

F. NATURAL RESOURCES

The purpose of this section is to:

1. Describe the water resources and critical natural resources in Whitneyville;
2. Predict whether the viability of important natural resources will be threatened by the impacts of future growth and development; and
3. Assess the effectiveness of existing measures to protect and preserve important natural resources.

FINDINGS

Surface waters in Whitneyville include the Machias River, a number of streams and ponds and a portion of one great pond, Six Mile Lake. Overall, the water quality in Whitneyville's surface waters and aquifers is high. Threats to water quality in Six Mile Lake include poorly designed and malfunctioning septic systems and non-point source pollution from access roads and driveways. In order to maintain the high level of water quality presently observed, the town should adopt stormwater run-off performance standards and water quality protection practices for the construction and maintenance of public roads. Whitneyville has relatively extensive groundwater resources, but no public water supplies.

Whitneyville's waters and forests support a wide variety of wildlife. Critical natural resources in Whitneyville include habitat for endangered Atlantic salmon, inland wading bird and waterfowl habitat, deer wintering areas and a bog ecosystem identified by the Maine Natural Areas Program. Natural resources in Whitneyville are protected through a variety of federal, state and municipal regulations and through public and private land conservation efforts. Existing regulatory and non-regulatory protections are largely sufficient to protect critical natural resources in Whitneyville.

LOCATION AND LAND COVER

Whitneyville is located in coastal Washington County. Whitneyville is bordered on the west by Jonesboro and Centerville Township, on the north by Northfield, on the east by Marshfield and Machias and on the south by Roque Bluffs. See *Map 1: Location*.

The village straddles the Machias River along Route 1A. The majority of town is located within the Machias River watershed. Small portions of town in the north and east are part of the East Machias River and Middle River watersheds, respectively. The part of town south of Route 1 drains into the Englishman River watershed.

The town of Whitneyville includes total land area of 14.3 square miles – approximately 9,800 acres. According to interpretation of recent satellite imagery conducted by the University of Maine at Machias GIS Center, over 80% of the land area in Whitneyville is forested, including areas that have recently been cut. The remaining land area includes non-forested wetlands (10%), developed areas (3%), grassland and pasture (2%) and cultivated and/or blueberry lands (>2% combined). Developed areas are concentrated near the village. Cultivated areas, grass lands and pasture lands are concentrated in the

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central part of town and along Route 1. Blueberry barrens are concentrated along Route 1. See *Map 7. Land Cover*.

LAND COVER BY TYPE

Land Cover Type	Approx. Area	Percent
Developed	300 ac.	3%
Forest	6,000 ac.	61%
Forest, Light Cut	1,250 ac.	13%
Forest, Heavy Cut	800 ac.	8%
Blueberry	200 ac.	2%
Cultivated	50 ac.	>1%
Grass/Pasture	200 ac.	2%
Wetland (Non-forested)	1,000 ac.	10%
Total Area	9,800 ac.	100%

Source: WCCOG, UMM GIS Center

WATER RESOURCES

A watershed is the land area from which runoff from precipitation drains into a given body of water. The boundaries of watersheds, also known as drainage divides, are shown for Whitneyville on *Map 5: Water Resources*. Whitneyville is divided among several coastal watersheds that drain eventually into Machias Bay and Englishman Bay.

River and Streams

Whitneyville has several miles of perennial streams. To assess what portion of Maine's rivers, streams, and brooks meet the goal of the Clean Water Act, MDEP uses bacteriological, dissolved oxygen, and aquatic life criteria.

All river and stream waters are classified into one of four categories, Class AA, A, B, and C as defined by legislation. Class AA is the highest classification with outstanding quality and high levels of protection. Class C, on the other end of the spectrum, is suitable for recreation and fishing yet has higher levels of bacteria and lower levels of oxygen.

The Machias River upstream from Whitneyville village is classified AA, the highest level of water quality. All streams north of the village are classified as A.

The Machias River downstream of the village and all remaining stream segments are classified as B. This indicates that the water quality is “suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as unimpaired.” [1985, c. 698, § 15 (new).]

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Lakes and Ponds

There are 4 small ponds in Whitneyville. In Maine, ponds over 10 acres in area are classified as “great ponds” and are subject to regulatory oversight under applicable state laws and municipal Shoreland Zoning ordinances. The only great pond in Whitneyville is a small portion of Six Mile Lake (most of the lake is located in Marshfield). A recent study conducted by the Washington County Soil and Water Conservation District identified several threats to water quality on Six Mile Lake. Threats include poorly designed and malfunctioning septic systems and non-point source pollution from access roads and driveways. The identified pollution sources are largely, if not exclusively, located in Marshfield. In order to protect water quality in the lake, the town of Whitneyville should support the efforts of local residents and the town of Marshfield to address identified threats to water quality.

Threats to water quality

Threats to water quality come from point and non-point discharges. Point source pollution is discharged directly from a specific site such as a municipal sewage treatment plant or an industrial outfall pipe. There are currently 2 waste water outfalls in Whitneyville permitted by the Maine DEP. Based on observed water quality, permitting conditions for both identified waste water outfalls appear to be adequate for the protection of surface water quality.

Non-point source pollution poses a greater threat to water quality in Whitneyville. The most significant contributing source comes from erosion and sedimentation as well as excessive run-off of nutrients, particularly phosphorus. In excessive quantities phosphorus acts as a fertilizer and causes algae to flourish or “bloom.” Additional contributing factors include animal wastes, fertilizers, sand and salt storage, faulty septic systems, roadside erosion, dirt roads, leaking underground storage tanks, and hazardous substances. It is not known to what extent each of these various sources of non-source point pollution currently affects water quality in Whitneyville.

There are no longer any licensed overboard discharges (OBD) in Whitneyville.

In order to maintain the high level of water quality presently observed in Whitneyville, the town should continue to maintain the community septic system in good working order, adopt stormwater run-off performance standards consistent with the Maine Stormwater Management Law and Stormwater Rules and other applicable state regulations, and continue to participate in the DEP Small Communities Grant program to identify and replace failing septic systems.

Wetlands

The term "wetlands" is defined under both state and federal laws as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support the prevalence of vegetation typically adapted for life in saturated soils." Wetlands include freshwater swamps, bogs, marshes, heaths, swales, and meadows.

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Wetlands are important to public health, safety and welfare because they act as a filter, absorb excess water, serve as aquifer discharge areas, and provide critical habitats for a wide range of fish and wildlife. They are fragile natural resources. Even building on the edge of a wetland can have significant environmental consequences. Some wetlands also have important recreational value providing opportunities for fishing, hunting, and wildlife observation.

The Maine DEP has identified wetlands located within Whitneyville, as illustrated on *Map 5: Water Resources*. These wetlands were identified as wetlands by aerial photo interpretation. Interpretations were confirmed by soil mapping and other wetland inventories. Field verification of the location and boundaries of the wetlands should be undertaken prior to development. The Maine DEP has jurisdiction over freshwater and floodplain wetlands under the Natural Resources Protection Act (NRPA)/Wetland Protection Rules and Site Location of Development Act. The Mandatory Shoreland Zoning Law provides protection to mapped non-forested wetlands. It is important to verify wetland extent for specific development proposals because aerial photography interpretation and field spot samples are educated guesses and random samples. A review by wetland professionals should be encouraged when the need arises.

Vernal Pools

Vernal pools are a sub-category of wetlands that are recognized in State Law for their habitat value. A vernal pool is a natural, temporary to semi-permanent water body that occurs in a shallow depression. Typically, vernal pools fill with water during the spring or fall and become dry during summer months.

Not all vernal pools are considered ‘significant.’ Vernal pools are only classified as significant if they support a breeding population of at least one of four indicator species: wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and/or fairy shrimp (*Eubbranchipus sp.*); or if the pool is used by threatened or endangered species. Classification of a vernal pool as ‘significant’ is made in the field based on the documented presence of one or more indicator species. Significant vernal pools are protected as Significant Wildlife Habitat under the Natural Resources Protection Act.

The presence of breeding amphibians in vernal pools contributes significantly to healthy forest ecosystems. Breeding amphibians are a protein-rich food source for many species and control insect species known to attack the roots of maturing timber.

DEP encourages landowners who are unsure of the status or presence of a vernal pool on their property to seek the advice of a trained wetland or wildlife ecologist early in the permitting process. The classification of vernal pools can change based on the continued absence of indicator species (or the presence of indicator species in pools where they were previously absent). There are currently no identified Significant Vernal Pools in Whitneyville.

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Groundwater - Sand and Gravel Aquifers

Aquifers may be of two types: sand and gravel aquifers or bedrock aquifers. A sand and gravel aquifer is a deposit of coarse-grained surface materials that, in all probability, can supply large volumes of groundwater. Boundaries are based on the best-known information and encompass areas that tend to be the principal groundwater recharge sites. Recharge to these specific aquifers, however, is likely to occur over a more extensive area than the aquifer itself.

The Maine Geological Survey has identified an extensive sand and gravel aquifer in Whitneyville between Route 1 and Longfellow Brook. Small sand gravel aquifers have been identified in southern Whitneyville and in central Whitneyville at the end of Canal Road (not shown on map), and north Whitneyville near Great Brook. See *Map 5: Water Resources*.

It is also worth noting that while fractured bedrock aquifers typically yield smaller volumes of water, in Whitneyville bed rock aquifers yielding large quantities of water are extensive. Due to their complex hydrology, it is more difficult to map the extent of fractured bed rock aquifers and their associated recharge areas. However, local residents report that high yielding bed rock aquifers are present in many parts of Whitneyville.

Map 5: Water Resources can be used to identify surface sites that are unfavorable for storage or disposal of wastes or toxic hazardous materials. It is important to protect groundwater from pollution and depletion. Once groundwater is contaminated, it is difficult, if not impossible, to clean. Contamination can eventually spread from groundwater to surface water and vice versa. Most aquifer and surface water contamination comes from non-point sources including faulty septic systems, road salt leaching into the ground, leaking above-ground or underground storage tanks, auto salvage yards, and landfills.

According to the Maine Department of Human Services, Bureau of Health, Division of Health Engineering, Drinking Water Program there are no Public Water Supply Sources in Whitneyville. However, protecting the water quality of groundwater is an important municipal goal for Whitneyville as private residences and businesses rely on groundwater wells for drinking water supplies.

In order to protect groundwater quality, Whitneyville should adopt appropriate performance standards for land use activities in areas with identified aquifers.

CRITICAL NATURAL RESOURCES

Whitneyville is home to a diverse array of wildlife. To feed and reproduce, wildlife relies on a variety of food, cover, water, and space. Protections for various types of habitat include state and federal jurisdiction over certain activities occurring near critical habitat, as well as local regulations and public and private conservation efforts.

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Essential Wildlife Habitats

Essential Wildlife Habitats are defined under the Maine Endangered Species Act as a habitat "currently or historically providing physical or biological features essential to the conservation of an Endangered or Threatened Species in Maine and which may require special management considerations".

These sites are identified by the Maine Department of Inland Fisheries and Wildlife (IF&W). An IF&W review is required for any projects occurring within the Essential Habitat if that project also requires a state or municipal permit or uses public funding.

IF&W has identified essential habitat in Whitneyville for one species: Atlantic salmon (*Salmo salar*). See *Map 6. Habitat*.

Essential Habitat for Atlantic salmon in Whitneyville is limited to the main branch of the Machias River. There are multiple layers of regulatory and non-regulatory protection for Atlantic salmon habitat in Whitneyville. State and federal permitting is required for activities that impact essential habitat. All of the upland areas along the river fall within the jurisdiction of Whitneyville's Shoreland Zoning Ordinance. Conservation easements protect salmon habitat along the Machias River upstream from Whitneyville. The town considers existing protections for identified essential habitat in Whitneyville to be sufficient.

Significant Wildlife Habitat

Significant Wildlife Habitat, as defined by Maine's Natural Resources Protection Act (NRPA), is intended to prevent further degradation of certain natural resources of state significance. NRPA-defined Significant Wildlife Habitats in Whitneyville includes inland waterfowl/wading bird habitat and deer wintering areas. As noted above, there are currently no identified Significant Vernal Pools in Whitneyville. See *Map 6. Habitat*.

There are limited protections in place for significant habitat in Whitneyville. State and federal permitting is required for some activities occurring near identified inland wading bird and waterfowl habitat. However, the town has not yet updated its Shoreland Zoning Ordinance to be consistent with state guidelines. In order to adequately protect inland wading bird and waterfowl habitat in Whitneyville, the town should update its Shoreland Zoning Ordinance.

There are fewer protections for identified deer wintering areas in Whitneyville. Portions of identified deer wintering areas in Whitneyville have been cleared in recent years to be managed for fir tip production or as blueberry land.

Other Wildlife Habitat

The Natural Areas Program of the Maine Department of Conservation is responsible for documenting areas that support rare, threatened, or endangered plant species and rare or exemplary natural communities. The Maine Natural Areas has identified one significant natural community in Whitneyville: a raised level bog ecosystem. See *Map 6. Habitat*. The Maine Natural Areas program describes the raised bog ecosystem as "raised (but not

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concentrically patterned) peatlands in basins with mostly closed drainage. Sphagnum dominated the ground surface and is the main peat constituent. It is sometimes treed with *Picea mariana* and *Larix laricina*.”

When last assessed, the habitat was rated to have good estimated viability. Areas listed under the Maine Natural Areas Program are not subject to any special regulatory protection. The identified area lies within the existing shoreland zoning jurisdiction. The town considers this level of protection to be adequate.

Brook Trout Habitat

Most of the stream and river segments support populations of wild Eastern Brook Trout. See *Map 6. Habitat*. Eastern brook trout are a popular recreational fish species. To preserve high quality brook trout habitat in Whitneyville, the town’s Land Use Ordinance should require commercial and industrial activities to maintain 100’ vegetative buffer from streams with existing tree coverage maintained to the maximum extent practical. Impervious surface (asphalt) within 250’ of the stream should be kept to a minimum. Proposed new crossings of streams with brook trout populations should be designed to maintain fish passage.

SCENIC RESOURCES

Scenic resources contribute significantly to quality of life in Whitneyville. In the summer of 2008, Washington County Council of Governments and Hancock County Planning Commission conducted an inventory of scenic viewsheds in coastal Hancock and Washington counties. The inventory, which focused on scenic areas visible from public view points such as roadways, trails and public lands, identified two scenic areas located wholly or partly in the town of Whitneyville, as summarized below. Full results of the scenic inventory are available online at www.wccog.net/scenic.htm.

Most of Whitneyville’s most significant scenic resources enjoy some level of protection through a combination of shoreland zoning, conservation easements, and current use taxation.

SCENIC AREAS IN WHITNEYVILLE

Scenic Area	Description
Whitneyville (Assessment Score: 63)	Whitneyville’s scenic area encompasses the village area in the town of Whitneyville. This scenic area includes distinctive a historic village on the Machias River. There are numerous scenic features in the foreground including a historic church and other historic buildings, rapids on the Machias River, and a historic railroad trestle on the Downeast Sunrise Trail. There are a few nice views from Route 1A and other public roadways. Other public view points include the Downeast Sunrise Trail.

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Scenic Area

Six Mile Lake

(Assessment Score: 39)

Description

Six Mile Lake scenic area encompasses the lake itself. The scenic area includes public boat access with a boat launch and a picnic area. There are some scenic features in the mid-ground such as the sportsman's lodge, and the ledges across the lake. Loons are known to nest in this scenic area and are commonly seen from the boat launch. There are no scenic views to water from the roadway.

Source: Downeast Coastal Scenic Inventory, 2008

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POLICIES AND IMPLEMENTATION

The town has developed the following policies and implementation strategies relative to water and critical natural resources in Whitneyville.

Goal: Whitneyville will protect and preserve the natural resources on which its economy and quality of life depend.			
Policy	Implementation Strategy	Responsibility	Timeframe
Whitneyville will act to conserve critical natural resources in the community.	Whitneyville will amend its shoreland zone standards to meet current state guidelines.	Planning Board, Selectmen	Immediate
	Whitneyville will require subdivision or non-residential property developers to look for and identify critical natural resources that may be on site and to take appropriate measures to protect those resources, including but not limited to, modification of the proposed site design, construction timing, and/or extent of excavation.	Planning Board	Short-term (1- 2 years)
	Whitneyville will designate critical natural resources as Critical Resource Areas in the Future Land Use Plan.	Planning Board	Immediate
	Whitneyville will incorporate maps and information provided by the Maine Beginning with Habitat program into the Planning Board review process.	Planning Board	Short-term (1- 2 years)
Whitneyville will coordinate with neighboring communities and state agencies to protect shared critical natural resources.	Whitneyville will participate in regional planning, management and/or regulatory efforts around shared critical natural resources.	Selectmen	On-going
	Whitneyville will make applicable local, state or federal regulations available to those living in or near critical natural areas about.	Selectmen	On-going
	Whitneyville will participate in public/private partnerships to protect critical natural resources such as through purchase of land or easements from willing sellers.	Selectmen	On-going

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Goal: Whitneyville will protect and preserve the natural resources on which its economy and quality of life depend.			
Policy	Implementation Strategy	Responsibility	Timeframe
Whitneyville will minimize pollution discharges through the upgrade of existing public sewer/septic system.	Whitneyville will continue to maintain the community septic system that serves portions of the village and make upgrades as necessary.	Selectmen	On-going
Whitneyville will protect significant surface water resources and drinking water resources from pollution and improve water quality where needed.	Whitneyville will continue to work with the DEP and private leach field owners to identify malfunctioning septic systems, particularly those located near streams and wetlands, and to seek grants through the Small Communities Grant Program to improve or replace malfunctioning systems.	Code Enforcement Officer	Ongoing
	Whitneyville will include performance standards in its local land use ordinance that are consistent with: <ul style="list-style-type: none"> a. The Maine Stormwater Management Law and Stormwater Rules (Title 38 MRSA Section 420-D and 06-096 CMR 500 and 502). b. DEP's allocations for allowable levels of phosphorus in lake/pond watersheds. c. The Maine Pollution Discharge Elimination System Stormwater Program. 	Planning Board	Short-term (1- 2 years)
	Whitneyville will consider incorporating low impact development standards in its Land Use Ordinance as described in the Future Land Use Plan.	Planning Board	Short-term (1- 2 years)
	Whitneyville will consider amending local land use ordinances, as applicable, to incorporate low impact development standards.	Planning Board	Short-term (1- 2 years)
	Provide educational materials at appropriate locations regarding aquatic invasive species.	Selectmen	On-going

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Goal: Whitneyville will protect and preserve the natural resources on which its economy and quality of life depend.			
Policy	Implementation Strategy	Responsibility	Timeframe
	Whitneyville will adopt water quality protection practices and standards for construction and maintenance of public roads and properties and require their implementation by the community's contractors.	Planning Board	Short-term (1- 2 years)
Whitneyville will encourage landowners to protect water quality.	Whitneyville will provide local contact information at the Town Office for water quality best management practices from resources such as the Natural Resource Conservation Service, University of Maine Cooperative Extension, Soil and Water Conservation District, Maine Forest Service, and/or Small Woodlot Association of Maine.	Selectmen	On-going
Whitneyville will participate in appropriate regional programs to preserve and protect the local water resources.	Whitneyville will participate in local and regional efforts to monitor, protect and, where warranted, improve water quality.	Selectmen	On-going

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