

**Wetland Human Disturbance Assessment (WHDA)**  
**Maine Department of Environmental Protection Biomonitoring Program**

Name of wetland and/or associated waterbodies: \_\_\_\_\_  
 Station #: \_\_\_\_\_ Date: \_\_\_\_\_ Town: \_\_\_\_\_ Evaluator(s): \_\_\_\_\_

The purpose of this assessment is to characterize the degree of human disturbance in and around a wetland Biomonitoring station, and to document environmental stressors. Note that this human disturbance assessment is a stressor identification tool and not a direct measure of biological condition. See *Protocols for Completing the Biological Monitoring Wetland Human Disturbance Assessment* for scoring procedures and guidance.

For each wetland station assessed, score all factors in each section below using the following scale:

Severity	Severity Description	Rank
<b>Not Observed or Unknown</b>	The stressor is not observed or has no detrimental impact on wetland condition.	<b>0</b>
<b>Observed; Minimal Disturbance</b>	The stressor is present and appears to have negligible impacts on wetland condition.	<b>1</b>
<b>Low Disturbance</b>	The stressor is present and appears to have minor impacts on wetland condition.	<b>2</b>
<b>Moderate Disturbance</b>	The stressor is present and appears to moderately impact wetland condition.	<b>3</b>
<b>High Disturbance</b>	The stressor is present and appears to significantly impact wetland condition.	<b>4</b>
<b>Severe Disturbance</b>	The stressor is present and appears to have major impacts on wetland condition.	<b>5</b>

Section 1. Hydrologic Modifications to Wetland	Check if present	Score 0 to 5
<b>Impoundment structures</b>		
dams		
dikes		
man-made berms		
tide gates		
Other:		
<b>Other structures that impede water flow</b>		
causeways/roads		
railroad beds		
bridge abutments (and associated structures)		
inadequate, hanging or obstructed culverts (and associated structures)		
additional retaining walls/riprap (not included above)		
Other:		
<b>Draining/Dewatering</b>		
ditching		
drain tiles		
agricultural water withdrawal		
non-agricultural water withdrawal (fire hydrant, intake pipe)		
Other:		
<b>Unnatural inputs of water</b>		
stormwater drain/discharge		
combined sewer overflow		
municipal/industrial point source discharge		
agricultural irrigation		
spray irrigation (non-agricultural, waste discharge, etc.)		
Other:		
<b>Filling and excavation</b>		
fill – recent and/or ongoing		
fill – older, stabilized		
grading or bulldozing (elimination of micro-topography)		
plowing/tilling		
excavated farm pond		
other excavated pond		
excavated area associated with culvert or bridge		
channelization		
Other:		

<b>Section 1. Hydrologic Modifications to Wetland (continued)</b>	Check if present	Score 0 to 5
<b>Natural hydrologic modifications</b> (specify but do not score)		
beaver activity		
debris dams		
land slide		
major flooding/storm damage		
Other:		
<b>Section 1 Comments:</b>	<b>Section Score</b>	

<b>Section 2. Vegetative Modifications to Wetland</b> Score based on vegetation impacts directly in the wetland, not in the buffer or watershed.	Check if present	Score 0 to 5																		
<b>Clearing/removal of vegetation</b>																				
roads																				
recreation trails (atv, hiking, snowmobile, etc.)																				
utility lines																				
buildings, structures, parking lots, etc.																				
mowing (in the wetland, not a lawn)																				
brush hogging																				
intentional/controlled burning																				
human-caused accidental/arson fires																				
chemical removal (herbicides, etc.)																				
Other:																				
<b>Clearing/removal of wetland vegetation – forestry activities</b>																				
clear cut																				
selective cut																				
logging roads																				
skidder trails/staging areas																				
replacement of wetland vegetation by tree plantation																				
Other:																				
<b>Clearing/removal of wetland vegetation - agricultural activities</b>																				
plowing/conversion to cropland																				
pasture/grazing																				
hayfield																				
farm roads																				
Other:																				
<b>Wetland vegetation changes due to other human activities (hydrological alterations, nutrient inputs, etc.)</b>																				
dead or dying vegetation due to inundation or flooding																				
dead or dying vegetation due to desiccation (draining, water withdrawal, water diversion, upstream dam, etc.)																				
replacement of natural plant community (excessive Typha sp., etc.)																				
change in historic wetland class (conversion from PFO to PEM, etc.)																				
Other:																				
<b>Presence of Non-aquatic Invasive Plants</b> (total cover, all known species)																				
Estimate total percent cover of non-aquatic invasive species in the assessment area using cover classes below and score accordingly. Check appropriate box if presence unknown and/or not assessed.																				
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<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
purple loosestrife																				
Phragmites																				
Other(s):																				

<b>Section 2. Vegetative Modifications to Wetland (continued)</b> Score based on vegetation impacts directly in the wetland, not in the buffer or watershed.	Check if present	Score 0 to 5
<b>Presence of Aquatic Invasive plants</b> (check if present):		<input type="checkbox"/> unknown/not assessed
For aquatic invasive plants (floating or submerged), indicate if observed (positive ID) or known to be present through signs or other means. Check appropriate box if presence unknown and/or not assessed.		
Eurasian water- milfoil		
Variable water-milfoil		
Hydrilla		
Other(s)		
<b>Natural vegetative modifications</b> (specify but do not score)		
herbivory (insect damage, animal browsing, beavers, etc.)		
fires		
floods		
storm damage (blow downs, etc.)		
Other:		
<b>Section 2 Comments:</b>	<b>Section Score</b>	

<b>Section 3. Evidence of Chemical Pollutants</b> Score based on observations in the wetland and adjacent/upstream sources that may potentially impact the wetland.	Check if present	Score 0 to 5
<b>Direct discharge present</b>		
stormwater		
industrial discharge		
treatment plant		
combined sewer overflow		
leachate plume		
fish hatchery		
Other:		
<b>Other evidence of contaminants</b>		
documented previous oil/chemical spill		
free oil, petroleum, chemicals observed on site		
unusual water color/turbidity		
sheen (not from natural causes)		
soil staining (not from natural causes)		
foam (not from natural causes)		
chemical odor present		
sewage odor present		
evidence of CSO discharge (solids)		
sewage fungus present		
Other:		
<b>Herbicide, pesticide and fertilizer application</b>		
utility line maintenance		
agricultural application		
forestry application		
insect pest control (specify):		
invasive species management (plants, fish, etc.); Only score impacts to non-target species		
Other:		
<b>Solid Waste</b>		
municipal dump/landfill		
sludge spreading		
household trash/dumping		
petroleum, chemical containers, drums, etc.		
abandoned vehicles, tires, etc.		
demolition debris		
stump dump		

litter		
Other:		
<b>Section 3. Evidence of Chemical Pollutants (continued)</b>	Check if present	Score 0 to 5
<b>Evidence of toxic effects to vegetation, aquatic life or wildlife in wetland</b>		
dead, dying or stressed vegetation (no apparent natural causes)		
dead or dying fish, amphibians or other aquatic life/wildlife (no other apparent natural causes)		
Other:		
<b>Section 3 Comments:</b>	<b>Section Score</b>	

<b>Section 4. Watershed Characterization and Potential NPS Pollution Impacts</b>	Check if present	Score 0 to 5
Score based on potential for erosion and sedimentation, urban runoff, nutrient enrichment, etc. in the wetland watershed.		
<b>Residential Development in watershed (including homes, lawns, residential roads)</b>		
low density		
medium density		
high density		
<b>Commercial/Industrial/Municipal Development in watershed (including associated roads, paved areas)</b>		
stores/businesses/office buildings		
schools, universities		
landfills/transfer stations		
sewage treatment plants		
power generation facility		
composting facility		
manufacturing plants/factories		
gravel pits/mining		
airports		
railroads (tracks, rail yards, etc.)		
military facilities		
additional parking lots/ pavement (not associated with any of the above)		
Other:		
<b>Recreation facilities in watershed</b>		
lawn/park/picnic areas		
ball fields, tennis courts, basketball courts, etc.		
campgrounds		
boat launches		
piers/docks		
golf course		
trails (atv, hiking, snowmobile, etc.)		
boardwalks		
Wildlife Management Area (ME IF&W, US F&WS)		
Other:		
<b>Additional Roads in watershed (not associated with any of the above)</b>		
gravel, small, low usage		
gravel, large, more heavily used (the Golden Road)		
1 or 2 lane, paved		
>2 lane, paved		
Other:		
<b>Forestry activities in watershed</b>		
clear cut, recent/ongoing		
selective cut, recent/ongoing		
clear cut, older/recovering		
selective cut, older/recovering		
tree farm/plantation		
mixed or unknown type(s)		
Other:		
<b>Agriculture in watershed</b>		
pasture		
livestock		

feedlots																	
manure piles/spreading																	
<b>Section 4. Watershed Characterization and Potential NPS Pollution Impacts (continued)</b>	Check if present	Score 0 to 5															
row crops																	
hayfield																	
fallow field																	
commercial blueberry operations																	
commercial cranberry operations																	
commercial nursery																	
commercial orchard																	
sod farm																	
mixed or unknown type(s)																	
Other:																	
<b>Evidence of erosion, sedimentation and nutrient enrichment</b>																	
unstable soil in a position to wash into wetland or associated water body																	
erosional gullies or washed out areas																	
excess accumulated sediment																	
sediment plume in water																	
unnatural turbidity																	
nuisance algae bloom																	
presence of excessive duckweed (Lemna sp.)																	
unusually heavy growth of epiphytic algae																	
unusually dense or large growth habit of aquatic macrophytes or other vegetation																	
Other:																	
<b>Alterations to wetland buffer (within 100 feet of wetland edge)</b>																	
Estimate total percent of buffer altered using cover classes below and score accordingly:																	
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<b>Section 4 Comments:</b>	<b>Section Score</b>																

Section 1 total: \_\_\_\_\_ (Hydrological Modifications to Wetland)

Section 2 total: \_\_\_\_\_ (Vegetative Modifications to Wetland)

Section 3 total: \_\_\_\_\_ (Evidence of Chemical Pollutants)

Section 4 total: \_\_\_\_\_ (Watershed Characterization and Potential NPS Pollution Impacts)

**Total Wetland Human Disturbance Score (WHDS) \_\_\_\_\_**

Additional Comments:

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