

E. NATURAL RESOURCES

The Purpose of this section is to:

1. Describe the natural resources in Lubec including farmlands, forestlands, critical natural resources, and water resources in terms of extent, characteristics, and importance to the economy and character of the Town and region;
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

Lubec's relatively protected location and rich estuarine habitats yield an abundance of intertidal, marine and avian life. Lubec's pristine bays and extensive mud flats support shellfish, marine mammals, wading waterfowl and shorebirds. Lubec has many critical natural resources, most significantly wildlife habitat. Bald eagle and various shore bird and migrant bird species are found throughout the town.

Surface waters in Lubec include a number of streams. There are no rivers or great ponds (lakes) in Lubec. Overall, the water quality in Lubec's surface waters and aquifers is relatively high. The greatest threat to water quality in Lubec is from non-point source pollution. In order to maintain the high level of water quality presently observed in Lubec, the town should adopt stormwater run-off performance standards and water quality protection practices for the construction and maintenance of public roads.

Information on natural resources is necessary to protect environmentally sensitive areas, and to identify opportunities and constraints for development. The natural resources of the town contribute greatly to the quality of life. Natural resources in Lubec are protected through a variety of federal, state and municipal regulations and through public and private land conservation efforts.

LOCATION AND LAND COVER

Located in coastal Washington County, the Town of Lubec is the easternmost town in the United States. Route 189 and Lubec's downtown lie along a former glacial moraine extending across town from west to east. The downtown itself sits on the end of a peninsula separated from Campobello Island, New Brunswick by Lubec Narrows. In the northern part of town, Seward Neck and Denbow Neck are the most prominent of several peninsulas that extend into Cobscook Bay. To the south, dramatic headlands and rocky coasts face onto Grand Manan Channel.

Lubec is bordered on the west by Trescott Township, on the north by Cobscook Bay, on the south by the Gulf of Maine and on the east by Campobello Island, New Brunswick (connected

by an international bridge) See *Map 1: Location*.

The Town of Lubec is divided more or less equally between land and sea. Lubec’s land area covers approximately 24,500 acres; and waters within the town’s jurisdiction cover approximately 25,750 acres (see *Map 7: Land Cover*). According to interpretation of recent satellite imagery conducted by the University of Maine at Machias GIS Center, 76% of the land area in Lubec is forested, including areas that have recently been cut. The remaining land area includes non-forested wetlands (16%), developed (4%), grassland and pasture (4%) and cultivated and/or blueberry lands (>2% combined). Developed areas and areas dedicated to cultivation are both concentrated along Route 189 and the South Lubec Road, with a sizeable area of blueberry land on the Dixie Road.

Table E-1: LAND COVER

Land Cover Type	Approx. Area	Percent of Land Area
Developed	900 ac.	4%
Forest	14,300 ac.	58%
Forest, Light Cut	2,100 ac.	9%
Forest, Heavy Cut	1,400 ac.	6%
Forest, Clear Cut	750 ac.	3%
Blueberry	50 ac.	>1%
Cultivated	50 ac.	>1%
Grass/Pasture	900 ac.	4%
Open Land	>50 ac.	>1%
Wetland (Non-forested)	4,000 ac.	16%
Open Water	25,750 ac.	-
Land Area	24,500 ac.	-
Total Area	50,250 ac.	-

Source: WCCOG, UMM GIS Center

GEOLOGY

Lubec is located in a region of massive granite intrusion that was glaciated in the Wisconsin age. The glacier caused till (unsorted, poorly drained soil) to be deposited over the entire region. This poorly drained till formed bogs and ponds and altered the drainage pattern. The topography in these areas is generally a blanket deposit that conforms to the underlying bedrock topography. However, the underlying granite caused the till to be more thickly deposited on the northwest sides of ridges: on the southeast sides, boulders were "plucked" and transported further south. Thick till deposits are also found in bedrock valleys and depressions. The weight of the ice (in some places a mile thick) caused the land to be depressed in relation to the level of the sea. Marine sediments (silts and clays) were deposited in valleys and more sheltered locations. The release of pressure due to the melting allowed the land to rise slowly. This explains why silt and clay deposits can be found at elevations of 100 feet or more. See *Map 3: Topography and Flood Zones* at the end of this section for general contour elevations.

LAND SUITABILITY FOR DEVELOPMENT

The United States Department of Agriculture (USDA) Soil Conservation Service (SCS) has prepared soil classification maps for each state (STATSGO). Soil maps for STATSGO are often compiled by generalizing more detailed (SSURGO) soil survey maps. Where more detailed soil survey maps are not available, as is the case in Washington County, data on geology, topography, vegetation, and climate are assembled, together with Land Remote Sensing Satellite (LANDSAT) images. Soils of like areas are studied, and the probable classification and extent of the soils are determined. *Map 4: Soils Classification* provides this level of information for Lubec.

A soils map at a 1:20,000 scale is useful in understanding and planning the soil resources of fields, farms, and communities, but it is not useful for planning small (less than 1 acre) plots. The pattern of soils is often very complex and, in some places, soils of one type grade imperceptibly into others. Soils in Lubec are of several types: glacial till thinly deposited in the uplands; thick glacial till on northwest slopes and in bedrock depressions; marine silts and clays in the valleys and more sheltered locations, and glacial outwash or ice contact sands and gravels. Some of these types are not particularly well suited to septic sewage disposal. Some are well suited to both septic disposal and forestry. On-site investigations are needed to determine the suitability of a plot for any leach field installation or larger development proposal.

Soil Potential for Low Density Development (LDD)

Few areas of Lubec have large tracts of land that are ideal for residential development. The Natural Resources Conservation Service of the USDA has produced a handbook of Soil Survey Data for Growth Management in Washington County. This publication is available at the Lubec Town office along with soils maps at a scale of 1 inch = 2000 feet. The Soil Survey handbook includes many tables that interpret the suitability of different soils for agricultural production, woodland productivity, erodability and low-density development.

This last interpretation – rating of soil potential for low-density urban development – is provided in the table to guide the concentration of development in Lubec. Under this system, soil potentials are referenced to an individual soil within the county that has the fewest limitations to development (depth to water table, bedrock). This reference soil is given a value of 100 points. Costs that are incurred to overcome limitations to development are developed for all other soils. These costs, as well as costs associated with environmental constraints and long-term maintenance, are converted to index points that are subtracted from the reference soil. The result is a comparative evaluation of development costs for the soils in the county. The overall range is large with values between 0 and 100. These numerical ratings are separated into Soil Potential Rating Classes of very low to very high. Thus, in the table, a soil with a Very High rating has very good potential for development.

Map 4: Soils Classification shows that soils with a low or very-low suitability for low-density development are fairly extensive through the town. As indicated in Map 4, the primary factor affecting soil suitability for low-density development throughout most of Lubec is relatively extensive soils with very low suitability for septic system development. Soils rated with “high”

and “very high” suitability for low-density development are concentrated along existing roadways. The best soils frequently coincide with prime agricultural soils.

Highly Erodible Soils

Special consideration should be given to the removal of surface vegetation from large areas to avoid soil erosion, which is a major contributor of pollution to surface waters. Soil composition affects its susceptibility to erosion but the combined effects of slope length and steepness are the greatest contributing factors when identifying highly erodible soils.

Most development and intensive land use can and should take place in areas with slopes of less than 15 percent (representing an average drop of 15 feet or less in 100 feet horizontal distance). On slopes greater than 15 percent, the costs of roads, foundations and septic, sewer and other utility systems rises rapidly. Areas of sustained steep slope cover less than 1% of the land areas in Lubec. In developing any future land use ordinance, the Town should incorporate appropriate standards for development in areas of steep slopes. *Map 4: Topography and Flood Zones* identifies the location of steep slopes in Lubec.

Table E-2 LUBEC – SOIL SUITABILITY FOR DEVELOPMENT(Prime agricultural soils indicated by *italic font*)

Unit	Soil Name	Low Density Development	Acres	Extent
AaE	Abram-Hogback Complex, 15 to 45%, very stony	Very Low	160	1%
AC	Abram-Rock Outcrop-Ricker Complex, 15 to 80%	Very Low	580	3%
BW	Bucksport and Wonsqueak Soils	Very Low	730	3%
BxC	Buxton Silt Loam, 8 to 15%	Medium	230	1%
CzB	Croghan Loamy Sand 3 to 8%	Medium	10	>1%
DdC	Dixfield Fine Sandy Loam, 8 to 15%	Medium	20	>1%
DfC	Dixfield Fine Sandy Loam, 8 to 15%, very stony	Medium	10	>1%
<i>DgB</i>	<i>Dixfield-Colonel Complex, 3 to 8%</i>	<i>High</i>	<i>60</i>	<i>>1%</i>
DH	Dixfield-Colonel Complex, 0 to 8%, very stony	Low	70	>1%
DkB	Dixfield-Colonel Complex, 3 to 8%, very stony	High	80	>1%
DU	Dixfield-Rawsonville-Colonel Complex, 3 to 15%,	Medium	40	>1%
Go	Gouldsboro Silt Loam	Very Low	140	1%
HC	Hermon-Colton-Abram Complex, 3 to 15%, very	Low	20	>1%
HeC	Hermon-Monadnock Complex, 8 to 15%	High	40	>1%
HkC	Hermon-Monadnock Complex, 8 to 15%, very	High	20	>1%
HW	Hogback-Abram-Rawsonville Complex, 15 to 60%,	Very Low	1,310	6%
HX	Hogback-Rawsonville-Abram Complex, 3 to 15%,	Low	1,440	7%
Kn	Kinsman Sand	Very Low	170	1%
LaB	Lamoine Silt Loam, 0 to 6%	Low	690	3%
LbB	Lamoine-Buxton Complex, 0 to 8%	Low	420	2%
LC	Lamoine-Buxton-Scantic Complex, 0 to 15%	Low	2,050	10%
LK	Lamoine-Rawsonville-Scantic Complex, 0 to 8%, very	Low	2,370	11%
Lm	Lamoine-Scantic Complex, 0 to 5%	Low	1,390	7%
LnB	Lamoine-Scantic Complex, 0 to 5%, very stony	Low	60	>1%
LSB	Lamoine-Scantic-Colonel Complex, 0 to 8%, very	Low	620	3%
Ma	Marlow Fine Sandy Loam, 8 to 15%	Medium	10	>1%
Mm	Masardis Fine Sandy Loam, 3 to 8%	Medium	110	1%
Mm	Masardis Fine Sandy Loam, 8 to 15%	Medium	140	1%
NA	Naskeag-Abram-Ricker Complex, 0 to 15%, very	Low	440	2%
NB	Naskeag-Rawsonville-Hogback Complex, 0 to 8%,	Low	2,600	12%
Pg	Pits, Sand and Gravel	Not rated	20	>1%
<i>RhB</i>	<i>Rawsonville-Hogback Complex, 3 to 8%</i>	<i>High</i>	<i>430</i>	<i>2%</i>
RhC	Rawsonville-Hogback Complex, 8 to 15%	Medium	430	2%
Rm	Rawsonville-Hogback-Abram Complex, 3 to 15%,	Medium	300	1%
RN	Rawsonville-Lamoine-Hogback Complex, 0 to 15%,	Medium	1,390	6%
Sa	Scantic Silt Loam	Very Low	470	2%
SF	Scantic-Biddeford Association, 0 to 3%	Very Low	1,070	5%
SG	Sebago and Waskish Soils	Very Low	180	1%
ShB	Sheepscot Fine Sandy Loam, 0 to 8%	Medium	260	1%
SJB	Sheepscot-Croghan-Kinsman Complex, 0 to 8%	Medium	80	>1%
<i>SkB</i>	<i>Skerry Fine Sandy Loam, 3 to 12%</i>	<i>High</i>	<i>200</i>	<i>1%</i>
Sm	Skerry Fine Sandy Loam, 3 to 12%, very stony	High	110	1%
SRC	Skerry-Colonel-Rawsonville Complex, 0 to 15%, very	Medium	220	1%
Ud	Udorthents-Urban Land Complex	Not rated	160	1%
WF	Wonsqueak and Bucksport Soils, Frequently Flooded	Very Low	30	>1%

Source: USDA-NRSC Orono, ME–Soil Survey Data for Growth Management in Washington County, ME, 1997

FARM AND FOREST LAND

The U.S. Department of Agriculture defines prime farmland as the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to produce a sustained high yield of crops while using acceptable farming methods.

Prime farmland produces the highest yields and requires minimal amounts of energy and economic resources. It is often targeted for low-density residential development due to the suitability of well-drained soils for septic systems. Very few of the soils in Lubec are listed as Prime Farmland. The three soils types present in Lubec that are considered Prime Farmland are Dixfield-Colonel Complex, 3 to 8% slope (DgB); Rawsonville-Hogback Complex, 3 to 8% slope (RhB); and Skerry Fine Sandy Loam, 3 to 12% slope (SkB). These soils appear in *italic* print in Table E-2 (above) and areas identified with red cross-hatches on *Map 4: Soils Classification*.

These prime farmland soils, as identified by USDA, all occur along or adjacent to the roadway outside of the traditional downtown area. They collectively cover less than 4% of the total land area in Lubec. Several others are classified as “Farmland of Statewide Importance” which would be considered Prime Farmland but only if either drained or irrigated. Though not considered Prime Farmland, other soils rated as having high productivity for forestry are more extensive in Lubec. As depicted on Map 4, these soils are notably concentrated along and north of Route 189.

Agricultural production

In recent years, the role of agriculture in the local economy has been limited. There are several small-scale livestock and fruit and vegetable producers as well as small farms producing commercial blueberries. In addition, some farmland is managed for hay production.

As recently as 1980, there were a number of large-scale egg producers operated in Lubec. The 1992 Comprehensive Plan identified nine parcels enrolled in agriculture. As of 2009, there was only one parcel in current use. This change is largely attributable to broader economic considerations (including transportation), rather than changing land use patterns.

Woodland Productivity

Maine's forests and forest industry still play a vital role in the state's economy, especially in northern and eastern Maine. Forested areas provide an abundant and diverse wildlife population for the use and enjoyment of all Maine citizens. The forest provides a wide variety of wildlife habitats for both game and non-game species. Furthermore, the forest protects the soil and water and contributes to a wide variety of recreational and aesthetic experiences. Loss of forestland can be attributed to development and to irresponsible harvesting techniques. When forestland ownership is fragmented, public access becomes more restricted due to increased land posting. To optimize forestland use, forests should be effectively managed and harvested.

Soils rated with a woodland productivity of medium or above are qualified as prime forestland soils. This designation does not preclude the development of these lands but only identifies the most productive forestland. These soils are rated only for productivity and exclude management

problems such as erosion hazards, equipment limitations or seedling mortality. Important forestland and farmland are shown on *Map 4: Soils Classification*.

Timber harvesting is a relatively minor economic activity in Lubec and is conducted mostly through selection harvest but also by shelter wood and much less frequently through clear cut harvesting (see Table E-3). In Lubec, as throughout Washington County, local residents selectively harvest timber for firewood on a small scale, providing sideline income for some and a means of heating their homes for others.

Table E-3 – SUMMARY OF TIMBER HARVEST INFORMATION FOR LUBEC

YEAR	Selection harvest, acres	Shelterwood harvest, acres	Clearcut harvest, acres	Total Harvest, acres	Change of land use, acres	Number of timber harvests
1991-1995	67	15	68	150	0	7
1996	92	6	2	100	0	6
1997	159	76	0	235	0	7
1998	577	0	0	577	0	10
1999	278	10	0	288	50	17
2000	68	0	0	68	0	14
2001	191	75	0	266	0	10
2002	164	0	0	164	0	8
2003	14	0	0	14	0	8
2004	40	0	0	40	20	6
2005	226	0	0	226	0	8
2006	185	50	0	235	4	18
Total	2,061	232	70	2,363	74	119

Source: Year End Landowner Reports to Maine Forest Service, 2007 (Note: to protect confidential landowner information, data is reported only where three or more landowner reports reported harvesting in the town).

In addition to timber harvesting, the harvesting of balsam fir tips (brush) for wreath production is a major use of the Lubec woodlands. Heavy cutting of timber is sometimes used as a method to increase the economic productivity of woodlands for brush used in wreath-making.

PROTECTION OF FOREST AND FARMLAND

The Town of Lubec does not have protective zoning for farm or forestland, however, a variety of programs provide financial incentives for landowners to keep land undeveloped and managed for long term productivity. They include the following:

- Farm and Open Space Tax Law - (Title 36, MRSA, Section 1101, et seq.) encourages landowners to conserve farmland and open space by taxing the land at a rate based on its current use, rather than potential fair market value.

Eligible parcels in the Farmland program must be at least five contiguous acres, utilized for the production of farming, agriculture or horticulture activities and show gross earnings from agricultural production of at least \$2,000 (which may include the value of commodities produced

for consumption by the farm household) during one of the last two years or three of the last five years.

According to municipal records, there is one parcel currently enrolled in Farmland current use taxation in Lubec. (9 parcels covering 737 acres were listed under this program in 1991).

The Open Space portion of this program has no minimum lot size requirements and the tract must be preserved or restricted in use to provide a public benefit by conserving scenic resources, enhancing public recreation opportunities, promoting game management or preserving wildlife habitat.

In 2008, Lubec had 29 parcels covering 2,090 acres of land enrolled in Open Space programs. This represents an area equal to approximately 8% of Lubec's land area. The majority of parcels enrolled in Open Space are shorefront properties; there are notable concentration of Open Space parcels in the Bailey's Mistake/Boot Head area and around South Bay and Straight Bay. (This represents an increase of 160% over the 801 acres listed under the Open Space program in 1991).

- Tree Growth Tax Law - (Title 36, MRSA, Section 571, et seq.) provides for the valuation of land classified as forestland on the basis of productivity, rather than fair market value.

According to municipal records for fiscal year 2008, Lubec had 52 parcels covering an area of 4,600 acres enrolled in Tree Growth tax status. This is an area equal to approximately 25% of the forestland in Lubec, and nearly 20% of the total land area. Parcels enrolled in Tree Growth are widely distributed throughout Lubec, with the greatest concentration in forested areas south of Route 189 and west of the South Lubec Road. (This represents an increase of 290% over the 1,170 acres listed under the Tree Growth program in 1991).

These programs enable farmers and other landowners to use their property for its productive use at a property tax rate that reflects farming and open space rather than residential development land valuations. If the property is removed from the program, a penalty is assessed against the property based on the number of years the property was enrolled in the program and/or a percentage of fair market value upon the date of withdrawal.

Farm operators and forestland owners from Lubec participate in soil and water conservation programs through the local NRCS office. Although no official statistics exist for Lubec, the Town is aware of several additional parcels that have come under active management for farmland and forestry products in recent years.

Farmland and forestland in Lubec are currently adequately protected through current use taxation. Any future land use regulation should continue to permit productive forestry and agriculture operations such as roadside stand, greenhouses, and pick-your-own operations.

Existing Policies Regarding Agricultural and Forest Resources

Town policies relative to natural resources as established by the 1992 Comprehensive Plan are summarized in the table below, as are recommended implementation strategies and notes on the

status of each recommendation. A complete list of the policy recommendations from the previous Comprehensive Plan is included in *Appendix A: Executive Summary of the Town of Lubec Comprehensive Plan, 1992*. A full copy of the previous plan is on file in the Town Office.

Table E-4. AGRICULTURAL & FORESTRY POLICIES FROM THE 1992 COMP PLAN

Policy	Notes
It is the policy of the Town of Lubec to protect its limited agricultural and forest resources from incompatible development.	<i>This policy should be continued with the words “from incompatible development” stricken.</i>
It is the policy of the Town of Lubec to encourage sound agricultural and forest practices through appropriate land use ordinances and planning.	<i>This policy continues to align with municipal goals and should be maintained.</i>
Implementation Strategies	Notes
Inform owners of agricultural and forest lands of the existing State programs which tax such properties at lower rates based on their use and yield of their resale value.	<i>This implementation strategy continues to align with municipal goals and should be maintained.</i>
Add reference to the Maine Forest Service’s <i>Erosion & Sediment Control Handbook for Maine Timber Harvesting Operations Best Management Practices, June 1991</i> for forest practices standards and the new state standards for outdoor application of pesticides for agricultural practices, in all appropriate local ordinances.	<i>This implementation strategy no longer aligns with municipal goals and should be discontinued.</i>

Source: Town of Lubec Comprehensive Plan, 1992

Policies and implementation strategies relative to agriculture and forestry are presented at the end of the chapter. They include revisions as noted above, along with additional policies and strategies that reflect changes in conditions on the ground, local priorities and State and Federal policy since the previous Comprehensive Plan was adopted.

WATER RESOURCES

A watershed is the land area in which runoff from precipitation drains into a body of water. The boundaries of watersheds, also known as drainage divides, are shown for Lubec on *Map 5: Water Resources*. Lubec is spread among several small coastal watersheds that drain into Cobscook Bay (to the north), Lubec Channel (to the east) and Grand Manan Channel (to the south). There are no great ponds (lakes) or rivers in Lubec.

The portion of a watershed that has the greatest potential to affect a body of water is its direct watershed, or that part which does not first drain through upstream areas. Anything that can be transported by water will eventually reach and impact the quality of a water body. Development activities, such as house and road construction and timber harvesting, disturb the land that drains to a lake by streams and groundwater; thus these activities can pollute the watershed.

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. All stream segments in Lubec are identified as Class B, indicating 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; and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as unimpaired.” [1985, c. 698, § 15 (new).]

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. Point sources are also any pipe that discharges to surface water and therefore included licensed Overboard Discharge Permits within the town of Lubec. In addition to waste water outfall associated with the Sewerage Treatment Plant, there are currently 7 licensed overboard discharges (see *Map 5: Water Resources*). The town is not aware of any current efforts to monitor water quality, but would support efforts to increase monitoring and assessment of local waterways.

Non-point source pollution poses the greatest threat to water quality in Maine communities and Lubec is no exception. 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. The most significant source of non-point source pollution identified in the 1992 Comprehensive Plan was the Lubec Landfill, which is no longer in operation. It is not known to what extent each of the various sources of non-source point pollution currently affects water quality in Lubec.

One issue that affects local water quality is that the new sewerage system is not fully segregated from surface drainage. There have been some overflows associated with recent rain events. The Town should continue to identify places where the surface water system continues to be integrated with the sewerage system and address those issues as they arise.

In order to maintain the high level of water quality presently observed in Lubec, the town should ensure that future land use ordinances incorporate stormwater run-off performance standards consistent with the Maine Stormwater Management Law and Stormwater Rules and other applicable state regulations. The Town works to minimize the impacts of road construction and maintenance on water quality, but should formally adopt water quality protection practices for the construction and maintenance of public roads.

Shorelands and Floodplains

Shorelands are environmentally important areas because of their relationship to water quality, their value as wildlife habitat and travel, and their function as floodplains. Development and the

removal of vegetation in shoreland areas can increase runoff and sedimentation leading to an increase in the amount of nutrients and other pollutants that reach surface water. This can lead to algal blooms and closure of shellfishing areas. Steep slopes with highly erodible soils are particularly susceptible to erosion. Lubec is currently in the process of revising its Shoreland Zoning ordinance.

Floodplains serve to accommodate high levels and large volumes of water and to dissipate the force of flow. A floodplain absorbs and stores a large amount of water, later becoming a source of aquifer recharge. Floodplains also serve as wildlife habitats, open space and outdoor recreation without interfering with their emergency overflow capacity. Flooding can cause serious destruction of property. Activities that increase paved or impervious surfaces and/or that change the watercourse on floodplains increase the quantity and rate of runoff which can intensify flooding impacts downstream.

The 100-year floodplains within Lubec have been identified by the Federal Emergency Management Agency (FEMA) for administration of the Federal Flood Insurance Program. A 100-year flood is a flood that has 1 chance in 100 of being equaled or exceeded in any 1-year period. One hundred year floodplains are associated with most of the mainland coastline of Lubec, several interior wet areas, and all of the coastal islands. See *Map 3: Topography and Flood Zones*. Lubec has adopted a Flood Hazard Ordinance that includes construction standards to minimize flood damage within the 200-year floodplain.

Wetlands

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

Wetlands are important to the 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 have important recreational and educational value providing opportunities for fishing, hunting, and environmental education. Riparian areas also offer habitat for many plants and animals and can serve as wildlife travel corridors. Planning efforts should take into account the constraints of these areas.

The Maine DEP has identified wetlands located within Lubec, 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 also important to verify wetland extent for specific development proposals as

aerial photography interpretation and field spot samples are educated guesses and random samples. Review by wetland professionals should be encouraged when the need arises.

Vernal pools are natural, temporary to semi-permanent water bodies that occur in shallow depressions. Typically, vernal pools fill with water during the spring or fall and become dry during summer months. The presence of breeding amphibians in vernal pools contributes significantly to healthy forest ecosystems both as a protein-rich food source for many species and because of the effect that amphibians associated with vernal pools have on controlling insect species known to attack the roots of maturing timber.

Detailed mapping of significant vernal pool habitat is not currently available. Significant vernal pools may exist both within and outside the boundaries of the shoreland zone. Classification of vernal pools as significant is made in the field based on the documented presence of at least one of four indicator species: wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubrachyus sp.*) or use of the pool by threatened or endangered species. Significant vernal pools are protected as Significant Wildlife Habitat under the Natural Resources Protection Act. DEP encourages landowners who are unsure as to 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).

Groundwater - Sand and Gravel Aquifers

Aquifers may be of two types: bedrock aquifers or sand and gravel aquifers. A bedrock aquifer is adequate for small yields. 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 limited sand and gravel aquifers within Lubec. These aquifers are shown on *Map 5: Water Resources*. Mapped aquifers with the potential yields of greater than 10 gallons per minute are located in the vicinity of the Lubec Water District's existing wells.

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 three Public Water Supply Sources in Lubec.

The risk assessment matrix prepared by the Maine Drinking Water Program (summarized in Table E-5, below) reflects existing acute contamination of the community water supply owned by the Lubec Water District (positive coliform test); and indicates a high potential for future chronic contamination to the community water supply due to a lack of legal control over the well head protection area (WHPA) and 2500’ Phase II/V Waiver Radius. To protect against future chronic contamination the town and/or water company should pursue means to secure this control through easements and/or land acquisition.

Table E-5 RISK ASSESSMENT MATRIX FOR PUBLIC WATER SUPPLIES

Risk of Contamination due to:	Lubec Water District (Well #1)	Lubec Water District (Well #2)	Lubec Water District (Well #4)
<i>Well type and site geology</i>	High: Positive coliform test; well type: spring	Moderate: Gravel well, overburden thickness 35’	Moderate: Gravel well, overburden thickness 68’
<i>Existing risk of acute contamination</i>	High: Positive coliform test.	High: Positive coliform test.	High: Positive coliform test.
<i>Future risk of acute contamination</i>	Low	Low	Low
<i>Existing risk of chronic contamination</i>	Moderate: 5 potential sources of chem.. contamination in WHPA	Moderate: 5 potential source of chem. Contamination in WHPA	Moderate: 5 potential source of chem.. contamination in WHPA
<i>Future risk of chronic contamination</i>	High: Lack of legal control for entire WHPA & 2500 Phase II/V Waiver Area.	High: Lack of legal control for entire WHPA & 2500 Phase II/V Waiver Area.	High: Lack of legal control for entire WHPA & 2500 Phase II/V Waiver Area.

Source: Maine Drinking Water Program 2003

Existing Policies regarding Water Resources

Town policies relative to water resources as established by the 1992 Comprehensive Plan are summarized in the table below as are recommended implementation strategies and notes on the status of each recommendation. A complete list of the policy recommendations from the previous Comprehensive Plan is included in *Appendix A: Executive Summary of the Town of Lubec Comprehensive Plan, 1992*. A full copy of the previous plan is on file in the Town Office.

Table E-6. WATER RESOURCES POLICIES FROM THE 1992 COMP PLAN

Policy	Notes
It is the policy of the Town of Lubec to preserve and protect surface water and groundwater resources, through municipal ordinances and enforcement of State laws.	<i>This policy continues to align with municipal goals and should be maintained.</i>
It is the policy of the Town of Lubec to encourage a clearer and less encompassing regulatory definition of the word wetland and substantial reduction in the amount of land in Lubec classified as wetland for regulatory purposes.	<i>This policy is felt to be impractical and should be discontinued.</i>
It is the policy of the Town of Lubec to participate actively in appropriate regional programs to preserve and protect the area's water resources.	<i>This policy continues to align with municipal goals and should be maintained.</i>
Implementation Strategies	Notes
Inform shoreland homeowners about the effects of failing septic systems on water quality.	<i>This implementation strategy continues to align with municipal goals and should be maintained.</i>
Request the plumbing inspector to inspect shoreland septic systems with dye tests, noting which systems fail to meet acceptable standards.	<i>Not implemented on town-wide basis. Town does perform dye tests when requested. Not recommended to be continued.</i>
Apply for the DEP Program which helps finance the replacement of private site standard septic systems.	<i>This policy continues to align with municipal goals and should be maintained.</i>
Require as a condition of approval that all conversions of seasonal to year-round homes have their subsurface sewage disposal systems in compliance with State Plumbing Code.	<i>Town does typically issue permits for conversion from seasonal to year round use.</i>

Source: Town of Lubec Comprehensive Plan, 1992

Policies and implementation strategies relative to water resources are presented at the end of the chapter. They include revisions as noted above, along with additional policies and strategies that reflect changes in conditions on the ground, local priorities and State and Federal policy since the previous Comprehensive Plan was adopted.

CRITICAL NATURAL RESOURCES

Wildlife Habitats

Conserving an array of habitats and their associated wildlife species will help in maintaining biological diversity and ensuring that wildlife and human populations remain healthy. Conservation of wildlife habitat is critically important for traditional activities such as hunting and fishing. To feed and reproduce, wildlife relies on a variety of food, cover, water, and space. Development can result in the deterioration of habitats and diversity through habitat fragmentation and loss of open space and essential travel corridors.

Lubec is home to diverse array of wildlife, including one of the densest congregations of bald eagle nesting sites on the east coast. Bald eagles (*Haliaeetus leucocephalus*) are plentiful and nest on several islands. Just offshore, common eiders (*Somateria mollissima*) gather in large rafts while great blue herons (*Ardea Herodias*) and several species of shorebirds grace the tidal flats

and marshes. On the ledges off the outer islands, large numbers of harbor seals (*Phoca vitulina*) frequently haul out to bask in the sun.

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 may require special management considerations". These sites are identified by the Maine Department of Inland Fisheries and Wildlife (MDIFW). In summary, any project within the Essential Habitat that requires a state or municipal permit, or uses public funding, requires IF&W review. There are currently no essential habitats identified in Lubec.

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 Lubec are illustrated on *Map 6: Critical Habitat* and include shorebird habitat, tidal waterfowl/wading bird habitat, inland waterfowl/wading bird habitat, seabird nesting habitat, significant vernal pools and deer winter areas (There are currently no significant vernal pools or deer wintering areas identified in Lubec).

Rare Animals - In addition to Essential and Significant Habitat, MDIFW tracks the status, life history, conservation needs, and occurrences for species that are endangered, threatened or otherwise rare. Lubec supports habitat for one species that is of special concern in Maine. Crowberry Blue (*Lycaeides idas empetri*) is a species of butterfly that is listed as a species of special concern in Maine. The only known distribution of Crowberry Blue in the US is in Washington County; Crowberry blue has been documented in Quoddy Head State Park (see *Map 6: Critical Habitat*). As a special concern species, Crowberry Blue is believed to be vulnerable and could easily become threatened or endangered, however it is not protected by endangered species statutes and has no special legislative protection at this time. The only recorded observance of Crowberry Blue in Lubec occurred in Quoddy Head State Park in an area managed for its habitat value.

Other Habitat - According to MDIFW, Lubec has a very high concentration of bald eagle nest sites (See *Map 6: Critical Habitat*). Land within ¼ mile of the bald eagle nest site is import habitat for bald eagles. Although these areas are no longer protected as Essential Habitat, bald eagle nest sites remain protected by the Federal Bald and Golden Eagle Act and some activities around nest sites may be regulated by USFWS. Bald eagles remain listed as a species of Special Concern in Maine. The Town may want to consider the impacts of development in these areas on the existing, healthy breeding population of bald eagles.

Maine Natural Areas Program

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 Program has identified a number of significant natural communities in Lubec including coastal plateau bog ecosystems, crowberry – bayberry headlands, a bluejoint meadow, and exemplary maritime spruce-fir forests. Areas listed under the Maine Natural Areas Program are not subject to special regulatory protection; however all areas listed under the Maine Natural Areas Program in Lubec are currently held in conservation by the State of Maine or private land conservation groups.

Fish Habitat

The Town of Lubec has several streams supporting populations of wild Eastern Brook Trout. Eastern Brook Trout are a popular recreational fish species. The following waters have high value wild Eastern Brook Trout populations and their associated habitats: Hamilton’s Brook, Wiggin’s Brook, May’s Brook, Kelly’s Brook, Baileys Mistake Brook, and the outlet of Lily Pond (Anderson Pond). Many of these streams lie within existing preserved areas. Proposed protections for May’s and Kelly’s Brooks are described in Chapter K: Land Use.

NATURAL RESOURCE PROTECTION

There are a variety of municipal, state and federal laws and legal incentives that protect natural resources in Lubec. Those of greatest significance are summarized below. Municipal, state and federal authorities often overlap in the same geographic space. The regulation of certain activities may require the involvement of multiple agencies at multiple levels of government. The following summary is adapted from the summary of local, state and federal authority over harbor, near-shore and offshore waters in the Taunton Bay Study (2006). Existing regulations are currently sufficient to protect the community’s critical natural resources.

In addition to municipal, state and federal regulations a variety of non-regulatory measures protect critical natural resources in Lubec. These include voluntary land conservation, tax incentive programs, and public outreach around natural resource protection issues.

Municipal Programs and Authorities

Under home rule authority, a town may assume certain regulatory powers. Local ordinances and regulations cannot conflict with applicable federal or state statutes or regulations. In some cases, the state or federal government has expressly delegated authority to local governments to enact more stringent standards (such as a number of environmental laws). In the near shore environment, primary municipal programs and authorities include:

- **Land use ordinances/zoning** – Municipalities have broad authority under home rule provisions to regulate land use through local zoning and subdivision ordinances. The Mandatory Shoreland Zoning Act requires all municipalities to establish zoning ordinances for land within 250 feet of great ponds, rivers, tidal areas, and freshwater and coastal wetlands. Local ordinances may be more restrictive, but not less restrictive than the state model ordinance. Shoreland zoning ordinances may also regulate aspects of structures which

extend into and over the water (e.g. size, height, consistency with existing use and character), including boat ramps, piers, docks, and floats).

- **Harbor management** – Municipal harbormasters have authority for the issuance and siting of moorings, the designation of open, convenient channels for the passage of vessels, and the establishment of anchorages.
- **Soft shell clam ordinances** - Towns may establish local ordinances regulating the harvest of soft shell clams. ME DMR regulations detail the standards that local shellfish ordinances must meet in order to be approved.
- **Intertidal leases** – A municipality that has established a shellfish conservation program may issue a municipal shellfish aquaculture permit to a person for the exclusive use of shellfish in a designated area in the intertidal zone to the extreme low water mark, for the purpose of shellfish aquaculture.

Lubec has adopted minimum shoreland standards, as required by the State Mandatory Shoreland Zoning Act. Surface waters in Lubec are also protected through the Plumbing Code and state mandated Subdivision Regulations. As noted above, Lubec also has an updated Flood Hazard Ordinance to protect the marine waterfront by restricting building to reduce flood damage and other problems. Lubec is currently in the process of revising its Shoreland Zoning ordinance.

Maine State Agency Regulatory Programs and Authorities

In Maine, the inner boundary of state ownership is the mean low water mark, unless the State owns the adjacent shorelands. Maine common law, derived from the Massachusetts Colonial Ordinance of 1641-7 allows private individuals to own submersible lands that lie between the mean high and mean low tide lines. The public, however, has certain rights of use in this intertidal area, including rights of fishing and navigation. The Submerged Lands Act sets the outer boundary of State waters at 3 nautical miles from the coastline.

Department of Marine Resources (DMR)

- **Fisheries management** – DMR has primary authority for the management of state water marine fisheries. Several species have advisory/management councils that provide recommendations to the Commissioner – the most well known are the seven lobster zone councils. For those species for which the fishery extends into federal waters and/or into adjacent states, DMR works with NOAA Fisheries (NMFS), the New England Fisheries Management Council (NEFMC), the Mid-Atlantic Fisheries Management Council (MAFMC), and the Atlantic States Marine Fisheries Commission (ASMFC) to coordinate federal, state, and interstate management of such species.
- **Aquaculture leasing and monitoring** – DMR has responsibility for evaluating finfish and shellfish lease applications, and monitoring environmental impacts of aquaculture operations in State waters.
- **Shellfish toxin monitoring** – DMR’s division of public health oversees the application of the National Shellfish Sanitation Program within Maine. This program keeps molluscan shellfish safe for human consumption by ensuring that a common set of standards are used to classify shellfish growing areas and to handle shellfish when they go to market. The Marine Biotxin Monitoring Program uses the standards outlined in the NSSP to monitor levels of PSP (“red tide”) and other marine biotoxins. When toxin is found at unacceptable levels, closures to the harvest of shellfish are implemented
- **Anadromous fish restoration** - Major restoration activities include the operation of fishways and traps to collect fish on their upstream spawning migration and transport them to upriver spawning areas. DMR also works closely with hydroelectric dam owners to provide for installation of fish passages to carry fish upstream to spawning areas and safely pass seaward migrating adults and juveniles downstream around hydropower turbines.

- **Coastal permit review** - DMR is responsible for environmental impact reviews on projects seeking leases on publicly owned submerged and/or intertidal lands, and permits issued by DEP and LURC. DMR consults with federal resource and regulatory agencies on these issues, as well as reviewing and commenting on municipal comprehensive plans, which may affect marine, estuarine and riverine resources.

Department of Environmental Protection (DEP)

DEP's role in the near-shore marine environment centers around water quality protection through the regulation of discharges – both from vessels and shore based facilities.

Discharges from vessels –

- **Marine Sanitation Devices** - Under the Clean Water Act (Section 312), vessels with installed toilet facilities and operating on the navigable waters of the U.S. must contain operable marine sanitation devices (MSDs) certified as meeting standards and regulations promulgated under section 312.
- **Pump-out Program** - For vessels without MSDs, DEP manages the pump-out program in Maine. DEP administers the grant program for the installation and maintenance of holding tank pump-out stations in coastal areas.
- **Commercial Passenger Ships** - Maine recently enacted Chapter 650, which specifies a number of requirements applicable to commercial passenger vessels (cruise ships). It provides for future rulemaking and issuance of a general permit for the discharge of graywater, and mixtures of graywater and blackwater, from large commercial passenger vessels.
- **No Discharge Zones** - Section 312 also allows establishment of zones where discharge of sewage from vessels is completely prohibited. The process requires DEP to make an application to the EPA for a specific area. An application for Casco Bay is currently in development.

Other discharges -

- **Combined sewer overflows (CSOs)** occur during storm events when a mixture of wastewater and stormwater runoff overflows the combined sewer collection system before receiving treatment at a licensed wastewater treatment facility. These discharges of diluted untreated wastewater violate both State and Federal water pollution laws. Municipalities or Sewer Districts that have CSOs are required to license them with DEP. License requirements direct these communities to evaluate their CSO problems and determine cost effective solutions to abate them.
- **Overboard discharge** is the discharges of sanitary waste from residential or commercial sources to streams, rivers, bays, and the ocean. All overboard discharges must be approved by the DEP.
- **National Pollution Discharge Elimination System (NPDES)** - Following Maine's authorization by the EPA in 2001, the State became the primary NPDES authority and point of contact for most wastewater discharge sources in Maine. State issued permits under the NPDES program are known as MEPDES or Maine Pollutant Discharge Elimination System permits.
- **Stormwater Management** - The Maine Stormwater Program includes the regulation of stormwater under two core laws: The Site Location of Development law (Site Law) and Stormwater Management Law.
- **Erosion and Sedimentation Control** - Under the Erosion and Sediment Control Law, activities that involve filling, displacing, or exposing soil must be conducted to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource.
- **Site Law** - Large developments considered to be of state or regional significance or of a type that may substantially affect the environment are required to obtain a Site Location of Development Permit.
- **Issuance of permits under the Natural Resources Protection Act** - Permits are required for certain activities (1) in, on, or over a protected natural resource and (2) on land adjacent to any great pond, river, stream or brook, coastal wetland and freshwater wetlands that may cause material or soil to be washed into those resources. DEP is responsible for issuing permits for specific activities up to 75' inland from the high water line, and up to 3 miles seaward.
- **Classification of Maine waters** - DEP establishes water quality goals for the State. Class SA is the highest classification of estuarine and marine waters. This classification is applied to waters that are outstanding natural resources and that should be preserved because of their ecological, social, scenic, economic or recreational importance. By law, Class SA waters shall be of such quality that they are suitable for the designated uses of

recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish, and navigation and as habitat for fish and other estuarine and marine life.

- Watershed Management is an approach to protecting water quality and quantity that focuses on a whole watershed. This is a departure from the traditional approach of managing individual wastewater discharges, and is necessary due to the nature of polluted runoff, which in most watersheds is the biggest contributor to water pollution.
- Nonpoint Source Water Pollution Control Grants – DEP provides grants to prevent or reduce nonpoint source pollutant loadings entering water resources so that beneficial uses of the water resources are maintained or restored
- Provide technical assistance to municipalities for the adoption, administration and enforcement of shoreland zoning ordinances.

Department of Conservation (DOC) Bureau of Parks and Lands (BPL) and Land Use Regulation Commission (LURC)

- Submerged lands leasing – BPL has authority to lease state-owned submerged lands for erection of permanent or seasonal structures and other activities, such as construction of wharves and marinas, dredging and filling (the exception is aquaculture leases, which are handled by DMR). Structures located on submerged land require a lease or easement when the existing use is being changed, or the size of an existing structure is being changed. A lease or easement is also required for new structures that will be permanent, or for new seasonal structures larger than 2,000 square feet and used for commercial fishing related purposes or larger than 500 square feet for any other purpose. Leases or easements are also required for pipelines, utility cables, outfall/intake pipes, and dredging. To qualify for a lease or easement, the proposed use cannot have adverse impacts on access to or over the waters of the State, the public trust rights (fishing, fowling and navigation), and/or services and facilities for commercial marine activities.

Department of Inland Fish & Wildlife (IF&W)

- **Manage populations, habitats and consult on impacts of development** for coastal seabirds (including Endangered & Threatened seabirds and Bald Eagles under the Maine Endangered Species Act)
- **Fund and develop** recreational public access
- **Partner** with other state and federal agencies in oil-spill response programs
- **Manage** sea-run brook, brown and rainbow trout fisheries
- **Atlantic salmon** - protect, conserve, restore, manage and enhance Atlantic salmon habitat, populations and sport fisheries within historical habitat in all (inland and tidal) waters of the State of Maine.

Maine State Planning Office, Maine Coastal Program (MCP)

- **Coastal Zone Management** – Maine has a federally approved Coastal Zone Management Plan (CZMP), and may therefore review any federal activities (either projects proposed by a federal agency or licensed or permitted by a federal agency) for consistency with the enforceable policies of the CZMP (the core laws). The core laws involve regulated activities such as wetland alteration, pollution discharge and dredging/dredge material disposal, both in organized and unorganized territories.

Maine Department of Transportation (DOT)

- **Shipping (cargo ports)/Ferries**
- **Surface Water Quality Protection Program (SWQPP)** - The purpose of this program is (1) to identify surface water bodies (lakes, rivers, streams, estuaries, etc.) where water quality is being adversely impacted by runoff from highways, (2) to select and prioritize candidate pollution elimination projects to fund, and (3) to manage the design, development and construction of projects selected for funding.
- **Wetland mitigation** - The Mitigation Unit directs and coordinates compensatory mitigation for impacts to wetland resources caused by transportation projects throughout the State.
- **NEPA Compliance** - DOT develops Environmental Impact Statements (EIS's) and Environmental Assessments (EA's) and Categorical Exclusions (CE's) for most major projects, as required by the National Environmental Policy Act (NEPA).

Federal Agency Regulatory Programs and Authorities

The United States Exclusive Economic Zone (EEZ) extends from the outer boundary of state waters (3 miles) out to 200 miles from shore. However, the federal government's legal authority in navigation, commerce and security extends shoreward into state waters. The federal agencies highlighted below are those that have a role in regulation or review of activities in state waters.

National Marine Fisheries Service (NMFS)

- **Fisheries Management** - Under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), the U.S. claimed sovereign rights and exclusive fishery management authority over all fish, and all Continental Shelf fishery resources, within the EEZ. Fisheries regulations for federal water species are often developed through the Regional Fisheries Management Councils. However, for some species, the interstate Marine Fisheries Commissions (e.g. ASMFC) may recommend to the Secretary of Commerce that the Secretary adopt federal regulations that reflect state management approaches or incorporate specific state measures.
- **Protected Resource Management** - NMFS administers the Marine Mammal Protection Act, and shares statutory responsibility with the USFWS for the Endangered Species Act.
- **Act as a review agency on coastal projects** which affect living marine resources, including Essential Fish Habitat (EFH) as identified in cooperation with regional Fishery Management Councils.

US Fish and Wildlife Service (USFWS)

- **Act as a review agency on coastal projects** with impacts on resources under their jurisdiction. USFWS has responsibility for National Wildlife Refuges, Endangered and Threatened species, migratory birds, and other natural resources.

Environmental Protection Agency (EPA)

- **Water quality protection and monitoring** - The primary mechanism in the Clean Water Act (CWA) regulating the discharge of pollutants is the NPDES. Under the NPDES, a permit is required from EPA or an authorized state for the discharge of any pollutant from a point source into the waters of the US. Permits may be issued by states following approval of their permit program by EPA (ME's program was approved in 2001); for discharges beyond the territorial sea, EPA is the permit-issuing authority. In ME, as in all delegated states, EPA's role is to assure that state actions meet the requirements of the CWA. This includes review of draft permits prepared by the state, general oversight of program requirements and performance, and review of proposed changes to state laws and rules related to the NPDES program.
- **Disposal Site selection** in cooperation with other state and federal agencies.

US Army Corps of Engineers (USACOE)

- **Jurisdiction over projects located on intertidal or submerged land** through issuance of permits authorizing activities in or affecting navigable waters of the U.S., and adjacent wetlands, including the discharge of dredged or fill material, and the transportation of dredged material for the purpose of dumping it into ocean waters. This requires consultation with other federal agencies, including NMFS and USFWS, and frequently involves consultation with state agencies.
- **Navigation Project Development and Maintenance**, including maintenance dredging of channels and anchorages, construction and maintenance of breakwaters.
- **Disposal Site Selection and Monitoring**

US Coast Guard (USCG)

- **Navigational issues** – placement and maintenance of navigational aids, permitting of bridges and consultation with the ACOE on other activities that have the potential to impact navigation.
- **Boating safety/search and rescue**
- Federal Energy Regulatory Commission (FERC)
- **Regulation of the interstate transmission of natural gas, oil, and electricity.** FERC also regulates natural gas and hydropower projects.

PUBLIC AND CONSERVED LANDS

In addition to local, state and, federal regulations and tax incentive programs, critical natural resources in Lubec are also protected through public and private land conservation. Protection of critical natural resources can help advance town policies in relation to access for outdoor recreation, protection of forestry and farmland, and protection of public water sources. All of the areas in Lubec listed under the Maine Natural Areas Program are currently held in conservation (see *Map 6: Habitat*). Many areas listed as essential or significant wildlife habitat are held in conservation – including Razor Island, the only identified Seabird Nesting Island in Lubec.

At the same time as public and private conservation efforts can advance certain town policies, the Town of Lubec has concerns over the fiscal impact that land conservation has on the Town of Lubec. Particularly given the relatively large area of land already held in conservation or listed as open space, the Town of Lubec requests that land owners, state agencies, land trusts and others making significant conservation decisions in Lubec meet with the town to discuss the potential social and economic impact of further conservation; to identify strategies to maximize the public benefit of conservation for local residents; and to identify strategies that will mitigate any adverse impacts.

SCENIC RESOURCES

Scenic resources contribute significantly to quality of life in Lubec. The 1992 Comprehensive Plan identified West Quoddy Head Light and Lubec Channel Light (a/k/a the Sparkplug Light) as the two most prominent structures of visual significance in the town. Scenic resources in Lubec also include historic farmlands, pristine coastal islands, and a varied shoreline with rocky headlands, protected bays, and extensive inter-tidal areas.

In the summer of 2010, the Washington County Council of Governments and the 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 seven scenic areas located wholly or mostly in the Town of Lubec, as summarized below. Full results of the scenic inventory are available online at www.wccog.net/scenic.htm.

Most of Lubec's most significant scenic resources enjoy some level of protection through a combination of shoreland zoning, conservation easement (especially on coastal islands), and current use taxation. More than half of respondents to the Community Survey felt that protection of scenic resources in Lubec is at least adequate.

Table E-7. SCENIC AREAS IN LUBEC

Scenic Area	Description
Bailey's Mistake (Assessment Score: 69)	Bailey's Mistake scenic area is located near the border of Trescott and Lubec, encompassing the area around a small embayment by the same name. This scenic area includes an enclosed cove used by numerous fishing vessels. Scenic features in the foreground include tidal marshes, small coastal islands, and crescent shaped, cobble beach. Headlands at Jim's head and Bolch Head frame views of Grand Manan Island in the distance. The scenic area's name derives from a ship captain who supposedly mistook the cove for the Lubec Narrows. Views are primarily from public roadways with short filtered views along Route 191; and more sustained views along the Boot Cove Road.
Hamilton Cove (Assessment Score: 77)	Hamilton Cove scenic area is located within a coastal preserve in the town of Lubec. This scenic area includes a small cobble beach, undeveloped coastline, rocky headlands and dramatic views across Grand Manan Channel. Fishing vessels are often present near shore. The area is frequented by shorebirds; and whales can often be seen from shore. The cove itself is not visible from the road, but there are views from trails, a view platform and the cobble beach. Hamilton Cove scenic area is contained within a preserved owned by Maine Coast Heritage Trust.
Johnson Bay (Assessment Score: 75)	Johnson Bay scenic area is located in the town of Lubec, encompassing views of Johnson Bay from downtown Lubec, Route 189 and the North Lubec Road. The scenic area includes Lubec's downtown, highly configured shoreline around the bay, numerous small coastal islands, and an active fishing harbor. From the State Boat Launch at the end of Water Street, numerous fishing boats are visible in the foreground with coastal islands, the City of Eastport and view up Passamaquoddy Bay in the mid- and background. There are numerous short views from Route 189 and the North Lubec Road.
Lubec Channel (Assessment Score: 76)	The Lubec Channel scenic area is located between the historic downtown and West Quoddy Head in the Town of Lubec. Lubec Channel is subject to dramatic tidal variation. Extensive tidal flats, marshes and the Lubec Sand Bar draw birders from across the country. Scenic features visible in the mid-ground include Lubec Channel Light (a/k/a "the Spark Plug") and Lubec's historic downtown. There are both short and sustained views from public roads on three sides of the channel. Other public view points include trails at Mowry Beach and Roosevelt International Park (New Brunswick); and public access to the shore at Lubec Sand Bar.
Morong Cove (Assessment Score: 68)	Morong Point scenic area encompasses the area in and around Morong Cove Wildlife Management Area, located off Crow's Neck Road in the Town of Lubec. The area includes numerous trails through former farmland. Mature forests and apple orchards provide excellent habitat woodland species. Wildlife (notably including deer, grouse and bald eagles among many other species) are common. Scenic views of enclosed coves along Straight Bay can be accessed by foot. The Wildlife Management Area is owned and managed by the Maine Department of Fish and Wildlife.
North Lubec (Assessment Score: 68)	North Lubec scenic area is located on Seward's Neck along the North Lubec Road in the town of Lubec. This scenic area includes a cluster of historic buildings in North Lubec. A scenic pull-out looks out on Roger's Island and across Johnson's Bay to downtown Lubec. Historic buildings within the scenic area include homes and a former store building. In addition to the scenic pull-out, short, filtered views can be seen from the North Lubec Road. Public land within the scenic area included Rogers Island, which is owned by the Town of Lubec and managed for bird habitat.
West Quoddy Head (Assessment Score: 81)	West Quoddy Head scenic area is located in the Town of Lubec, encompassing West Quoddy Head State Park and nearby areas. This scenic area includes dramatic views across the eastern Bay of Fundy to Grand Manan Island. Marine life in the form of whales and seals are not uncommon in the area as well as many species of birds. The scenic areas also include numerous walking trails providing access to exemplary natural communities including coastal spruce forests and raised bogs. There are a handful of scenic features in the foreground, most notably including West Quoddy Head Lighthouse. This scenic area is culturally significant because it is the easternmost point in the United States. Public views are primarily from trails and scenic overlooks in the State Park. There are a few short views from public roadways.

Existing Policies regarding Critical Natural Resources

Town policies relative to critical natural resources as established by the 1992 Comprehensive Plan are summarized in the table below as are recommended implementation strategies and notes on the status of each recommendation. A complete list of the policy recommendations from the previous Comprehensive Plan is included in *Appendix A: Executive Summary of the Town of Lubec Comprehensive Plan, 1992*. A full copy of the previous plan is on file in the Town Office.

Table E-8. CRITICAL NAT. RESOURCES POLICIES FROM THE 1992 COMP PLAN

Policy	Notes
It is the policy of the Town of Lubec to vigorously resist the acquisition of additional land or interest in land by the state and federal government and by state and national environmental groups which are not supported by in-depth environmental, social and economic impact statements and by the landowners involved.	<i>The Town of Lubec continues to be concerned by the effect of land conservation and current use taxation on the municipal tax base. This strategy should be amended to read: “It is the policy of the Town of Lubec to request that land owners, state agencies, land trusts and others making significant conservation decisions in Lubec meet with the town to discuss the potential social and economic impact of further conservation; to identify strategies to maximize the public benefit of conservation for local residents; and to identify strategies that will mitigate any adverse impacts.”</i>
Implementation Strategies	Notes
Encourage the identification, mapping and registry of any and all sites which may be eligible for the State Critical Areas and/or Natural Heritage Programs, and encourage the continued inventory of fish and wildlife resources by the Department of Inland Fisheries and Wildlife.	<i>This implementation strategy continues to align with municipal goals and should be maintained.</i>
Regulate incompatible development in significant Critical Areas, through Resource Protection zoning as outlined in the Land Use Plan: include identified critical natural areas identified by the Department of Inland Fisheries and Wildlife, the Critical Areas Program and the Natural Heritage Program in the Towns Resource Protection District.	<i>This implementation strategy continues to align with municipal goals and should be maintained.</i>
Encourage public and private educational activities which enhance the understanding of and aesthetic appreciation of Lubec’s identified Critical Natural Resources.	<i>This implementation strategy continues to align with municipal goals and should be maintained.</i>

Source: Town of Lubec Comprehensive Plan, 1992

Policies and implementation strategies relative to critical natural resources are presented on the following pages. They include revisions as noted above, along with additional policies and strategies that reflect changes in conditions on the ground, local priorities and State and Federal policy since the previous Comprehensive Plan was adopted.

POLICIES & IMPLEMENTATION STRATEGIES

In order to protect and preserve the natural resources within the Town of Lubec, the Town will continue to update local land use regulations to maintain consistency with the minimum State of Maine requirements. The Town has adopted shoreland zoning regulations that protect the lakes, ponds, wetlands and aquifers within the borders of Lubec. The town has developed the following policies and implementation strategies to further protect and preserve the natural resources:

Goal: Lubec will protect and preserve the natural resources on which its economy and quality of life depend.			
Policy	Implementation Strategy	Responsibility	Time frame
Critical Natural Resources			
The Town of Lubec requests that land owners, state agencies, land trusts and others making significant conservation decisions in Lubec meet with the town to discuss the potential social and economic impact of further conservation; to identify strategies to maximize the public benefit of conservation for local residents; and to identify strategies that will mitigate any adverse impacts.	Inform land trusts and State agencies actively involved in land conservation projects in Lubec of the Town’s request to assess the potential social and economic impact of further conservation projects on the Town.	Selectmen	Immediate
Conserve critical natural resources in the community.	Encourage the identification, mapping and registry of any and all sites which may be eligible for the State Critical Areas and/or Natural Heritage Programs, and encourage the continued inventory of fish and wildlife resources by the Department of Inland Fisheries and Wildlife.	Planning Board	Short-term (1 - 2 years)
	Through local land use ordinances, require subdivision and 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)
	Regulate incompatible development in significant Critical Areas, through Resource Protection zoning as outlined in the Land Use Plan: include identified critical natural areas identified by the Department of Inland Fisheries and Wildlife, the Critical Areas Program and the Natural Heritage Program in the Towns Resource Protection District.	Planning Board	Short-term (1- 2 years)

Goal: Lubec will protect and preserve the natural resources on which its economy and quality of life depend.			
Policy	Implementation Strategy	Responsibility	Time frame
	Adopt natural resource protection practices and standards for construction and maintenance of public roads and properties and require their implementation by the community's officials, employees, and contractors.	Planning Board	Short-term (1- 2 years)
	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)
	Encourage public and private educational activities which enhance the understanding of and aesthetic appreciation of Lubec's identified Critical Natural Resources.	Selectmen	On-going
	Amend local shoreland zone standards to meet current state guidelines.	Planning Board	Short-term (1- 2 years)
Coordinate with neighboring communities and regional and state resource agencies to protect shared critical natural resources.	Initiate and/or participate in interlocal and/or regional planning, management and/or regulatory efforts around shared critical natural resources.	Selectmen	On-going
	Distribute or make available information to those living in or near critical natural areas about applicable local, state or federal regulations	Selectmen	On-going
Water Resources			
Preserve and protect surface water and groundwater resources, through municipal ordinances and enforcement of State laws.	1. Amend land use ordinances as applicable to incorporate stormwater runoff performance standards 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)
	Update the floodplain management ordinance to be consistent with state and federal standards.	Planning Board	Short-term (1- 2 years)
	Consider amending local land use ordinances, as applicable, to incorporate low impact development standards.	Planning Board	Short-term (1- 2 years)
	Enact public wellhead and aquifer recharge area protection mechanisms, as necessary.	Selectmen	Medium-term (3 - 5 years)
	Provide water quality "best management practices" information to farmers and loggers.	Selectmen	On-going
	Adopt water quality protection practices and standards for construction and maintenance of public roads and properties and require their	Planning Board	Short-term (1- 2 years)

Goal: Lubec will protect and preserve the natural resources on which its economy and quality of life depend.			
Policy	Implementation Strategy	Responsibility	Time frame
	implementation by the community’s officials, employees and contractors.		
Participate in appropriate regional programs to preserve and protect the area’s water resources.	Participate in local and regional efforts to monitor, protect and, where warranted, improve water quality.	Selectmen	On-going
	Inform shoreland homeowners about the effects of failing septic systems on water quality.	CEO	On-going
	Apply for the DEP Program which helps finance the replacement of private site standard septic systems.	Selectmen	On-going
Agricultural and Forest Resources			
Protect Lubec’s limited agricultural and forest resources.	Consult with the Maine Forest Service District Forester when developing any land use regulations pertaining to forest management practices.	Planning Board	As necessary
	Consult with Soil and Water Conservation District staff when developing any land use regulations pertaining to agricultural management practices.	Planning Board	As necessary
	Amend land use ordinances to require commercial or subdivision developments in critical rural areas to maintain areas with prime farm soils as open space to the greatest extent practicable.	Planning Board	Short-term (1- 2 years)
	Limit non-residential development in critical rural areas to natural resource-based businesses and services, nature tourism/outdoor recreation businesses, farmers’ markets, and home occupations.	Planning Board	Short-term (1- 2 years)
Encourage sound agricultural and forest practices through appropriate land use ordinances and planning.	Inform owners of agricultural and forest lands of the existing State programs which tax such properties at lower rates based on their use and yield of their resale value.	CEO, Assessor	On-goin
	Permit activities that support productive agriculture and forestry operations, such as road-side stands, greenhouses, and pick-your-own operations.	Planning Board	Short-term (1- 2 years)
	Include agriculture and commercial forestry operations in local or regional economic development plans.	Selectmen	On-going