

Natural Resources

ROCKPORT GEOGRAPHY

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HABITAT AND NATURAL AREAS

SCENIC AREAS

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Geography

Approximately 25.5 square miles in size, Rockport lies along the Penobscot Bay coastline between Camden to the north and Rockland to the south. Bordering to the west are the towns of Hope and Warren; to the east is the Atlantic Ocean, and Rockport's two islands, Indian and Ram islands.

Within town boundaries are seven natural lakes, ponds, and artificial ponds all totaling 611 acres; nine watersheds, 2,000 acres of wetlands, a stretch of rocky coastline, one deep harbor, a shallow cove with clam flats, farmland, blueberry fields, and hills that are part of the Camden Hills geologic formation.

While the town has traditionally been rural in nature, the decade of the 1990s saw a steady increase in housing and business construction. At the same time, the decade also saw more land put into conservation, and more use of current use tax classifications, such as tree growth, farmland, and open space.

In 2002, 584 acres were in designated tree growth; 657 acres in designated farm and open space; and 502 in conservation easement. Properties such as the scenic Beech Hill and its famous Nut House, and the Belted Galloway Aldermere Farm were transferred to the Maine Coast Heritage Trust and the Coastal Mountains Land Trust. Smaller parcels, some under two acres in size, were also put under permanent protection.

At latitude 44 degrees north, Rockport's climate is influenced by its proximity to the ocean, with cool summer temperatures and moderate winter temperatures. Mean annual precipitation is approximately 40 inches, and mean annual temperature is approximately 43 degrees F.

While the geography is varied, the settlement patterns of the five villages

reflect the diversity of the natural environment: Rockport Village was established at the head of the harbor; Glen Cove at the productive and sheltered Clam Cove; Rockville along the Mace Pond stream that flows into Chickawaukie Lake; Simonton Corner on a bend in the Goose River as it flows toward Rockport Harbor; and West Rockport on a tributary of the Oyster River.

Topography and Soils

Rockport's bedrock consists of rocks crystallized at great depths from molten rock, including granite, volcanic rock, and rocks changed by heat and pressure. Much of Rockport's higher elevations, many of them steep, are rocky outcrops and ledge covered by a thin layer of surface soil.

Rockport's surface materials are the result of continental glaciers that waxed and waned across Maine, depositing debris of all sizes. That debris was either "plastered" by the ice on the land surface or released by melting. The way the glacial debris settled onto the underlying

bedrock largely determines the location of various soil types. It also affects solid waste and private sewage disposal, groundwater recharge areas, near-surface groundwater movement, and ultimately, the location of industrial and residential structures.

Till is the most prevalent glacial deposit and is the major component of most of Rockport's soils. Glacial till plus glacial marine or lake sediments create Rockport's sand and gravel deposits. The Peru series of fine, sandy (often stony), moderately well-drained loams is the most common soil type.

Peru soils are generally suitable for pasture, blueberries, and tree-growing. They can support underground wastewater disposal, but

Tree Growth and Farm and Open Space property taxes use a taxable value for land based on its use for agriculture or open space (See page 55, Rockport Fiscal Capacity for more information). The resulting property taxes are usually lower than regular property taxes that base their land valuation on the likely price of the land if offered on the real estate market. Instead of market valuation, Farm and Open Space base land values on current use. The State of Maine offers the Farm and Open Space tax program to encourage the preservation of farmland and open space. Parcels must be greater than five contiguous acres (tree growth, 10 acres) and farmland and open space must show that there is a public benefit.

because an impervious “pan” is typically found at less than 40 inches below the surface, seasonal groundwater is high and large waste disposal systems are required.

According to the Maine Geologic Survey, glaciers probably covered Maine several times during the past two million years. The most recent glacial episode in Maine began about 25,000 years ago, when the Laurentide ice sheet overspread New England. During its peak development, this ice sheet was centered over eastern Canada and flowed east to southeast across Maine. It became several thousand feet thick and covered the highest mountains in the state.

The weight of the glacier depressed the Earth’s crust in Maine by about 790 feet. Even though sea level was lower 13,000 years ago than today (because more sea water existed as glacial ice), this depression caused the sea to flood coastal Maine to present elevations of up to 400 feet. The sea extended far into central Maine — to Bingham in the

Kennebec River valley and Millinocket in the Penobscot River valley. As the glacier withdrew, it left behind the variety of surficial deposits that make up Maine’s topography today, including deposits now termed sand and gravel aquifers.

Sand and gravel is used for construction aggregate; sandy tills are used for domestic sewage disposal; fine-grained sediments are used for land-fill caps and for lining or covering other waste-disposal sites. In addition, crushed stone as construction aggregate is an increasingly valuable resource in the midcoast area as the limited surface deposits there become depleted.

Proper siting of new buildings and of land-fills or other environmental hazards needs to take into account surface geologic factors such as drainage, aquifers, wetlands, and susceptibility to erosion and floods.

About half of Maine’s domestic water supply comes from bedrock wells.

Commonly found soil types in Rockport

HYDRIC SOIL is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

PERU SERIES: consists of deep, moderately well drained soils that formed in dense, loamy glacial till. Permeability is moderate in the upper layers, and moderately slow in the dense substratum. Slope ranges from 0 to 35 percent.

SWANVILLE SERIES consists of very deep, poorly drained soils that formed in glaciolacustrine or glaciomarine deposits on lake and marine plains. Slope ranges from 0 to 8 percent. Permeability is moderate in the surface and moderately slow or slow in the underlying material.

LYMAN SERIES consists of shallow, somewhat excessively drained soils formed in glacial till. They are on rocky hills, mountains and high plateaus. Permeability is moderately rapid. Slope ranges from 3 to 80 percent. Depth to bedrock ranges from 10 to 20 inches.

HERMON SERIES consists of very deep, somewhat excessively drained soils on upland till plains, hills and ridges. These soils formed in glacial till. Permeability is moderately rapid or rapid in the solum and rapid or very rapid in the substratum. Slope ranges from 0 to 60 percent.

MARLOW SERIES consists of well drained soils that formed in loamy till on drumlins and glaciated uplands. They are moderately deep to a densic contact and very deep to bedrock. Permeability is moderate in the solum and moderately slow or slow in the densic materials. Slope ranges from 0 to 60 percent.

TUNBRIDGE SERIES consists of moderately deep, well drained soils on glaciated uplands. They formed in loamy glacial till. Permeability is moderate or moderately rapid. Slope ranges from 0 to 75 percent.

Watersheds

A watershed is defined as a geographic region within which water drains into a particular river, stream, or body of water, and includes hills, lowlands, and the body of water into which the land drains. Approximately 50 percent of the land area in Maine lies in a lake watershed.

Rockport has five major watersheds that together ultimately drain into the ocean. These five are all part of a larger, regional Central Coastal Watershed, which empties into the Gulf of Maine. Watersheds do not adhere to town boundaries and are just one environmental factor in the importance of taking a regional approach to planning. In this section, the major watersheds in Rockport are outlined, including descriptions of their soils, critical areas, essential and protected habitat (as defined by current state and federal designations), water quality, soils, and other notable features that need consideration in future planning.

Rockport is adjacent to Penobscot Bay and has a number of small brooks, as well as the Goose River that flow into the bay. The town also contributes to

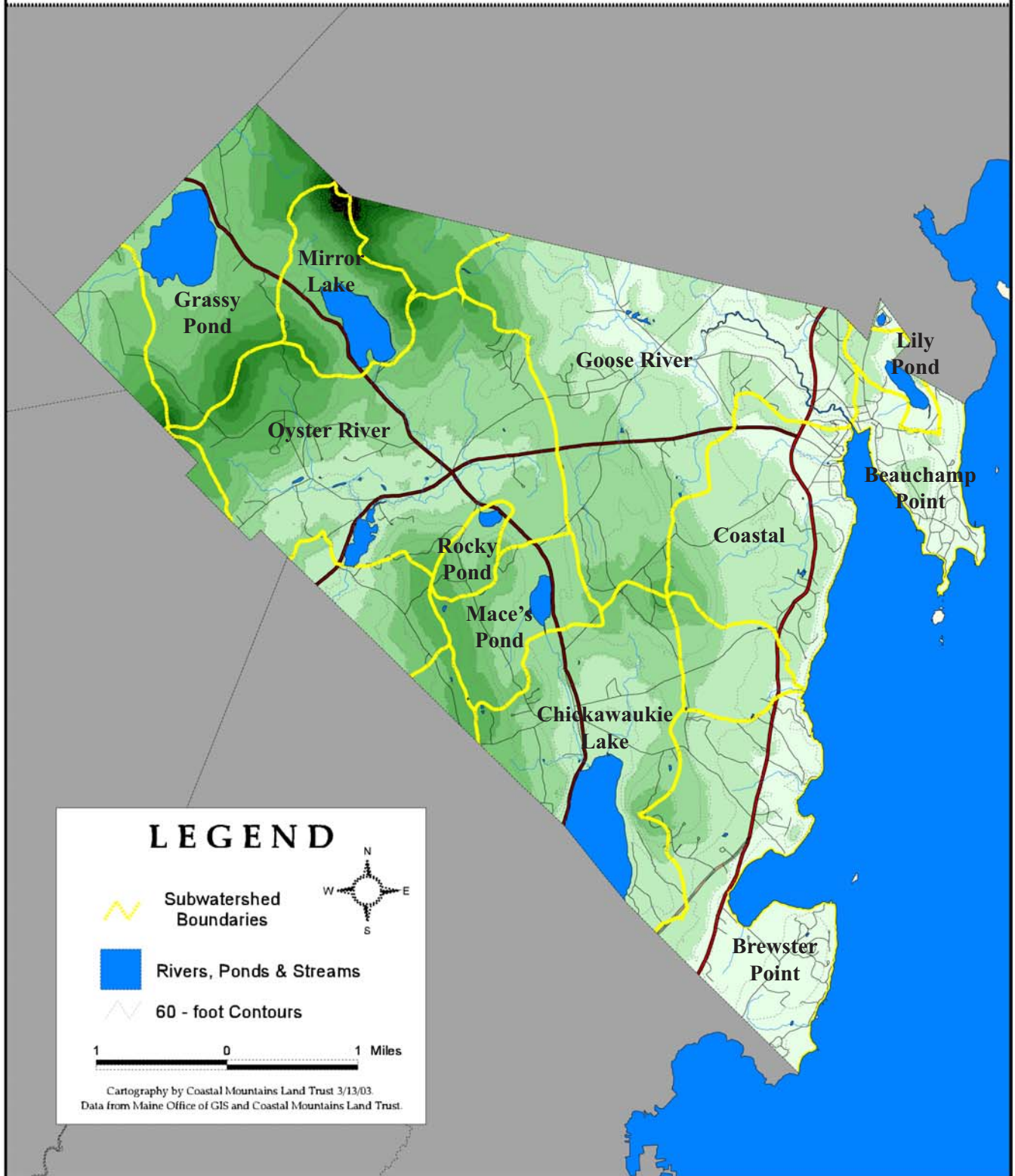
the flow of the Megunticook River watershed, which flows into the bay in the Town of Camden, and contributes water to the St. George River watershed in Thomaston.

Rockport's watersheds include Grassy Pond, Mirror Lake, Oyster River, Goose River, Chickawaukie Lake, Brewster Point, the coast, Lily Pond, and Deadman Point.

There are also four small watershed areas that are part of larger watersheds in adjacent towns: the high area along Mill Street; the blueberry land that runs from Pleasant Mountain to West Street Extension, the Quiggle Brook watershed; the northwest corner of Rockport including the top of Spruce Mountain and the slopes down to Grassy Pond outlet; and the small Thorndike Brook watershed on the shoulder of Ragged Mountain.

The Goose River and Oyster River watersheds stretch westward. The Goose River watershed has provided a relatively broad floodplain and good farmland; the Oyster River is a narrow, meandering floodplain with varied soils.

Town of Rockport Map of Subwatersheds



Grassy Pond Watershed

Both West Rockport and the Town of Hope are located in the Grassy Pond Watershed. The 136-acre Grassy Pond is one of two major sources for Aqua Maine, Inc (see page 125 in Water Resources section). One stream and eight intermittent streams drain into Grassy Pond. The outlet, Grassy Pond Brook (Heminway Brook) drains into the east branch of Quiggle Brook. At the southern end of the pond there is a possible sand and gravel aquifer, although that has not been determined.

Route 17 runs along the northeast side of Grassy Pond. Much of the land adjacent to the pond remains undeveloped and wooded.

Soils

The land that lies to the west of Route 17 is

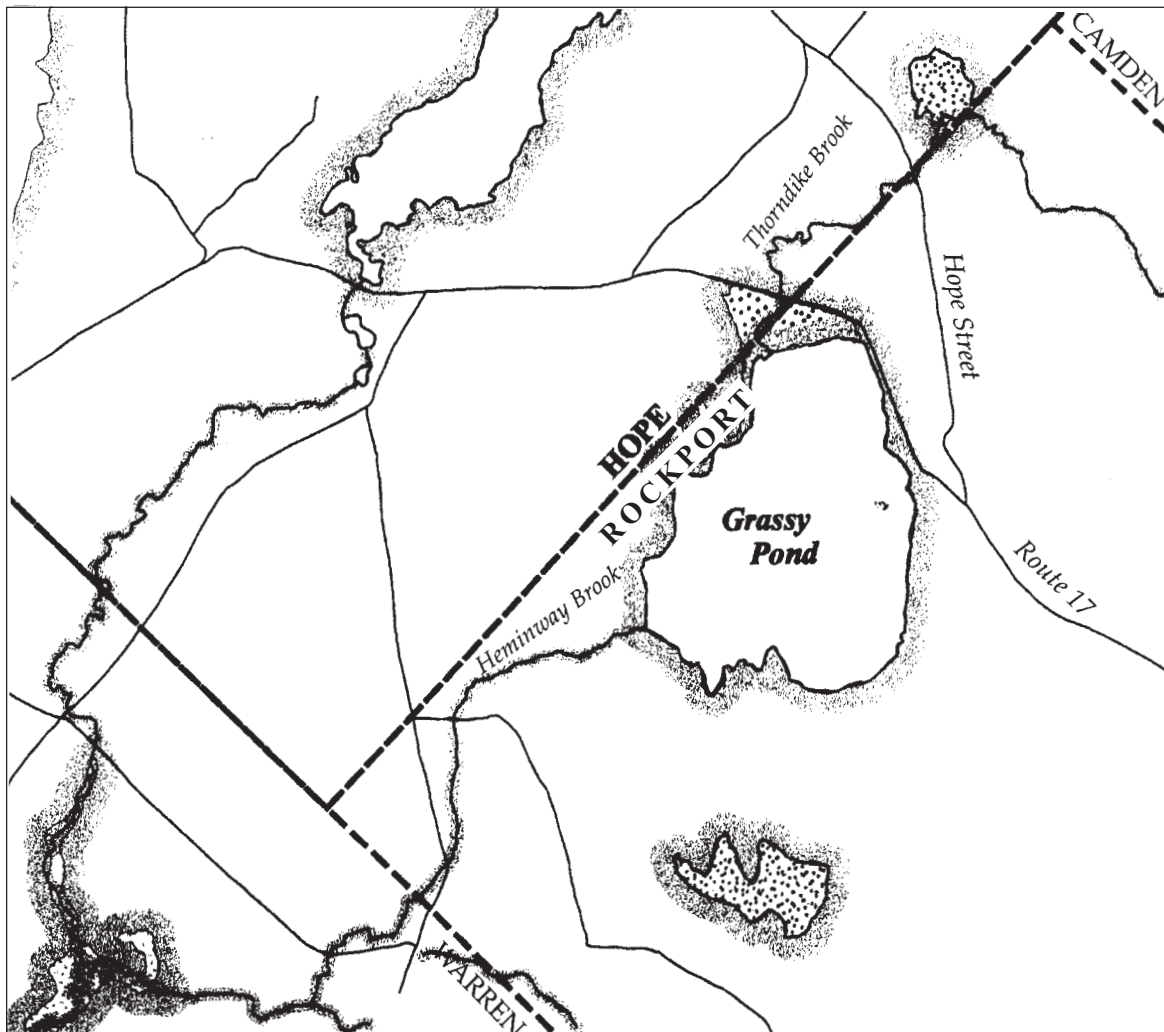
considered to be good farmland. The soils surrounding Grassy Pond are hydric, with Marlow and Peru fine, sandy loams predominating. Lyman rock outcrop soils are on the steeper slopes.

Elevations

Elevations range from 322 feet at Grassy Pond to 970 feet at the top of Spruce Mountain and 1,000 feet at the summit of Pleasant Mountain. The slopes of these mountains are steep to the 400-foot elevation. The slopes down from the Spruce Mountain saddle are gentler, and much of the area is still wooded.

Quiggle Brook is a small, elevated (almost all above 300 feet) part of the Quiggle Brook watershed, which is mainly in Hope, Union, and War-

Grassy Pond Watershed



ren. The watershed boundary extends from Mount Pleasant down to the Grassy Pond outlet (Heminway Brook). Higher elevations and steep slopes are on Mount Pleasant. There are steep slopes (15 to more than 25 percent) along the headwaters of a stream, along Mount Pleasant Road where CMP's Section 49 parallels the road and the edge of a blueberry field. Fine, sandy loams, some stony, predominate. Part of a large wetland in Grassy Pond watershed is in the Quiggle Brook area, and there is another smaller wetland.

Heminway Brook has brown trout in the spring. Moose winter on the Spruce Mountain saddle and on Meadow Mountain, and forage on Grassy Pond's abundant aquatic plants in the summer.

Water Quality

Please see the Water Resources section in page 125 for a complete report of Aqua Maine, Inc., including its 1998-2007 Long Range Facilities Plan.

Grassy Pond serves as a secondary supply of water for Aqua Maine, Inc., the largest investor-owned water utility operating in Maine. The primary water supply for Aqua Maine is Mirror Lake, which lies adjacent to Route 17 in Rockport. Aqua Maine in Rockport serves customers in Rockport, Rockland, Thomaston, Camden, and sections of Owls Head and South Warren. The Town of Rockport represents 17 percent of the company's customer base.

Water is transferred from Grassy Pond through Mirror Lake via a pumping system. The combined safe yield capacity of these supplies is 4.2 million gallons per day, according to Aqua America. The current daily demand is 3.1 million gallons per day. Aqua Maine projects that the available supply capacity is projected to meet regional needs for 20 to 40 years.

Aqua Maine maintains an active watershed monitoring and protection program aimed at protecting the quality of the source water. Water treatment is provided at a central treatment facility on Route 17 in Rockport at the east end of Mirror Lake.

Critical Areas and Habitat

For a complete analysis of Rockport's high-value plant and animal habitats, see the "Beginning with Habitat" map, prepared by the Maine Natural Areas Program and available at the Rockport

Town Office (or online at the town's website) in the resource documents "Beginning with Habitat."

The Maine Department of Inland Fisheries and Wildlife has designated the entire perimeter of Grassy Pond to be Significant Wildlife Habitat to waterfowl and wading birds. On the southwest shore lies IF&W designated High-Value Habitat for U.S. Fish and Wildlife Service Priority Trust Species (all migratory birds, anadromous/catadromous and certain coastal fishes, and federally listed endangered and threatened species).

There is a floodplain with shrub/scrub wetlands at the northern end of Grassy Pond. Heminway Brook floodplain also contains a wetland, as do several other segments of the pond's floodplain. The gravel aquifer is adjacent to the pond and partially within the floodplain.

There are six forested open wetlands within the watershed, several in the pond's floodplain. The two largest wetlands are on the eastern and western boundaries.

On the west side of Ragged Mountain, which slopes down to Grassy Pond, lies a large deer wintering area, as well as grassland, shrub lands, and barrens designated by the state as significant habitat.

There are also scenic views from the top of Pleasant Mountain, and from the tops and the saddle of Spruce Mountain.

Grassy Pond is rich with wildlife. Moose and deer winter on the higher elevations and descend to the pond. Trout live in Heminway Brook; loons and other waterfowl are on the pond in the wetlands along Heminway Brook.

Land Use

There are scattered homes in the Grassy Pond watershed. Route 17, a state arterial highway, runs close to the northern edge of Grassy Pond.

Utilities

Central Maine Power has its Section 86 line running across the northwest side of Grassy Pond.

Aqua America has an access road to Grassy Pond, and there are several snowmobile trails. A water transmission line also runs from Thorndike Brook to Mirror Lake.

The water company owns approximately 630 acres of land within the watershed.

Mirror Lake Watershed

Mirror Lake is the primary source of water for Consumers Maine Water Company, which provides public water utility service to customers in Rockport, Rockland, Thomaston, Camden, and sections of Owls Head and South Warren.

The Mirror Lake Watershed is entirely within Rockport town limits. This watershed is characterized by elevations of more than 400 feet, steep and wooded slopes, and little development. Consumers Maine Water Company owns the majority of the shoreline and much of the watershed itself.

Soils

Rocky outcrop (Lyman and Tunbridge) predominates, with some pockets of stony, fine, sandy soil (Marlow and Peru) west of Route 17. There is a small area of good farmland near the northwest corner of Mirror Lake, and there are some soils suitable for tree growth and blueberries.

Elevations

Elevations range from 375 feet at Mirror Lake to 1,300 feet at the top of Ragged Mountain. Most of the watershed is above 400 feet. With the exception of the northern and southern ends of Mirror Lake, the slopes are steep with cliffs along the shoulder of Ragged Mountain above the lake, and Spruce Mountain to the west. The watershed is primarily wooded.

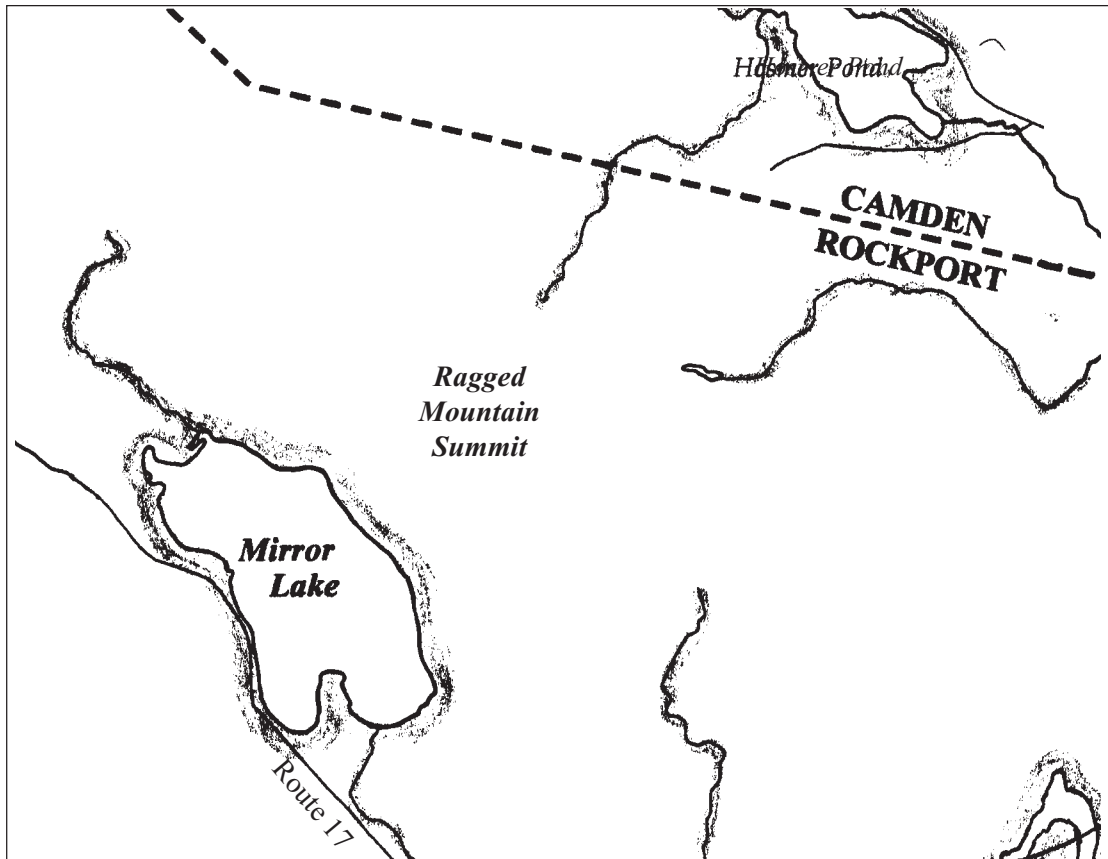
Water Quality

In addition to water from Thorndike Brook and Grassy Pond, there are three unnamed streams that drain into Mirror Lake. The outlet stream is one of the headwaters of Oyster River.

Mirror Lake has a surface area of 109 acres, drains a one square mile area. The maximum depth is 66 feet.

The combined safe yield capacity of Grassy

Mirror Lake Watershed



Pond and Mirror Lake is 4.2 million gallons per day, according to Aqua America. The current average daily demand is 3.1 million gallons per day. Aqua America projects that the available supply capacity is projected to meet regional needs for 20 to 40 years.

Aqua America maintains an active watershed monitoring and protection program aimed at protecting the quality of the source water. Water treatment is provided at a central treatment facility on Route 17 in Rockport at the east end of Mirror Lake.

Mirror Lake, is classified by the Maine Department of Environmental Protection as a Great Pond. The water quality of the three unnamed inlet streams is unspecified. No water recreational uses are permitted on Mirror Lake.

Critical Areas

Route 17 is a state designated natural area scenic view. The steep slopes and cliffs of Ragged Mountain up to 910 feet are in the Maine State Sce-

nic Area 7-52. There are four upland forested open wetlands. A portion of the watershed sloping toward Ragged Mountain has been determined as high-value habitat for U.S. Fish and Wildlife Service priority trust species (all migratory birds, anadromous/catadromous and certain coastal fishes, and federally listed endangered and threatened species. For more information, see the Habitat and Natural Areas Section of this plan.

Along the slopes of Ragged Mountain in an area that spans the Rockport-Camden town line there is Rocky Summit Heath, a rare grassland/shrub land/barrens designated by the Maine Department of Inland Fisheries and Wildlife as significant.

A large deer wintering area also spans the town line and is considered significant by IF&W.

Spruce Mountain is home to deer and moose.

Communication towers are atop the Ragged Mountain ridge and accessed from the Camden Snow Bowl in Camden.

Goose River Watershed

The Goose River Watershed covers about seven square miles, or 4,480 acres. It is considered a major watershed and extends into Camden, and includes Hosmer Pond, one of the headwaters of the Goose River.

The four-mile-long Goose River meets eight tributaries as it meanders down to Simonton Corner. From there to the culverts under Main Street and Route 1, Goose River broadens into a wide floodplain. Prime farmland, tree growth farms, woodlots, a golf course, and homes are all within the watershed.

The Goose River, which is also spring-fed, then passes beneath Main Street and empties into Rockport Harbor.

Soils

Prime farmland soil runs along the Goose River and its tributaries between Park and Main

streets, the junction of Cross and West streets, off of Route 1 near the Camden town line and in scattered pockets, and along Meadow Street.

Hydric soils are concentrated in the area bordered by Park Street, the Camden town line, Route 1, and Main Street.

Swanville soils are on the eastern side of Cross Street and scattered elsewhere throughout the watershed.

Lyman Rock outcrop complexes are concentrated on the shoulder of Ragged Mountain and scattered elsewhere.

The Nature Conservancy owns an area of approximately 13 acres around two quarries on Main Street and a small area on Annis Lane.

Elevations

Except for the Goose River floodplain, the

watershed is above 100 feet in elevation. The majority of the watershed is between 100 and 300 feet in elevation.

The top of Ragged Mountain is 910 feet with slopes descending to 300 feet.

Beech Hill is 593 feet with a small, circular area of 500 to 700 feet and a larger area of 300 to 500 feet.

Slopes

Slopes of more than a 25 percent grade are on the shoulder of Ragged Mountain, on both sides of the Goose River before it empties into the harbor, and in isolated bands along Route 90 and Cross

Street, west of South Street between Beech Hill and Meadow Street, and in several places near Simonton Corner.

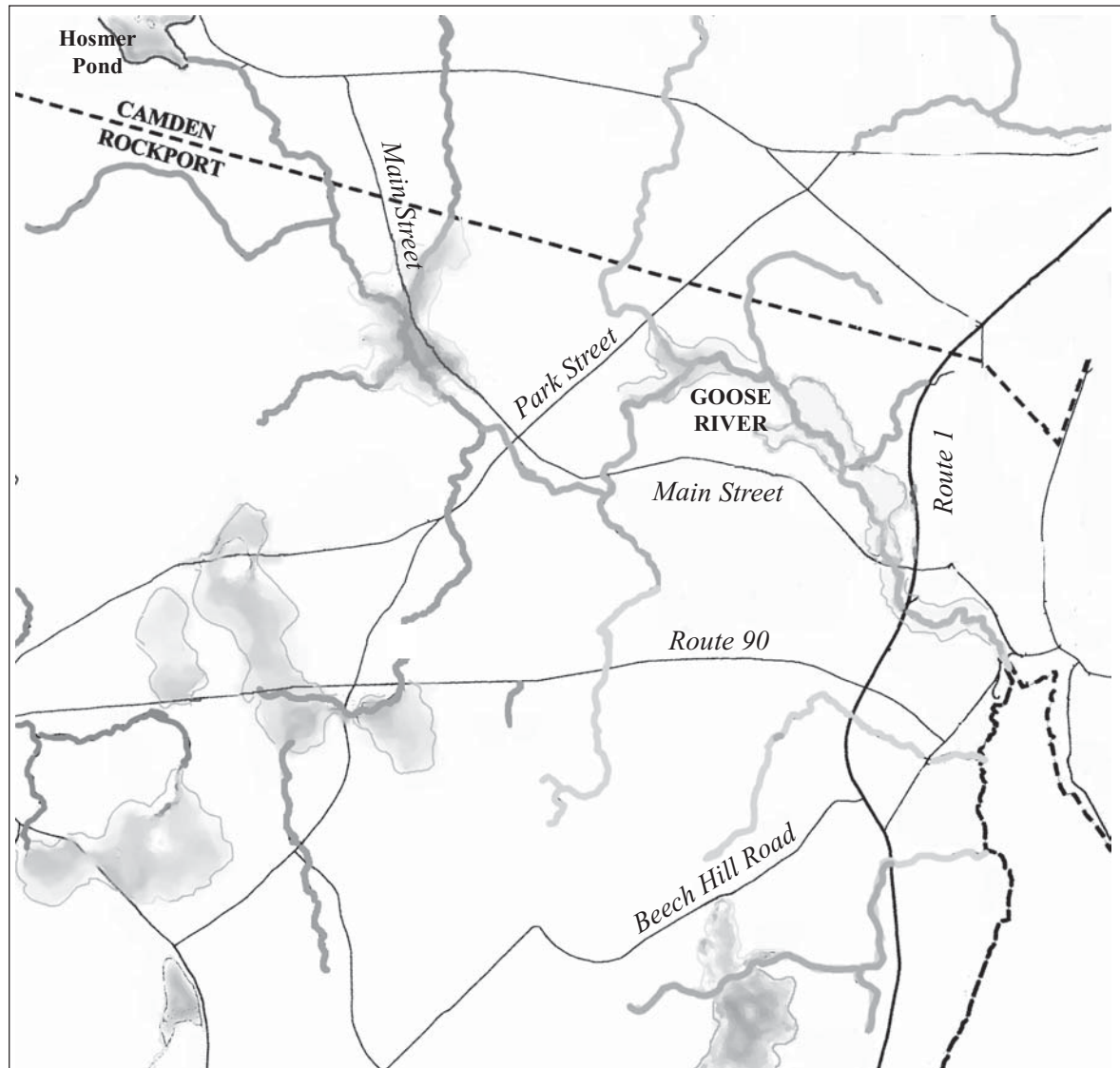
There are few areas of 15 to 25 percent slopes; 8 to 15 percent slopes are scattered in pockets.

Water Quality

Goose River and its eight tributaries drain the watershed. All of them have been classified as Class B by the state. (See page 107 for definitions of water classifications.)

In 1989, the Goose River floodplain had been studied in detail for approximately 1,400 feet upstream from Rockport Harbor to the crossing of

Goose River Watershed



Park and Main streets. The floodplains of the two tributaries had been delineated but the flood elevations had not been determined. At that point in time, a minor source of Goose River pollution had been traced to fertilizer from the Goose River Golf Course and emissions from automobile exhaust.

On October 16, 2002, a third grade class analyzed the Goose River at a point near the Goose River Golf Club and Merryspring Park. The class reported that the river had excellent clarity there, with a slightly orange tinge due to decomposing leaves at the bottom of the river. The shoreline vegetation there included alders, grasses, pickerel weed, wild clematis, elderberry, and a large swamp maple. There was also a ground hog burrow above the river bank.

The Goose River, the third graders reported, is mostly shaded and slow-moving. The bottom is covered with mud and sediment, and constantly decomposing vegetation lowers the amount of dissolved oxygen in the water.

The river is 2 to 3 feet deep and approximately 15 feet wide; during spring melt and rains, the river can rise to 6 feet.

Around the juncture of Annis Lane and Main Street, including part of the Nature Conservancy quarries, there is a 100 gpm hi-yield bedrock contour line. This area is bisected by the Goose River and a wetlands inside the floodplain.

Outside this contour line and tangential to it on the northeast corner is a 50 gpm hi-yield bedrock contour line. This extends to the west into another wetland and includes more of the Goose River wetland and floodplain.

There is a U-shaped 10 gpm bedrock yield between Park and Main streets, near the junction of Cross Street. Part of this is on the golf course.

Marine Water Quality

Whatever pollution flows down through the Goose River ultimately affects Rockport Harbor.

Critical Areas

There are 38 forested open wetlands in the Goose River watershed.

Portions of the Goose River wetland extending from the junction of Route 1 and Main Street to areas north and northwest are considered by the U.S. Fish and Wildlife Service and by the Maine Department of Inland Fisheries and Wildlife to be high-value habitat for priority trust species and habitat of statewide significance.

These areas are well delineated on the "Town of Rockport High Value Plant and Animal Habitat" map prepared for Rockport by the Maine Natural Areas Program for the "Beginning with Habitat" program.

The Goose River floodplain is designated as Significant Wildlife Habitat for waterfowl and wading birds.

The Goose River Golf Course and areas extending up through MerrySpring Gardens and over the town line are considered High Value Habitat for the U.S. Fish and Wildlife Service Priority Trust Species.

Further north in the Goose River watershed are similarly designated areas and are delineated on the "Town of Rockport High Value Plant and Animal Habitat" map.

Utilities

Central Maine Power's Section 49A crosses the watershed from west to east on its way to Camden.

The Maine Department of Transportation operates a maintenance area, with a sandpile, on Route 90, and borders a Goose River tributary.

Oyster River Watershed

West Rockport is in the Oyster River Watershed, which drains the southern slopes of Spruce and Pleasant mountains and eventually into the 700-acre Rockland Bog, the largest peatland complex in midcoast Maine.

Several small streams converge in the large wetland along West Street Extension.

The outlet from Mirror Lake runs along Route 17 to Route 90 where it joins the outlet from Rocky Pond and streams from Ragged Mountain. All of these streams flow into Tolman Pond (an artificial lake) and on into Oyster River.

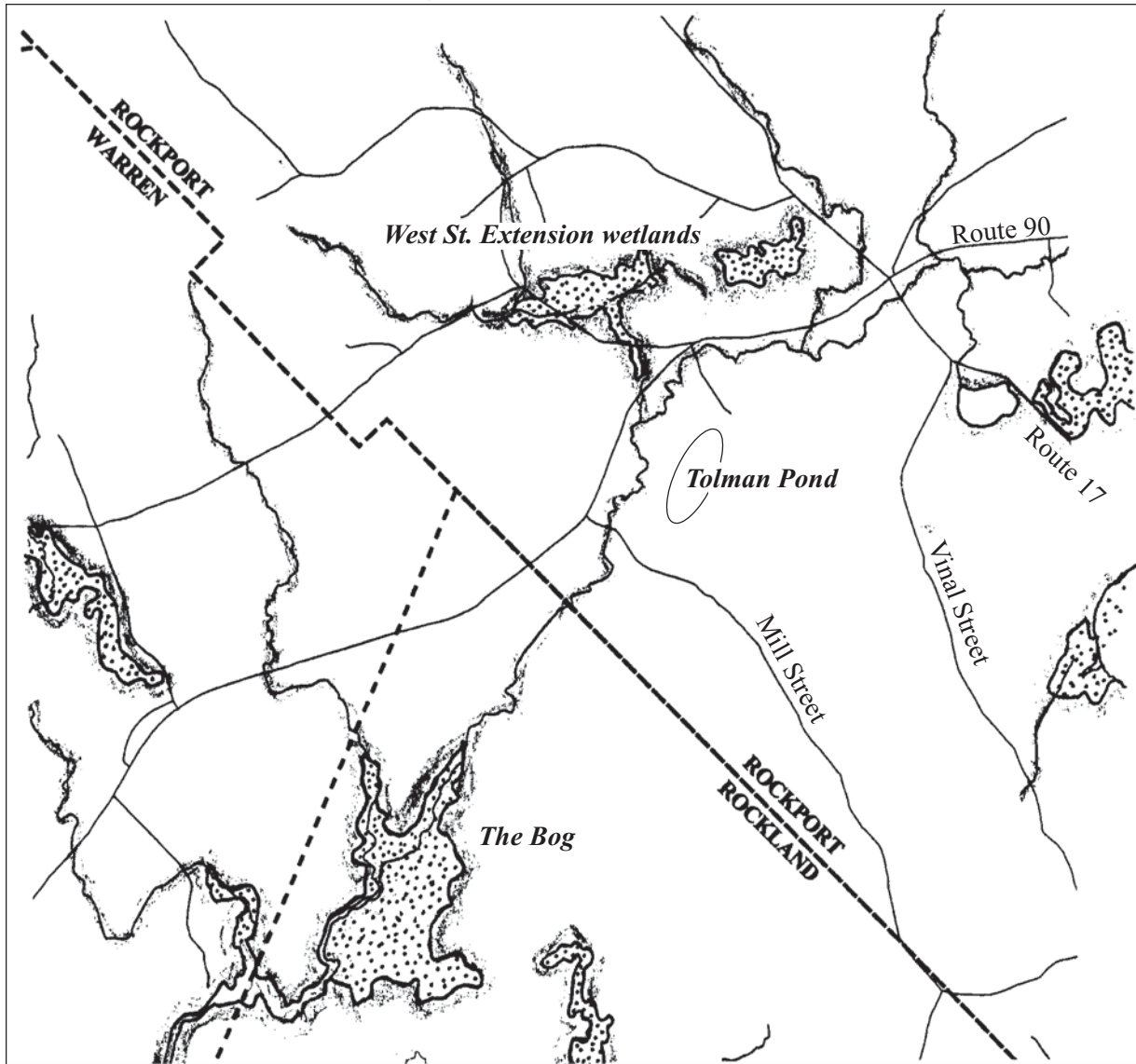
Rocky Pond is a state-designated "Great

Pond," whose water quality meets standards for a Great Pond. It is rated vulnerable to increased phosphorous concentrations.

The 35-acre Tolman Pond is the dominant hydrological feature of the Oyster River Watershed. Created 30 years ago by a trapezoidal dam constructed across the Oyster River Channel, Tolman Pond is the funnel through which all the water from the watershed drains.

The pond's location next to Route 90 and developments make it susceptible to run-off and pollution. Silt build-up and suspected high phosphorous levels create potential algae conditions.

Oyster River Watershed



The landscape is dominated by Spruce and Pleasant mountains. The community of West Rockport is centered at the junction of routes 17 and 90, where there are several commercial establishments, along with a fire station and post office.

Utilities

CMP Section 49 cuts through the gap between Pleasant and Spruce mountains and down the shoulder of Spruce as it descends to the Park Street substation. Section 86B parallels Section 49 through the gap, descends through the woods at the base of Pleasant Mountain, and crosses over to the Meadow Hill substation.

Soils

The dominant soil types are rocky outcrops (Lyman-Tunbridge complexes) and fine, sandy loams (Tunbridge-Lyman, Herman, Marlow, and Peru). Some of the loams are very stony. Ledges are on the steep mountain slopes and tops.

Hydric and prime farmland soils are scattered throughout the watershed. The sandy loams are suitable for low-bush blueberries, pasture, and tree growth.

A former lime quarry and kiln is located on West Street Extension.

Elevations

Elevations range from 200 to 1,000 feet with steep slopes on the tops of Pleasant and Spruce mountains. Blueberry fields and woods exist in the area.

Water Quality

Rocky Pond and Tolman Pond drain into the Oyster River through the outlet culvert of Tolman Pond. All the tributaries of Oyster River, the intermittent streams draining the mountains, and the Mirror Lake outlet pass into Tolman Pond. The pond's location next to Route 90 makes it susceptible to run-off and pollution.

Mirror Lake, Rocky Pond outlets, and the Oyster River tributaries currently meet Maine's Class B (third highest classification, suitable for fish-

ing, recreation, and drinking after treatment).

Critical Areas

There are 30 forested wetlands in the Oyster River watershed. The West Street Extension wetland is rated by the Maine Department of Inland Fisheries and Wildlife as significant for waterfowl and wading bird habitat.

The floodplain of the Mirror Lake outlet parallels Route 17; the Oyster River tributaries and Rocky Pond outlet floodplains parallel Route 90. There is a floodplain around the large wetland on West Street Extension, which is the catchment area for the streams from Spruce and Pleasant mountains.

There is a deer wintering area on the higher Spruce Mountain peak, and signs of moose on the Spruce Mountain saddle and adjacent wetland.

Land Use

West Rockport Village centers around the intersection of routes 17 and 90. These heavily-traveled highways dominate what was a former village area and have altered the community. People still walk to the post office, but the lack of sidewalks and high speed of traffic make this difficult. In spite of this, the West Rockport community is reasonably cohesive.

The village area is served by the Consumers Maine Water Company. There is a fire station, mixed development, commercial, and light industrial along Route 90. Route 17 is mixed commercial/residential.

With the exception of eight suburban-style subdivisions, land use in the Oyster River watershed remains moderately rural. Houses are strung along roads with fields and woods behind.

Three of the subdivisions are on the lower section of Mount Pleasant Street. A hillside subdivision extends up above Tolman Pond, and there is a planned subdivision for on Mill Street fields. There is also a plan for a traditional village development in West Rockport on Park Street.

Chickawaukie Lake Watershed

The 2,264-acre Chickawaukie Lake watershed includes parts of Rockport and Rockland with Dodge Mountain looming above the lake to the west and Bear Hill to the east. Eighty percent of the watershed is in Rockport. It includes the 29-acre Mace's Pond, and nine tributary streams within Rockport town lines.

Soils

Fine, sandy loams (Marlow, Hermon, and Tunbridge-Lyman) predominate. There are pockets of good farmland, especially along both sides of Route 17 between Mace's Pond and Chickawaukie Lake. Some are intermingled with pockets of hydric soil. Rocky outcrops are concentrated on the steep slopes on the western and eastern sides of Chickawaukie.

There is an old urban landfill between Route 17 and the lake across from the pasture and near the discharge of the Mace's Pond tributary.

Elevation

Elevations range from 123 feet at

Chickawaukie Lake to 584 feet on Dodge Ridge. The elevation of Mace's Pond is 253 feet. The Dodge Ridge line and the top of Beech Hill are over 500 feet high. The slopes of Dodge Ridge, and Bear and Beech hills are 300 to 500 feet. Much of the watershed is at approximately 300 feet. The lower land forms a natural corridor between Dodge Ridge and Bear and Beech hills. Route 17 and power lines cut through this corridor.

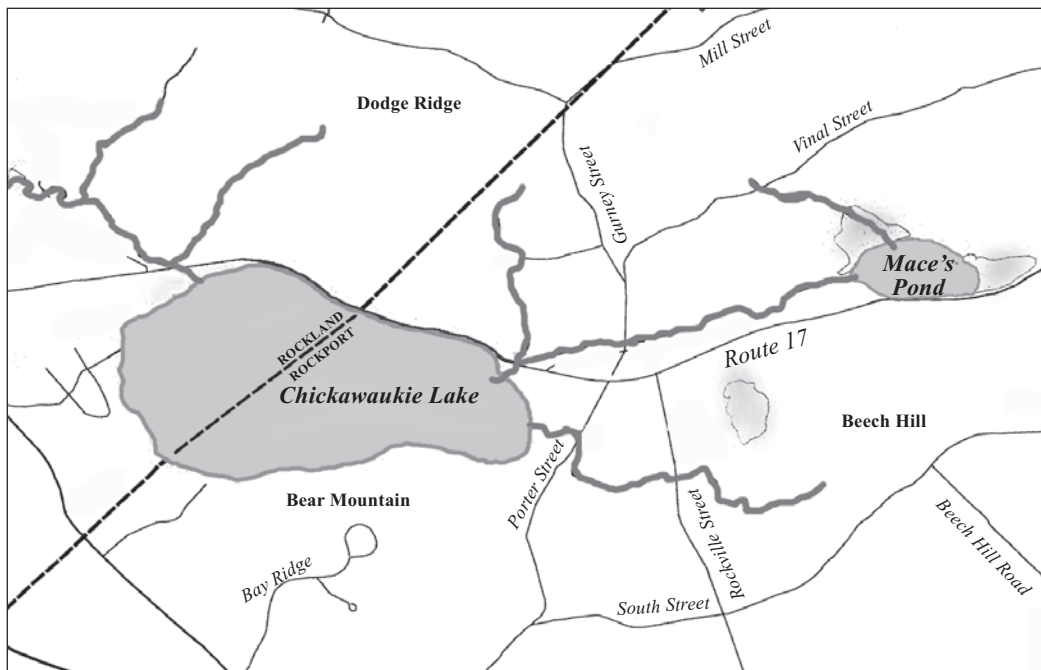
Steep slopes and cliffs rise above Chickawaukie Lake on the western side of Bear Hill and almost directly across the lake on the lower eastern side of Dodge Ridge above Route 17.

Dodge Ridge above Mace's Pond has blueberry fields and woodlands. There are some woods on Bear and Beech hills, and on the upper portions of Rockville and Porter streets, although there has been clearing and siting of many new homes over the decade of the 1990s.

Land Use

The watershed has varying degrees of development with the village of Rockville lying between

Chickawaukie Lake Watershed



old Rockland Street and Route 17, along the outlet stream from Mace's Pond.

Lakeside summer cottages, some of them now year-round, line portions of the shore, subdivisions have crept into former meadows and up Bear Hill. Individual homes have been built along the area's roads, and the older homes in Rockville all combine to make the watershed moderately populated. There remains some open land and pastures, and some blueberry fields under production.

Water Quality

Chickawaukie Lake

Chickawaukie Lake is approximately a half-square mile in size, and lies 123 feet above sea level just 1.5 miles from the seacoast. The lake is an emergency non-potable water source for Aqua Maine, Inc. (see page 125 in the Water Resource section). Approximately 70 percent of the lake's 352-acre surface area is in Rockport. The lake has a maximum depth of 33 feet with a mean depth of 20.5 feet. It flushes .788 times annually.

Chickawaukie Lake has, in the past, been rated "highly vulnerable" to increased phosphorous content. In 1993, it did not meet its assigned Great Ponds Water Act water quality standard.

The Maine Department of Environmental Protection has placed Chickawaukie Lake (along with Grassy Pond and Mirror Lake) on its Non-Point Source (NPS) Control Program list. (www.state.me.us/dep/blwq/1&whome2.htm) The fundamental objective of the list is to identify waters to help direct NPS water pollution control efforts. Listed waterbodies have both significant value from a regional or statewide perspective, and water quality that is either impaired, or threatened to some degree due to nonpoint source water pollution from land use activities in the watershed.

The quality of Chickawaukie Lake water, and the appearance of algae, has concerned the state and town over the past three decades. Old and deficient septic systems were repaired and upgraded during the early 1990s, farm fertilizers were contained, and a state and local collective effort ensued to im-

prove the water quality and eliminate the phosphorus from the lake.

In June 1992, aluminum sulfate and sodium aluminate were sprayed underwater along 248 acres of the lake bottom below 12-15 feet to break the cycle of phosphorus growth. Improvements were noted by Maine Department of Environmental Protection over the decade of the 1990s, and monitoring by the DEP continues every summer.

Contributing to Chickawaukie's vulnerability is its shape, which is bowl-like, creating more bottom area for phosphorus to accumulate, and its limestone bedrock. That limestone provides a more fertile environment; hence, more algae.

Despite the water quality improvement, Chickawaukie, along with the ponds of Lily, Mace's and Rocky, and Mirror Lake are considered by the Maine Department of Environmental Protection to be waterbodies in Rockport that are most at risk from new development and are sensitive or threatened regions or watersheds. Any potable water supply (Mirror Lake) is automatically on the DEP's sensitive list.

Under the Site Location of Development Act Title 38 M.R.S.A, Section 480-D (effective July 1, 1997) and under the DEP's Stormwater Management Rules (effective January 1, 1998), the DEP rated these waterbodies and watersheds for risks, the DEP considered such factors as potential future growth and water quality degradation.

The Department of Environmental Protection (DEP) has developed a systematic method that towns can use to assess the impact of a proposed development on their lakes water quality. This method is called the Phosphorus Control Method and is designed for lake watersheds only. By performing the calculations in the method for lake watersheds, towns can determine the acceptable level of phosphorus that each of their lakes can handle before a noticeable change in water quality occurs. Municipalities can then set a water quality standard for increased phosphorus from new development for each individual lake. The figures used in the method have been calculated by the DEP. This goal is expressed as the allowable increase of phosphorus export per acre (per acre phosphorus allocation).

Mace's Pond

Mace's Pond, with a surface area of 25 acres and a depth of 10 feet, is upstream from Chickawaukie Lake. Its outlet is the major tributary of Chickawaukie Lake. Mace's Pond has wetlands with waterfowl habitat on the northern and southern ends, and along Route 17 to the east. Route 17 and a scenic turnout are close to the pond.

Mace's Pond is rated highly vulnerable to increased phosphorous content. The pond is lightly used for recreational canoeing and boating, and brown trout have been known to hide in the pond's deep holes. The pond is not stocked.

The outlet stream of Mace's Pond flows from the pond's southern tip through a wetland, down through Rockville, and tumbles down a steep, picturesque pasture on the west side of Route 17. The stream then travels beneath Route 17, around an old landfill, and into Chickawaukie Lake. The stream is fished for trout in the spring.

Wetlands

There are approximately 30 wetlands, most of them forested or open, in the watershed. The largest are around Mace's Pond and near the Rockville Cemetery.

There is a large wetland between Porter and Rockville streets. Loons use the lake, herons fly over Bear Hill, and deer travel along the slopes of Dodge Mountain and Bear Hill.

Critical Areas and Habitat

The flood plain of Mace's Pond encompasses some of the wetlands at the northern and southern end. The Chickawaukie floodplain is narrower due to the steeper slopes that rise above it.

The northern end of Chickawaukie Lake is a designated rare animal habitat (New England Bluet) of special concern and a rare animal location of special concern, according to the Maine Department of Inland Fisheries and Wildlife.

The northern end of Chickawaukie and some areas along some of the tributaries are considered high value habitat for U.S. Fish and Wildlife Service priority trust species (see Habitat Resources section). Those areas are mapped and listed in the

"Beginning with Habitat" document prepared for Rockport by the State of Maine.

A large portion of Mace's Pond is designated waterfowl and wading bird habitat and confirmed species habitat by IF&W. That portion also includes high value habitat for U.S. Fish and Wildlife Service priority trust species.

Approximately half of the 10gpm bedrock well yield contour line is in the Chickawaukie watershed. The line extends from the northern end of Chickawaukie to near the Penobscot Bay shoreline just north of Clam Cove.

Land Use

Rockville, tucked along Old Rockland and Gurney streets and to the west of Route 17, used to be a bustling village with stores and a church. Today, there is little commercial development, aside from the Green Thumb, and little community activity. A few churches are in the area, and there has been an increase in single-family homes in the Rockville area over the past decade.

Rockville, along with Route 17 and Old Rockland Street, is served by Consumers Maine Water Company.

Subdivisions

There are nine suburban-type subdivisions in the watershed, plus two more that are partially in the Chickawaukie watershed and partially in the Oyster River watershed.

Utilities

Section 49 of Central Maine Power more or less parallels Route 17, then climbs up a shoulder of Bear Hill, and extends over into the coastal watershed.

Recreation

Chickawaukie is heavily used for sailing, wind-surfing, boating, fishing, swimming, and in the winter, for ice-boating. A public swim area, Johnson Memorial Park, lies on the lake's southern end, in Rockland.

Brewster Point Watershed

This watershed lies within the larger Rockland Harbor watershed. Essentially a flat, low-lying coastal plain, the watershed in Rockport includes one small stream and several intermittent tributaries that flow into Penobscot Bay at the Samoset Resort.

Soils

Fine, sandy loams are interspersed with pockets of good farmland soil. There are several areas of hydric silt loam. There is some pasture land, but no rocky outcrops.

Elevation

All of the Brewster Point watershed is under 100 feet of elevation. Except for some narrow bands of 25 percent slope at the head of Brewster Point and along the shoreline on either side of the point, the whole watershed is fairly flat. An escarpment lies at Jameson Point.

Streams and tributaries

The unnamed stream and tributaries that originate near the Rockland town line and that flow into Penobscot Bay are part of the “All Coastal Streams” classification of “C.”

Land Use

The Samoset Resort occupies a large portion of the watershed, as well as the Eastward subdivision, single-family homes along Warrenton Street, and the newer homes in the

Clam Cove subdivision.

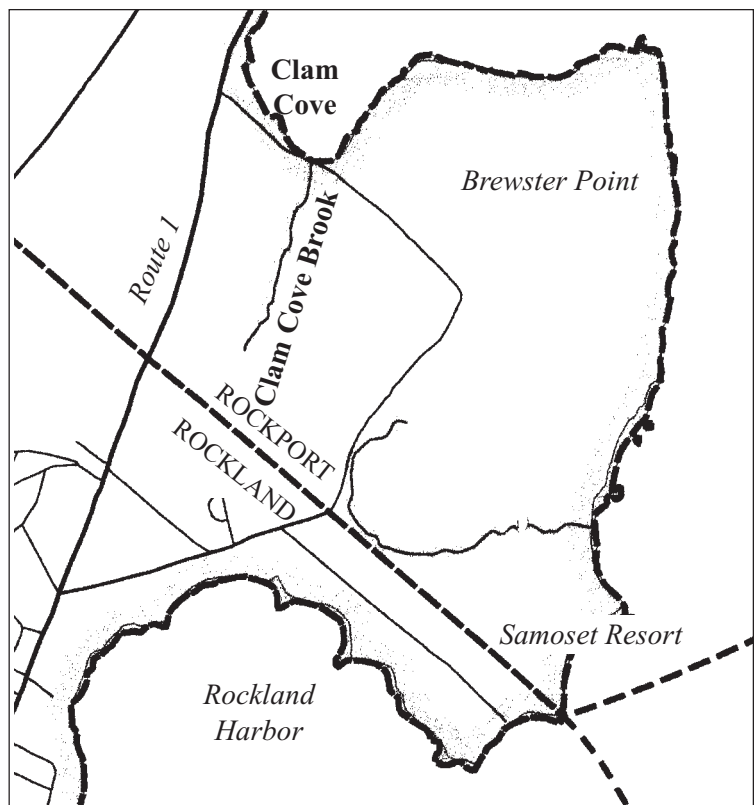
Rockland’s commercial district, which includes Wal-Mart and several other stores with large footprints, also lies within the watershed, as does a mobile home development located at the Rockport/Rockland town line and in Rockport.

Wetlands

The Brewster Point watershed has seven areas of wetlands.

Critical Areas and Habitat

There are two areas on Brewster Point that are considered high value habitat for U.S. Fish and Wildlife Priority Trust Species. The areas are notable for their grass, shrub, and bare ground, which offers habitat to all migratory birds.

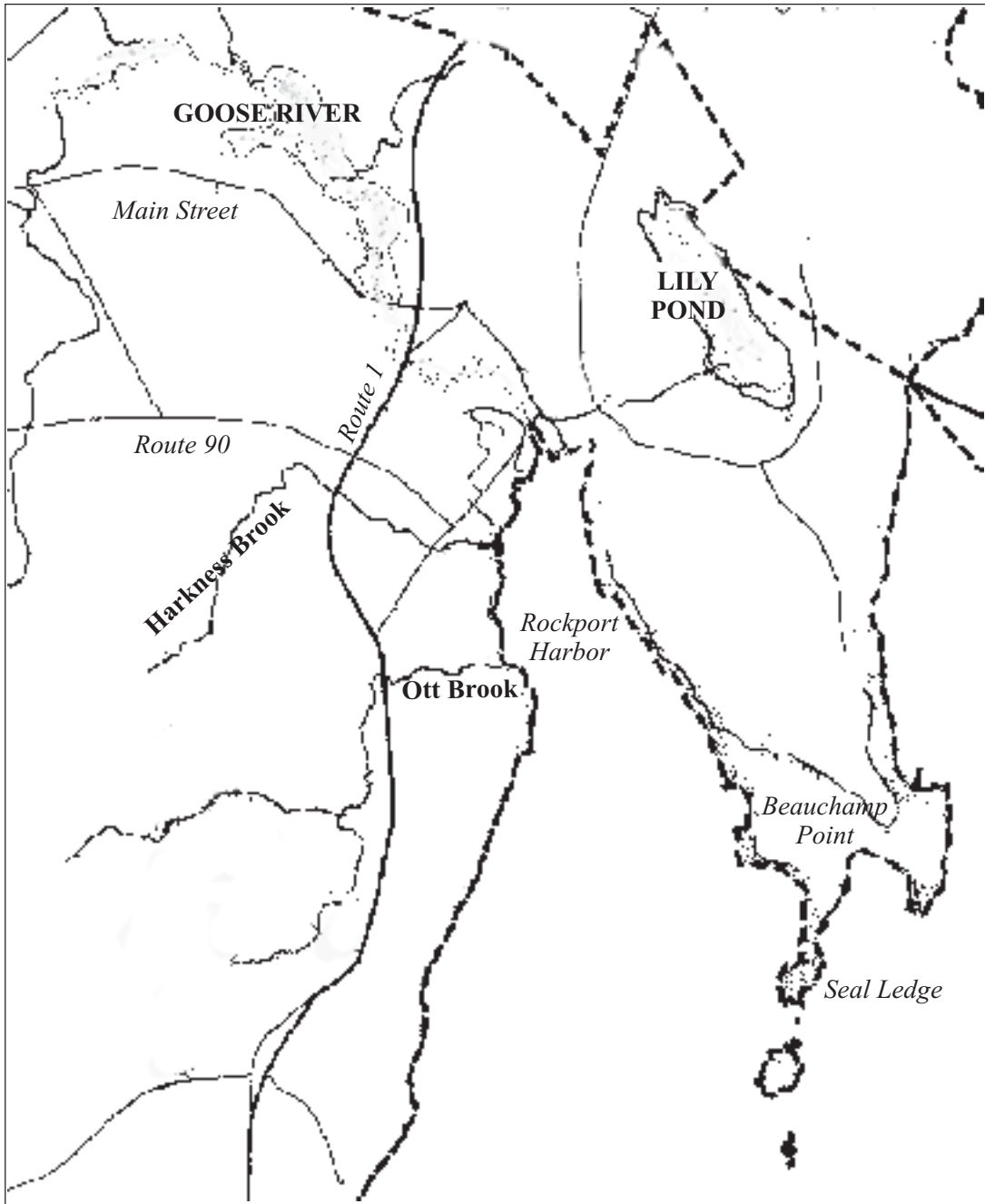


Coastal Watershed

The coastal watershed extends from Beauchamp Point all the way down to Clam Cove and the Brewster Point Watershed. Parts of it can be considered belonging to different and distinct Rockport watersheds, and yet all eventually empty into the Penobscot Bay.

Rockport Village is nestled around Rockport

Harbor at the northern end of the coastal watershed. The neighborhood of Glen Cove is at the southern end. The Coastal, Goose River, and Lily Pond watersheds converge where the Goose River enters Rockport Harbor. Parts of Rockport Village are in the Lily Pond watershed, other parts lie in the Goose River watershed.



From north to south, the following brooks, creeks, and streams empty through the watershed into the ocean: Harkness Brook, Ott Brook, Varmah Creek, Oak Park, and Clam Cove Brook. There are also several smaller, unnamed streams that drain, some of which through culverts, into the bay.

Rockport Village is the most densely populated area of town and is connected by Route 1 to Glen Cove.

Soils

Lyman-Rock outcrop and Tunbridge complex series of soils are concentrated along the coast on Babcocks Point below Pine Hill, on the eastern slope of Beech Hill above Rockville Street, and in a north-south band from Route 90 to Rockville Street west of Commercial Street.

There is prime farmland between Beech Street and Route 90, along Rockville Street from South Street to Route 1, and around Clam Cove. Some hydric soils are intermingled with prime farmland in these areas. There are urodorthents-urban land complexes near Pine Hill, along Route 1 near the Crestwood Motel, and south of where the Goose River empties into the Rockport Harbor.

A cattle farm lies along Rockville Street at the junction of Old Route 1.

Elevation

With the exception of Bear and Beech hills, which reach elevations of 300 to 500 feet (Beech Hill reaches 553 feet), most of the watershed has elevations of 100 to 300 feet.

Slopes

Steep slopes of more than 25 percent rise above the coastline from the head of Rockport Harbor to the head of Oakland Park Cove, and along the southern part of Clam Cove, around Brewster Point, and down to Babcocks Point. Clam Cove has a few narrow, steep strips, as does Bear Hill near the junction of Porter and South streets.

The eastern side of Beech Hill has alternating bands of 15 to 25 percent slope and areas of more than 25 percent slope.

Coastline

The dominant feature of the intertidal coast-

line is ledge interspersed with sloping surfaces of boulder in the lower tidal zone (boulder ramps). In Rockport Harbor there is ledge and mud flats, and where Ott Brook enters the outer harbor, there is a sand beach with an intertidal boulder ramp.

At Roxmont, there is a gravel beach and at Oakland Park Cove, there are three areas of gravel beach with intermingled ledge.

Clam Cove is shallow with considerable diversity in its intertidal environment. (See Clam Cove in the Marine Resources section for more information.) The shoreline is predominantly a beach there with a wide variety of sediment, mostly fine, and is protected from high waves (a low-energy beach) with ledges at the head of the cove.

Mud flats run out seaward from the ledge and beach areas into areas of accumulated sediment where waves swash onto the flats (swash bars). On the northern edge of Clam Cove lies a triple-decker sandwich of a low-energy beach, boulder ramp, and mud flats. The other side of Clam Cove, near Brewster Point, is a gravel beach.

Fresh Water Quality

The Coastal watershed drains through four streams that run west to east and enter the ocean between Rockport Harbor and Babcocks Point, and one stream that runs south to north and drains into the head of Clam Cove.

Harkness Brook and its intermittent tributaries drain the watershed north of Beech Street, passing through three wetlands.

Ott Brook drains along Route 1 between South and Beech streets. Originating on the 300-foot elevation shoulder of Beech Hill, it passes through a large wetland. One tributary passes through two wetlands and a small pond before joining Ott Brook. Together, they drain two more wetlands before entering the ocean.

Varmah Brook is short, running from Route 1 near Megunticook-by-the-Sea Campground into the ocean. Its five intermittent tributaries drain the area along Rockville Street and east of South Street, including a small wetland.

Oakland Park Brook and intermittent tributaries drain the area east of South Street and north of Porter Street. One of its tributaries originates in a wetland, which is located at the tangential junc-

tion of the 200 gpm and 50 gpm bedrock well yield contour lines.

Approximately half of a 10 gpm bedrock well yield contour line is in the Coastal Watershed, running from South Street over to Oakland Park along Route 1, and back to near the junction of South and Porter streets. Within that area is a shorter 50 gpm yield contour line centered on Porter Street at a 200-foot elevation. Within that area is a short 200 gpm yield contour line, which is almost a perfect circle. Its circumference is tangential with the 50 gpm contour line on the east and west, and on the south with both the 10 and 50 gpm yield lines.

The convergence of two high-yield bedrock well contour lines, a wetland, and a stream originating in the same location south of Porter Street at a 200-foot elevation suggests the possibility of a bedrock aquifer.

Clam Cove Creek drains the medium-sized wetland next to Route 1 and two small wetlands that lie west of Warrenton Street. The creek is a tidal creek in the mud flats.

All these creeks are rated as "Class C," by the Maine Department of Environmental Protection.

Marine Water Quality

Clam Cove

Pollution, primarily residential discharge, officially shut the mudflats for shellfish harvesting on May 18, 1962. In 1978, Clam Cove was re-opened for clamming, but then closed again in 1984 due to poor bacteriological water quality.

The Glen Cove sewer, which hooks into the Rockland City sewer system, runs along Route 1 from South Street to the Rockland city line, and includes the Romaha Trailer Park and along Warrenton Street to the right-angle corner near the Eastward on the Ocean subdivision. Since 1990, Rockport has taken water samples and considered a shellfish management program that would include reseeding Clam Cove with clams. In 1996, the Shellfish Conservation Committee reported that there was renewed interest in a clamming restoration project in Clam Cove; however, the committee also reported high fecal coliform counts and concluded, "We have some big problems in identifying the sources of pollution and dealing with them

before worrying about how to get clams to grow there."

In 2002, a renewed effort by the town to determine whether the cove could once again be home to shellfish and other marine resources was made, and water samples from five different streams that empty into Clam Cove were collected. The results were discouraging, as one state official reported: "I was surprised to see that the P90 data for the 30 most recent samples collected for the years 1992-1997 was actually better in 1997 than it is today. It seems hard to believe that with all the new sewer work that has gone on in this area the water quality has gotten worse."

In 2003, there remains uncertainty about the potential for clam production in Clam Cove. Issues such as the extent of continued pollution from the stream under Warrenton Road, and other sources, as well as the presence of predator populations hold back the commitment of human and economic resources to a clam restoration project.

While the mudflats beneath the tidal Clam Cove are rich with benthic activity and highly productive — worms and other invertebrates thrive there — the land-side soils along the Clam Cove shore are shallow and low in nutrient content.

However, severe erosion of the past has somewhat stabilized, thanks to a re-established plant growth, whose roots hold the soil and encourage nutrients to leach back into the soil.

The bedrock, which lies along the furthest edge of the midcoast region of Maine's coastal geology, is the type of bedrock that causes problems in pollution control because pollutants — sewage and otherwise — follow the path of least resistance, finding cracks in the bedrock and run unfiltered into the cove.

Although once extensively rich in clams, the mudflats now have a small population of clams. There is, though, an extensive mussel bar that forms a reef of living mussels. The mussels are an important food source to marine and bird life.

To protect the natural habitat of Clam Cove, the 1989 report encouraged the town to monitor pollution, including non-point source pollution (run-off due to increased development and impervious surfaces) from vehicles, salt on Route 1 and Warrenton Street, and commercial developments south and west of the cove. The report also warned

of run-off from fertilized lawns.

The report also encouraged the town to protect wetlands surrounding the streams, and to seek conservation easements on the lots adjacent to the cove. A 1991 wetlands map created by Normandeau Associates identifies a medium-sized wetland around the source of Clam Creek and a smaller wetland along Route 1 in Glen Cove. This indicates a large wetland area with interlocking and contiguous wetlands from Rockville Street to beyond Beech Street. Those wetlands include the source of both Ott and Harkness Brooks. The study area also indicates a convoluted small wetland along Ott Brook, west of Route 1 near the junction of Pascal Avenue.

“If development is allowed along the cove, there will be a great deal of siltation and erosion into the cove, which will continue to pollute the area. The wildlife will disappear from the wooded areas as more disturbance occurs because of a loss of habitat and food source,” the town report said.

Rockport Harbor

Rockport Harbor has an SB classification, according to the Maine Department of Environmental Protection. This means the water is suitable for recreational purposes, as well as aquaculture, shellfish harvesting, and navigation. The marine, fish, and estuarine habitats are characterized as unimpaired and discharges to SB classified waters shall not adversely impact those habitats.

When the sewer was installed in the harbor, removing residential wastewater and combined sewer storm runoff. Rockport Harbor, in particular, also has non-point source pollution from marine activities, such as oily wastes, bottom paint, and wharves, as well as from parking lots, roads, and lawns.

The mudflats at the head of Rockport Harbor are marine wetlands. With the coastal floodplain around the tip of Beauchamp Point, Indian Island, and Lowell Rock, there are marine intertidal rocky shore wetlands within the floodplain.

The Lily Pond outlet is a shallow man-made canal approximately eight feet wide that descends through a wetland where it is joined by an intermittent tributary from the west. From behind the Rockport Public Library, the outlet continues beneath Russell Avenue and enters the head of the

harbor behind Rockport Marine via a culvert.

Floodplains

The coastal floodplain includes Ram Island and the harbor. Its elevations range from 17 to 20 feet in Clam Cove and Rockport Harbor to a high of 37 feet near Varmah Creek. Because the shore is exposed to the east and southeast, it is vulnerable to wind and wave swash. There is moderate to heavy wave action along the coastline.

Wetlands

There is a wetland around the source of Clam Creek and a smaller wetland along Route 1 in Glen Cove. These are part of a larger wetland area with interlocking and contiguous wetlands that extend from Rockville Street to beyond Beech Street. Those wetlands include the source of both Ott and Harkness brooks. There is also a smaller wetland along Ott Brook, west of Route 1 near the junction of Pascal Avenue.

There are 35 open, forested wetlands; two intertidal rocky shores; two intertidal beach bars; and at Clam Cove, an intertidal flat wetland within a floodplain.

There is also a marine wetland along the southern shore of Clam Cove out to Babcock’s Point. Ram Island has contains a wetland.

Critical Areas and Habitat

Ram Island

Ram Island, which sits less than a mile off of Glen Clove, is identified as a Sea Bird Nesting Island Number 63-323 by the Maine Department of Inland Fisheries and Wildlife. Ram Island has also been identified as an important seal haul-out and is a Class A Coastal Wildlife Concentration Area. It is also identified as a wetland.

The town has identified Ram Island as especially significant in conjunction to the habitat of Clam Cove because of its nesting status. Efforts to secure the island as a protected natural resource zone are crucial to the preservation of a large portion of the bird life in Clam Cove.

Portions of the shoreline from Beauchamp

Point down toward Clam Cove, and a large area that extends seaward into the water in Clam Cove and around Brewster Point is considered by the Maine Department of Inland Fisheries and Wildlife as significant wildlife habitat for tidal waterfowl and wading birds.

The Harkness Preserve is home to a stand of American Chestnut trees and is a rare plant location considered habitat of statewide significance, according to IF&W. Ott Brook runs through the southern corner of these woods, which are accessible by public trail.

Portions along the Harkness and Ott brooks and extending through some stands of woods are forested wetlands considered high value habitat for U.S. Fish and Wildlife Priority Trust Species. The areas are notable for their forested wetlands, which offers habitat to all migratory birds and other threatened species.

Land Use

Section 49 of Central Maine Power goes

Lily Pond Watershed

Lily Pond (once called Neck Pond) is the dominant feature of this watershed, and lies partially in Camden. Rockport Village is the dominant area, making the Lily Pond Watershed the most densely populated watershed in Rockport. In the watershed lies a golf course, subdivision, and a cattle farm.

The high end of the watershed, where the Midcoast Solid Waste Transfer Station, the quarries filled with demolition debris, and the Penobscot Bay YMCA are located, drains into Lily Pond. The western coastal areas, from the Goose River discharge (the three-watershed junction) around to the tip of Beauchamp Point, drain into Rockport Harbor.

The Lily Pond outlet drains into the head of Rockport Harbor via a culvert. Another unnamed stream enters the harbor a short distance from the east.

The Lily Pond outlet is a shallow man-made canal approximately eight feet wide that descends through a wetland where it is joined by an inter-

around Bear Hill and through Glen Cove before crossing into Rockland. The Fox Island Electric Co-op Cable take-off point is in the Bay Ridge subdivision above Old County Road.

There are more than 19 subdivisions in the coastal watershed, varying in size from three to 20 or more lots.

For the decade of the 1990s, Route 1, which runs through the Coastal Watershed, was zoned commercial and was the town's designated growth area. Route 1 is home to residential homes, medical offices, a hospital, bowling alley, car lot, retail stores, restaurants, nurseries, automobile repairs, service businesses, and light industry.

Glen Cove is heavily residential and commercial, and borders the commercial district of Rockland. Route 1 in this area is strip development.

In 1999, 2000, 2001, and 2002, Rockport voters considered and adopted various ordinances addressing the control of strip development and the aesthetics of commercial enterprises along Route 1, as well as Route 90.

mittent tributary from the west. From behind the Rockport Public Library, the outlet continues beneath Russell Avenue and enters the head of the harbor behind Rockport Marine via a culvert.

At the head of Rockport Harbor is a beach of mixed sediments with some marsh grass (a low-energy beach) and mud flats where the Lily Pond outlet discharges. Most of Beauchamp Point is ledge with gravel; there is boulder beach around Seal Ledge Cove, and at Beauchamp Point Cove there is a sand beach surrounded by ledge and an area of large boulders, which slopes downward.

Elevations

The northern end of Lily Pond has an elevation of 96 feet. Both sides of the Lily Pond outlet, the head of Rockport Harbor and down to Spear Street, a narrow band along the middle of Beauchamp Point, and all of the end of Beauchamp Point have elevations of 100 feet or less. There are two hills on Beauchamp Point with elevations of

102 and 192 feet. The rest of the watershed has elevations of less than 200 feet.

Soils

The predominant soils are fine, sandy loams (Tunbridge-Lyman series) with a few areas of stony, fine, and sandy loam.

Near the Beauchamp Point cove are pockets of prime farmland. There are two more pockets of such land alongside the Lily Pond outlet, and another near Winter Street.

There are several areas of hydric Swanville soil near Lily Pond and nearby prime farmland soils (Boothbay silt loam). Rocky outcrop complexes (mainly Lyman rock outcrop Tunbridge series) are along both sides of Union Street, and along the Beauchamp Point shoreline extending inland in the middle of the point, and around the northern edge of Lily Pond.

There is an area of urban land complex at the head of Rockport Harbor near the Lily Pond discharge. There is a complex of dump pits on the southeast shore of Lily Pond. Hydric soil is on the eastern side of the inlet from the dump pits complex to Lily Pond.

Slopes

While most of the Lily Pond Watershed is fairly flat, there are a few stretches of steep slopes along Beauchamp Point from the harbor to the Seal Ledge and around Seal Ledge Cove.

Fresh Water Quality

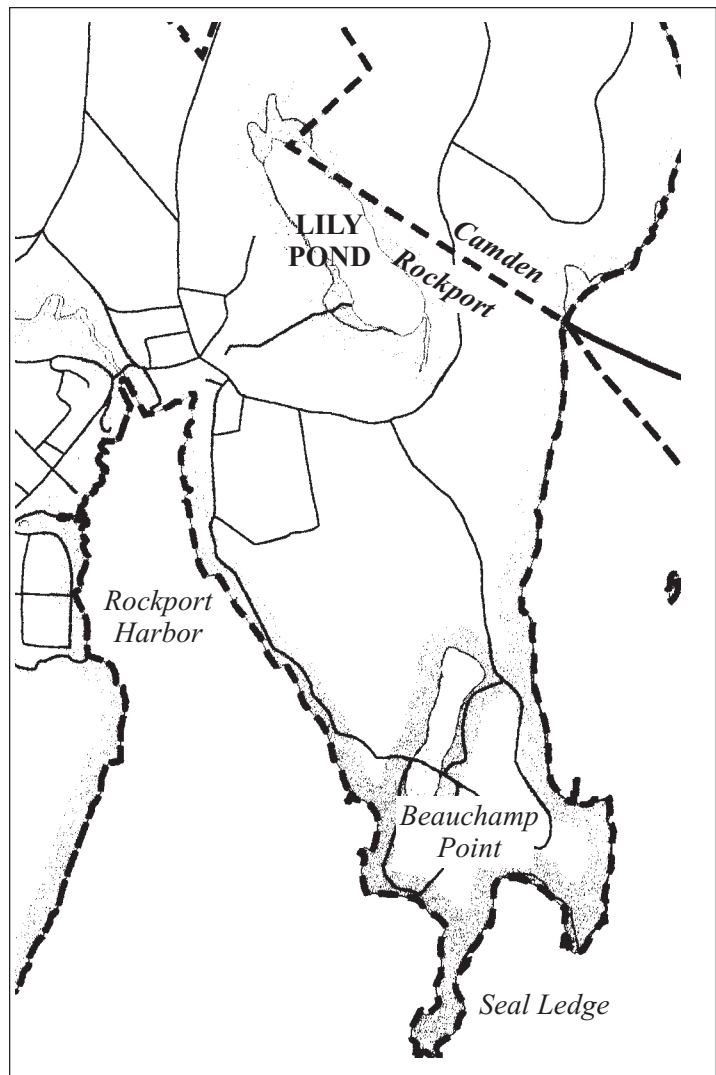
Lily Pond has a surface area of 25.5 acres, a maximum depth of 24 feet, and an average depth of 12.5 feet. The pond drains a 186-acre area (85 percent lies within Rockport), and flushes once a year. A 1987 study (Civil Engineering Services, Brewer, "Report on Jacobs Quarry and its Effect on Lily Pond Watershed") estimates that 61 to 75 percent of the Lily Pond is from ground water; the quarry discharge into the pond accounts for 10 to 16 percent of the pond water; and the southern canal near Russell Avenue accounts for 4 to 7 percent.

Lily Pond is eutrophic with culturally induced algal blooms and a stable water

quality trend. There are four causes of the algae blooms: leachate from Jacob's Quarry, Canada geese and cows on Russell Avenue.

Lily Pond is not stocked for fish, but has white perch, chain pickerel, hornpout, suckers, and American eels. Water lilies cover a portion of its surface. In the past, the Maine Department of Inland Fisheries and Wildlife has recommended managing the pond for warm water fish.

Three streams flow into Lily Pond. From the north and Jacobs Quarry, a stream runs through an emergent wetland and marsh. The stream also drains woods and the Midcoast Solid Waste Transfer Station. Pollution from the transfer station, and underground water contamination from the quarries that have been filled with refuse and demolition debris, has concerned the Maine Department of Environmental Protection for a decade. The



quarry discharge has been estimated to contribute 10 to 16 percent of the water in Lily Pond.

In 2001, the DEP rejected a proposal from the Midcoast Solid Waste Corporation to pump the dirty water out of the quarry at the transfer station. The pumping proposal was submitted to the DEP in an attempt to convince the DEP to issue a license for disposal of demolition debris in MCSW's Jacobs Quarry. The MCSW demolition debris dump, which currently accepts waste from towns outside the MCSW membership, has operated under a DEP consent decree since 1993. The decree required that MCSW apply for a formal license for the operation.

The DEP refused to grant the license, putting MCSW in a position of drafting a closure plan for the quarry dump. The license was denied for fear that leachate would contaminate nearby groundwater. The MCSW proposed pumping the water and treating it at the Camden sewage treatment plant.

A minor second inflow to Lily Pond, through the marshy area at the northern end, is a seasonal stream draining the area west of the pond toward Union Street.

The third and last primary inflow at the southern end is a man-made drainage canal that begins near Russell Avenue and crosses a wetland where migratory Canadian geese rest before entering the pond. The canal drains 25 percent of the Lily Pond drainage area, much of it the Aldemere Farm cow pastures. Several storm water catch basins on Russell Avenue and Calderwood Lane drain into the canal.

This canal is shallow, approximately eight feet wide, and descends through a wetland where it is joined by an intermittent tributary from the west. The stream travels behind the Rockport Public Library, down beneath Russell Avenue, and enters the harbor via a culvert.

Marine Water Quality

Rockport Harbor has an SB classification, according to the Maine Department of Environmental Protection. This means the water is suitable for recreational purposes, as well as aquaculture, shellfish harvesting, and navigation. The marine, fish, and estuarine habitats are characterized as unimpaired and discharges to SB classified waters shall not adversely impact those habitats.

The sewer was installed in the harbor, where it removed residential wastewater and combined sewer storm runoff. Rockport Harbor, in particular, also has non-point source pollution from marine activities, such as oily wastes, bottom paint, and wharves, as well as from parking lots, roads, and lawns.

Floodplains

There is a narrow floodplain around Lily Pond except at the southern end (around Russell Avenue).

The marine coastal floodplain includes the head of the harbor from an imaginary line that extends from the Sea Street beacon to the shore below Spear Street. From the Ledges to where the Beauchamp Point Road tracks inland, the floodplain is narrow. It widens at Seal Ledge to the tip of Beauchamp Point. This area is open to the south and subject to wave action and swash.

Wetlands

The entire southern part of Lily Pond is a wetland that lies partially in the floodplain.

There is a wetland that extends from Jacobs Quarry along the outlet stream to Lily Pond, with an arm extending from Limerock Street to Union Street. There are five more small wetlands in the watershed and a larger wetland near Vesper Hill (Children's Chapel).

The mudflats at the head of Rockport Harbor are marine wetlands. With the coastal floodplain around the tip of Beauchamp Point, Indian Island, and Lowell Rock, there are marine intertidal rocky shore wetlands within the floodplain.

Critical Areas and Habitat

The entire Lily Pond and a wetland area that extends toward the Lily Pond subdivision is considered waterfowl and wading bird habitat of statewide significance by the Maine Department of Inland Fisheries and Wildlife. A southern portion of the watershed has grass, shrub, and bare ground considered by the U.S. Fish and Wildlife Service to be high-value habitat for priority trust species. In that same area are forested wetlands also rated the same by the U.S. Fish and Wildlife.

Water Resources

There are more than 5,800 lakes and ponds in Maine of which about 3,500 are larger than 10 acres in size and are known as Great Ponds. Great Ponds fall under the jurisdiction of the State of Maine. Great Ponds cover about 1,000,000 acres or about five percent of the State of Maine; a size comparable to the entire state of Rhode Island. These ponds provide outstanding opportunities for recreation, fishing, seasonal and year round homes.

The Great Ponds are public waters of the State of Maine, and belong to the people of Maine. The State of Maine has delegated much responsibility for comprehensive planning and shoreland zoning to the town level. There is little federal involvement in the control of Maine's Great Ponds or shoreline.

Rockport has seven Great Ponds: Grassy Pond, Mirror Lake, Tolman Pond, Rocky Pond, Mace's Pond, Lily Pond, and Chickawaukie Lake.

Rockport Lakes and Ponds Are on Maine's Protection List

Under the Site Location of Development Act Title 38 M.R.S.A, Section 480-D (effective July 1,

1997) and under the Maine Department of Environmental Protection's Stormwater Management Rules (effective January 1, 1998), the DEP placed all of Rockport's great ponds – Chickawaukie Lake, Grassy Pond, Lily Pond, Mace's Pond, Mirror Lake, and Rocky Pond – on its 1997 Non-Point Source (NPS) Control Program list. (www.state.me.us/dep/blwq/1&whome2.htm)

Additionally, Hosmer Pond, in Camden, which is the source water for the Goose River Watershed, is also on the list. The list also includes portions of the St. George River's coastal wetlands, into which the Chickawaukie Lake feeds.

The fundamental objective of the list is to identify waters to help direct non-point source water pollution control efforts. The entire list consists of 180 lakes out of a total of 2,314 significant lakes in Maine. Listed waterbodies have both significant value from a regional or statewide perspective, and water quality that is either impaired, or threatened to some degree due to nonpoint source water pollution from land use activities in the watershed. They are considered to be waterbodies

Rockport Ponds and Lakes

Name	Size (in acres)	direct drainage (in acres in Rockport)	Flushing rate times/year
Chickawaukie Lake	352	1,321	.77
Grassy Pond	188	961	3.84
Lily Pond	29	150	1.2
Mace's Pond	29	516	6.9
Mirror Lake (Oyster River Pond)	109	753	.72
Rocky Pond	10	153	3.6
Tolman Pond	38	2,463	28.58

Rockport also has four unnamed ponds that are one and two acres in size.

Source: Maine Department of Environmental Protection, 1996

most at risk from development and are sensitive or threatened regions or watersheds.

This means that Maine’s stormwater quality standards and site location standards require extra permitting for developments that substantially affect the environment.

Local groups that are developing or implementing watershed management plans in “Non-Point Source Pollution Priority Watersheds” are likely to receive additional technical assistance from state and federal agencies.

Mirror Lake and Grassy Pond are sources of public drinking water for the midcoast area and are managed by Aqua Maine (see next page).

Drinking water for businesses and residents not served by Aqua Maine use groundwater wells as their source. Groundwater is fed by surface water run-off and existing aquifers. Rough estimates indicate that approximately a little more than 50 percent of Rockport’s population draws water from dug and drilled wells and the rest secure water through Consumers Maine. Damage to those sources effect not only quantity but the quality of individual water sources.

While just a little more than half of the homes in Rockport are supplied by bedrock aquifers, it is rare to find any that are highly productive and due to their low yield, they are not used for municipal water supplies. Sand and gravel aquifers are more productive than bedrock, but due to the composition of soil in Rockport, there are no identified sand and gravel aquifers.

Maine Water Classification System

The state has established a water quality classification system to monitor and protect water quality. All of Maine’s water bodies are divided into categories:

- rivers, streams, and small ponds
- ponds with more than ten acres of surface area
- coastal and tidal waters
- groundwater

Within each category, waters are assigned a

Water Quality of Rockport’s Ponds and lakes, 1996	
Name	Water Quality
Chickawaukie Lake	poor/restorable
Grassy Pond	moderate/sensitive
Lily Pond	poor/restorable
Mace’s Pond	moderate/stable
Mirror Lake (Oyster River Pond)	good
Rocky Pond	moderate/sensitive
Tolman Pond	moderate/sensitive

Source: Maine Department of Environmental Protection, 1996

class rating of AA (best), A, B, and C. These ratings are then used to determine limits on licensed discharges of pollutants. All of Knox County waters draining directly or indirectly into tidal waters of Knox County, with the exception of the St. George River basin, are Class B, unless otherwise specified.

Class B, the third highest classification, are suitable for designated uses of drinking water after treatment, fishing, recreation in and on the water, industrial process and cooling water supply, hydro-electric power generation, navigation, and unimpaired habitat for fish and aquatic life.

Discharges to Class B waters shall not cause impact to aquatic life in that the receiving waters shall be of sufficient quality to support all indigenous aquatic species and biological community.

Additionally, an “Anti-Degradation Policy” provision is intended to prevent further decline of Maine’s waters. According to the policy, no license may be granted which authorizes additional discharges into a water body that doesn’t currently meet the minimum standards of its classification.

The effects of poorly-planned development on water resources

Undisturbed land, particularly wooded and wetlands, act like a sponge absorbing rain and snow melt. Once land is developed and soils are stabi-

lized with lawn, buildings, asphalt, and concrete, the land and water resources are permanently altered. Covering permeable soils with impervious materials, such as homes, parking lots, and streets, prevents rainwater and snowmelt from soaking into the earth. This infiltrating rain and snowmelt serves as the source of water entering most wetlands and streams during dry weather. As impervious areas increase within a watershed, the volume of groundwater flowing into the wetland or stream decreases, and what results, besides reduced groundwater recharge and flow, is non-point source pollution, generated and exacerbated by runoff of rainwater and snowmelt.

A decline in recharge may also affect the amount of water available to those who rely upon wells.

The water which once soaked into the earth becomes stormwater runoff after impervious areas are constructed. This runoff washes large quantities of pollutants from rooftops, streets, and parking lots. Stormwater pollutants include nutrients, salt, oil, oxygen-consuming materials, and toxics, such as copper, lead, and zinc. Many of these contaminants settle from the atmosphere and accumulate upon impervious areas until the next rain washes them into a nearby waterway.

Other sources include: car and truck exhaust; fertilizers and pesticides applied to lawns; corrosion of metal downspouts and gutters; and a host of other sources.

Converting a forest to homes on one-acre lots can result in a 12-fold increase in nutrient loads. Such a nutrient increase could cause algae to proliferate in a downstream lake or tidal waterway.

As algal populations build water clarity declines, which has resulted in the loss of aquatic grasses and a dramatic shift in the species inhabiting the water body. The U.S. Environmental Protection Agency has found that the copper, lead, and zinc are frequently present in runoff from impervious areas that are at a concentration which will kill or injure aquatic organisms.

In addition to chemical contaminants, run-

PHOSPHORUS POLLUTION

The most serious problem for Maine lakes is phosphorus pollution, the major cause of cultural eutrophication. Phosphorus is a natural element found in soil and in lake sediments. Fertilizers, detergents, manure, and sewage contain concentrated phosphorus that can be carried into lakes by stormwater (rainwater run-off). When roads, houses, and lawns replace forested terrain, the flow of rainwater increases carrying with it additional and sometimes destructive amounts of phosphorus and sediment.

Once in a lake, phosphorus nourishes algae and allows the algae to multiply into a "bloom." When the algae die, they fall to the bottom, decompose, and deplete oxygen in the process. There are two serious consequences of oxygen depletion. First, loss of oxygen kills the cold water species such as trout and salmon living near the bottom. Second, the loss of oxygen causes a chemical change to occur in lake sediment that frees additional phosphorus to feed the bloom.

Any lake or pond in bloom loses its appeal for swimmers and boaters and property values may plummet. There is usually no indication of a water quality problem to the casual viewer until an algae bloom occurs, at which point it becomes far more difficult to correct than it would have been to prevent.

The Department of Environmental Protection (DEP) has developed a systematic method that towns can use to assess the impact of a proposed development on their lakes water quality. This method is called the Phosphorus Control Method and is designed for lake watersheds only. By performing the calculations in the method for lake watersheds, towns can determine the acceptable level of phosphorus that each of their lakes can handle before a noticeable change in water quality occurs. Municipalities can then set a water quality standard for increased phosphorus from new development for each individual lake. The figures used in the method have been calculated by the DEP. This goal is expressed as the allowable increase of phosphorus export per acre (per acre phosphorus allocation).

off from impervious surfaces, such as roads and parking lots, also carries other forms of pollution such as heat. Runoff from an asphalt road or parking lot may have a temperature of 83°F or more in the summer. Sensitive species such as trout prefer a temperature of 68°F or less and begin dying when water temperature reaches 77°F.

Higher phosphorous levels degrade water quality and reduce property values. In areas where impervious surfaces are less than 10 percent of total surface area, there is relatively little degradation. Above that 10 percent coverage threshold the water quality tends to deteriorate.

Non-point source pollution is prevented by retaining natural drainage to the greatest possible degree. It can be mitigated by the use of retention ponds in, for example, residential and industrial subdivisions. Retention ponds, however, only remove a portion of NPSP pollutants.

Recommended strategies for preventing non-point source pollution include:

- preserving open space
- building subdivisions that concentrate housing in a particular area and leave more of the land in a natural state will reduce non-point source pollution. For example: In a planned 100-acre subdivision, the permitted 50 homes would be concentrated on 25-50 acres, and the amount of impervious surfaces are kept to a minimum, then the open space and ground

retain the ability to absorb rain water and snow melt.

- **Building Site Design:** On each building site certain design features can also assist in mitigating non-point source pollution. Those features include:
 - 1) The use of mounded dirt islands
 - 2) Minimal lawn (less fertilizer)
 - 3) The use of native plants
 - 4) Providing for stormwater infiltration
- **Reduced and Modified Parking Requirements:** Smaller parking lots reduce the amount of impervious surface. But, perhaps more importantly, in some cases those parking areas could be constructed of porous paving blocks. They would allow for water to be absorbed rather than running off. Another technique that could be required to reduce the damage from parking lot runoff would be the inclusion of filtration boxes to remove pollutants.
- **Roads:** Along roadways keep natural buffers on either side to assist in trapping and absorbing the runoff.
- **Erosion Control:** Highway, municipal, construction site erosion control is essential in reducing non-point source pollution.

Aqua Maine, Inc.

Please see the appendix for the 1998-2007 Long Range Facilities Plan of Aqua Maine (formerly Consumers Maine Water Company. See also the March 2003 Aqua America report for the Maine Public Drinking Source Water Assessment Program.

Aqua Maine serves a midcoast population of 22,000 through 7,300 service connections. The Town of Rockport represents 17 percent of this customer base. In 1993, the Rockport Comprehensive Plan reported that the water company served approximately 7,000 connections, indicating that the number of customers has increased by 4 percent over last decade.

The 2,684-acre watershed of Mirror Lake and Grassy Pond is located in Rockport, Camden, and Hope. Thorndike Brook is the principal stream drainage that discharges into Grassy Pond, or when diverted, discharges into Mirror Lake. Approximately 88 percent of the watershed is in forest growth. Aqua Maine owns 1,100 acres surrounding both the lake and the pond. The ownership includes 81 percent of Mirror Lake watershed and 65 percent of the Grassy Pond watershed. The entire shoreline of both the lake and pond are included in this protective ownership. Additional safeguards for land use are provided in Rockport through the Shoreland Zoning Ordinance and a Watershed Overlay District. Shoreland zoning is also established in Camden and Hope.

Mirror Lake and Grassy Pond are sources of public drinking water for the midcoast area, and Chickawaukie Lake serves as an emergency, non-potable source for Consumers Maine. Mirror Lake is the primary source, and is supplemented by water from Thorndike Brook and Grassy Pond, which feeds Mirror Lake via a transmission line from Thorndike Brook.

Both Mirror Lake and Grassy Pond have well-protected watersheds, according to Aqua Maine, due in large part to the significant land ownership of the water company.

No significant land use threats were identified during the 2003 reconnaissance of the watershed. Aqua Maine has agreements that provide certain protections along Route 17 and along the power line corridor. However, the

lake and pond are somewhat susceptible to potential impacts from runoff and accidental spills related to vehicles traveling along the road in close proximity to the water.

The company maintains an active watershed monitoring and protection program aimed at protecting the quality of the source water. Water treatment is provided at a central treatment facility on Route 17 in Rockport at the easterly end of Mirror Lake.

The Mirror Lake intake is used as the primary source for water. The intakes at Grassy Pond and Thorndike Brook are used to supplement the supply. The water is used as an unfiltered source with chlorination, flouride, and corrosion pH treatment prior to entering the distribution system. The raw water is monitored by Aqua America and the re-

Aqua Maine – Since 1885

The Camden and Rockland Water Company was organized in 1885 under an amendment to the original charter granted by the State of Maine. After incorporation, the central elements of the present system were constructed, and consisted of an intake at Mirror Lake, a 10-inch transmission line to Rockland, and a branch to Camden and Rockport. The company also built the Juniper Hill reservoir in Rockland and the Chickawaukie lake pump station, and a portion of the distribution system.

In 1895, the company acquired the property of the Rockland Water Company, which had been incorporated in 1850 to serve what was then the Rockland village. In 1959, Consumers Water Company, of Portland, acquired the Camden and Rockland Company through the majority of the stock.

Today, the company, now named Aqua Maine, is a subsidiary of the publicly-held Aqua America, Inc (formerly Philadelphia Suburban Corporation). Aqua America is the nation's largest U.S.-based, investor-owned water utility, providing water and wastewater services to approximately two million residents in Pennsylvania, Ohio, Illinois, New Jersey, Maine, and North Carolina. Aqua America's common shares are traded on both the New York and Philadelphia Stock Exchanges under the ticker symbol "WTR."

sults show good water quality from the source.

In March 2003, Aqua Maine reported: "Based on the largely undeveloped nature of the watershed, extensive ownership by Aqua Maine, existing zoning protection, recreational and land use controls, and local public awareness, the overall susceptibility of the Mirror Lake and Grassy Pond water supply is considered to be low."

The combined safe yield capacity of Mirror Lake and Grassy Pond is 4.2 million gallons per day. The current average daily demand is 3.1 million gallons per day. Consumers Maine projects that the available water supply capacity will meet the water supply needs of the region for 20 to 40 years.

Aqua Maine also holds water rights in Rocky Pond in Rockport, Fish and Hobbs ponds in Hope, and to the Megunticook River and Megunticook Lake in Camden.

The water distribution system in Rockport serves two areas of town: Rockport Village and Glen Cove, including Penobscot Bay Medical Center and the Samoset Resort.

The distribution system can generally provide adequate pressure to serve areas in Rockport below an elevation of 200 feet above sea level.

From Mirror Lake, water is distributed to homes and businesses along routes 17 and 90 to the Rockport Village distribution system. Mirror Lake provides system pressure in Rockport Village and provides water for fire protection, emergencies, and peak demand flows.

The transmission system to the Glen Cove area is along Route 17 to the two-million Juniper Hill storage tank in Rockland. The distribution system in this area coincides with Rockland's north end distribution system.

Penobscot Bay Medical Center is supplied from Route 17 via Rockville and South streets. A control valve at Power House Hill allows water to supplement the Glen Cove area and Juniper Hill during high demand.

Filtration Waivers and Consumers Maine

The U.S. Safe Drinking Water Act requires that all surface supplies used as public water systems are filtered. However, the State of Maine Drinking Water Program allows water systems to avoid fil-

tration if certain criteria can be met, particularly raw water quality standards and active watershed management.

Aqua Maine currently operates under a "filtration waiver." There is, however, no guarantee that this waiver will continue due to a change in federal or state laws, or a change in water quality. With the loss of a waiver, Consumers Maine is likely to build a filtration plant at the existing Mirror Lake location.

Long-Range Plans

Aqua Maine believes the water system has sufficient capacity to serve additional residential and commercial customers in Rockport. Rules established by the Maine Public Utilities Commission govern the extension of the water system to serve new customers. Essentially, these rules require that the new customers pay for all costs associated with the extension of water service. The water utility is then allowed to invest in the extension based on a formula that recognizes the new revenues provided to the utility by the new customers served.

When lengthy main extensions are required to serve residential developments, the costs of extending water service is often greater than the cost of installing private wells. A benefit to municipality and to the property owners of extending the public water system is the ability to provide public fire protection to the development and Aqua America advises that this benefit should be considered by the municipality in its review of proposed developments.

In April 1998, Aqua Maine published a long-range facilities plan for its Camden-Rockland division. The plan identifies five goals for the 10-year period from 1998-2007. The goals are:

1. The development of additional source water capacity to insure the ability to provide a safe and reliable supply to all customers.
2. To provide the highest quality product possible.
3. To maintain a rate structure that provides an average residential water bill that is less than 1.4 percent of the median household income for the area.
4. To systematically address the water service needs of each of the seven communities served by the utility and to investigate the expansion

of service to new communities.

5. To maintain full compliance with all state and federal drinking water regulations.

To address those goals, the plan recommends the following projects or initiatives over the next 10 years:

1. Raise the level of Grassy Pond and reconstruct the pump station in order to increase the utilization of existing sources of supply.
2. Secure access to Megunticook River through land acquisition to insure that that future source remains a viable alternative for additional water supplies.
3. Enhance treatment processes to control taste and odor concerns.
4. Improve the company's emergency response plan to address source contamination threats.
5. Systematically replace sections of the distribution system in order to improve service pressure, flow, or water quality.
6. Participate in local economic development activities.
7. Insure compliance with the Long Term Enhanced Surface Water Treatment Rule.

The impact of those goals and initiatives on the Town of Rockport during the plan period are identified more specifically in the following projects:

1. A two-year capital improvement project along Route 1 in Rockport from Warrenton Street to the Rockland town line has been completed. This project was completed and involved replacement of old six-inch pipe with new 12-inch pipe at a cost of \$236,000.
2. The Grassy Pond Dam reconstruction and pump station upgrade was completed in 1999. The dam project raised the water level 18 inches, translating into approximately 120 million gallons of additional storage. The pump station project increased pumping capacity from 2.2 mgd to 4.5 mgd.
3. Approximately 2,000 feet of small diameter main was replaced with 16-inch on Route 1, south of Ben Paul Lane. This project was completed in 2000 with funding secured by the

Town of Rockport.

4. A five-acre parcel of land was acquired in Camden along the Megunticook River as a potential future site for water withdrawal and treatment.

Ongoing projects include:

1. Transmission improvements in the areas of Mirror Lake and the intersection of routes 17 and 90.
2. Comprehensive mapping and GIS system improvements.
3. Completion of a "Vulnerability Assessment" and an update of an emergency response plan, as required by the Environmental Protection Agency in the aftermath of September 11, 2001.
4. Exploration of treatment process alternatives to comply with new and upcoming regulations.

Each year, based on discussions with municipal officers and the Maine Department of Transportation, replacement projects are undertaken to address system improvements in a cooperative manner to lower costs and minimize inconveniences to the public. For example: Camden notified Aqua Maine of its intent to reconstruct Cross Street in Camden, including stormwater and sewer infrastructure. Working with the town's public works department, crews from Aqua Maine were able to replace an under-sized main and renew all service connections for a significantly reduced project cost.

This routine work, and the more significant projects identified above, will consume the capital available from Aqua Maine for public water system improvements in Rockport for the next five to 10 years. Further extensions or expansion of the public water system are possible, but most likely the company will need the involvement of Rockport or private developers to finance them in order to achieve the goal of water rate affordability.

Aqua Maine is eager to assist in pursuing public/private partner opportunities for water system improvements that benefit the community. Aqua Maine has completed public/private projects in Rockport, Freeport, Bucksport, Hartland, and Greenville.

Habitat and Natural Areas

In 2002, the Maine Department of Conservation, Maine Natural Areas Program, Maine State Planning Office, U.S. Fish and Wildlife Service, Maine Cooperative Fish and Wildlife Research Unit, Maine Department of Inland Fisheries and Wildlife, Maine Coast Heritage Trust, the Nature Conservancy, Southern Maine Regional Planning Commission, Wells National Estuarine Research Reserve, and Maine Audubon pooled resources and produced for Maine communities a collected series of documents and maps known as “Beginning with Habitat, An Approach to Conserving Maine’s Natural Landscape for Plants, Animals, and People.”

The “Beginning with Habitat” report, resources, and maps were developed principally to help guide municipalities in land-use planning efforts. The maps delineate state and federally designated habitat that is considered rare and valuable, collecting various strands of data, regulations, and guidelines. The intent of the “Beginning with Habitat” program is to conserve high-value habitats throughout towns by integrating natural resource information into planning. Conserving species through habitat conservation keeps species of con-

“Natural area” means any area of land or water, or both land and water, whether publicly or privately owned, that retains or has reestablished its natural character, though it need not be completely natural and undisturbed, and that supports, harbors or otherwise contains endangered, threatened or rare plants, animals and native ecological systems, or rare or unique geological, hydrological, natural historical, scenic or other similar features of scientific and educational value benefiting the citizens of the state.

cern from becoming endangered or threatened, and minimizes further additions to rare species lists.

Rockport’s “Beginning with Habitat” provides the town with a comprehensive look at what lands and water resources are currently considered important to a healthy wildlife population.

The following areas in Rockport have been identified as falling into various classifications outlined above. They are delineated on the map “Town of Rockport, High Value Plant and Animal Habitats,” produced by the Maine Natural Areas Program under the Maine Department of Conservation. These areas are also identified in the “Watersheds” section of this comprehensive plan.

The State of Maine and the U.S. Fish and Wildlife Service have different classifications of habitat and animals. See the following page for definitions of those classifications.

Categories of Wildlife Habitat

The State of Maine and the U.S. Fish and Wildlife Service have different classifications of habitat and animals. The following terms describe wildlife habitat that has special protection under current laws.

Federal

CRITICAL HABITAT for a threatened or endangered species is specific areas within the geographical area occupied by the species, on which are found those physical or biological features essential to the conservation of the species; and specific areas outside the geographical area occupied by the species that are essential for the conservation of the species.

State of Maine

ESSENTIAL HABITATS: state-designated habitats that are “currently or historically providing physical or biological features essential to the conservation” of endangered or threatened species.

SIGNIFICANT WILDLIFE HABITATS are habitats for species appearing on the official state or federal lists of endangered or threatened animal species; high and moderate value deer wintering areas and travel corridors; high and moderate value waterfowl and wading bird habitats, including nesting and feeding areas; critical spawning and nursery areas for Atlantic salmon; shorebird nesting, feeding and staging areas and seabird nesting islands; and significant vernal pools.

Categories of Wildlife Species

All wildlife species have been placed into one of the following categories. These categories are used among wildlife professionals as well as in many laws that conserve and protect wildlife.

Federal

ENDANGERED SPECIES: Any species that is in danger of extinction throughout all or a significant portion of its range.

A **THREATENED SPECIES:** Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

State of Maine

ENDANGERED SPECIES: Any species in immediate danger of extinction within its habitat in the state.

THREATENED SPECIES: Any species that will become endangered in the state if current populations experience further decline.

The state also tracks the status, life history, conservation needs, and occurrences of species that are considered “**RARE.**”

General

- Species **OF CONCERN** may be listed because they are particularly vulnerable to population decline due to restricted distribution or habitat loss, or because there is concern about the status of the species, but there is insufficient information to list it as endangered or threatened.
- **GAME SPECIES:** Wildlife that can be hunted and/or trapped during a restricted season with permits.
- **NONGAME SPECIES** are all wildlife that cannot be hunted or trapped.

Rare Animal Habitat and Location in Rockport

Chickawaukie Lake, western and northern ends, has been identified as habitat and location of the **NEW ENGLAND BLUET**, a dragonfly rated of special concern by the State of Maine. The habitat area and buffer area spreads in a wide circle into the lake, as well as on the adjacent shorelines and upland from the lake.

THE NEW ENGLAND BLUET is restricted to emergent vegetation along shallow lakeshores, often with coarse substrates of sand and gravel. Individual bluets can move several hundred meters, depending on wind direction and speed. In limited sampling, there appeared to be a relationship between shoreline development and bluet presence, with bluets tending to occur more often along less

developed lakeshores. A key land management consideration is the type of lakeshore vegetation; bluets seem attracted to old field vegetation adjacent to lakeshores, while avoiding closely mowed grass. Thus, where development abuts waterways, retention of an un-mowed strip at least several meters wide would be favorable for this species.

Northern, eastern, and southern shores of Chickawaukie Lake are also determined to be **HIGH-VALUE HABITAT** of more than five acres for U.S. Fish and Wildlife Service's Priority Trust Species. That habitat includes grass, shrub, and bare ground, as well as forest and forested wetlands.

Rare or Exemplary Natural Communities in Rockport

Ragged Mountain, which straddles the Rockport/Camden town line, is home to the rare natural community of **ROCKY SUMMIT HEATH**, a bedrock of outcrops, ledges, and summits of igneous and high-grade metamorphic rocks. Two rare plants also share the habitat: **CRAWE'S SEDGE** and **SMOOTH SANDWORT**.

Maine IF&W has proposed that parts of Ragged and Bald mountains be protected (see appendix) from further development. At over 1200 feet in elevation, Ragged Mountain and Bald Mountain are imposing peaks in the western part of Camden. Both summits are capped by exposed bedrock, and the side slopes of both mountains are largely undeveloped. Together these peaks form the core of a 5,500-acre block of largely undeveloped lands.

Currently, Camden owns several parcels on Ragged Mountain, totaling over 280 acres (the east side is a ski area). The Coastal Mountains Land Trust owns 28 acres. Consumer's Maine Water Company owns several hundred acres around Mir-

ror Lake.

Camden operates a ski area on the northeast slopes of the mountain, and a communications tower is located on the summit above the ski slopes. A new hiking trail, completed in the fall of 1997, traverses the ridgeline. Much of the ridgetop is exposed bedrock that supports a 40 acre acidic rocky summit plant community. The bedrock outcrops are interspersed with spruce/fir forest, and further to the north, a 150-year-old but recently ice-damaged oak forest. A small population of the rare smooth sandwort (*Minuartia glabra*) grows near an exposed section of the hiking trail. The west-facing slopes of Ragged Mountain are 30 acres of steep acidic cliffs with talus slopes at the bottom. The forest beneath the cliffs contains patches of mature oak forest in the upper ravines.

The exposed southern face of Bald Mountain is similar to that described above, with characteristic plants including juniper (*Juniperus communis*), bearberry (*Arctostaphylos uva-ursi*), and low-bush blueberry (*Vaccinium angustifolium*).

Deer Habitat on Ragged Mountain

There is **one mapped DEER WINTERING AREA** on the northern side of Ragged Mountain, and another is mapped on the south side of Bald Mountain.

According to the Land Trust Assistance Project (a combined effort of the Maine Natural Areas Program, IF&W, Maine Coast Heritage Trust, and Maine Audubon), conservation measures in the Ragged/Bald mountains area should be addressed because:

- The coastal mountains have experienced rapid growth in the last decade (Krohn 1997), and many of the upland areas are under increasing threat. Growth and sprawl in rural areas contribute to habitat fragmentation, water quality degradation, and expansion of invasive plant species.
- Many of the higher elevation oak forests in this region — particularly stands facing the east and southeast — were heavily damaged by the January 1998 ice storm. In light of this damage, some landowners have undertaken heavy salvage cuts to offset possible economic loss. Woodlot owners considering such options should be encouraged to develop a long-term forest management plan with the guidance of a licensed forester.
- Old forests (i.e., greater than 100 years old) are becoming scarce in Maine. Retention of old for-

est stands and characteristics, such as coarse woody debris and standing snags, may augment habitat diversity and value.

- Particular attention should be given to protecting large parcels adjacent to already protected lands. (Most of Bald Mountain lies within a few large parcels.) Furthermore, conservation priorities within this focus area should also be influenced by the development threat of each tract. The development potential of several areas is limited by steep slopes, restricted access due to adjacent conservation lands, or both.
- The biggest threat to the summit peaks may be from two sources (1) the further development of communication towers and associated facilities, and (2) uncontrolled recreational use.
- Recreational use should be limited to existing trails.
- Crawe's sedge (*Carex crawei*), a small plant with only one other known site in the state, grows near the summit of the open ski slope in a gravelly seep. All previously documented Maine sites for this species have been in Aroostook County. This small population appears to be surviving in spite of the maintenance of the ski slope. It typically prefers moist open soils, and it probably occurred historically in other naturally open seeps in the area.

Rare Plant Locations in Rockport

Rockport Village, in particular the **HARKNESS PRESERVE**, is home to the **AMERICAN CHESTNUT** tree, a rare species and natural community location of special concern to Maine's Department of Inland Fisheries and Wildlife. The American Chestnut (*Castanea dentata*) is a forest tree with large, coarse-toothed leaves. In the past, specimens grew to 30 m in height, but now most are smaller, about 8 m. The edible nuts are enclosed in a spiny husk; several nuts per husk. Chestnut is distinguished from the similar beech (*Fagus*

grandifolia) by its longer leaves and petioles and its blunt buds. Though often confused in conversation, it is not closely related to the horse-chestnut (*Aesculus hippocastanum*), a widely planted non-native ornamental tree that has palmately compound, opposite leaves and showy white flowers. Formerly a dominant species of central hardwood forests, it is now limited to small specimens and sprouts from old stumps. It still occurs in all New England states but the trees often are killed by a fungus before they reach a large size.

Significant Wildlife Habitats and Species Location in Rockport

Significant wildlife habitats are protected under the Maine Natural Resources Act, which was effected in 1988 and was intended to prevent further degradation of certain natural resources of state significance.

WATERFOWL/WADING BIRD HABITAT:

Waterfowl habitats are characterized both seasonally and behaviorally as breeding habitat, migration and staging habitat, and wintering habitat. Wading bird habitat consists of breeding, feeding, roosting, loafing, and migration areas.

- All of Lily Pond, as well as a large area that extends toward the Lily Pond subdivision and the Camden town line
- A large area of the Goose River wetlands that lie adjacent to Route 1 and extend along Main Street to Park Street
- An area straddling Main Street and Annis Lane
- Portions of an area at the intersection of Route 90 and Meadow Street
- Wetlands along West Street Extension near Mt. Pleasant
- A large area extending over and beyond Mace's Pond
- All of Grassy Pond, its edges, and a northern portion that spills over into the Town of Hope.

TIDAL WATERFOWL/WADING BIRD

HABITAT: Waterfowl habitat is characterized both seasonally and behaviorally as breeding habitat, migration and staging habitat, and wintering habitat. Wading bird habitat consists of breeding, feeding, roosting, and migration areas. Habitats can include seaweed communities, reefs, aquatic beds, emergent wetlands, mudflats, and eelgrass beds. Any area around a seabird nesting island (with at least 25 nesting pairs of CommonEiders) and areas documented as wading bird rookeries.

- This habitat runs along much of the Rockport coastline, and is especially prevalent in Glen Cove.
- Rockport has shared tidal waterfowl and wading bird habitats with the City of Rockland

along Penobscot Bay.

- Ram Island, which sits less than one mile off of Glen Clove, is identified as a Sea Bird Nesting Island Number 63-323 by the Maine Department of Inland Fisheries and Wildlife. Ram Island has also been identified as an important seal haul-out and is a Class A Coastal Wildlife Concentration Area. It is also identified as a wetland. The town identified Ram Island as especially significant in conjunction to the habitat of Clam Cove because of its nesting status.

DEER WINTER AREA:

A deer wintering area is a forested area used by deer when snow depth in the open/hardwoods exceeds 12 inches, deer sinking depth in the open/hardwoods exceeds eight inches, and mean daily temperatures are below 32°F. Non-forested wetlands, non-stocked clearcuts, hardwoods, and stands predominated by Eastern larch are included in the deer wintering area only if they are less than 10 acres in size. Agricultural and development within wintering areas are excluded regardless of size.

Rockport has one identified deer wintering area that straddles the Rockport-Camden town line along the north side of Ragged Mountain.

In early winter, deer normally migrate to preferred winter habitat, in some cases more than 20 miles from their summer range. Without the protection of wintering habitat, deer are particularly vulnerable to severe winter weather and predators.

Because deer in Maine exist near the northern limit of the species' range, abnormally severe winters cause periodic declines in deer abundance. In many parts of Maine, deer populations are normally kept well below the capacity of the habitat to support deer. This ensures that deer remain productive, that they have access to high-quality forages, and that they achieve near-optimum body size and condition prior to winter.

IF&W encourages landowners to develop a management plan for their lands to provide optimal winter and summer habitat for deer. IF&W has identified deer wintering areas to ensure that town governments adequately address the protection of special habitats, such as deer wintering areas, during the comprehensive planning process.

High Value Habitat for U.S. Priority Trust Species in Rockport

The U.S. Fish and Wildlife Service, through its Gulf of Maine Coastal Program, identified, mapped, and ranked important fish and wildlife habitat for Priority Trust Species throughout the Gulf of Maine Watershed. The species included as Priority Trust Species in the Gulf of Maine include all migratory birds, anadromous/catadromous and certain coastal fishes, and federally listed endangered and threatened species. The habitat shown on the Rockport map identifies that which is important for 64 trust species that regularly occur in the Gulf of Maine watershed and are considered a priority for protection because they:

- are listed as federally endangered or threatened, and/or
- are exhibiting significant declining population trends nationwide, and/or
- have been identified as endangered or threatened by two or more of the three states in the Gulf of Maine watershed.

Those species include birds, fish, plants, reptiles, and mammals.

Areas designated as high value habitat for priority trust species include:

- land around Grassy Pond, marshes and forested and open wetlands, as well as shrubland and bare ground
- open uplands, as well as forested wetlands and forests in the Mt. Pleasant area, and along West Street Extension and the Oyster River Watershed
- forests and forested wetlands, as well as shrubland, in the Goose River Watershed from Hosmer Pond down to the wetlands near the junction of Main Street and Route 1.
- forests and forested wetlands along Route 90 and open shrub and grassland along Route 90 closer to the intersection of Route 1
- open shrub and grassland on Brewster Point and in the Samoset Resort area
- forest and forested wetlands in the Coastal Watershed in brooks and streams that flow from Beech Hill toward the ocean

Wetlands and Riparian Habitat

Wetlands include those areas called bogs, marshes, swamps, and salt marshes, but also include lesser known and appreciated forested wetlands and vernal pools. Wetlands are some of the most productive natural areas in the world and provide habitat for many types of wildlife, including waterfowl and wading birds, frogs, turtles and snakes, fish and shellfish.

Wetlands naturally control floods, filter pollutants, retain nutrients, and reduce erosion. They also provide educational and recreational opportunities, including boating, hunting, fishing, and photography. Most Maine wetlands are given some level of oversight through the permitting process, but small wetlands, including vernal pools and forested wetlands, receive limited protection.

Cumulative loss of wetlands has led to

stormwater run-off problems and threatens local species.

Riparian habitat refers to the areas adjacent to ponds, lakes, streams, rivers, and wetlands. Riparian habitat is the transitional zone between open water or wetlands and dry or upland habitats. It includes the banks and shores of streams, rivers, ponds, and lakes, and the upland edges of wetlands.

Stream riparian habitat in Rockport has been mapped in the “Beginning with Habitat” documentation. Essentially, all streams are noted with a 75-foot buffer on each side. Riparian habitat around Great Ponds (ponds 10 acres or larger), rivers, and wetlands at least 10 acres in size are shown with a 250-foot buffer.

Rockport’s shoreland zoning ordinance currently restricts development within 250 feet from great ponds, rivers, or the salt-water; from wetlands; and within 75 from streams.

Rockport’s wetlands are also mapped in the “Beginning with Habitat” report, and are evaluated according to their various functions, characteristics, and the presence of significant or essential habitat, rare or exemplary natural communities, or rare, threatened, and endangered plants and animals.

The wetland’s map characterization suggests review of a particular wetlands in relation to its surrounding landscape. It helps to identify significant wetland resources and affiliated systems; i.e., the map identifies wetlands that are likely to provide floodflow control, sediment retention, plant and animal habitat, finfish habitat, and shellfish habitat. It also identifies wetlands that have value for educational and research opportunities.

Vernal Pools

In Maine, the cries of frogs in the night in early spring is a hopeful reminder that warmer months are soon to come. Many frogs, salamanders, turtles and some endangered and threatened species are dependent on vernal pools for their primary breeding habitat. Wood frogs, spotted salamanders and blue-spotted salamanders migrate up to a mile to pools each spring to lay their eggs. Often tiny and overlooked, vernal pools are temporary or sometimes permanent pools, which occur in shallow depressions that fill in the spring and fall and may dry out during the summer.

Their often tiny size and period of dryness generally means an absence of predatory fish which would otherwise feast on egg masses and newly-hatched amphibians. They are primary breeding habitat for spotted and blue-spotted salamanders, wood frogs, and fairy shrimp. They are also habitat for Blandings, spotted, and wood turtles, ribbon snake, four-toed salamander, and the ringed-boghaunter dragonfly.

They are among Maine’s most unique and productive wetlands. Their size makes them especially vulnerable to destruction due to intentional or inadvertent filling, or degradation from changes in their surrounding landscape. They are especially at risk because they are often too small to be protected under the state’s wetland protection laws.

Maine’s vernal pool amphibians and endangered species use forested uplands abutting vernal pools to complete their life history needs. It is important to leave a zone of intact natural vegetation around the pool for as great a distance as possible back from the edge of the pool’s high water mark. A buffer of at least 100 feet helps maintain water quality but only partially protects amphibians and turtles living around the pool. They need several hundred feet of relatively undisturbed habitat surrounding the pool basin to ensure existence.

Wildlife Corridors

Wildlife corridors are sections of habitat, or travel lanes, that may be used by animals to travel from one habitat block to another. Corridors may also serve as habitat themselves; link habitat that was originally connected, minimize pollution by preventing run-off into a body of water; and provide recreation for people. An example of a wildlife corridor is a buffer -- the riparian area -- alongside streams, rivers, ponds, lakes, and wetlands.

According to the Patterns of Development Task Force of the Maine Environmental Priorities Project, 1997, wildlife such as moose, bear, and bobcats (animals traditionally needing more than 2,500 acres of undeveloped land in which to thrive) can survive if suitable undeveloped corridors are avail-

able to allow their movement through developed areas to adjacent undeveloped blocks.

Most wildlife species move across the landscape in habitual, traditional, and predictable pathways that follow available cover, terrain, and riparian areas. Topographical features, such as ridge lines, are typically used by a wide variety of wildlife that need to move around the landscape.

In general, if corridors are maintained along ridge lines, wetlands, and other riparian areas, most wildlife will be able to travel without disturbance. While there is no one suitable width for corridors, protection from disturbance can come from heavy vegetative cover within the corridor, or from a wide enough corridor to prevent most disturbance from the edges.

LAWS REGULATING HABITAT AND WILDLIFE

These laws regulate varied activities including hunting, trapping, and habitat alteration. This fact sheet will help clarify what these laws are, and how they work to protect wildlife species and habitat.

Federal and State Laws Protecting Wildlife Species

Federal Laws

THE MIGRATORY BIRD TREATY ACT OF 1918 (Title 16 U.S. Code Sections 703 to 711). Administered by the U.S. Fish and Wildlife Service. This law protects all birds, with the exception of the nonnative rock dove (common pigeon), European starling, and the English sparrow. It is unlawful for anyone without the proper permits to kill a bird; pick up and keep a young, injured or dead bird; or disturb, take down or collect a bird nest, or bird eggs.

ENDANGERED SPECIES ACT (Title 16 U.S. Code Sections 1531 to 1544). Administered by the U.S. Fish and Wildlife Service. This law is designed to protect endangered and threatened species and their habitats. Federal agencies must ensure that no agency actions will “jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of [critical] habitat of such species.” This applies to organizations, landowners, and private developers that receive federal funds or permits. In addition, all individuals are prohibited from “taking” any listed threatened or endangered species. A “taking” includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct.

State of Maine

ENDANGERED SPECIES ACT (Title 12 M.R.S.A. Sections 7751 to 7759). Administered by the Maine Department of Inland Fisheries and Wildlife. This law is designed to protect state-listed endangered and threatened species, and their habitats. Local and state governments are prohibited from funding, permitting, licensing or carrying out projects that will significantly alter “essential” habitat or violate protection guidelines determined by the Commissioner of the Department of Inland Fisheries and Wildlife. Individuals are prohibited from importing, exporting, hunting, trapping, possessing, selling, transporting, feeding or harassing any endangered or threatened species without a permit from the Commissioner.

Federal and State Laws Protecting Wildlife Habitat

Federal Laws

CLEAN WATER ACT (Title 33 U.S. Code Sections 1251 to 1376). Administered by the Army Corps of Engineers, permits reviewed by the U.S. Fish and Wildlife Service and the

U.S. Environmental Protection Agency. This law is designed to protect and enhance our nation's waters. No discharges are permitted without a federal license, and a state can condition a federal license for a project that may impact the state's water quality standards. A permit is required in order to dispose of dredged or fill material into navigable waters. The Administrator of the EPA may prohibit disposal of dredged or fill material into an area when the disposal will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

COASTAL ZONE MANAGEMENT ACT (Title 16 U.S. Code Sections 1451 to 1464). Administered by the U.S. Fish and Wildlife Service. This law is designed to preserve, protect, develop, and the restore or enhance the resources of the nation's coastal zones. Under the act, the government identifies land uses that are contributing to the degradation of the coastal waters, and areas of the coast in critical condition. The act focuses on the quality of the coastal water, which has a major impact on the health of coastal habitat, including estuaries. The government provides financial and technical assistance to states for the development and implementation of approved coastal zone management plans.

NONINDIGENOUS AQUATIC NUISANCE PREVENTION & CONTROL ACT (Title 16 U.S. Code Sections 4701 to 4751). Administered by the U.S. Fish and Wildlife Service. This law is designed to prevent unintentional introduction of non-native species into the waters of the United States, and to minimize the economic and environmental effects of any species that does become established. The law establishes a task force to help contain non-native species, and to minimize the impact of the species. In addition, the law makes available voluntary treatment of ballast water to ensure that no non-native species are released with the ballast into waters of the nation.

FEDERAL AGRICULTURAL IMPROVEMENT AND REFORM ACT OF 1996 (Public Law No. 104-127). Administered by the United States Department of Agriculture. This law creates incentives for agricultural improvements that improve water quality. Included are financial incentives to protect wildlife habitat, mitigate or prevent wetlands loss, and create animal waste management facilities. It also provides funds for permanent or thirty-year conservation easements on agricultural land.

State of Maine Laws

NATURAL RESOURCES PROTECTION ACT (Title 38 M.R.S.A. Section 480). Administered by the Department of Environmental Protection. This law is designed to protect the state's critical natural resources, including "rivers and streams, great ponds, fragile mountain areas, freshwater wetlands, significant wildlife habitat, coastal wetlands and coastal sand dunes systems." There are several activities that require a permit from the Department of Environmental Protection (DEP) if performed over or adjacent to a protected natural resource. These activities include dredging, bulldozing, removing or displacing soil, sand, vegetation or other materials; draining or de-watering; filling; construction, repair or alteration of permanent structures. The DEP will only grant permits for activities that will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses; will not cause unreasonable erosion of soil

or sediment; and will not unreasonably harm the state's critical natural resources.

COASTAL MANAGEMENT POLICY (Title 38 M.R.S.A. Sections 1801 to 1803). Administered by the State Planning Office, Department of Environmental Protection and Department of Conservation. This statement of policy is directed toward balancing the competing uses of Maine's coast. The policies encourage developing ports and harbors, managing marine resources and shorelines, increasing recreation and tourism and protecting natural and scenic areas, and water and air quality.

SHORELAND ZONING ACT (Title 38 M.R.S.A. Sections 435 to 447). Administered by the Department of Environmental Protection. This law is designed to "prevent and control water pollution; to protect fish spawning grounds, aquatic life, bird and other wildlife habitat...to protect commercial fishing...to protect freshwater and coastal wetlands...to conserve natural beauty and open space; and to anticipate and respond to the impacts of development in shoreland areas." It requires local governments to restrict certain land uses within 250 feet of the normal high-water line of any great pond, river or saltwater body, and within 250 feet of the upland edge of coastal or freshwater wetlands, and within 75 feet of the high water mark of a stream.

MAINE'S RIVERS LAW (Title 12 M.R.S.A. Sections 401 to 407). Administered by the Department of Environmental Protection and the State Planning Office. This law provides special protection for outstanding Maine rivers. The law protects these rivers from the construction of dams and hydro-electric facilities without consent of the state legislature. This establishes the policy of balancing the diverse needs of the public, particularly the need to restore fisheries, improve recreation, restore the water to fishable/swimmable standards, revitalize waterfronts, and maintain the scenic beauty of these rivers. The law requires several state agencies to cooperate to create a comprehensive river resource management plan for each watershed with a hydroelectric facility.

SUBDIVISION LAW (Title 30-A M.R.S.A. Sections 4401 to 4407). Administered by the State Planning Office. This law requires local governments to review applications for subdivisions. A subdivision will not be approved if it has an undue effect on the natural beauty of the area, or on rare and irreplaceable natural areas. The developer must map and identify all freshwater wetlands within the proposed area regardless of their size and indicate any rivers, streams, lakes and ponds so the town may consider the potential impact of the subdivision on these natural resources.

WATER POLLUTION CONTROL LAW. (Title 38 M.R.S.A. Sections 411 to 424) Administered by Department of Environmental Protection. This law is designed to implement water pollution control measures by granting funds for municipal pollution abatement projects, and requiring licenses for discharges of waste into bodies of water. Narrow exceptions to this rule include 1) discharges of pollutants resulting from erosion related to agricultural activities, 2) discharge of snow dumps, if the Board determines the activity would have no significant adverse effect on the quality of water in the state, and 3) dredge related discharges if the party has a Federal permit under the Clean Water Act, and is discharging at an approved Army Corps of Engineers discharge site.

INTERSTATE WATER POLLUTION CONTROL (Title 38 M.R.S.A. Sections 491 to 501) Administered by the Signatory States of the New England Water Pollution Control Compact.

This law affirms Maine's support of the New England Interstate Water Pollution Control Compact. The Compact states (Massachusetts, Connecticut, Rhode Island, New Hampshire, Vermont and Maine) work together to manage interstate waters to meet the industry and agriculture's growing need for water and the growing population's increasing need for clean water for consumption and recreation.

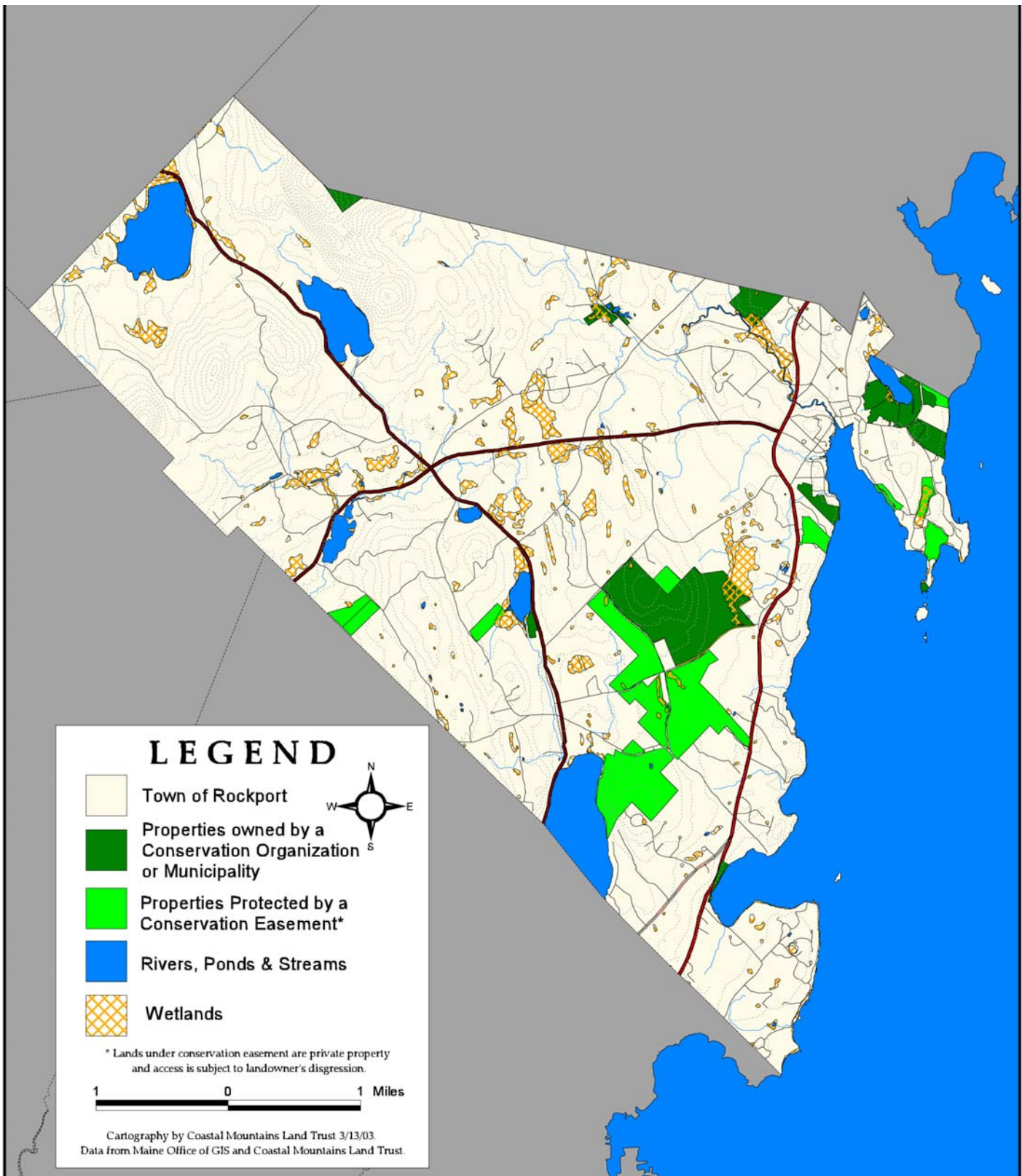
SITE LOCATION OF DEVELOPMENT LAW (Title 38 M.R.S.A. Sections 481 to 490). Administered by the Department of Environmental Protection. This law is designed to control the locations of certain developments and subdivisions that may substantially affect the natural environment. The natural resources protected under this act are existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities.

MAINE FOREST PRACTICES ACT (Title 12 M.R.S.A. Sections 8867 to 8869). Administered by the Department of Conservation, Maine Forest Service. This law creates size limits for clearcuts, establishes requirements for buffer zones between clear cuts, requires reforestation within clearcuts, requires a forest management plan for clearcuts over 20 acres, and expands the authority of the Maine Forest Service to create and enforce water quality protection rules.

WATER CLASSIFICATION PROGRAM (Title 28 M.R.S.A. Sections 464 to 470). Administered by the Department of Environmental Protection. Established to monitor and protect water quality. Maine's waters are divided into categories and within each category waters are designated a class rating AA, A, B, or C. Limits on licensed discharges of pollutants are determined based on these ratings. The State's anti-degradation policy is meant to prevent degradation of Maine's waters by forbidding any license that would allow additional discharges into a waterbody that doesn't currently meet the minimum standards of its classification.

Note: Laws are made stronger or weaker by communication and votes from citizens. The only way to ensure the protection of our wildlife and natural resources is through active public support of these or stronger laws.

Conserved Natural Areas in Rockport



Rockport’s overall acreage is more than 12,750 with a population of more than 3,210. Of that, Rockport has approximately 965 acres that are under conservation, either through easements or outright preservation parcels purchased by land trusts. That does not count the land placed by owners

under the tax classification of open space, farmland, or tree growth.

According to Rockport’s assessor agent, less than five percent of Rockport land is under conservation easement.

Preserved land, with full or limited public access

Aldermere Farm 136 acres

Maine Coast Heritage Trust owns and manages the working 136-acre Aldermere Farm, which supports a world-renowned herd of Belted Galloway cattle and is permanently protected by conservation easements. MCHT is currently developing long-term stewardship plans.

the summit across Penobscot Bay and the Camden Hills while protecting current organic blueberry farming operation and habitat for some rare grassland bird species.

The Ledges 6.5 acres

The Dodge family gifted to the Town of Rockport in 1999 forested shorefront and public access to the waterfront. The easement, under the Coastal Mountains Land Trust, complements a neighboring preserve owned by the land trust.

Beech Hill 295 acres

Beech Hill consisting of open blueberry fields, hilltop, and wooded slopes, is owned and managed by Coastal Mountains Land Trust, subject to a management agreement with the Maine departments of Conservation and Agriculture. Partners to the purchase were the Land for Maine’s Future Program, which contributed \$400,000, and the Maine Coast Heritage Trust, which helped secure large donations, including \$500,000 from MBNA, for the purchase.

Sides Preserve 8.3 acres

Donated by Ginny and Andrew Sides, this preserve protects 1,400 feet of shoreline on Maces Pond. The northern portion is a popular spot to launch a canoe or wet a fishing line. A quiet trail moves south through the interior woods of the preserve and towards the southern end of the pond. The wetland near the pond’s outlet is a great spot to look for many species of waterfowl. It is managed by Coastal Mountains Land Trust.

The acquisition of Beech Hill ensured no additional residential structures will be built on the prominent coastal hilltop. The Beech Hill Preserve allows public access on trails to enjoy views from

Under Conservation Easement

A conservation easement is a type of deed that keeps the land in private ownership, but has specific covenants that describe how the land can be used.

which has accepted a perpetual obligation to monitor the property to assure that the conservation protections are sustained.

The following are conservation easements under the pervue of Coastal Mountains Land Trust,

Town of Rockport

The Town of Rockport itself owns two conserva-

tion easements protecting the five acres of land between Lily Pond and the Penobscot Area YMCA complex, and approximately 140 acres of woods and fields at the top of Bear Hill. Both are monitored by the Rockport Conservation Commission.

Beech Hill Preserve 277 acres

Along with ownership of 295 acres of Beech Hill, there are 277 adjacent acres that are privately owned with conservation easements owned by Coastal Mountains Land Trust.

Other CMLT easements on private land include:

1.9 acres	donated in 2000
21.7 acres	donated in 2002
17.48 acres	donated in 2002
20.8 acres	donated in 1998
8.4 acres	donated in 1994
8.6 acres	donated in 1998
18.2 acres	donated in 1992

Scenic Resources

In 2002, the Comprehensive Plan Committee circulated a survey to all Rockport residents, asking for opinions about how Rockport should grow over the next decade. Approximately 94 percent of the 643 respondents said they live in Rockport because its scenic beauty is “very important” and “somewhat important.” Another 62 percent said scenic views should be protected, and the specific areas cited included:

- Beech Hill
- Glen Cove
- Rockport Harbor
- ocean views
- Pleasant Mountain
- Beauchamp Point
- fields along Route 90
- ridgelines
- Rockville fields and village
- Spruce Mountain
- Bald Mountain
- Aldermere Farm
- Chickawaukie lake and hills
- Grassy Pond and Mirror Lake

In the survey, Rockport residents were also asked which areas of Rockport deserved special protection by the town. Two-thirds of those that responded indicated that water resources and wildlife habitats deserved special protection. Other popular choices were oceanfront, scenic views, historical sites or structures, wetlands, hilltops and ridgelines, and lakefront. Rockport residents indicated a desire to conserve many features and areas of their town: The typical number of items checked was almost eight.

As a town, Rockport has never officially designated scenic areas, although there are spots or

landscapes that citizens informally and collectively refer to as important and treasured. They range from the Belted Galloways at Aldermere Farm to Rockport Harbor to the ridgelines of the hills of West Rockport. Mirror Lake, on the west side of Ragged Mountain, and the Glen Cove area with its views out to Penobscot Bay are also valued highly by Rockport residents.

In 1992, Rockport’s Ad Hoc Committee on Open Space held a series of 14 meetings, engaging the public in a discussion about preserving open space in the town.

The committee concluded that it was vital to the future wellbeing of the town to preserve open space in order to protect water quality, contain municipal costs and property taxes, provide future generations the opportunity for traditional recreation, to protect wildlife habitat, and to maintain scenic beauty.

To that end, the committee proposed several areas in town to be preserved. They included:

- Ledges on the east side of Rockport Harbor
- The watersheds of Grassy Pond, and Chickawaukie and Mirror lakes
- Land surrounding Clam Cove
- Undeveloped land along routes 90 and 1
- Beech Hill–Bear Hill corridor
- Land around Lily Pond
- Land around Mace’s and Rocky ponds
- Goose River corridor
- Pleasant, Spruce, and Ragged mountains corridor
- Indian Island views

State Recommendations for Scenic Areas

In 1990, the Maine State Planning Office conducted its **Scenic Inventory: Mainland Sites of Penobscot Bay**, a study that documented significant scenic areas viewed from public roads and other public access points along the coastline from Owls Head to Ellsworth.

The report recommended 33 sites be evaluated for inclusion on the state's Critical Areas Register. The report suggested an additional 46 places considered moderate to high-scenic quality to be further evaluated for possible inclusion on the list.

Rockport Harbor was high on the list of notable areas to be considered a critical area, with a viewshed description that said: "One of Maine's most visually cohesive villages, with a strong orientation to its deep, well-defined harbor. Steeply sloping streets lead to a waterfront park, a rather extensive mooring area for pleasure craft and commercial boats, and an historic lime kiln. The density of development decreases with distance from the village center, terminating in a small lighthouse at the mouth of the harbor. A highly memorable, unified landscape."

The recommendations from the report for viewshed management said: "Strict performance standards for new construction and re-development activities within the viewshed of the harbor. Conservation easements to protect the edges and the skyline."

The **Megunticook Golf Course** and **Clam Cove** also scored high enough to be included on the list of areas to be further evaluated as a possible critical area candidates.

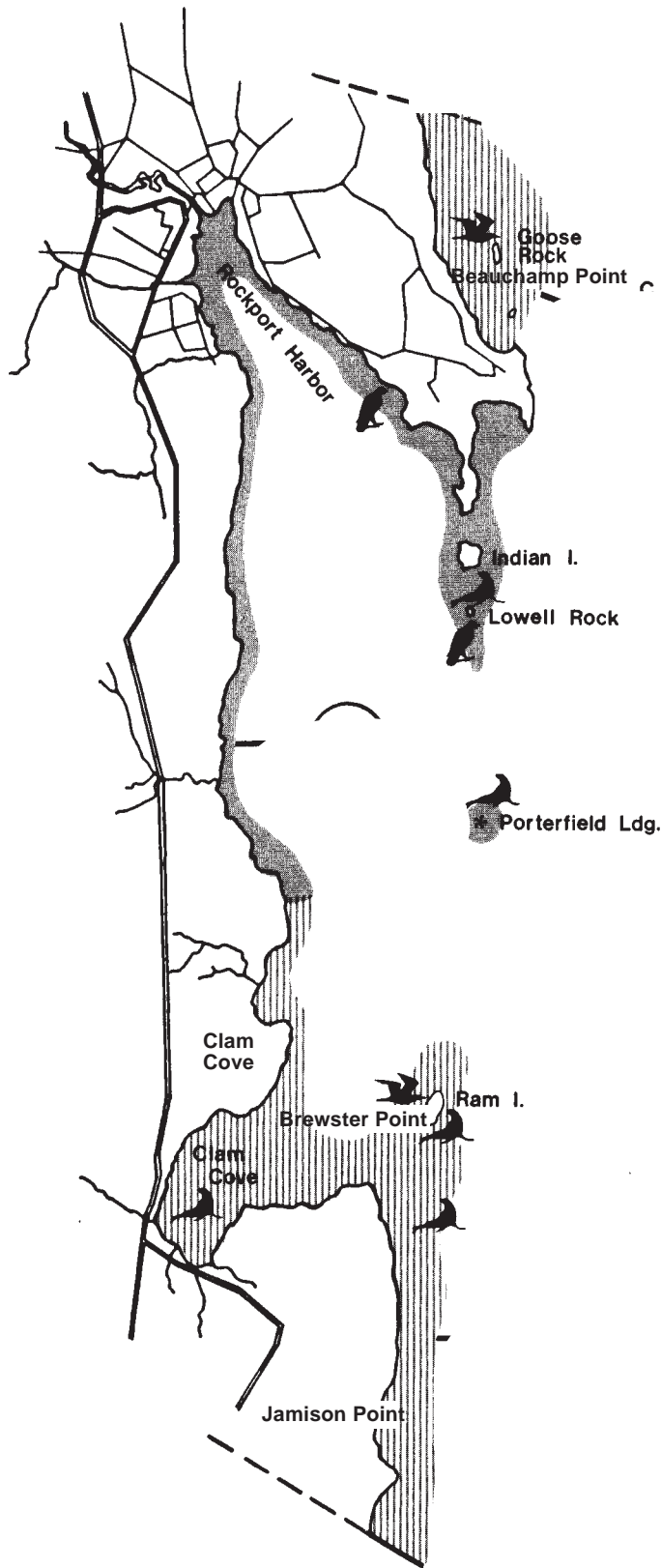
Clam Cove: "Natural area focusing on a small cove. A Route 1 rest area is located on the northerly shoreline. Town roads and Route 1 have a variety of level and dominant views of the water. Foreground elements include residential and commercial structures in the village of Glen Cove, rest area parking and landscaping, Clam Cove, and the opposite shoreline. Midground includes wooded hilltop on the opposite shore and Penobscot Bay. Background views are to Penobscot Bay with Vinalhaven on the horizon. The general landscape condition ranges from fair to very good."

Viewshed management recommendations: "Define pull-offs on hillside. Clean and maintain second growth on Route 1 bank."

Megunticook Golf Course: "Combination of rural and natural landscape with local road winding through mature spruce forests, along pasture land, and through the waterfront golf course. Views are filtered through spruce forest to open waters with short, open views to Penobscot Bay. Midground consists of Penobscot Bay with a background of open water and Vinalhaven on the horizon. The general condition of the landscape is very good to pristine. Local scenic attractions include a farm with Belted Galloways and the view across Lily Pond."

Viewshed management recommendations: "Maintain character of road system. Open or maintain character of road system. Open or maintain filtered views to the water. Provide pull-offs for motorists. Conservation easements to protect open space."

Marine Resources



Rockport lies on the western edge of Penobscot Bay between Camden and Rockland, stretching approximately 14 miles from Aldermere Farm, around the rocky Beauchamp Point, and then westward to the shores of the Samoset Resort, which borders the Rockland Breakwater and the entrance to Rockland Harbor.

Along the coast, the landscape ranges from rocky covered shoreline to the clam flats of Glen Cove. In between, imposing bluffs and seaweed-covered boulders meet the the Gulf of Maine. Steep slopes, some of them more than 25 percent, run along the coastline from the head of Rockport Harbor to the head of Oakland Park Cove, along the southern part of Clam Cove, around the point, and down to Babcock's Point. Clam Cove has a few narrow, steep strips, as does Babcock Hill, near the junction of Porter and South streets.

The Maine Department of Environmental Protection classifies the tidal waters of Rockport as SB. An SB classification means the water is suitable for recreational purposes, as well as aquaculture, shellfish harvesting, and navigation. The marine, fish, and estuarine habitats are characterized as unimpaired and discharges to SB classified waters should not adversely impact those habitats. The southwestern half of Ram Island, just off of Clam Cove, is a designated Class A Coastal Wildlife Concentration Area.

Due to pollution, all of Rockport's marine shoreline, flats, and waters have been closed to all digging of clams, quahogs, mussels, oysters, and other marine mollusks since 1962.

The coastal floodplain elevations range from lows of 17 feet to 20 feet in Clam Cove and Rockport Harbor to a high of 37 feet near Varmah Creek. Because the Rockport shoreline is exposed to the east and southeast, it is vulnerable to moderately heavy wind and wave splash.

Coastal Watershed

The Coastal, Goose River, and Lily Pond watersheds converge where Goose River enters Rockport Harbor. The coastal watershed drains through four west-to-east running streams that enter the ocean between Rockport Harbor and Babcock's Point, and a south-to-north stream draining into the head of Clam Cove.

From north to south along the stretch of Rockport's oceanfront, Harkness Brook, Ott Brook, Varmah Creek, Oak Park, and Clam Cove brooks cross the watershed and empty into the ocean. Several small, unnamed brooks drain, some of them through culverts, into Clam Cove.

With the exception of Bear and Beech Hill, which have elevations of 300 to 500 feet, most of the watershed has elevations of 100 to 300 feet. Beech Hill has a total elevation of 533 feet.

Harkness Brook and its intermittent tributaries drain the watershed north of Beech Street, passing through three wetlands before entering the ocean near Ship Street. Ott Brook drains the area along Route 1 between South and Beech Streets. Originating at the 300-foot elevation shoulder of Beech Hill Road, it passes through a large wetland. One tributary passes through two wetlands and a small pond before joining Ott Brook. Together they

drain two more wetlands before entering the ocean near Sea Street.

Varmah Brook is short, running from Route 1 into the ocean near Megunticook-by-the-Sea campground. However, the brook's five tributaries drain the area east east of South Street and north of Porter Street. One of these tributaries originates in a wetland that is located at the tangential junction of the 200 gpm and 50 gpm well yield contour lines.

Approximately half of a 10 gpm bedrock well yield contour line is in the Coastal Watershed, running from South Street over to Oakland Park, along Route 1 and back to near the junction of South and Porter streets. In this area there is a shorter 50 gpm yield contour line centered on Porter Street at a 200-foot elevation. Within this area is a short 200 gpm yield contour line that is almost a perfect circle. Its circumference is tangential with the 50 gpm contour line on the east and west, and on the south with both the 10 and 50 gpm yield lines.

Although the full significance of bedrock well yield contour lines is not yet understood, the convergence of two high yield bedrock well contour lines, a wetland, and a stream origin in the same location south of Porter Street at a 200-foot elevation could indicate a bedrock aquifer.

Rockport Harbor

Rockport Harbor, facing due south, offers safe haven from coastal weather, thanks to its long stretch inland. Shaped like an upside-down letter V, the harbor extends from its northerly head, where the Goose River empties, due southward and gradually widens as it opens into Penobscot Bay. Sailors and fishermen can set a course for 0-degree north as they enter the harbor and wind up at the bridge that spans the Goose River.

Rockport Harbor is split into three sections: the inner, middle, and outer harbors. Most of the harbor offers protection from prevailing westerly winds, as well as north, northwest, and northeast

winds. Boats, however, are not as well protected from the rare southeast storms, and the winds that pick up directly out of the south.

At its northerly edge, steep bluffs and small hills help protect the year-round boats from winter's northwest winds and northeast storms. This is where the Goose River finishes its leisurely wind down through West Rockport and empties through a steep ravine into the harbor.

Nautical charts show the harbor edged with primarily a rocky shoreline, which drops off almost immediately to depths of 58 feet. The harbor is unusual in that the entire outer harbor has an almost

consistent depth of 54-58 feet, from Indian Head Island to the Ledges on the east and from Rockport Ledges subdivision to Sea Street on the west.

The inner harbor, from the Ledges across to Sea Street, is also fairly deep at 20–30 feet, until the bottom shoals up at the low energy beach, a beach of mixed sediment and marsh grass, where a brook from Lily Pond discharges. Charts indicate that the harbor bottom is mud, and at the head of the harbor are mud flats and ledges.

There are a few sand beaches on the harbor, one where Ott Brook joins the ocean at Sea Street there is a small sand beach with an intertidal boat ramp. Similarly, near Ship Street, where the Harkness Brook enters the harbor, there is a small gravel beach.

Goody's Beach, acquired by the town in 2000 thanks to the public money and private donations, offers the public a sandy beach on the waterfront just adjacent to the town-owned Marine Park.

The west side of the harbor is mainly glacial marine deposits (Presumpscot formation, mostly silt and clay). The harbor floor from the harbor beacon, which is near Ship Street, to the head of the harbor, near the town wharf and Rockport Marine, is relatively flat. The Marine Park was once home to lime kilns, the old railroad, and the former Homeport Fish Plant, before it was purchased by the Friends of Rockport Harbor in 1970 and destined for public use.

The east side of the harbor is steep with boulders and ledges. Mechanic Street is fully developed with ramps and floats providing homeowners private access to the ocean. Most the floats can accommodate deep draft boats. The Ledges, on Beauchamp Point Road just beyond the winter closure point, offers public access to the water.

Lowell Rock, Indian Island, and the tip of Beauchamp Point are all marine wetlands inside a coastal floodplain, as are two small marine wetlands in a cove just above the Seal Ledge Beacon.

In 1987, the U.S. Army Corps of Engineers hired Prock Marine, of Rockland, to dredge the inner harbor to a low-water depth of 10 feet. Approximately 10,000 yards of silt were removed. At the same time, the town dredged the mouth of the Goose River dredged to a five-foot depth. The 1987 dredging of the harbor removed some of polynuclear aromatic hydrocarbons and lead from the

bottom sediment.

Rockport Harbor Water Quality

Rockport Harbor has an SB classification, according to the Maine Department of Environmental Protection. This means the water is suitable for recreational purposes, as well as aquaculture, shellfish harvesting, and navigation. The marine, fish, and estuarine habitats are characterized as unimpaired and discharges to SB classified waters shall not adversely impact those habitats.

While the sewer was installed in the harbor, removing residential wastewater and combined sewer storm runoff. Rockport Harbor, in particular, also has non-point source pollution from marine activities, such as oily wastes, bottom paint, and wharves, as well as from parking lots, roads, and lawns.

The mudflats at the head of Rockport Harbor are marine wetlands. With the coastal floodplain around the tip of Beauchamp Point, Indian Island, and Lowell Rock, there are marine intertidal rocky shore wetlands within the floodplain.

The Lily Pond outlet is a shallow man-made canal approximately eight feet wide that descends through a wetland where it is joined by an intermittent tributary from the west. From behind the Rockport Public Library, the outlet continues beneath Russell Avenue and enters the head of the harbor behind Rockport Marine via a culvert.

Boats and Marine Facilities

Marine facilities at Rockport Harbor include floats, finger floats, and a launching ramp at the Marine Park, the Rockport Boat Club float, commercial floats at the bottom of Main Street and the town wharf, and the privately-owned Rockport Marine docks and floats.

The town also provides for a fee winter storage for boats on the east side of the footbridge over the Goose River.

At the Marine Park, a new harbormaster's building was constructed in 2001, providing toilets, pay showers, and laundry facilities to the public.

Economics of Rockport Harbor

Rockport Harbor's history is rich with industry, ranging from fishing, shipbuilding, export of

natural resources, fishpacking, and lime extraction. Today, there is moderate activity, with fishing, boatbuilding, and tourism the primary businesses at work.

The Harbor is a cost center for the town with operating costs that are largely balanced by fees if costs associated with the Harbormaster's building are excluded. The Town's 2002 budget called for estimated revenues of \$57,525 and estimated expenses of \$67,011. Mooring fees of \$20,575 account for approximately 30 percent of the estimated budget. Winter boat storage fees account for another 10 percent of the budget and a modest fee increase of 15 percent across the board would bring the Harbor's operating budget into balance. However, it should be noted that the Harbor provides Rockport with an enormous financial benefit in the form of property taxes and Rockport Marine provides the community with 50 year-round jobs. Management estimates that approximately eight Rockport Marine employees live in Rockport. The actual operating budget for the Harbor has little relationship to the benefits which the Harbor gives to Rockport.

The Working Waterfront

The Town of Rockport has a long history of protecting access for commercial fishermen at the Town Landing on the east side of the harbor. Fishermen have two floats exclusively reserved for their use with adequate space for 20 dinghies. The number fluctuates up and down but currently Rockport has about 20 fishermen operating out of the harbor. They appear to have enough space for loading and unloading. There is no obvious space for additional fishermen but then it is always difficult for newcomers to break into an existing fleet. Fishermen also have priority in the allocation of inner harbor moorings. Rockport residents value the concept of a working waterfront.

Commercial recreation is provided by the schooner *Timberwind*, the yacht *Shantih II*, and yacht *Harvest Moon*. They serve paying guests with overnight and daily cruises from Marine Park on the west side of the harbor. Other commercial cruise ships would like to operate out of Rockport but there is no dock space available. The town receives approximately \$ 6000 in docking fees from all three

vessels. It is estimated that between 20,000 and 30,000 visitors are attracted to Marine Park each season, between June and October, and the number is growing. Maine's Office of Tourism expects visitor numbers to the coast will continue to rise steadily over time. Clearly visitors to the harbor spend money in the local economy and benefit Rockport significantly.

Recreational Use of the Harbor

Public recreation is hard for the harbor to accommodate. There are approximately 290 moorings allocated to pleasure craft and 34 moorings allocated to commercial craft for a total of 324 moorings. However, there are only 14 floats at Marine Park for the use of yachtsmen. More importantly, the Marine Park floats can only service 62 recreational dinghies and there is a long waiting list for dinghy space at the town office. Obviously, Rockport has a large harbor with a mooring capacity of more than 600 moorings but not enough docking facilities to service the moorings currently in existence. A launch service might help to mitigate this problem but the physical constraints of the harbor are a fact of life which Rockport must acknowledge by maximizing the usage of existing facilities. It is estimated that \$50,000 is needed to replace ageing floats at Marine Park. The replacement floats could be designed to allow more dinghies to be tied up at the floats.

Public Access

In addition to docking facilities at the head of the harbor, public access is provided at several other locations including Walker Park, the east side Ledges managed by the Coastal Mountain Land Trust, Aldermere Farm, and Clam Cove. Residents may not be, as a whole, well informed about the availability of water access points and how they can be used. The ability of Maine residents to gain access to their coastal waters has been a persistent issue over the past two decades.

Areas of the coastal trail system have been lost due to denied permission from landowners and, in some cases, new opportunities have been created such as the Aldermere Farm trail system which extends to water destinations on the east side of Beauchamp Point.

Fishing Licenses Issued in Rockport, 1998-2002

	1998	1999	2000	2001	2002
30-Day Temporary Urchin	2	0	0	2	0
Commercial Shrimp, Single	0	0	2	2	2
Commercial Fishing, non-resident	2	2	0	0	0
Commercial Fishing, single operator	0	0	2	2	2
Commercial Fishing, with crew	4	4	4	4	2
Commercial Shellfish	6	2	2	2	4
Elver-2 Fyke net		8	8	6	6
Elver Dip Net	16	0	0	0	0
Lobster/crab Apprentice	4	4	2	4	6
Lobster/crab Class 1	14	18	14	10	8
Lobster/crab Class 11	34	36	30	34	32
Lobster/crab non-commercial	12	6	10	6	8
Lobster/crab over age 70	2	0	2	2	2
Lobster/crab student	2	8	12	14	14
Retail seafood	18	18	14	16	10
Scallop diver	6	6	8	8	2
Scallop dragger	8	6	8	8	2
Scallop non-commercial	8	16	10	6	6
Sea urchin diver	10	10	8	8	4
Sea urchin/scallop tender	6	10	8	6	4
Wholesale seafood w/t lobsters, suppl.	20	22	24	20	16
residents w/t marine resource licenses	30	30	25	24	18
Harvesters	80	73	63	61	54
# lobster traps fished by residents	12,950	13,145	11,700	12,540	12,750

Source: Maine Department of Marine Resources

Glen Cove/Clam Cove

The neighborhood of Glen Clove lies at the south end of Rockport at the Rockland town line. Its waterfront is otherwise referred to as Clam Cove, aptly named for its former abundance of the almighty clam.

Clam Cove is a broad, shallow cove that faces east toward North Haven. It is well protected from the prevailing winds and swells, and is ideal habitat for quahogs, surf, and soft-shelled clams. With a narrow, sandy beach, the cove is surrounded by houses along Warrenton Street, and protected from Route 1 by steep bluffs. On its south side, the cove is currently abutted by private and wooded land. A small town-owned picnic area accessed from Route 1 allows the public to enjoy the view and

walk to the beach.

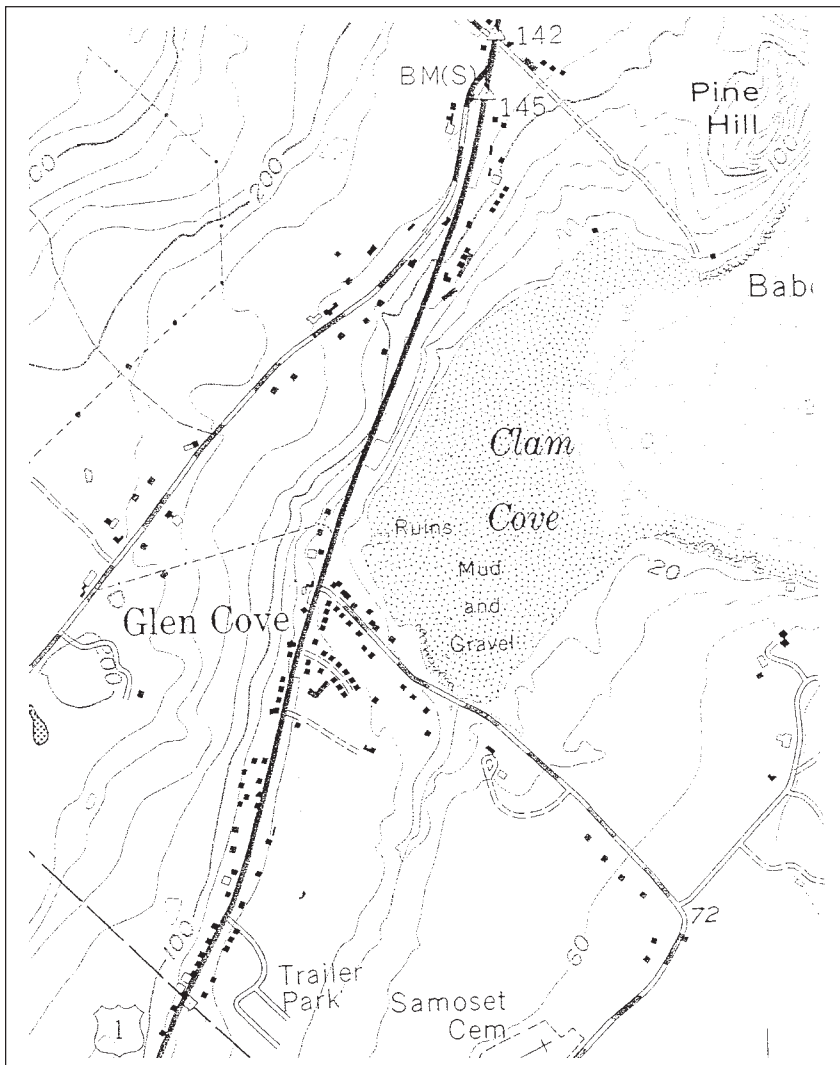
The shoreline is protected from high waves (making it a "low-energy beach," according to the Maine Department of Environmental Protection) with ledges at the head of the cove. Seaward of the ledge and beach are mudflats. At the northern portion of the cove, the intertidal coastline is a triple-decker sandwich of low-energy beach, boulder ramp, and mudflats. For the whole cover, proceeding to 10 feet below mean low-water depth, there is a boulder ramp, mudflats, and areas of accumulated sediment where waves swash onto the flats, creating swash bars.

The area's fragile yet rich habitat for marine life, mammals, reptiles, and birds is well outlined in a complete natural resources inventory compiled

by Rockport in 1989. Sixty-one species of waterfowl and migratory birds, including geese, loons, ducks, and osprey have been recorded there, and the shrubbery around the cove offers protection to migratory and land birds, as well as deer, fox, fisher, and other wildlife.

Pollution, primarily residential discharge, had officially shut the mudflats for shellfish harvesting on May 18, 1962, as well as along the shore that runs to the Rockland breakwater. In 1978, the Clam Cove was reopened for clamming, but then closed again in 1984 due to poor bacteriological water quality.

The Glen Cove sewer, which hooks into the Rockland City sewer system, runs along Route 1 from South Street to the Rockland city line, and includes the Romaha Trailer Park and along Warrenton Street to the right-angle corner near the Eastward on the Ocean subdivision. Since 1990, Rockport has taken water samples and considered a shellfish management program



that would include reseeded Clam Cove with clams. In 1996, the Shellfish Conservation Committee reported that there was renewed interest in a clamming restoration project in Clam Cove; however, the committee also reported high fecal coliform counts and concluded "we have some big problems in identifying the sources of pollution and dealing with them before worrying about how to get clams to grow there."

In 2002, a renewed effort by the town to determine whether the cove could once again be home to shellfish and other marine resources was made, and water samples from five different streams that empty into Clam Cove were collected. The results were discouraging, as one state official reported: "I was surprised to see that the data for the 30 most recent samples collected for the years 1992-1997 was actually better in 1997 than it is today. It seems hard to believe that with all the new sewer work that has gone on in this area the water quality has gotten worse."

While the mudflats in beneath the tidal Clam Cove are rich with benthic activity and highly productive -- worms and other invertebrates thrive there -- the land-side soils along the Clam Cove shore are shallow and low in nutrient content. Severe erosion of the past has somewhat stabilized, thanks to a re-established plant growth, whose roots hold the soil and encourage nutrients to leach back into the soil.

The bedrock lies along the furthest edge of the Midcoast Region of Maine's coastal geology. This type of bedrock causes problems in pollution control because pollutants -- sewage and otherwise -- follow the path of least resistance, finding cracks in the bedrock and running unfiltered into the cove.

Although once extensively rich in clams, the mudflats now have a small population of clams. There is, though, an extensive mussel bar that forms a reef of living mussels. Those mussels expel sediments they extract from the water in feeding, which then settle in between individual organisms and raise the bar above the level of the surrounding environment. The mussels are an important food source to marine and bird life.

To protect the natural habitat of Clam Cove, the 1989 report encouraged the town to monitor pollution, including non-point source pollution (run-off due to increased development and imper-

vious surfaces) from vehicles, salt on Route 1 and Warrenton Street, and commercial developments south and west of the cove. The report also warned of run-off from fertilized lawns.

The report also encouraged the town to protect wetlands surrounding the streams, and to seek conservation easements on the lots adjacent to the cove. A 1991 wetlands map created by Normandeau Associates identifies a medium-sized wetland around the source of Clam Creek and a smaller wetland along Route 1 in Glen Cove. This indicates a large wetland area with interlocking and contiguous wetlands from Rockville Street to beyond Beech Street. Those wetlands include the source of both Ott and Harkness Brooks. The study area also indicates a convoluted small wetland along Ott Brook, west of Route 1 near the junction of Pascal Avenue.

"If development is allowed along the cove, there will be a great deal of siltation and erosion into the cove, which will continue to pollute the area. The wildlife will disappear from the wooded areas as more disturbance occurs because of a loss of habitat and food source," the town report said.

Ram Island

Ram Island, which sits less than one mile off of Glen Cove, is identified as a Sea Bird Nesting Island Number 63-323 by the Maine Department of Inland Fisheries and Wildlife. Ram Island has also been identified as an important seal haul-out and is a Class A Coastal Wildlife Concentration Area. It is also identified as a wetland.

The town has identified Ram Island as especially significant in conjunction to the habitat of Clam Cove because of its nesting status. Efforts to secure the island as a protected natural resource zone are crucial to the preservation of a large portion of the bird life in Clam Cove, the report stressed.

Brewster Point

Another seal haul-out area is identified near Brewster Point. There is a gravel beach near Brewster Point, and all of the Brewster Point Watershed is less than 100 feet in elevation. Except for some narrow bands of 25-percent slope at the head of Brewster Point, and along the coast on either side of the point, the entire watershed and coastline are flat. There is an escarpment at Jameson Point.

Agricultural & Forestry Resources

Agriculture

While Rockport once was bustling with productive farms, today there are but a handful of agricultural enterprises. Calculating the number of farms, nurseries, and agricultural businesses left in Rockport is inexact, for neither the town or state maintains a registry of those operations. Various indicators, such as the 2000 U.S. Census and the 2003 town tax rolls, measure the number of farming operations, but the criteria also differs according to the yardstick used.

According to the U.S. Census Bureau, the 2000 Census lists 45 residents as living on a farm, with 2,495 living in a rural setting. The remaining residents, 669, lived within an urbanized area (village).

Of the 1,677 Rockport residents at work in 2000, 21 of the men and five of the women were in

the occupations of agriculture, forestry, fishing, and hunting.

In 2003, the Knox County Extension Association, which is a division of the University of Maine Cooperative Extension system and which assists farmers, was servicing 10 agricultural businesses (three nurseries, three landscapers, one blueberry grower, two small backyard vegetable growers, and one beef producer) in Rockport. Not all Rockport farmers, however, use Extension services. For privacy purposes, the Extension did not share the names of those businesses.

The Natural Resource Conservation Service, which is a division of the federal government that provides assistance for natural resource conservation on private land, estimated there to be four blue-

berry farmers in Rockport, a few people growing vegetables in greenhouses, and one herb cultivation enterprise. But the underlying question from the Conservation Service was “what were we considering to be a farm? Was there a size limit? An income base?”

There are differences in how state and local entities define farms: To the Maine Department of Agriculture, landscape businesses and plant nurseries are considered agri-businesses. To the Maine Department of Taxation (Maine Revenue Services), those businesses are considered retail businesses, and are subject to the state’s sales tax.

According to the **Dictionary of Real Estate Appraisal**: “Farm: A tract of rural land devoted to agriculture.” And Farm Budget: “The plan for the financial organization and operation of a farm for a specific period of

Farmland, Open Space, and Tree Growth

While the town has traditionally been rural in nature, the decade of the 1990s saw a sharp increase in housing and business construction in what was formerly woods and fields. The decade also saw more land put into conservation, and limited use tax classifications, such as tree growth, farmland, and open space.

In 2002, there were 584 acres were in designated tree growth; 657 acres in designated farm and open space; and 502 in conservation easement.

Tree Growth and Farm and Open Space property taxes use a taxable value for land based on its use for agriculture or open space. The resulting property taxes are usually lower than regular property taxes that base their land valuation on the likely price of the land if offered on the real estate market. Instead of market valuation, Farm and Open Space base land values on current use. The State of Maine offers the Farm and Open Space tax program to encourage the preservation of farmland and open space. Parcels must be greater than five contiguous acres (tree growth, 10 acres) and farmland and open space must show that there is a public benefit.

time; includes a detailed statement of anticipated gross income, expenses, and net income.”

On the Town Tax Rolls

Of 328 businesses on Rockport’s list of 2003 business owners there are just 10 that are associated with either blueberry growing, landscaping, gardening, composting, raising horses, and selling plants and crops.

Farms in Rockport

There are several blueberry operations in West Rockport, as well as small and large acreage owned by various families and individuals on which blueberries are cultivated. The land under blueberry cultivation is approximately 290 acres. The various farms and agricultural ventures, blueberry and otherwise include the following:

Spruce Mountain Blueberries, run Molly Sholes, is on Mount Pleasant Street. Spruce Mountain Blueberries grows wild Maine blueberries, sells some fresh-pack, freezes some for the six blueberry products made in the kitchen, and sells some to blueberry processors.

Beech Hill blueberry fields are owned and managed by the Coastal Mountains Land Trust with advice from the Maine Department of Agriculture. That arrangement rests on the the collabo-

rative funding of the Beech Hill purchase in 2001, which included money raised through donations and through the state’s Land for Maine’s Future Program.

Aldermere Farm, on Russell Avenue near Lily Pond, is a working cattle farm now owned and managed by the Maine Coast Heritage Trust. In 1999, the late Albert H. Chatfield, Jr., put the 136-acre farm in trust, and Aldermere Farm continues his work of breeding and raising a herd of Belted Galloway cattle. The farm is permanently protected by conservation easements, and during the summer months, the farm leases fields on Route 90 for cattle grazing.

Rockport also has five nurseries and plant sellers: Goose River Greenery, on Main Street; Plants Unlimited and Hoboken Gardens, on Route 1; The Green Thumb, on Route 17 in Rockville; and Seasons Downeast, a nursery and composting enterprise on Meadow Street.

Avena Botanicals’ apothecary, on Mill Street, maintains organic herb gardens, and runs its Avena Institute’s teaching center, all of which borders a 6,000-acre wetland. The Avena Institute includes classroom and hands-on opportunities for students to better understand issues of biodiversity, seed saving, and ecological and cultural restoration along with various programs on growing and using medicinal herbs.

Soils

Topographically, Rockport has miles of fertile agricultural and forestry land. According to mapped resources, Rockport’s prime farmland lies within the Goose River Watershed, along Park and Meadow streets, Annis Lane, and down along the Goose River where it empties into Rockport Harbor.

Other prime farmland areas include the fields along Cross Street, Route 90, and up toward Beech Hill Road.

In West Rockport, prime farmland exists along Mt. Pleasant Street, in the West Rockport Village area, toward West Street Extension, and near Robinson Drive.

There are other areas of prime farm soil along South Street, in Rockville, and all along Porter Street. Rockport Meadows, Spring Lane, and the area between Vinal Street and Route 17 contain prime farmland. Route 1 from the Rockport Park Center to the intersection of Pascal Avenue contains fertile soil, as does areas of Glen Cove and the Samoset Resort.

Currently, many of those areas cited are where subdivisions and single family homes now sit.

Types of soils particular to each region of Rockport are further examined beginning on page 55 in the Topography and Soils section of this Comprehensive Plan.

Forestry

There are no large tracts of commercially-harvested forests in Rockport. There were, however, 584 acres in designated tree growth in 2003.

The total timber harvest in Rockport fluctu-

ated in the decade 1991 to 2002. The largest harvest was in 1998, when 210 acres were cut over a total of six harvests; the smallest was 2002 when 32 acres were cut in a total of three harvests.

Summary of Timber Harvest (in acres) in Rockport, 1991-2002

Year	Selection Harvest	Shelterwood Harvest	Clearcut Harvest	Total Harvest	Change of land use	# of Timber Harvest
1991	61	-	-	61	-	3
1993	140	1	2	143	2	6
1994	65	-	-	65	-	6
1995	89	-	-	89	-	7
1996	25	-	-	25	-	4
1997	140	-	-	140	-	4
1998	179	-	-31	210	31	6

Public Opinion

In the fall of 2003, the Comprehensive Plan Committee circulated to all Rockport households a survey to determine how residents feel about a broad range of issues, including those that were articulated during earlier meetings in the various neighborhoods and with committees and organizations. More than 640 questionnaires were returned, representing more than one-third of all households in Rockport. In those responses, 55 percent said the town should actively encourage agriculture and farming. Just 12 percent said forestry should be actively encouraged, while 38.7 said forestry should be actively discouraged.

Summary

While farming has been an integral part of life in Rockport since the early English settlements, few farms are left today. Rockport has emerged as a community of villages, subdivisions, single-family homes, schools, and businesses.

Given that, however, there is still room in Rockport for more farms, commercial forests, and agricultural enterprises. Farms can range in size and scope from the smallest backyard raising of herbs, vegetables, and fruit to large-scale agri-businesses. With the recent emphasis by the Maine Department of Agriculture to promote locally-grown food, and the desire by the public for more organically-grown produce, there are growing opportunities for farmers in Maine.

According to the state, fishing, farming and forestry are the foundational industries on which Maine's economy and persona were built. While the dominance of these three industries has diminished, they still have a significant presence as they provided in 2001 8.3 percent of Maine's jobs and 9.6 percent of the State's Gross State Product (GSP).