of more advanced expertise.

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<sup>24</sup> Wetlands in Washington State Appendix 8-H Volume 2 – Protecting and Managing Wetlands 1 Hiring a Qualified Wetland Professional April 2005

- At least **two years of full-time work experience** as a wetland professional; including delineating wetlands using the state or federal manuals, preparing wetland reports, conducting function assessments, and developing and implementing mitigation plans. Generally, the more years of experience, the greater the expertise.
- **Completion of additional wetland-specific training programs.** This could include a more comprehensive program such as the University of Washington Wetland Science and Management Certificate Program or individual workshops on wetland delineation, function assessment, mitigation design, hydrophytic plant or hydric soil identification, etc.

Keep in mind that most people engaged in professional wetland work have greater expertise in some aspects of the field than others. A person may have in-depth training in plant ecology or soils or hydrology, but few people have all three. A person may have extensive experience in wetland delineation or function assessment and have little experience in designing and implementing mitigation projects. Thus, it is important to be clear what specific tasks need to be completed and make sure the person or firm being hired has the specific expertise needed. Generally, more complex projects require multiple individuals that provide collective expertise to address all aspects of the project.

## How to Find a Qualified Wetland Professional

There are a number of ways to find the names of wetland professionals. Finding a qualified one, however, can be difficult since this group of professionals is not required to be certified, licensed, or bonded in the State of Washington. One approach is to look in the Yellow Pages under *Environmental and Ecological Services*. You can also contact the local government planning office and ask for a list of professionals that work in their jurisdiction. Some local governments maintain lists of wetland professionals they consider to be well qualified.

Wetland professionals may also be found by requesting the advice of associations or businesses that commonly encounter wetlands in their work, such as the Building Industry Association and Association of Washington Business. Finally, state and federal resource agencies can be asked for referrals. Be aware, however, that most agencies will not be able to provide recommendations because of questions of fairness.

## How to Select a Qualified Wetland Professional

A number of factors should be considered before hiring a wetlands professional. When interviewing professionals, their qualifications should be carefully considered (see above for the minimum recommended). Be sure to ask the following questions before making a selection:

- **Does the professional have training or experience in the use of the 1987 federal or 1997 Washington State wetland delineation manuals?** The selected professional should have the ability to apply the methods for identifying wetlands used by state and

federal agencies. Make sure that the professional can identify wetlands and their boundaries consistent with regulating agencies.

- **Has the professional had additional training or expertise in related fields** such as hydrology, soil science, botany, or ecology?

- **Is the professional familiar with local, state, and federal wetland regulations?**

- **How long has the professional been doing wetlands work?** How much experience do they have delineating wetlands in the field, assessing wetlands functions and values, or working with wetland regulations? Has the person worked in the part of the state where you propose to develop? Ask the professional for examples of previous work similar to the services being requested. Can the professional take you to a successful wetland mitigation project they designed and/or implemented?

- **Does the professional have experience working with regulatory agencies?** Ask the professional to describe their working relationship with the agencies that will be reviewing and/or permitting your project.

- **Does the professional have experience working on a team?** Given the complexity of some projects, it is expected that a wetland professional will team up with others who have experience in related fields such as water quality, wildlife, stormwater management, and hydrogeology. Ask the professional for a list of people with whom they have worked on a team in the past.

- **Who were some of the professional's past clients?** Request referrals and ask clients if they were satisfied with the professional's work. Ask whether there were any problems that occurred during or after the project, how the professional handled those problems, and what they charged for their work. Find out what type of track record the company has with local, state, and federal agencies. Be sure to ask for references that include clients who have had projects reviewed and approved by the regulatory agencies (Corps, Ecology, and local government).

- **Talk with colleagues and other businesses**, such as real estate, land development, homebuilding, etc. that are routinely involved in wetland concerns. Ask them about their experiences and knowledge regarding the professional being considered.

- **If you are considering a consulting firm, find out exactly who will be working on your project.** Will it be the principal professional with the years of experience, or someone with less experience who works for them?

- **Get an estimate of how much the professional will charge.** Compare rates but do not let cost be the sole criterion. Be sure to consider training, experience, and the other factors as well. A good professional who charges more may end up saving money by reducing permit processing delays.

## **Society of Wetland Scientists Professional Certification Program**

The Society of Wetland Scientists keeps a list of those who have qualified for their professional certification program for wetland scientists. The certification program website <http://www.wetlandcert.org> allows you to search by name, city, and/or state.

As explained in the Professional Wetland Scientist program overview:

*Certification is not required by any agency and has no official or legal standing. However, certification signifies that the academic and work experience of a Professional Wetland Scientist (PWS) meets the standards expected by his or her peers of a practicing wetland professional and provides acknowledgment to his or her peers of adherence to standards of professional ethics with regard to the conduct and practice of wetland science.*

*Wetland Professional in Training (WPIT) is considered a preliminary step for persons who meet the requirements for either (but not both) education and experience. Professional Wetland Scientist (PWS) certification is awarded for those meeting both educational and experience requirements.*

*Minimum degree requirements for WPIT and PWS are the BA or BS degrees, with course distribution of 15 semester hours each in biological and physical sciences and 6 hours in quantitative areas. For certification as a PWS, an additional 15 semester hours in wetland-related courses are required. In addition to comprehensive training in wetland science, a PWS is expected to have professional experience of at least 5 years as a wetland scientist, demonstrating the application of current technical knowledge dealing with wetland resources and activities.*

## Definitions of Types of Regulation

### **Licensure:**

Licensure has the most rigorous regulatory requirements among the three types of credentials. Licensing is a mandatory process for practitioners and generally stipulates that individuals meet significant education, experience, and examination requirements before being granted licensure. Requirements often require payment of fees and:

- Examinations to assess minimum competencies
- Basic educational requirements
- Codified professional and performance standards

### **Certification:**

Certification is a voluntary process through which a regulatory entity grants recognition to an individual who has met certain prerequisite qualifications. Once these prerequisites are met the individual may use “certified” in their title or professional designation. Requirements may require payment of fees and:

- Demonstration of passage of entry level examinations
- Basic educational requirements
- Minimum experience levels

### **Registration:**

Registration generally has the least burdensome requirements for those wanting to join the profession. Registration programs provide a formal process whereby the practitioner can register by paying a fee and submitting specific information to a regulatory entity such as:

- Name and address of the practitioner
- Location
- Nature and operation of the business
- Activity to be practiced
- Description of services provided



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DEPARTMENT OF ECOLOGY

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DEC 31 2007

DIRECTOR'S OFFICE  
DEPARTMENT OF LICENSING

December 28, 2007

Ms. Liz Luce, Director  
Department of Licensing  
P.O. Box 9020  
Olympia, WA 98507

**RE: Regulation of Wetland and Soil Scientists**

Dear Director <sup>Liz</sup>Luce:

Thank you for your letter of December 6, 2007, asking about the Department of Ecology's (Ecology's) position regarding the regulation of wetland and soil scientists. Ecology supports the voluntary state certification of wetland and soil science professionals in the State of Washington under a title act.

I understand that a group of wetland and soil science practitioners have requested a voluntary regulatory program that would:

- Set minimum standards for education and experience, and require ongoing education.
- Provide consumers with a listing of certified practitioners.
- Bind practitioners to a code of ethics.
- Establish an advisory board to provide regulatory oversight.

The credentialing of wetland and soil scientists will help provide consistency and accuracy in the field of wetland delineation and management by requiring practitioners to possess a minimum level of education and experience. It will also help consumers find qualified scientists who meet those minimum standards, and provide them with a venue to address poor or unprofessional work. Under the proposal, public employees would be exempt from the credentialing requirements.

We have reviewed the draft report. Ecology recommends that the final report and associated legislation clearly address the concerns expressed by some geologists, engineers, agronomists, and others regarding potential overlaps and conflicts with related professions.

Liz Luce  
December 28, 2007  
Page No. 2

We look forward to tracking the issue as it moves through the legislative process.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jay J. Manning", with a stylized flourish at the end.

Jay J. Manning  
Director

cc: Tom Clingman  
Keith Phillips  
Gordon White

---

**From:** Wick, Ann (AGR)  
**Sent:** Monday, January 07, 2008 3:23 PM  
**To:** Chunn, Bruce (DOL)  
**Subject:** RE: Soil Scientists & Wetland Scientist sunrise

Bruce,

A quick read over the scope of this proposal does not appear to present any areas that would conflict with the Department of Agriculture's responsibilities for licensing. If any recommendations were to be made in the process of "soil and/or wetland management" for application of any type of pesticide, this would require a Pesticide Consultant's license. We do not license fertilizer or soil amendment applicators.

There might be some misunderstanding regarding the responsibilities of these two certifications with those duties that are preformed by a "crop advisor" but, as long as no recommendations for pesticide applications are made, this should not be a problem. However, I can see some instances where a crop advisor might need soil scientist certification. There are therefore some concerns regarding how regular maintenance of farming and forestry operations might be perceived. Would the services of a certified soil/wetland scientist generally be confined to a professional evaluation when land practices are altered? In other words, farmers wanting to improve soil would not need to enlist a soil scientist but a developer wanting to convert farmland to housing would. In that case, I can see a real advantage to certification.

I do agree that even a voluntary system eventually leads to a "requirement", but you seem to have numerous documentations for the need for this certification. A voluntary certification system as opposed to a mandatory license requirement would appear to give the public some confidence in choosing the right individual for an evaluation without unduly burdening normal farming or forestry procedures.

Ann Wick

## Testimony from Public Hearing: Burien

### Soil Scientist

[http://www.dol.wa.gov/about/reports/Soilscientists\\_Burien.pdf](http://www.dol.wa.gov/about/reports/Soilscientists_Burien.pdf)

### Wetland Scientist

[http://www.dol.wa.gov/about/reports/Wetlandscientists\\_Burien.pdf](http://www.dol.wa.gov/about/reports/Wetlandscientists_Burien.pdf)

## Testimony Public Hearing: Wenatchee

Soil Scientist

[http://www.dol.wa.gov/about/reports/Soilscientists\\_Wenatchee.pdf](http://www.dol.wa.gov/about/reports/Soilscientists_Wenatchee.pdf)

Wetland Scientist

[http://www.dol.wa.gov/about/reports/Wetlandscientists\\_Wenatchee.pdf](http://www.dol.wa.gov/about/reports/Wetlandscientists_Wenatchee.pdf)

# Senate Bill 756

Sponsored by Senator MORSE

## SUMMARY

The following summary is not prepared by the sponsors of the measure and is not a part of the body thereof subject to consideration by the Legislative Assembly. It is an editor's brief statement of the essential features of the measure **as introduced**.

Establishes Board of Professional Wetland Scientists and professional wetland delineator certification program. Authorizes board to establish fees to recoup cost of certification program.

Provides criminal penalties for individual who misrepresents status as professional wetland delineator.

Provides that certification program becomes operative January 1, 2010.

Declares emergency, effective on passage.

## A BILL FOR AN ACT

1  
2 Relating to wetland delineators; and declaring an emergency.

3 **Be It Enacted by the People of the State of Oregon:**

4 **SECTION 1. The Legislative Assembly finds and declares that it is in the best interest**  
5 **of the people of the State of Oregon to establish a professional wetland delineator certifi-**  
6 **ication program to:**

7 (1) **Guard the citizens of Oregon from unqualified wetland delineator practitioners;**

8 (2) **Foster the knowledgeable application of wetland science and wetland delineation pro-**  
9 **cedures in implementing ORS 196.600 to 196.692 and 196.800 to 196.905 and in making land use**  
10 **decisions; and**

11 (3) **Better protect, manage and conserve the waters of this state in accordance with the**  
12 **findings and policies of ORS 196.668 and 196.805.**

13 **SECTION 2. As used in sections 1 to 13 of this 2009 Act:**

14 (1) **"Certified professional wetland delineator" means a person who is granted certifi-**  
15 **ication by the Board of Professional Wetland Scientists under section 9 or 11 of this 2009 Act.**

16 (2) **"Practice of wetland delineation" means any of the following:**

17 (a) **The delineation of wetlands by accepted principles and methods, including investi-**  
18 **gation of soil, vegetation and hydrologic parameters as specified in the United States Army**  
19 **Corps of Engineers 1987 Wetlands Delineation Manual and regional supplements.**

20 (b) **Verifying delineated wetland boundaries established by others and delineating the ju-**  
21 **risdictional limits of streams, estuaries and other waters of this state.**

22 (c) **Preparation of wetland delineation reports.**

23 (3) **"Wetland delineation" means:**

24 (a) **A specific determination of the limits of wetlands and other waters of this state in**  
25 **accordance with applicable state and federal regulations; and**

26 (b) **The preparation of an accurate map of the delineated boundaries.**

27 (4) **"Wetland science" means the science dealing with the physical, chemical and biolog-**  
28 **ical properties of wetland ecosystems.**

29 (5) **"Wetland scientist" means a person who has special knowledge of wetland science and**

**NOTE:** Matter in **boldfaced** type in an amended section is new; matter [*italic and bracketed*] is existing law to be omitted. New sections are in **boldfaced** type.

1 the methods and principles of wetland delineation acquired through education and experience  
2 in the ecology, identification and mapping of wetlands.

3 (6) "Wetlands" has the meaning given that term in ORS 196.800.

4 **SECTION 3.** The professional wetland delineator certification program set forth in  
5 sections 1 to 13 of this 2009 Act is a voluntary program. Sections 1 to 13 of this 2009 Act do  
6 not prohibit:

7 (1) The practice of wetland delineation by persons who are not certified professional  
8 wetland delineators.

9 (2) An employee or subordinate of a certified professional wetland delineator from en-  
10 gaging in the practice of wetland delineation without certification.

11 (3) A professional engineer, certified landscape architect or similar professional from  
12 providing services that constitute the practice of wetland delineation.

13 **SECTION 4.** (1) There is established a Board of Professional Wetland Scientists, con-  
14 sisting of seven members appointed by the Governor.

15 (2) The Governor shall appoint board members as follows:

16 (a) Six members shall be certified professional wetland delineators, appointed from a list  
17 of at least three names for each vacancy submitted by the Director of the Department of  
18 State Lands; and

19 (b) One shall be a citizen member.

20 (3) Of the wetland delineator members:

21 (a) All must have experience with wetland delineation procedures; and

22 (b) At least two must have experience with state wetland regulations.

23 (4) The citizen member shall be a person who is not, and never has been, a member of  
24 the wetland science profession and who is not, and never has been, affected by the practice  
25 of wetland delineation or the application of ORS 196.800 to 196.905.

26 (5) The term of office of each board member is four years, but a member serves at the  
27 pleasure of the Governor. Before the expiration of the term of a member, the Governor shall  
28 appoint a successor whose term begins on July 1 next following. A member is eligible for  
29 reappointment. If there is a vacancy for any cause, the Governor shall make an appointment  
30 to become immediately effective for the unexpired term.

31 (6) A member of the board is entitled to compensation and expenses as provided in ORS  
32 292.495.

33 **SECTION 5.** (1) The Board of Professional Wetland Scientists shall annually select one  
34 of its members as chairperson and another as vice chairperson, for such terms and with  
35 duties and powers necessary for the performance of the functions of such offices as the  
36 board determines.

37 (2) Notwithstanding ORS 174.130, five members of the board constitutes a quorum for the  
38 transaction of business.

39 (3) The board shall meet at least once every year at a place, day and hour determined  
40 by the board. The board may also meet at other times and places specified by the call of the  
41 chairperson or of a majority of the members of the board.

42 **SECTION 6.** (1) The Board of Professional Wetland Scientists may appoint an executive  
43 director as necessary to carry out the operations of the board. If the board appoints an  
44 executive director, the board shall fix the compensation of the executive director. The exec-  
45 utive director serves at the pleasure of the board.

1       (2) Subject to any applicable provisions of ORS chapter 240, the director shall appoint all  
2 subordinate officers and employees of the board, prescribe their duties and fix their com-  
3 pensation.

4       **SECTION 7.** (1) In accordance with applicable provisions of ORS chapter 183, the Board  
5 of Professional Wetland Scientists may adopt rules:

6       (a) Governing applications for certification as a professional wetland delineator;

7       (b) Establishing standards for certifying professional wetland delineators;

8       (c) Relating to the professional methods and procedures used by certified professional  
9 wetland delineators;

10       (d) Governing the examination of applicants for certification and the renewal, suspension  
11 and revocation of certification;

12       (e) Establishing fees for:

13       (A) Application for certification;

14       (B) Examination;

15       (C) Certification by reciprocity;

16       (D) Renewal of certification;

17       (E) Reinstatement after late renewal;

18       (F) Professional listings; and

19       (G) Replacement of lost or damaged certificates; and

20       (f) Regarding any matter that the board reasonably considers necessary and proper for  
21 the administration and enforcement of sections 1 to 13 of this 2009 Act.

22       (2) The board shall waive all fee requirements for employees of a governmental or tribal  
23 body who are responsible for conducting or reviewing wetland delineations in the due course  
24 of their employment.

25       (3) The board shall establish fees sufficient to produce estimated revenues to cover the  
26 costs incurred by the board in administering and enforcing sections 1 to 13 of this 2009 Act.

27       **SECTION 8.** The Board of Professional Wetland Scientists and the authorized represen-  
28 tatives of the board may administer oaths, take depositions and issue subpoenas to compel  
29 the attendance of witnesses and the production of documents or other written information  
30 necessary to carry out the provisions of sections 1 to 13 of this 2009 Act. If any person fails  
31 to comply with a subpoena issued under this section or refuses to testify on matters on  
32 which the person lawfully may be interrogated, the procedure set out in ORS 183.440 shall  
33 be followed to compel obedience.

34       **SECTION 9.** (1) Any person engaging in the practice of wetland delineation or seeking to  
35 engage in the practice of wetland delineation in this state may apply to the Board of Pro-  
36 fessional Wetland Scientists to be a certified professional wetland delineator.

37       (2) The application shall be on a form prescribed by the board and shall contain the in-  
38 formation required by the board. The applicant shall pay the fee prescribed by the board for  
39 certification at the time the applicant files for certification.

40       (3) Unless an examination is unnecessary under section 11 of this 2009 Act, an applicant  
41 shall take an examination administered by the board on the principles and practice of  
42 wetland delineation. The board may include a field practicum component as part of the ex-  
43 amination.

44       (4) The board shall certify an applicant under subsection (1) of this section as an Oregon  
45 certified professional wetland delineator if the applicant:

- 1 (a) Is 18 years of age or older;
- 2 (b) Satisfies professional standards adopted by the board by rule;
- 3 (c) Satisfies educational requirements established under section 10 of this 2009 Act;
- 4 (d) Satisfies experiential or other requirements established under section 10 of this 2009
- 5 Act; and
- 6 (e) Achieves a score that is at least equal to the minimum score that the board has es-
- 7 tablished as a passing score on the examination administered by the board under subsection
- 8 (3) of this section.

9 (5) The board shall certify an applicant under subsection (1) of this section as an Oregon  
 10 certified professional wetland delineator without the applicant demonstrating compliance  
 11 with subsection (4)(c) of this section if the applicant demonstrates to the satisfaction of the  
 12 board that the applicant is certified as a professional wetland scientist or wetland profes-  
 13 sional in training by the Society of Wetland Scientists Professional Certification Program or  
 14 a successor program.

15 **SECTION 10.** (1) In order for an applicant to be certified as an Oregon certified profes-  
 16 sional wetland delineator, the applicant must have:

17 (a) A bachelor's or graduate degree from an accredited college or university in wetland  
 18 science, biology, botany, biological engineering, environmental engineering, ecology, soil sci-  
 19 ence, geology, physical geography, hydrology or any similar curriculum approved by the  
 20 Board of Professional Wetland Scientists in biology, physical sciences, natural science or  
 21 environmental engineering;

22 (b) Completed a course of instruction in state and federal wetland delineation methods  
 23 approved by the board; and

24 (c) A record of at least four years of:

25 (A) Experience in wetland delineation under the supervision of a certified professional  
 26 wetland delineator, the quality of which demonstrates to the board that the applicant is  
 27 competent to practice as a certified professional wetland delineator;

28 (B) Public sector experience in conducting wetland determinations and reviewing wetland  
 29 delineations, including field verification, under the supervision of a certified professional  
 30 wetland delineator, the quality of which demonstrates to the board that the applicant is  
 31 competent to practice as a certified professional wetland delineator; or

32 (C) A combination of experience described in subparagraph (A) or (B) of this paragraph.

33 (2) For purposes of this section, educational training shall not be considered as experi-  
 34 ence.

35 **SECTION 11.** (1) An individual who is certified as a wetland delineator in another state  
 36 and who is not the subject of any disciplinary proceeding before the regulatory body that  
 37 issued the other state certification, in lieu of being certified under section 9 of this 2009 Act,  
 38 may be certified under this section by filing an application with the Board of Professional  
 39 Wetland Scientists and submitting with the application a copy of the other state certificate  
 40 and the application fee established by the board.

41 (2) The board shall certify applicants described in subsection (1) of this section if the  
 42 board:

43 (a) Determines that the requirements of the state that issued certification to the appli-  
 44 cant are at least substantially equivalent to the requirements for certification under sections  
 45 9 and 10 of this 2009 Act; and

1 (b) Obtains agreement from the regulatory body of the other state that the State of  
 2 Oregon's professional wetland delineator certification requirements are substantially equiv-  
 3 alent and that the other state will permit an Oregon certified professional wetland delineator  
 4 to be granted reciprocal certification.

5 **SECTION 12.** (1) A certified professional wetland delineator shall renew the wetland  
 6 delineator's certification every two years by filing an application for certification renewal  
 7 with the Board of Professional Wetland Scientists and obtaining renewal approval from the  
 8 board.

9 (2) An application for renewal shall be:

10 (a) Made on a form prescribed by the board;

11 (b) Contain the information required by the board; and

12 (c) Be accompanied by payment of the renewal application fee.

13 (3) An application for certification renewal shall be automatically approved within 30 days  
 14 of the date of application, unless the applicant receives written notification that:

15 (a) The certification renewal is denied; or

16 (b) The certification renewal is pending the results of further inquiry by the board.

17 (4) A denial of an application for certification renewal may be appealed as a contested  
 18 case under ORS chapter 183.

19 (5)(a) If a certification has lapsed due to the failure to timely file an application for re-  
 20 newal, the wetland delineator holding the lapsed certification may apply for certification re-  
 21 newal by complying with subsection (2) of this section and also including payment of a  
 22 reinstatement fee for late renewal.

23 (b) A lapsed certification may not be renewed under this section if the period of lapse  
 24 was greater than 24 months.

25 **SECTION 13.** (1) An Oregon certified professional wetland delineator commits unprofes-  
 26 sional conduct and is subject to disciplinary action by the Board of Professional Wetland  
 27 Scientists if the individual:

28 (a) Obtained certification under section 9 of this 2009 Act through fraud or deceit;

29 (b) Violates or cooperates with others to violate any provision of sections 1 to 13 of this  
 30 2009 Act or any rule adopted by the board;

31 (c) Performs any act likely to deceive, defraud or harm the public;

32 (d) Demonstrates gross negligence, incompetence or misconduct in the practice of  
 33 wetland delineation; or

34 (e) Is convicted of a felony.

35 (2) The board shall by rule establish procedures for the objective investigation of  
 36 allegations of unprofessional conduct and criteria for imposing disciplinary action, including  
 37 but not limited to censure, certification suspension, certification revocation or refusal to  
 38 renew a certification.

39 (3) A person may not represent, through verbal claim, sign, advertisement or letterhead,  
 40 that the person is an Oregon certified professional wetland delineator, certified professional  
 41 wetland delineator, certified wetland delineator, professional wetland delineator or use a  
 42 substantially similar title unless the person has been certified by the board.

43 **SECTION 14.** Violation of section 13 (1)(a) or (3) of this 2009 Act is a Class B  
 44 misdemeanor.

45 **SECTION 15.** (1) Notwithstanding the term of office specified by section 4 of this 2009

1 **Act, of the members first appointed to the Board of Professional Wetland Scientists:**

2 (a) **The citizen member shall serve for a term ending June 30, 2013.**

3 (b) **Two shall serve for terms ending June 30, 2011.**

4 (c) **Two shall serve for terms ending June 30, 2012.**

5 (d) **Two shall serve for terms ending June 30, 2013.**

6 (2) **Notwithstanding section 4 (2)(a) of this 2009 Act, board members appointed under**  
7 **subsection (1)(b), (c) or (d) of this section need not be certified under sections 1 to 13 of this**  
8 **2009 Act at the time of their appointment, but must become certified within six months of**  
9 **the date on which the board begins certifying individuals as Oregon certified professional**  
10 **wetland delineators.**

11 **SECTION 16. Notwithstanding section 10 (1) of this 2009 Act, experience requirements**  
12 **described under section 10 (1)(c) of this 2009 Act need not take place under the supervision**  
13 **of an Oregon certified professional wetland delineator or equivalent certified wetland**  
14 **delineator from another state for periods occurring before January 1, 2016.**

15 **SECTION 17. Sections 9 to 14 of this 2009 Act become operative January 1, 2010.**

16 **SECTION 18. This 2009 Act being necessary for the immediate preservation of the public**  
17 **peace, health and safety, an emergency is declared to exist, and this 2009 Act takes effect**  
18 **on its passage.**

19 \_\_\_\_\_

# **Professional Wetland Scientist Certification Program Recommendations**

Submitted to

Senate Interim Committee on Environment and Natural Resources

House Interim Committee on Agriculture and Natural Resources

On October 30, 2008

Prepared by the Department of State Lands

## **I. Introduction**

Senate Bill 544 (2007) directed the Department of State Lands (the Department) to investigate the feasibility of establishing an Oregon certification program for professional wetland scientists, and report back to the legislature with the results of the investigation and recommendations for legislation by November 1, 2008.

SB 544 was intended to provide a means for speeding up final agency decisions and reducing disagreements regarding state jurisdiction over wetlands and other waters of the state. The bill initially focused on providing a mechanism for resolving disagreements between private consultants and agency staff over the accuracy of wetland delineations, and the delays such disagreements cause. However, because mechanisms for addressing such disagreements already exist and because the process set out in the bill was unwieldy, SB 544 was revised to address the lack of state standards for wetland scientists and those providing wetland-related professional services, including wetland delineation and wetland fill permit applications.

Most private wetland consultants in Oregon are well trained and highly competent in providing professional services. Most of these consultants understand the need for standards and have acquired specialized training and skills to delineate wetlands and other waters of the state and United States. A minority of consultants either lack education in appropriate sciences or lack the training and skills to adequately delineate wetlands and water resources. Without some standards or requirements, there is no commonly-accepted expectation of the knowledge and skills required to provide adequate professional services. In addition, the public (landowners, developers, realtors and others) and local governments often find it difficult to determine which private consultants are well qualified to provide the professional services they need.

It should be noted that HB 2106, also introduced in the 2007 legislative session, addressed one factor related to speedier agency decisions on state jurisdiction. HB 2106 added two wetland specialist positions for handling the wetland delineation review workload—funded by a new report review fee—and included timelines for initial agency review of wetland delineation reports. HB 2106 passed and is being implemented successfully; days to completion of initial report review has dropped significantly (mean = 49 days). SB 544 addresses other problems

related to incomplete or inadequate work that delay final agency approvals. (See Appendix D for data and information pertinent to these issues.)

This report provides the results of the Department's investigation; the sections below the recommendation summary correspond to each of the six study aspects listed in SB 544. We provide recommendations for each aspect; in some cases, we also discuss alternatives that were considered. Additional information is contained in the appendices.

## II. Recommendation summary

The Department recommends that a voluntary Oregon Professional Wetland Delineator Certification Program be implemented if program costs can be covered by a reasonable fee level and if a stakeholder involvement process develops a legislative concept that results in a meaningful certification program with a sufficient level of support. Under a voluntary program, only those persons certified under the program will be permitted to use the title "Oregon Certified Professional Wetland Delineator" or similar titles. The certification program will set minimum standards for education, training, and experience; require a passing score on an examination; require signing a code of ethics and professional practice; and require periodic renewal that includes continued professional experience and continuing education.

This recommendation is based upon the finding that a voluntary wetland delineator certification program will promote consumer protection by providing standards for the profession and a means for the public to easily determine whether a private consultant is likely to provide competent professional services. Such a program will also foster the knowledgeable application of wetland science in implementing the state Removal-Fill Law and land use decisions that will better protect, manage and conserve the waters of this state.

## III. Feasibility

The Department finds that a professional wetland delineator certification program is feasible for the State of Oregon, if program costs can be supported by certification fees that are not excessive. That finding is based upon (a) the existence of successful certification programs in three other states (described below); (b) the existence of a professional wetland scientist certification program, associated with the Society of Wetland Scientists, that provides a framework for education and experience requirements and opportunity for streamlining the Oregon application process for persons certified under that program; (c) the existence of a well-defined practice (wetland boundary delineation) along with a wetland delineation methodology that includes existing training courses, materials and written examination; (d) approximately 200 individuals who practice wetland delineation in Oregon, many of whom may seek certification;

and (e) support for certification from some private interests, some agencies, and some but not all private wetland consultants (Appendix B). However, additional stakeholder participation would be important to ascertaining the level of support for either a voluntary or mandatory certification program.

The Department recommends a wetland delineator certification program as opposed to a broadly defined wetland scientist certification program for a number of practical reasons. Wetland science is an interdisciplinary field encompassing many specialties and professional activities, including academic research. In contrast, there is a defined body of knowledge and specific required methodologies for conducting wetland delineations. There are also existing wetland delineation training courses, exams, and existing delineator certification programs in a few other states. If a member of the public hires a certified professional wetland delineator to conduct a wetland delineation, private consultants report that most often that same person will be hired to provide related professional services, if needed, including wetland permit applications and mitigation plans. That certified wetland delineator will have the educational background, though not necessarily the specific training and experience, needed to provide those additional wetland-related services in a competent manner.

The Department recommends a voluntary as opposed to mandatory certification program. Our investigation finds that under a voluntary program, education and experience requirements may be set at a higher standard, assuring well qualified practitioners and establishing a target for young professionals to aim at and achieve. With a voluntary program, many of the more controversial issues (e.g., grandfathering some but not all existing consultants; apprenticeship option for young professionals meeting education requirements but with little experience; potential impact on related professions; certification of agency staff) are not as significant. For a voluntary program, which does not preclude uncertified persons from practicing, the Department recommends that there be very limited grandfathering provisions and no apprentice provisions; such provisions are more difficult to develop, would delay program benefits for many years, and could increase administrative costs beyond their value.

A voluntary program will not preclude non-certified persons from conducting wetland delineations; however, the Department, local governments, and other agencies and organizations will make the roster of certified professional wetland delineators available to the public. In other states with a voluntary certification program, some local governments began to require that wetland delineations submitted with land use or permit applications within their jurisdiction be performed by a certified professional wetland delineator. Also, several wetland consultants and others who have provided comments during this investigation are of the opinion that the marketplace will provide additional incentive for hiring and using the services of certified professional wetland delineators. We anticipate that these factors will, together, increase the effectiveness and efficiency of the certification program over time.

The Department investigated the pros and cons—and necessary components—of a mandatory certification program and discussed this with stakeholders. Though a mandatory program has greater potential to provide consumer protection and resource protection, the issues described above (e.g., grandfathering) make such a program more complex and controversial. There was some, but relatively little, support expressed for a mandatory program from private consultants or others during this investigation. A few consultants, whether or not they supported a mandatory program, expressed the opinion that only a mandatory program would provide the desired benefits. However, most participants in outreach meetings were gathering information and weighing options rather than rushing to endorse a particular approach. Should the legislature decide to pursue mandatory certification in order to maximize program effectiveness (either immediate or phased in), the Department recommends that such a program include: (1) a grandfathering provision that only waives the education (four year degree) requirement; and (2) an “apprentice” provision under the supervision of a certified professional wetland delineator for applicants who do not (yet) meet the experience requirements. All applicants should be required to take and pass an examination.

#### IV. Existence and validity of professional wetland scientist certification programs

Existing wetland scientist certification programs include the Society of Wetland Scientists’ (SWS) Professional Certification Program and three state certification programs. These and other programs are described below.

##### *Society of Wetland Scientists’ Professional Certification Program*

The SWS Professional Certification Program (SWS/PCP) is an international, broad-based professional certification available to wetland scientists. The SWS/PCP sets minimum requirements for education, wetland-specific training and experience, and requires adhering to a code of ethics and professional practice. Pertinent experience is broad by design, including academic, research, ecological restoration, delineation, regulatory expertise, etc. The program provides for two levels of certification—Professional Wetland Scientist (PWS) and Wetland Professional in Training (WPIT). The SWS/PCP program was initiated in 1993 and in April 2008 received provisional accreditation from the Council of Engineering Specialty Boards.

The SWS/PCP provides a very useful template for education and experience requirements for state certification programs, which informed these recommendations, but because its scope and objectives are very different it does not provide a complete framework for the pertinent skills, knowledge and experience needed for delineator certification. Also, although there is a process for submitting and handling complaints against a PWS or WPIT, professional societies are not well suited to effectively handle complaints and disciplinary action. No formal complaints have been handled to date by the SWS/PCP. As part of this investigation, the Department considered whether the state could require that persons providing private wetland consulting services be

certified as a PWS or WPIT, and investigated other ways we might make use of this existing program. The Department of Justice advised that the state could certify persons certified by the SWS/PCP as of a certain date, but the state would need a mechanism for certifications after that date, would have no controls over changes to the program and no ability to take disciplinary action or revoke certification without establishing a state program. For this reason and because the SWS/PCP is broad and does not include an examination, it does not satisfy the state's needs. However, the Department recommends accepting PWS and WPIT certification as sufficient evidence that the proposed education requirements are met (see Section V).

### *State Programs*

Three states (Minnesota, New Hampshire and Virginia) have passed legislation establishing a wetland scientist certification program; one state (Wisconsin) has implemented a pilot wetland delineator assurance program; and Washington State completed a study (similar to this one) of the public need for wetland scientist certification and introduced legislation in 2008 (HB 3198). The Washington legislature requested that bill sponsors and proponents do additional work to resolve concerns raised by related professions and the Department of Ecology, and reintroduce a revised bill in the 2009 legislative session. The Department of State Lands recommends that the Oregon certification program allow for reciprocity with other state delineator certification programs that have equivalent or higher requirements and that provide similar reciprocity for Oregon certified professional wetland delineators. This element is important to private consultants who work in more than one state, as is common between Oregon and Washington, and the Department is tracking the Washington State legislation.

Minnesota has established a voluntary wetland delineator certification program (WDCP) that is operated jointly by the Minnesota Board of Water and Soil Resources (BWSR) and the University of Minnesota. The BWSR has statewide responsibility for implementing the 1991 Wetland Conservation Act (WCA), and local governments implement the WCA at the local level. The WCA allows BWSR to establish standards for training, experience and certification (WCA Rules, Chapter 8420.0200, Subp. 2A.). In 2000, the Act required the BWSR to work with the Minnesota Association of Professional Soil Scientists, the University of Minnesota, and the Wetland Delineators Association (now the Minnesota Wetland Professionals Association, or WPA), to submit a plan for a professional delineator certification program to the legislature. The University of Minnesota provided start-up funding for the WDCP, provides continuing education courses, and provides operational support for the program. The WPA played a significant role in developing the certification program recommendations and continues to support the program, in part by providing education forums that help members meet the continuing education requirements.

Requirements for certification include a minimal education requirement (a four-year degree, "broad coursework" or completion of a wetland delineation course); three years of pertinent experience; and a passing score on a written examination. Continuing education and certification

renewal on an annual basis is required. The program is self-supporting on fees, including University of Minnesota course fees. More than 150 persons are certified. The rules are being revised; anticipated changes include a move toward mandatory certification in the future. Private sector wetland scientists are the strongest supporters of the certification program, including making it mandatory, whereas some local governments (who help implement the WCA) are not supportive of a mandatory certification requirement (Greg Larson, Co-Director of the WDCP, personal communication).

New Hampshire enacted legislation in 1997 that established a wetland scientist and apprentice wetland scientist certification program, along with a soil scientist certification program. The program is administered by the New Hampshire Board of Certification for Natural Scientists. The program is partially mandatory, in that reports and permit applications submitted to the state Department of Environmental Services (DES) must be stamped by a certified wetland scientist if a major project (defined in the regulations) is involved. Certification requirements include educational requirements (BA, AA or equivalent course work); experience, including submittal of wetland delineations as part of the application process; and both a written and field examination. Continuing education for renewal is also required. Approximately 215 persons are currently certified. The program has been effective at improving the quality of wetland delineations and, as a result, has significantly reduced staff time spent on report review and resolving problems (Collis Adams, New Hampshire DES, personal communication).

Virginia enacted legislation in 2002 that required the establishment of a wetland professional certification program effective July 2004. The state established a voluntary Professional Wetland Delineator program that is administered by the Board for Professional Soil Scientists and Wetland Delineators, through the Department of Professional and Occupational Regulation. The program is self-supporting. Requirements include education requirements similar to those established by the SWS/PCP, experience requirements, letters of reference, submittal of wetland delineation reports for review as part of the application procedure, and a written examination. There is no continuing education or renewal requirement. The legislation, code (rules), standards and operating procedures for this program are well thought out and clear, and provided excellent information used for many of the recommendations in this report. Approximately 73 persons are currently certified (9/08).

Dave Davis, wetland ecologist with the Virginia Department of Environmental Quality (the state regulatory agency) and a member of the Board for Professional Soil Scientists and Wetland Delineators, reports that the certification program is helpful in setting a standard and that firms are increasingly encouraging their staff to seek certification (personal communication). However, he has only anecdotal information regarding improved quality of work, because under the State Programmatic General Permit from the Corps of Engineers, the Corps reviews all wetland delineation reports. Bob Hume, head of the Corps regulatory branch for the district, is supportive of the state's certification program in that it "sets a bar" and provides the public with

a means for ascertaining professional qualifications; however, they continue to field check most wetland delineations (personal communication).

Wisconsin initiated a five-year pilot “delineator assurance” program in 2005. The Wisconsin Department of Natural Resources (WDNR) initiated the voluntary program without enabling legislation and they have not adopted administrative rules for operating the program, which is why it is not considered a certification program. The objective was to evaluate whether there would be regulatory streamlining benefits if the WDNR could “assure” that the wetland delineation work of qualifying private consultants is likely to be accurate. Under this pilot program, consultants may apply for assurance. Requirements include a Bachelors degree in a relevant field of study, at least five years of full-time professional experience with a primary focus on wetland science, and completion of a five-day wetland delineation training course. Applicants must submit six wetland delineation reports that they had primary responsibility for completing to the WDNR for review by a panel of interagency experts. Work submitted by “assured” consultants would not require WDNR concurrence. Once a person is “assured,” they must continue to submit wetland delineation reports to the WDNR but the agency will not review them all—rather, they will field check some of the reports.

Very few persons have been assured under Wisconsin’s pilot program. Approximately 45 private consultants have applied for assurance, but only six are currently listed as “assured” and the maximum number at any time has been seven. One person was “dismissed” because the quality of his work declined significantly after he received assurance; another is being dismissed (9/08) for missing wetlands (both of these are one-year dismissals). According to Pam Biersach (WDNR, personal communication), the panel reviewing the reports submitted as part of the application process find common errors and omissions such that they could not assure that the delineated wetland boundaries were correct. Other limitations include the fact that even if a person’s work is “assured,” that does not relieve the landowner or applicant of responsibility in the event the wetland delineation report is not correct and unpermitted wetland fill occurs (Cherie Wieloch, WDNR, personal communication).

### *Local Government Programs*

A few local governments have adopted requirements for wetland consultants who conduct work for the city or for landowners and developers applying for local permits within their jurisdiction. While not certification programs, these requirements are adopted to address the same concerns regarding the lack of standards for wetland consultants. For example, the City of Seattle adopted a rule effective August 16, 2006, that requires all wetland delineation reports submitted to the Department of Planning and Development to be completed by a wetland professional who meets the minimum education and experience requirements set forth in the rule. The requirements include: (1) PWS certification by the SWS/PCP or (2) A Bachelor’s degree with coursework similar to the PWS requirements and at least four years of professional experience in wetland delineation, functional assessment and mitigation techniques; and (3) preparation of at least 10

wetland delineations using appropriate techniques; and (4) completion of a wetland delineation training course. (Director's Rule 19-2006 as authorized under Seattle Municipal Code Section 25.09.330.C regarding Regulations for Environmentally Critical Areas.)

#### *Corps of Engineers Wetland Delineator Certification Program*

It should also be noted that the U.S. Army Corps of Engineers tested a pilot Wetland Delineator Certification Program (WDCP) in 1993 in three different Corps districts around the country, including the Seattle District. A few private consultants working in Washington and Oregon were "provisionally certified" under the pilot program. The intent of the WDCP was to improve the quality and consistency of wetland delineations submitted to the Corps and to streamline the regulatory process by providing expedited review of delineations conducted by certified delineators. Under the WDCP, certification is optional. Persons seeking certification would take a written test which, if passed, would be followed by a field practicum. The Corps published a proposed rule for the WDCP in the Federal Register on March 14, 1995, but the final rule was never published and the program is on hold because Congress has not provided funding.

#### V. Methods and procedures about which a professional wetland delineator should be knowledgeable

Because wetland science and wetland delineation is interdisciplinary, a professional wetland delineator should be knowledgeable about ecology, landscape processes, plant identification and physiology, soil science and morphology, geomorphology and near-surface hydrological processes. The ability to synthesize environmental and land use information and apply sound judgment in analyzing the information is essential. Specific instruction and experience with wetland delineation procedures is also necessary for a wetland delineator.

There are few degree programs in wetland ecology and a number of different degree programs provide suitable academic preparation (e.g., botany, soil science, environmental science) if course work includes both biological and physical sciences with a field component. The Department recommends that a professional wetland delineator should have, at a minimum, a four-year degree from an accredited institution of higher education in a biological, physical or natural science; course work and/or specific training in plant taxonomy and/or field botany and soil morphology; and a course in state and federal wetland delineation manual procedures. Many consultants expressed the opinion that a four-year degree should not be required, but that appropriate course work from universities, colleges and other sources of training should be required. Legislation should establish the basic academic requirement, while specific coursework and credit requirements should be specified in rule, not statute, in order to maintain the flexibility to update or adjust the requirements as needed.

Because the SWS/PCP certification program has an equivalent or higher education requirement than what is recommended for an Oregon certification program, if a person is a certified PWS or PWIT (in good standing) through the SWS/PCP, the Department recommends that they are automatically determined to have met the educational requirements and not be required to submit transcripts or other documentation of education. This reciprocity will reduce program administration costs because many wetland scientists in Oregon are certified by the SWS/PCP.

In addition to the degree and course requirements, the Department recommends the following minimum requirements:

- a) Completion of an approved five day wetland delineation course.
- b) At least four years of wetland-related work experience, including field experience.
- c) A passing score on a thorough written examination on wetland delineation. Legislation should include the authority to require a field examination, if needed.
- d) Adherence to high ethical and professional standards (applicant must sign a code of ethics and professional practice).

#### VI. Scope of initial examination and continuing education requirements

The initial examination must cover the knowledge required for accurately identifying and delineating wetlands using the 1987 Corps of Engineers wetlands delineation manual and regional supplements, the wetland plant list, the Natural Resources Conservation Service (NRCS) hydric soil field indicators, related state and federal guidance, and wetland delineation procedures. The Corps of Engineers' regulatory assistance program delineation training exam and the exam developed by the State of Virginia's delineator certification program may provide a good starting point for developing an examination for an Oregon professional wetland delineator certification examination.

Because a written examination is a crucial element of a certification program, a thorough, well-documented, objective examination is essential. The Department strongly recommends that the state contract with a private company to help develop, test, score, and maintain statistics on the examination results. Based upon information from Professional Credential Services, the firm on contract with the Virginia certification program, the firm works with a panel of subject-area experts identified by the state to develop the examination questions, helps to refine the questions to eliminate ambiguity, maintains a computerized database of all questions and exam results, generates questions from the central database for each exam (so that no two exams are exactly alike), scores exams and maintains statistics on examination results.

The Department recommends that certification be renewed every two years. Renewal on a less frequent basis would significantly reduce the revenue needed to support the program. Requirements for renewal should include continued professional experience as a wetland scientist and at least 24 hours of continuing education credits earned during the biennium. Credits should be earned for completion of courses, trainings and workshops; for teaching relevant courses and workshops; for serving as an officer or committee chairperson of a professional organization directly relevant to wetlands; and for appointment to boards or committees which draw upon the person's professional expertise. A continuing education requirement is important to maintaining and improving the knowledge and skills of certified professional wetland delineators, thus supporting the goals of the certification program.

The Department also recommends that the administering entity be given the authority to approve courses, workshops, seminars and trainings and assign credits for the purpose of meeting the continuing education requirements. The State of New Hampshire has taken this approach. Benefits include assuring that only pertinent, substantive courses taught by well-qualified instructors will qualify for certification renewal, and this approach may also serve to expand the availability of training options. There may be an opportunity to partner with a public institution of higher education and/or a non-profit to provide specific courses and workshops that support the certification program goals.

#### VII. Appropriate entity to administer the certification program

The Department recommends that a new Board for Professional Wetland Scientists be created to administer the certification program. The board should consist of seven members—six certified wetland delineators and one public member. Board members serve without pay but their mileage and related costs for attending board meetings will be paid at state per diem rates. The board will be responsible for adopting administrative rules, certifying delineators, approving continuing education courses and assigning credits, and handling complaints and taking disciplinary action as needed, including revoking certification. A paid administrator will conduct much of the day-to-day business of the board. A full-time administrator would not be necessary due to the relatively small number of potential professionals seeking certification. Opportunities to share an administrator with other boards may exist.

The initial wetland scientists appointed to the board should be Professional Wetland Scientists as certified by the Society of Wetland Scientists' Professional Certification Program (in good standing) and must have at least 10 years of wetland delineation experience. After the program has been in effect for at least three years, newly appointed wetland scientists on the board must have been certified by the board.

As a possible alternative to administration through a Board, the Department investigated administering the program in-house with the assistance of an advisory committee (similar to the

DEQ Wastewater Systems Operators and DHS Drinking Water Certification Programs). These programs certify thousands of individuals, making dedicated staff (2 FTE per agency) necessary and cost effective, in addition to other program support systems such as data management. Because the wetland delineator certification program would be much smaller, in-house administration would not be cost-effective. In addition, private wetland consultants and the other states the Department consulted with strongly recommended that the certification program not be housed within the regulatory agency.

### VIII. Fees

Certification fees will need to cover program operating expenses. Fees depend in large part on the number of persons seeking certification. A rough estimate is that approximately 100 persons may apply under a voluntary program and approximately 150-175 persons may apply under a mandatory program. The scope of this investigation did not include an in-depth cost analysis, which will be important to determining the feasibility of implementing a certification program. At this stage of the investigation, a rough estimate for initial certification fees (initial application and application for examination) is in the range of \$600-\$700. Consultants and the Department agree that application fees would need to be lower to encourage participation in a voluntary certification program, more in the realm of fees charged by the other state programs (e.g., around \$400). There would be upfront costs for developing the examination, a part time administrator and developing administrative rules and procedures prior to receipt of the first certification revenues (additional information in Appendix C). The following fee categories are recommended:

<b>Fee Type</b>
Initial application
Application for examination
Application for certification by reciprocity
Biennial renewal fee
Professional listing fee (optional)
Late reinstatement fee
Replacement of certificate fee

### IX. Recommendations for Legislation

SB 544 required the Department to provide recommendations for legislation. Our recommendations for legislation are discussed primarily in sections V through VIII of this report. In summary, the Department recommends that a voluntary Oregon Professional Wetland

Delineator Certification Program be implemented if program costs can be covered by a reasonable fee level and if a stakeholder involvement process develops a legislative concept that results in a meaningful certification program with a sufficient level of support. Examples of certification program legislation from other states is available from the Department, upon request.

Appendices:

Appendix A: Senate Bill 544

Appendix B: Public outreach summary

Appendix C: Estimated program costs and revenues

Appendix D: Delineation report review data and information

Appendix E: Department of State Lands' testimony on Senate Bill 544

**Enrolled**  
**Senate Bill 544**

Sponsored by Senators MORSE, AVAKIAN, BEYER, JOHNSON

CHAPTER .....

AN ACT

Relating to Department of State Lands; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

**SECTION 1.** (1) The Department of State Lands shall investigate the feasibility of establishing an Oregon certification program for professional wetland scientists. The study shall include but need not be limited to:

- (a) The feasibility of a certification program for professional wetland scientists;
  - (b) The existence and validity of professional wetland scientist certification programs;
  - (c) The professional methods and procedures about which a professional wetland scientist should be knowledgeable;
  - (d) The scope of an initial examination for certification and any continuing education requirements that should be imposed;
  - (e) A recommendation of an appropriate entity to administer the certification program;
- and
- (f) Recommended fees for certification as necessary to cover the expenses of operating a certification program.

(2) Not later than November 1, 2008, the department shall submit a report of the findings of the study conducted under this section, and shall include recommendations for legislation, to the interim legislative committees on environment and natural resources.

**SECTION 2.** Section 1 of this 2007 Act is repealed on the date of the convening of the next regular biennial legislative session.

**SECTION 3.** This 2007 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2007 Act takes effect ~~on its passage.~~

Passed by Senate May 3, 2007

Repassed by Senate June 6, 2007

.....  
Secretary of Senate

.....  
President of Senate

Passed by House June 1, 2007

.....  
Speaker of House

Received by Governor:

.....M.,....., 2007

Approved:

.....M.,....., 2007

.....  
Governor

Filed in Office of Secretary of State:

.....M.,....., 2007

.....  
Secretary of State

## **Appendix B: Public Outreach Summary**

Public outreach was an integral part of the Department's investigation. Throughout the process, the Department kept stakeholders informed and solicited feedback through meetings and other mechanisms, as summarized below. Considerably more—and more formal—stakeholder input will be required if the legislature decides to pursue development and implementation of a certification program.

### *Removal-Fill Technical Advisory Committee*

The Removal-Fill Technical Advisory Committee (R-F TAC) is a standing committee that includes representatives from state and federal agencies, interest groups, local governments and the private sector. There are approximately 50 individuals on the R-F TAC e-mail list who receive regular updates from the Department and notice of monthly meeting agendas. The Department regularly updated the R-F TAC on the SB 544 investigation, and provided briefings on the proposed recommendations and a forum for discussion at the June 19, 2008 and August 19, 2008 meetings.

### *Wetland Consultants*

Because private wetland consultants are potentially the most directly affected by a certification program, the Department went to extra effort to provide information, forums for discussion and opportunities for input. The Department maintains an e-mail list of private consultants (approximately 193 individuals) and meets with them on a regular basis. We provided regular updates by e-mail, set up a dedicated e-mail address for comments, and encouraged them to discuss the draft recommendations provided by DSL among themselves. The Department provided information and opportunity for questions and discussion at meetings with consultants on July 5, 2007; May 20, 2008; August 15, 2008; August 20, 2008; and September 18, 2008.

As of the date of this report, there is no consensus among private consultants regarding a wetland delineator certification program. Based upon discussions and written comments received to date (available upon request), some favor establishing a mandatory certification program; some favor establishing a voluntary program; some are opposed to establishing a certification program; some favor a consultant association-operated program; and some are more neutral but question the need for, and potential benefit of, a certification program. Because a certification program in any form inevitably affects individuals differently and views on the merits of a program differ, consensus is unlikely.

### *Department of State Lands Web Site*

Information on the web site provided the public with basic information about SB 544 and the status of the Department's investigation, including information about—and links to—other state certification programs. The web site also provided the link to the e-mail address set up for providing comments to the Department.

*Pacific Northwest Chapter, Society of Wetland Scientists*

Members of the PNW chapter of the Society of Wetland Scientists (SWS) include additional stakeholders; many are certified Professional Wetland Scientists through the SWS certification program. Information about the Department's mandate under SB 544 was provided on the chapter web site, with a link to the Department's web site. The Department provided an article on the certification effort for the Fall 2007 chapter newsletter, and the wetlands program manager participated in a panel presentation/discussion on Oregon's and Washington's certification investigations at the September 2007 chapter meeting in Yakima.

*Other Meetings*

Department staff met with other interested parties (e.g., the Oregon Home Builders Association) to discuss the investigation and obtain advice. These meetings were helpful in framing the recommendations contained in this report.

## **Appendix C: Estimated Program Costs and Revenues**

Costs to develop and administer a wetland delineator certification program—and fees to cover administration—depend upon several variables and have been only estimated as part of this investigation and report. Variables include such costs as percent FTE required for a program administrator, and whether or not the program is able to share an administrator with another professional board; program support including office space, equipment and office supplies; cost of developing a good written examination; cost of maintaining and administering a written examination; and other professional services, including Department of Justice expenses. Variables for program revenues include the number of wetland professionals seeking and maintaining certification (partially dependent on whether the certification program is voluntary or mandatory), and additional sources of program incomes, such as through continuing education courses.

### Program Costs

Program start-up costs will include such essentials as establishing the Board and covering per diem expenses for meetings to develop operating procedures and administrative rules, hiring an administrator, setting up office support and a certification tracking database, and developing the written examination. As stressed in the report, the Department strongly recommends contracting with a professional credentialing company to help develop a good examination and maintain related records. The upfront cost to develop the examination is approximately \$22,000. Program initiation costs will need to be funded through appropriation, removal-fill program income, and/or other mechanisms until the program is ready to operate and certification fees begin to support ongoing program operation.

### Certification Fees

The table below shows fees charged by the other state certification programs. All programs are required to ensure that fees cover program expenses. However, each state has a unique program, making it difficult to directly compare program expenses and fees. For example, the Virginia Department of Professional and Occupational Regulation was able to incorporate the new wetland scientist and soil scientist certification programs (and their shared board) with little additional program operation expense due to the existing Department infrastructure and relatively small size of the new programs (Joan Leonard, personal communication). In Oregon, the Landscape Architect Board budget may provide a rough approximation of anticipated costs. Their 2007-09 biennial budget is \$294,360 of which approximately \$150,000 is for board administration.

**Main Fees Charged by Other Certification Programs (not including incidental fees)**

<b>State or Program</b>	<b>Type &amp; Main Title</b>	<b>Number certified</b>	<b>Initial Fees (applic. + exams)</b>	<b>Comments</b>
New Hampshire	Certified wetland scientist (delineation)	215	\$450	Mandatory for large projects applications
Virginia	VA Professional Wetland Delineator	73	\$450	Voluntary
Minnesota	MN Certified Wetland Delineator	> 150	\$275	Voluntary; jointly administered by Univ. of Minnesota
Wisconsin	Not a certification program; listed as "assured" delineator	6	None	Voluntary, pilot program. Very low rate of "assured" practitioners
Soc. of Wetland Scientists' Professional Certification Program	Professional Wetland Scientist (PWS)	1,378	\$300 member \$400 non-member	International certification for wetland scientists (broad); sets useful standard for education & experience
Washington State (HB 3198; re-introduction 2009)		N/A Estimate 240	\$1,200 (Estimate); working on ways to reduce cost	Voluntary; first introduced in 2007 session

There are approximately 200 persons practicing wetland delineation in Oregon. The number of persons likely to become a certified wetland delineator depends upon how many will meet the requirements and pass the examination, how many will seek voluntary as opposed to mandatory certification, how many will maintain their certification through renewal, and how many new practitioners enter the pool (if initial certification fees are higher than renewal fees). If an estimated 150 persons are certified, fees (using the Landscape Architect Board budget cost estimate) may be in the realm of \$525-\$600 for initial application and application for examination, and \$425-\$450 for biennial renewal. As noted in the report, additional investigation is needed to bring the fee level more in line with that of other states.

The Department recommends that all fees are nonrefundable and will not be prorated. It is anticipated that fees will be adjusted each biennium, as needed, to cover the operating costs of the certification program.

Explanation of Recommendation to Waive Fee for Public Employees

The Department also recommends that fees be waived for employees of federal, state, local or tribal governmental bodies with responsibility for conducting and/or reviewing wetland delineations. There are three related reasons for this recommendation: (1) private consultants want agency staff reviewing their delineations to be certified, which the Department supports; (2)

based upon our investigation and experience to date, agencies do not cover the cost of certification for their employees; and (3) it is crucial when involved in a contested case related to a wetland delineation and jurisdictional determination to have agency staff with professional credentials at least equal to that of consultants for the other party. Because there is no personal benefit to the employee to pay for professional certification, few seek it. Though such a fee waiver would reduce program revenue, the Department concludes that it is more beneficial to the program and the state to facilitate agency staff certification.

## Appendix D: Delineation report review data and information

Wetland delineation reports are prepared by private consultants for landowners, developers, local governments and others so that they know if wetlands are present on a particular parcel of land and, if so, the boundary limits of the wetland(s). Wetland delineations include not just wetlands, but other potentially regulated waters of the state or United States, such as streams, lakes, ponds, estuaries, and canals. All wetland delineations must be conducted following procedures in the *1987 Corps of Engineers Wetlands Delineation Manual* and regional supplements. In addition, the Department of State Lands has adopted administrative rules that provide more detailed guidance and requirements for wetland delineation reports submitted to the Department (OAR 141-090). These rules also lay out procedures followed by the Department for wetland delineation report reviews and determinations of state jurisdiction over waters of the state. The Department's approval and determination is relied upon by landowners, developers and local governments for avoiding wetland impacts and for any removal-fill permit applications they may need.

The Department's wetland specialists review wetland delineation reports to ensure that they accurately identify and map any wetlands, and to determine which wetlands and other waters of the state are subject to state permit requirements. If the Department's wetland specialists conduct a field visit and determine that a wetland delineation report has not correctly identified and mapped wetlands, they collect sufficient field data (soils, vegetation and hydrology data) to document their findings. Most discrepancies are readily resolved with the consultant through the joint field visit. Sometimes, as a result of the field visit, the consultant returns to the site to collect additional data (e.g., to fully document and map the revised wetland boundary, or to collect data at a time of year when field indicators are more reliable).

### *Wetland Delineation Report Approval Statistics*

The table below includes all wetland delineation report reviews completed by the Department for reports submitted after January 1, 2008 (when new rules and related database changes went into effect) and September 30, 2008. This table provides an overview of the relative number of wetland delineation reports that are approved fairly quickly without much if any back-and-forth between the consultant and the agency, compared to those that are incomplete, unclear, or incorrect and thus require additional handling and more time for completion.

<b>Report Status</b>	<b>Explanation</b>	<b>Number</b>	<b>Percent</b>
Approved	Approved with no or little clarification needed	178	47
Approved with revisions	Approved after changes or clarifications made	160	42
Withdrawn by applicant	Prior to agency review, for variety of reasons	11	3
Rejected	Substantially inaccurate methods, data or conclusions	20	5
Completed by DSL	Substantially inaccurate and applicant unable to get issues resolved with consultant; prevailed upon DSL staff for direct help	8	3
Totals		377	100%

As the table data indicates, half of the delineation reports required clarifications, changes or were rejected. The “approved with revisions” status includes significant wetland boundary changes but also some relatively minor delineation map changes. Many of those reports that were approved after additional information was requested, a site visit conducted by the Department, and revisions by the consultant required a substantial amount of back-and-forth and staff time. This can be costly to the client and may delay projects for an entire year. An example (not unusual) from the Department’s database of the review steps taken for one wetland delineation report is shown below.

Last Modified: 10/11/2006 By: per		Site: Lincoln County (10S11W20)	
Players	Sites	Status History	Projects
			Det./Delin. History
			Related Dets./Delins.
			Notices
9 of 9			
Status Date	Status	Status Comment	
10/11/2006	Approved with Revisions		
10/10/2006	Information Received/ Pending		
09/28/2006	Information Requested	New figure and area calculations.	
09/25/2006	Information Received/ Pending		
05/26/2006	Information Requested	Map and letter requesting additional information sent.	
05/16/2006	Site Visit Needed	Site visit done 5/18/2006	
04/21/2006	Information Received/ Pending		
04/19/2006	Information Requested	Data sheets and precip data	
02/21/2006	Review Pending	Record Created	

### *Procedures for Resolving Disagreements over Wetland Delineations and State Jurisdiction*

SB 544 was initially drafted to establish an arbitration process for disagreements about wetland delineations and state jurisdiction. The language in the bill was changed after discussion between the sponsor and agency about existing procedures in state law. The administrative rules governing wetland delineation reports and approvals include an informal procedure—request for reconsideration—whereby the applicant, landowner or legal agent may request that the Department review and reconsider a final jurisdictional determination (OAR 141-090-0050). That process provides an avenue for submitting additional information or rationale for differing with the agency’s decision, including a decision about wetland boundaries. The request is reviewed by the Department’s wetlands program manager and assistant director of the Wetlands and Waterways Conservation Division, and the review generally includes a site visit. If the applicant or landowner still disagrees with the agency decision, they may initiate a contested case proceeding.

Since the request for reconsideration provision was adopted in 2001, ten requests for reconsideration have been submitted to the Department. Of those, four were denied (agency decision upheld); two were supported (agency decision changed); 2 were partially supported (agency decision changed for some but not all waters of the state on the site); one was effectively withdrawn (applicant applied for permit); and one is on hold (was filed as a placeholder and will likely be withdrawn or denied).

## Appendix E:

**Testimony of  
Kevin Moynahan, Assistant Director  
Wetlands and Waterways Conservation Division  
Department of State Lands  
On A-engrossed Senate Bill 544  
Before the House Agriculture and Natural Resources Committee  
May 17, 2007**

Good afternoon. For the record, I am Kevin Moynahan. I am here on behalf of the Department of State Lands to testify in support of A-engrossed Senate Bill 544.

### What This Bill Does

- SB 544A directs the Department of State Lands to investigate establishing a certification program for wetland professionals practicing in Oregon.
- The investigation would research how well other programs are working; appropriate education and training requirements; and administration options.
- DSL would report the results of the investigation to the Legislative Assembly by January 2009.

### Background/Current Situation

- Currently, there are no education, training or certification requirements for persons providing wetland consulting services in Oregon.
- Typical services include: wetland delineations; development planning; preparing permit applications; and designing & monitoring compensatory mitigation projects.
- To provide these services accurately and effectively requires interdisciplinary coursework and training including botany, soil science, hydrology and ecology.
- Many individuals who provide wetland consulting services in Oregon are highly qualified and professional. These individuals are essential partners in the removal-fill permit program—they educate applicants, handle complicated development projects, and navigate clients through multiple permit requirements.
- Unfortunately, many persons providing wetland services are not well qualified and, as a result, they create problems for their clients and for agency staff.

### Why it's a Problem

- Few landowners or businesses know how to locate a highly qualified consultant.
- When they run into problems with their consultant, they're usually very surprised to learn that there are no education or certification requirements.
- A few examples of problems people run into are:
  - Multiple revisions to or rejected wetland delineations
  - Incomplete permit applications and multiple submittals
  - Cost over-runs and project delays, sometimes to the next construction season

### Opportunity This Bill Presents

- The increasing frustration on the part of the development community, landowners and agency staff has led to a demand for setting minimum standards and accountability for the profession.
- This bill provides the impetus and direction to begin to address the problem.
- Several states and a few cities now have either minimum requirements or a certification program for private consultants—there's wide variation among the programs.
- The approach outlined in SB 544A is a good one—it allows DSL the time to research the options, investigate how well these different programs are working, and work with stakeholders to develop recommendations for Oregon.
- The business community, landowners, many wetland consultants and agencies recognize the need for minimum standards for education, training and professional practice for persons offering wetland consulting services.
- SB 544A facilitates a thoughtful approach to investigating options and bringing a recommendation back to the Legislative Assembly for consideration next session.
- We see no downside and only benefits to passing this bill.

We would be happy to answer any questions you might have. Thank you.

## Chapter 507 Oregon Laws 2007

AN ACT

SB 544

Relating to Department of State Lands; and declaring an emergency.

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- (a) The feasibility of a certification program for professional wetland scientists;
- (b) The existence and validity of professional wetland scientist certification programs;
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- (f) Recommended fees for certification as necessary to cover the expenses of operating a certification program.

(2) Not later than November 1, 2008, the department shall submit a report of the findings of the study conducted under this section, and shall include recommendations for legislation, to the interim legislative committees on environment and natural resources.

**SECTION 2.** Section 1 of this 2007 Act is repealed on the date of the convening of the next regular biennial legislative session.

**SECTION 3.** This 2007 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2007 Act takes effect on its passage.

Approved by the Governor June 20, 2007

Filed in the office of Secretary of State June 21, 2007

Effective date June 20, 2007

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