

PENOBSCOT NATION
Nonpoint Source
Assessment Report
for the Tribal Trust Lands
and the Indian Island
Portion of the Tribal Reservation



Alder Stream waterfall, Penobscot Nation Tribal Trust Land (Dan Kusnierz photo)

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1.0 INTRODUCTION

1.1 Purpose of Assessment

This assessment represents the first effort by the Penobscot Nation Water Resources Program to systematically identify waters on Tribal Lands that are presently impaired or may have the potential to be threatened by nonpoint source pollution. This is also the first attempt of the program to locate and identify the types of nonpoint source pollution (NPS) that could threaten the health of these waters. In addition to identifying water bodies that are threatened or impaired, the assessment describes the best management practices (BMPs) that will be needed to control nonpoint source pollution and the programs that might be used to carry them out.

The Penobscot Nation Tribal Trust Lands and a portion of the Tribal Reservation were assessed. The Trust Lands assessment is considered complete, whereas the assessment of the Tribal Reservation covers only Indian Island in detail, and uses a broader approach to identify the most obvious threats and impairments for the remainder of the Reservation. The assessment distinguishes between nonpoint source problems that the tribe is responsible for, versus problems that will require cooperative efforts with other entities.

1.2 Organization of Report

Following a discussion of assessment methods (Part 2), this report describes the lands and waters assessed for this project (Parts 3 and 4). Assessment results are presented (Part 5), and the sources and categories of nonpoint source pollution are identified (Part 6). The report concludes with an explanation of the Tribe's approach to developing Best Management Practices (Part 7).

1.3 Major Findings

This assessment found that every body of water on tribal lands is affected by some form of nonpoint source pollution. The purpose of the assessment was to identify Tribal sources of nonpoint source pollution, but non-tribal sources are cited where Tribal water quality goals are obviously not being met. Two definitions were used to define the seriousness of the nonpoint source problems in relation to tribal water resources - Impaired or Threatened. "Impaired" waters do not attain present water quality standards and fail to support treaty reserved sustenance fishing rights. "Threatened" waters may not meet water quality standards in the future unless preventative measures are taken. All impairments were found to be caused by non-tribal sources, whereas the "threats" identified by the assessment were those coming from tribal sources.

Impaired Waters - All tribal waters are impaired because fish contain unsafe levels of mercury for tribal sustenance. Other impairments include algae blooms and degraded fish habitat. Advisories for mercury are present on all tribal waters, and for dioxin and PCBs on 30 miles of the Penobscot River Reservation. Episodic algae blooms affect up to 60 miles of the Penobscot River Reservation. Fish habitat is impaired by flow regulation at Grand Lake Matagamom and the "Back Channel" of the Penobscot River due to excessive dewatering of riparian habitat. Embedded spawning gravels and thermal pollution are additional factors that impair fish habitat for over 100 miles in the

Penobscot River. None of these impairments can be attributed to tribal sources (Table 1). Thus, cooperative efforts will be required to address the problems of atmospheric deposition of mercury, flow regulation, industrial point sources, and cumulative thermal impacts.

Threatened Waters - Half the streams at the Tribal Trust Lands are threatened by old logging roads. Without preventive measures by the Tribe, these 21 streams will not be adequately protected from sedimentation and nutrient enrichment at their road crossings. Four of the tribe's 10 lakes and ponds are threatened by nontribal shorefront camps that are in need of vegetation buffers, treatment of greywater and removal of dumps. Those actions will require Tribal initiative to gain voluntary compliance from non-Tribal neighbors. One of the lakes will be better protected once the Tribe removes an abandoned car dumped nearby. Some camps that pre-date the tribe's land use plan will require more protective vegetation buffers. On the Indian Island portion of the Tribal Reservation, threats stem from inadequate riparian buffers and a poorly sited uncovered salt storage pile. Nontribal threats to the Reservation were not assessed as that would have involved reviewing land use practices for one third the state of Maine. It is likely that well over 100 miles of the Penobscot River Reservation are vulnerable to contaminant and erosion threats from industrial, residential, commercial, agricultural, and recreational uses. Towns and highways adjacent to the Reservation should be assessed in the future, including the numerous RCRA/Superfund sites in Penobscot River Basin.

Table 1. Major Findings

Type of Water Quality Impairment or Threat	Water Bodies Affected (Trust Land or Reservation)	Major Contributor (Tribal or Nontribal)
Mercury - Impaired	Trust Land and Reservation (10 lakes, 5 rivers, 32 streams)	Nontribal
Logging Roads – Threat	Trust Lands (21 streams)	Tribal
Junked Car – Threat	Trust Land (1 lake)	Tribal
Riparian Buffers – Threat	Reservation (<1 river mile)	Tribal
Salt Pile – Threat	Reservation (<1 river mile)	Tribal
Shorefront Camps – Threat	Trust Lands (4 lakes)	Nontribal
Algae Blooms – Impaired	Reservation (60 river miles)	Nontribal
Thermal Pollution - Impaired	Reservation (>100 river miles)	Nontribal
Dioxin/PCBs – Impaired	Reservation (30 river miles)	Nontribal

2.0 ASSESSMENT METHODOLOGY

2.1 Project Coordination

The nonpoint source assessment was undertaken by the Penobscot Nation Water Resources Program in consultation with tribal natural resource professionals in the Fisheries Program and Forestry Program, and assistance from the tribal geologist, GIS specialist, and the tribe's air quality consultant. The Tribe's Department of Trust Responsibilities and Department of Economic Development provided information for the assessment. Other natural resource agencies that were consulted include the Maine DEP, Natural Resources Conservation Service, Water Resources Institute at the University of Maine in Orono, and Region 1 EPA.

Sources of potential threats and impairments to water quality were identified by various means including communication with other DNR and DTR staff, review of land use information, review of Maine's Non-Point Source Assessment report, review of aerial photographs and soil maps, and on-site watershed surveys. Initially water resources staff had discussions with Tribal Natural Resources program managers for forestry, fisheries, and conservation enforcement to identify locations of known obvious and potential nonpoint source problems (ditching, road washouts, bank erosion, stream crossings, land clearing) and the severity of these sites. These sites were documented and revisited as part of the watershed surveys for more detailed evaluations.

2.2 Analysis of Water Quality Data

Water quality monitoring by the Tribe is extensive and ongoing. Tribal waters are among the best-monitored waters in the State of Maine. This assessment made use of existing data and no additional water quality sampling required. The specific parameters we relied upon to determine impaired or threatened status are summarized in table 2, followed by a description of our overall water quality monitoring program and other sources of data. We also relied upon our watershed surveys to make a determination of threatened waters, described in part 2.3.

Table 2. Water Quality Parameters Used to Determine Impairment

Water Quality Parameter	Water Bodies Sampled	Basis for "Impaired"
fish tissue – mercury - dioxin/PBCs	major lakes, Penobscot River Penobscot River	unsafe for sustenance use unsafe for sustenance use
water – trophic status (chlorophyll <i>a</i> , secchi, water - temperature	Penobscot River Penobscot River	Episodic algae blooms Lethal limit for salmonids
water – ANC/pH	Selected lakes	Episodic acidification

The Tribal Water Resources Program has been conducting various levels of monitoring every year since 1992 under EPA (106, Multi-media, GAP) and BIA 638 programs.

Tribal water quality investigations on the Trust Lands have primarily focused on the lakes and ponds. The purpose of the monitoring has been: 1) to detect severe impediments such as eutrophication and bacteria contamination, 2) characterize the chemical and physical attributes of each waterbody, and 3) obtain baseline information for detecting long term trends in water quality. For general monitoring each lake and pond is visited once per month from late May/early June to early October. Although some sampling is conducted during or shortly after wet weather the sampling does not specifically target weather events. In most instances sampling is done at two locations on each water body; one site in the deepest portion of the pond and one at the outlet (if present). Additional sampling is conducted at specific locations to assess potential sources of pollution (i.e. inlet with forestry harvesting, cluster of camps). We examine numerous chemical and physical parameters including dissolved oxygen and temperature (1 meter spaced profiles), conductivity, E. coli bacteria, pH, alkalinity, color, turbidity, total suspended solids, biochemical oxygen demand (5-day), secchi transparency, chlorophyll , nitrogen, and phosphorous.

Due to statewide fish consumption advisories, the Tribal Water Program also analyzed tissues of select species of fish for mercury from most of the Trust Land lakes and ponds and the Penobscot River. Aquatic life studies using benthic macroinvertebrates were conducted following Maine DEP's River and Stream Biological Monitoring Program protocol at two of the largest streams located in PIN Trust Lands (Mattamiscontis Stream and Birch Stream (Davies and Tsomides, 1997).

Tribal water quality investigations on the Penobscot River have primarily addressed concerns related to point source discharges and impoundments. In addition, a special monitoring project is underway to determine the cause of the episodic algae blooms on the Penobscot River. River and tributary work focuses on chemical and physical parameters listed above for the lakes and ponds (dissolved oxygen, temperature, conductivity, E. coli bacteria, pH, alkalinity, color, aluminum, turbidity, total suspended solids, biochemical oxygen demand (5-day), secchi transparency, chlorophyll , nitrogen, and phosphorous).

It should be noted that turbidity and total suspended solids measurements by the Tribe have alerted us to some potential nonpoint source problems in relation to nontribal agricultural uses on the Piscataquis River, a major tributary to the Penobscot. This problem is being investigated in cooperation with the agencies responsible for regulating land use in that area and is not addressed by this assessment.

Water quality data are available from other agencies, including the University of Maine, Maine Department of Inland Fisheries and Wildlife, Maine DEP, US EPA Region I, US EPA Lexington lab, USGS, and USDA Natural Resources Conservation Service (formerly Soil Conservation Service). Data from other sources were found to be very limited, though useful data were

collected by EPA at East Branch Lake (1994) for the EMAP Program - Northeast Lakes Project and by the MEDEP/UMaine High Elevation Lakes Project for Snow Mountain Pond in 1986 and 1987 (Kahl and Scott, 1994).

2.3 Watershed Surveys

Staff examined aerial photographs, topographic maps, and soil maps to identify areas where topography, geology, and proximity to water bodies indicate the potential for surface runoff and erosion. Most of these sites are associated with roads, bridges, and camp lots. Staff traveled along all Trust Land roads during the fall and spring using all terrain vehicles to identify locations of non-point source problems. All problem sites involving road and stream crossing were visited, recorded using global positioning system (GPS), and visually evaluated using the non-point source checklists developed for the project (Appendix B). Most sources were further documented using photography. Evaluations for roads and bridges examined amount and type of vegetation, evidence of erosion, ditch condition, culvert condition, and water condition.

From the Tribal Department of Trust Responsibility (DTR), information was obtained on the location of all Tribal land assignments and non-Tribal outlots on the Trust Lands. The land assignments were visited and evaluated to determine their potential for causing non-point source pollution to Tribal waters. Most outlots were similarly evaluated. However many of the non-Tribal outlots along Rte. 27 in Alder Stream were omitted because they were too numerous or because of access problems. Evaluations of camp lots (Appendix C) included distances of structures, gray water, septic, dumps, and outhouses to water, and condition of buffer zone, bank and structures. A checklist was used to give a rating of very poor, poor, fair, or good. Structures and buildings on evaluated sites were recorded using GPS and input into the geographical information system (GIS). Evaluation information, including owner name and address where known, were added to the GIS database. Maps highlighting locations of camp lots and other potential non-point source threats were created using GIS. These maps and information were also provided to PIN DTR for use in managing land use on Trust Lands.

2.4 Steps Used to Identify Priority Waters

The steps that were used in the NPS Assessment to identify priority waters revolved around the use of a series of screening questions, as follows.

Does NPS pollution cause waters to fail to meet current state water quality standards or make it likely to fail these standards in the future?

Does NPS pollution cause waters to fail to support tribal beneficial uses (aquatic life support, fish consumption, swimming, boating, aesthetics, cultural and ceremonial, drinking water supply) or is it likely to fail to support these uses in the future?

Does NPS impair or threaten a tribally managed fisheries resource (described in part 2.5)?

Does NPS impair or threaten Atlantic salmon restoration habitat?

2.5 Fisheries Characterization

Fish population surveys have been conducted for most of the Trust Land lakes, ponds, and streams by the Tribal Fisheries Program or prior to 1980 by Maine Department of Inland Fisheries & Wildlife. Tribal fisheries management goals were obtained from the Tribe's Land Use Management Plan (Penobscot Nation Land Use Committee, 1994 Draft) and updated by the Tribal Fisheries Biologist (Fay, 1998 pers comm). These goals were weighed in our determination of the severity of the nonpoint source pollution threats. Some of the fisheries information is presented in Part 3 of this report and detailed fisheries information for each body of water is summarized in Appendix A.

3.0 LAND USE SUMMARY

3.1 Tribal Trust Lands

Current Tribal Trust Land holdings are composed of six land areas totaling 64,342 acres. The Alder Stream Trust Land lies within the Kennebec River Basin in western Maine. The other five Tribal Trust Lands, at Argyle, Lee, Matagamon, Mattamiscontis, and Williamsburg are located in the Penobscot River Basin in northern Maine (Figure A). Land uses of Tribal Trust Lands are a blend of sustenance activities, commercial forestry, and recreation. Seasonal occupation of camps is the norm and access is by unpaved roads which are generally closed during mud season. The Tribe's forestry program manages Trust Lands for timber, pulpwood, and household firewood in accordance with a ten year forest management plan. This plan includes no-cut areas, and wildlife management areas. Sustenance fishing and hunting take place and popular recreational uses include hiking, boating, and swimming. Existing camps are concentrated in waterfront areas and additional camps will continue to be added. Certain areas are designated as set-asides, for common use by Tribal members and for spiritual retreat. Detailed maps of individual Trust Lands are included in Appendix D. Lakes and ponds of the Penobscot Nation Tribal Trust Lands include 10 named bodies of water that add up to 4,739 acres (Table 3). All the lakes and ponds receive a high level of protection under Maine's present Water Quality Standards.

Table 3. Ponds of the Tribal Trust Lands

Trust Land	Pond/Lake Name	Acres on Trust Land	Class
ALDER STREAM	Round Mountain Pond	75.5	GPA
	Snow Mountain Pond	9.8	GPA
	Blanchard Pond	7.2	GPA
MATA- GAMON	Grand Lake Matagamon	2,162	GPA
	Mountain Catcher Pond	67	GPA
	Morrell Pond	6	GPA
MATTA- MISCON- TIS	East Branch Lake	1,100	GPA
	Bear Pond	11	GPA
	Mattamiscontis Lake	1,025	GPA
	Little Mattamiscontis Lake	275	GPA

Flowing waters of the Tribal Trust lands add up to 106 miles and include segments of 4 rivers, 25 named streams and their tributaries (Table 4 and 5). Almost all of the flowing waters on Tribal Trust lands receive a high level of protection under Maine's present Water Quality Standards as Class A and Class AA waters. Data gathered by the Tribal Water Resources Program were used

recently to upgrade the classification of 20 stream miles on Tribal Trust Lands. Remaining Class B waters will be monitored and proposed for upgrades in the future.

Table 4. Streams of the Tribal Trust Lands

Trust Land	Stream Name	Miles on Trust Land	Class
ALDER STREAM	Alder Stream and 7 tributaries	11.4	A
	N Branch Alder and 2 tribs	4.8	A
	Middle Branch Alder, 4 tribs	7.8	A
	Round Mountain Pond Outlet	1.4	A
	Snow Mountain Pond Outlet	1.6	A
	Nash Brook	1.1	A
	Shagadee Brook and 1 trib	0.8	A
	Blanchard Pond Outlet	1.2	A
ARGYLE	Birch Stream and 1 tributary	7.3	A
	Bear Brook and 1 tributary	2.2	A
	E Branch Birch Stream & trib	1.8	A
	Hemlock Stream & tributary	3.5	A
LEE	"Kettlehole" Stream	0.7	A
	"Northeast" Stream	0.7	A
MATA-GAMON	Mountain Catcher Brook	2.3	A
	Wadleigh Brook	0.9	A
MATTA- MISCONTIS	Oak Knoll Brook	0.6	A
	Two inlets to E Branch Lake	0.7	A
	E Branch Seboeis Stream	0.9	A
	Three inlets to Mattamis. Lake	6.1	A
	Mattamiscontis Stream	1.8	A
	Squirrel Brook	2.2	A
	Mountain Brook and tributary	4.1	A
	"Trout" Brook	0.3	A
	Sam Ayers Stream & 2 tribs	9.4	A
Johnny Ayers Brook	2.5	A	
WILLIAMS- BURG	Stinking Brook and 1 tributary	2.4	A
	Roaring Brook and 2 tributaries	3.1	A
	Unnamed, Brownville Jct	1.1	B
	Whetstone Brook & 2 tribs	2.1	B
	Dexter Mill Stream	0.8	B
	Merrill Brook	1.1	A

Table 5. Rivers of the Tribal Trust Lands

Trust Land	River Name	Miles on Trust Land	Class
ALDER STREAM	North Branch Dead River	3.3	A
ARGYLE	Penobscot River	0.3	B
LEE	East Branch Passadumkeag R.	1.4	A
MATA- GAMON	East Branch Penobscot River	0.4	A/AA
WILLIAMS- BURG	West Branch Pleasant River	1.0	AA

3.2 Tribal Reservation (Indian Island Portion)

The Tribal Reservation consists of the Penobscot River and islands starting at Indian Island and continuing north (Figure B). Indian Island is the only part of the Reservation that is accessible by automobile and the dominant land use is residential. The population is approximately 500. Development can be characterized as light urban with private homes, light industry, and infrastructure for the tribal government, health center, and wastewater treatment plant, paved roads and parking lots (Figure C).

Four fifths of Indian Island is forested floodplain and forested wetland and the island is surrounded by the Penobscot River. The segment of the river that surrounds Indian Island is about a half mile in length and the State of Maine has classified this segment of river as Class B.

Figure A - Location, Penobscot Nation Tribal Trust Lands

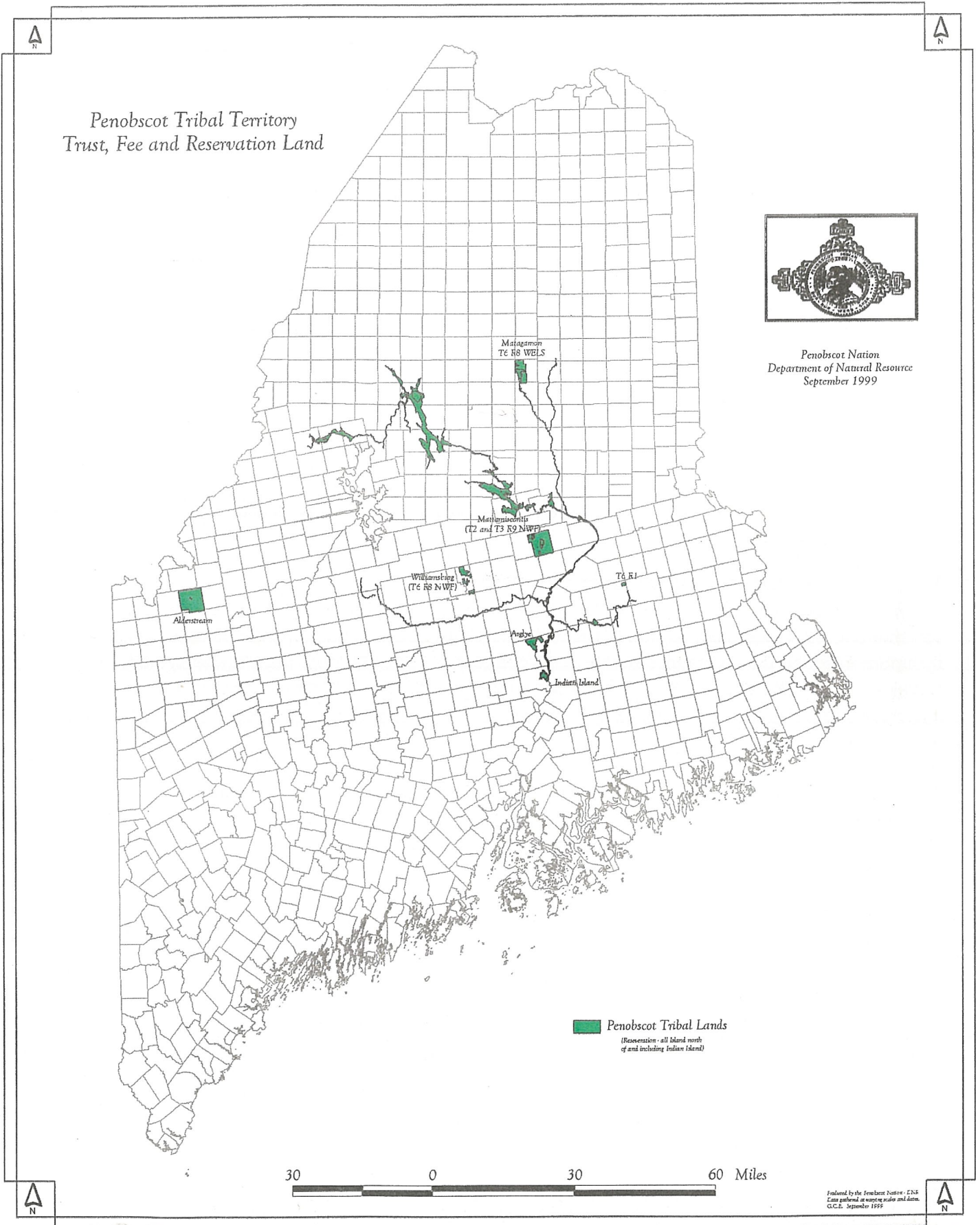


Figure B - Location, Penobscot Nation Reservation Lands

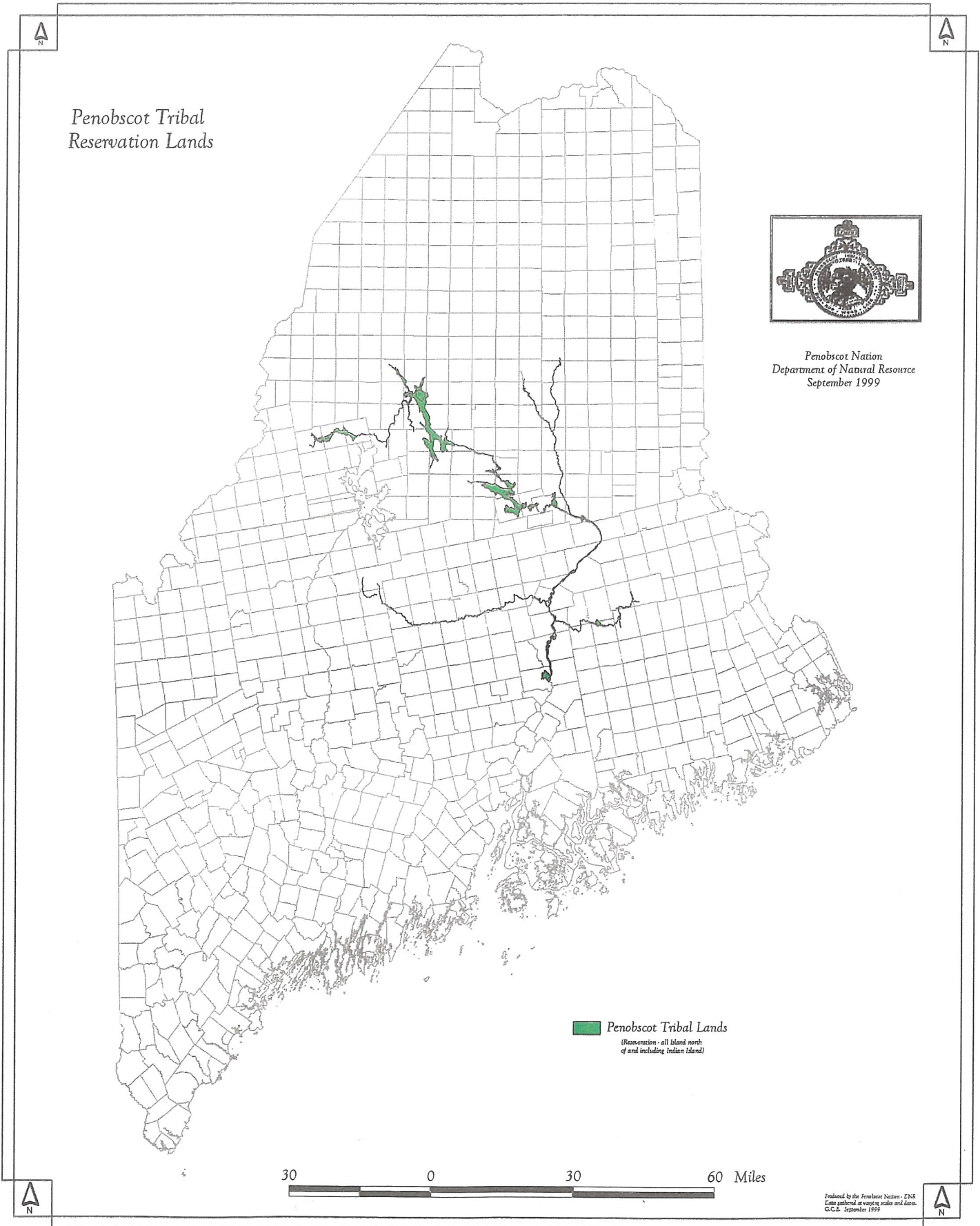
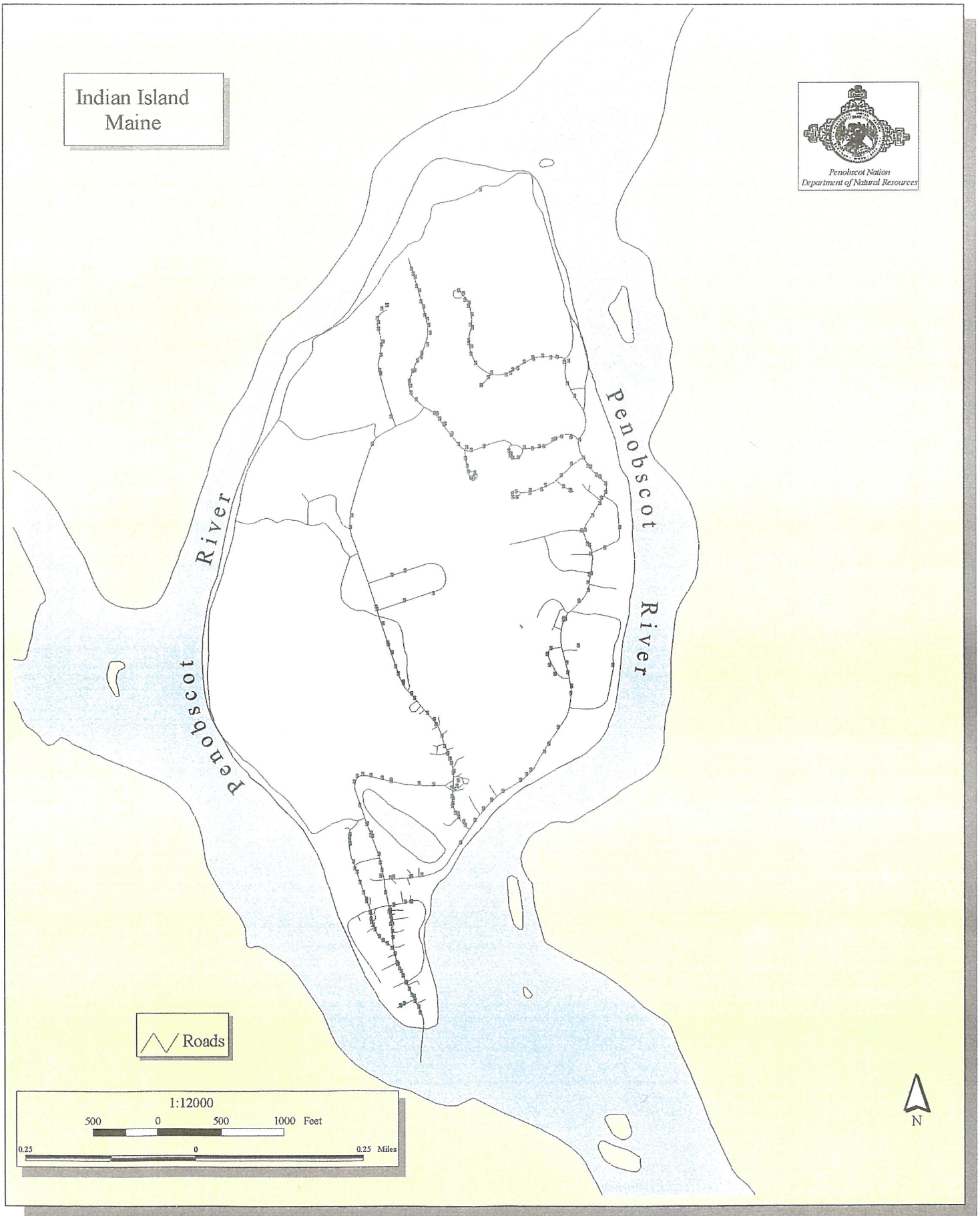


Figure C - Indian Island Portion of Tribal Reservation



4.0 RESOURCE VALUES

This section of the report contains short descriptions of important land uses and resource values for Tribal Lands covered by this assessment. The resource values that are summarized have been identified as being of cultural importance to the Tribe. The presence of important resource values will have a bearing on the severity ranking that is assigned to nonpoint source pollution problems in section 5 of the report.

4.1 Alder Stream

<i>Acreage</i>	23,445 acres - largest single Penobscot Nation Trust holding.
<i>Location</i>	Western Maine, North Branch Dead River, Kennebec River Basin.
<i>Resources</i>	Mountainous, scenic, with waterfalls and high elevation lakes. Used for forestry, hunting, fishing and camp lots. More moose taken here than any other Trust Land. Swimming in the deadwaters above Alder Stream Falls.
<i>Access</i>	Access by Route 27 to two gravel roads, the North and South Road.
<i>Camps</i>	15 Tribal camps and some non-Tribal camps built before Tribal 1981 ownership.
<i>Forestry</i>	Average annual harvest of 5,138 cords of timber and pulpwood. Most productive growth per acre of the Tribal Trust Lands.
<i>Slopes</i>	Mountainous, with elevations from 1220 feet to 3,960 feet.
<i>Soils</i>	Alder Stream is the Trust Land most prone to erosion due to the steep slopes. Great care must be taken to protect the pristine quality of its ponds and streams.
<i>Waters</i>	Three named ponds add up to 93 acres. The streams, river, and their tributaries add up to 37 miles of flowing waters.
<i>Fisheries</i>	Brook trout in virtually all flowing and ponded waters. All populations naturally sustained except Blanchard Pond and the North Branch of the Dead River, where stocking occurs.
<i>Summary</i>	Scenic-Excellent Moose Habitat-Productive Forestlands-Native Brook Trout

4.2 Argyle

<i>Acreage</i>	4,978 acres
<i>Location</i>	Adjacent to Penobscot River Tribal Reservation. Extends up Birch Stream and Hemlock Stream.
<i>Resources</i>	Traditional tribal hunting for moose, bear, partridge, snowshoe hare, beaver. Numerous wetlands. More deer and beaver taken here than any other Trust Land.
<i>Access</i>	Access by canoe or unpaved logging road on adjacent Tribal fee land in Alton.
<i>Camps</i>	A few hunting camps.
<i>Forestry</i>	Closed to commercial forest harvesting operations.
<i>Slopes</i>	Flat to gently sloping, elevations 110 to 220 feet.
<i>Soils</i>	Argyle soils are poorly drained, consisting mainly of wetlands, with much clay.
<i>Waters</i>	No named ponds. Abundant wetlands. Three named streams and one river provide 15 miles of flowing waters.

Fisheries Warm water fisheries, with seasonal brook trout, and habitat targeted for Atlantic Salmon Restoration.
Summary Wildlife Management and Protection Zone-Traditional Hunting Area-Excellent Deer and Beaver Habitat-Atlantic Salmon Restoration Habitat.

4.3 Lee

Acreage 576 acres
Location East Branch of the Passadumkeag River, a tributary of the Penobscot River.
Resources Forest products. Wildlife habitat for beaver, moose, deer and bear.
Access Unpaved logging road from Route 6.
Camps None.
Forestry Timber and pulpwood harvesting.
Slopes Flat to gently sloping, with elevations from 280 to 400 feet.
Soils Mostly poorly drained or steep, except at the existing road bed.
Waters The river and 2 unnamed tributaries provide 2 miles of flowing water. Wetlands.
Fisheries Seasonal brook trout. Eel habitat. Natural falls may impede shad and alewife.
Summary Commercial Forestry. Wildlife Habitat. Eel Habitat.

4.4 Matagamon

Acreage 9,147 acres
Location Northernmost Tribal Trust Land, near source of East Branch Penobscot River.
Resources Scenic, exceptional cold water fisheries. Wildlife habitat for moose, deer and bear. Shoreline camp lots with scenic views of Katahdin range. Forest products. Hiking, boating, camping and spiritual retreat.
Access Unpaved gravel roads from the south.
Camps Tribal and non-Tribal, mostly shorefront.
Forestry Timber and pulpwood harvest.
Slopes Flat to gently sloping, 700 to 1,000 foot elevations.
Soils Existing roads on fair soils. Slope or drainage limitations elsewhere.
Waters Half of Grand Lake Matagamon (2,162 acres) is in the Trust Land, plus part of Mountain Catcher Pond (67 acres) and Morrell Pond (6 acres). The East Branch Penobscot River and inlets to lakes provide 4 miles of flowing waters.
Fisheries Viable lake fisheries of landlocked salmon, lake trout, and brook trout. River habitat downstream of the Trust Land is critical for migratory Atlantic Salmon.
Summary High quality coldwater fisheries habitat. Scenic camping and hiking opportunities. Wildlife Habitat. Spiritual Retreat. Commercial Forestry.

4.5 Mattamiscontis

Acreage 21,779 acres
Location Mattamiscontis Stream, a tributary of the Penobscot River.
Resources Three large lakes, large streams, shorefront camps. Used for fishing, camping, boating, hiking, swimming, forestry. Sand and gravel aquifer. Warm water fisheries, Atlantic Salmon Habitat.

Access Unimproved roads.

Camps Tribal and non-Tribal, mostly shorefront.

Forestry Timber and pulpwood harvest. Annual allowable cut of 4,460 cords.

Slopes Flat to gently sloping, but steep around Mattamiscontis Mountain (1,093 feet).

Soils Existing roads are logging roads that pre-date tribal ownership. Three road sections cross soils ranked poor to very poor for this purpose.

Waters The Trust Land includes all of Mattamiscontis Lake (1,025 acres), Little Mattamiscontis Lake (275 acres), most of East Branch Lake (1,100 acres) and most of Bear Pond (11 acres). Three major streams, their tributaries and lake inlets provide 18.6 miles of flowing waters.

Fisheries Warmwater fisheries are present, with seasonal brook trout, and suitable stream habitat for stocking Atlantic salmon.

Summary Abundant Lakes and Streams. Forestry. Waterfront Camps. Fishing. Atlantic Salmon Habitat. Hiking.

4.6 Williamsburg

Acreage 4,417 acres

Location On the West Branch Pleasant River, a tributary of the Piscataquis River that drains into the Penobscot River.

Resources Cold Water Fisheries. Atlantic Salmon Habitat. Wildlife Habitat. Sustenance Fishing and Hunting. Recreational Value for Camping, Canoeing, Hiking, Driving for Enjoyment. Forest Products. There are no ponds or built camps.

Access Limited gravel roads.

Camps None.

Forestry Timber and pulpwood harvest is limited to 871 cords. Forest management emphasizes recreation and wildlife protection.

Slopes Flat to gently sloping, 390 to 930 feet. (Check this)

Soils Soils are rated poor along the West Branch of the Pleasant River where an access road is presently located. Elsewhere soils are fair for roads.

Waters Four permanent streams and their tributaries add up to 12 miles of flowing waters.

Fisheries Four large streams support naturally sustained brook trout fisheries, along with Atlantic salmon and/or landlocked salmon. The river is actively being managed for Atlantic Salmon Restoration.

Summary High quality coldwater fisheries. Scenic canoeing and camping opportunities. Wildlife and Hunting Habitat. Fiddlehead Harvesting. Commercial Forestry.

4.7 Tribal Reservation - Land Use and Resource Values

Acreage The Reservation contains at least 6,000 acres of land, plus Penobscot River waters

Location The Reservation begins at Indian Island in Old Town, and includes the Penobscot River and its Branches to the north.

Resources Traditional tribal hunting, trapping, fishing, and gathering. Commercial harvest of fiddlehead ferns. Established Camps and campsites. Ancestral home. Burial and ceremonial sites. Cultural and Spiritual Significance. Indian Island is home

for Tribal residential, commercial, and government service areas.

Access Access by paved road and bridge to Indian Island. Boat access only to the other several hundred islands.

Camps A few camps.

Forestry Closed to commercial forest harvesting operations.

Slopes Flat to gently sloping, very low elevations with much floodplain.

Soils Predominantly poorly drained wetlands soils.

Waters The Penobscot River flows over 100 miles in the Reservation.

Fisheries Warm water fisheries, eel fisheries, turtle, Atlantic Salmon.

Summary Ancestral Home. Sustenance Fisheries. Cultural and Spiritual Significance. Traditional Plants and Medicines. Wildlife Habitat. Atlantic Salmon Habitat. Residential and Commercial Use of Indian Island.

5.0 ATTAINMENT STATUS

5.1 Impaired Waters

Impaired waters identified by this assessment do not attain present water quality standards and fail to support treaty reserved sustenance fishing rights. Impaired waters are summarized in Tables 6 and include all 4,739 acres of tribal lakes and ponds, and all 106 miles of the streams and rivers that were assessed.

All tribal waters are impaired because fish contain unsafe levels of mercury for tribal sustenance. Additional fish consumption advisories are present for dioxin and PCBs on a 30 mile segment of the Penobscot River Reservation. Additional impairments affect water quality and degrade fish habitat. Episodic algae blooms affect up to 60 miles of the Penobscot River. Flow regulation at Grand Lake Matagamon and the "Back Channel" of the Penobscot River cause excessive dewatering of riparian fish habitat. Embedded spawning gravels and thermal pollution impair fish habitat for over 100 miles in the Penobscot River. No impairments can be attributed to tribal sources. Thus, cooperative efforts will be required to address the problems of atmospheric deposition of mercury, flow regulation, industrial point sources, and cumulative thermal impacts.

Table 6. Impaired Waters

Water Body	Problem	NPS category	Methods
All lakes and ponds 4,739 acres	mercury	8100- atmospheric dep	WQ Data
Grand Lake Matagamon 2,162 acres	Riparian Dewatering of Fish Habitat	7400 - flow regulation	Fish Surveys
Penobscot River at Indian Island 4.3 miles	fish habitat	7400 - flow regulation 0100 - point source	Fish Surveys
	dioxin/PCBs	0100 - point source 8800 - impoundment	WQ Data
	eutrophication	0100 - point source	WQ Data
All streams and rivers. 106 miles	mercury	8100 - atmospheric dep 7400 - flow regulation	WQ Data
4,739 acres and 106 miles	-	-	-

5.2 Threatened Waters (by Type and Severity)

Threatened waters identified by this assessment may not meet water quality standards in the future unless preventative measures are taken. The threatened waters are listed in Tables 7 through 10 by type and severity. Threats to water quality that are caused by tribal sources are distinguished from those that are caused by non-tribal sources. The purpose of the assessment was to identify Tribal sources of nonpoint source pollution, but non-tribal sources are cited where Tribal water quality goals are obviously not being met. Four of the 10 tribal lakes and ponds are threatened by nontribal shorefront camps that need vegetation buffers, treatment of greywater and removal of dumps. Those actions will require Tribal initiative to gain voluntary compliance from non-Tribal neighbors. One of the lakes will be better protected once the Tribe removes an abandoned car dumped nearby. Some camps that pre-date the tribe's land use plan will require more protective vegetation buffers. Half of the streams at Tribal Trust Lands are threatened by old logging roads. Without preventive measures by the Tribe, these 21 streams will not be adequately protected from sedimentation and nutrient enrichment at road crossings. On the Tribal Reservation, threats along a one-mile section of the Penobscot River stem from inadequate riparian buffers and a poorly sited uncovered salt storage pile.

Table 7. Threatened Lakes and Ponds (by Severity)

Water Body	Problem	NPS category	Severity	Methods
Round Mountain Pond (76 acres)	contaminants	6300 - landfill	MODERATE - nontribal source	Field Survey
	nutrients	6500 - greywater	MODERATE - nontribal source	Field Survey
	sediments/nutrients	7600 - riparian vegetation	HIGH - nontribal source	Field Survey
Grand Lake Matagamon (2,162 acres)	sediments/nutrients	7600 - riparian vegetation	MODERATE	Field Survey
Mattamiscon. Lake (1,025 acres)	sediments/nutrients	7600 - riparian vegetation	MODERATE - nontribal source	Field Survey
Little Mattamiscon. Lake (275 acres)	sediments/nutrients	7600 - riparian vegetation	MODERATE	Field Survey
	contaminants	6300 - landfill (junked car)	LOW	Field Survey
538 acres	-	-	-	-

Table 8. Threatened Streams and Rivers - HIGH Severity

Water Body Extent of Impairment	Problem	NPS category	Assessment Methods
Little Alder Stream 4.8 mi	sediments/ nutrients	2300 - logging road	Field Survey
Alder Stream 5.6 mi	sediments/ nutrients	2300 - logging road	Field Survey
N Branch Dead River 3.3 mi	sediments/ nutrients	2300 - logging road	Field Survey
Kettlehole Stream 0.7 mi	sediments/ nutrients	2300 - logging road	Field Survey
West Branch Pleasant River 1.0 mi	sediments/ nutrients	2300 - logging road	Field Survey
Stinking Brook 1.6 mi	sediments/ nutrients	2300 - logging road	Field Survey
Stinking Brook Tributary 0.8 mi	sediments/ nutrients	2300 - logging road	Field Survey
Penobscot River at Indian Island 2.5 mi	sediments/ nutrients	7600 - riparian vegetation	Field Survey
	salt storage	8300 - road maintenance	Field Survey
20.3 miles	-	-	-

Table 9. Threatened Streams and Rivers - MODERATE Severity

Water Body Assessed; Extent of Threatened Status	Problem	NPS category	Assessment Methods
Little Alder Stream 3rd trib 0.8 mi	sediments/ nutrients	2300 - logging road	Field Survey
Middle Branch Alder 2.6 mi	sediments/ nutrients	2300 - logging road	Field Survey
Alder 2nd trib 1.2 mi	sediments/ nutrients	2300 - logging road	Field Survey
Alder 7th trib 1.2 mi	sediments/ nutrients	2300 - logging road	Field Survey
Birch Stream trib 0.3 mi	sediments/ nutrients	2300 - logging road	Field Survey
Wadleigh Brook 0.9 mi	sediments/ nutrients	2300 - logging road	Field Survey
Mtn Catcher Brook 2.3 mi	sediments/ nutrients	2300 - logging road	Field Survey
Squirrel Brook 2.2 mi	sediments/ nutrients	2300 - logging road	Field Survey
Mountain Brook 3.1 mi	sediments/ nutrients	2300 - logging road	Field Survey
Mountain Brook trib 1.0 mi	sediments/ nutrients	2300 - logging road	Field Survey
Sam Ayers Stream 5.3 mi	sediments/ nutrients	2300 - logging road	Field Survey
Sam Ayers NW trib 2.6 mi	sediments/ nutrients	2300 - logging road	Field Survey
Johnny Ayers Brook 2.5 mi	sediments/ nutrients	2300 - logging road	Field Survey
26 miles	-	-	-

Table 10. Threatened Streams and Rivers - LOW Severity

Water Body Assessed; Extent of Threatened Status	Problem	NPS category	Assessment Methods
Blanchard Pond outlet 1.2 mi	sediments/ nutrients	2300 - logging road	Field Survey
Birch Stream 6.0 mi	sediments/ nutrients	2300 - logging road	Field Survey
7.2 miles mildly threatened	-	-	-

In summary, all tribal waters are impaired. Additional impairments and threats are present at four of the ten named tribal lakes and ponds and at fifteen of the named tribal rivers and streams.

Nontribal threats to the Reservation were not assessed as that would have involved reviewing land use practices for one third the state of Maine. It is likely that well over 100 miles of the Penobscot River Reservation are vulnerable to contaminant and erosion threats from industrial, residential, commercial, agricultural, and recreational uses. Towns and highways adjacent to the Reservation should be assessed in the future, including the 104 RCRA/Superfund sites that have been listed within the Penobscot River Basin (EPA, 1998).

6.0 CATEGORIES OF NONPOINT SOURCE POLLUTION

The Penobscot Nation NPS Assessment has identified EPA nonpoint source categories and subcategories that have the potential to degrade tribal water quality. These are presented in Table 11, followed by specific examples.

Table 11. Known and Potential Nonpoint Source Categories

Category	Sub-Category	Severity
Silviculture 2000	Road Cons/Maint 2300	High, Moderate, Low
Construction 3000	Land Development 3200	Moderate
Land Disposal 6000	Landfills 6300	Moderate
	On-site Wastewater 6500	Low
	Hazardous Waste	Unknown Potential
Hydromodification 7000	Flow Regulation 7400	High, Moderate
	Removal Riparian Veg 7600	High, Moderate, Low
	Bank Modification 7700	High
Other 8000	Atmospheric Dep 8100	High;Unknown
	Highway Maintenance 8300	High
	Accidental Spills 8400	Unknown Potential
	Recreational Activity 8700	Unknown Potential
	Upstream Impound 8800	High
Industrial Point Source 0100	Major Indus Source 0110	High
	Minor Indus Source 0120	Unknown Potential
Municipal Point Source 0200	Major Munic Source 0210	Unknown Potential
	Minor Munic Source 0220	Unknown Potential
Agriculture 1000	Pastureland 1400	High (affects portion of Reservation not assessed)

6.1 Agriculture

Agricultural practices (Category 1000) on non-tribal lands within the Penobscot River Basin are believed to affect the water quality of the Penobscot River Reservation, particularly on the Piscataquis River drainage. An interagency approach will be required to investigate and control this source of NPS pollution.

6.2 Silviculture

Silviculture is the most significant Tribal land use of the Tribal Trust Lands. This category requires the a greatest amount of NPS management efforts by the Tribe. In particular, the subcategory of road construction and maintenance (2300) needs attention. Twenty one sites of road erosion were identified. One retired road at Alder Stream was originally built too close to the river. There is a steep sloped bank and the bank is eroding away into the stream.

6.3 Construction

Construction (3000) of seasonal camps is taking place on the Trust Lands and non-tribal outlots. Camps on non-tribal outlots were constructed well before the lands were acquired and placed into trust in the early 1980's and before shoreline protection and zoning regulations were established in Maine. Therefore, most of these outlots, particularly those located on lakeshores, have structures built in very close proximity to shorelines and have inadequate quantity and quality of riparian vegetation. For example, the shoreline of the Round Mountain Pond Camp Association outlot located at the southeastern tip of the pond is nearly devoid of any "non-grass" vegetation types. The lawn area of the outlot is mowed nearly to the waterline.

Camps on the tribal land assignments are currently being constructed following the zoning and regulations of the 1994 Penobscot Nation Comprehensive Land Use Plan and Ordinance. Most of the newer camps are set back at least 100 feet from the normal high water mark and have a well maintained vegetative buffer strip with a mix of trees, shrubs, and ground cover (Land Use Plan pg. 5-4). Generally, there appears to be little if any threat of sedimentation/erosion from the newer camps. In fact most of the newly constructed camps are not easily visible from the water. The field observations suggest that the setbacks and clearing regulations of the land use plan are adequate to ensure protection riparian zones and water quality.

There are numerous tribal camps that were constructed prior to the land use plan. Generally these camps are protective of the riparian shoreline, however some are within close proximity to the shoreline and/or require more protective vegetative buffer strips to ensure shoreline stabilization. Additional investigation/evaluation is warranted of the seasonal and permanent structures located on outlots along Route 27 and Alder Stream. Many of these structures are located in close proximity to Alder Stream and its tributaries, often along steep slopes.

Construction activities on non-Tribal lands have potential to affect waters of the Tribal Reservation. An interagency inspection is warranted.

6.4 Land Disposal (Landfills, Graywater)

Land Disposal (6000) activities on the Trust Lands include the occasional small landfill (6300) and one abandoned car and the on-site wastewater systems (graywater 6500) at the camps. Small household landfills are known to be present adjacent to Tribal Trust Land Lakes at Alder Stream and Mattamiscontis. Of concern for the Reservation waters are the numerous RCRA/Superfund sites listed by EPA within the Penobscot River Basin whose present status is unknown to the Tribe at this time (Appendix E).

All on-site wastewater systems exist in relation to the mostly seasonal camps located on Trust Lands. The majority of tribal and non-tribal camps utilize outhouses or privies for treatment of septic wastewater. A small number of camps utilize subsurface sewage disposal with septic tanks and leach fields and some camps utilize portable toilets which are disposed off-site. Septic systems on non-tribal outlots which were installed prior to 1974 (when a modern system for the regulation of subsurface disposal of wastewater was adopted) pose the most significant threat to Trust Land waters.

It is often difficult to assess the extent of discharges to surface waters from malfunctioning septic systems. However, E. coli bacteria monitoring from the lakes and ponds suggest that septic systems appear to be working properly to prevent discharge to surface waters. Perhaps more extensive nutrient monitoring would assist in assessing the extent of septic runoff to surface waters.

Septic systems, if improperly functioning or densely clustered together, pose a significant threat to ground water quality. Although groundwater quality has not been assessed most of the buildings do not use ground water as a source of potable drinking water. Additionally, the land use plan provides for a permit review process that seeks to protect known groundwater aquifers from land uses that could adversely affect groundwater. However, protection groundwater quality should continue to be a major concern given the lack of existing data and the land use plan policies that encourages clustering or concentrating assignments to preserve open space.

Disposal of graywater, or wastewater from showers, sinks, washing, etc., while not a major human health threat, does significantly threaten water quality of Trust Lands waters. Graywater from seasonal dwellings is typically disposed of into gravel or stone filled pits nearby the originating structure, where the water is allowed to become treated by passing through the soil. However, many sites, primarily non-tribal outlots, were identified where graywater is treated improperly. At these sites wastewater is led through a pipe or channeling device directly to the shoreline of the waterbody, is discharged directly to the soil surface, or is located very close to the waterbody without the benefit of filtering by vegetative buffers. Practices that permit the gray water to travel into the nearby surface water allows for nutrients, detergents, and soaps to enter the water.

6.5 Hydromodification (Flow Regulation, Riparian Vegetation)

Hydromodification (7000) in the form of flow regulation (7400) has a major impact on the waters of the Tribal Reservation and the flowing waters of the Trust Lands. Major impoundments have a significant effect on the water quality and tribal fisheries. Impoundments contribute to thermal impacts, mercury fish advisories, habitat degradation, and inadequate fish passage. The role that impoundments can play in the uptake of mercury into the food chain has been documented (Haines, 1998). Excessive draw-downs at a lake impoundment affect riparian fish habitat at Grand Lake Matagamon.

Hydromodification (7000) and removal of riparian vegetation (7600) is an issue in relation to campsite clearing on the Trust Lands and is an issue in relation to construction activities for the Tribal Reservation. Because the tribal forest management plan does not allow for harvesting of timber resources within 250 to 500 feet of great ponds or 75 to 150 feet of other ponds and flowing waters riparian vegetation removal is not a significant harvesting related issue. However, many of the non-tribal outlots and early tribal assignments on the Trust Lands have had much of the protection riparian vegetation removed. (See Land Development category).

Additionally much non-grass riparian vegetation has been removed from some developed areas of Indian Island of the Reservation. It is understandable that a community such as the Penobscot Nation that inhabits an island would have removed riparian vegetation, given the limited available space. As is typical of many older shoreline developments riparian vegetation was removed to provide views of the river, lawns, and to "neaten" appearances. Annual trimming of grass, perennial weeds and brush still occurs in some areas. While such practices improve views and neaten aesthetics, they also can destabilize the shoreline and allow sediments and nutrients to runoff into the river.

6.6 Atmospheric Deposition (Mercury and Acidic)

Under the category of other sources (8000), the most significant threat to tribal waters is the atmospheric deposition of mercury (8100). Even though point source discharges of mercury do exist in some Maine waters the primary source of mercury to the PIN Trust Lands is atmospheric deposition. Deposition of mercury into the water originates from local (Maine), regional, and global sources. Modeling of mercury deposition from the Northeast States and Eastern Canadian Provinces Mercury Study (1998) estimates that 35% of mercury deposited in Maine is due to sources within the northeast, 10% from other US sources, and 55% from global background. The study finds that 78% of Maine's anthropogenic deposition is due to northeast emissions. Maine's largest emission sources are HoltraChem in Orrington (chlor-alkali facility), municipal waste combustors, and residential wood combustion.

Also under the category of other sources (8000), and atmospheric deposition (8100) is the category of acidic deposition. East Branch Lake, Mountain Brook, and possibly other Mattamiscontis area waters are the Trust Land waters that the Tribe believes have the greatest potential to be threatened by acidic deposition. The low acid neutralizing capacity (ANC) of the

East Branch Lake results in fish kills during some years of significant snow accumulation. The inability of the surface water to neutralize the acidic input of snowmelt causes the pH to lower and increases the solubility of aluminum which is toxic to fish. pH levels of 5.2 and ANC of 0.4 mg/L have been recorded. Fish population studies of East Branch Lake indicate that age classes of fish are often missing from years of significant snowmelt. The low ANC of East Branch Lake, and to a lesser extent Mountain Brook and other Mattamiscontis area surface water, makes the waters susceptible to acid deposition. Spring thaw data for other PIN Trust Land waters suggest that sufficient ANC exists to buffer the episodic acid inputs from causing acidification.

6.7 Sand and Salt Storage

Also under the category of other sources (8000), is the category of Highway Maintenance, which includes Road Salt Sand and Storage (8300). As indicated in Maine DEP NPS Assessment, storage of salt and sand-salt mixtures can be a major non-point source pollution threat to surface and groundwater quality. Currently the sand-salt storage pile used by Penobscot Nation for maintaining safe roads on Indian Island roads is uncovered. This site is a major concern because of its close proximity to the Penobscot River and a wetland where salt damage has occurred to nearby trees and other vegetation. The plume of contamination from an uncovered sand-salt pile is estimated to pollute an average of ten acres of groundwater (ME NPS Assessment). Although this uncovered pile likely does not threaten groundwater, because the drinking water supply for Indian Island comes from off island, it has caused observable damage to nearby wetland. Salt discharge from this pile likely runs off into the Penobscot River.

6.8 Point Sources

Major and minor industrial point sources (0100) contribute to water quality problems of the Penobscot River Reservation, including dioxin and PCB contamination of fish tissues, thermal pollution, episodic algae blooms, and lowered dissolved oxygen. Major and minor municipal point sources also contribute to pollutant loading.

7.0 SELECTION OF BEST MANAGEMENT PRACTICES

7.1 Participants

To select appropriate Best Management Practices (BMPs) on Penobscot Trust Lands, the Penobscot Nation Water Resources Program will first consult with other Penobscot Nation Tribal Programs within the Tribe's Department of Natural Resources (Forestry, Wildlife, and Fisheries). Secondly, we will consult with other Tribal Departments and Committees that regulate and manage land use: the Department of Trust Responsibility, Land Committee, Chief and Council. Thirdly, the Tribe will consult with appropriate federal, state, county, and municipal agencies. Core participants for the selection, funding, and implementation of Tribal BMPS include the U.S. Environmental Protection Agency (EPA), Natural Resources Conservation Service (NRCS), the Penobscot County Soil and Water Conservation District (PCSWCD), and University of Maine Cooperative Extension Service (UMCES). The core participants and their roles are shown in Table 12.

Organization/Group	Type of Participation
Penobscot Indian Nation DNR & DTR	Technical Assistance Education Demonstration Projects
Penobscot Indian Nation DTR	Compliance
USEPA	Technical Assistance Financial Assistance [319, GAP, 106, 104(b) 3] Education Demonstration Projects
NRCS	Technical Assistance Financial Assistance [EQIP] Demonstration Projects
PCSWCD	Technical Assistance Education Demonstration Projects
UMCE	Education

Other potential participants in Tribal BMP selection include the Maine Department of Environmental Protection (MDEP), Bureau of Indian Affairs (BIA - Forestry Section), U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service and the Soil and Water Conservation Districts of Somerset and Piscataquis Counties. The Tribe will also consult and work cooperatively with adjacent landowners where appropriate (e.g. owners of camps on outlots). All these entities share the goal of controlling NPS pollution and protecting water quality.

7.2 Public Participation and Governmental Coordination

The NPS Assessment Report and Management Plan will undergo review by the Tribal Council at a meeting that is open to the Tribal Community before implementation and final submission to EPA. The Tribal Council will make a recommendation to the Department of Natural Resources regarding the need for additional community workshops regarding the implementation of the NPS Management Plan.

Tribal Council procedure provides public participation and public comment, with the Department of Natural Resources serving as the coordinating party for all proposed pollution prevention measures. A resolution authorizes submittal of the assessment plan to other federal agencies. Section 319 of the Federal Clean Water Act requires each tribe to describe tribal and local programs for controlling pollution from nonpoint sources. The specific agencies and programs that the tribe will coordinate with to control nonpoint source pollution will be detailed in the Management Plan and the annual Section 319 work plans.

7.3 Existing BMPs/Current Programs

The current Tribal Land Use Plan and Ordinance has setback requirements that vary according to site, vegetative buffer strip requirements, no development areas, set aside areas, requires permits for major filling and grading, recommends unscarified filter strips for roads, and permitting requirements similar to the State of Maine for the maintenance and construction of subsurface sewage disposal systems for privies and septic systems (Penobscot Nation Comprehensive Land Use Plan and Ordinance, 1994 draft). There are also a set of Silvicultural BMPs instituted by the Tribe in its 1991 Forest Management Plan that are consistent with EPA's recommended practices (EPA, 1993). These are shown in Table 13.

At present, the tribe is utilizing technical specifications and standard procedures of the NRCS and funding from Environmental Quality Incentives Program (EQIP) for implementing appropriate BMPs on Trust Land roads. PIN also is using EQIP to build water flow devices to minimize damage to roads from beaver activity. Additionally, the tribe has a 10% Administrative Fund, derived from a portion of its stumpage revenues from its Trust Lands. These funds can be utilized for road repairs and maintenance including those that control nonpoint source pollution.

The tribe's Water Quality Monitoring Program conducts extensive water quality monitoring and assesses point and nonpoint source pollution. Data obtained by this program are utilized to prioritize water quality problems. The program also enables the tribe to monitor the effectiveness of selected BMPs and changes in water quality.

The tribe expects to utilize or continue to use the participants discussed earlier for carrying out nonpoint source pollution control on its lands and waters.

Table 12. Checklist Tribal Silvicultural BMPs

Harvesting and Forest Management Practice	Currently Done	Potential Practice
In warmer regions, schedule harvest and construction operations during dry periods/seasons. In temperate regions, harvest and construction operations may be scheduled during the winter to take advantage of snow cover and frozen ground conditions.	Yes	
To minimize soil disturbance and road damage, limit operations to periods when soils are not highly saturated	Yes	
Preplan skid trail and landing location on stable soils and avoid steep gradients, landslide-prone areas, high-erosion-hazard areas, and poor-drainage areas.	Yes	
Systematically design transportation systems to minimize total mileage.	No	Yes
Use existing roads, whenever practical, to minimize the total amount of construction necessary.	Yes	
When temporary stream crossings are used, remove culverts and log crossings upon completion of operations.	Yes	
Weigh skid trail length and number against haul road length and number.	No	Yes
Locate landings to minimize skid trail and haul road mileage	No	Yes
<p>Use topographic maps, aerial photography, soil surveys, geologic maps, and rainfall intensity charts to augment site reconnaissance to lay out and map harvest unit; identify and mark, as needed:</p> <ol style="list-style-type: none"> 1. Any sensitive habitat areas needing special protection such as threatened and endangered species nesting areas, 2. Streamside management areas, 3. Steep slopes, high-erosion-hazard areas, or landslide prone areas, Wetlands. 	Yes (except rainfall intensity charts)	
Establish and maintain Streamside Management Areas (SMAs) along surface waters, which is sufficiently wide and which includes a number of canopy species to buffer against detrimental changes in the temperature regime of the waterbody, to provide bank stability, and to withstand wind damage.	Yes	

7.4 Pollution Reduction/Summary of Potential BMPs for Tribal Lands

Three major areas of concern have been targeted in this assessment for PIN's nonpoint source management program. These are Silviculture–road construction/maintenance, Land Disposal–On-site wastewater systems, and Hydrologic/Habitat Modification–streambank modification/destabilization. The following is a list of BMPs the tribe will consider in managing these three primary areas of concern.

7.4.1 Silviculture–road and bridge construction/maintenance

1. Blade and reshape road to conserve existing surface material.
2. Clear road inlet and outlet ditches, catch basins, culverts, and road crossing structures of obstructions.
3. Maintain road surfaces by mowing, patching or resurfacing as necessary.
4. Wherever possible, completely close the road to travel and restrict access by unauthorized persons by using gates or other barriers.
5. Revegetate to provide erosion control and stabilize the road surface and banks.
6. Replace open-top culverts with cross drains (water bars, dips or ditches) to control and divert runoff from road surfaces.
7. Periodically inspect closed roads to ensure that vegetational stabilization measures are operating as planned and that drainage structures are operational. Conduct reseeding and drainage structure maintenance as needed.
8. Install 'Beaver Deceiver' flow devices where needed.
9. Construct/repair bridges and culverts when streamflow is low.
10. Revegetate or stabilize disturbed areas, especially at stream crossings
11. Construct stream crossings to minimize erosion and sedimentation.

7.4.2 Road Maintenance–Salt Control

1. Cover salt storage piles and other de-icing materials to reduce contamination of surface waters.
2. Regulate the application of de-icing salts to prevent oversalting of pavement.
3. Use specifically equipped salt application trucks.
4. Use alternative de-icing materials, such as sand or salt substitutes, where sensitive ecosystems should be protected.
5. Prevent dumping of accumulated snow into surface waters.

7.4.3 Land Disposal–On-Site Disposal Systems (OSDS)

1. Perform regular inspections of OSDS–use educational outreach and brochures to educate homeowners on how to determine if their OSDS is functioning properly.
2. Perform regular maintenance of OSDS–educate homeowners on pumping frequency of their septic systems.

3. Retrofit or upgrade improperly functioning systems—construct backup soil absorption fields and encourage water conservation where necessary.
4. Use denitrification systems where conditions indicate that nitrogen-limited surface waters may be adversely impacted by excessive nitrogen loading.
5. Discourage the use of phosphate in detergents.
6. Discourage the use of acid and organic chemical solvent septic system additives.
7. Promote proper operation and maintenance of OSDS through public education and outreach programs

7.4.4 Hydrologic/Habitat Modification—streambank modification/destabilization

1. Use soil bioengineering and other vegetative techniques to restore damaged habitat along shorelines and streambanks wherever conditions allow—these techniques include: Live Staking, Live Fascines, Brushlayering, Brush Mattressing, Branchpacking, Joint Planting, and Live Cribwalls.
2. Use properly designed and constructed engineering practices for shore erosion control in areas where practices involving marsh creation and soil bioengineering are ineffective—these techniques include: vegetative dune stabilization, vegetative streambank stabilization, vegetated buffer strips, culverts, grassed swales, diversion, structures to channelize water down steep slopes, shoreline riprap, streamline riprap, and temporary check dams.
3. In areas where existing protection methods are being flanked or are failing, implement properly designed and constructed shore erosion control methods such as returns or return walls, toe protection, and proper maintenance or total replacement.
4. Establish and enforce no-wake zones to reduce erosion potential from boat wakes.
5. Establish setbacks to minimize disturbances of land adjacent to streambanks and shorelines to reduce other impacts.
6. Establish and maintain Streamside Management Areas (SMAs) along surface waters, which is sufficiently wide and which includes a number of canopy species to buffer against detrimental changes in the temperature regime of the waterbody, to provide bank stability, and to withstand wind damage.

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9.0 APPENDICES

APPENDIX A. FISHERIES MANAGEMENT INFORMATION

ALDER STREAM TRIBAL TRUST LAND

Round Mountain Pond is the most significant fisheries resource at Alder Stream Trust Land and receives the most fishing pressure. The Tribe put restrictive fishing regulations in place at the pond in 1992. Virtually all brook trout spawning at Round Mountain Pond occurs in gravel springs within the pond. Protecting groundwater supplies is as critical as protecting surface waters to sustain the native trout.

Snow Mountain Pond produces many brook trout, but growth rates are slow. There is light to moderate fishing pressure. Access is difficult. Waters remain cold and are nutrient poor. Low alkalinity and low buffering capacity make the pond vulnerable to chronic and acute acidification from precipitation and snowmelt, which may slow fish growth rates. Protecting groundwater is as important as protecting the surface waters.

Blanchard Pond supports brook trout. Growth rates are high. Spawning areas are lacking and the population is maintained by stocking. Naturally organic sediments cause high sediment oxygen demand and anoxic conditions in late summer. Moderate fishing pressure occurs the first two months of fishing season until most available fish are caught.

Alder Stream, Little Alder Stream support abundant brook trout. Other common fish include blacknose dace, slimy sculpin, and white sucker. Longnose sucker, creek chub, and fallfish also occur in places.

Tributaries to Alder Stream and Little Alder Stream are small and numerous. These provide excellent nursery habitat for juvenile trout and are considered critical to overall viability of the trout population in the drainage. Protecting water quality and habitat in the small tributaries is as important to the overall system as protecting the mainstem.

North Branch Dead River is the largest volume flowing water body at Alder Stream Trust Land. Only a small section of the River is in the Tribal ownership, so fish management is somewhat difficult and fragmented. There is high quality cold water fisheries habitat for brook trout. Populations are sustained by stocking and natural reproduction. Landlocked salmon are seasonally present in low numbers from natural reproduction and State stocking State upstream and downstream of the Trust Land.

Tributaries to the North Branch of the Dead River include Nash Brook, Blanchard Pond Outlet, and an unnamed brook (known as Shagadee). These support brook trout populations and probably contribute to the high quality fisheries in the River.

ARGYLE TRIBAL TRUST LAND

Birch Stream and Hemlock Stream are considered warm water fisheries, with chain pickerel and smallmouth bass. Brook trout fishing is available in spring and fall in the flowing sections and in areas of cold water inflow (spring holes) during the summer. Management of stream fisheries at Argyle is not a high priority for the Tribal fisheries program at this time. Low populations of Atlantic Salmon have been documented on Hemlock Stream and in the Penobscot River. These waters include habitat targeted for Atlantic Salmon Restoration.

LEE TRIBAL TRUST LAND

West Branch Passadumkeag River has a seasonal brook trout fishery, with stocking conducted upstream at Weir Pond by the Maine Department of Fish and Wildlife. There is also an eel fishery. It is unknown whether shad and alewife can access this part of the drainage owing to a natural waterfall downstream.

MATAGAMON

Grand Lake Matagamon is the Tribe's largest coldwater fisheries lake. The lake supports viable fisheries of landlocked salmon, lake trout, and brook trout. Other fish present include lake whitefish, cusk, fallfish, yellow perch, bullhead, rainbow smelt, eel, and minnows. Fishing pressure varies seasonally, from high to light. Until recently most salmon, some brook trout and all lake trout were sustained by annual or biannual stocking by the State of Maine. Stocking of landlocked salmon was suspended in 1995 to lessen competition between salmon and wild brook trout in the outlet. It is hoped a naturally sustained salmon fishery will develop in the lake. In general, the need for stocking arises from the current operating regime at the lake's outlet. Drawdowns use up to 13 feet of lake elevation for downstream hydropower generation purposes, which negatively impacts riparian spawning areas. However, these drawdowns may support Tribal and non-Tribal habitat and fisheries management goals and opportunities downstream, where the high quality habitat in the East Branch Penobscot River sub-basin is critical to the overall success of the Penobscot River salmon restoration program.

Mountain Catcher Pond is shallow, but cool. Access is difficult. The Pond and its Stream sustain wild brook trout. Yellow perch compete with trout in the Pond. The Tribe has implemented restrictive fishing regulations to protect trout. White sucker, eel and minnows are also present.

Morrell Pond lies mostly outside Tribal Trust Land; no fisheries management work is done there.

MATTAMISCONTIS TRIBAL TRUST LAND

Considerable fisheries assessment work has been conducted in this ownership since 1988. A solid fisheries database exists for all the major lakes and streams. **Lake fisheries** in this Trust Land generally emphasize warm water species such as smallmouth bass, chain pickerel and white perch. A few trout are taken from each of the lakes in the spring, primarily near the inlets or the in the outlets, but none of the lakes are conducive to year round management for cold water species.

Stream fisheries consist mainly of early season or transitional runs of brook trout. Later in summer, these trout reside primarily in the deadwaters and flowages where cold water springs and seeps enter. However, the majority of the flowing sections of the larger streams become too warm to support brook trout year round. DNR has selected several stream sections at Matamiscotis for Atlantic salmon fry stocking to fill vacant habitat and augment adult returns to the Penobscot River drainage and hopefully into Matamiscotis Stream drainage, including Sam Ayers Stream. The long term program goal is establishment of a self sustaining run of Atlantic salmon in these streams. Ideally, this self-sustaining population will be robust enough to provide a harvestable surplus for Tribal members to use.

Matamiscotis Lake primary fisheries are white perch and chain pickerel. Other species present include fallfish, brown bullhead, yellow perch, redbreast sunfish, pumpkinseed sunfish, white sucker, and American eel. Habitat in the lake is conducive to sustaining smallmouth bass, but none have been documented to date, despite their presence several miles downstream in the outlet. The lake is only lightly fished at this time due to difficult access. The deeper portions of the lake stratify in the summer and the hypolimnion becomes anoxic. This water quality deficiency precludes management for cold water species on a year round basis. The extensive areas of shallow water in the lake contribute to the lakes overall productivity and provide excellent cover and habitat for warm water fish species.

Little Matamiscotis Lake is very uniform in terms of depth. The majority of the lake is about 10 or 11 feet deep. A few shoreline boulders and scattered aquatic vegetation provides some habitat and cover for fish and invertebrates but the quality and variety of habitat pales in comparison to Matamiscotis Lake. Primarily fisheries are for white perch, pickerel, with a few small brook trout caught near the inlets through the ice and in spring. Other species present include yellow perch, pumpkinseed sunfish, white sucker, American eel, common shiner, golden shiner, fallfish, creek chub, blacknose dace, banded killfish, and Atlantic Salmon (transitional during migratory phases). Future management, if any, by the Tribe will emphasize warm water fisheries. Fishing pressure is currently low and the lake appears to be used more for general recreation than for fishing. Canoeing swimming, sunbathing. The lake is very appropriate for these general uses because of good access, warm summer temps and the large shallow sand beach on

the south end.

East Branch Lake is the most valuable of the three lakes at the Matamiscontis Tribal Trust Land in terms of fisheries and fishing. Primary fisheries are for smallmouth bass and white perch. Chain pickerel are also caught occasionally, and a few brook trout are available seasonally near the inlets and in the outlet. Other fish species present include yellow perch, pumpkinseed sunfish, redbreast sunfish, fallfish, white sucker, brown bullhead, American eel, creek chub and common shiner. Fishing pressure was historically very light, but has increased recently due to improved access on the non-Tribal side and increased interest in bass angling throughout Maine. Area guides regularly use this lake for their bass angling clients. New bass fishing regulations were implemented on the lake in 1992 in an effort to preserve the quality of the existing smallmouth bass fishery.

Small stream drainages, including some that are unnamed, and the **east and west inlets to Matamiscontis Lake, Johnny Ayers brook, deadwaters of Sam Ayers Stream, Mountain Brook, Squirrel Brook, and Trout Brook** (a cold water high gradient tributary to Little Matamiscontis Lake) contribute to seasonal trout fisheries in the larger stream flowages and the lakes in the Trust Land. These smaller streams cannot support many adult trout year round but provide primary spawning grounds and juvenile nursery habitat for trout populations seasonally present in the larger waters.

Matamiscontis Stream has been selected for Atlantic Salmon stocking. Habitat is generally good for juveniles. Stream temperatures can reach sublethal temperatures, but there has been a good survival rate for the juveniles stocked there in the past. As of 1998, stocking of Atlantic Salmon in Matamiscontis Stream has been discontinued, but may resume in the future.

Sam Ayers Stream has very good juvenile habitat for Atlantic Salmon. A one mile stretch below the lower deadwater (just above the road bridge) is suitable for spawning and juvenile salmon due to a high gradient and favorable temperature and chemistry. This is where the fry is stocked. There is abundant good habitat immediately adjacent to the tribal lands. Protection of the entire watershed is important, because adult salmon could return to any part of the watershed. As of 1998, stocking of Atlantic Salmon in Sam Ayers Stream has been discontinued, but may resume in the future. When there are resources, personnel, and time available, the Tribe may consider cooperating with the Atlantic Salmon Authority to set out eggs in the winter that would self-release in spring.

WILLIAMSBURG TRIBAL TRUST LAND

All of the larger streams at Williamsburg are cold water streams and support brook trout, Atlantic salmon, and/or landlocked salmon. The tribe has documented significant brook

trout populations in **Whetstone Brook** and significant brook trout and salmon populations in **Roaring Brook**. Of the two, Roaring Brook has the best promise of providing a sustainable fishery because of its greater size. The **West Branch Pleasant River** is known for its excellent Atlantic salmon juvenile nursery and adult spawning habitat. These habitat values are evident in the section that flows along Tribal ownership. Cooperative Tribal/State/Federal stocking of juvenile salmon occurs in the drainage, but much of the population present is natural in origin. This river also supports a naturally sustained brook trout fishery.

PENOBSCOT RIVER RESERVATION

The Penobscot River basin currently supports four migratory fish species of high management interest to the tribe: Atlantic salmon, alewife/blueback herring, American shad, and American eel. The status of these fisheries in the Penobscot basin ranges from commercially viable but declining (eels), to commercially available, but only downstream of the Reservation (alewife), to remnant (shad), with essentially all such migratory fish stocks in peril to some degree due to historical and present day operation of hydropower dams, discharges of pollutants, and/or overharvest. Within the Penobscot Nation Reservation, only eels are sufficiently abundant to support a viable tribal fishery at this time.

In addition to migratory species, the Penobscot River basin supports a full assemblage of native and introduced fish species that reside in the river throughout their life. Those of highest management interest to the tribe include smallmouth bass, chain pickerel, landlocked salmon, brook trout, brown trout, and white perch. Lake trout, lake whitefish, round whitefish, splake (artificial hybrid of brook and lake trout), largemouth bass, black crappie, pumpkinseed and redbreast sunfish, yellow perch, fall fish, white and longnose sucker, burbot (cusk), and a wide variety of minnow species also inhabit various parts of the basin, although the current geographic range of largemouth bass and black crappie (both recently introduced exotics) in the Penobscot is quite limited.

Smallmouth bass and chain pickerel are the primary management species in the main stem and lower sections of the major tributaries, while landlocked salmon and wild brook trout are species of high management interest in upriver areas and smaller tributaries.

APPENDIX B. WATERSHED SURVEY DATA SHEET - ROADS

Trustland:	Site:	Ground Cond.:
Date:	Time:	Flow:

Section 1. Critical Location

What was found	what to do
<input type="checkbox"/> Bridge crossing stream	If runoff from bridge drains directly to water, look for a way to divert it to land.
<input type="checkbox"/> Ditch discharging directly to stream	Look for a way to reroute ditch so it drains to land or a buffer strip.
<input type="checkbox"/> Holding pond/ buffer zone discharging to stream	Check holding pond or buffer for signs that sediment and other pollution is leaving the pond or the buffer zone.
<input type="checkbox"/> Culvert in stream channel	Check culvert for signs of erosion and failure, look for streaks of mud or loose rocks in water right below culvert outlet, check for downstream scour in stream as a result of culvert concentrating the water. Repair problems.
<input type="checkbox"/> Road within 20' of waterbody	Check the edge of road to see if there is a buffer between road and stream. If not, consider installing and vegetating one.
<input type="checkbox"/> Condition of bridge	
<input type="checkbox"/> Other	
Comments:	

Section 2. Inventory of Areas Within 100 Feet of Critical Location

Streambank Condition (within 100 feet of critical location):

<input type="checkbox"/> Mix of grass, shrubs, trees; no signs of erosion, little bare soil	Check the water for signs of pollution. If none, no action needed.
<input type="checkbox"/> Fully vegetated with 1-3 types of plants, little sign of erosion	Check the water for signs of pollution, if none, no action needed.
<input type="checkbox"/> Sparsely vegetated, some rills, no gullies	Divert water flow away from streambank, mulch, and—if needed—seed the bank.
<input type="checkbox"/> Unvegetated with rills, gullies, headcuts, or severe undercuts	Stabilize any headcuts with rocks or vegetation. Mulch and revegetate bare bank.
<input type="checkbox"/> Riprap or concrete	Check for cracks and wear. Look downstream for channel scour; if found, install energy dissipaters away from outlet before scoured area.

Ditch Condition (within 100 feet of critical location):

<input type="checkbox"/> Vegetated, uniform grade, no signs of erosion or deposition	Check water for signs of pollution. If none, no action needed.
<input type="checkbox"/> Vegetated, varying grade, some soil deposits and/or erosion	Correct grade, deposit any excess material away from contact with runoff or drainage water, mulch and/or seed bare soil.
<input type="checkbox"/> Sparsely vegetated, moderate erosion and/or deposition	Correct grade, deposit any excess material away from contact with runoff or drainage water, put temporary straw bales tied down with wire and/or rock energy dissipaters in problem area, mulch and seed.
<input type="checkbox"/> Unvegetated and/or significant erosion or deposition, concave banks, sloughing	Lay back banks, install check dams and rock energy dissipaters or gabions, revegetate, and install fiber mats.
<input type="checkbox"/> Other	

Comments

Road Condition (within 100 feet of critical location):

What Was Found	What To Do
<input type="checkbox"/> Proper crown, slope; no signs of washboarding, potholes, or water damage	Check water for any signs of pollution. If none, no action needed.
<input type="checkbox"/> Flat, slope out adjustment, some washboarding, potholes, or other drainage	Recrown, blade out washboard, deposit any excess material away from any contact with runoff or drainage water.

<input type="checkbox"/> Cut or eroded, roadbed, poor drainage and slope, large puddles/holes, toe slope sloughing	Rebuild a stable roadbed with correct material; regrade ditches; deposit any excess material away from any runoff or drainage water; install culverts, cross drains, or waterbars; revegetate ditch.
--	--

Culvert Conditions (within 100 feet of critical location):

<input type="checkbox"/> Intact and stable, surrounding soil well-vegetated or riprapped	Check ditch and water for problems. If none, no action needed.
<input type="checkbox"/> Signs of water damage, eroded fill soil sparse vegetation surrounding outlet or inlet	Install waterbars or other diversions above culvert, regrade ditch depositing excess material away from runoff and drainage water, replace culvert fill soil and compact, revegetate and install an anchored fiber mat.
<input type="checkbox"/> Exposed top, severe erosion, no soil stability	Regrade and vegetate ditch depositing excess material away from water or runoff, install check dams, see if an additional culvert or larger size culvert is needed, refill and compact, revegetate or riprap inlet and outlet.
<input type="checkbox"/> Other	

Comments:

Section 3. Water Condition at Critical Location

What Was Found	What To Do
<input type="checkbox"/> Clear	Usually no action needed.
<input type="checkbox"/> Slightly cloudy	Look for ditch or streambank erosion.
<input type="checkbox"/> Turbid or very muddy	Look for culvert, road toe slope, ditch or streambank sloughing/failure. If found, correct as needed.
<input type="checkbox"/> No algae in water, on rocks, or on stream bottom	Usually no action needed.
<input type="checkbox"/> Some algae	Look for source of nutrients, such as septic tank line discharge (report to the county or state health department) or animals in the stream.
<input type="checkbox"/> Abundant algae and/or aquatic weeds	Look for concentrated sources of nutrients, such as a leaking wastewater treatment line (report leaks to the state water agency), a newly fertilized field next to the water, lots of cattle, pigs or chickens housed near or lounging in the water.
<input type="checkbox"/> Light sheen of oil or grease	Look for signs of leaking or spilled oil.
<input type="checkbox"/> Puddles of oil or grease and/or black oil streaks along bank	Don't change your oil near the water, put the waste oil in a container and dispose properly. Look for spills on or near road and/or leaking containers dumped beside or in the road or water.
<input type="checkbox"/> Trash, junk, garbage in or on water	Make sure it is not from your vehicle, look for illegal dumps and notify the local authority if needed.
<input type="checkbox"/> Septic or fecal odor	Notify the health department and state water agency right away.
<input type="checkbox"/> Foam or scum on water or along banks	Note the color and amount and notify state authorities if excessive (above what is normal).
<input type="checkbox"/> Dead fish	Report this to the local wildlife or fisheries warden or ranger.
<input type="checkbox"/> Other	

COMMENTS FOR B.M.P. :

APPENDIX C. WATERSHED SURVEY DATA SHEET - CAMPS

Picture #: _____

NPS Pollution Site Visit Checklist - Camps

Trustland:	Campowner:
Time:	Date:

Sect. 1 camp, greywater, etc. distances to water	Distance Ft.
___ stream running nearby camp-	
___ pond or waterbody near camp-	
___ outhouse to water-	
___ greywater to water-	
___ septic to water-	
___ dump to water-	
___ other:	
Comments:	

Sect. 2 buffer zone conditions

___ amount of clearing around camp-	___ extreme	___ mod.	___ little
___ buffer zone width (if nearby water)-	ft.		
___ greywater buffer-	___ good	___ fair	___ bad
___ condition of outhouse-	___ good	___ fair	___ bad
Comments:			

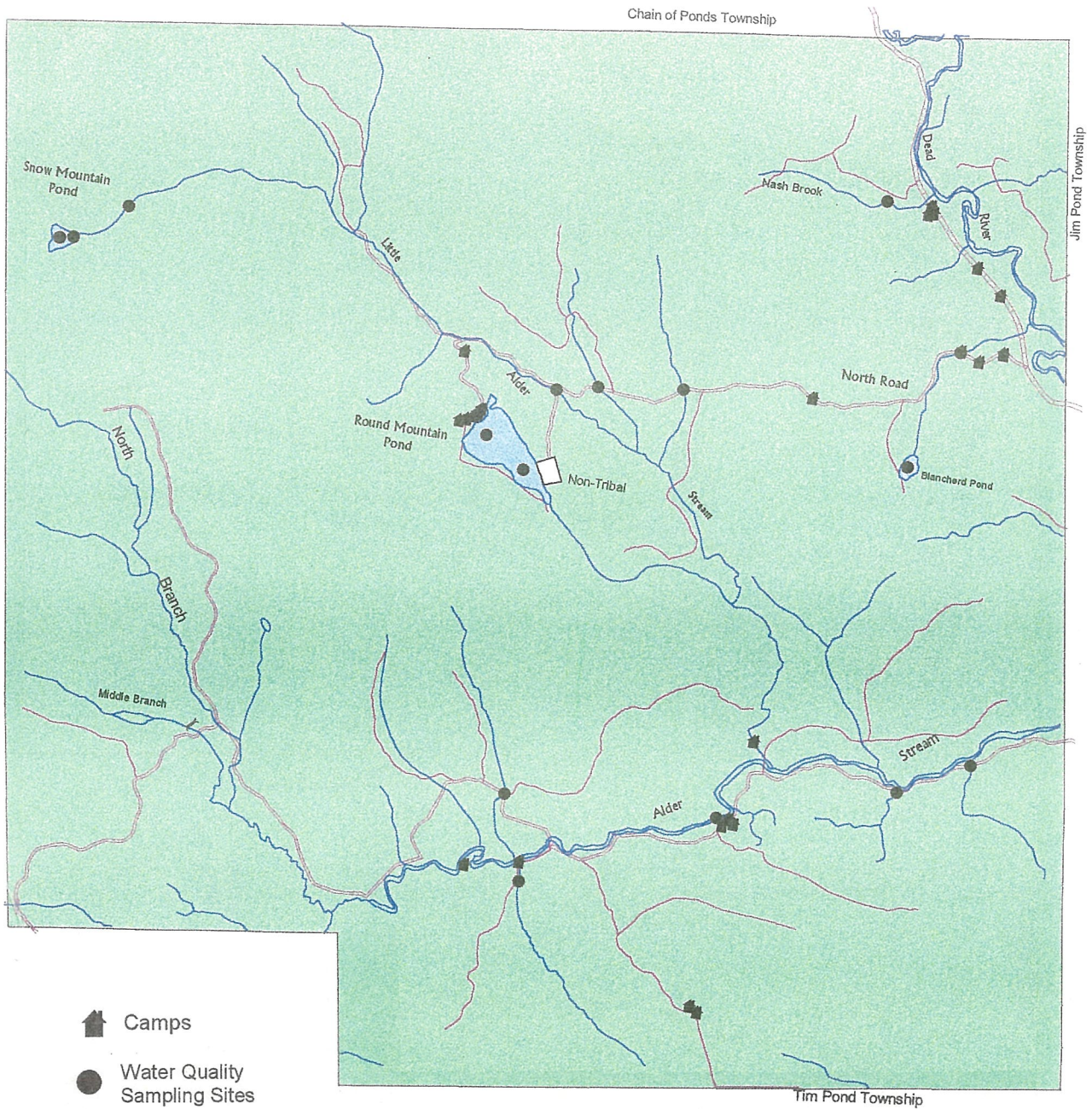
Sect. 3 stream or waterbody bank condition

___ mix of grass, shrubs, trees; no signs of erosion, little bare soil.
___ fully vegetated with 1-3 types of plants, little sign of erosion.
___ sparsely vegetated, some rills, no gullies.
___ unvegetated with rills, gullies, headcuts, or severe undercuts.
___ riprap or concrete
Comments:

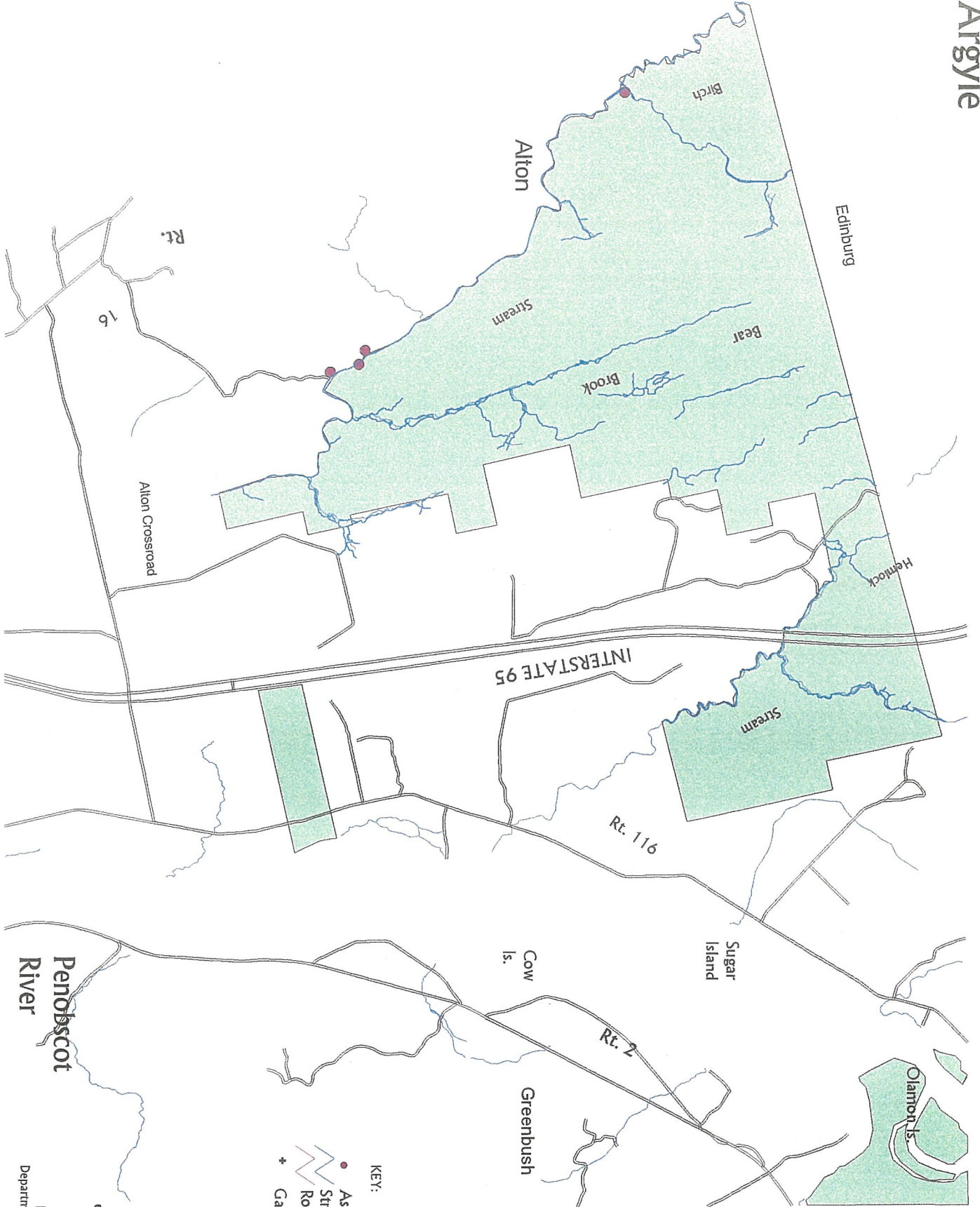
B.M.P. :

APPENDIX D. MAPS OF THE TRIBAL TRUST LANDS

Alder Stream Township (T2 R5)



▲
1:60801



1:51585

KEY:

- Assignments and Camps
- ~ Streams
- Roads
- + Gate

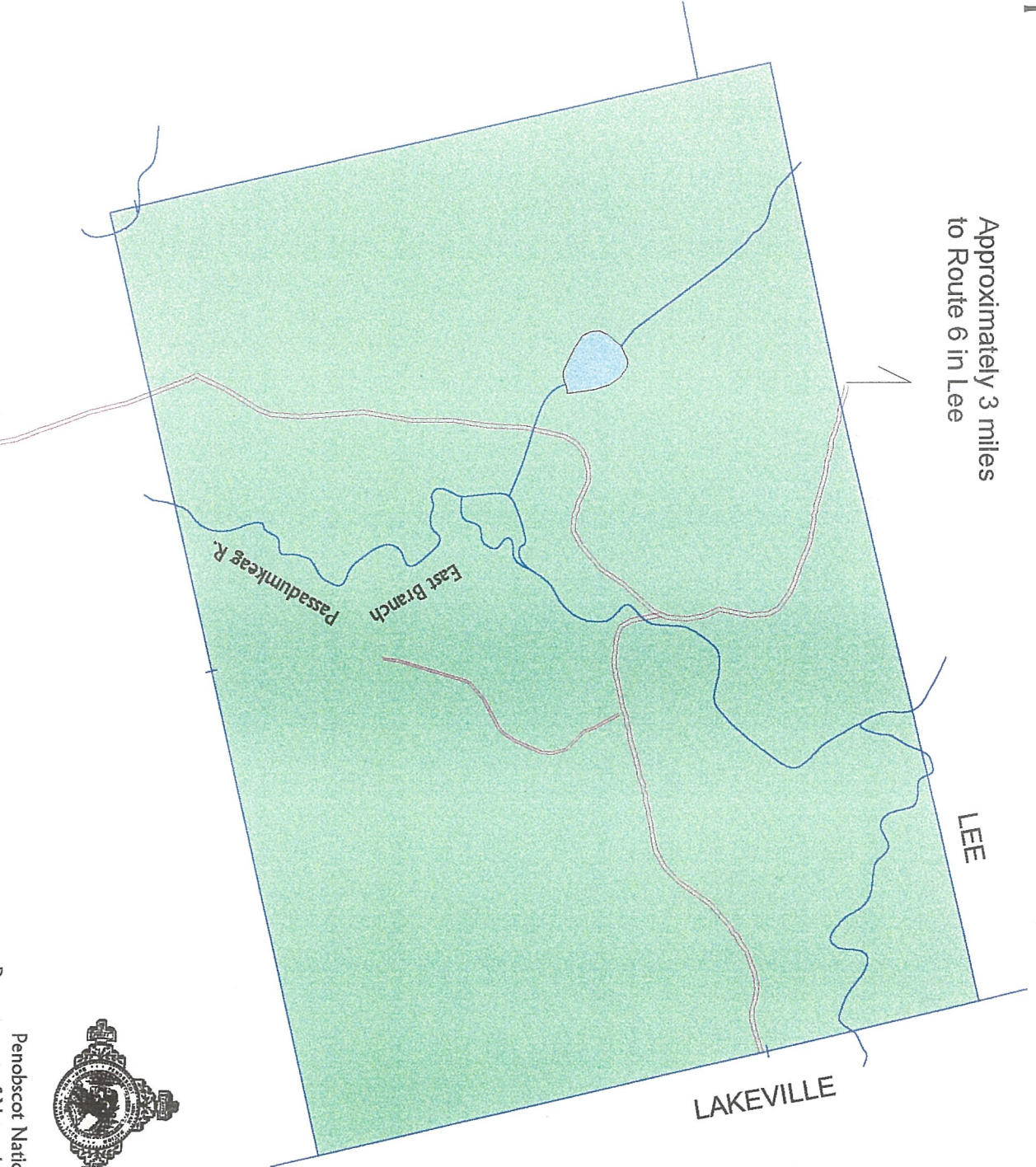


Penobscot River

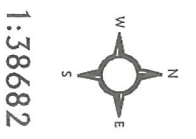
Penobscot Nation
 Department of Natural Resources
 August, 1997
 (Please See Map # 33 in
 The Maine Atlas...; Delorme)

T3 R1 NBPP

Approximately 3 miles
to Route 6 in Lee



KEY:
Streams
Roads

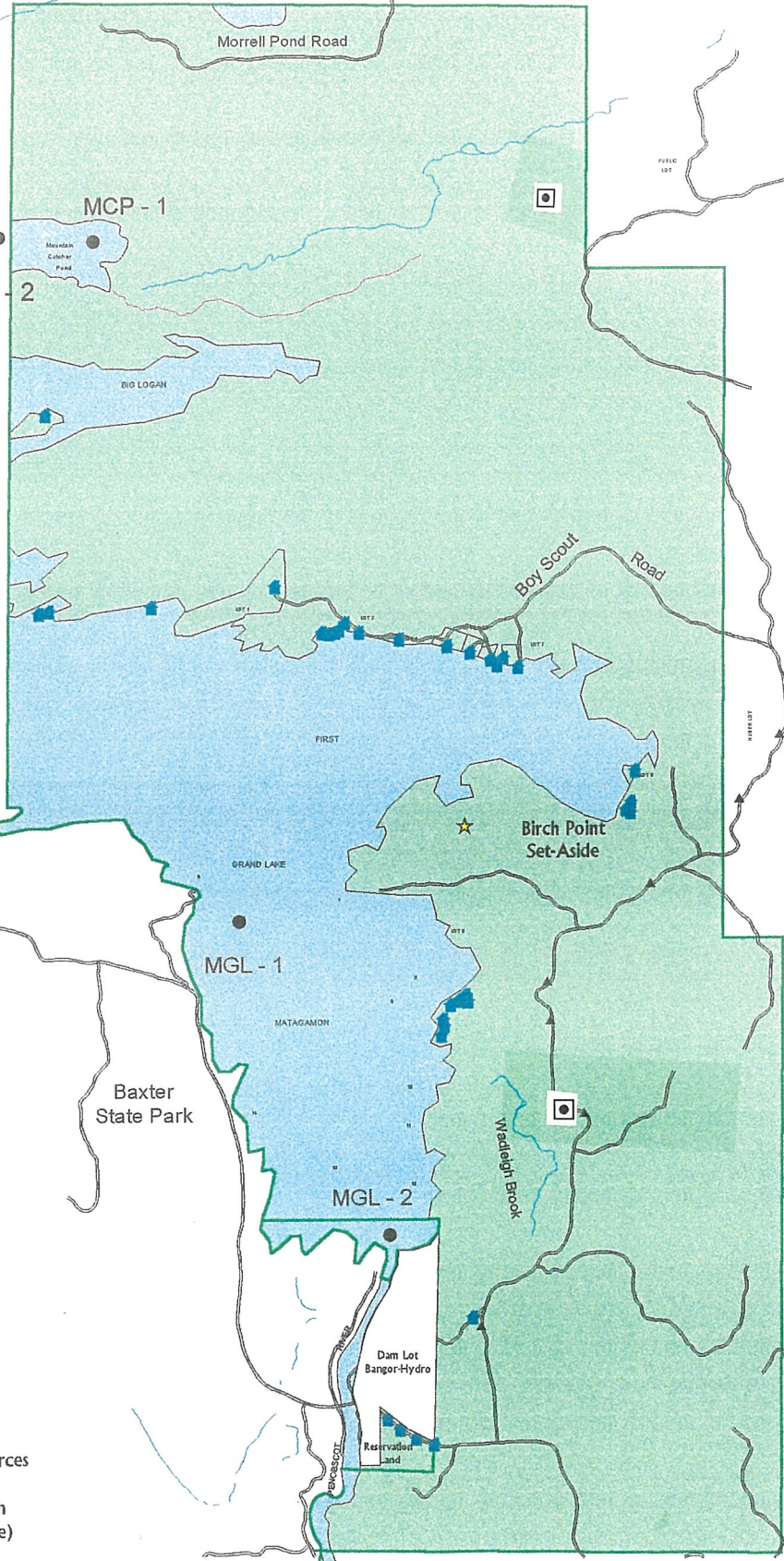


Penobscot Nation
Department of Natural Resources
August, 1997
(Please See Map # 34 in
The Maine Atlas..., Delorme)

Matagamon Tribal Trust Land



- Water Quality Sampling Sites
- ▲ Camps
- ▲ Road Erosion
- ◻ Roadside Beaver Flowage



T6 R8 WELS

T5 R8 WELS



Penobscot Nation
 Department of Natural Resources
 August, 1997
 (Please See Map # 51,57 in
 The Maine Atlas..., Delorme)

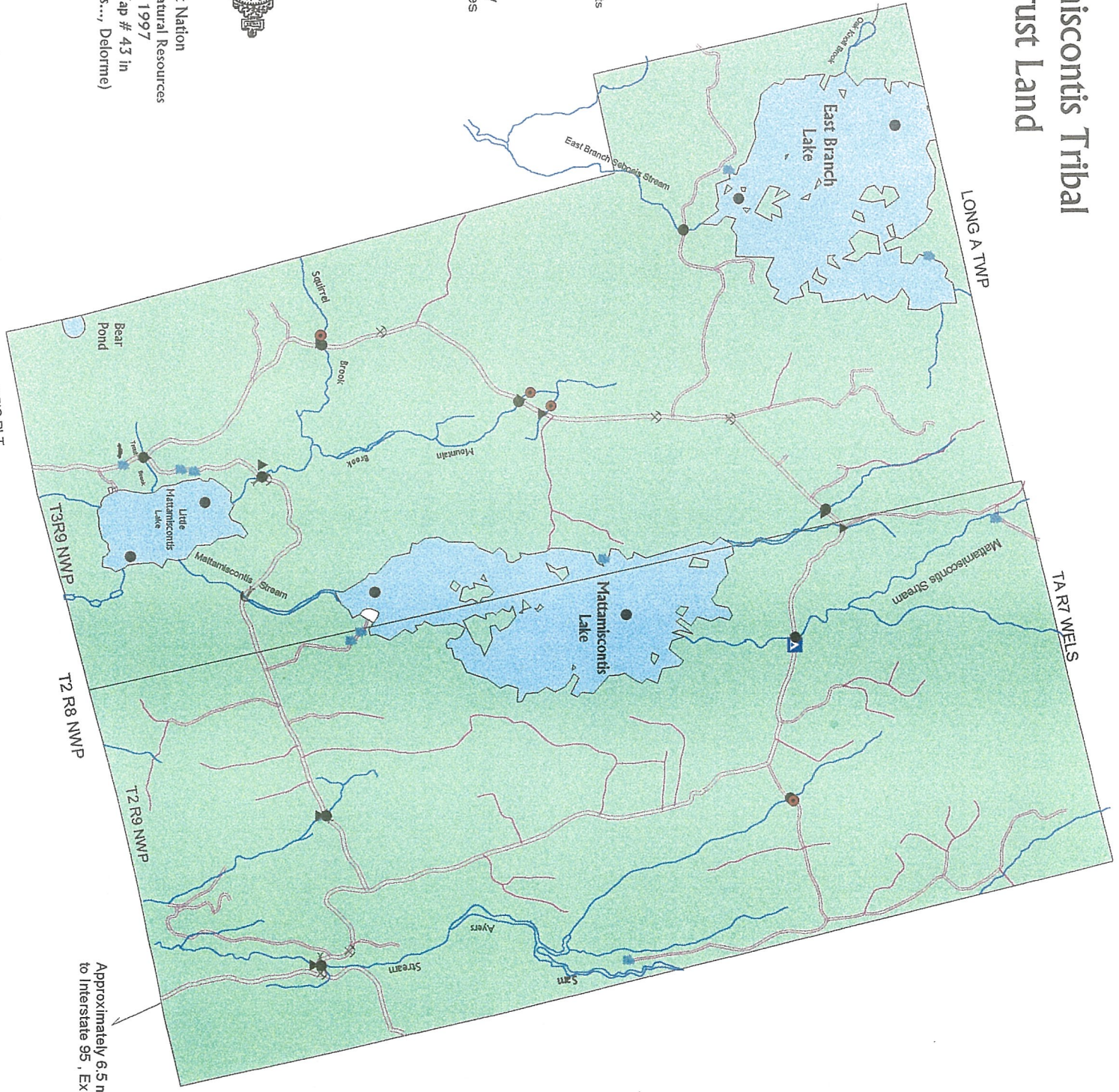
1:44975

Mattamiscontis Tribal Trust Land

- Camping Area
- Beaver Deceiver
- Road Erosion Points
- Bridges
- Abandon Car
- Water Quality Sampling Sites
- Camps



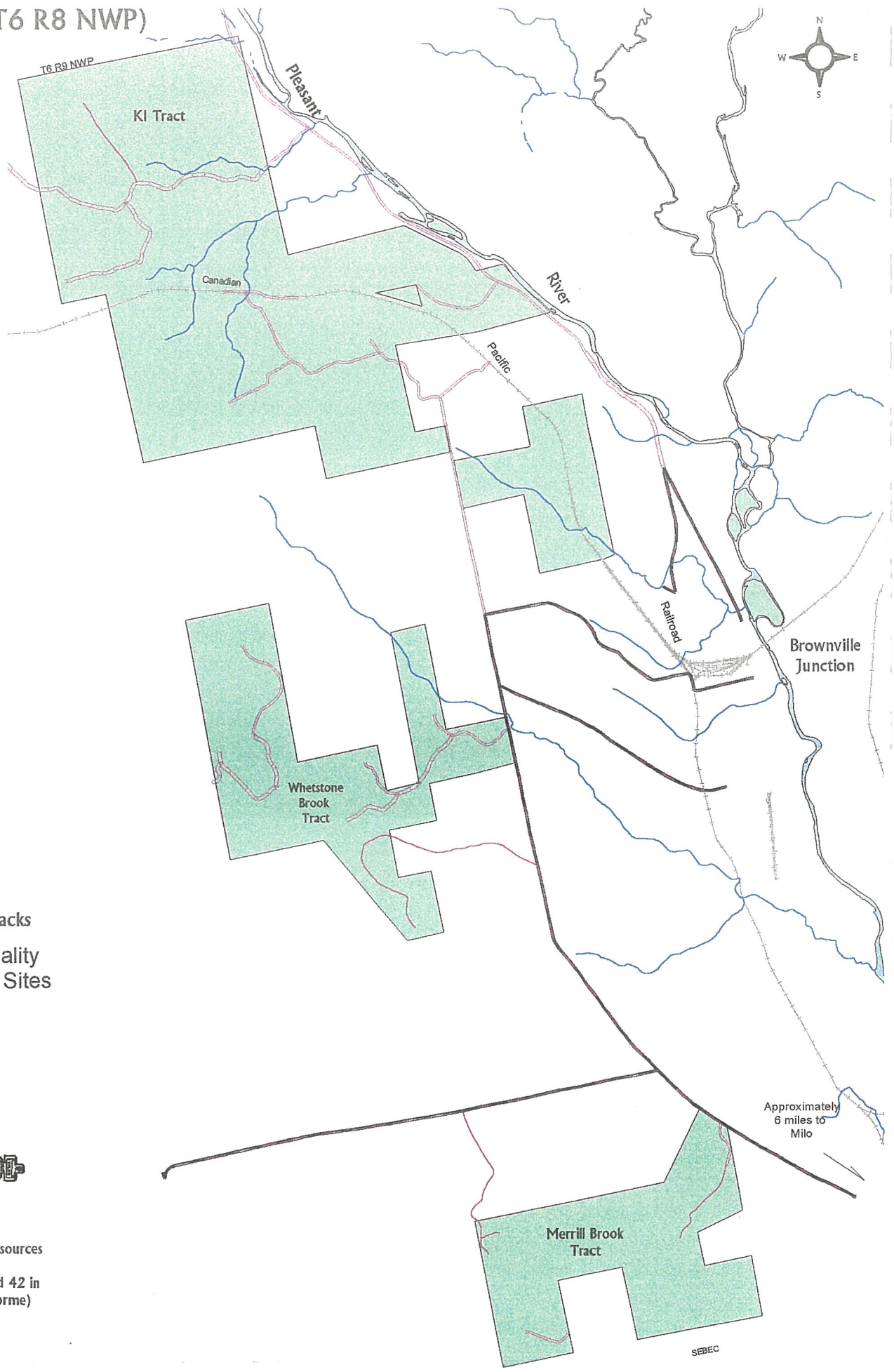
Penobscot Nation
 Department of Natural Resources
 August, 1997
 (Please See Map # 43 in
 The Maine Atlas... Delorme)



1:60143

Approximately 6.5 miles
 to Interstate 95, Exit 55

Williamsburg (T6 R8 NWP)



1:48871

- KEY:**
- Railroad Tracks
 - Water Quality Sampling Sites



Penobscot Nation
Department of Natural Resources
August, 1997
(Please See Map # 32 and 42 in
The Maine Atlas..., Delorme)

APPENDIX E. RCRA/SUPERFUND SITES IN PENOBSCOT RIVER BASIN

Data obtained from U.S. EPA Region 1 Office of GIS on 2/17/97

LCP Chemicals	Orrington
Great Northern Paper	East Millinocket
Gulf Oil	Brewer
Champion International	Bucksport
Moosehead Mfg	Monson
Chevron USA	Hampden
Lincoln Pulp & Paper	Lincoln
Eastern Fine Paper	Brewer
Hacket Machine Co	Brewer
University of Maine	Orono
Sawyer Environmental	Hampden
Sprague & Son	Bucksport
Pride Manufacture	Guilford
Boynton Street	Bradley
Usang	Bangor
Bangor Gas Works	Bangor
Great Northern Paper	Millinocket
Roadway Express	Bangor
Lily Transport	Bangor
Maine National Guard	Bangor
Guilford of Maine	Guilford
Globe Printing	Lincoln
Hertz corp	Bangor
New Frankline Laundry	Bangor
Webber Tanks	Bucksport
Osram Sylvania	Bangor
General Electric	Bangor
Bangor Chrystler Dodge	Bangor
Northeast Chrystler Plymouth	Bangor
Bangor Hydro	Bangor
Spotbilt	Bangor
Beacon Cadillac Olds	Bangor
Champion International	Costigan
Eastern Maine Medical	Bangor
Diamond Lumber	Passadumkeag
Ansewn Show	Bangor
Nautel Maine	Bangor
Keiths Auto Body	Bangor
Affiliated Lab Inc	Bangor
Millinocket Ford	Millinocket
Maine DOT	LaGrange
Hillside Cleaners	Bangor
Steves Cleaner	Bangor

Village Dry Cleaners	Lincoln
Freightliner of Maine	Bangor
Bickford Auto Body	Hampden
Maine National Guard	Bangor
K & M Motors	Millinocket
United Technologies	Bangor
Bangor Dry Cleaning	Bangor
Whited Ford Truck	Bangor
Federal Express	Bangor
Bangor Hydro	Milford
Texaco Service Sta	Bangor
Texaco Service Sta	Bangor
Forrest Auto	Winterport
Cummins North Atlantic	Bangor
Kenworth CB	Bangor
Babcock Ultrapower	West Enfield
Road & Sea Transport	Hampden
General Electric	Bangor
Northeast Express Airline	Bangor
Cold Brook Energy Inc	Bangor
Mobil Oil Terminal	Bangor
Chadwick Baross Inc	Bangor
Coles Express	Bangor
L & I Atlantic	Bangor
Unifirst Corp	Bangor
Darlings Honda Sales	Bangor
Maine Air National Guard	Bangor
D and S Corporation	Bangor
Brewer Junk Yard	Brewer
BFI of Maine	Brewer
Southworth Milton Inc	Brewer
Lemforder Corp	Brewer
Gold Star Cleaners	Brewer
Down East Toyota	Brewer
Old Town Canoe	Old Town
James River Paper	Old Town
Kagan Lown Co	Old Town
Diamond Occidental Forest	Old Town
Dexter Shoe	Milo
Rowells Garage	Dover Foxcroft
Brothers Chevrolet	Dover Foxcroft
Prouty Ford	Dover Foxcroft
Moosehead Mfg	Dover Foxcroft
Maine Leathers	Dover Foxcroft
Currier Trucking Corp	Hermon
Ryder Truck Rental	Hermon

Sunquip
Bangor Hydro Electric
Maine Resources

Hermon
Veazie
Brooks

RCRA/SUPERFUND SITES - PENOBSCOT BASIN

