Maine Department of

Inland Fisheries & Wildlife

Report back to Legislature

On Public Law 2013

Chapter 358, Section 8

Proposed Plan for Managing State Heritage Fish Waters

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126th Legislature – Second Session

TABLE OF CONTENTS

Executive Summary…….....3

Foreword……...…..6

Statement of Intent……..…...6

Department Review Process……..……...6

Public Involvement….…….....7

Background Information……...……..10

1.0 Maine's Native and Wild Brook Trout Resources…….....11

2.0 Maine's Brook Trout Management Program……..…….…...14

Current Management Guidelines
Establishment of the A & B Lists

3.0 Brook Trout Threats in Maine……...……....……16

Non-Native Fish
Habitat Degradation and Changing Climate Conditions
Baitfish Introductions
Stocking of Other Salmonid Species

4.0 Proposed Plan for Managing State Heritage Fish Waters…….…….....24

Waters Not Identified for Inclusion on the List of State Heritage Fish Waters
Proposed Listing Criteria for Future Amendments to State Heritage Fish Waters
Proposed Process for Amending the List of State Heritage Fish Waters
Policy

5.0 Future Public Working Group Discussion Topics…….....29

6.0 Brook Trout Management Priorities and Strategies……..……...……...…...31
Identification
Habitat Protection
Outreach
Recreational Fishing

Appendix 1: MDIFW Policy Regarding the Addition and Removal of Lakes and Ponds to the Wild Brook Trout List (B List)

Appendix 2: Section H, Chapter 6, Policies for Species Management - Native and Wild Salmonids

Appendix 3: 2009 MDIFW Brook Trout Management Plan

EXECUTIVE SUMMARY

The development of this report is a result of a Public Law 2013 c. 358 § 8. To meet the outlined reporting requirements of this law, this report by the Maine Department of Inland Fisheries and Wildlife (MDIFW) provides:

1. A complete list of up-to-date B List waters with justification as to the qualifications for each water listed; and
2. A management plan for the B List waters that is in accordance with the intent of the Department's mandate in the Maine Revised Statutes, Title 12, §10051 to preserve, protect and enhance the inland fisheries and wildlife resources of the State, to encourage the wise use of these resources, to ensure coordinated planning for the future use and preservation of these resources and to provide for effective management of these resources.

Maine's native and wild brook trout populations are recognized for their ecological, economic, cultural, and aesthetic values. The primary intent for managing wild brook trout in lakes and ponds shall be the protection and conservation of these self-sustaining fisheries, in so far as possible, without resorting to stocking brook trout.

Proposed Plan for Managing State Heritage Fish Waters

- The MDIFW proposes to merge the A and B Lists to: 1) renew focus on protecting Maine's most outstanding brook trout resources by applying A List management (Title 12, §12461) to wild brook trout waters (B List); and 2) recognize the significant cultural and economic value of sport fisheries for other native coldwater species.
- The resulting list would be titled "The State Heritage Fish Waters," which already includes 10 waters (6 on A List, 4 on B List) containing native arctic charr (a designated State Heritage Fish).
- The A List has been amended several times since its inception in 2005, whereby 35 waters have been <u>added</u> to the original list (via new pond surveys).
- The A List currently (February 2014) totals 340 waters (addition of new waters to the A List currently does not require the major substantive process as established in Title 12 §12461).
    - The MDIFW has concluded that 16 A List waters should be removed entirely from any list, however, because these 16 A List waters are either fishless or do not contain brook trout. Furthermore, of those 16 A List waters, 5 waters have been identified to not exist as lakes or ponds based on recent biological surveys (removal of waters from the A List is major substantive and currently requires legislative approval).
    - The proposed A List removal changes would need to be approved by the Joint Standing Committee on Inland Fisheries and Wildlife in order to finalize the State Heritage Fish Waters list. The MDIFW intends to proceed with rule making during summer 2014 and will bring those 16 waters for removal forward to the JSC in January 2015.

Waters Not Identified for Inclusion on the List of State Heritage Fish Waters

Wild brook trout populations and their fisheries are not threatened by current MDIFW salmonid stocking programs; managing for wild brook trout on these waters is a management priority, as is maintaining principal fisheries for other coldwater gamefish species. Therefore, these waters do not meet the intent of P.L. 2013 c. 358 § 8 and are not proposed for inclusion on the State Heritage Fish List.

- Wild brook trout waters, where interspecific stocking programs for lake whitefish, landlocked salmon, togue, or where restoration programs for native species are contemplated or ongoing (13 total waters), will not be considered for inclusion on the State Heritage Fish Waters list.
- Wild brook trout waters where live fish as bait is permitted will also not be considered for inclusion on the list of State Heritage Fish Waters (34 total waters).
- Because many of these wild brook trout waters have interspecific stocking programs and also permit live fish as bait, a total of 38 combined waters will not be included on the State Heritage Fish waters list.
    - These 38 waters are not included on the State Heritage Fish Waters list because, while they have wild, self-sustaining brook trout populations, the MDIFW maintains diverse fishing opportunities including unrestricted bait use, as these fishing opportunities are recognized for their economic benefit to Maine.
    - These 38 waters would be managed appropriately according to MDIFW's existing policies for protecting Maine's native and wild salmonids.

Proposed Listing Criteria for Future Amendments to State Heritage Fish Waters

- The MDIFW will continue to maintain a current list of State Heritage Fish Waters. This list will be reviewed when necessary when new biological information becomes available and if appropriate, recommendations will be made for amending the list, based on the following criteria:
    - Lakes and ponds with self-sustaining[1] brook trout populations that are sufficiently high in abundance to sustain fishing quality and are readily captured by anglers and by scientific sampling methods during biological surveys.
    - If brook trout presence is only seasonal, then the water's direct drainage system should provide habitat for all life stages during all life history periods.

Proposed Process for Amending the State Heritage Fish List

- For each water proposed to be added to, or removed from, the State Heritage Fish Waters list, a summary report will be developed by the MDIFW Regional Biologist describing the water's physical and biological characteristics as they relate to wild brook trout production capabilities, historic and current management programs, and present public use, if available. Each summary report will be peer-reviewed.
- The MDIFW fisheries biologists will provide their recommendations for change in writing to the MDIFW Fisheries Director. The Department will then initiate the major

[1] A self-sustaining population relies entirely on natural reproduction; that is, stocking is not required to support the population and sustain viable sport fisheries.

substantive or routine technical process for consideration as established in Title 12 §12461 and §12462.

- In State Heritage Fish Waters where natural reproduction and recruitment of brook trout becomes compromised due to local changes in habitat conditions, fish assemblage, etc., fisheries may be provided by planting hatchery-reared or transplanted wild brook trout (in the case of pond reclamations) as outlined in MDIFW's stocking policy regarding native and wild salmonids. Any direct stocking of a State Heritage Fish Water will be subject to the same peer-review and major substantive or routine technical processes.
- A decision to stock would, however, warrant immediate removal from the State Heritage Fish Waters list until it is deemed that the water meets the proposed criteria.

Policy

- MDIFW's current Administrative Policy for Managing Maine's Native and Wild Salmonids, Strategic Management Plan, and Eastern Brook Trout Joint Venture plans and assessment information continue to be an effective approach to preserve, protect, and enhance wild trout and other coldwater fisheries in the State.
- These policies and documents shall collectively serve as the guiding documents for managing all native and wild brook trout.

Public Involvement

- Public working groups will be established during the strategic planning process to assist the MDIFW in developing broad goals and objectives for fishing opportunities and/or conservation. Whenever practical, partnerships and volunteers will be employed to assist in the implementation of management programs.
- The Department will develop a guiding document outlining the process for public working groups and strategic species planning.

FOREWORD

On April 12, 2005 The Joint Standing Committee on Inland Fisheries and Wildlife (JSC) voted OTP-A on LD 1131 (An Act to Recognize and Protect the Native Eastern Brook Trout as one of Maine's Heritage Fish). The JSC also directed the Maine Department of Inland Fisheries and Wildlife (MDIFW) to review 180 waters identified during the public hearing and work session as "wild brook trout waters" and to report back before February 6, 2006 on the suitability for inclusion of these 180 wild brook trout waters on the list of native brook trout waters.

Maine's native and wild brook trout lakes and ponds represent a unique, valuable and irreplaceable ecological and angling resource. Maine has retained several hundred lakes and ponds with healthy populations of native and wild brook trout. The MDIFW recognizes the unrivaled historic and economic importance of Maine's brook trout resource and, furthermore, focuses on the conservation and protection of this uniquely valuable resource.

STATEMENT OF INTENT

The primary intent for managing wild brook trout in lakes and ponds shall be the protection and conservation of these self-sustaining fisheries, in so far as possible, without resorting to stocking brook trout. The development of this report and management plan is a result of a P.L 2013 c. 358 § 8, that reads in part:

> The Commissioner of Inland Fisheries and Wildlife shall review the lakes and ponds that contain eastern brook trout, *Salvelinus fontinalis*, and that according to reliable records have not been stocked since January 1, 1988, referred to in this section as "B List waters," and report the findings to the Joint Standing Committee on Inland Fisheries and Wildlife no later than January 15, 2014. The report must include:
>
> > 1. A complete list of up-to-date B List waters with justification as to the qualifications for each water listed; and
> >
> > 2. A management plan for the B List waters that is in accordance with the intent of the department's mandate in the Maine Revised Statutes, Title 12, section 10051 to preserve, protect and enhance the inland fisheries and wildlife resources of the State, to encourage the wise use of these resources, to ensure coordinated planning for the future use and preservation of these resources and to provide for effective management of these resources.

DEPARTMENT REVIEW PROCESS

During 2012 – 2013, MDIFW conducted a regional staff review of the native (A List) and wild (B List) brook trout waters. The intent of the review was to determine if changes to the lists were warranted based on new biological or habitat data, and based on the listing criteria outlined in Section 2.2 of this report. MDIFW staff recommendations were summarized and presented to the MDIFW Administration in 2013. Approximately 1,000 hours of staff time were dedicated to this review effort and development of this proposed plan.

PUBLIC INVOLEMENT

Public working groups are often established during the strategic planning process to assist the MDIFW in developing broad goals and objectives for fishing opportunities and/or conservation. The Brook Trout Working Group was established in 2012 and is tasked with providing the MDIFW with recommendations on conserving brook trout resources. The Baitfish Working Group was established in 2013 and is tasked with providing the MDIFW with recommendations for baitfish management, policies, and disease prevention. Since the legislature enacted P.L. 2013 c. 358 § 8, both the Brook Trout and Baitfish Working groups were also asked to provide joint recommendations for inclusion in this plan.

Brook Trout Working Group members included:

Michael Brown, MDIFW Fisheries Division Director, Chair

Gary Corson	Dave Allen	Ted Koffman
Matt Libby	Toby Montgomery	Brandi Sladek
John Whalen	Kevin O'Brien	Bonny Holding (left group mid-2012)

The Brook Trout Working Group has focused on providing recommendations and input on the following questions asked by the MDIFW:

1) Does the Department assess/monitor Heritage Brook Trout Waters ("A" waters) adequately to protect these ponds from overfishing or long-term population declines? Should these waters be place on a species of greatest conservation need or similar list if the Department identifies issues in "A" waters?
2) How do we promote brook trout fishing in Maine? Who/what have succeeded/failed in the past and where are we now?
3) Does the existing diversity of fishing opportunities provided within the current management plan accurately reflect user needs/wants?
4) What level of protection should wild populations vs. stocked populations of brook trout receive within the existing regulatory structure? Direct vs. indirect stocking – lakes vs. streams and rivers? Thoughts on mixing wild and hatchery stock?
5) Discuss terminal gear/bait used to catch brook trout. Does the existing regulatory structure adequately support opportunities accomplish angler needs/wants and protect wild brook trout?
6) Discuss how the public defines a successful fishery or fishing experience vs. the Department perspective (size/quality/number of fish).

Baitfish Working Group members included:

Merry Gallagher, MDIFW Research Fisheries Biologist, Chair

Bruce Steeves	Dwayne Rioux	Sebastian Belle
Dale Doucette	Larry Burns	Steve Brooke
Dennis Bolduc	Roddie McLellan	Kevin Adam, MDIFW Warden Service

The Baitfish Working Group has focused on providing recommendations and input on the following topics and questions proposed by the MDIFW:

1) Review the species of bait fish currently allowed in Maine
   A) Are there concerns with the number/species of fish on the list?
   B) How do we address the concerns that some legal bait fish species are not currently in all waters and may become significant competitors with other species if spread? Do we regulate by watershed/drainage/individual water body?
   C) Are there current regulatory or pending regulatory concerns for species on the permitted bait fish species list (Species of Significant Conservation Need, pending state or federal listed species)?
2) Identification – How are these bait fish species identified in the field to ensure that only legal bait fish species are transported, stored, sold, used by commercial/recreational harvesters and anglers
   - Review current requirements to collect bait/store/sell bait captured in the wild. Both commercial and recreational fishermen – are there ways to improve process to ensure only legal bait fish are sold/used?
3) Identify elements needed to develop a consistent policy to address where bait can be stored, caught and used. Should live bait fish harvest be permitted where individuals cannot use live fish as bait? Should the Department issue permits to catch or store bait in waters closed to bait fishing?
4) Review license fees, free permits and reporting processes. Are these items appropriate or do they need to be changed, implemented and for what reasons?
5) Review the Hazard Analysis and Critical Control Points (HACCP) Program concept, including the benefits and drawbacks of implementing this program for all bait collection activities. HACCP is used to ensure safety of seafood, meat and other products as they move though the food system – producer to end user. The HACCP program has been around for a long time in the food industry. http://www.foodsafetyspecialists.com/haccp.htm
   A) What are the benefits of having a HACCP plan in place if fish pathogens are found in Maine waters?
   B) How much would the program cost/training required/who monitors?
6) Identify the benefits of having a safe disease free source of bait fish in Maine.
   A) Can these fish be sold at higher prices out of state?
   B) Are there opportunities to expand aquaculture for bait fish?
   C) Costs of introduction of fish pathogens into Maine waters due. What happens if we identify a harmful fish pathogen in a water open to bait fishing? Do we close the water, watershed, go to no live fish as bait, how do we get the information out to recreational bait fishermen?

Summary of Working Group Activities

The Brook Trout Working Group met 9 times between 2012 and 2014. The Baitfish Working Group met 9 times between 2013 and 2014. For several meetings, MDFIW fisheries biologists were in attendance and provided data summaries and information at the request of working group members. Non-working group members (i.e. general public) also attended some meetings but did not participate directly during the formal working group sessions. These individuals were afforded the opportunity to provide input after the formal meetings were closed.

Public Working Group Discussion Topics and Recommendations

Brook Trout Working Group Recommendations

- Prohibit live fish as bait on B List waters. Waters should come off the B List if live fish as bait and/or interspecific stocking programs are permitted on these waters. The MDIFW should make the determination which waters are included on the B List;
- Consideration of a geographic area (northern Maine) where the existing number of species of baitfish is modified in areas where there are a concentration of wild and native brook trout waters;
- No storage of live bait in public waters;
- Consideration for implementing a Hazard Analysis and Critical Control Points (HACCP) program at the wholesale bait level (support for more baitfish species allowed in conjunction with a HACCP plan). Some consideration for a statewide HACCP program.

Baitfish Working Group Recommendations

- Modify the list of legal baitfish species by removing those species that are rare, not actively used or dealt in the market, and have some level of conservation concern;
- The MDIFW needs a better understanding of baitfish ecology and economics;
- The MDIFW needs a greater understanding and more stringent control on the personal collection of bait for live use;
- There is a need for improved fish identification skills for all participants in baitfish use and management;
- Educational materials need to be developed and provided to anglers, commercial bait dealers/retailers and others;
- Baitfish holding and stocking in private ponds needs further investigation and understanding.

A joint meeting between the two working groups was held on January 29, 2014 to review this management plan. While no vote was held, the majority of all working group members considered the plan to be balanced and that the plan reached a compromise regarding conservation of brook trout resources and also maintaining fishing opportunities for other native coldwater species.

Background Information

1.0 Maine's Native and Wild Brook Trout Resources

Maine has the most extensive distribution and abundance of brook trout (*Salvelinus fontinalis*) throughout their native range in the United States (Figure 1); more than 1,000 lakes and ponds (over 760,000 surface acres) contain self-sustaining brook trout populations. In addition, brook trout occur in an estimated[2] 22,248 miles of stream habitat, the vast majority of which are wild. A 2006 range-wide assessment by the Eastern Brook Trout Joint Venture (EBTJV) concluded that:

> "Maine is the only state with extensive intact populations of wild, self-reproducing brook trout in lakes and ponds, including some lakes over 5,000 acres in size[3]. Maine's lake and pond brook trout resources are the jewel of the eastern range: lake populations are intact in 185 subwatersheds (18% of the historical range), in comparison to only six intact subwatersheds among the 16 other states[4]."

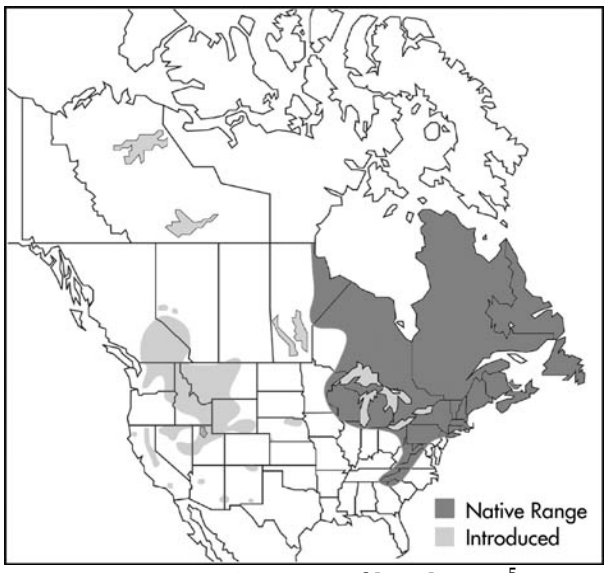

Figure 1. Native range of brook trout[5].

Maine's wild brook trout waters are not evenly distributed throughout the state but are concentrated in the interior highlands, many of which are located in privately owned commercial forestlands. These areas are generally cooler with fewer competing, non-native fish species than the southern or coastal parts of the state. In addition, in these regions, habitat quality, quantity, and connectivity are higher than in any other area of the state. The MDIFW Management Regions D, E, F, and G (Figure 2), which include most of the interior highlands, contain the majority of the lakes and acreage in which wild brook trout occur (Figure 3). In this area, a total

[2] Based on an estimate of 70% of Maine's 31,806 miles of flowing water.
[3] 16 lakes totaling 192,413 acres in size.
[4] Eastern Brook Trout Joint Venture. 2006. Eastern Brook Trout: Status and Threats.
[5] Map from: Bonney, F. 2006. Maine Brook Trout: Biology, Conservation, and Management. Maine Department of Inland Fisheries and Wildlife technical report.

of 177 lakes and ponds that have suitable habitat for trout are zoned as Remote Ponds[6] by Maine's Land Use Planning Commission (LUPC), which oversees zoning in Maine's 10.4 million acres of unorganized territory.

Those brook trout waters located in the southern, coastal, and interior lowlands are more likely to be dependent on stocking to provide recreational fisheries (Figure 3), although the Maine coastline has many documented populations of wild anadromous[7] brook trout. The southern part of the state and the coastal plain are more heavily developed, have suffered more habitat degradation, are subject to thermal regimes less conducive to wild trout persistence, and have more non-native fish species that compete with and predate on brook trout.

Habitat loss and degradation in southern and central Maine are mainly attributed to urbanization and agricultural land use practices, and are a continuing concern for brook trout conservation (discussed in Section 3.2). However, the illegal introduction of non-native fish species into areas away from the coastal plain has accelerated within the last two decades. For example, the proliferation of smallmouth bass, largemouth bass, and northern pike throughout the state has been far more damaging to lentic (lake and pond) brook trout populations than the introductions of other groups of fishes (e.g., minnow species). This issue is discussed in more detail in Section 3.3.

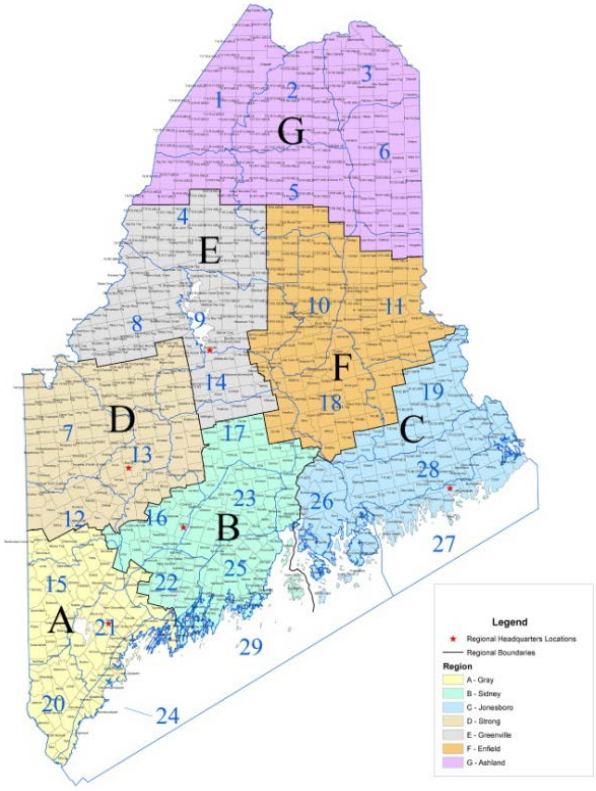

Figure 2. Maine Department of Fisheries and Wildlife Management Regions

[6] This designation is limited to waters that are not accessible within one half-mile by two-wheel-drive vehicles; that have no more than one non-commercial remote camp; and that have cold water game fisheries.
[7] Brook trout that live part of their life cycle in freshwaters and part in marine estuaries.

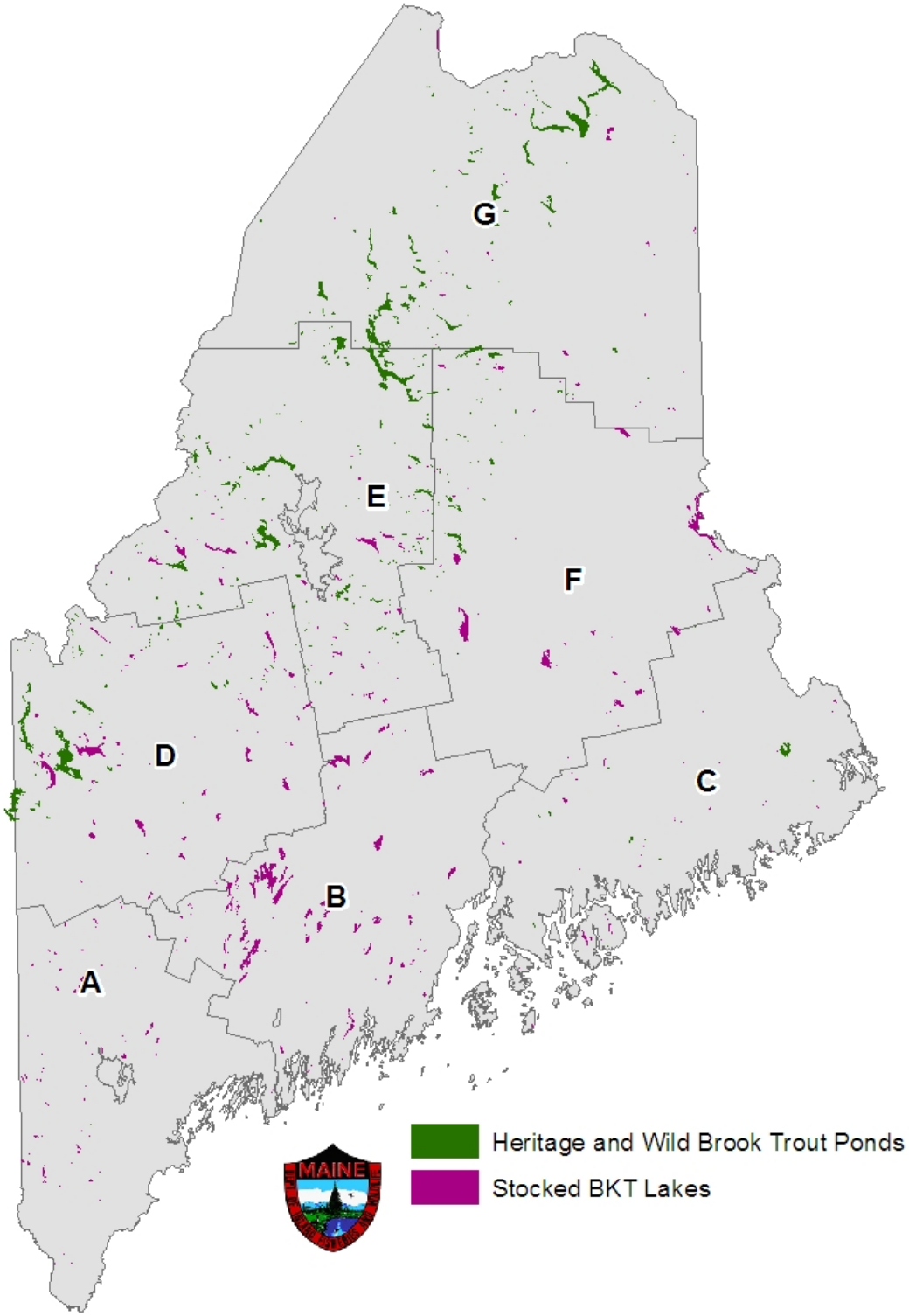

Figure 3. General locations of native (Heritage; A List), wild (B List) and (green) and stocked brook trout waters (pink) in Maine.

2.0 Maine's Brook Trout Management Program

2.1 Current Management Guidelines

Scientific brook trout management began with the formation of the Fisheries Research and Management Division in 1951. Programs to survey brook trout habitat systematically and conduct research projects to provide guidance for the statewide management of this species were implemented when the MDIFW Fisheries Research and Management Division was established.

MDIFW fisheries managers have long given special attention to wild brook trout populations where they exist, and efforts are made to preserve them through regulatory protection, management policies (Appendices 1 and 2), a Strategic Brook Trout Management Plan (Appendix 3), and most recently, through the EBTJV assessments (Section 3.0, Tables 1 and 1). Significantly, the MDIFW's Administrative Policy Regarding Native and Wild Salmonids (Appendix 2) dictates that management of wild brook trout populations be given the highest priority where fisheries can be maintained through natural reproduction. The intent of this policy is to protect the integrity of native and wild brook trout populations, while allowing for stocking interspecific species to create sport fisheries in situations where wild trout fisheries will not be imperiled.

Artificial propagation has played a significant role in the management of Maine's brook trout for many years. Hatchery-reared fish are used to provide fisheries where adult fish habitat is present but spawning and/or nursery habitat are compromised or lacking, or in rare instances, to re-establish wild populations following reclamation.

2.2 Establishment of the A & B Lists

In 2005, the Maine legislature enacted in P.L. 2005 c. 180, "An Act to Recognize and Protect the Native Eastern Brook Trout as Maine's Heritage Fish." This law named the eastern brook trout as a State Heritage Fish. Outlined in Title 12, §12461, "A List" waters are brook trout lakes and ponds that have never been stocked with brook trout according to any reliable records. Under this statute, 1) the commissioner may not stock or issue a permit to stock fish in a lake or pond listed as a State Heritage Fish water, and 2) a person may not use live fish as bait or possess live fish to be used as bait on a lake or pond listed as a state heritage fish water. Any person who violates this statute commits a Class E crime. In September 2005, the A List contained 305 ponds. Since then, 35 additional ponds have been added to the original A List, which now (February 2014) totals 340 ponds. In 2007, the Maine legislature enacted P.L. 2007 c. 21, "An Act to Designate the Arctic Charr as a State Heritage Fish;" §12461 was amended to read that state heritage fish waters are "composed of lake and ponds that contain state heritage fish and have never been stocked according to any reliable records."

Public Law c. 180 also directed the MDIFW to review wild (i.e. historically stocked and now self-sustaining) brook trout waters for possible inclusion on the A List. In its 2006 report to the Joint Standing Committee on Inland Fisheries and Wildlife (*Managing Maine's Wild Brook Trout Fisheries in Lakes and Ponds*), MDIFW stated that "the primary intent for managing wild brook trout in lakes and ponds shall be the protection and conservation of these self-sustaining

fisheries, in so far as possible, without resorting to stocking brook trout." The MDIFW concluded that these specific wild brook trout waters had not been entirely isolated from the potential impacts of stocking, but concluded nonetheless that these populations were an important resource. These waters were organized under a "B List" and were defined as waters that:

1) Have not been directly stocked with brook trout in at least 25 years[8];
2) Have self-sustaining brook trout populations; and
3) Have brook trout that are sufficiently abundant to be considered a principal brook trout fishery.

These lakes and ponds may have received indirect stockings within the last 25 years.

B List criteria definitions are:

- A brook trout fishery is deemed to have been **directly stocked** if brook trout from a hatchery or from another water have been stocked directly into that body of water.
- A brook trout fishery is said to be **self-sustaining** if it relies entirely on natural reproduction; that is, stocking at any level is not required for its continued existence.
- A lake or pond is deemed to have a **principal fishery** for brook trout if the species is regularly sought after by anglers and makes up a significant portion of the catch.
- A brook trout fishery is deemed to have been **indirectly stocked** if brook trout from a hatchery or from another body of water have been stocked into another body of water in the same drainage from which they could have migrated into the water in question.

[8] P.L. 2013 c. 924 §12462 references waters that have not been stocked since January 1, 1988, however prior reports to the JSC and MDIFW policies consistently refer to the 25 year criteria. The MDIFW would like to clarify the Legislature's intent.

3.0 Brook Trout Threats in Maine

Brook trout are listed as a Species of Greatest Conservation Need (SGCN) in Maine's State Wildlife Action Plan - Comprehensive Wildlife Conservation Strategy (Maine CWCS)[9]. Under the SGCN designation, brook trout are ranked 'high priority' based on the state's knowledge of the species and readiness and ability to achieve conservation goals assuming stable, moderate levels of funding. The CWCS lists the following as direct threats to brook trout in Maine:

- Competition resulting from illegal introductions of other fish species;
- Habitat degradation resulting from development/land use;
- Possible long-term threats include climate change and acid precipitation.

The EBTJV is part of the National Fish Habitat Partnership comprised of a diverse group of partners, including state fish and wildlife agencies (including the MDIFW), federal resource agencies, academic institutions, and private sector conservation organizations. The EBTJV is working to conserve brook trout and their habitats across their native US range through a collaborative process. The EBTJV Steering Committee has adopted a formal Management Structure and all active partners, including the MDIFW, have signed a Memorandum of Understanding that affirms a commitment to participate in this Fish Habitat Partnership.

The EBTJV produced a range-wide brook trout population assessment, completed extensive work that identifies key threats to brook trout and their habitats in Maine (Tables 1, 2, and 3), and developed conservation strategies to protect, enhance and restore wild brook trout[10]. This assessment is the most comprehensive analysis of threats to wild brook trout conducted to date. Currently, the EBTJV is revising and updating its current Status and Threats Report[11] based on new survey data provided by each member state (anticipated report completion date in 2014/2015).

Table 1. Primary threats to brook trout across their native US range.

Rank	Disturbance (High or Medium)	Number of Subwatersheds	Percentage of Subwatersheds
1	Poor Land Management	1647	37%
2	High Water Temperature	1629	36%
3	Sedimentation (Roads)	1225	27%
4	One or More Non-Native Fish Species	1189	26%
5	Urbanization	1141	25%
6	Riparian Habitat	1029	23%
7	Brown Trout	853	19%
8	Stream Fragmentation (Roads)	767	17%
9	Dam Inundation/Fragmentation	705	16%
10	Forestry	642	14%
Note: Threats information based on professional opinion of regional experts. Figures do not add to 100% because zero, one, or multiple disturbances may occur in each subwatershed.			

[9] 2005. Maine State Wildlife Action Plan, Chapter 5.0 – Problems, Priority Research, and Survey Efforts; Table 33: Goals, Objectives, Threats, and Strategies for Priority Inland Fish in Maine.
[10] Eastern Brook Trout Joint Venture.2005. Distribution, Status, and Perturbations to Brook Trout within the Eastern United States. Final Report.
[11] Eastern Brook Trout Joint Venture. 2006. Eastern Brook Trout: Status & Threats.

Table 2. Primary threats to brook trout in Maine's lakes and ponds.

Disturbances (High or Medium)	Number of Subwatersheds	Percentage of Subwatersheds
1 or More Non-Native Fish	222	25%
Smallmouth Bass	126	14%
Other Cool/Warmwater Fish (Perch, Sunfish, Muskellunge)	121	14%
Largemouth Bass	109	13%
Dissolved Oxygen	43	5%

Table 3. Non-native fish species in Maine.

Black Crappie	Northern Pike
Blue Gill	Rainbow Trout
Brown Trout	Rock Bass
Central Mudminnow	Rudd
Carp (Koi)	Smallmouth Bass
Emerald Shiner*	Spottail Shiner
Goldfish	Walleye
Green Sunfish	White Catfish
Largemouth Bass	Muskellunge

*The MDIFW does not currently have sufficient information to determine if this species exists or persists in Maine.

3.1 Non-Native Fish

The EBTJV determined that Maine has 185 intact subwatersheds containing brook trout and many other healthy wild brook trout lakes and ponds. These brook trout populations, however, are extremely vulnerable to introductions of non-native fish (Tables 2 and 3) as identified by the EBTJV, the State Wildlife Action Plan – CWCS, and by the MDIFW.

Non-native warmwater and coolwater fish are the primary threat to wild lake and pond brook trout populations throughout the state[12]. Over 30% of Maine's subwatershed populations are greatly reduced, primarily from non-native warmwater species; these species out-compete brook trout, and approximately 25% of Maine's lake subwatersheds that have brook trout are known to be negatively impacted from non-native fish.

The introduction and spread of competing and predatory fish species have had a substantial impact on the present distribution and abundance of Maine's wild brook trout resource. Coolwater and warmwater fish species (i.e. yellow perch, white perch, chain pickerel, northern pike, muskellunge, and smallmouth and largemouth bass) are the most commonly introduced species limiting brook trout populations in Maine.

[12] Bonney, F. 2006. Maine Brook Trout: Biology, Conservation, and Management; Chapter 3: Conserving Maine's Brook Trout. Maine Department of Inland Fisheries and Wildlife technical report.

Both yellow perch and white perch are strong competitors in Maine lakes and ponds and are widely distributed throughout the state. Yellow perch are found in over 800 waters in Maine and are open to commercial harvest. Yellow perch are highly fecund and females can produce over 100,000 eggs annually. Yellow perch compete heavily with brook trout for food resources.

White perch were considered a valuable fish by earlier settlers to Maine and were introduced into many waters where they were not native, thereby increasing the range of this species; they are currently found in over 500 Maine waters. Where conditions are favorable, white perch form very large populations and can dominate the water they inhabit. Their reproductive potential is great and only unfavorable environmental conditions during spawning can limit their population size. White perch compete heavily with brook trout for food resources and large individuals will forage on other fish, including their own species.

Chain pickerel, northern pike, and muskellunge are in the family Esocidae. Species in this freshwater family are distributed throughout the northern hemisphere including Eurasia and North America. Chain pickerel were indigenous to only a few southern Maine waters, but by 1850, had been introduced to other parts of the state and were well established in many brook trout waters. Chain pickerel are highly predatory on brook trout and other native fishes. More recently, northern pike (which are closely related to pickerel but grow much larger) have been illegally introduced into several drainages, and they continue to expand their range through purposeful illegal introduction and natural migration. Northern pike are not native to Maine, having been illegally introduced to the Belgrade Chain of Lakes several decades ago. In 1970, the Canadian government introduced muskellunge into Lac Frontière, Quebec which connects to the Northwest Branch of the St. John River, Maine. Since that time, muskellunge have colonized the entire mainstem St. John River to tidal water in St. John, New Brunswick. Other watersheds with fish passage have been colonized by muskellunge as well, particularly the St. Francis River that forms the boundary between Maine, New Brunswick, and Quebec. Baker Lake was the first Maine water to develop a muskellunge sport fishery in the early 1980’s. Muskellunge are now well established in major tributaries of the St. John River including the Northwest Branch, Southwest Branch, Baker Branch, the Allagash River downstream of Allagash Falls, and the Fish River downstream of Fish River Falls. Muskellunge are increasingly popular with northern Maine anglers during both the ice and open water seasons, due to their large size. MDIFW fisheries biologists and northern Maine anglers have documented declines in wild brook trout populations throughout much of the main-stem St. John River drainage and in the Fish River below Fish River Falls.

Smallmouth bass were established in many coastal drainages by the early 1900's, but the species continues to be illegally introduced into new drainages, including the upper Kennebec and Androscoggin River drainages (including the Rapid River) in the 1980’s, and the St. John River drainage in the 2000’s (they were documented in the Meduxnekeag River drainage, a subdrainage of the St. John River, in the 1990’s). Because smallmouth bass are present above Grand Falls, they are expected to eventually invade all accessible and suitable habitats in the upper reaches of the St. John River drainage, including the lower Fish and Allagash rivers. The rate of illegal bass introductions has recently increased, and is a great concern to MDIFW fisheries biologists, anglers, and others. Largemouth bass introductions continue to increase as well, and populations are now established in the Penobscot River drainage, among others.

3.2 Habitat Degradation and Changing Climate Conditions

In addition to threats from non-native fish species, habitat degradation and changing climate conditions threaten Maine's brook trout resources. Historic and current land use and development continue to degrade and threaten critical brook trout habitat throughout the state; this is of particular concern in northern Maine. In addition, changing climate conditions influence water temperatures, dissolved oxygen content, and may acidify water resources in some areas.

Maine's forests have a long history of land use change associated with commercial wood harvest including extensive modifications to facilitate log driving through streams and rivers. Forestry practices such as dam and road construction, river drives of raw wood (often involving channelization), and harvesting along shoreline riparian zones led to the degradation of trout habitat. Prior to the implementation of environmental laws, the indiscriminate use of large mechanized equipment to harvest timber resulted in the degradation of brook trout habitat through erosion, siltation, and the loss of stream cover, instream habitat, and habitat complexity. Similar losses occurred early in the state's history through widespread clearing for agricultural purposes, especially in the southern and central portions of the state. Loss of habitat as a result of industrial pollution increased in the 19th century and continued well into the 20th century. Although log driving ended statewide over forty years ago, many aquatic habitats within forested lands retain chronic degraded conditions, channel instabilities, and fragmentation between lakes, ponds, and streams resulting from remnant timber dams and poorly designed road crossings. Many of Maine's wild brook trout ponds are artificial and were created by timber dams that still exist in various states of disrepair. These dams fragment watersheds and separate pond and tributary brook trout populations that were historically connected. The state's agricultural, silvicultural, and industrial history resulted in degradation of much of the state's brook trout habitat as well. In most cases (with the exception of southern and central Maine), however, these changes resulted in a decline in brook trout abundance or shifts in local distribution and habitat use, rather than outright extirpation.

The reduction in industrial and municipal pollution in the latter half of the 20th century has resulted in improved water quality and restoration of habitat in *some* of Maine's major rivers. The imposition of environmental regulations designed to protect natural resources also has provided additional protection to all brook trout habitat, including commercial woodlands. Some forestry companies have voluntarily exceeded regulatory standards in order to protect fisheries resources; in recent years some commercial landowners have showed a desire to partner with MDIFW to restore degraded fisheries habitat. For example, the Maine Department of Agriculture, Conservation and Forestry, in partnership with MDIFW, developed guidance on placing large wood in streams to enhance instream cover and habitat for brook trout. The MDIFW has also developed *Forest Management Recommendations for Brook Trout* that include:

> "Potential harmful impacts to fish and wildlife may be further minimized by designating low impact "riparian management zones" adjacent to streams and stream-associated fringe and floodplain wetlands in forest management and harvest plans. Smaller streams may be greatly influenced by land management

practices; these systems benefit the most from well managed and intact riparian corridors.

The MDIFW also recommends limiting the harvest of trees and alteration of other vegetation within 100 feet of streams and their associated fringe and floodplain wetlands to maintain an intact and stable mature stand of trees, characterized by heavy crown closure (at least 60 – 70%) and resistance to wind-throw. In some situations wider buffers should be considered where severe site conditions (e.g., steep slope, vulnerable soils, poor drainage, etc.) increase risk to soil and stand stability. Any harvest within the riparian management zone should be selective with a goal of maintaining relatively uniform crown closure."

Brook trout are not afforded any special state or federal regulatory protection from forestry operations, so these management recommendations are advisory. Therefore, the MDIFW also recommends forestry companies follow *Best Management Practices for Forestry*[13], which offers guidance on managing and protecting water quality, installing road-stream crossings, and providing fish passage. Despite diverse and destructive historic land use practices, Maine is still considered to have the most intact, lake and pond brook trout populations throughout their native US range[14].

The acidity, or pH, of Maine's waters has historically been suitable for brook trout. There was concern about the possibility of declining pH levels (high acidity) to negatively affect brook trout after several surrounding states documented acidified water conditions resulting from acid rain. Following extensive water testing by the US Environmental Protection Agency and the Maine Department of Environmental Protection, available data is inadequate to determine whether there has been any impact from acidic precipitation on fisheries in Maine. These agencies continue to monitor water quality conditions in Maine.

As a result of changing climatic conditions, regional experts have identified increasing water temperatures and associated decreasing dissolved oxygen concentrations as potential impacts to many Maine brook trout waters. In streams, the distribution and abundance of brook trout will decline if water temperatures increase beyond that of trout's upper thermal tolerance (> 68°F). Warmer lake and pond temperatures may cause earlier and longer temperature stratifications, which could reduce dissolved oxygen concentrations and cause "summer kills". If water temperatures rise and dissolved oxygen levels decrease beyond brook trout tolerances, brook trout will not compete effectively for food, space, and habitat, particularly in the presence of non-native species that are more broadly adapted to varying conditions. The protection of high-elevation cold water resources and riparian habitat, and the removal of barriers between stream and pond populations, are essential for the long-term maintenance of brook trout populations.

[13] 2004. Maine Department of Agriculture, Conservation and Forestry; Forest Policy and Management Division. Best Management Practices for Forestry: Protecting Maine's Water Quality.
[14] 2006. Eastern Brook Trout: Status and Threats.

3.3 Baitfish Introductions

The inadvertent or intentional release of minnow species, rainbow smelt, and suckers (these groups of fish are commonly used for baitfish in most parts of Maine, particularly by ice anglers) may pose a threat to Maine's wild brook trout populations where they become established. Brook trout populations in small (< 200 surface acres) ponds with simple fish assemblages are particularly vulnerable to new baitfish introductions. This is because the probability of habitat overlap, with attendant competition and predation pressures, is much higher in these confined environments.

Conversely, wild brook trout populations residing in large, interconnected lake systems are generally less vulnerable to new baitfish introductions. In most cases, these brook trout populations co-evolved in sympatry (together) with many native minnow species and white and/or longnose suckers, and the opportunity for direct interaction with new minnow species is generally less due to the size, diversity, and complexity of these habitats.

MDIFW has actively addressed the threat to wild brook trout from baitfish introductions for many decades. All A List waters, and the majority of wild brook trout waters, are regulated with a prohibition on the use and possession of live fish as bait or artificial lures or fly fishing only restrictions. In fact, most of these waters were managed with these regulations prior to enactment of P.L. 2005 c.180 and the establishment of the A and B Lists. The few remaining wild brook trout waters without this protection are primarily 34 larger lakes where brook trout have for many years been managed in conjunction with other coldwater gamefish species (especially lake trout [togue] and landlocked salmon), and where there is a tradition of ice fishing. Wild brook trout populations and their fisheries are not as threatened by live bait usage in these 34 larger lakes; managing for wild brook trout on these waters is a management priority, as is maintaining principal fisheries for other coldwater gamefish species. Therefore, these waters do not meet the intent of P.L. 2013 c. 358 § 8 and are not proposed for inclusion on the State Heritage Fish List as outlined in Section 4.1.

Perhaps the most significant threat associated with the use and possession of live baitfish is the presence of illegal bait species in the baitfish market. The presence in the bait supply of perch, bass, or sunfish species, and northern pike, black crappie, etc., would negatively impact wild trout production if they became established in brook trout waters through intentional or inadvertent release. MDIFW has worked proactively with anglers and bait dealers to minimize or eliminate this threat. Winter inspections (usually with Wardens present) of baitfish wholesalers and retailers have been ongoing since the 1990's, but occurred less frequently in earlier years. For example, in 1987-88, 149 bait dealer inspections were conducted with the Warden Service; only 4 instances of illegal baitfish were documented. This inspection program has served to raise the awareness among commercial harvesters, dealers and others involved in the baitfish business of their obligation under the law to use and sell only legal baitfish species. The inspection program has clearly been effective in significantly reducing the presence of illegal baitfish in the marketplace. Since 2001, only 10 of 544 bait shop inspections found dealers holding illegal bait (Table 4), and there has been only a single incident since 2006. In addition, the MDIFW has designed, and vigorously promoted, educational and informational materials to raise public awareness of Maine's baitfish laws.

Maine's regulatory structure for management of baitfish is among the most rigorous in the United States. In 1959, the legislature enacted a law prohibiting the importation of live baitfish into Maine. The law was intended to prevent the spread of parasites to Maine's rainbow smelt populations in inland waters. Current laws are designed to protect native ecosystems from disease, parasites, and from non-native fish species. Maine law lists which fish species may be legally used as live bait (currently restricted to 22 species in addition to rainbow smelt which are considered both a gamefish and a baitfish). Maine law prohibits the importation of live baitfish, so all live baitfish used in Maine must be either taken from the wild or reared in captivity within the state. Licenses are required to capture and sell baitfish commercially in Maine. In addition, Maine law prohibits the transport of live fish (except baitfish and smelts), prohibits the dumping of unused baitfish into any waterway, and imposes severe penalties for persons convicted of illegal fish stocking. Recreational angling, baitfish wholesaler, live bait retailer or smelt wholesaler licenses all permit the license holder to possess, hold, and transport legal live baitfish or smelt.

Table 4. Number of MDFIW Dealer Inspections by Year[15].

Year	# Inspections	# Shops with Illegal Baitfish
2001	8	0
2002	82	6
2003	94	2
2004	43	0
2005	23	0
2006	7	1
2007	68	0
2010	61	0
2011	75	0
2013	83	1
All years	**544**	**10**

[15] Since 2001, the MDIFW has conducted 544 inspections. Within that timeframe, 10 inspections (1.8%) found dealers holding illegal species. Species infractions were found in 2002 (6 inspections), 2003 (2 inspections), 2007 (1 inspection), and 2013 (1 inspection). Illegal species found during dealer inspections include: pumpkinseed sunfish, brown bullhead, stickleback species, yellow perch, northern pike, and sunfish. The most common infraction observed since 2001 is dealers conducting business without a proper license or not adequately displaying their license. Twenty infractions of this type have been found since 2001. The MDIFW did not conduct Dealer Inspections in 2008 and 2009.

3.4 Stocking of other Salmonid Species

In Maine, brook trout may compete with other species of fish, including other coldwater species such as togue, landlocked salmon, and lake whitefish, where habitat and/or food resources are limited. MDIFW data, and data from other states and provinces, suggest that wild brook trout production is maximized where they reside alone or with a limited assemblage of non-predatory fish. However, the MDIFW notes that brook trout co-evolved with togue, whitefish, arctic charr, and migratory Atlantic salmon and have continued to coexist and thrive with these species in many Maine lakes for thousands of years. The MDIFW further notes that self-sustaining, wild landlocked salmon and brook trout have existed in sympatry for more than 100 years in many lakes and ponds in northern and western Maine.

The MDIFW currently maintains stocking programs for togue, landlocked salmon, and lake whitefish in 13 wild brook trout lakes. The objective of these stocking programs is to provide diverse fishing opportunities for Maine anglers, which is an important obligation of the MDIFW. Most of these stocking programs support popular, well established sport fisheries that are of significant value to local or regional anglers. In addition, lake whitefish have been recently stocked in several wild brook trout waters as a means of restoring depleted native stocks. These 13 wild brook trout waters are primarily larger lakes where brook trout have, for many years, been managed in conjunction with other coldwater gamefish species (especially togue and landlocked salmon), and where there is a tradition of ice fishing. Brook trout populations and their fisheries are not threatened by current salmonid stocking programs; managing for wild brook trout on these waters is a management priority, as is maintaining principal fisheries for other coldwater gamefish species. Therefore, these waters do not meet the intent of P.L. 2013 c. 358 § 8 and are not proposed for inclusion on the State Heritage Fish Waters list as outlined in Section 4.1.

Stocking other salmonine (i.e. “true” trout and salmon species of the subfamily Salmoninae, excluding whitefish, which are in the subfamily Coregoninae) species where wild brook trout exist, as described above, could introduce competition with wild brook trout populations and reduce their production, though this is very difficult to demonstrate with a high degree of scientific fervor. The MDFIW’s extensive fishery survey efforts on wild brook trout lakes have not documented the extirpation or significant depression of wild brook trout in the presence of other stocked salmonines. In many waters, such as Millimagasset Lake in northern Penobscot County, where togue and/or salmon may be stocked at low levels to support popular fishing opportunities and achieve size quality objectives, wild brook trout populations remain robust with all age-classes present.

4.0 Proposed Plan for Managing State Heritage Fish Waters

4.0 Proposed Plan for Managing State Heritage Fish Waters

The MDIFW recognizes the unrivaled ecological, cultural, and economic importance of Maine's brook trout resource, and strives to conserve and protect this unique natural resource. The primary objective in managing native and wild brook trout fisheries in lakes and ponds shall continue to be to maintain current, self-sustaining fisheries, in so far as possible, without resorting to stocking domesticated and/or non-heritage strain brook trout.

The MDIFW proposes to merge the A and B Lists to: 1) renew focus on protecting Maine's most outstanding brook trout resources by applying A List management (Title 12, §12461) to select wild brook trout waters (B List); and 2) recognize the significant cultural and economic value of sport fisheries for other native coldwater species. A suggested process for merging these lists is outlined in Section 4.1. The resulting list would be titled "State Heritage Fish Waters," which already includes 10 waters (6 A List, 4 B List) containing native arctic charr (a designated State Heritage Fish). Four other arctic charr waters are not proposed for inclusion because they have recent or active stocking programs for other species or because they are closed to all fishing.

If this process for merging the A and B Lists is adopted, current management policies (Appendices 1 and 2) and the Strategic Brook Trout Management Plan (Appendix 3) would be revised accordingly.

NOTE: The A List has been amended several times since its inception in 2005, whereby 35 waters have been added to the original list (via new pond surveys).

- The A List currently (January 2014) totals 340 waters (addition of waters to the A List currently does not require the major substantive process as established in Title 12 §12461).
- The MDIFW has concluded that 16 A List waters should be removed entirely from any list, however, because these 16 A List waters are either fishless or do not contain brook trout.
- Furthermore, of those 16 A List waters, 5 waters have been identified to not exist as lakes or ponds based on recent biological surveys (removal of waters from the A List is major substantive and currently requires legislative approval).
- In summary, the proposed A List removal changes would need to be approved by the Joint Standing Committee on Inland Fisheries and Wildlife in order to finalize the State Heritage Fish Waters list.
    - The MDIFW intends to proceed with rule making during summer 2014 and will bring those 16 waters for removal forward to the JSC in January 2015.

4.1 Waters Not Identified for Inclusion on the List of State Heritage Fish Waters

Maine's wild brook trout resources are important because they are entirely self-sustaining and adapted to their local conditions, so most of these populations warrant the application of A List management strategies. As noted in Section 3.4 however, brook trout populations and their fisheries are not threatened by current salmonid stocking programs; managing for wild brook trout on these waters is a management priority, as is maintaining principal fisheries for other coldwater gamefish species. Therefore, these waters do not meet the intent of P.L. 2013 c. 358 § 8 and are not proposed for inclusion on the State Heritage Fish Waters list.

- Wild brook trout waters, where interspecific stocking programs for lake whitefish, landlocked salmon, togue, or where restoration programs for native species are contemplated or ongoing (13 waters; Table 5), will not be considered for inclusion on the State Heritage Fish Waters list.
- In addition, wild brook trout waters where live fish as bait is permitted will also not be considered for inclusion on the State Heritage Fish Waters list (34 waters; Table 5).
- Because many of these wild brook trout waters have interspecific stocking programs and also live fish as bait is permitted, a total of 38 combined waters will not be included on the State Heritage Fish Waters list (Table 5).
- These 38 waters are not included on the State Heritage Fish Waters list because, while they have wild, self-sustaining brook trout populations, the MDIFW maintains diverse fishing opportunities including unrestricted bait use, and these fishing opportunities are recognized for their economic benefit to Maine.
- These 38 wild brook trout waters would be managed appropriately according to existing policies for protecting Maine's native and wild salmonids (Appendix 2).

4.2 Proposed Listing Criteria for Future Amendments to State Heritage Fish Waters

The MDIFW will continue to maintain a current list of State Heritage Fish Waters. This list will be reviewed when necessary when new biological information are available and if appropriate, recommendations will be made for amending the list, based on the following criteria:

1) Lakes and ponds with self-sustaining[16] brook trout populations that are sufficiently high in abundance to sustain fishing quality and are readily captured by anglers and by scientific sampling methods during biological surveys. If brook trout presence is only seasonal, then the water's direct drainage system should provide habitat for all life stages during all life history periods.

4.3 Proposed Process for Amending the List of State Heritage Fish Waters

For each water proposed to be added to or removed from the State Heritage Fish Waters list, a summary report will be developed by the MDIFW Regional Biologist describing the water's physical and biological characteristics as they relate to wild brook trout production capabilities, historic and current management programs, and present public use, if available. Each summary report will be evaluated by a review team consisting of 1) the Regional Fisheries Biologist proposing the addition/deletion; 2) the Fisheries Management Supervisor; 3) the Coldwater Fisheries Biologist; and 4) the Research and Assessment Fisheries Lead in Bangor. The review team will provide their recommendations for change in writing to the MDIFW Fisheries Director. The Department will then initiate the major substantive or routine technical process for consideration as established in Title 12 §12461 and §12462.

In State Heritage Fish Waters where natural reproduction and recruitment of brook trout becomes compromised due to local changes in habitat conditions, fish assemblage, etc., fisheries may be provided by planting hatchery-reared or transplanted wild brook trout (in the case of pond reclamations) as outlined in MDIFW's stocking policy regarding native and wild salmonids

[16] A self-sustaining population relies entirely on natural reproduction; that is, stocking is not required to support the population and sustain viable sport fisheries.

(Appendix 2). Any direct stocking of a State Heritage Fish Waters will be subject to the same peer and major substantive or routine technical process processes outlined in Appendix 2 and in Title 12 §12461 and §12462, respectively.

A decision to stock would, however, warrant immediate removal from the State Heritage Fish Waters list until it is deemed that the water meets the proposed criteria outlined in Section 4.2.

4.4 Policy

MDIFW's current Administrative Policy for Managing Maine's Native and Wild Salmonids (Appendix 2), Strategic Management Plan (Appendix 3), and EBTJV plans and assessment information continue to be an effective approach to preserve, protect, and enhance wild trout and other coldwater fisheries in the State. These policies and documents shall collectively serve as the guiding documents for managing all native and wild brook trout.

Public Involvement

Public working groups will be established during the strategic planning process to assist the MDIFW in developing broad goals and objectives for fishing opportunities and/or conservation. Whenever practical, partnerships and volunteers will be employed to assist in the implementation of management programs. The Department will develop a guiding document outlining the process for public working groups and strategic species planning.

Table 5. Wild brook trout waters not identified for inclusion on the State Heritage Fish Waters list. Thirteen (13) waters support principal fisheries for wild brook trout and other salmonids such as landlocked salmon, togue, and/or lake whitefish maintained through stocking. In addition, unrestricted bait usage is permitted on 34 of these waters.

WATCODE	NAME	TOWN	COUNTY	REGION	INTERSPECIFIC STOCKING/LIVE FISH AS BAIT
3276	B POND	UPTON	OXFORD	D	Interspecific
5104	SPENCER L	HOBBSTOWN TWP	SOMERSET	D	Both
3102	UMBAGOG L	MAGALLOWAY PLT	OXFORD	D	Unrestricted Bait
4120	BRASSUA L	ROCKWOOD STRIP-EAST	SOMERSET	E	Both
2882	CHAMBERLAIN L	T07 R13 WELS	PISCATAQUIS	E	Unrestricted Bait
0800	LONG POND	T7 R9 NWP	PISCATAQUIS	E	Interspecific
2710	TELOS L & ROUND P	T06 R11 WELS	PISCATAQUIS	E	Unrestricted Bait
0410	WILSON P (UPPER)	BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	Interspecific
2950	SPENCER POND (LITTLE)	EAST MIDDLESEX CANAL GRANT TWP	PISCATAQUIS	E	Unrestricted Bait
0984	JO-MARY L (LOWER)	T01 R10 WELS	PISCATAQUIS	F	Unrestricted Bait
2718	WEBSTER L	T06 R10 WELS	PISCATAQUIS	F	Unrestricted Bait
1598	CARR P	T13 R08 WELS	AROOSTOOK	G	Unrestricted Bait
2856	CHURCHILL L	T09 R12 WELS	PISCATAQUIS	G	Unrestricted Bait
1938	CLEAR L	T10 R11 WELS	PISCATAQUIS	G	Unrestricted Bait
1674	CROSS L	T17 R05 WELS	AROOSTOOK	G	Both
1634	EAGLE L	EAGLE LAKE	AROOSTOOK	G	Unrestricted Bait
2858	EAGLE L (BIG)	EAGLE LAKE TWP	PISCATAQUIS	G	Unrestricted Bait
1954	HUDSON P (LOWER)	T10 R10 WELS	PISCATAQUIS	G	Interspecific
1682	LONG L	T17 R04 WELS	AROOSTOOK	G	Both
1578	MACHIAS L (LITTLE)	NASHVILLE PLT	AROOSTOOK	G	Unrestricted Bait
3004	MILLIMAGASSETT L	T07 R08 WELS	PENOBSCOT	G	Both
4156	MILLINOCKET L	T07 R09 WELS	PISCATAQUIS	G	Unrestricted Bait
1914	MUSQUACOOK L (1ST)	T12 R11 WELS	AROOSTOOK	G	Unrestricted Bait
1916	MUSQUACOOK L (2ND)	T11 R11 WELS	AROOSTOOK	G	Both
1918	MUSQUACOOK L (3RD)	T11 R11 WELS	AROOSTOOK	G	Unrestricted Bait
1602	PORTAGE L	PORTAGE LAKE	AROOSTOOK	G	Unrestricted Bait
1008	PORTLAND L	BRIDGEWATER	AROOSTOOK	G	Unrestricted Bait
1888	ROSS L	T10 R15 WELS	PISCATAQUIS	G	Unrestricted Bait
1774	SAINT CROIX L	ST CROIX TWP	AROOSTOOK	G	Unrestricted Bait
1610	SAINT FROID L	WINTERVILLE PLT	AROOSTOOK	G	Unrestricted Bait
2758	SPIDER L	T09 R11 WELS	PISCATAQUIS	G	Unrestricted Bait
1672	SQUARE L	T16 R05 WELS	AROOSTOOK	G	Unrestricted Bait
0009	FISH RIVER L	T14 R08 WELS	AROOSTOOK	G	Unrestricted Bait
1892	LONG L	T11 R13 WELS	AROOSTOOK	G	Unrestricted Bait
1680	MUD L	T17 R04 WELS	AROOSTOOK	G	Unrestricted Bait
1646	SLY BROOK L (THIRD)	NEW CANADA	AROOSTOOK	G	Both
1530	TOGUE P	T15 R09 WELS	AROOSTOOK	G	Both
1896	UMSASKIS L	T11 R13 WELS	AROOSTOOK	G	Both

5.0 Future Public Working Group Discussion Topics

6.0 Future Public Working Group Discussion Topics

The following are identified by the MDIFW and the brook trout and baitfish working groups as important topics that require additional discussion and consideration prior to implementation.

Managing Wild Trout Waters Not Included on State Heritage Fish Waters

- For those wild brook trout waters not identified for inclusion on the State Heritage Fish Waters list, additional protective measures could be applied. For example, on the 34 waters where live fish as bait is permitted (identified Section 4.1 and in Table 5), a limited number of easily identifiable and common baitfish species known to occur in each water *could* be permitted for use in certain drainage, such as the Allagash Wilderness Waterway or the Fish River Lakes drainage.

- Commercial and/or personal storage of baitfish *could* also be prohibited on the 38 wild brook trout waters that combined permit use and possession of live fish as bait and maintain interspecific stocking programs.

- Lake-specific or watershed-specific management plans for these 38 total wild brook trout waters *could* be developed that align with MDIFW's wild brook trout management goals and objectives, and that also address public concerns and expectations.

Additional Criteria for Amending Wild Brook Trout in State Heritage Fish Waters

- Lakes and ponds that may have been indirectly stocked may be included, if in the judgment of MDIFW hatchery influence was likely minimal.
    - This determination will be made on the basis of several landscape features including, but not limited to, location in the drainage, configuration of the inlets and outlets, and distance from waters where brook trout were or are currently stocked, and distance from waters where brook trout were or are currently stocked, as well the nature and duration of historic stocking programs.

6.0 Brook Trout Management Priorities and Strategies

Given the MDIFW's legislative mandate to preserve, protect and enhance Maine's fishery resources, it shall be the MDIFW's goal to continue to identify and protect native and wild brook trout waters by applying the following management priorities and strategies[17]:

PRIORITY 1: Identification

Address data gaps and informational needs on the distribution, abundance, and status of brook trout. Address gaps in our understanding of life history, productivity, mortality, habitat requirements, limiting factors, interactions with other species, and conservation needs.

Short Term Goals

1.1 Determine the status of wild brook trout in watersheds lacking adequate or contemporary data.

Strategy 1.1.1. Identify conservation/management units based on the scale of biological processes. Describe and characterize the genetic relationships of Maine's wild lake, pond, and associated tributary brook trout with adequate representation from all seven major river drainages as funding and staffing levels permit.
Strategy 1.1.2. Continue to determine wild brook trout status in unsurveyed ponds where current wild brook trout status is unknown. This can be accomplished through ongoing remote pond surveys via partnerships with Trout Unlimited, Maine Audubon, and/or other organizations.

1.2 Develop statewide GIS data layers for wild brook trout management and conservation planning purposes.

Strategy 1.2.1. Continue developing a series of GIS data layers displaying wild brook trout status, overall habitat quality, geomorphic condition[18], and critical areas for conservation and management.
Strategy 1.2.2. Continue efforts at digitizing and converting useful historical information to GIS formats.

Long Term Goal

1.3 Maximize the contribution of wild brook trout stocks to the fishery.

Strategy 1.3.1. Manage native and wild brook trout populations consistently by adhering to law (Title 12, §12461) and MDIFW policies. No inter- or intraspecific predator, prey, or competitor fish species from any hatchery or wild source shall be stocked directly in State Heritage Fish Waters (proposed in Section 4.0 of this plan) unless necessary for restoration purposes for native salmonids or reclamation projects to reestablish wild brook trout fisheries.

[17] Priorities and strategies are adapted from those presented in the 2005 Maine State Wildlife Plan CWCS, the 2006 EBTJV Status and Threats Report, and the 2009 MDIFW Brook Trout Management Plan and 2010 revised Fisheries Division policies.
[18] The classification and condition of stream channel types. This contributes to rating stream stability.

Strategy 1.3.3. For brook trout lakes and ponds, continue to evaluate angling regulatory efficacy by comparing the size quality at age for fish sampled from waters with differing regulatory severity.
Strategy 1.3.4. Increase effort to collect angler use and harvest rates, as well as brook trout population statistics, for management areas that are under-represented in current assessment programs, such as LUPC's Remote Ponds.
Strategy 1.3.5. Prevent, eradicate or control the detrimental effects caused by the intrusion of non-native and/or competitive aquatic species into native and wild brook trout waters. Obtain basic biological information, including habitat use in brook trout watersheds, for non-native species (e.g., northern pike, muskellunge, etc.) as staff resources permit. Utilize volunteer anglers to collect basic fishery metrics on non-native species.

PRIORITY 2: Habitat Protection

Addresses threats to brook trout habitat due to alteration and degradation, conversion, fragmentation, introduction of non-native species, pollution, etc. The MDIFW shall encourage the protection of brook trout habitat by continuing to work with landowners, conservation organizations, and local groups to restore and enhance brook trout habitat and fish passage where feasible, to include:

a) Reconnecting State Heritage Fish Waters with their tributary networks where appropriate and feasible; and
b) Monitoring water quality in wild brook trout waters, as appropriate.

Short Term Goals

2.1 Restore natural flow and habitat conditions to A and B list pond tributaries

Work with landowners, land managers, and conservation groups to restore or enhance tributary stream conditions and natural flow regimes.

Strategy 2.1.1. Identify barriers to fish passage and re-establish habitat connectivity where possible.
Strategy 2.1.2. Prevent the intrusion of non-native aquatic species into previously uncolonized habitats:

a) Where natural landform provides strategic opportunities for selective barrier placement, where feasible;
b) Consider use of chemical reclamation to remove non-native species, where feasible;
c) Where non-native species negatively impact wild brook trout populations, the MDIFW will consider harvest and terminal tackle restrictions to better protect the brook trout populations. In addition, the MDFIW will evaluate opportunities to implement seasonal closed areas for fishing to protect critical habitat (e.g., springs during summer, tributaries during pre-spawn staging sites, spawning sites, etc.).
d) Clarify, and if required, promulgate rules that prohibit commercial and/or personal storage of baitfish on State Heritage Fish Waters.

e) Data is needed to determine if angler possession of illegal bait species is an actual threat to wild trout management. The Fisheries Division and Warden Service will develop a study plan to inspect angler bait during winter creel surveys to determine the frequency of illegal bait species. The MDIFW shall develop a comprehensive bait inspection process at the commercial wholesale and retail levels to ensure warmwater species are not in the bait inventory (zero tolerance). Each dealer will be inspected by the Warden Service and Fisheries Division at least once during each winter. Accurate records will be kept regarding frequency of illegal or non-native species. The Warden Service will continue to place emphasis on apprehending the intentional illegal stocking of warmwater species such as black bass, crappie, pike, muskellunge, etc.

2.2 Identify critical areas and habitats for conservation planning and land protection, such as pursuing conservation easements.

Strategy 2.2.1. Continue to identify critical spawning, nursery, thermal, and winter refuge[19] habitats for conservation. Continue to implement seasonal closed fishing areas based on these data.
Strategy 2.2.2. Develop non-regulatory habitat management guidelines for priority brook trout habitats for distribution to landowners, land managers towns, land trusts, and others.

Long Term Goals

2.3 Permanently protect critical habitats.

Strategy 2.3.1. Establish collaborative partnerships with State, Federal, Tribal and private entities for the permanent conservation of critical brook trout habitats and refuges. The permanent protection of riparian corridors is critical to our remote brook trout resources.

2.4 Restore degraded brook trout habitats.

Strategy 2.4.1. Increase collaborative partnerships with State, Federal, Tribal and private entities to implement stream restoration projects, with a focus on restoring habitat connectivity for wild brook trout and other native fishes.
Strategy 2.4.2. Monitor efficacy of implemented projects for ecological responses and indicators of success.

2.5 Prevent continued degradation of brook trout habitats

Strategy 2.5.1. Investigate the feasibility of increasing the level of enforcement of existing rules regarding illegal introductions of competitor and predator fish species;
Strategy 2.5.2. Negotiate with stakeholders in development of water use, flow, and groundwater withdrawal agreements.
Strategy 2.5.3. Work with landowners to continue development of riparian use practices that protect or restore stream bank stability, eliminate erosion and sedimentation concerns, maintain

[19] Refuges are specific areas where trout congregate to alleviate stressful seasonal conditions.

riparian shading and thermal regimes, and reduce rapid precipitation runoff. Reconnect State Heritage Fish Waters with their tributary networks where appropriate and feasible.

PRIORITY 3: Outreach and Education

Provide information to increase the public's understanding of the needs and requirements of wild brook trout, and to raise the public's awareness of the threats to wild brook trout and their habitats. The MDIFW shall renew the Information and Education Division's effort to educate the public about the impacts of spreading warmwater fish and species like rainbow smelt into waters containing native coldwater fisheries.

Short Term Goals

3.1 Raise public awareness of Maine's wild brook trout resources.

Strategy 3.1.1.

The MDIFW proposes additional actions to minimize illegal bait introductions. Specifically:

- The Fisheries Division and Warden Service will develop a study plan to inspect angler bait during winter creel surveys to determine the frequency of illegal bait species being purchased and used as bait.
- The Fisheries Division will provide training to the Warden Service, commercial bait harvesters, bait dealers, and retailers so that all Department staff and the public can accurately identify baitfish species and differentiate legal from illegal species.
- The MDIFW could evaluate the development of a comprehensive bait inspection process at the commercial wholesale to ensure warmwater species are not in the bait inventory (zero tolerance). Each dealer could be inspected by the Warden Service with the Fisheries Division at least once during each winter. Accurate records could be kept regarding frequency of illegal or non-native species.
- The Warden Service will continue to place increased emphasis on apprehending the <u>intentional</u> illegal stocking of warmwater species such as black bass, crappie, pike, muskellunge, etc.
- The Department will develop interactive Public Service Announcements (PSAs) via social media (e.g., Twitter, Facebook, YouTube) and other printed material addressing baitfish species identification, species interactions, laws, etc.

Strategy 3.1.2. Advertise Maine's brook trout resource through the MDIFW's Public Information and Education Division, the Maine State Office of Tourism, and/or other outlets to emphasize appropriate management and harvest strategies, respect for landowner rights, and the physical beauty of the setting of many of Maine's brook trout waters.
Strategy 3.1.3. Encourage volunteer and school group participation in assessment and monitoring programs when and where feasible and appropriate.

3.2 Foster public/private collaborative stewardship of brook trout resources

Strategy 3.2.1. Continue public education efforts highlighting the permanent ecological repercussions associated with illegal fish stockings.
Strategy 3.2.2. Contribute toward public policy that includes brook trout population health and sustainability as positive indicators toward improving or enhancing environmental quality.

PRIORITY 4: Recreational Fishing

The MDIFW supports the right for anglers to access all publicly owned waters. A policy of appropriate access, consistent with the strategies delineated in Maine's Public Access Plan[20], is recommended. Undeveloped access is recommended on selected waters (including Remote Ponds) to preserve the wilderness fishing experience.

Goals

4.1 Optimize brook trout angling opportunities.

Strategy 4.1.1. Continue to gain appropriate public access rights over private ways by purchase, negotiation and agreement, easement, gift, cooperation with landowners, and by encouragement of private groups and enterprises.

4.2 Monitor Maine's wild brook trout waters to maximize angling opportunities for principal fisheries.

Strategy 4.2.1. Continue ongoing evaluation of brook trout populations in lakes, increasing sampling frequency when necessary to yield age and growth information, abundance estimates, and catch and harvest estimates. Provide information on:

1) Population metrics:
    a. Biometrics
    b. Recruitment
    c. Effects of climate conditions on populations (in cooperation with EBTJV)
    d. Long term information on population trends
2) Detailed background information if regulation changes occur.
3) Angler use estimates when funding and staff time are available.
4) Provide the opportunity for future detailed studies, such as:
    a. Cohort annual survival
    b. Spawning (shoreline vs. tributary)
    c. Immigration/emigration studies

Strategy 4.2.2. Determine angler demand and attitudes through use of the statewide angler questionnaire every fifth year.
Strategy 4.2.3. Continue systematic statewide sampling regime for estimating angler use, harvest, and fishing quality for lotic habitats.
Strategy 4.2.4. Implement, review, and update fishing regulations to:

[20] Strategies For Addressing Site Acquisition, Development, and Management Issues (pp 43-58), in: Strategic Plan For Providing Public Access To Maine Waters For Boating and Fishing. Maine Departments of Conservation and Inland Fisheries and Wildlife, March 1995.

1. Maintain sustainable wild brook trout populations;
2. Protect a portion of the older population from harvest to maintain genetic diversity;
3. Provide management standardization where possible to achieve management consistency between A and B List waters where appropriate;
4. Account for the diversity of growth rates of salmonid populations among the state's waters; and
5. Provide diversified angling opportunity.

Appendix 1

MDIFW Policy Regarding the Addition and Removal of Lakes and Ponds to the Wild Brook Trout List

Maine Department of Inland Fisheries and Wildlife, Division of Fisheries:

Policy Regarding the Addition and Removal of Lakes and Ponds to the Wild Brook Trout List
May 4, 2010

On April 12, 2005 The Joint Standing Committee on Inland Fisheries and Wildlife (JSC) voted OTP-A on LD 1131 (An Act to Recognize and Protect the Native Eastern Brook Trout as one of Maine's Heritage Fish). The JSC also directed the Department of Inland Fisheries and Wildlife (MDIFW) to review 180 waters identified during the public hearing and work session as "wild brook trout waters" and to report back before February 6, 2006 on the suitability for inclusion of these waters on the list of 295 native waters.

From the 2006 work session the committee, "*determined that wild brook trout waters, while not entirely isolated from the impacts of stocking and thus not eligible for inclusion on the list of "A" waters, are nevertheless an important resource worthy of special consideration. Therefore, the primary intent in managing wild brook trout in lakes and ponds ("B" Waters) shall be the maintenance of these fisheries, in so far as possible, without resorting to stocking brook trout*."

This document outlines the procedures that MDIFW Fisheries staff must adhere to when adding or removing waters to the Wild Brook Trout List ("B" List).

I) Addition of Lakes and Ponds

Annually, by March 31st of each year, MDIFW's Lake Inventory and Stocking databases will be queried to identify additional lakes and ponds that:

1. Provide a principal fishery for brook trout
2. Support a brook trout population based on natural reproduction
3. Have not been directly stocked with brook trout for at least 25 years. (Current year minus 25 years determines the cut-off year.)

When new, eligible lakes and ponds are identified from the annual query, regional biologists that oversee the specific waterbodies will be asked to determine if a water should be added to the list. Any decision must be supported by existing data on that water. Data to be reviewed for each eligible water should include, to the extent available: fish samples, water quality, stocking database, habitat surveys, and angler creel survey information.

Based upon the recommendations and information provided by the regional biologists, MDIFW Fisheries Administrators will make the final determination regarding a water's eligibility for inclusion on the Wild Brook Trout List.

II) Removal of Lakes and Ponds

1. Change in Status (non-stocking related)

Change in status for a waterbody can occur when the water no longer has a principal fishery for brook trout, as determined by:

- Brook trout are no longer present in the lake or pond.
- The presence of competing/predatory fish species prevents management for wild brook trout.
- Water quality that is no longer suitable for providing a principal fishery for brook trout based on natural reproduction.
- Inadequate brook trout spawning and nursery habitat.

Adequate justification must be provided through the presentation of current data (within last 10 years) based on one or more of the following sampling techniques: fish sampling, water quality sampling, habitat assessment, and angler data.

Before a waterbody is removed from the Wild Brook Trout List the regional biologist must carefully consider the following strategies for maintaining or increasing the wild brook trout population present in the waterbody. The strategies to be considered are:

- Manipulation of angling regulations.
- Habitat restoration/enhancement.
- Removal/control of predator/competitor populations.
- Restoration/enhancement of forage organisms.
- Control/elimination of disease/parasites.
- Other feasible (non-stocking) management strategies.

If, after thorough review, it is determined that no practical strategies are available to retain or restore a principal fishery for wild brook trout, the waterbody will be removed from the Wild Brook Trout List. At this time the regional biologist will present the new management goals for the waterbody.

2. Approved Stocking

When a currently listed Wild Brook Trout lake or pond has gone through the existing stocking proposal policy[1] and a decision has been made to stock the water with brook trout, the waterbody will be removed from the Wild Brook Trout List.

3. Accidental Stocking

Any accidental stocking of a Wild Brook Trout List lake or pond will immediately remove the water from the list.

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[1] As detailed in the February 14, 2006 report entitled "Managing Maine's Wild Brook Trout Fisheries in Lakes and Ponds, A Report to The Joint Standing Committee on Inland Fisheries and Wildlife.

Appendix 2

Section H, Chapter 6

POLICIES FOR SPECIES MANAGEMENT

Native and Wild Salmonids

H6. POLICIES FOR SPECIES MANAGEMENT

H6.1 Endangered or threatened fish populations

No action will be taken which poses unreasonable risk to recovery efforts for state and federal Threatened or Endangered species. Management of Threatened or Endangered species will be directed towards their recovery. Management strategies may include habitat protection and restoration, special law enforcement details, research directed at determining factors limiting recovery, stocking of suitable habitats, information and education programs leading to appreciation and support of the species and support for the recovery effort. A high priority shall be placed on securing funds to conserve these species.

H6.2 Native Salmonids

Maine's native salmonids represent unique, valuable and irreplaceable ecological and angling resources. The Department of Inland Fisheries and Wildlife recognizes the historic and economic importance of Maine's native salmonids and, furthermore, focuses on conserving and protecting these aquatic resources.

Native salmonid populations are naturally occurring, self-sustaining populations of landlocked salmon (*Salmo salar*), lake trout (*Salvelinus namaycush*), arctic char (*Salvelinus alpinus oquassa*), and brook trout (*Salvelinus fontinalis*) that have not been influenced by stocking of the same species in the same water, or by the same species in the same drainage where migration into the native population's water is possible. The Department shall maintain records, to be reviewed and updated on a regular basis, of the total number of native salmonid waters and the status of the populations in these waters. Indicators of population's status are summarized in the Department's Inland Fisheries Management Plans. These data will be used to monitor the status of Maine's native salmonid resource. Within the confines of personnel and financial limitations, the Department should undertake a systematic program of genetic analysis of native salmonid populations to determine the degree of genetic variability within the State.

Management will be directed toward preserving Maine's remaining native salmonid populations, and providing fisheries consistent with this goal. Management objectives for native populations will be developed with public input, and included in the Department's Inland Fisheries Management Plans.

Native brook trout fisheries in lakes and ponds provide principal fisheries for brook trout that rely entirely on natural reproduction and that have never been stocked with brook trout, directly or indirectly. Lakes and ponds having native brook trout fisheries are considered to be genetically unique. The Division of Fisheries and Hatcheries will maintain a list of these waters. These waters cannot be stocked with any fish species from any hatchery or wild source without legislative approval (Sec. 2.12 MRSA 12461). Furthermore, a lake or pond cannot be removed from the Division's list without the approval of the legislature.

In waters with principal fisheries for native salmonid populations (other than brook trout and char in lakes and ponds), stocking fish of the same species as the native salmonid species will not occur unless it is necessary to maintain the management objectives for that species. A proposal to stock the same species as the naturally occurring native species will require peer review by the Division of Fisheries and Hatcheries, an opportunity for public input, and approval by a Fishery Administrator (see Policy H4.2).

Species other than those already present in ongoing management programs will not be stocked without peer review by the Division of Fisheries and Hatcheries, an opportunity for public input, and approval by a Fishery Administrator (see Policy H4.2).

Management of non-native species shall not conflict with conserving native salmonid populations.

The Department shall encourage protecting native salmonid habitat:

a) by supporting applicable environmental protection laws and in accordance with Department Policies;

b) by zoning initiatives, such as shore land zoning in cities and towns, or the Land Use Regulation Commission's Land Use Districts and Standards in the unorganized areas;

c) by monitoring water quality in native salmonid waters, as appropriate; and

d) by working with conservation organizations and local groups to restore and enhance native salmonid habitat.

H6.3 Wild Salmonids *(January, 2009)*

These are self sustaining populations of salmonids that a) were created by stocking and are now able to fully or partially sustain a viable fishery through natural reproduction, b) are native (indigenous) populations in waters that have been stocked with the same species to enhance the fishery, or c) are native (indigenous) populations that may have been influenced by stocking of the same species in the same drainage where migration into the native population's water is possible.

Wild salmonids in some waters cannot sustain established fishing quality objectives without supplemental stocking, and therefore these waters are stocked regularly to augment natural reproduction. Stocking of fish of the same species as the wild species will not occur unless it is necessary to maintain the fishing quality objectives for the fishery. The Department will solicit public input into this decision-making process. The public will also provide input into management options to encourage a higher quality fishery.

Stocking other fish species will not occur unless it is reasonably certain that stocking will not conflict with achieving the wild fishery management objectives that have been developed with public input.

H6.4 Wild Brook Trout Fisheries in Lakes and Ponds *(January, 2009)*

Maine's wild brook trout lakes and ponds represent a unique, valuable and irreplaceable ecological and angling resource. While lake and pond populations of wild brook trout in other states have largely disappeared, Maine has retained several hundred lakes and ponds with healthy populations of wild brook trout. The Department of Inland Fisheries and Wildlife recognizes the unrivaled historic and economic importance of Maine's brook trout resource and, furthermore, focuses on the conservation and protection of this resource. Therefore the primary intent in managing wild brook trout fisheries in lakes and ponds shall be to maintain these self-sustaining fisheries, in so far as possible, without resorting to stocking brook trout.

Wild Brook Trout Fisheries in Lakes and Ponds provide principal fisheries for brook trout that rely entirely on natural reproduction to sustain the fisheries, and that have not been directly stocked with brook trout for at least 25 years. These lakes and ponds may have received indirect stockings within the last 25 years.

> *A lake or pond is deemed to have a **principal fishery for brook trout** if the species is regularly sought after by anglers and makes up a significant portion of the catch.*
>
> *A principal fishery is said to be **self-sustaining** if it relies entirely on natural reproduction, that is, stocking is not required for its continued existence.*
>
> *A brook trout fishery is deemed to have been **directly stocked** if brook trout from a hatchery or from another water have been stocked directly into that body of water.*
>
> *A brook trout fishery is deemed to have been **indirectly stocked** if brook trout from a hatchery or from another body of water have been stocked into another body of water in the same drainage from which they could have migrated into the water in question.*

The Division of Fisheries and Hatcheries will maintain a list of these waters. This list will be updated annually and will therefore be dynamic because lakes and ponds will be added or subtracted as they are discovered to meet or fail to meet the criteria for inclusion (i.e. 1. they shall provide a principal fishery for brook trout, 2. their trout populations shall rely entirely on natural reproduction, 3. they shall not have been directly stocked with brook trout for at least 25 years). The Department will develop and implement policies that will provide the framework within which these waters will be managed. These lakes and ponds cannot be directly stocked unless a formal stocking proposal has successfully completed the process for initiating a new stocking program.

The primary management goal for "wild brook trout fisheries in lakes and ponds shall be to protect and conserve these fisheries. The following management strategies are to be considered and, if determined to be potentially useful, employed to manage wild brook trout fisheries, before stocking can be proposed. This does not imply that each management strategy must actually be implemented and exhaustively tested before stocking can be considered. For instance, a very large lake with a great deal of weedy littoral zone, many tributaries, and no

opportunity for a barrier on its outlet is not a candidate for reducing competition from yellow perch through reclamation, etc, etc. Ultimately, it shall be the responsibility of the Regional Fisheries Biologist in the Region in which the water occurs to make these determinations before preparing a formal proposal to for review. The strategies are not listed in order of priority.

- Manipulation of regulations.
- Habitat restoration/enhancement.
- Removal/control of predator/competitor populations.
- Restoration/enhancement of forage.
- Control/elimination of disease/parasites.
- Other appropriate (non stocking) management strategies.

Formal proposals to initiate a new stocking program for any species in any water on the list may only be prepared when all permissible management strategies (see above) have been determined by the Regional Fisheries Biologist to be ineffective in maintaining/restoring a wild brook trout fishery. Although requests to stock may originate from the public, administrative staff, etc., formal proposals will be prepared and presented by the regional fisheries staff in the region in which the fishery occurs.

Formal proposals to stock will include the following elements:

1. Name of water, watcode, location, etc.;
2. Lake inventory printout;
3. Map showing any wild/never-been-stocked waters in the drainage;
4. Management history including regulations, stocking, etc.;
5. Consideration of permissible management strategies;
6. Type of program proposed, i.e. restoration/supplementary/ongoing;
7. Source of fish, i.e. hatchery stock or feral stock; and
8. Plans for evaluation.
9. Interests of area anglers.

Completed proposals to stock will be presented to the fishery administration. The administration will, after careful consideration, return it to the appropriate Regional Biologist with instructions to proceed to the peer review as is, or to modify the proposal. If modifications are requested, the Regional Biologist will make the changes indicated and return the proposal to the administrative staff for their approval. The Region will then place the approved proposal into the peer review process. At this time the Department will inform the public that a proposal to stock this water on the “B” list is under preliminary consideration, and that given the Department decides to go forward with the proposal, the public will be invited to comment.

The purpose of the peer review is to provide a professional, scientific determination of the necessity of the proposed stocking versus the primary goal for managing wild brook trout fisheries in lakes and ponds. A committee consisting of at least one person from each regional fishery staff, at least one person from the Bangor fishery research staff, the Fishery Management Supervisor, and up to two fisheries (or closely related field) scientists not directly employed by

IF&W will conduct the peer review. The Director of Fisheries will select committee members. The Fishery Management Supervisor will serve as the chair of the committee.

The review committee will consider only those proposals approved by the fishery administration. The committee will act on each proposal within 30 calendar days of receipt of the proposal. Deliberations can be in the form of e-mail, conference calls, or meetings. Each committee member will carefully consider the proposal to determine if all the elements of a formal stocking proposal are present and if all permissible management strategies have been considered and deemed ineffective in maintaining the fishery. The committee will return the proposal to the Administration with their recommendation for:

1. Approval as presented,
2. Modification, *or*
3. Denial.

Proposals recommended for modification can be changed as indicated and resubmitted to the committee for consideration within 30 calendar days of their receipt in the affected regional office. Failing that, these proposals will be treated as denied. Proposals recommended for denial cannot be forwarded to the committee for reconsideration for at least one year after the initial denial.

A proposal that has successfully passed the Division's peer review process will then be formally presented for public input in accordance with Sec. 12 § 12758-A. All proposals will be offered in an appropriate venue at a public meeting held for that express purpose. The formal proposal will be posted 14 calendar days prior to the meeting. Other types of public outreach may be utilized in addition to the required public meeting. Some of these methods include the Division's Weekly Fishing reports, the Department's web page, local, regional, and/or statewide media (newspapers, magazines, radio, television, etc). Public input in the form of letters, e-mail, etc. will continue to be accepted for up to 7 calendar days beyond the date of the public meeting. Public input received as a result of outreach will be reviewed and considered in making the final decision. A Fishery Administrator will be responsible for making the final decision.

Appendix 3

MDIFW Strategic Brook Trout Management Plan

Revised 2009

BROOK TROUT MANAGEMENT PLAN

Department of Inland Fisheries and Wildlife

Divisions of Fisheries and Planning

Prepared by

Forrest R. Bonney

Regional Fishery Biologist

Revised June 2009

BROOK TROUT LIFE HISTORY

The brook trout (*Salvelinus fontinalis*) has historically been the most abundant and ubiquitous coldwater game fish occurring in Maine and remains so today despite reductions in brook trout habitat that have occurred since settlement of the State by Europeans. The brook trout's basic requirements are cool, clean, well-oxygenated water and suitable spawning, nursery, and adult habitat. As long as water temperatures do not exceed 68° F for extended periods and oxygen levels remain at 5 ppm or greater, brook trout can usually survive and grow. Brook trout may spend part or all of their lives in habitats ranging from the smallest brook to the largest of lakes, provided that the habitat is suitable and competition from other fish is not excessive. In addition, they are capable of spending the adult portion of their lives in marine or brackish waters, and anadromous populations are found in some of Maine's estuaries.

The species is extremely vulnerable to the effects of interspecific competition, particularly in the first year or two of life. After attaining a length of about 10 inches, however, trout will feed heavily on other small fishes. There is evidence that larger brook trout may be very effective predators on their own young in certain circumstances. In waters where forage fish are not available to adult trout, they are still capable of good growth rates on a diet of invertebrates if the habitat is productive.

Brook trout are capable of extremely diverse growth rates, which are primarily dependent on such environmental factors as basic productivity, water temperature, and food abundance. A 5-year-old brook trout may weigh less than 2 ounces in waters with poor growth conditions. At the other extreme, a trout of the same age may weigh 4 or 5 pounds if growth conditions are ideal. Brook trout are generally short-lived, with relatively few survivors beyond 3 years of age. A few individuals may attain ages of 4 to 6 years, but rarely more. For stocked populations, the life span is typically even shorter, with few individuals surviving beyond 2 years. However, recent efforts to extend the life span of hatchery-reared brook trout through the rearing of eggs taken from wild fish have been successful, and progeny of these fish have lived to age IV to date.

Brook trout spawn in gravelly substrate over upwelling ground water in the fall, usually late September to November. In Maine, spawning occurs the earliest in high-elevation waters. Water moving through the gravel prevents the buried eggs from freezing and provides them with oxygen. Shore spawning is successful in some ponds where spring-water inflows occur in gravelly shallows. Survival of shore-spawned trout may be poor if protective cover for emerging fry is not available. Smelt are especially voracious predators of brook trout fry under these conditions. Brook trout eggs hatch in the early spring after over-wintering in the gravel substrate. Young fish use cover for protection from predators and move to the deeper water that serves as adult habitat when they attain greater size.

Brook trout are highly catchable and their numbers are therefore easily reduced by over-fishing, especially in the smaller ponds and in streams that have easy angler access. They are, however, very resilient in good habitat, and their numbers can quickly rebound to former abundance under adequate regulatory protection. Furthermore, recent studies indicate that Maine's wild brook trout populations have not been genetically compromised due to excessive harvest of the older, mature fish.

BROOK TROUT MANAGEMENT HISTORY

This species has always been harvested as a food fish, but systematic exploitation of Maine's brook trout as a sports fish increased greatly in the latter 1800's. At that time, sporting camps flourished by catering to sportsmen in search of superior fishing for brook trout and other game fish common to the state. Records of the period mention trophy trout of 2 to 6 pounds fairly regularly, and a few fish ranged to 9 pounds. The state record is a 12.5-pound brook trout caught at Mooselookmeguntic Lake in 1886. It appears, however, that where large fish were caught they were not abundant. The converse was also true; high numerical catches were of smaller trout. One of the earliest recorded examples is from Arnold's expedition to Quebec in 1775. Soldiers' journals recorded catching dozens of brook trout weighing a half pound each at the Carry ponds. Angling pressure was relatively light, compared to current standards, well into the early 1900's. Early access to waters on Maine's vast private forest lands increased as they were harvested for timber, first using log drives and later private road systems to deliver their products to mills. As the number of anglers increased and more backcountry roads were constructed, angling pressure increased over the years to current levels.

Nearly all of the State's inland waters were originally suited for brook trout. This situation began to change as increases in human population growth, industrialization (including the construction of power-generating dams), agriculture, and timber harvesting became increasingly widespread in the 1800's. Forestry practices such as dam and road construction, river drives of raw wood (often involving channelization), and harvesting along shoreline riparian zones led to the degradation of trout habitat. Prior to the implementation of environmental laws, the indiscriminate use of large mechanized equipment to harvest timber resulted in the degradation of brook trout habitat through erosion, siltation, and the loss of cover and habitat. Similar losses occurred early in the state's history through widespread clearing for agricultural purposes, especially in the southern and central portions of the state. Loss of habitat as a result of industrial pollution increased in the nineteenth century and continued well into the twentieth century. In summary, the state's agricultural, silvicultural, and industrial history resulted in degradation of much of the state's brook trout habitat. In most cases, however, these changes resulted in a decline in brook trout abundance, rather than outright extirpation.

The reduction in industrial and municipal pollution in the latter half of the twentieth century resulted in improved water quality and restoration of habitat in some of the major rivers. The imposition of environmental regulations designed to protect natural resources also provided additional protection to all brook trout habitat, including commercial woodlands. Some forestry companies have voluntarily exceeded regulatory standards in order to protect fisheries resources; indeed, in recent years some commercial landowners have showed a desire to partner with the Department to restore degraded fisheries habitat.

Scientific brook trout management began with the formation of the Fisheries Research and Management Division in 1951. Prior to this date, the Department's Commissioners authorized management activities, including stockings that were surprisingly widespread (thanks in large part to railroad transport) but poorly documented. William C. Kendall of the Bureau of Fisheries, U.S. Dept of Commerce, conducted the earliest scientific evaluation of Maine brook trout populations in 1918. His report - specific to the Rangeley Lakes area in western Maine - discussed the physical features, species composition, and abundance of these important brook trout waters. In addition, Dr. Kendall compiled records of brook trout harvests from previous documents dating back to the mid-1800's. Gerald P. Cooper, Assistant Professor of Zoology at the University of Maine, conducted the first systematic fishery survey of statewide significance. In a series of reports published from 1940-45, Dr. Cooper and his colleagues reported findings on the fisheries of the Rangeley chain of Lakes, the lower Androscoggin and Kennebec drainage systems, Moosehead Lake, and Haymock Lake. Of particular value for brook trout management were the age and growth data for lightly exploited populations.

Programs to survey brook trout habitat systematically and conduct research projects to provide guidance for the statewide management of this species were implemented soon after the Fisheries Division was established. These research projects included several investigations into the life history of lake and stream populations of both wild and stocked populations.

Efforts to manage the brook trout sports fishery intensively increased with angler use and with concern for the welfare of the species. Increasingly restrictive regulations - in the form of bag limits, minimum length limits, and gear restrictions - have been imposed over the years. The first fly-fishing-only restrictions were imposed on individual waters in the Rangeley and Moosehead areas near the turn of the twentieth century. However, there was no general-law bag limit on trout as late as 1910. At that time there was a 25-pound limit and a 5-inch minimum length limit. As of 1920, there was a 25-trout limit, a 15-pound limit, and a 6-inch minimum length limit. The bag limit for brook trout in lakes has been gradually reduced from 25 fish in 1950 to the current limits of five in northern Maine and two in southern Maine. In addition, categories of standardized special regulations, including bag and length limits, were implemented in 1996 and refined effective 2007 to account for the variability in growth rates

among trout waters and to standardize special brook trout regulations, thereby simplifying a confusing array of special regulations.

Hatchery-reared fish are used to provide fisheries where adult habitat is present but spawning and/or nursery habitat are lacking. Artificial propagation has played a significant role in the management of Maine's brook trout for many years. The first state fish hatchery was constructed in 1895 following a decade of private efforts to hatch and stock trout fry. With the development of additional public hatcheries and rearing stations and the improvement of transportation systems, brook trout stocking gradually increased throughout the state and reached an annual level of about 800,000 fish in the 1970's, where it has remained. Current numbers are somewhat lower, averaging 580,000 per year, due to the emphasis on stocking more waters with larger (but fewer) catchable-size brook trout, newly available due to the rebuilding of the Embden Rearing Station in 2004-05 for that express purpose. The average weight of brook trout stocked has also increased (from 1.1 oz. in the 1970's to 3.1 oz. in the 2000's) due to the trend toward stocking these older, catchable (legal-size) fish. Nonetheless, the majority of Maine's brook trout are stocked on a biological basis[1]. The quantity and quality of the habitat and the extent of competition from other fish species determine the size of the fish stocked. For those waters in which brook trout stocking is done on a non-biological (put-and-take) basis, catchable-size trout are typically stocked near population centers to provide immediate angling opportunity with little expectation of holdover due to habitat limitations. Brook trout stocked in marginal quality habitat during spring months will survive at least until water temperatures become prohibitively warm while those stocked in the fall provide both winter and spring fishing opportunity. This program is currently being expanded as a result of angler interest and the availability of larger numbers of catchable brook trout resulting from the upgrade of the Embden rearing station. Accordingly, requests for catchable brook trout increased 3% for spring yearlings and 276% for fall yearlings from 2003 to 2008 (Table 1). Special length and gear regulations are frequently imposed on biologically stocked brook trout waters (which are intended to attain larger size before harvest) to assure escapement to increase longevity. For put-and-take fisheries, low bag limits are more commonly imposed with the intent to distribute fish equitably among anglers. Stocking rates, determined from a policy developed by fishery managers, take into account water size, water quality, interspecific competition, and the amount of angler use.

In the 1990's the Department undertook a program to improve its brook trout hatchery brood stock[2]. We developed new strains from wild fish originating from the Kennebago River and Sourdnahunk Lake with the goal of producing progeny that retain wild-fish characteristics, including

[1] The stocking of legal-size fish intended for immediate harvest is referred to as put-and-take stocking. The stocking of sub-legal size fish that must grow to legal size before becoming vulnerable to harvest is referred to as biological stocking.

[2] 'Brood stock' are fish raised in a hatchery setting specifically for the production of progeny to be stocked in the state's public waters.

greater longevity. Because these strains grow and behave differently from the more domesticated strains previously stocked, stocking rates have been evaluated and adjusted as necessary. Results of comparative performance studies of the new strains indicated that the longevity of both strains exceeded that of the older, domestic strains. However, the Kennebago strain fish performed better in the hatchery/rearing-station environment and provided better returns to the angler post-stocking. Consequently, the Kennebago strain has been retained for hatchery production, though these fish are frequently crossed with the older hatchery strain to provide faster-growing (though shorter-lived) fish for specific management situations. Comparative tests of the Kennebago strain vs. F_1[3] strain (progeny of Kennebago and Maine Hatchery Strain cross) stocked as fall fingerlings in study ponds indicated that the F_1 fish had a size advantage over the Kennebago strain and therefore attained legal size at an earlier age.

The removal of introduced competing warmwater fish species from trout waters by means of chemical reclamation began in 1939. Since that time, about 140 trout ponds have been reclaimed, usually with good – if sometimes temporary - results. Due to the expense of this management technique and changing public sentiment, the reclamation program is currently conducted at a modest level. Reclamation remains an especially valuable tool in eradicating illegally introduced fish species before they migrate throughout drainages. Removal of competing species by netting has been shown to be feasible in some cases but is labor intensive and temporary in nature in that it does not remove all of the competitors, which quickly repopulate to their former abundance.

The introduction and spread of competing fish species has had a substantial impact on the quantity and quality of Maine's brook trout resource. The chain pickerel was indigenous to only a few southern Maine waters but by 1850 had been introduced to other parts of the state and was well established in many trout waters. More recently, northern pike and muskellunge – which are related to pickerel but grow much larger - have been illegally introduced into several drainages where they continue to expand their range. The smallmouth bass had become established in many coastal drainages by the early 1900's, but continues to be illegally introduced into new drainages, including the upper Kennebec and Androscoggin River drainages (including the Rapid River) in the 1980's; and the St. John River drainage in the 2000's (they were documented in the Meduxnekeag River drainage, a subdrainage of the St. John River, in the 1990's). Because they are present above Grand Falls, they are expected to eventually invade the upper reaches of the St. John River drainage. The rate of illegal bass introductions has recently increased, and is a great concern for brook trout fisheries. Efforts to reduce the abundance of invasive smallmouth bass in the Rapid River in western Maine by stressing fry through flow manipulation have been relatively unsuccessful to date but are ongoing.

[3] F_1 (first filial generation) refers to the first offspring of the parental generation.

White perch and yellow perch, both severe competitors with brook trout, became widespread during the late 1800's. These species remain an active threat, as exemplified by the introduction of yellow perch into the Moosehead Lake drainage, the Rangeley Lakes, and the Fish River Chain of Lakes in the 1950's and 1960's. The often inadvertent spread of white suckers and a number of minnow species used as bait caused still further interspecific competition with brook trout, but is less of a problem today because their use as live bait is prohibited from most waters with native or wild brook trout populations. It has long been the policy of fisheries biologists to recommend the imposition of regulations restricting the use of live fish as bait on newly-surveyed waters that have brook trout populations but few if any competing species. Nonetheless, unscrupulous individuals continue to illegally introduce bait species into brook trout waters in order to harvest them for profit. Introductions of other coldwater species of fish, including smelts, landlocked salmon and lake trout, were made into many waters that originally harbored only brook trout, but their effect on trout is fortunately less severe than that of warmwater fish.

Maine's wild brook trout populations are recognized for their genetic and aesthetic values and efforts to protect these traits through the imposition of special regulations have been expanded. Department policy now formalizes past Fishery Division guidelines by preventing the stocking of hatchery-reared fish in waters with thriving wild populations unless these waters have previously been stocked. In 2006, Legislative protection[4] was extended to native brook trout populations[5]. Henceforth, any proposal to stock waters with native brook trout will require review and consent from the Maine Legislature's Fish and Wildlife Committee.

In the 1990's the Department conducted studies to determine the abundance, longevity, rates of harvest, and genetic variability of wild trout populations. This information is being used as a reference to monitor future population changes. More recently, detailed stream surveys have been conducted in an effort to determine more accurately the relationship between stream habitat types and brook trout abundance. Thanks to funding received from the Natural Resources Conservation Service's Fish and Wildlife Conservation Grant Program, we surveyed more than 1,000 streams in 2007 and a comparable number in 2008 to document the presence and abundance of brook trout in lotic waters throughout the state. As part of this effort, stream habitat is also being systematically evaluated for symptoms of degradation and fragmentation. Wild trout populations in streams, once largely taken for granted, are now recognized for their biological, economic, and aesthetic value.

Over the past 50 years, significant advances in knowledge and management expertise have been made relating to Maine's brook trout resource, enabling sound and rational management programs for this

[4] LD 1131, An Act to Recognize and Protect the Native Eastern Brook Trout as one of Maine's Heritage Fish.
[5] Native brook trout waters are those that have never been stocked. Wild brook trout waters are defined as those that have not been stocked within the last 25 years. Their populations, though self-sustaining, originated from stocking or have been influenced by stocking.

species. However, increased demand for brook trout, coupled with habitat threats and stagnant or decreasing funding levels for management and research, are necessitating innovative approaches to brook trout management. For example, the recently developed standardized regulations imposed on waters according to biological principles are not only resulting in a simplified law book, but – more importantly – are preventing overharvest, protecting genetically important older-age fish, and increasing carry-over to meet angler demands for larger fish.

Recognizing the economic importance of Maine's brook trout, we have increased promotional advertising of the sport fishery to both in state and out of state anglers. This advertising includes the following initiatives that are promoted through the media and at sportsman's shows that the Department attends annually throughout the northeast:

- Brook trout fishing is promoted at seminars
- Brook trout photos are featured prominently at sportsman show displays
- Promotional literature, posters, and stickers are handed out at these events
- Maine brook trout are promoted in national fishing magazines and web sites
- Brook trout are featured prominently in the Department's merchandise line
- The species author completed two books (technical and non-technical versions) on brook trout biology and management
- A brook trout initiative is currently being developed to inform the public of Maine's wild brook trout resources and to facilitate angling through the development of a dedicated website.

These initiatives are put forth under the premise that promotion and protection of Maine's brook trout resource need not be mutually exclusive if they are adequately protected by appropriate regulations.

In the absence of pure research, brook trout data have been consolidated onto computerized statewide databases, which are being used to monitor trends in the fishery. Grants are increasingly being used as funding sources to accomplish specific fisheries projects, notably resource inventory and stream restoration projects. Finally, the Department recognizes and supports the evolving angler ethic regarding the voluntary release of legal-size fish. These changing attitudes, together with the preservation of habitat through reasonable environmental regulations and intensive management efforts, demonstrate the Department's and the public's commitment to protecting and preserving our brook trout fishery. Despite this commitment, however, habitat degradation from past land use practices and the illegal introduction of predatory and competing fish species remain dire threats to brook trout populations.

PAST MANAGEMENT GOALS

Lakes and Ponds

The management goal for the planning period commencing 1986 called for the maintenance of existing availability and quality of brook trout in all Regions except A and B, where these parameters were to be expanded through increased stocking to accommodate the greater population of anglers. In 1991, the management goal again called for the maintenance of existing availability and quality of brook trout statewide but was modified to improve fishing quality on waters capable of above-average growth rates. Specific objectives for **abundance** in 1991 were to increase the distribution of brook trout from 7,000 to 9,000 acres in Region A and from 3,600 to 4,500 acres in Region B. It was also recommended that the contribution of wild stocks be maximized statewide. Since these objectives were first stated, the distribution of brook trout in Regions A and B has increased substantially, exceeding the distribution objectives for these two Regions. The increase in distribution resulted primarily from the stocking of legal-size brook trout in marginal (limited by unsuitable water quality, temperature, and/or by interspecific competition) habitat with the intent that they be angled or outmigrate before they succumb to these limitations.

On a statewide basis, the distribution of principal-fishery brook trout waters has increased from 391,400 acres in 1991 to 435,846 in 2009 (an 11% increase) primarily due to increased stocking but also as additional existing brook trout lakes have been surveyed and added to the inventory.

To meet the abundance objective of maximizing the contribution of wild stocks to the fishery statewide, the Fishery Division formulated and implemented the aforementioned regulations to reduce harvest and afford protection to genetically important, sexually mature individuals of wild trout populations. These special regulation categories initially became effective in 1996 and were expanded to include trophy regulations in 2007. Evaluations of the effectiveness of these regulations indicate that populations with moderately restrictive regulations had higher proportions of older-age trout, but additional benefits have not been demonstrated to date with severe regulations (Table 2).

The **harvest** objective developed in 1986 was to permit removal of 40-50% of the estimated spring legal wild population and, for hatchery-supported populations, 60-80%[6] of the total number stocked over a two-year period following stocking. The objectives were redefined in the 1991 update because these parameters could not be determined for more than a few waters annually with existing management capabilities. Instead, future comparisons were to rely on the relative number of pounds per acre harvested, as determined from statewide angler surveys and confirmed by field data as resources allowed.

[6] This figure is less than 100% due to the natural mortality that occurs prior to harvest.

The harvest objective in the 1991 update was therefore set at 0.5 pounds per acre based on the estimated annual (winter plus summer) statewide harvest rate of 0.45 pounds per acre reported. However, the annual harvest rate for lakes reported during the 1996 planning period increased to 1.11 pounds per acre and to 0.96 pounds per acre in 1999, approximately twice the 1991 harvest objective. The fact that size quality and a stable proportion of sexually mature fish are being maintained or improved with these harvest rates suggests that the harvest objective can safely be maintained at 1 pound per acre if sexually mature wild fish are afforded adequate regulatory protection. No statewide angler surveys have been conducted since 1999, however, necessitating reliance on size quality and age structure of sampled fish as indicators of population health.

The 1986 **fishing quality** objectives were to improve fishing quality in Regions A and B to levels typical of other Regions (0.5 trout caught per angler trip and an average size of 11 inches for open water fishing in lakes) and to optimize public access statewide. The fishing quality goal was met for Regions A and B as of 1996, when the number of trout caught per angler trip averaged 0.49 and 0.57 respectively. Angler surveys used to estimate fishing quality for the 2001 species plan update indicated that fishing quality in Regions A and B was similar to that of 1996, with brook trout catch rates per angler trip of 0.43 and 0.44, respectively. Statewide, the catch rate per angler trip declined slightly from 0.98 in 1996 to 0.85 in 2001. Current figures are not available because a recent angler questionnaire has not been conducted.

The fishing quality objective of increasing the average brook trout length in Regions A and B to 11 inches has been exceeded (current average lengths are 12.9 and 12.4 inches, respectively). The statewide average for lakes, derived from clerk surveys and sampled from 1996-2000, was 13.3 inches; for 2001-2006, it was 10.6 inches (9.3 inches for stocked waters and 13.4 inches for wild waters).

Brooks and Streams

No management goals were specified for brooks and streams in previous strategic plans. De facto goals included the maintenance of populations at existing levels except for waters with exceptional growth potential. Representative streams have been monitored annually since the 1960's to determine changes in brook trout abundance and age structure and as a guide for promulgating appropriate general law regulations. Appropriately restrictive special regulations have been imposed on individual streams with exceptional growth rates.

OPPORTUNITY

Lakes and Ponds

Maine has the most extensive distribution and abundance of brook trout in the eastern United States. A 2005 range-wide assessment by the Eastern Brook Trout Joint Venture concluded that:

> Maine is the only state with extensive intact populations of wild, self-reproducing brook trout in lakes and ponds, including some lakes over 5,000 acres in size[7]. Maine's lake and pond brook trout resources are the jewel of the eastern range: lake populations are intact in 185 subwatersheds (18% of the historical range), in comparison to only six intact subwatersheds among the 16 other states[8].

Brook trout occur in 1,503 Maine lakes (762,123 acres) and provide principal fisheries in 1,148 lakes (431,036 acres) (Table 3). Because it is a more accurate indicator of fishing quality, the amount of lake

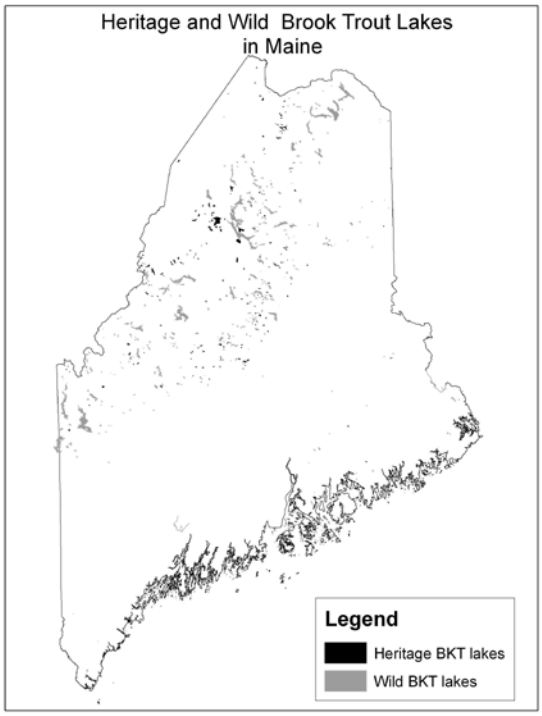

Figure 1. Location of native (Heritage) and wild brook trout lakes in Maine.

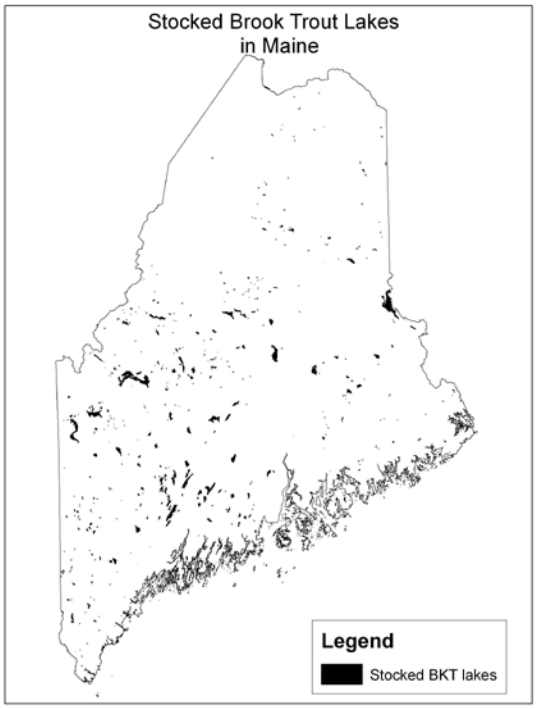

Figure 2. Location of stocked brook trout lakes in Maine.

[7] 16 lakes totaling 192,413 acres in size.
[8] Page 34, Eastern Brook Trout: Status and Threats.

habitat providing *principal fisheries*,[9] rather than the total occurrence, *are used in this document*. Maine's wild brook trout waters are not evenly distributed throughout the state but are concentrated in the interior highlands – particularly in Region E - which have a cooler climate and fewer introduced competing fish species than the southern part of the state (Figure 1). Those brook trout lakes located in the southern, coastal, and interior lowlands are more likely to be dependent on stocking to provide a fishery (Figure 2). Regions D, E, F, and G, which include most of the interior highlands, contain 73% of the lakes and acreage in which brook trout occur. These Regions contain an even greater proportion of the lake (lacustrine) habitat categorized as principal fisheries: 81% of the lakes and 92% of the acreage.

Because brook trout tend to favor the shallow (littoral) areas of lakes, the size of the body of water is an important indicator of brook trout abundance. Smaller ponds and lakes generally produce more trout per acre than larger, deeper lakes that have proportionally less productive trout habitat for their size. For that reason, an arbitrary-but-realistic size of 200 acres or less is used to designate typical brook trout ponds. More than three quarters (78%) of the state's brook trout waters are 200 acres or less in size (Table 4). Of the 1,148 brook trout lakes of all sizes that provide principal fisheries, 491 (43%) are currently being stocked with brook trout ranging in age from fry (less than 6 months old) to fall yearlings (1.5 years old) (Table 5); these waters account for 31% of the principal-fishery acreage of all lakes and ponds. Conversely, 657 principal brook trout fisheries are sustained by natural reproduction. Of these, 311[10] lakes and ponds, comprising 23,747 acres, have never been stocked, and therefore contain potentially unique genotypes. These waters – referred to as the 'A List' or Heritage waters - received special Legislative protection in 2006. In addition, some of the infrequently stocked lakes may still contain relatively pure genotypes because early stockings were often unsuccessful. These 246 brook trout lakes and ponds, comprising 164,609 acres and referred to as the 'B List' waters, are defined as having not been stocked directly or indirectly within the last 25 years. (The number of both A List and B List waters will change as A List waters are surveyed and as additional B List waters meet the 25-year criterion.) In its 2006 report to the Joint Standing Committee on Inland Fisheries and Wildlife (*Managing Maine's Wild Brook Trout Fisheries in Lakes and Ponds*), the Department stated that "The primary intent for managing wild brook trout in lakes and ponds shall be the protection and conservation of these self-sustaining fisheries, in so far as possible, without resorting to stocking brook trout" and stipulates management policies, including Permissible Management Strategies and Procedures, that must be implemented prior to stocking. These strategies include the following management techniques:

- Manipulation of regulations

[9] A principal fishery is one for which the species is regularly sought by anglers and which makes up a significant portion of the catch.

[10] The current number of never-stocked brook trout waters is substantially less than the 424 reported in the previous Plan because historic Federal stocking records were located indicating that 118 of these waters have in fact been stocked in the past.

- Habitat restoration/enhancement
- Removal/control of predator/competitor populations
- Restoration/enhancement of forage
- Control/elimination of diseases/parasites.

It is recognized, however, that these decisions must involve a realistic assessment of habitat conditions and must have a reasonable chance of success. It is the responsibility of the Regional Fisheries Biologist to make this determination before preparing a formal proposal to stock any of these waters.

Abundance estimates were determined for a number of brook trout waters 200 acres in size and less in the 1990's as part of the fishing regulation evaluations for wild fish and genetic strain evaluations for stocked fish. These data permit more detailed categorization of brook trout lakes by size, stocking status, and degree of interspecific competition. Separation into categories is presumed to result in more accurate abundance estimates. Sample sizes remain small, however, and may not be truly representative of statewide averages. Few estimates of brook trout abundance exist for waters greater than 200 acres in size, and the abundance figures for these waters are therefore also subject to error. Nonetheless, this method of categorizing habitat has the potential to yield increasingly accurate abundance estimates as additional data are collected. For the current estimates of post-fishing season (late fall) abundance, only principal fisheries are included. The average number of brook trout per acre for lakes less than 200 acres in size varies widely from the average of 33/acre. Not surprisingly, waters that were stocked and had little interspecific competition had the greatest number of brook trout (115/acre); those with wild populations and with high interspecific competition had the least (15/acre). Brook trout were 14 times more abundant on a per acre basis in waters less than 200 acres in size than in those over 200 acres in size (Table 6). Multiplying the average number per acre by the statewide number of principal fishery lakes (separated by category) yields an estimate of about 3.5 million brook trout 6 inches in length and longer in lakes statewide.

No significant changes are anticipated in the amount of physical habitat presently available in lakes and ponds during this planning period, though some continued loss from development and even greater losses from the introduction of competing species to trout waters is anticipated. The loss of habitat through the introduction of interspecific competitors can be slowed somewhat by reclamation[11], which has proven successful in eradicating some illegal introductions before they spread throughout the drainage. The Department's *Administrative Policy Concerning Eradication of Exotic Fish Species from Private Ponds* and *Rapid Response Plan for Invasive Plants, Fish, and Other Fauna* (in coordination with the Maine Dept. of Environmental Protection) provides guidance for the best practicable, timely, and efficient implementation of invasive control methods.

[11] The application of a piscicide (fish toxicant) to remove all fish from selected waters.

In the early 1990's a statewide reduction in the abundance of older-age (age IV and greater) brook trout was documented by comparing the age structure of recent samples to those of relatively unexploited brook trout populations sampled in the 1930's and 1940's. The decline in the proportion of older fish was attributed to increased angler use and harvest, and was an incentive for developing restrictive regulation categories to reverse this trend. These regulation classes, which are combinations of low bag limits and high length limits, were imposed to restore age and size quality of these populations to their former levels. They became effective in 1996 on 453 (40%) of Maine's lakes with principal brook trout fisheries and a demonstrated ability to grow large fish. A smaller number of lakes considered to provide exceptional brook trout fisheries were chosen as 'Fisheries Initiatives' waters, and had highly restrictive special regulations applied, also effective 1996, to protect and enhance trophy-class brook trout fisheries.

In 2006, an array of restrictive regulations was consolidated into a smaller number of standardized regulations (1 trout, minimum length 14 in.; 1 trout, minimum length 18 in.; and catch and release) intended to foster quality fisheries while simplifying regulations to the maximum extent possible. These regulations were imposed on only those waters with exceptional brook trout growth potential. An experimental slot limit, which is still being evaluated, was also imposed on a number of waters at that time. Regulation categories, which were applied to most brook trout waters prior to 2007, are presented in Table 7. The number of special gear regulations currently in effect on lakes and ponds are presented in Table 8.

Statewide data (grouped into 5-year increments except 2006-08) indicate that the proportion of older age wild brook trout sampled increased after imposition of the restrictive regulations in 1996 (Table 9). The proportion of older-age Kennebago strain stocked brook trout sampled also continued to increase over time; there was no corresponding trend for the older Maine Hatchery Strain fish. An evaluation of the efficacy of these regulations indicated that – as intended - wild brook trout lakes with restrictive regulations have accrued a significantly higher proportion of older fish than those with regulations of low to moderate severity (Tables 2 and 10).

Management objectives have been assigned to Maine's brook trout lakes based on growth potential. Using this method, 365 (31%) of Maine's principal brook trout lakes are managed as 'Size Quality' waters (Tables 11 and 12). These waters meet angler expectations of the presence of brook trout that have a minimum length of at least 12 inches. Waters with 10 inch length limits are included in this category because clerk angler surveys indicate that the average length of brook trout caught from wild and stocked lakes with a 10-inch limit exceeds 12 inches (Table 13, Appendix 2). There are also 25 lakes with 18 inch length limits managed as Trophy fisheries. The relatively small number of Trophy waters reflects the fact that only a small proportion of Maine's lakes are capable of growing very large brook trout.

The majority of brook trout waters that retain more liberal harvest regulations, including the 6 and 8-inch general law restrictions, do so for a variety of reasons:

- For most stocked waters, brook trout are in fact much longer than 6 inches in length when stocked and are intended to be available for immediate harvest. In this case the 6-inch regulation is retained for law book standardization because a longer length limit would serve no practical purpose. (For stocked waters designated as Quality of Trophy waters, the length limit is increased to the extent allowed by the growth potential.)

- For wild brook trout waters with poor growth rates (resulting from sterile, unproductive habitat, interspecific competition, and/or a high reproductive rate) low length limits are imposed to allow harvest of fish that have low biological growth capacity. The imposition of high length limits on waters with high reproductive rates has been found to be counterproductive in that it results in large numbers of stunted brook trout, at greater risk of disease and parasite epidemics.

For wild populations, the minimum length limit is based on growth potential, which is water specific. The length limit may be set at a length to ensure that the particular population is protected from harvest until the brook trout become sexually mature. However, other factors, such as the population size and the harvest rate are also considered. There are many wild brook trout lakes in Maine where, despite a low length limit of 6 inches, populations remain high and slow growing. Increasing the length limit on these waters would clearly further compound the slow-growth/high abundance problem. Conversely, these waters must be periodically monitored for changes in brook trout abundance and growth rates to assure that more restrictive regulations are imposed if the population abundance declines due to increased harvest or other factors.

Analysis of statewide brook trout samples indicates that overall brook trout size declined since the restrictive regulations were imposed in 1996, even as the proportion of older-age fish increased. The average length of age III+ (the most abundant year class) wild brook trout sampled statewide declined from an average of 13.0 inches in 1991-95 (before the restrictive regulations were imposed) to 11.4 inches in 2006-08 (Table 14). Average weights declined correspondingly. The decline is attributed to increased brook trout density resulting from reduced harvest, which causes greater intraspecific competition for food and space (commonly referred to as “stockpiling”). Growth rates declined more dramatically in waters where highly restrictive regulations were imposed than on those where they were not. These trends did not hold for stocked brook trout because potential growth-rate reductions resulting from reduced harvest were attenuated by reducing stocking rates. In fact, the average size of stocked brook trout increased after the imposition of restrictive regulations, as intended. For wild brook trout waters, these data reinforce the notion that restrictive regulations must be imposed cautiously on a water-by-water basis, and must carefully consider the potential impacts on recruitment.

Brooks and Streams

Of Maine's 31,806 miles of flowing water, about 21,127 (66%) are considered to be brook trout habitat (Table 15). As with the distribution of brook trout in lakes, the majority of brook trout streams are concentrated in the interior highlands; Regions D, E, F, and G contain 76% of the miles designated as brook trout stream habitat. Again, the Eastern Brook Trout Joint Venture analysis singles out Maine as being "the last true stronghold for brook trout in the eastern United States" and states that "Maine boasts more than twice the number of intact subwatersheds for brook trout populations as the other 16 states in the eastern range combined" but points out that "almost 65% of the state has no quantitative data on [stream] brook trout status." Recognition by the Joint Venture of Maine's unique stream brook trout resource, multiple threats to that resource, and acknowledged understaffing of fisheries management personnel all contributed to a range-wide sense of urgency to conduct an extensive resource inventory as a first step to protecting the resource. Accordingly, the Department was awarded funding through the Natural Resources Conservation Service's Fish and Wildlife Conservation Grants Program to conduct an inventory in 2007-2008; 1,061sites were electrofished in 2007 and 929 in 2008, for a total of 1,990.

Prior to the initiation of the comprehensive statewide survey, estimates of brook trout abundance in streams were determined from multi-year samplings of representative waters that have been conducted since the 1960's. Because electrofishing is labor-intensive, population estimates were determined for relatively few waters and for relatively short reaches of stream. Nonetheless, accurate sampling of representative streams is thought to have yielded realistic estimates. Beginning in 1998, this procedure was refined by separating population estimates for some waters by stream type, defined by differences in stream characteristics. Many of the streams were historically selected for population estimates because they contained what was believed to be the best brook trout habitat; they were typically low gradient, winding reaches with riffle-pool habitat. These streams contained an average of 110 legal-size brook trout per mile. Streams that were steeper, straighter, and had fewer pools averaged only 63 legal-size brook trout per mile – the average for all streams was 75 brook trout per mile. The statewide surveys currently underway will provide information to determine brook trout abundance for other stream types and to expand these samples to obtain an accurate statewide estimate of brook trout abundance in streams.

Wild brook trout populations in streams are supplemented by stocking if wild genomes will not be compromised (a possibility that must be evaluated with care given their ability to migrate) and if angler demand exceeds the ability of streams to produce brook trout. This situation frequently occurs in the most populous areas of the state. Accordingly, stream stocking is practiced most intensively in Region A, which accounted for 41% of the brook trout stocked statewide from 2005-2008 (Table 16). Statewide,

fry account for the largest number of brook trout stocked in streams[12] (at the least cost), but provide the poorest returns given their high mortality rates. Fall fingerling stocking can be successful if over wintering habitat, in the form of pools, is available. Frequently, however, it is not, and spring yearlings are stocked with the expectation that immediate returns to anglers will be high but carryover rates to older ages will be low. As with lake stocking, stream stocking is initiated only after efforts to provide a wild fishery have been exhausted.

Some loss of stream habitat is anticipated despite the protection afforded by environmental laws. Although these losses are expected to be relatively small, they will likely occur in those areas of the State that are being the most aggressively developed and where the current resource is poorly distributed and the most heavily utilized. Habitat losses accelerate with increased rates of development, and are frequently permanent and thus cumulative. Much of the brook trout habitat fragmentation and loss in states south of Maine has resulted from cultural development. Detailed stream surveys conducted within recent years suggest that many of Maine's interior rivers and streams that provide brook trout habitat are degraded as a result of activities associated with log driving, timber harvesting, and associated road construction. Although log driving was terminated many decades ago, surveyed streams that were driven tend to remain overwidened, entrenched (incised), and have fewer pools than would be expected. Loss of habitat connectivity resulting from improperly placed/sized culverts at road crossings limits fish passage and isolates populations. Data collected as part of the Eastern Brook Trout Joint Venture surveys indicate that approximately 80% of the culverts examined act as barriers to fish passage.

It is assumed that restoration of these streams to their natural state would improve fisheries habitat and therefore brook trout abundance. Several stream restoration projects intended to enhance brook trout habitat are currently underway and are being evaluated for efficacy, but early indications are that they are indeed successful in improving measurable habitat parameters.

Brook trout abundance and size quality has increased on larger streams and small rivers with above-average growth potential that were selected for special regulations similar to those imposed on lakes. (Indeed, many of these riverine fisheries have associated lake habitat, providing trout with seasonal access to more productive habitat.) These regulations include high length limits and low bag limits intended to preserve and enhance wild brook trout fisheries. Though the number of streams is not large, those included are some of the state's most valuable brook trout resources.

[12] An average of 135,450 fry were stocked per year statewide from 2005 to 2008.

DEMAND

Lakes and Ponds

Brook trout populations supported by natural reproduction account for 59% of the lakes with principal fisheries. Minimum length restrictions categories ranging from 6 to 18 inches, depending on growth potential, have been promulgated on brook trout lakes with both wild and stocked populations since 1996. Prior to 1996, the statewide minimum length limit on brook trout in both lakes and streams was 6 inches, except in three southern counties where it was 8 inches in lakes[13]. The allowable statewide harvest has been determined by multiplying the estimated supply of brook trout by the maximum allowable harvest, expressed as a percent. For wild brook trout populations, an annual harvest of 50 % of the available population of fish 6 inches and longer was set as a maximum allowable harvest for 1996 planning periods. For stocked waters, where natural reproduction is not a consideration, an annual harvest of up to 70% of the legal size trout was determined to be allowable during the first year at large, providing for some escapement to larger sizes. Using the estimated springtime standing crop plus an estimated 25% rate of recruitment, a figure of 2,150,000 brook trout of legal-size (6 inches and greater in length) was determined for the planning period commencing in 1986. Using the same method, the current standing crop of brook trout 6 inches and greater in length was estimated to be 4,139,000 in 1991 and 3,507,965[14] in 2006 (from Table 6).

Although the 6-inch minimum length limit remains in effect statewide, efforts to estimate the allowable brook trout harvest are complicated by the imposition of special (if necessary) length limits on nearly 500 lakes. Furthermore, the concept of maximum allowable harvest has been replaced by optimum sustained yield, which implies consideration of size, age, and genetic qualities of wild brook trout populations in addition to their standing stocks when determining appropriate harvest rates. The imposition of special regulations reversed the decline in the numbers of older, genetically important brook trout as indicated by an increase in the proportion of age IV+ and older brook trout in the population from a low of 10% as recently as the 1980's to the current 18%, which approaches the historic 20% proportion. The loss of older-age fish from brook trout populations through the 1980's appears to have been a function of selective harvest of large fish rather than excessive overall harvest resulting from the set maximum allowable harvest of 50% of trout 6 inches or greater in length.

The angler demand on brook trout in lakes has been determined from angler questionnaires. Estimates from the 1999 angler questionnaire indicated an annual demand of 1,882,368 angler days, of which 1,633,496 (87%) occurred in the summer. Of these, 1,488,211 (91%) were on lakes. No angler

[13] The 8-inch minimum length limit imposed on the lakes of the ten southern counties was rescinded effective 2007. It became unnecessary because the fish that comprised these fisheries are in fact at least 8 inches long when stocked.

[14] The numeric decline in abundance may reflect refinement in estimation rather than an actual reduction in the number of fish.

questionnaires have been conducted since 1999, prompting efforts to calculate these parameters from sampled data. Estimation of current angler demand through the use of clerk survey data (Table 17) is less reliable because of disproportionate sampling on large lakes during the winter season, yielding results that are not representative of the statewide brook trout fishery[15]. The estimated number of angler days derived from this exercise was 34% less than the figure determined from the 1999 angler questionnaire (Table 18), and therefore suspect. Furthermore, accrual of additional open water fishery data from surveys of individual waters declined during the last 5-year period in the absence of a motivating brook trout research project. With limited personnel and traveling budgets it will be difficult to sustain an on-going program to collect current information on angler use and harvest estimates from brook trout lakes with differing sizes, regulatory restrictions, water-quality limitations, and degrees of interspecific competition. The inability to estimate accurately angler demand emphasizes the need for updated information provided by a statewide angler survey.

The voluntary release rate of legal-size brook trout, which was considered to be negligible during the first planning period, has increased substantially, and therefore both the number of fish caught and the number kept are now used as indicators of success. Overall angler success is lower in the winter because most of the more productive trout waters are closed to ice fishing. Anglers and managers alike recognize that brook trout in small ponds are extremely vulnerable to ice fishing, and that fisheries would be destroyed if this type of fishing were allowed. Likewise, the historical closure to fishing during the fall spawning period should be continued where brook trout are known to reproduce.

Regional estimates of **winter** angler-use and catch (Table 19) indicate that Regions E and G, located in the northwest section of the state, account for 45% of the statewide angler-days and 45% of the brook trout harvest. These two regions have the greatest number of large lakes with principal brook trout fisheries open to ice fishing. The 1999 Angler Questionnaire indicated that, on a statewide basis, winter anglers kept 37% of the legal-size trout they caught, a substantial decline from the 48% reported in the 1993-94 angler questionnaire. They caught brook trout at an average rate of 0.47 per day and kept them at a rate of 0.18 per day. No data are available to update these parameters beyond the results of the 1999 angler questionnaire.

For lakes during the **summer** season, the highest rates of angler-use and catch occurred in Regions D, and E, which together accounted for 53% of the angler days and 47% of the harvest (Table 20). Statewide, the proportion of legal-size trout kept also declined from 32% in 1994 to 25% in 1999. Brook trout were caught at a rate of 0.84 per day and kept at a rate of 0.25 per day.

[15] Twenty four estimates were from lakes less than 200 acres in size; 56 were from lakes greater than 200 acres in size, a disproportionate 38 of which were ice fishing estimates.

There were no clear trends in catch-rate changes from 1994-1999; the number of trout caught per angler day in lakes increased from 0.40 to 0.47 during the ice fishing season but declined from 0.99 to 0.84 during the summer season.

The mean length of brook trout harvested from lakes (as determined from clerk surveys) is 13.2 inches in the winter and 14.0 inches in the summer (Table 21). Their mean weights are 0.92 and 1.05 pounds respectively, yielding an estimated annual harvest of 362,420 pounds, 40,593 pounds (11%) of which are harvested during the winter and 321,827 pounds (89%) are harvested during the summer. The estimated yield represents a 10% decline from that of 1994. This decline was anticipated given the imposition of restrictive regulations and the increased tendency toward catch and release, and is expected to contribute toward improved brook trout size quality. However, on a per-acre basis, the annual harvest was 0.96 pounds[16] (0.16 pounds were harvested in the winter and 0.80 pounds were harvested in the summer), indicating that the harvest objective of 1.0 pounds per acre is being met. This rate approximates the annual harvest of 1.11 pounds per acre reported in the 1996 update.

Angler demand increased in the 1980's as a result of increasing license sales and improved access to once-remote trout ponds. License sales have remained relatively consistent the last decade, and angler demand is expected to remain stable during the next planning period as well. However, harvest is expected to decline as a result of the imposition of restrictive regulations designed to restore quality brook trout fisheries and as more anglers practice catch and release. Conversely, catch rates are expected to rise.

Brooks and Streams

There are a total of 21,126 stream miles of habitat, with an estimated 75 wild brook trout 6 inches and longer per mile of streams sampled. However, because the number of brook trout per miles varies considerably with stream type and size, it is not possible to estimate accurately the number of brook trout in streams statewide. Angler use on streams was estimated to be 399,696 angler-days in 1999, a decline of 24% since 1994. These anglers caught an estimated 978,505 legal-size brook trout, or 2.45 per angler; the harvest rate was 0.82 fish per angler-day. The proportion of trout kept declined from 37% in 1994 to 34% in 1999 while the catch rate increased from 2.00 to 2.41 for the same period. Region G, which has the greatest mileage of streams suitable as brook trout habitat, accounted for 20% of the angler-use and 34% of the catch.

Despite the fact that three times as many angler days are spent fishing on lakes as on streams, the number of trout caught is similar because the catch-rate on streams is three times that of lakes. The total

[16] Calculated from the acreage of principal fishery waters open to fishing.

number of trout kept is slightly higher on streams because these anglers keep a higher proportion of their catch.

A harvest of 50% of available supply was set as a safe maximum for streams in earlier species plans. However, this standard is difficult to measure given present monitoring capabilities. Instead, brook trout abundance is currently monitored statewide annually on representative waters, and results – as defined by the estimated number of mature fish per unit of area - indicate that brook trout in streams are not being over harvested at current use levels, although fishing quality has declined in specific streams that receive high levels of angler-use. While this problem has been addressed with the imposition of special regulations on selected streams and rivers that are capable of exceptional brook trout fisheries, there remain many fisheries in smaller streams that have become locally over-fished. Under current levels of staffing, it is not possible to document systematically the locations or extent of these local areas of depletion. Overall, future demand during the current planning period, like that of lakes, is expected to remain stable or increase slightly as a result of increased stream stocking. Therefore, demand should not exceed available supply.

CONSTRAINTS ON OPPORTUNITY

Overall opportunity to use the existing brook trout resource is not severely limited. Unavoidable limitations on the use of this species include regulations designed to sustain their numbers and distribute the catch among anglers, as well as the physical distribution of brook trout populations throughout the state, which – for wild populations - is concentrated away from population centers. Use opportunity is also limited by restricted access to some public waters, particularly in the western part of the state. Traditional access to brook trout waters within commercial forests is expected to become more tenuous with accelerated changes in land use patterns. Regulations imposed to protect brook trout populations from over-exploitation include bag, length, gear, and season restrictions. Among the latter, the closure of many brook trout waters to ice fishing is the most use-restrictive; only 278 (24%) of the lakes are open to ice fishing (Tables 22 and 23); however, these lakes represent 62% of the total acreage because only the larger brook trout lakes (including many of the state's largest lakes) are open to ice fishing.

Brook trout waters have historically been closed to fishing after Sept. 30 to protect spawning populations. As a result of angler initiatives, the fishing season was extended throughout October on many stocked lakes and ponds effective 2002 to provide additional opportunity. Waters open to October fishing have restrictive gear restrictions and are limited to catch-and-release fishing only.

Due to angler mobility, the distance of the majority of Maine's brook trout lakes from population centers does not significantly reduce opportunity. Furthermore, the advent of all-terrain vehicles (ATVs)

in the 1980's resulted in increased use of waters once accessible only by foot. These vehicles are sometimes used to access Remote Ponds in violation of LURC zoning standards, although the 2005 passage of a law prohibiting the operation of ATVs on the land of another without permission has reduced this practice. Landowner restrictions on legal and physical angling access are significant in some unorganized townships of the state. Private roads remain the only means of vehicular approach to many of the trout waters located in northern and western Maine. Public use of many of these roads is often controlled and sometimes restricted by the landowner resulting in reduced use-opportunity. Accelerated rates of real estate transfers and development within Maine's wild lands may reduce angler access as parcels are fragmented and posted. The total acreage of brook trout lakes where public access is currently restricted is 6,615, or 1.6% of the statewide total (Table 24). Region D has 39 lakes (71%) of the 55 brook trout lakes where access is restricted to club members or paying guests. Accessibility to many trout waters throughout the state is in a constant state of change as new logging roads are constructed and old ones degrade to impassability. Overall, however, additional permanent road development has resulted in net gain in road access and use since the 1970's.

Fishing quality and the opportunity for solitude frequently declines as accessibility increases. The Fish & Wildlife Department therefore does not advocate unlimited vehicular access to all brook trout waters, but rather equal access for all anglers. To provide a variety of angling opportunity, we recommend that the access to remote ponds remain undeveloped. To that end, some remote waters have been designated "wilderness" ponds under Land Use Regulation Commission statutes at the advice of the Department of Inland Fisheries and Wildlife. A total of 170 waters in the unorganized townships of eight counties are protected from permanent road construction within a half mile of their shorelines (Table 25); this number represents a decline of 7 waters (4%) since the 1996 update was written.

Opportunity to fish for brook trout in flowing waters increased with the extension of the open-water fishing season from August 15 in brooks and streams and from September 15 in rivers to September 30, effective 1988. To protect pre-spawning populations, this season extension requires the use of artificial-lures-only and restricts the bag limit to one trout. Angler access to some streams or portions of streams is barred by private landowners who do not allow trespassing, and access to many streams located in the unorganized townships of the state is affected by landowners who control public use on private roads (e.g., lands within the headwaters of the Androscoggin River drainage in western Maine). The extent of these restrictions on public use has not been quantified, but, thanks to landowner tolerance, is not yet a severe problem statewide. The promotion of responsible public use of private lands – as well as the resolution of conflicts between landowners and anglers - is addressed through Project Landshare, the Department's landowner relations program, which received new direction and emphasis in 2000.

The opportunity for anglers to use existing brook trout fisheries is expected to remain at current levels or decrease slightly during the next planning period, but could change unpredictably with any ownership or policy changes of the major woodland owners. The imposition of fees for private road use, while justifiable if reasonable and equitably applied, may discourage some angler use.

The effect of recently enacted special regulations intended to improve the quality of brook trout fisheries has not discouraged angler use as evidenced by fishing license sales, which have remained steady or increased modestly since 1996[17]. It also seems unlikely that restrictive regulations will discourage angling given the increasing voluntary release rate of legal-size fish. It is anticipated that the proportion of anglers who fish non-consumptively and who value quality fisheries will continue to increase. These contentions are supported by angler preferences expressed in the summer, 1999 open water fishing survey; a majority of anglers rated fishing in remote waters and fishing for wild fish as 'very important'. Only a minority felt that 'catching many fish' was very important. Furthermore, the rating of fishing quality by anglers, as reported in open water fishing surveys, increased from 2.1 ("fair") in 1994 to 2.9 ("good") in 1999, implying angler approval of recent management initiatives.

Publicity generated by the Eastern Brook Trout Joint Venture and advertisement of the development of quality brook trout fisheries will likely attract additional angler use. Because of the brook trout's vulnerability to harvest by ice fishing, it is not recommended that use opportunity be increased by opening additional waters during the winter season. In terms of brook trout 6 inches and longer, supply still exceeds angler demand. The loss of older-age fish in the population has been reversed through the imposition of regulations intended to restore brook trout fishing quality in lakes.

[17] 267,158 fishing licenses were sold in 1996 vs. 279,262 in 2006, a 4.5% increase.

Table 1. Spring yearling and fall yearling brook trout brood year request by Region and age, 2003-2008.

Region	Age	Brood Year[18] 2003	2004	2005	2006	2007	2008
A	SY	65,200	63,800	56,075	55,975	57,515	53,390
	FY	3,400	5,300	6,650	8,900	10,635	10,610
	Both	68,600	69,100	62,725	64,875	68,150	64,000
B	SY	63,250	60,850	40,175	56,900	62,400	57,600
	FY	11,575	11,375	11,375	11,375	22,025	18,950
	Both	74,825	72,225	51,550	68,275	84,425	76,550
C	SY	3,475	3,475	5,300	5,925	6,800	8,450
	FY	0	0	1,525	1,965	2,125	3,000
	Both	3,475	3,475	6,825	7,890	8,925	11,450
D	SY	37,400	33,450	77,650	49,900	55,500	53,650
	FY	2,600	2,200	16,150	22,250	18,600	16,650
	Both	40,000	35,650	93,800	72,150	74,100	70,300
E	SY	55,825	60,575	59,075	59,325	60,925	59,825
	FY	0	11,600	10,725	10,725	8,875	10,650
	Both	55,825	72,175	69,800	70,050	69,800	70,475
F	SY	26,600	27,000	28,600	28,100	27,300	30,275
	FY	1,100	3,100	3,500	10,150	8,900	11,800
	Both	27,700	30,100	32,100	38,250	36,200	42,075
G	SY	15,175	15,525	12,225	12,150	12,100	11,875
	FY	1,425	3,525	3,575	4,125	4,150	3,850
	Both	16,600	19,050	15,800	16,275	16,250	15,725
All	SY	266,925	264,675	279,100	268,275	282,540	275,065
	FY	20,100	37,100	53,500	69,490	75,310	75,510
	Both	287,025	301,775	332,600	337,765	357,850	350,575

Table 2. Percent of older-age wild brook trout sampled from lakes by regulation class.

Regulation class	Ages III+	IV+	V+	VI+	VII+	All	Sample size
5 trout, 6″ min.	24.5	4.9	1.1	0.3		30.8	3,945
2 trout, 6″ min.	30.6	5.4	1.5			37.5	754
2 trout, 8″ min.	37.8	7.6	1.6			47.0	755
2 trout, 6-12″ slot	25.5	5.4	1.0			31.9	388
2 trout, 10″; 1>12″	27.4	11.2	2.6	0.4		41.6	4,628
2 trout, 12″; 1>14″	30.6	11.2	2.3	0.5	0.1	44.7	2,180
1 trout, 14″ min.	50.0					50.0	28
1 trout, 18″ min.	26.0	10.7	2.6	0.3		39.6	1,333
Catch & Release	18.0	2.9	2.4			23.3	206
All	**27.5**	**8.6**	**2.0**	**0.3**	**0.01**	**38.4**	**14,217**

[18] The year in which the eggs were taken.

[19] 91% of which are sexually mature.

Table 3. Number and acreage by Region of Maine brook trout lakes as of 2009.

Region	Total Occurrence		**Principal Fisheries**		Unknown Status	
	Number of Lakes	Acres of Lakes	**Number of Lakes**	**Acres of Lakes**	Number of Lakes	Acres of Lakes
A	116	46,467	**101**	**13,511**	6	1,638
B	103	68,023	**76**	**49,205**	23	4,050
C	185	89,760	**74**	**6,039**	19	13,570
D	249	103,065	**200**	**75,889**	9	1,153
E	420	228,125	**365**	**165,707**	1	14
F	202	140,808	**132**	**37,946**	2	33
G	228	85,875	**200**	**82,739**	35	2,873
STATE	**1,503**	**762,123**	**1,148**	**431,036**	**95**	**23,331**

Table 4. Number and acreage of principal fishery brook trout lakes as of 2009 by size category and by origin (wild vs. stocked).

Size category (acres)	Origin	Number (%) of lakes	Acreage of lakes
Less than 200	Wild	526 (46)	23,521
	Stocked	380 (33)	18,088
	Both	906 (79)	41,609
Greater than 200	Wild	119 (10)	258,831
	Stocked	123 (11)	130,578
	Both	242 (21)	389,409
All	Wild	645 (56)	282,352
	Stocked	503 (44)	148,666
	Both	1,148	431,018

Table 5. Average number of brook trout (exclusive of fry) stocked per year in **lakes**, 2005-2008 (FF=fall fingerlings; SY=spring yearlings; FY=fall yearlings; AD= adults).

Region	Age	Average stocked per year: Number	Per principal acre[19]	Percent of total number stocked:
A	FF	14,938	1.1	
	SY	20,563	1.5	
	FY	8,400	0.6	
	AD	215	0.02	
	All	44,116	3.2	8
B	FF	13,825	0.3	
	SY	52,598	1.1	
	FF	17,593	0.4	
	AD	125	0.003	
	All	84,141	1.7	14
C	FF	68,010	8.5	
	SY	8,694	1.1	
	FY	2,129	0.3	
	AD	63	0.01	
	All	78,896	9.9	14
D	FF	94,300	1.2	
	SY	39,463	0.5	
	FY	15,688	0.2	
	AD	80	0.001	
	All	149,531	2.0	26
E	FF	61,276	0.4	
	SY	40,225	0.2	
	FY	7,863	0.05	
	AD	188	0.001	
	All	109,552	0.7	19
F	FF	20,050	0.5	
	SY	27,516	0.7	
	FY	9,470	0.2	
	AD	187	0.005	
	All	57,223	1.5	10
G	FF	37,825	0.5	
	SY	12,200	0.1	
	FY	4,300	0.1	
	AD	63	0.001	
	All	54,388	0.6	9
All	FF	310,224	0.7	
	SY	201,259	0.5	
	FY	65,443	0.2	
	AD	921	0.002	
	All	577,847	1.3	100

[19] From Table 3.

Table 6. Estimated numbers of brook trout 6 inches in length and greater in Maine lakes with principal brook trout fisheries, by category.

Lake size category (acres)	Stocked	Substantial interspecific competition	Estimated number of BKT/acre[20]	Statewide number of: Lakes	Acres	Estimated number of brook trout
<200	No	No	45	348	1,178	53,010
	No	Yes	15	192	13,077	196,155
	Yes	No	115	176	4,620	531,300
	Yes	Yes	40	192	13,006	520,240
Subtotal			**41**	**908**	**31,881**	**1,300,705**
>200	No	No	10	14	10,305	103,050
	No	Yes	3	123	270,102	810,306
	Yes	No	25	4	1,304	32,600
	Yes	Yes	11	112	114,664	1,261,304
Subtotal			**3**	**253**	**396,375**	**2,207,260**
Total			**8**	**1,161**	**428,256**	**3,507,965**

[20]The number of brook trout per acre is estimated from fall population estimates plus harvest estimates, and therefore does not account for recruitment or natural mortality.

Table 7. General law and standardized special regulation classes for brook trout lakes, effective 2006.

Class	Bag limit	Length limit	Lake category	No. (%) lakes[21]
C&R	0	N/A	Trophy	7 (0.6)
I	1 trout	18 inch minimum	Trophy	27 (2.1)
II	1 trout	14 inch minimum		12 (0.9)
III	2 trout	12 inch minimum; only 1 fish may be greater than 14"	High growth potential	135 (10.6)
IV	2 trout	10 inch minimum; only 1 fish may be greater than 12"	High growth potential	242 (19.1)
V[22]	2 trout	8 inch minimum	Moderate growth potential and stocked waters where distribution of the catch among anglers is a goal	173 (13.6)
VI[23]	5 trout	6 inch minimum	"Put and take" stocked waters, slow-growth waters, and remote waters with low angler use	632 (49.8)
VII	2 trout	6 inch minimum; all greater than 12 inches must be released	Experimental slot limit	12 (0.9)
None	Noncom-forming			28 (2.2)
Total				**1,268**

[21] Principal fisheries only.
[22] Class V regulations are general law regulations on lakes in Androscoggin, Cumberland, Franklin (effective 2007), Kennebec, Knox, Lincoln, Oxford, Sagadahoc, Waldo, and York counties.
[23] Class VI regulations are general law regulations on lakes in Aroostook, Hancock, Penobscot, Piscataquis, Somerset, and Washington counties.

Table 8. Number of principal brook trout lakes and ponds with special gear restrictions by lake type.

Regulation[24]	Statistic	Category: A waters	B waters	Other wild	Stocked	All lakes
FFO	Number	67	72	17	38	217
	% of category	31	33	8	18	
ALO	Number	68	45	14	69	210
	% of category	22	18	10	14	
NLFAB	Number	43	53	21	120	278
	% of category	14	22	15	25	
All lakes	Number	311	245	142	489	1,187

Table 9. Percent of older-age wild (>II+) and stocked (>I+) brook trout sampled from lakes by origin and year group (before and after regulation changes).

Origin[25]	Year group	Ages: II+	III+	IV+	V+	VI+	VII+	All	Sample size
Wild	1986-90		35.7	10.1	1.1	0.2		47.1	1,777
	1991-95		31.7	6.6	0.5			38.7	2,807
	All before		**33.7**	**8.4**	**0.3**	**0.1**	**0**	**42.9**	**4,584**
	1996-00		24.8	8.3	2.1	0.3		35.4	5,881
	2000-05		33.0	13.1	3.6	0.6	0.03	50.3	3,413
	2006-08		32.0	10.4	1.5	0.2		44.1	1,308
	All after		**29.9**	**10.6**	**2.4**	**0.4**	**0.01**	**43.3**	**10,602**
MHS	1986-90	27.4						27.4	102
	1991-95	4.9	7.1					12.0	124
	All before	**16.2**	**7.1**					**19.7**	**226**
	1996-00	43.0	0.6					43.6	293
	2000-05	3.4	0.3	0.1				3.8	226
	2006-08	23.3	1.9	16.5				41.7	103
	All after	**23.2**	**0.9**	**8.3**				**29.7**	**622**
Kenne-bago	1996-00	29.7	4.5	0.7				34.9	671
	2000-05	24.7	6.3	0.7				31.7	1,033
	2006-08	29.6	18.4	1.0				49.0	98
	All after	**28.1**	**6.3**	**0.7**				**35.1**	**1,802**

[24] FFO = fly fishing only; ALO = artificial lures only; NLFAB = no live fish as bait.

[25] MHS = Maine Hatchery Strain; Kenn. = Kennebago Strain. All stocked as fall fingerlings.

Table 10. Percent of older-age stocked brook trout sampled from lakes by age and regulation class.

Strain	Regulation class	Ages II+	III+	IV+	All	Sample size
MHS	5 trout, 6″ min.	9.6	4.5	0.2	14.3	490
	2 trout, 6″ min.	23.3			23.3	86
	2 trout, 8″	20.9	0	0.4	21.3	268
	2 trout, 6-12″ slot	100	0	0	100	7
	2 trout, 10″; 1>12″	20.2	0.6	1.2	22.0	173
	2 trout, 12″; 1>14″	8.9	0.6	0.6	10.1	180
	1 trout, 14″ min.	0	16.7	0	16.7	6
	1 trout, 18″ min.	23.7	9.9	8.3	41.9	253
	Catch & Release	0	0	0	0	0
	All	**16.5**	**3.4**	**1.8**	**21.7**	**1,463**
Kenn.	5 trout, 6″ min.	16.0	2.2	0.5	18.7	626
	2 trout, 6″ min.	15.4	7.7		23.1	13
	2 trout, 8″ min.	25.4	7.2	0	32.6	445
	2 trout, 6-12″ slot	0	0	0	0	0
	2 trout, 10″; 1>12″	51.8	20.2	1.6	73.6	193
	2 trout, 12″; 1>14″	29.5	5.8	1.2	36.5	844
	1 trout, 14″ min.	0	100	0	0	3
	1 trout, 18″ min.	100	0	0	0	17
	Catch & Release	51.4	0	0	51.4	35
	All	**24.8**	**5.9**	**0.7**	**31.5**	**2,176**

Table 11. Lakes with special brook trout regulations, by Region.

Regulation	No. of:	Region A	B	C	D	E	F	G	**All**
2, 6-12″ slot	Lakes				7	5	1		**13**
	Acres				126	458	38		**622**
2, 10″; 1>12″	Lakes	6	2	10	65	111	30	12	**236**
	Acres	122	766	216	46,486	15,160	9,733	950	**73,433**
Other 10″ min.	Lakes					8	2		**10**
	Acres					447	106		**553**
2, 12″, 1>14″	Lakes	5	5	14	8	36	2	35	**105**
	Acres	324	237	1,845	3,880	29,541	97	63,077	**99,001**
1 trout, 14″	Lakes			4	2	7			**13**
	Acres			2,589	108	88,891			**91,588**
Other 14″ min.	Lakes					1			**1**
	Acres					64			**64**
1 trout, 18″	Lakes		1	1	6	8	1	8	**25**
	Acres		78	126	9,110	345	8	287	**9,954**
All	**Lakes**	**11**	**8**	**29**	**88**	**176**	**36**	**55**	**403**
	Acres	**446**	**1,081**	**4,776**	**59,710**	**134,906**	**9,982**	**64,314**	**275,215**

Table 12. Number and acres of principal fishery brook trout lakes by management objectives.[26]

Region	General		Size Quality		Trophy	
	No. lakes	Acres	No. lakes	Acres	No. lakes	Acres
A	91	13,311	12	484	0	0
B	70	48,521	7	1,003	1	126
C	51	3,195	28	4,650	1	126
D	118	16,022	83	50,397	7	9,622
E	193	30,178	172	136,104	11	403
F	97	27,970	34	9,968	1	8
G	151	19,081	47	63,651	12	1,070
State	**771**	**158,278**	**383**	**266,257**	**33**	**11,355**

Table 13. Average length in inches of brook trout caught by anglers in the summer, by origin (wild vs. stocked) and minimum length limit in effect.

Origin	Minimum length limit[27]	Average length of brook trout caught	Number of brook trout in sample
Wild	6	11.8	195
	8	12.9	162
	10	13.9	850
	12	15.1	352
Stocked	6	9.6	489
	8	10.2	180
	10	13.1	10
	12	13.5	40

Table 14. Mean sizes (inches and pounds) of wild and stocked brook trout sampled during summer and fall months by year group. Solid vertical line denotes imposition of restrictive regulations in 1996.

		Year group					
		1981-85	1986-90	1991-95	1996-00	2001-05	2006-08
Wild (Age III+)	Length	12.8	12.4	13.0	12.3	11.9	11.4
	Weight	1.00	0.80	0.89	0.74	0.66	0.55
	Number	87	646	891	1,457	1,189	453
Stocked (Age II+)	Length	11.6	12.8	12.7	12.2	12.6	13.3
	Weight	0.74	0.97	0.91	0.74	0.83	0.89
	Number	24	92	155	724	795	53

[26] General: lakes and ponds managed for 'average' fisheries; Size Quality: lakes and ponds managed to enhance abundance of trout greater than 12 inches in length; Trophy: managed to enhance abundance of trout greater than 16 inches in length.
[27] Includes Class III and IV regulations (See Table 7).

Table 15. Estimated miles of stream habitat by management Region.

Region	Estimated total stream mileage	Miles brook trout habitat	Percent brook trout habitat
A	3,729	2,634	71
B	3,598	2,568	71
C	3,793	2,688	71
D	4,837	2,959	61
E	4,134	2,365	57
F	4,770	3,382	71
G	6,945	4,531	65
State	**31,806**	**21,127**	**66**

Table 16. Average number of brook trout (exclusive of fry) stocked per year in **streams**, 2005-2008

Region	Age	Number	Percent of total number stocked:
A	FF	2,023	
	SY	42,461	
	FY	1,060	
	AD	261	
	All	**45,805**	**41**
B	SY	14,653	
	All	**14,653**	**13**
C	SY	2,275	
	FY	206	
	Ad	185	
	All	**2,666**	**2**
D	FF	1,492	
	SY	17,386	
	FY	2,338	
	All	**21,216**	**19**
E	SY	18,620	
	FY	1,881	
	Ad	125	
	All	**20,626**	**18**
F	SY	5,310	
	FY	533	
	Ad	4	
	All	**5,847**	**5**
G	SY	1,400	
	All	**1,400**	**1**
State	FF	2,984	
	SY	102,105	
	FY	6,018	
	AD	575	
	All	**111,682**	**100**

Table 17. Estimated brook trout catch, effort, and harvest, by lake size class and origin (hatchery vs. wild). Data from clerk surveys conducted from 1994-2006.

Lake size class (acres)	Origin	No. anglers /a	No. harvest-ed/a	Lb. harvest-ed/a	No. acres state-wide	No. anglers state-wide	No. harvest-ed state-wide	Lbs. Harvest-ed state-wide
LE 200	Hatch-ery	26.5	15.1	7.3	17,626	467,089	266,153	128,670
	Wild	5.8	3.6	0.8	14,225	82,505	51,210	11,380
	Both				31,851	549,594	317,363	140,050
G 200	Hatch-ery	2.1	0.1	0.1	115,968	243,533	11,597	11,597
	Wild	0.7	0.2	0.1	280,407	196,285	56,081	28,041
	Both			0.1	396,375	439,818	67,678	39,638
Both	Hatch-ery				133,594	710,622	277,750	140,267
	Wild				294,632	278,790	107,291	39,421
	Both				428,226	**989,412**	**385,041**	**179,688**

Table 18. Estimated Brook Trout Catch and Effort by Season and Water Type. From 1998-99, and 1999 Angler Questionnaires. (Numbers in Parentheses are 95% Confidence Intervals).

Season	Water Type	Anglers	Angler Days	Legal fish Caught	Legal fish Kept	% Kept	Fish per Angler-day Caught	Fish per Angler-day Kept
Winter	Lakes	38,441	248,872	119,644	44,122	37	.48	0.18
		(1,468)	(17,648)	(21,988)	(6,293)			
Summer	Lakes	124,534	1,239,339	1,055,274	308,062	29	0.85	0.25
		(2,208)	(48,516)	(67,823)	(6,473)			
Summer	Streams	51,580	399,696	978,505	326,449	33	2.45	0.82
		(1,897)	(21,512)	(66,758)	(30,275)			
Both	Both	142,392	1,633,496	2,049,028	635,985	31	1.25	0.39
		(2,123)	(56,310)	(105,316)	(42,672)			

Table 19. Estimated Brook Trout Catch and Effort, Ice Fishing Season, by Region. From 1998-99 Angler Questionnaire. (Numbers in Parentheses are 95% Confidence Intervals).

Region	Anglers	Angler Days	Legal Fish Caught	Legal Fish Kept	Percent Kept	Fish Per Angler Day Caught	Fish Per Angler Day Kept
A	8,016	40,362	18,610	7,598	41	0.46	0.19
	(972)	(5,596)	(7,920)	(2,831)			
B	7,772	43,847	11,118	5,193	47	0.25	0.12
	(959)	(7,616)	(2,968)	(1,542)			
C	2,997	16,537	10,281	4,078	40	0.62	0.25
	(620)	(3,751)	(4,679)	(1,475)			
D	2,579	8,302	4,809	2,091	43	0.58	0.25
	(577)	(1,961)	(2,104)	(952)			
E	13,940	60,905	33,004	10,874	33	0.54	0.18
	(1,215)	(7,934)	(7,769)	(2,505)			
F	5,785	28,609	17,565	5,193	30	0.61	0.18
	(842)	(5,278)	(13,170)	(1,854)			
G	6,643	51,135	24,256	9,096	38	0.47	0.18
	(877)	(9,602)	(15,228)	(3,108)			
ALL	47,732	249,697	119,643	44,123	37	0.48	0.18

Table 20. Estimated brook trout catch and effort, open water fishing season, by water type and region. From 1999 Angler Questionnaire. Sums are not additive because estimates were made independently.

Region	Water Type	Anglers	Angler Days	Legal Fish Caught	Legal Fish Kept	Percent Kept	Fish Per Angler Day Caught	Fish Per Angler Day Kept
A	Lakes	22,133	217,362	93,699	27,301	29	0.43	0.13
	Streams	9,689	82,667	108,290	30,872	29	1.31	0.37
	All	28,972	299,485	203,582	58,623	29	0.68	0.20
B	Lakes	14,344	123,187	53,715	18,202	34	0.44	0.15
	Streams	3,420	24,600	29,067	13,581	47	1.18	0.55
	All	17,003	147,824	83,445	31,931	38	0.56	0.22
C	Lakes	6,649	42,461	37,332	14,439	39	0.88	0.34
	Streams	3,800	17,561	58,230	24,128	41	3.32	1.37
	All	9,309	60,558	95,561	38,566	40	1.58	0.64
D	Lakes	42,651	372,947	339,836	69,185	20	0.91	0.19
	Streams	15,009	98,077	255,147	47,170	18	2.60	0.48
	All	49,015	471,559	600,684	116,694	19	1.27	0.25
E	Lakes	42,651	287,308	278,925	73,644	26	0.97	0.26
	Streams	8,739	39,768	133,178	43,793	33	3.35	1.10
	All	46,261	327,550	413,932	117,498	28	1.26	0.36
F	Lakes	13,204	72,719	100,691	46,787	46	1.38	0.64
	Streams	6,934	44,504	109,525	46,001	42	2.46	1.03
	All	18,048	116,467	210,216	92,655	44	1.80	0.80
G	Lakes	18,618	133,620	147,378	56,944	39	1.10	0.43
	Streams	10,069	83,770	250,017	112,422	45	2.98	1.34
	All	23,558	216,650	402,625	170,030	42	1.86	0.78
State	Lakes	160,250	1,249,604	1,051,576	306,502	29	0.84	0.25
	Streams	57,660	390,947	943,454	317,967	34	2.41	0.81
	All	217,910	1,640,551	1,995,030	624,469	31	1.22	0.38

Table 21. Mean brook trout length (inches) and weight (pounds) from lakes by Region and season for the years 1996-2000. Data from clerk surveys. Means are means of weighted means. N is the number of surveys.

	Winter					Summer					Annual				
		Length		Weight			Length		Weight			Length		Weight	
Region	N	Mean	SE	Mean	SE	N	Mean	SE	Mean	SE	N	Mean	SE	Mean	SE
A	9	13.1	0.4	0.74	0.13	1	15.9		1.59		10	12.9	0.40	0.64	0.14
B	7	13.5	0.7	0.97	0.18	4	11.2	1.0	0.46	0.13	9	12.4	0.87	0.83	0.21
C	6	15.0	1.0	1.42	0.29										
D	3	8.9	0.9	0.32	0.10	5	13.5	0.4	1.06	0.17	6	13.7	0.34	1.11	0.11
E	10	14.5	0.6	1.11	0.21	4	14.1	0.4	0.95	0.07	12	14.3	0.18	0.99	0.05
F	3	13.5	2.3	0.91	0.31	2	15.6	0.4	1.37	0.25	4	12.1	1.86	0.74	0.26
G	40	13.9	0.2	0.99	0.06	2	13.6	0.1	0.89	0.06	31	14.3	0.17	1.03	0.04
State	78	13.2		0.92		18	14.0		1.05		71	13.3		0.94	

Table 22. Number and acres of brook trout lakes open to fishing, 2006.

	All Lakes				Principal Fisheries			
	Open summer		Open winter		Open summer		Open winter	
Region	Number	Acres	Number	Acres	Number	Acres	Number	Acres
A	117	46,378	83	45,336	101	14,340	71	13,122
B	105	69,618	83	69,961	48	16,973	61	49,751
C	182	88,886	136	85,868	81	8,057	43	6,042
D	239	103,731	23	33,508	205	76,904	10	9,329
E	431	223,899	40	150,390	385	167,045	23	108,946
F	193	138,719	93	110,898	127	35,801	38	26,586
G	234	91,511	40	44,056	214	89,464	32	42,363
State	1,501	762,742	498	539,747	1,161	408,584	278	256,139

Table 23. Mean brook trout length (inches) and weight (pounds) from lakes by Region and season for the years 2003-2008. Data from clerk surveys. N is the number of fish in the sample. Means are weighted.

		Winter			Summer			Annual		
Region	Origin	N	Length	Weight	N	Length	Weight	N	Length	Weight
A	Wild	.	.	.	.	.	.	.	.	.
	Stocked	.	.	.	.	.	.	.	.	.
	Both	9	13.1	0.74	1	15.9	1.59	10	12.9	0.64
B	Wild	.	.	.	.	.	.	.	.	.
	Stocked	.	.	.	.	.	.	.	.	.
	Both	7	13.5	0.97	4	11.2	0.46	9	12.4	0.83
C	Wild	11	14.1	0.94	.	.	.	.	.	.
	Stocked	.	.	.	.	.	.	.	.	.
	Both	.	.	.	.	.	.	.	.	.
D	Wild	23	11.0	0.56	161	13.5	1.04	184	13.2	0.98
	Stocked	37	14.0	1.34	71	8.9	0.25	108	10.6	0.63
	Both	60	12.4	1.00	232			292		
E	Wild	78	14.8	1.11	.	.	.	.	.	.
	Stocked	.	.	.				.	.	.
	Both	.	.	.	4	14.1	0.95	.	.	.
F	Wild	.	.	.	.	.	.	.	.	.
	Stocked	.	.	.	.	.	.	.	.	.
	Both	3	13.5	0.91	2	15.6	1.37	4	12.1	0.74
G	Wild	14	13.6	0.78	4	17.9	2.89	18	14.6	1.25
	Stocked	6	12.1	0.68	332	9.1	0.26	338	9.1	0.27
	Both	20			336					
State	Wild	126	13.9	0.96	165	13.6	1.09	291	13.8	1.03
	Stocked	43	13.7	1.24	403	9.0	0.26	446	9.5	0.36
	Both	169			568					

Table 24. Principal fishery brook trout lakes closed to general public access or closed to all fishing.

Region	Number of lakes with fee access	Closed to general public access: Number of: lakes	acres
D	3	37	6,058
F	3	1	544
G	3	1	13
State	9	39	6,615

Table 25. Number and acres of brook trout lakes zoned as Remote Ponds by the Land Use Regulation Commission (LURC); by management Region.

Region	Lakes		Acres	
	Number	Percent	Number	Percent
A	1	<1	17	<1
B	0	0	0	0
C	3	2	108	2
D	15	9	192	4
E	114	69	3,686	71
F	20	12	586	11
G	13	8	607	12
State	166		5,196	

Appendix 1. Brook trout waters with no or limited public access.

Region	Water	Town	Acres
D	Abbie Pond	Bowmantown Twp.	12
	Baker Pond	T5 R6 BKP WKR	270
	Barker Pond	Bowmantown Twp.	35
	Beaver Pond	Seven Ponds Twp.	20
	Billings P # 1	Parmachenee Twp.	20
	Billings P # 2	Parmachenee Twp.	10
	Black Pond, Lower	Oxbow Twp.	30
	Black Pond, Upper	Bowmantown Twp.	30
	Blakeslee Lake	T5 R6 BKP WKR	55
	Boundary Pond, South	Massachusetts Gore	10
	Butler Pond	King and Bartlett Twp.	45
	Carry Pond, East	Carrying Place Town Twp.	267
	Carry Pond, Middle	Carrying Place Town Twp.	126
	Carry Pond, West	Carrying Place Town Twp.	675
	Deer Pond	King and Bartlett Twp.	30
	Everett Pond	King and Bartlett Twp.	20
	Felker Pond	King and Bartlett Twp.	50
	Flatiron Pond	Davis Twp.	30
	Grants Pond	Massachusetts Gore	20
	Island Pond, Little	Seven Ponds Twp.	50
	Island Pond, Big	Seven Ponds Twp.	350
	Johns Pond	Davis Twp.	267
	Kamankeag Pond	Davis Twp.	40
	Kennebago L, Big	Davis Twp.	1700
	King & Bartlett Lake	King and Bartlett Twp.	538
	King Lake, Little	King and Bartlett Twp.	90
	L Pond	Seven Ponds Twp.	95
	Long Pond	King and Bartlett Twp.	60
	Long Pond	Seven Ponds Twp.	35
	Northwest Pond	Massachusetts Gore	45
	Northwest Pond, Little	Massachusetts Gore	10
	Otter Pond	Parmachenee Twp.	14
	Parmachenee Lake	Lynchtown Twp.	912
	Rock Pond	Chain of Ponds Twp.	26
	Ross Pond	Rangeley	26
	Rump Pond	Parmachenee Twp.	35
	Secret Pond	Seven Ponds Twp.	10
F	Shin Pond, Upper	Mount Chase	544
G	Butterfield Lake	Caswell Plt.	13

Appendix 2. Average length (inches) of wild brook trout caught by anglers, by water and minimum length limit in effect.

Water and County	Survey season	Minimum length limit	Average length of brook trout caught and (sample size)	Average exceedance of length limit
Allagash Lake, Piscataquis	Winter	12	15.0 (52)	3.0
Aziscohos Lake, Oxford	Summer	8	13.0 (106)	5.0
		10	14.3 (418)	2.3
Moosehead Lake, Piscataquis	Winter	12	14.3 (418)	2.3
Mooselookmeguntic Lake, Oxford	Summer	10	13.2 (437)	3.2
Pierce Pond, Somerset	Summer	10	16.0 (127)	6.0
Rangeley Lake, Franklin	Summer	10	13.7 (46)	3.7
Richardson Lakes, Oxford	Summer	8	12.6 (46)	4.6
All	All	8	12.9 (152)	4.9
		10	13.9 (791)	3.9
		12	14.4 (470)	2.4

BROOK TROUT IN LAKES

GOALS AND OBJECTIVES

2009-2016

GOAL: Maximize the contribution of wild stocks to the fishery. Provide principal fishing opportunities for brook trout in 1,205 lakes and ponds (440,993 acres).

OBJECTIVES:

Abundance: Increase the current distribution of brook trout from 1,187 to 1,205 lakes and ponds (1.5%) and from 435,846 to 436,281 principal-fishery acres (0.1%).

Harvest: For brook trout lakes less than or equal to 200 acres in size, establish harvest rates of 1.0 pound per acre for wild populations and 5.0 pounds per acre for stocked populations. For brook trout lakes greater than 200 acres in size, establish harvest rates of 0.1 pound per acre for wild populations and 0.2 pound per acre for stocked populations.

Fishing quality:

Statewide: Increase the catch rate to 1.0 brook trout/angler day but reduce the number of fish kept/day to 0.25. Increase the average lengths and weights of brook trout kept from 12.6 to 13 inches and from 0.9 to 1.0 pound.

General Management Waters: 731 lakes and ponds (104,960 acres). Waters chosen for this management class should provide an average catch rate of 0.9 fish/angler-day with an average size of 10.75 inches and 0.6 pound.

Size Quality Management Waters: 365 lakes and ponds (264,639 acres). Waters chosen for this management class should provide brook trout with an average size of 14.25 inches and 1.25 pound.

Trophy Management Waters: 25 lakes and ponds (9,954 acres). Waters chosen for this management class should provide brook trout with an average length of 16 inches.

Regional management criteria for brook trout:

Regional management objectives for brook trout in lakes vary considerably but on a statewide basis stipulate an average catch rate of 0.85 brook trout per angler for General Management waters. For Size Quality and Trophy waters, the management objectives are defined by average fish length, which are 14 inches and 17 inches respectively (Table 26).

Capability of Habitat: Given the anticipated unauthorized introduction and migration of competing fish species, it will be a challenge to increase brook trout abundance and distribution even modestly throughout the next planning period. To do so, it will be necessary to add lakes and ponds to the inventory through new surveys of existing populations and to create new fisheries through stockings. In areas that remain free from invasive fish species, the contribution of wild stocks is being maximized by protecting trout to spawning size through regulatory fiat. Despite success in restoring older age classes though the imposition of restrictive regulations, it will be necessary to continue to monitor individual waters to assure that regulations remain appropriate, effective, and do not negatively impact growth rates.

The harvest objective of 1.0 pound per acre is reasonable given the regulatory protection afforded larger, sexually mature wild fish and, for stocked populations, the increased stockings of catchable fish. There is adequate habitat to meet the objective of increasing brook trout fishing quality in large salmonid lakes by stocking catchable trout (spring yearlings and fall yearlings). Many oligotrophic lakes currently supporting lake trout and/or salmon fisheries have few wild brook trout, possibly as a result of predation by these larger species and/or interspecific competition from warmwater species occupying the littoral zone. Numbers of stocked spring and fall yearlings have been increased in recent years, thanks in large part to the expansion of the Embden Rearing Station and provide additional angler opportunity, especially for those who wish to harvest fish.

Feasibility: As evidenced by the increase in the number of legal-size brook trout voluntarily returned to the water alive and the willingness to accept stricter regulations, anglers are supportive of improved fishing quality at the expense of harvest. Restrictive regulations recently imposed on waters capable of producing brook trout of above-average size are maximizing the contribution of wild stocks and improving size quality. These regulations are also increasing escapement of hatchery-reared trout on selected waters, resulting in increased holdover to the second year post-stocking and beyond. The expansion of fish rearing capability resulted in increased availability of spring yearling and older brook trout beginning in 2006. Evaluation of new hatchery-reared strains of brook trout indicated that the Kennebago Strain fish survive to older age than do the older Maine Hatchery Strain fish, but that a cross of the two strains yields a hybrid that grows quickly and provides superior returns for fish stocked

biologically as fall fingerlings. This variety of genetic traits assists managers by providing a range of management options.

Desirability: A modest increase in the current distribution of brook trout is desirable because of the species' aesthetic and economic value. Maximizing the contribution of wild stocks will ensure perpetuation of the species and maintenance of its genetic traits while improving size quality. Permitting a harvest of up to 1.0 lb/acre of hatchery-reared populations will maintain current fishing quality for stocked fish in most waters and improve size-quality on selected waters through recently imposed restrictive regulations. The stocking of spring and fall yearling brook trout in larger lakes with suitable water quality will improve fishing quality for this species in waters where past stocking efforts, including those of fall fingerling stockings, have performed poorly.

Possible Consequences: Increasing the numbers and distribution of catchable brook trout within the confines dictated by policy will create additional fisheries and improve fishing success on some currently stocked waters, particularly those near human population centers. Increasing brook trout abundance in larger salmonid lakes by stocking spring yearlings may require changing priorities at rearing facilities, which may impact the ability to rear adequate numbers of other fish species. Existing policy permits the expansion of stocked brook trout distribution on a case-by-case basis after a review intended to prevent or minimize the impact on native and wild populations. Efforts to maximize the contribution of wild stocks by imposing higher minimum length limits and lower bag limits will result in a reduction in allowable harvest rates, which will be unpopular with some anglers. There are biological limits on the number of waters where greater fish size can be achieved by simply increasing the length limits – those with high reproductive rates being a prime example. The higher length limits imposed on selected waters with both wild and stocked populations may also result in increased rates of hooking injury and mortality despite efforts to minimize these effects through gear restrictions. Although the benefits of restrictive regulations outweigh the detrimental effects of hooking mortality, anglers often react negatively to the loss of individual fish to hooking mortality.

BROOK TROUT IN LAKES

MANAGEMENT PROBLEMS AND STRATEGIES IN ORDER OF PRIORITY

PROBLEM 1. Statewide brook trout abundance and harvest estimates are not statistically robust because an inadequate number of lakes have been sampled to date. The number of estimates of population abundance, standing crop, and harvest remains low in proportion to the total number of brook trout lakes, and is biased toward winter fisheries in large lakes.

Strategy 1. Continue to evaluate brook trout populations in lakes at the current level, yielding post-season abundance estimates for two to six waters per year and angler use and harvest estimates as economically feasible.

Strategy 2. Expand the above program to include waters with both wild and stocked brook trout populations, both acreage categories (LE 200 acres and >200 acres), a variety of regulations, intra-specific competition, and varying levels of angler-use.

Strategy 3. Re-establish the statewide angler questionnaire on a 5-year basis.

PROBLEM 2. Age and growth data indicate that restrictive regulations imposed on Quality and Trophy waters have been successful in maximizing the contribution of wild stocks but have resulted in overall decreased rather than increased average fish size at age. Conversely, there may be waters with low reproductive potential that could benefit from the imposition of more restrictive regulations. For stocked waters, abundance is currently appropriate for the regulations in effect in terms of maximizing growth and allowing escapement to older ages; however, these waters will need to be monitored closely in the future to maintain this balance.

Strategy 3. For wild brook trout lakes, evaluate the success of these regulations by comparing the relative population abundance (determined from routine netting catches), relative growth rates, and the proportion of older-age (age III and greater) fish sampled to that from pre-regulation change data. For stocked populations, compare the proportion of age II and older fish sampled and growth rates to that from pre-regulation change data.

Strategy 4. Initiate a systematic statewide sampling regime designed to gather clerk survey information on waters with different classes of regulations. Contract with outside labor to perform this work.

PROBLEM 3. Restrictive regulations imposed on Maine brook trout waters have resulted in increased brook trout catch rates, thereby creating a more desirable fishery, especially for anglers inclined to

release a portion or all of their catch. Increased angler use is desirable economically and is sustainable biologically because restrictive regulations protect the resource from overhavest. In fact, there is evidence that limited increased harvest might benefit wild populations by reducing intraspecific competition. However, this resource has been under-advertised to date, particularly to out-of-state anglers.

Strategy 5. Develop print and web-based promotion of Maine's brook trout resource through the Department's Public Information & Education Division and the Maine State Office of Tourism, emphasizing Maine's unique wild brook trout resource, a catch-and-release ethic, and the physical beauty of the setting of many of Maine's brook trout waters.

PROBLEM 4. The expanded catchable (spring and fall yearling) stocking program has not been fully evaluated.

Strategy 6. Using information from routine lake sampling, correlate statewide catch and harvest information to stocking rates, accounting for age at stocking, strain, interspecific competition, regulations, and other factors that influence brook trout growth and survival.

PROBLEM 5. A number of Maine's public brook trout lakes are inaccessible to anglers because access is denied over privately owned roads.

Strategy 7. Gain appropriate public access rights over private ways by purchase, negotiation and agreement, easement, gift, cooperation with other State Agencies, legislation, and by encouragement of private groups and enterprises.

PROBLEM 6. Angler demand, use-rates, and harvest rates of remote brook trout lakes are unknown. Such knowledge would be useful to determine the effectiveness of current zoning and the need to zone additional waters as LURC Remote Ponds.

Strategy 8. Obtain angler counts on a sample of remote ponds as an indicator of use.

Strategy 9. Determine angler demand through use of the statewide angler questionnaire.

BROOK TROUT IN STREAMS

GOAL: Maintain current abundance and fishing opportunity for existing fisheries on 22,250 miles of flowing water and provide additional fishing opportunity in selected river sections.

OBJECTIVES:

Abundance: Maintain an average population of about 1,350 brook trout of all size classes for each stream mile classified as permanent brook trout habitat. Maintain a late-summer average of 5 to 7% of the total population at lengths exceeding 6 inches.

Harvest: Maintain harvest levels at or below 50% of legal fish available pre-season.

Fishing quality:

Statewide: Maintain angling quality at 2.5 legal trout caught and 0.75 harvested per angler day, and an average length of 10 inches.

General Management Waters: Maintain an average catch rate of 2.0 fish/angler with a minimum average length of 9.5 inches.

Size Quality Management Waters: Maintain an average length of 12 inches.

Trophy Management Waters: Maintain an average length of 14 inches.

Regional management criteria for brook trout:
Regional management objectives for brook trout in streams specify a catch rate of 2.47 fish per angler with an average length of 9.4 inches for General Management waters and an average length of 12.0 inches for Size Quality waters (Table 27).

Capability of Habitat: Brook trout stream habitat is abundant on a statewide basis and does not limit overall goals and objectives. However, there is less suitable stream habitat in Regions A and B. The majority of streams supporting native brook trout populations do not normally produce trout of

exceptional size; thus, there is limited potential statewide for creating quality brook trout fisheries through the imposition of restrictive regulations.

Feasibility: Harvest rates have not, to date, reduced brook trout abundance or opportunity statewide. Some continued loss or degradation of stream habitat is expected to occur as a result of development, including road construction, and agricultural practices. Restrictive regulations intended to improve fishing quality on many of the State's larger quality brook trout streams were imposed in 1996. The success of these regulations in increasing the average fish size will continue to be evaluated over the period.

Desirability: The stated goals and objective, if met, will maintain the existing brook trout stream fishery overall and improve quality where growth potential occurs.

Possible Consequences: Success of special regulations imposed to improve fishing quality in streams capable of growing larger-than-average brook trout may increase angler demand. These fisheries are expected to attract non-consumptive and trophy anglers and, in doing so, may displace some of the more traditional anglers. Increased demand may also result in crowding and associated degradation of the aesthetic angling experience on some waters.

BROOK TROUT IN STREAMS

MANAGEMENT PROBLEMS AND STRATEGIES IN ORDER OF PRIORITY

PROBLEM 1. A 2005 assessment by Maine's fisheries biologists for the Eastern Brook Trout Joint Venture indicated that 64% of the subwatersheds (12 digit HUC[28]) have no quantitative data on brook trout status. Although recent efforts toward collecting information regarding stream brook trout status has increased substantially, there remains a lack of detailed information on the quantity and quality of brook trout habitat for some areas of Maine. In addition, estimates of angler demand, harvest, and angling quality of both wild and stocked brook trout stream fisheries remain unknown.

Strategy 1. Complete the inventory of Maine's lotic brook trout habitat at a rate of 100 HUC – 6 watersheds per year using the methodology outlined in "A Large-Scale Assessment of Brook Trout (*Salvelinus fontinalis*) Populations and Habitat in Maine"[29] by collaborating with partner agencies and seeking additional funding mechanisms for continued efforts.

Strategy 2. Compile statewide summaries of voluntary data for brook trout streams to estimate harvest and angling quality and expand efforts as necessary.

Strategy 3. Initiate a systematic statewide sampling regime for estimating angler use, harvest, and fishing quality on brook trout streams.

PROBLEM 2. Maine has the largest remaining number of anadromous brook trout populations but the exact number of waters and the status of their populations remain unknown.

Strategy 4. Complete the systematic sampling regime currently underway to determine the distribution and abundance of coastal brook trout populations.

Strategy 5. Investigate methods for identifying brook trout populations with an anadromous component, giving preference to non-lethal sampling.

Strategy 6. Address fish passage concerns in coastal brook trout habitats.

PROBLEM 3. Because the degree of genetic diversity and heterozygosity within Maine's wild lotic brook trout populations has not been determined, it is not possible to determine their uniqueness and therefore the degree to which they should receive regulatory protection.

Strategy 7. Determine the genetic diversity of Maine's wild riverine brook trout populations by analyzing archived genotype samples collected from the statewide stream status assessment project.

[28] HUC is an acronym for Hydrologic Unit Code. The HUC system classifies nested watersheds from large river basins (2 digit code) to small subwatersheds (12 digit code).

PROBLEM 4. Restricted public access to some streams may limit use opportunity in some areas.

Strategy 8. Improve access to trout streams by purchase, negotiation, easement, or gift. Encourage other state agencies, private groups or enterprises to work toward acquisition of new access and protection of existing access.

PROBLEM 5. Illegally introduced fish species that compete with brook trout migrate throughout drainages to new waters. There is currently an incomplete knowledge of existing and potential manmade and natural barriers to fish migration that would allow managers to predict and limit fish movement.

Strategy 9. Continue statewide survey efforts to document barriers to fish movement in conjunction with the statewide stream inventory as outlined in Strategy 1 above and other efforts underway by partner agencies..

PROBLEM 6. Recent stream surveys indicate that stream degradation may be impacting brook trout habitat and abundance. However, the extent of this problem is unknown.

Strategy 10. Continue efforts to determine stream habitat condition in conjunction with stream surveys and population determination to correlate stream condition to brook trout indices.

Strategy 11. Continue to implement and evaluate stream restoration treatments to determine their efficacy in restoring brook trout habitat in degraded streams.

PROBLEM 7. Environmental degradation from habitat fragmentation, streamside tree harvesting, development, and pesticide/herbicide application threatens some stream fisheries.

Strategy 12. Continue cooperation with other state and federal agencies charged with evaluating and enforcing these areas of degradation, including replacement of culverts that restrict migration. Support legislation intended to minimize or eliminate specific environmental risks. Inform the public and encourage interest and participation in addressing these issues.

[29] Prepared by Project Leader Merry Gallagher, Research Fishery Biologist.

Table 26. Regional management criteria for brook trout in lakes.

	Management objective									
	General				Size Quality			Trophy		
Region	No.	Acres	Catch rate	Average length	No.	Acres	Average length	No.	Acres	Average length
A	84	13,930	0.43	12.0	9	594	14.0	0	0	17.0
B	28	7,379	0.44	9.0	6	969	13.0	3	161	17.0
C	46	2,883	0.88	11.0	33	5,018	14.0	1	126	16.5
D	121	12,203	0.91	11.5	70	60,964	14.0	2	542	17.5
E	186	19,788	0.97	11.0	170	145,896	14.0	13	5,590	17.5
F	94	24,539	1.38	11.0	34	10,925	13.0	1	8	16.0
G	172	24,238	1.10	10.0	58	67,528	14.0	4	115	17.0
State	**731**	**105,604**	**0.85**	**11.0**	**430**	**291,894**	**14.0**	**24**	**6,542**	**17.0**

Table 27. Regional management criteria for brook trout in streams.

		Management criteria			
		General		Size Quality	
Region	Miles	Catch rate[30]	Average length	Catch rate	Average length
A	1,678	1.31	9.4±0.3	.	12.0
B	720	1.18	9.4±0.3	.	12.0
C	2,845	3.32	9.4±0.3	.	12.0
D	3,870	2.60	7.1±0.3	.	12.0
E	3,307	3.35	7.5±0.2	.	13.0
F	3,578	2.46	9.4±0.3	.	12.0
G	6,250	2.98	11.0±0.3	.	12.0
State	**22,248**	**2.47**	**9.4±0.3**	**.**	**12.0**

[30] Number of legal-size brook trout caught per angler.

MDIFW proposed list of State Heritage Fish Waters

Total: 573 Waters (includes: 340 A List Waters & 233 B List Waters)

Code "AH" denotes 16 A List waters proposed for removal; major substantive (Title 12, §12461)

Qualifications For Inclusion

WATCODE	WATER	ALTERNATE NAME	TOWN	COUNTY	REGION	A&B LIST	SELF-SUSTAINING POPULATION	CURRENT STOCKING	LIVE FISH AS BAIT PROHIBITED
1322	BUTCHER L		CODYVILLE PLT	WASHINGTON	C	A	Y	N	Y
1090	FLOOD L		TALMADGE	WASHINGTON	C	A	Y	N	Y
1092	FLOOD L (UPPER)		TALMADGE	WASHINGTON	C	A	Y	N	Y
7429	FOSTER L		MARION TWP	WASHINGTON	C	A	Y	N	Y
4668	GOOSE P		SWANS ISLAND	HANCOCK	C	A	Y	N	Y
4496	HALFMILE P		AURORA	HANCOCK	C	A	Y	N	Y
4576	LITTLE JELLISON HILL P		AMHERST	HANCOCK	C	A	Y	N	Y
4416	MYRICK P		T10 SD	HANCOCK	C	A	Y	N	Y
4572	SPRING BROOK P		AMHERST	HANCOCK	C	A	Y	N	Y
3360	ABBIE P		BOWMANTOWN TWP	OXFORD	D	A	Y	N	Y
3118	BARKER P		BOWMANTOWN TWP	OXFORD	D	A	Y	N	Y
3114	BEAVER P		PARMACHENEE TWP	OXFORD	D	A	Y	N	Y
2323	BEN GILE P		LANG TWP	FRANKLIN	D	A	Y	N	Y
3508	BIRCH P		ROXBURY	OXFORD	D	A	Y	N	Y
7724	BLACK P (LOWER)		OXBOW TWP	OXFORD	D	A	Y	N	Y
3362	BLACK P (UPPER)		BOWMANTOWN TWP	OXFORD	D	A	Y	N	Y
3346	BOUNDARY P (SOUTH)		MASSACHUSETTS GORE	FRANKLIN	D	A	Y	N	Y
3120	BOWMAN P NO. 1		BOWMANTOWN TWP	OXFORD	D	A	Y	N	Y
0176	CARIBOU P		MOUNT ABRAM TWP	FRANKLIN	D	A	Y	N	Y
7726	CUPSUPTIC P		OXBOW TWP	OXFORD	D	A	Y	N	Y
3366	DEER P		BOWMANTOWN TWP	OXFORD	D	A	Y	N	Y
2378	DILL P		DALLAS PLT	FRANKLIN	D	A	Y	N	Y
5044	DOUGLASS P		KIBBY TWP	FRANKLIN	D	A	Y	N	Y
0096	FISH P		PIERCE POND TWP	SOMERSET	D	A	Y	N	Y
4089	FLATIRON P		CHASE STREAM TWP	SOMERSET	D	A	Y	N	Y
2372	FLATIRON P		DAVIS TWP	FRANKLIN	D	A	Y	N	Y
4074	FRYPAN P		SQUARETOWN TWP	SOMERSET	D	A	Y	N	Y
0146	GORDON P		UPPER ENCHANTED TWP	SOMERSET	D	A	Y	N	Y
0094	HELEN P		PIERCE POND TWP	SOMERSET	D	A	Y	N	Y
0034	HID P		KINGFIELD	FRANKLIN	D	A	Y	N	Y
5150	HORSESHOE P		T3 R5 BKP WKR	SOMERSET	D	A	Y	N	Y
4102	HORSESHOE POND		EAST MOXIE TWP	SOMERSET	D	A	Y	N	Y
7304	HUSTON BROOK P		DEAD RIVER TWP	SOMERSET	D	A	Y	N	Y
3954	KAMANKEAG P		DAVIS TWP	FRANKLIN	D	A	Y	N	Y
8619	LITTLE HAMMOND P	HAMMOND P LITTLE, JULIES P	CARRABASSETT VALLEY	FRANKLIN	D	A	Y	N	Y
3540	MOUNTAIN P		RANGELEY PLT	FRANKLIN	D	A	Y	N	Y
3344	NORTHWEST P (LITTLE)		MASSACHUSETTS GORE	FRANKLIN	D	A	Y	N	Y
5148	PARKER P		T3 R5 BKP WKR	SOMERSET	D	A	Y	N	Y
2386	QUILL P		DALLAS PLT	FRANKLIN	D	A	Y	N	Y
0220	ROBINSON P		CARATUNK	SOMERSET	D	A	Y	N	Y
5060	SNOW MOUNTAIN P		ALDER STREAM TWP	FRANKLIN	D	A	Y	N	Y
3282	SURPLUS P		ANDOVER NORTH SURPLUS	OXFORD	D	A	Y	N	Y
3572	SWIFT RIVER P (LITTLE)		TOWNSHIP E	FRANKLIN	D	A	Y	N	Y
2362	TIM P		TIM POND TWP	FRANKLIN	D	A	Y	N	Y
7112	UNNAMED P	OSSIE P	BALD MOUNTAIN TWP T2 R3	SOMERSET	D	A	Y	N	Y
4064	WILSON HILL P		WEST FORKS PLT	SOMERSET	D	A	Y	N	Y
0162	WILSON HILL P (LITTLE)		JOHNSON MOUNTAIN TWP	SOMERSET	D	A	Y	N	Y
3574	WITHAM P		TOWNSHIP E	FRANKLIN	D	A	Y	N	Y
2504	ALDER P		ALDER BROOK TWP	SOMERSET	E	A	Y	N	Y
9787	ALLAGASH L		T8 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0422	BAKER P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
4026	BEAN POT P		T5 R15 WELS	PISCATAQUIS	E	A	Y	N	Y
0882	BEAR P		ELLIOTTSVILLE TWP	PISCATAQUIS	E	A	Y	N	Y
0636	BEAR P		RAINBOW TWP	PISCATAQUIS	E	A	Y	N	Y
0610	BEAVER P (BIG)		RAINBOW TWP	PISCATAQUIS	E	A	Y	N	Y
0828	BENSON P (LITTLE)		BOWERBANK	PISCATAQUIS	E	A	Y	N	Y
0514	BIRCH RIDGE P # 1		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
2928	BLOOD P (DUCK)	DUCK P	T2 R13 WELS	PISCATAQUIS	E	A	Y	N	Y
0434	BLUFF P		FRENCHTOWN TWP	PISCATAQUIS	E	A	Y	N	Y
2426	BOBS P		T4 R17 WELS	SOMERSET	E	A	Y	N	Y
2822	BRANCH P (EAST)		T7 R11 WELS	PISCATAQUIS	E	A	Y	N	Y
0788	BROWN P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
0834	BURDEN P	BUTTERMILK P (3RD)	BOWERBANK	PISCATAQUIS	E	A	Y	N	Y
0273	BUTTERMILK P (FOURTH)		BOWERBANK	PISCATAQUIS	E	A	Y	N	Y
2568	CAPE HORN P		BLAKE GORE	SOMERSET	E	A	Y	N	Y
0802	CHAIRBACK P (EAST)		T7 R9 NWP	PISCATAQUIS	E	A	Y	N	Y
0796	CHAIRBACK P (WEST)		T7 R9 NWP	PISCATAQUIS	E	A	Y	N	Y
4093	CHASE STREAM P		CHASE STREAM TWP	SOMERSET	E	A	Y	N	Y
5158	CLISH P		T5 R20 WELS	SOMERSET	E	A	Y	N	Y
0286	CROCKETT P		BLANCHARD TWP		E	A	Y	N	Y
2462	DINGLEY P (LITTLE)		T4 R5 NBKP	SOMERSET	E	A	Y	N	Y
2464	DINGLEY P (UPPER)		T4 R5 NBKP	SOMERSET	E	A	Y	N	Y
2454	DOLE P		DOLE BROOK TWP	SOMERSET	E	A	Y	N	Y
2496	DORITY P		HAMMOND TWP	SOMERSET	E	A	Y	N	Y
0616	DOUGHNUT P		RAINBOW TWP	PISCATAQUIS	E	A	Y	N	Y
0376	DOUGHTY P (LOWER)		MONSON	PISCATAQUIS	E	A	Y	N	Y
0374	DOUGHTY P (UPPER)		MONSON	PISCATAQUIS	E	A	Y	N	Y
2478	DUBOIS P		PRENTISS TWP	SOMERSET	E	A	Y	N	Y
2894	DUCK P		T5 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
0832	DUCK P		BOWERBANK	PISCATAQUIS	E	A	Y	N	Y
2954	DUCK P (BIG)		EAST MIDDLESEX CANAL GRANT TWP	PISCATAQUIS	E	A	Y	N	Y

WATCODE	WATER	ALTERNATE NAME	TOWN	COUNTY	REGION	A&B LIST	SELF-SUSTAINING POPULATION	CURRENT STOCKING	LIVE FISH AS BAIT PROHIBITED
9855	DURGIN P	CHAIN P #1	JOHNSON MOUNTAIN TWP	SOMERSET	E	A	Y	N	Y
2870	ELLIS P (LOWER)		T7 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
2992	ELLIS P (UPPER)		T7 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0574	FEMALE P		T1 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
2512	FISH P (LITTLE)		ALDER BROOK TWP	SOMERSET	E	A	Y	N	Y
2560	FISHER P #2		T4 R5 NBKP	SOMERSET	E	A	Y	N	Y
2940	FISHER P (BIG)		T2 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
2534	FOGG P		LONG POND TWP	SOMERSET	E	A	Y	N	Y
2820	FOURTH L		T7 R11 WELS	PISCATAQUIS	E	A	Y	N	Y
0498	FOX P		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
2455	FROST P		T4 R5 NBKP	SOMERSET	E	A	Y	N	Y
0668	FROST P (LITTLE)		T3 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
0620	GOULD P		RAINBOW TWP	PISCATAQUIS	E	A	Y	N	Y
0842	GRAPEVINE P (LITTLE)		BOWERBANK	PISCATAQUIS	E	A	Y	N	Y
0420	GRASSY P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
9853	GRENELL P		GREENVILLE	PISCATAQUIS	E	A	Y	N	Y
2456	GRENIER P (BIG)		T4 R5 NBKP	SOMERSET	E	A	Y	N	Y
2566	HALL P		PRENTISS TWP	SOMERSET	E	A	Y	N	Y
2824	HAY P		T7 R11 WELS	PISCATAQUIS	E	A	Y	N	Y
0790	HEDGEHOG P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
0532	HENDERSON P		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
0304	HILL P #1	HILTON P #1	KINGSBURY PLT	PISCATAQUIS	E	A	Y	N	Y
0306	HILLP #2	HILTON P #2	KINGSBURY PLT	PISCATAQUIS	E	A	Y	N	Y
0626	HORSERACE PONDS		RAINBOW TWP	PISCATAQUIS	E	A	Y	N	Y
2498	HUTCH P		HAMMOND TWP	SOMERSET	E	A	Y	N	Y
0492	HUTCHINSON P		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
2866	INDIAN P		T7 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
0782	INDIAN P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
5106	IRON P		T5 R6 BKP WKR	SOMERSET	E	A	Y	N	Y
2510	IRONBOUND P		ALDER BROOK TWP	SOMERSET	E	A	Y	N	Y
2986	JOHNSON P		T8 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0878	JUNIPER KNEE P		ELLIOTTSVILLE TWP	PISCATAQUIS	E	A	Y	N	Y
0654	KELLY P		T2 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
2926	KIDNEY P		EAST MIDDLESEX CANAL GRANT TWP	PISCATAQUIS	E	A	Y	N	Y
2490	LANE P		COMSTOCK TWP	SOMERSET	E	A	Y	N	Y
2543	LANG P (LITTLE)		PARLIN POND TWP	SOMERSET	E	A	Y	N	Y
5162	LINE P		T5 R20 WELS	SOMERSET	E	A	Y	N	Y
2556	LONE JACK P	CHAIN P #3	JOHNSON MOUNTAIN TWP	SOMERSET	E	A	Y	N	Y
9861	LONG P (LEWISTON P)		DOLE BROOK TWP	SOMERSET	E	A	Y	N	Y
0424	LOST P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
2420	LOST P		RUSSELL POND TWP	SOMERSET	E	A	Y	N	Y
0280	MARBLE P		BLANCHARD TWP	PISCATAQUIS	E	A	Y	N	Y
2474	MARY PETUCHE P		PRENTISS TWP	SOMERSET	E	A	Y	N	Y
2982	MILE P		T8 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0930	MILL BROOK P		BOWERBANK	PISCATAQUIS	E	A	Y	N	Y
5800	MISERY P		MISERY TWP	SOMERSET	E	A	Y	N	Y
5802	MISERY P (UPPER)		MISERY TWP	SOMERSET	E	A	Y	N	Y
0902	MOOSE P		ELLIOTTSVILLE TWP	PISCATAQUIS	E	A	Y	N	Y
0414	MOUNTAIN BROOK P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
2989	MOUNTAIN P		T8 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0316	MOXIE P (LITTLE)		EAST MOXIE TWP	SOMERSET	E	A	Y	N	Y
2884	MUD P		T6 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
0330	MUD P		MOOSEHEAD JUNCTION TWP	PISCATAQUIS	E	A	Y	N	Y
2422	MULE P		RUSSELL POND TWP	SOMERSET	E	A	Y	N	Y
0486	MURPHY P		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
4036	MUSCALSEA P (BIG)		RUSSELL POND TWP	SOMERSET	E	A	Y	N	Y
4034	MUSCALSEA P (LITTLE)		RUSSELL POND TWP	SOMERSET	E	A	Y	N	Y
2976	NARROW P		T8 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0786	NOTCH P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
0328	NOTCH P (BIG)		MOOSEHEAD JUNCTION TWP	PISCATAQUIS	E	A	Y	N	Y
0326	NOTCH P (LITTLE)		MOOSEHEAD JUNCTION TWP	PISCATAQUIS	E	A	Y	N	Y
0354	ORDWAY P (LITTLE)		SHIRLEY	PISCATAQUIS	E	A	Y	N	Y
2924	OTTER P		T3 R13 WELS	PISCATAQUIS	E	A	Y	N	Y
2994	POLAND P		T7 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0562	PRENTISS P		T1 R11 WELS	PISCATAQUIS	E	A	Y	N	Y
0898	PRESCOTT P		ELLIOTTSVILLE TWP	PISCATAQUIS	E	A	Y	N	Y
0027	PRICK P		SKINNER TWP	FRANKLIN	E	A	Y	N	Y
0294	PUNCHBOWL P		BLANCHARD TWP		E	A	Y	N	Y
0552	RABBIT P		T1 R11 WELS	PISCATAQUIS	E	A	Y	N	Y
0808	RAYS MILLS P		T7 R9 NWP	PISCATAQUIS	E	A	Y	N	Y
2910	RIPOGENUS P		T4 R12 WELS	PISCATAQUIS	E	A	Y	N	Y
5164	ROBERTS P		T5 R20 WELS	SOMERSET	E	A	Y	N	Y
5108	ROCK P		T5 R6 BKP WKR	SOMERSET	E	A	Y	N	Y
2670	ROUND P		APPLETON TWP	SOMERSET	E	A	Y	N	Y
0490	ROUND P		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
2874	ROUND P (LITTLE)		EAGLE LAKE TWP	PISCATAQUIS	E	A	Y	N	Y
0780	RUM P		GREENVILLE	PISCATAQUIS	E	A	Y	N	Y
0907	SECRET P		ELLIOTTSVILLE TWP	PISCATAQUIS	E	A	Y	N	Y
2912	SHACK P		LOBSTER TWP	PISCATAQUIS	E	A	Y	N	Y
2868	SHALLOW L (LITTLE)		T7 R14 WELS	PISCATAQUIS	E	A	Y	N	Y
0558	SING SING P		T1 R11 WELS	PISCATAQUIS	E	A	Y	N	Y
2728	SOURDNAHUNK L (LITTLE)	NESOWADNEHUNK L(LIT)	T5 R11 WELS	PISCATAQUIS	E	A	Y	N	Y

WATCODE	WATER	ALTERNATE NAME	TOWN	COUNTY	REGION	A&B LIST	SELF-SUSTAINING POPULATION	CURRENT STOCKING	LIVE FISH AS BAIT PROHIBITED
0334	SQUAW P (BIG)	MOOSE P (BIG)	MOOSEHEAD JUNCTION TWP	PISCATAQUIS	E	A	Y	N	Y
0336	SQUAW P (LITTLE)	MOOSE P (LITTLE)	MOOSEHEAD JUNCTION TWP	PISCATAQUIS	E	A	Y	N	Y
2416	ST JOHN P (FOURTH)	SAINT JOHN P (FOURTH)	T5 R17 WELS	SOMERSET	E	A	Y	N	Y
2432	ST JOHN P (SECOND)	SAINT JOHN P (SECOND)	T4 R17 WELS	SOMERSET	E	A	Y	N	Y
2438	ST JOHN P (THIRD)	SAINT JOHN P (THIRD)	T4 R17 WELS	SOMERSET	E	A	Y	N	Y
2428	ST JOHN P(LOWER 1ST)	SAINT JOHN P(LOWER 1ST)	T4 R17 WELS	SOMERSET	E	A	Y	N	Y
2440	ST JOHN P(UPPER 1ST)	SAINT JOHN P(UPPER 1ST)	T4 R17 WELS	SOMERSET	E	A	Y	N	Y
0618	STRATTON P		RAINBOW TWP	PISCATAQUIS	E	A	Y	N	Y
2434	SUMMIT P		T4 R17 WELS	SOMERSET	E	A	Y	N	Y
4088	TEN THOUSAND ACRE P		CHASE STREAM TWP	SOMERSET	E	A	Y	N	Y
0792	TROUT P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	A	Y	N	Y
0548	TUMBLEDOWN DICK P		T1 R11 WELS	PISCATAQUIS	E	A	Y	N	Y
8980	UNNAMED P		T5 R7 BKP WKR	SOMERSET	E	A	Y	N	Y
8416	UNNAMED P		COMSTOCK TWP	SOMERSET	E	A	Y	N	Y
9746	UNNAMED P	RAILROAD P	ATTEAN TWP	SOMERSET	E	A	Y	N	Y
8934	UNNAMED P		ATTEAN TWP	SOMERSET	E	A	Y	N	Y
7115	UNNAMED P		COMSTOCK TWP	SOMERSET	E	A	Y	N	Y
8942	UNNAMED P		HOLEB TWP	SOMERSET	E	A	Y	N	Y
7073	UNNAMED P		T6 R15 WELS	PISCATAQUIS	E	A	Y	N	Y
2453	UNNAMED P (LEATH)	LEATH P	T5 R20 WELS	SOMERSET	E	A	Y	N	Y
9676	UNNAMED P (RUBBERNECK)		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
2972	WADLEIGH P		T8 R15 WELS	PISCATAQUIS	E	A	Y	N	Y
2974	WADLEIGH P (LITTLE)		T8 R15 WELS	PISCATAQUIS	E	A	Y	N	Y
0900	WILSON P (LITTLE)		ELLIOTTSVILLE TWP	PISCATAQUIS	E	A	Y	N	Y
2484	WOUNDED DEER P		PRENTISS TWP	SOMERSET	E	A	Y	N	Y
4250	ATTWOOD P		T5 R8 WELS	PENOBSCOT	F	A	Y	N	Y
0912	BRANCH P (MIDDLE)		T5 R9 NWP	PISCATAQUIS	F	A	Y	N	Y
2706	BRAYLEY P		T7 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0474	CEDAR P		TB R10 WELS	PISCATAQUIS	F	A	Y	N	Y
2734	CENTER P		T4 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0538	CHURCH P		TA R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0594	DAISEY P		T2 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
9616	DEEP P		T4 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
2732	DWELLEY P		NESOURDNAHUNK TWP	PISCATAQUIS	F	A	Y	N	Y
0722	ELBOW P		T3 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
4232	FOWLER P (LOWER)		TROUT BROOK TWP	PISCATAQUIS	F	A	Y	N	Y
4220	FOWLER P (MIDDLE)		T5 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
0472	GAUNTLET P		TB R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0724	GRASSY P		T3 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0464	GREENWOOD P		TB R11 WELS	PISCATAQUIS	F	A	Y	N	Y
4242	HATHORN P		T4 R8 WELS	PENOBSCOT	F	A	Y	N	Y
2298	HATHORN P (LITTLE)		T4 R8 WELS	PENOBSCOT	F	A	Y	N	Y
4236	HIGH P		TROUT BROOK TWP	PISCATAQUIS	F	A	Y	N	Y
9786	HILL P		T7 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
2724	HUDSON P		T6 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0596	HURD P (LITTLE)		T2 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0534	JOHNSTON P		TA R10 WELS	PISCATAQUIS	F	A	Y	N	Y
3664	LANE BROOK P		T6 R6 WELS	PENOBSCOT	F	A	Y	N	Y
4230	LONG P		TROUT BROOK TWP	PISCATAQUIS	F	A	Y	N	Y
0590	MINISTER P (BIG)		T2 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0592	MINISTER P (LITTLE)		T2 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0588	MOOSE P		T2 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
2208	PEAKED MOUNTAIN P		T4 R7 WELS	PENOBSCOT	F	A	Y	N	Y
4206	POGY P		T4 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
2022	RUSSELL P		T4 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
4196	SIX PONDS #3		T4 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
4192	SIX PONDS #4		T4 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
0466	SPRUCE MOUNTAIN P		TB R11 WELS	PISCATAQUIS	F	A	Y	N	Y
8260	STUMP P		T3 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
0726	TRACY P		T3 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
4216	TRAVELER P		T5 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
1098	TROUT L		KOSSUTH TWP	WASHINGTON	F	A	Y	N	Y
4724	TROUT P		GRAND FALLS TWP		F	A	Y	N	Y
2103	TWIN P (LOWER)	TROUT P (LOWER)	T2 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
2102	TWIN P (UPPER)	TROUT P (UPPER)	T2 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
9083	UNNAMED P		T3 R8 WELS	PENOBSCOT	F	A	Y	N	Y
7419	UNNAMED P	ABBIE P	TOPSFIELD	WASHINGTON	F	A	Y	N	Y
4212	WASSATAQUOIK L		T4 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
4214	WASSATAQUOIK L (LIT)		T4 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
4208	WEED P		T4 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
2034	WHIDDEN P #1		MOUNT KATAHDIN TWP	PISCATAQUIS	F	A	Y	N	Y
2036	WHIDDEN P #2		MOUNT KATAHDIN TWP	PISCATAQUIS	F	A	Y	N	Y
2038	WHIDDEN P #3		MOUNT KATAHDIN TWP	PISCATAQUIS	F	A	Y	N	Y
2970	ALLAGASH P		T9 R15 WELS	PISCATAQUIS	G	A	Y	N	Y
2794	BLUFFER P		T8 R11 WELS	PISCATAQUIS	G	A	Y	N	Y
2796	BLUFFER P (LITTLE)		T8 R11 WELS	PISCATAQUIS	G	A	Y	N	Y
2798	BLUFFER P (UPPER)		T8 R11 WELS	PISCATAQUIS	G	A	Y	N	Y
1548	BRAN L		SAINT FRANCIS	AROOSTOOK	G	A	Y	N	Y
4182	BROWN BROOK P		T9 R9 WELS	PISCATAQUIS	G	A	Y	N	Y
2840	BUCKLEY P		T8 R10 WELS	PISCATAQUIS	G	A	Y	N	Y
1467	CAMPBELL P				G	A	Y	N	Y
1766	CARLISLE P		T8 R3 WELS	AROOSTOOK	G	A	Y	N	Y

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1582	CENTER P		T10 R8 WELS	AROOSTOOK	G	A	Y	N	Y
1538	CHASE P (FIRST)	HOURGLASS P	T14 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1540	CHASE P (SECOND)		T14 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1542	CHASE P (THIRD)		T14 R9 WELS	AROOSTOOK	G	A	Y	N	Y
9806	CHURCHILL L (LITTLE)		T10 R13 WELS	PISCATAQUIS	G	A	Y	N	Y
2964	CRESCENT P		T9 R15 WELS	PISCATAQUIS	G	A	Y	N	Y
2772	CURRIER P (FOURTH)		T9 R11 WELS	PISCATAQUIS	G	A	Y	N	Y
1512	DEBOULLIE L		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1524	DENNY P		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
2996	DESOLATION P		T8 R16 WELS	SOMERSET	G	A	Y	N	Y
1490	FALLS P	FALL BROOK L	T18 R10 WELS	AROOSTOOK	G	A	Y	N	Y
1486	FALLS P (LITTLE)	FALL BROOK L (LITTLE)	ALLAGASH	AROOSTOOK	G	A	Y	N	Y
1592	FERGUSON P		T14 R8 WELS	AROOSTOOK	G	A	Y	N	Y
1526	GALILEE P		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1528	GARDNER L		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1868	GERARD P		CASWELL	AROOSTOOK	G	A	Y	N	Y
1556	GILBERT P		SAINT JOHN PLT	AROOSTOOK	G	A	Y	N	Y
1558	GILBERT P (LITTLE)	JALBERT P (LITTLE)	SAINT JOHN PLT	AROOSTOOK	G	A	Y	N	Y
3638	GILMAN P		MORO PLT	AROOSTOOK	G	A	Y	N	Y
3646	GRASS P		MORO PLT	AROOSTOOK	G	A	Y	N	Y
9470	GREY P		T12 R12 WELS	AROOSTOOK	G	A	Y	N	Y
1498	HAFEY P		T18 R11 WELS	AROOSTOOK	G	A	Y	N	Y
9277	HORSESHOE P		T16 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1632	ISIE L		EAGLE LAKE	AROOSTOOK	G	A	Y	N	Y
1516	ISLAND P		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
2740	ISLAND P (UPPER)		T10 R10 WELS	PISCATAQUIS	G	A	Y	N	Y
1500	JONES P		BIG TWENTY TWP	AROOSTOOK	G	A	Y	N	Y
1002	KETCHUM L		TD R2 WELS	AROOSTOOK	G	A	Y	N	Y
9775	LAMBERT P		NEW LIMERICK	AROOSTOOK	G	A	Y	N	Y
2764	LEADBETTER P		T9 R11 WELS	PISCATAQUIS	G	A	Y	N	Y
1822	LINDSAY L		EASTON	AROOSTOOK	G	A	Y	N	Y
1476	MCKEEN L		T14 R10 WELS	AROOSTOOK	G	A	Y	N	Y
1550	MCLEAN L		SAINT FRANCIS	AROOSTOOK	G	A	Y	N	Y
1982	MINK MARSH P		T11 R10 WELS	AROOSTOOK	G	A	Y	N	Y
1604	MOSQUITO BROOK P		T14 R7 WELS	AROOSTOOK	G	A	Y	N	Y
9781	NORTH P		T14 R9 WELS	AROOSTOOK	G	A	Y	N	Y
5774	PEAKED MOUNTAIN P		T10 R11 WELS	PISCATAQUIS	G	A	Y	N	Y
1564	PELLETIER B L (1ST)		T16 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1566	PELLETIER B L (2ND)		T16 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1560	PELLETIER B L (3RD)		T16 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1562	PELLETIER B L (4TH)		T16 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1504	PELLETIER B L (5TH)		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1502	PELLETIER B L (6TH)		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1482	PETE'S P		T13 R10 WELS	AROOSTOOK	G	A	Y	N	Y
1943	PLEASANT P (LITTLE)		T10 R11 WELS	PISCATAQUIS	G	A	Y	N	Y
1870	PRESLEY L		T12 R17 WELS	AROOSTOOK	G	A	Y	N	Y
1514	PUSHINEER P		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
2746	RAGGED P	RAGGED P # 1	T9 R10 WELS	PISCATAQUIS	G	A	Y	N	Y
2744	RAGGED P (LITTLE)	RAGGED P # 2	T9 R10 WELS	PISCATAQUIS	G	A	Y	N	Y
1716	READ L		MERRILL	AROOSTOOK	G	A	Y	N	Y
2842	REED P (BIG)		T8 R10 WELS	PISCATAQUIS	G	A	Y	N	Y
2838	REED P (LITTLE)		T8 R10 WELS	PISCATAQUIS	G	A	Y	N	Y
9794	ROBBINS BROOK P		T12 R11 WELS	AROOSTOOK	G	A	Y	N	Y
2960	RUSSELL P (UPPER)		T9 R14 WELS	PISCATAQUIS	G	A	Y	N	Y
1484	SAG P		T13 R10 WELS	AROOSTOOK	G	A	Y	N	Y
2398	SAINT FRANCIS L		T8 R16 WELS	SOMERSET	G	A	Y	N	Y
1488	SOWISH L		T18 R10 WELS	AROOSTOOK	G	A	Y	N	Y
2832	SPRING P		T7 R10 WELS	PISCATAQUIS	G	A	Y	N	Y
1518	STINK P		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
1904	SWEENEY P		T12 R12 WELS	AROOSTOOK	G	A	Y	N	Y
1902	THREEMILE P		T12 R12 WELS	AROOSTOOK	G	A	Y	N	Y
9765	TWO MILE P		T16 R14 WELS	AROOSTOOK	G	A	Y	N	Y
9466	UNNAMED P	NO NAME P	T13 R10 WELS	AROOSTOOK	G	A	Y	N	Y
1521	UPPER P		T15 R9 WELS	AROOSTOOK	G	A	Y	N	Y
3286	YORK P		GRAFTON TWP	OXFORD	D	A	Y	N	Y
5110	BAKER P		T5 R6 BKP WKR	SOMERSET	D	A	Y	N	Y
0046	CARRY P (MIDDLE)		CARRYING PLACE TOWN TWP	SOMERSET	D	A	Y	N	Y
4076	ROUND P		SQUARETOWN TWP	SOMERSET	D	A	Y	N	Y
2486	JONES P		BALD MOUNTAIN TWP T4 R3	SOMERSET	E	A	Y	N	Y
0488	MOUNTAIN VIEW P		TA R11 WELS	PISCATAQUIS	E	A	Y	N	Y
0352	ORDWAY P		SHIRLEY	PISCATAQUIS	E	A	Y	N	Y
9760	WELMAN P (LOWER)		PRENTISS TWP	SOMERSET	E	A	Y	N	Y
2482	WELMAN P (UPPER)		PRENTISS TWP	SOMERSET	E	A	Y	N	Y
0696	FOSS & KNOWLTON P		T3 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
2190	JERRY P		T5 R7 WELS	PENOBSCOT	F	A	Y	N	Y
0728	LOST P		T3 R10 WELS	PISCATAQUIS	F	A	Y	N	Y
2026	TWIN P #1		T4 R9 WELS	PISCATAQUIS	F	A	Y	N	Y
3648	GREEN P		MORO PLT	AROOSTOOK	G	A	Y	N	Y
1020	ROSS L		LITTLETON	AROOSTOOK	G	A	Y	N	Y
1376	**BOG L**		**MARION TWP**	**WASHINGTON**	**C**	**AH**	**N, BKT ABSENT**	**N**	**Y**
3314	**CRANBERRY P**		**MAGALLOWAY PLT**	**OXFORD**	**D**	**AH**	**N, BKT ABSENT**	**N**	**Y**
4020	**BEAR BROOK BOG**		**T6 R15 WELS**	**PISCATAQUIS**	**E**	**AH**	**NOT A POND**	**N**	**Y**
2654	**CEDAR P**		**HOLEB TWP**	**SOMERSET**	**E**	**AH**	**N, BKT ABSENT**	**N**	**Y**
2492	**FOLEY P (LITTLE)**		**COMSTOCK TWP**	**SOMERSET**	**E**	**AH**	**N, FISHLESS POND**	**N**	**Y**
5166	**HURRICANE P**		**T5 R20 WELS**	**SOMERSET**	**E**	**AH**	**NOT A POND**	**N**	**Y**
0332	**IRA BOG**		**MOOSEHEAD JUNCTION TWP**	**PISCATAQUIS**	**E**	**AH**	**NOT A POND**	**N**	**Y**
2668	**LONG BOG**		**HOLEB TWP**	**SOMERSET**	**E**	**AH**	**N, BKT ABSENT**	**N**	**Y**
0154	**MCKENNEY P**		**UPPER ENCHANTED TWP**	**SOMERSET**	**E**	**AH**	**N, FISHLESS POND**	**N**	**Y**
2906	**PINE STREAM FLOWAGE**		**T4 R13 WELS**	**PISCATAQUIS**	**E**	**AH**	**NOT A POND**	**N**	**Y**

WATCODE	WATER	ALTERNATE NAME	TOWN	COUNTY	REGION	A&B LIST	SELF-SUSTAINING POPULATION	CURRENT STOCKING	LIVE FISH AS BAIT PROHIBITED
0350	**SHIRLEY BOG (WEST)**		**SHIRLEY**	**PISCATAQUIS**	**E**	**AH**	**NOT A POND**	**N**	**Y**
4044	**SOCATEAN P #1**		**PLYMOUTH TWP**	**SOMERSET**	**E**	**AH**	**N, BKT ABSENT**	**N**	**Y**
4046	**SOCATEAN P #2**		**PLYMOUTH TWP**	**SOMERSET**	**E**	**AH**	**N, BKT ABSENT**	**N**	**Y**
2296	**ROBAR P (BIG)**		**T4 R8 WELS**	**PENOBSCOT**	**F**	**AH**	**N, FISHLESS POND**	**N**	**Y**
9223	**DUCK P**		**T15 R9 WELS**	**AROOSTOOK**	**G**	**AH**	**N, BKT ABSENT**	**N**	**Y**
1906	**PRIESTLY L**		**T10 R13 WELS**	**PISCATAQUIS**	**G**	**AH**	**N, BKT ABSENT Restoration Required**	**N**	**Y**
3865	COLDWATER P		KENNEBUNK	YORK	A	B	Y	N	Y
6969	KENNEBUNK PLAINS P		KENNEBUNK	YORK	A	B	Y	N	Y
5012	SAND P		LIMINGTON	YORK	A	B	Y	N	Y
3906	SPICER P		SHAPLEIGH	YORK	A	B	Y	N	Y
4288	BURNT P		OTIS	HANCOCK	C	B	Y	N	Y
4570	DUTTON P		AMHERST	HANCOCK	C	B	Y	N	Y
4558	HALFMILE P		AMHERST	HANCOCK	C	B	Y	N	Y
4306	HARRIMAN P		DEDHAM	HANCOCK	C	B	Y	N	Y
4290	HATCASE P		DEDHAM	HANCOCK	C	B	Y	N	Y
0447	LONG P	LITTLE LONG POND	MOUNT DESERT	HANCOCK	C	B	Y	N	Y
4414	NARRAGUAGUS L		T10 SD	HANCOCK	C	B	Y	N	Y
4656	NOYES (NORRIS) P		BLUE HILL	HANCOCK	C	B	Y	N	Y
1436	WESTERN L		ROBBINSTON	WASHINGTON	C	B	Y	N	Y
3332	ARNOLD P		COBURN GORE	FRANKLIN	D	B	Y	N	Y
3290	AZISCOHOS L	AZISCOOS L, SAWYER L	PARKERTOWN TWP	OXFORD	D	B	Y	N	Y
0242	BAKER P		CARATUNK	SOMERSET	D	B	Y	N	Y
3310	BEAVER P	BEAVER P (BIG)	MAGALLOWAY PLT	OXFORD	D	B	Y	N	Y
3562	BEAVER MOUNTAIN L	LONG P	SANDY RIVER PLT	FRANKLIN	D	B	Y	N	Y
3354	BEAVER P		SEVEN PONDS TWP	FRANKLIN	D	B	Y	N	Y
5142	BECK P		T3 R5 BKP WKR	SOMERSET	D	B	Y	N	Y
3108	BILLINGS P #1		PARMACHENEE TWP	OXFORD	D	B	Y	N	Y
3110	BILLINGS P #2		PARMACHENEE TWP	OXFORD	D	B	Y	N	Y
5114	BLAKESLEE L	BLAKESLEY L	T5 R6 BKP WKR	SOMERSET	D	B	Y	N	Y
2366	BLANCHARD P (No. 1)		LANG TWP	FRANKLIN	D	B	Y	N	Y
5132	BUTLER P		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
0056	BUTLER P		LEXINGTON TWP	SOMERSET	D	B	Y	N	Y
3278	C POND		C SURPLUS	OXFORD	D	B	Y	N	Y
0044	CARRY P (EAST)		CARRYING PLACE TOWN TWP	SOMERSET	D	B	Y	N	Y
0048	CARRY P (WEST)		CARRYING PLACE TOWN TWP	SOMERSET	D	B	Y	N	Y
3330	CROSBY P		COBURN GORE	FRANKLIN	D	B	Y	N	Y
5112	DAVIS P		T5 R6 BKP WKR	SOMERSET	D	B	Y	N	Y
0016	DAY MOUNTAIN P		AVON	FRANKLIN	D	B	Y	N	Y
4066	DEAD STREAM P		WEST FORKS PLT	SOMERSET	D	B	Y	N	Y
0232	DECKER P #1		CARATUNK	SOMERSET	D	B	Y	N	Y
0230	DECKER P #2		CARATUNK	SOMERSET	D	B	Y	N	Y
5128	DEER P		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
9911	DIXON P		PIERCE POND TWP	SOMERSET	D	B	Y	N	Y
4086	ELLIS P		CHASE STREAM TWP	SOMERSET	D	B	Y	N	Y
5134	EVERETT P		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
5120	FELKER P		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
3348	GRANTS P		MASSACHUSETTS GORE	FRANKLIN	D	B	Y	N	Y
0104	GRASS P		PIERCE POND TWP	SOMERSET	D	B	Y	N	Y
0234	HEALD P		CARATUNK	SOMERSET	D	B	Y	N	Y
0092	HIGH P		PIERCE POND TWP	SOMERSET	D	B	Y	N	Y
4082	HORSESHOE P		CHASE STREAM TWP	SOMERSET	D	B	Y	N	Y
4094	ISLAND P		CHASE STREAM TWP	SOMERSET	D	B	Y	N	Y
3352	ISLAND P (BIG)		SEVEN PONDS TWP	FRANKLIN	D	B	Y	N	Y
3350	ISLAND P (LITTLE)		SEVEN PONDS TWP	FRANKLIN	D	B	Y	N	Y
3956	JOHNS P		DAVIS TWP	FRANKLIN	D	B	Y	N	Y
2374	KENNEBAGO L (BIG)		DAVIS TWP	FRANKLIN	D	B	Y	N	Y
5136	KING & BARTLETT L		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
5138	KING L (LITTLE)		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
5062	L POND		SEVEN PONDS TWP	FRANKLIN	D	B	Y	N	Y
5124	LONG P		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
3116	LONG P		LYNCHTOWN TWP	OXFORD	D	B	Y	N	Y
3356	LONG P		SEVEN PONDS TWP	FRANKLIN	D	B	Y	N	Y
5794	LONG P (LITTLE LONG)	LONG P (LITTLE)	CHASE STREAM TWP	SOMERSET	D	B	Y	N	Y
8597	MASSACHUSETTS BOG		MASSACHUSETTS GORE	FRANKLIN	D	B	Y	N	Y
0200	MILL (CLEAR) P	CLEAR P	PLEASANT RIDGE PLT	SOMERSET	D	B	Y	N	Y
7688	MOOSE BOG		BOWMANTOWN TWP	OXFORD	D	B	Y	N	Y
3302	MOOSELOOKMEGUNTIC L		ADAMSTOWN TWP	OXFORD	D	B	Y	N	Y
4084	MUD P		CHASE STREAM TWP	SOMERSET	D	B	Y	N	Y
3342	NORTHWEST P		MASSACHUSETTS GORE	FRANKLIN	D	B	Y	N	Y
3972	OTTER P		PARMACHENEE TWP	OXFORD	D	B	Y	N	Y
3966	PARMACHENEE L		LYNCHTOWN TWP	OXFORD	D	B	Y	N	Y
9913	PICKEREL P		PIERCE POND TWP	SOMERSET	D	B	Y	N	Y
3328	POND IN THE RIVER		TOWNSHIP C	OXFORD	D	B	Y	N	Y
2318	REDINGTON P		REDINGTON TWP	FRANKLIN	D	B	Y	N	Y
3340	ROCK P		CHAIN OF PONDS TWP	FRANKLIN	D	B	Y	N	Y
5058	ROUND MOUNTAIN P		ALDER STREAM TWP	FRANKLIN	D	B	Y	N	Y
4092	ROUND P		CHASE STREAM TWP	SOMERSET	D	B	Y	N	Y
3112	RUMP P		PARMACHENEE TWP	OXFORD	D	B	Y	N	Y
3578	SABBATH DAY P		TOWNSHIP E	FRANKLIN	D	B	Y	N	Y
4072	SCRIBNERS BOG		SQUARETOWN TWP	SOMERSET	D	B	Y	N	Y
3358	SECRET P		SEVEN PONDS TWP	FRANKLIN	D	B	Y	N	Y
5122	SPECTACLE P		KING & BARTLETT TWP	SOMERSET	D	B	Y	N	Y
7674	SUNDAY P		LYNCHTOWN TWP	OXFORD	D	B	Y	N	Y
7066	UNNAMED P	MOSQUITO P (LITTLE)	THE FORKS PLT	SOMERSET	D	B	Y	N	Y
2658	BARRETT P		HOLEB TWP	SOMERSET	E	B	Y	N	Y
0528	BEAR P		TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
5066	BEATTIE P		BEATTIE TWP	FRANKLIN	E	B	Y	N	Y
0670	BEAVER P		T3 R11 WELS	PISCATAQUIS	E	B	Y	N	Y

WATCODE	WATER	ALTERNATE NAME	TOWN	COUNTY	REGION	A&B LIST	SELF-SUSTAINING POPULATION	CURRENT STOCKING	LIVE FISH AS BAIT PROHIBITED
0484	BEAVER P		SHAWTOWN TWP	PISCATAQUIS	E	B	Y	N	Y
0612	BEAVER P (LITTLE)		T3 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
9700	BEAVER P (LITTLE)		RAINBOW TWP	PISCATAQUIS	E	B	Y	N	Y
0864	BENSON P (BIG)		WILLIMANTIC	PISCATAQUIS	E	B	Y	N	Y
2550	BERRY P		JOHNSON MOUNTAIN TWP	SOMERSET	E	B	Y	N	Y
2554	BERRY P (LITTLE)	CHAIN P # 2	JOHNSON MOUNTAIN TWP	SOMERSET	E	B	Y	N	Y
0494	BOARDWAY P (BIG)	BOARDMAN P (BIG)	TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0496	BOARDWAY P (LITTLE)	BOARDMAN P (LITTLE)	TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0440	BRANCH P (1ST WEST)	WEST BRANCH P (1ST)	SHAWTOWN TWP	PISCATAQUIS	E	B	Y	N	Y
0442	BRANCH P (2ND&3RD W)	WEST BRANCH P (2ND&3RD)	SHAWTOWN TWP	PISCATAQUIS	E	B	Y	N	Y
0644	BUCK P		RAINBOW TWP	PISCATAQUIS	E	B	Y	N	Y
0392	BURNHAM P		BIG MOOSE TWP	PISCATAQUIS	E	B	Y	N	Y
0836	BUTTERMILK P (2ND)		BOWERBANK	PISCATAQUIS	E	B	Y	N	Y
2516	CANADA FALLS L		PITTSTON ACADEMY GRANT	SOMERSET	E	B	Y	N	Y
0275	CARPENTER P		T7 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
9761	CARPENTER P (LITTLE)		T7 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
4040	CENTER P		SOLDIERTOWN TWP.	SOMERSET	E	B	Y	N	Y
2494	CHENEY P		HAMMOND TWP	SOMERSET	E	B	Y	N	Y
5074	CLEAR P		LOWELLTOWN TWP	FRANKLIN	E	B	Y	N	Y
2712	COFFEELOS P		T6 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
2538	COLD STREAM P		MISERY TWP	SOMERSET	E	B	Y	N	Y
0634	COLLINS P		RAINBOW TWP	PISCATAQUIS	E	B	Y	N	Y
0520	CRAWFORD P		TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0582	DEBSCONEAG L (4TH)		T1 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
2458	DINGLEY P		T4 R5 NBKP	SOMERSET	E	B	Y	N	Y
4138	DOW P		SEBEC	PISCATAQUIS	E	B	Y	N	Y
0257	DUCK P		T4 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0150	ENCHANTED P	BULLDOG P	UPPER ENCHANTED TWP	SOMERSET	E	B	Y	N	Y
0148	ENCHANTED P (LITTLE)		UPPER ENCHANTED TWP	SOMERSET	E	B	Y	N	Y
2666	FISH P (LITTLE)		HOLEB TWP	SOMERSET	E	B	Y	N	Y
0426	FOGG P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	B	Y	N	Y
2488	FOLEY P		COMSTOCK TWP	SOMERSET	E	B	Y	N	Y
0388	FOSS P		KINGSBURY PLT	PISCATAQUIS	E	B	Y	N	Y
0152	GRACE P		UPPER ENCHANTED TWP	SOMERSET	E	B	Y	N	Y
0660	GRASSY P		T2 R12 WELS	PISCATAQUIS	E	B	Y	N	Y
2520	HEALD P		MOOSE RIVER	SOMERSET	E	B	Y	N	Y
0412	HORSESHOE P		BOWDOIN COLLEGE GRANT WEST TWP	PISCATAQUIS	E	B	Y	N	Y
0324	INDIAN P (BIG)		MOOSEHEAD JUNCTION TWP	PISCATAQUIS	E	B	Y	N	Y
0704	JACKSON P #2	JORDAN POND	T3 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
2542	LANG P		PARLIN POND TWP	SOMERSET	E	B	Y	N	Y
0462	LLOYD P		BOWDOIN COLLEGE GRANT EAST TWP	PISCATAQUIS	E	B	Y	N	Y
0402	LUCKY P		SPENCER BAY TWP	PISCATAQUIS	E	B	Y	N	Y
0430	LYFORD P (1ST LITTLE)		BOWDOIN COLLEGE GRANT EAST TWP	PISCATAQUIS	E	B	Y	N	Y
0428	LYFORD P (2ND LITTLE)		BOWDOIN COLLEGE GRANT EAST TWP	PISCATAQUIS	E	B	Y	N	Y
0438	LYFORD P (BIG)		SHAWTOWN TWP	PISCATAQUIS	E	B	Y	N	Y
0158	MARKHAM		JOHNSON MOUNTAIN TWP	SOMERSET	E	B	Y	N	Y
0382	MOORES P		MONSON	PISCATAQUIS	E	B	Y	N	Y
0432	MOUNTAIN P		BEAVER COVE	PISCATAQUIS	E	B	Y	N	Y
0160	MOUNTAIN P (2nd)		JOHNSON MOUNTAIN TWP	SOMERSET	E	B	Y	N	Y
0400	MUD P (LITTLE)		GREENVILLE	PISCATAQUIS	E	B	Y	N	Y
0870	NORTH P		ELLIOTTSVILLE TWP		E	B	Y	N	Y
0339	PENOBSCOT L		DOLE BROOK TWP	SOMERSET	E	B	Y	N	Y
0568	PENOBSCOT P		T1 R12 WELS	PISCATAQUIS	E	B	Y	N	Y
0512	PLEASANT P (BIG)		TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0510	PLEASANT P (LITTLE)		TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0692	POLLY P		T3 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0576	POLLYWOG P		T1 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
9698	RAINBOW DEADWATERS		RAINBOW TWP	PISCATAQUIS	E	B	Y	N	Y
0614	RAINBOW L		RAINBOW TWP	PISCATAQUIS	E	B	Y	N	Y
0480	ROACH P (SIXTH)		SHAWTOWN TWP	PISCATAQUIS	E	B	Y	N	Y
0522	ROCKY P (BIG)		TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0524	ROCKY P (LITTLE)		TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
2424	RUSSELL P		RUSSELL POND TWP	SOMERSET	E	B	Y	N	Y
0346	SALMON POND		GREENVILLE	PISCATAQUIS	E	B	Y	N	Y
4048	SEBOOMOOK L		PLYMOUTH TWP	SOMERSET	E	B	Y	N	Y
0344	SECRET POND		GREENVILLE	PISCATAQUIS	E	B	Y	N	Y
0682	SEWALL P		T3 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0690	SLAUGHTER P		T3 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
2702	SNAKE P		T7 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
2548	SNAKE P		JOHNSON MOUNTAIN TWP	SOMERSET	E	B	Y	N	Y
0282	SPECTACLE P		BLANCHARD TWP		E	B	Y	N	Y
2726	THISSELL P		T5 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
4038	TOMHEGAN P		WEST MIDDLESEX CANAL GRANT	SOMERSET	E	B	Y	N	Y
0322	TROUT P		MOOSEHEAD JUNCTION TWP	PISCATAQUIS	E	B	Y	N	Y

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2642	TURNER P (BIG)		FORSYTH TWP	SOMERSET	E	B	Y	N	Y
2640	TURNER P (LITTLE)		FORSYTH TWP	SOMERSET	E	B	Y	N	Y
5084	TWIN ISLAND P		LOWELLTOWN TWP	FRANKLIN	E	B	Y	N	Y
8928	UNNAMED P (JIM MACK P)		SANDY BAY TWP	SOMERSET	E	B	Y	N	Y
0444	WEST BRANCH P (4th)		SHAWTOWN TWP	PISCATAQUIS	E	B	Y	N	Y
0734	WILLIAMS P		T4 R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0622	WOODMAN P		RAINBOW TWP	PISCATAQUIS	E	B	Y	N	Y
0504	YOKE PONDS		TA R11 WELS	PISCATAQUIS	E	B	Y	N	Y
0478	B POND		TB R11 WELS	PISCATAQUIS	F	B	Y	N	Y
2042	BASIN P #1		MOUNT KATAHDIN TWP	PISCATAQUIS	F	B	Y	N	Y
2044	BASIN P #2		MOUNT KATAHDIN TWP	PISCATAQUIS	F	B	Y	N	Y
4224	BRANCH P (UPPER SO)	SOUTH BRANCH P (UPPER)	T5 R9 WELS	PISCATAQUIS	F	B	Y	N	Y
0720	DAICEY P		T3 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
0586	DEBSCONEAG L (2ND)		T2 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
0706	DEER P		T3 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
4252	HAY P		T6 R8 WELS	PENOBSCOT	F	B	Y	N	Y
0920	HOUSTON P (LITTLE)		KATAHDIN IRON WORKS TWP	PISCATAQUIS	F	B	Y	N	Y
2064	HURD P		T2 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
2016	KATAHDIN L		T3 R8 WELS	PENOBSCOT	F	B	Y	N	Y
0716	KIDNEY P		T3 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
0718	LILY PAD P		T3 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
3030	LOST P		T7 R7 WELS	PENOBSCOT	F	B	Y	N	Y
4244	MESSER P		T5 R8 WELS	PENOBSCOT	F	B	Y	N	Y
0968	MOOSE P		T1 R9 WELS	PISCATAQUIS	F	B	Y	N	Y
4258	MOUNTAIN CATCHER P		T6 R8 WELS	PENOBSCOT	F	B	Y	N	Y
3670	PLEASANT & MUD LAKES		T6 R6 WELS	PENOBSCOT	F	B	Y	N	Y
0708	ROCKY P		T3 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
0710	ROCKY P (LITTLE)		T3 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
4234	ROUND P		TROUT BROOK TWP	PISCATAQUIS	F	B	Y	N	Y
2040	SANDY STREAM P		MOUNT KATAHDIN TWP	PISCATAQUIS	F	B	Y	N	Y
2730	SOURDNAHUNK L	NESOWADNEHUNK L	T5 R11 WELS	PISCATAQUIS	F	B	Y	N	Y
0730	WINDY PITCH P		T3 R10 WELS	PISCATAQUIS	F	B	Y	N	Y
1718	B LAKE		HAMMOND	AROOSTOOK	G	B	Y	N	Y
1480	BIG BROOK L		T14 R10 WELS	AROOSTOOK	G	B	Y	N	Y
1862	BLACK BROOK L (LITTLE)		CASWELL	AROOSTOOK	G	B	Y	N	Y
1666	BLACK L		FORT KENT	AROOSTOOK	G	B	Y	N	Y
1506	BLACK L	BLACK P	T15 R9 WELS	AROOSTOOK	G	B	Y	N	Y
1508	BLACK P (LITTLE NORTH)		T15 R9 WELS	AROOSTOOK	G	B	Y	N	Y
1648	BLAKE L		T16 R6 WELS	AROOSTOOK	G	B	Y	N	Y
9759	BOURGOIN L		SAINT AGATHA	AROOSTOOK	G	B	Y	N	Y
1848	BUTTERFIELD L		CASWELL	AROOSTOOK	G	B	Y	N	Y
1684	CARRY P		T16 R4 WELS	AROOSTOOK	G	B	Y	N	Y
2834	CHANDLER P		T8 R10 WELS	PISCATAQUIS	G	B	Y	N	Y
2752	CHASE L		T9 R10 WELS	PISCATAQUIS	G	B	Y	N	Y
1958	CLAYTON L		T12 R8 WELS	AROOSTOOK	G	B	Y	N	Y
2780	CLIFF L		T9 R12 WELS	PISCATAQUIS	G	B	Y	N	Y
0487	CRATER P		T15 R9 WELS	AROOSTOOK	G	B	Y	N	Y
1890	CUNLIFFE L		T12 R13 WELS	AROOSTOOK	G	B	Y	N	Y
2774	CURRIER P (SECOND)		T9 R11 WELS	PISCATAQUIS	G	B	Y	N	Y
9771	EASTON P		EASTON	AROOSTOOK	G	B	Y	N	Y
1934	HARROW L		T10 R12 WELS	PISCATAQUIS	G	B	Y	N	Y
1926	HORSESHOE P		T11 R10 WELS	AROOSTOOK	G	B	Y	N	Y
1554	HUNNEWELL L		SAINT JOHN PLT	AROOSTOOK	G	B	Y	N	Y
1924	LOST P		T11 R10 WELS	AROOSTOOK	G	B	Y	N	Y
1660	MCCLUSKY L		T14 R5 WELS	AROOSTOOK	G	B	Y	N	Y
1962	MCGOWAN P		T11 R8 WELS	AROOSTOOK	G	B	Y	N	Y
1992	MCPHERSON P		T10 R10 WELS	PISCATAQUIS	G	B	Y	N	Y
1990	MOOSELEUK L		T10 R9 WELS	PISCATAQUIS	G	B	Y	N	Y
4180	MUNSUNGAN L		T8 R9 WELS	PISCATAQUIS	G	B	Y	N	Y
1920	MUSQUACOOK L (4TH)		T10 R11 WELS	PISCATAQUIS	G	B	Y	N	Y
2756	PLEASANT L (BIG)		T9 R11 WELS	PISCATAQUIS	G	B	Y	N	Y
2762	PORTAGE P (UPPER)		T9 R11 WELS	PISCATAQUIS	G	B	Y	N	Y
1758	PRESQUE ISLE L		T9 R3 WELS	AROOSTOOK	G	B	Y	N	Y
0521	RITTER L		BRIDGEWATER	AROOSTOOK	G	B	Y	N	Y
1470	ROUND P		T13 R12 WELS	AROOSTOOK	G	B	Y	N	Y
1594	ROUND P		T14 R8 WELS	AROOSTOOK	G	B	Y	N	Y
4158	ROUND P		T7 R9 WELS	PISCATAQUIS	G	B	Y	N	Y
3660	SECRET P		MORO PLT	AROOSTOOK	G	B	Y	N	Y
2748	SEWALL DEADWATER P		T9 R10 WELS	PISCATAQUIS	G	B	Y	N	Y
1642	SLY BROOK L (FIRST)		NEW CANADA	AROOSTOOK	G	B	Y	N	Y
1644	SLY BROOK L (SECOND)		NEW CANADA	AROOSTOOK	G	B	Y	N	Y
9783	SOLDIER P		WALLAGRASS	AROOSTOOK	G	B	Y	N	Y
6402	UNNAMED P (VIOLETTE BROOK L)	VIOLETTE BROOK L	CYR PLT	AROOSTOOK	G	B	Y	N	Y
1628	WALLAGRASS (1ST&2ND)		SAINT JOHN PLT	AROOSTOOK	G	B	Y	N	Y
1552	WALLAGRASS L (THIRD)		SAINT JOHN PLT	AROOSTOOK	G	B	Y	N	Y
1968	WEEKS P		T11 R8 WELS	AROOSTOOK	G	B	Y	N	Y
1614	WHEELOCK L		SAINT JOHN PLT	AROOSTOOK	G	B	Y	N	Y