

Chapter J. Natural Resources

1. Purpose

This chapter provides analyses and a detailed overview of the Town’s vital natural resources, and addresses issues related to wildlife, fish habitats and other important ecological systems. Development on or near these vital resources could unbalance the natural systems and negatively affect many quality-of-life issues such as: clean drinking water, protection from flooding, and clean air. Specifically, this chapter:

- a) describes Gouldsboro’s critical natural and scenic resources;
- b) assesses the effectiveness of existing efforts to protect and preserve these resources;
- c) predicts future impacts to these resources by growth and development.

2. Key Findings & Issues

Gouldsboro benefits from its clean environment, the qualities of life provided by the local and regional diversity of plant and animal life and by functioning ecosystems and habitats. Residents continued to support protecting these habitats and forestlands in the 2021 survey. While the Town does comply with Maine State requirements for shoreland protections, other measures could be explored to help develop clear goals, objectives and strategies to protect resources vital to the Town.

3. Key Findings & Issues from the 2005 Plan

Among the Town’s rare natural resource features were several bald eagle nesting sites. There were also several unique coastal ecosystems including one of the few areas of Jack Pine in Maine and the Corea Heath. Due to improved mapping, it is now easier to identify natural resource areas.

4. 2022 Public Opinion Survey Results

Respondents were asked how they felt about protecting the following and overwhelmingly responded as shown below:

2022 Survey Results (241 respondents)	Very Important	Important	Somewhat Important
Air Quality	70.29%	19.67%	6.69%
Preserving Existing Farmland	52.20%	33.75%	10.42%

Preserving Existing Forest Land	58.58%	28.87%	10.04%
Protecting Groundwater	75.93%	18.67%	4.98%
Protecting Rivers & Streams	74.27%	20.33%	4.98%
Protecting Scenic Views	66.25%	20.42%	9.17%
Protecting Wetlands	67.92%	22.50%	7.50%
Protecting Wildlife Habitats	67.78%	24.69%	6.28%

5. Summary of Critical Natural Resources

Wildlife:

Gouldsboro has many varied wildlife habitats. Tidal flats are important wintering areas for waterfowl. Birds found on the flats in winter include bufflehead, goldeneye, black duck and scaup. Our freshwater and tidal shores are home to loons, osprey, eagles, king fishers, terns, gulls and cormorants. The upland environment, which includes mature forests, supports deer and the occasional black bear or moose, though very few due to the lack of continuous uninterrupted blocks of riparian land unsegmented by development, roads and homes.

Other animals found in this environment include ruffed grouse, turkey, pheasant, woodcock, hare, red fox, coyote, porcupine and squirrel. The Maine Natural Areas Program found two deer wintering areas in the town of significance. As of 2023, Gouldsboro has two locations of nesting bald eagles as shown below according to the USFWS Maine Ecological Services.

Table J-1: Wildlife Commonly Found in Gouldsboro
Birds: American goldfinches, alder flycatchers, broad winged and other hawks, bald eagles, common crows, common ravens, great crested flycatchers, hermit thrushes, Eastern phoebes, rock doves, blue jays, red-winged blackbirds, black-capped chickadees, robins, slate colored juncos, turkeys, ruffed grouse, spruce grouse, swamp sparrows, tree swallows, white-throated sparrows, woodcock, owls, ospreys, purple finches, downy woodpeckers, pileated woodpeckers, yellow shafted flickers, kingfishers, turkey buzzards, hummingbirds, cardinals, Eastern bluebirds, cedar waxwings, hairy woodpeckers.
Freshwater/tidal shores: loons, king fishers, terns, gulls, cormorants
Waterfowl: bufflehead, goldeneye, black duck, scaup, harlequin duck, laughing gull, black-crowned-night heron

Forests: deer, black bear, raccoon, white tailed deer, fisher cat
Mammals: beaver, coyote, eastern gray squirrel, hare, muskrat, raccoon, red fox, red squirrel, white-tailed deer, skunk, porcupine, mink, groundhogs/woodchucks.
Other: ruffed grouse, turkey, pheasant,, hare, porcupine, eastern gray squirrel, skunk, mink,

Wetland Areas

Wetlands are one of the most critical natural resources. They often serve as aquifer recharge areas, allowing underground water supplies to be recharged. They are also crucial wildlife and bird habitats. Wetlands are an important part of nature's drainage system since they hold storm water. Areas that have experienced extensive filling of wetlands often face increased flooding problems. Wetlands are also important as breeding areas for waterfowl and habitat for other wildlife such as amphibians, reptiles, and insects.

There are several major salt and freshwater wetlands in Gouldsboro:

The Schoodic portion of Acadia National Park is home to rare animals such as bald eagle, harlequin duck, rare plants such as blinks, fragrant cliff wood-fern, marsh felwort, Pickering's Reed bent-grass, screwstem, and rare and exemplary communities of Downeast Maritime shrubland, jack pine woodland and open headland.

The Gouldsboro Grand Marsh Focus Area encompasses the peninsula east of Prospect Harbor in the vicinity of the village of Corea. Portions of this focus area stand out as an excellent example of a Coastal Plateau Bog Ecosystem. These two areas are currently linked as one focus area because of the unfragmented habitat connecting them.

The Grand Marsh is a 135-acre Salt Hay Saltmarsh bisected by a tidal creek that empties into the narrow Grand Bay. Tidal marsh vegetation occurs in north to south bands, with low marsh types dominated by salt marsh cordgrass nearest the creek and high marsh types nearest the uplands. Black-grass, seaside plantain, and saltmeadow cordgrass dominate here in broad areas of high marsh.

This area of Gouldsboro is also home to rare native plants such as Pickering's Reed Bent-grass , Screwstem, and Swarthy Sedge. Bands of vegetation are not continuous and are punctuated by open water pannes (small saltwater pools) and creek branches. Although this tidal marsh is not as large as some others in the East Coastal region, it is in very good condition, with very little to no evidence of past ditching that characterizes many salt marshes in Maine. Moreover, the adjacent uplands are intact. The marsh is mapped as both Tidal Waterfowl and Wading Bird Habitat and Shorebird Feeding and Roosting Habitat.

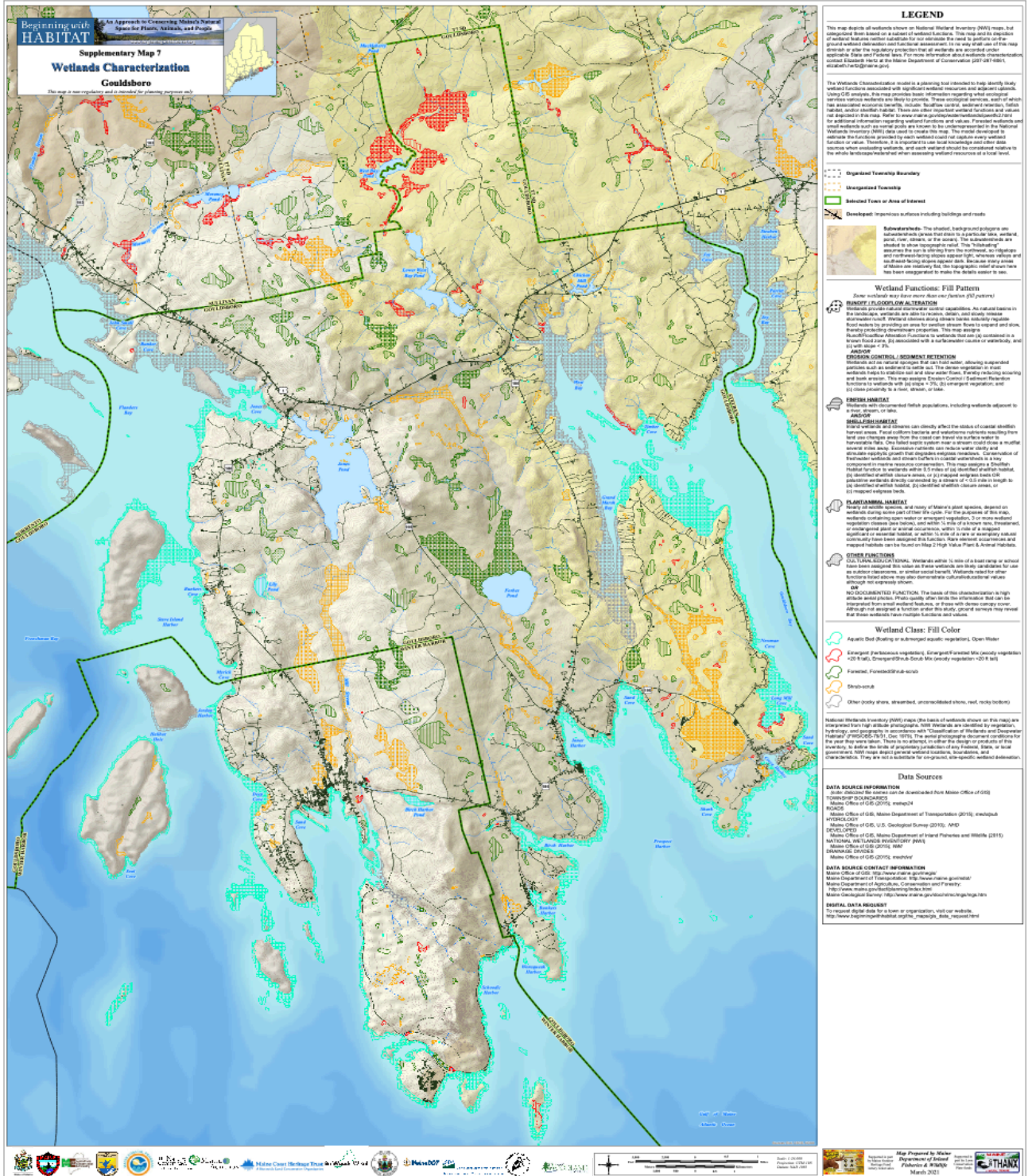
Corea Heath is an approximately 250-acre Coastal Plateau Bog that abuts Route 195 near the village of Corea. It is an excellent example of a coastal plateau bog ecosystem, a peatland in which the surface is raised above the surrounding terrain, with the bog perimeter sloping sharply to mineral soil. The raised surface is flat or undulating, generally with few to no trees, and usually features extensive lawns of deer-hair sedge. Black crowberry and baked apple-berry are

also characteristic. Corea Heath is a rare and exemplary natural community due to its large size, circular shape, well-developed concentric patterning, and raised central treeless plateau with evident marginal slopes.

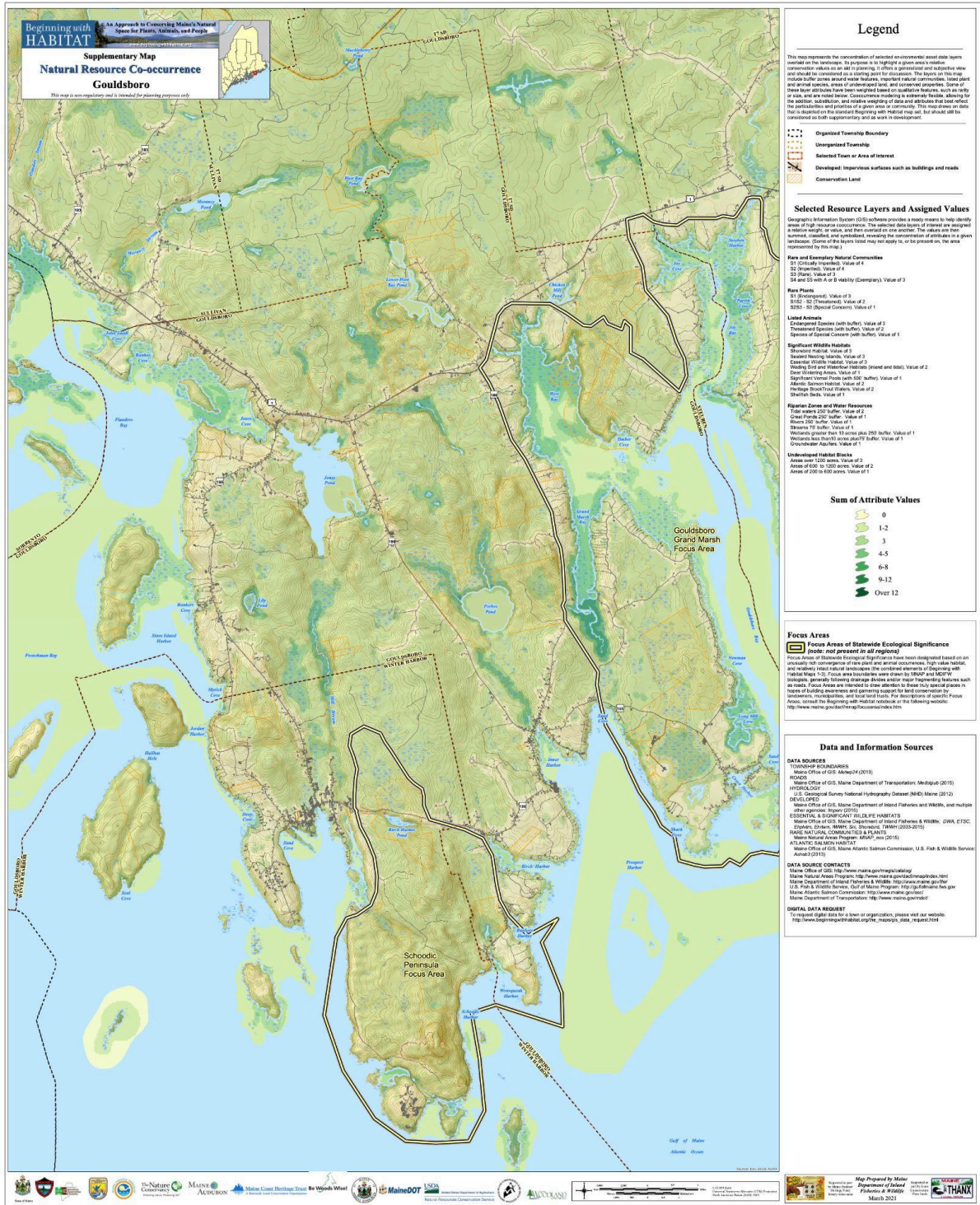
Corea Heath supports several species of rare plants. Stunted jack pine trees also occur at Corea Heath. Though not rare, this species is very uncommon in a peatland setting in Maine. A large portion of Corea Heath, especially in the southern half, is characterized by well-defined ridge and depression relief. The hollows, some of which retain surface water for long periods, contain dwarf shrubs, deer-hair sedge, lichen, and mud-bottom areas. The ridges support a similar variety of species including stunted black spruce, black crowberry, and peat mosses.

In addition to the ecological features there is another rare and exemplary small jack pine woodland community at the southeastern tip of this peninsula on Route 195 near Sand Cove.

Map J-1: Gouldsboro Wetland Characterizations



Map J-2: Gouldsboro Natural Resource Co-occurrence



Wildlife Habitats:

Gouldsboro has multiple amazing wildlife habitats. Forbes Pond, a 980-acre preserve consists of wild-life rich wetland habitats. The Gouldsboro Grand Marsh is a 135-acre Salt Hay Saltmarsh which supports several species of rare plants, and serves as wintering grounds for the State Threatened harlequin duck and the Corea Heath is an approximately 250-acre Coastal Plateau Bog ecosystem and supports several species of rare plants.

Fisheries Resources

Fresh Water: The Department of Inland Fisheries and Wildlife currently stocks Jones Pond with rainbow and brown trout. Gouldsboro provides public access to Jones Pond for boat launching, swimming and includes a parking area. Upper West Bay and its tributaries provide brook trout, eel, white sucker, minnows, gold shiners and ninespine stickleback. Forbes Pond will continue to be managed for its self-sustaining population of fish and well known for large-mouth bass and northern pike.

Salt Water: Gouldsboro is a working waterfront community. Lobsters, scallops, crab ,mussels and clams are among the common species. Striped bass, bluefish and winter flounder are popular saltwater species.

Coastal Ecoregion

Gouldsboro is part of the Downeast Coast ecoregion and includes an island-bay coastal type is an indented shoreline type of coast, or "drowned coast", with long, narrow, rocky peninsulas and intervening deep, narrow estuaries, and cliffed coastal margins. Rocky headlands and islands are abundant with pockets of rocky, gravel and coarse-grained sand beaches, and tidal flats. The region has a few tidal marshes. Granitic plutons are common, with less resistant, low-grade metamorphic rock occurring in the deeply embayed areas. Fine and coarse-loamy, frigid Inceptisols and Spodosols are typical. Most forests contain a large percentage of maritime spruce-fir although beech, birch, maple, red oak, and white pine occur. Pitch and jack pine also grows here on isolated coastal bluffs.

The Downeast Coast has more fog and precipitation than other coastal regions, and the wet, cool, foggy climate supports these spruce-fir forests of a more northern character. The boreal features include rocky woodlands of patchy black spruce and heaths, as well as some boreal plant species that are otherwise restricted to alpine and subalpine areas of Maine, such as black crowberry. There are also some areas of jack pine woodland near its southern range limit, on the dry, rocky ocean faced ridges. The unique area also has some transitional features to mid- and south-coast flora, including areas of pitch pine and some oak woodlands. Tidal amplitudes of the Downeast Coast are great, and the offshore waters are nutritionally richer and cooler than those offshore of ecoregions to the south.

Rare Plants & Natural Areas

The Town is also home to three rare or exemplary natural communities identified by the Maine Natural Areas Program. The most ecologically significant features in this focus area are Acadia National Park, Grand Marsh and Corea Heath. In Gouldsboro these areas are located on the Schoodic Peninsula Acadia National Park, as well as Gouldsboro Grand Marsh Bay (all lands and waters east of West Bay road in and around Gouldsboro Bay and West Bay), and the entirety of the Corea Peninsula.

Also identified are coastal and inland waterfowl and wading bird habitat, migratory shorebird habitat, seabird nesting islands, deer wintering areas and several rare plant populations. Refer to

Map J- 1.

The Gouldsboro Grand Marsh Focus Area encompasses the peninsula east of Prospect Harbor in the vicinity of the village of Corea. Portions of this focus area stand out as an excellent example of a Coastal Plateau Bog Ecosystem. The Gouldsboro Grand Marsh supports several species of rare plants, and serves as wintering grounds for the state threatened harlequin duck.

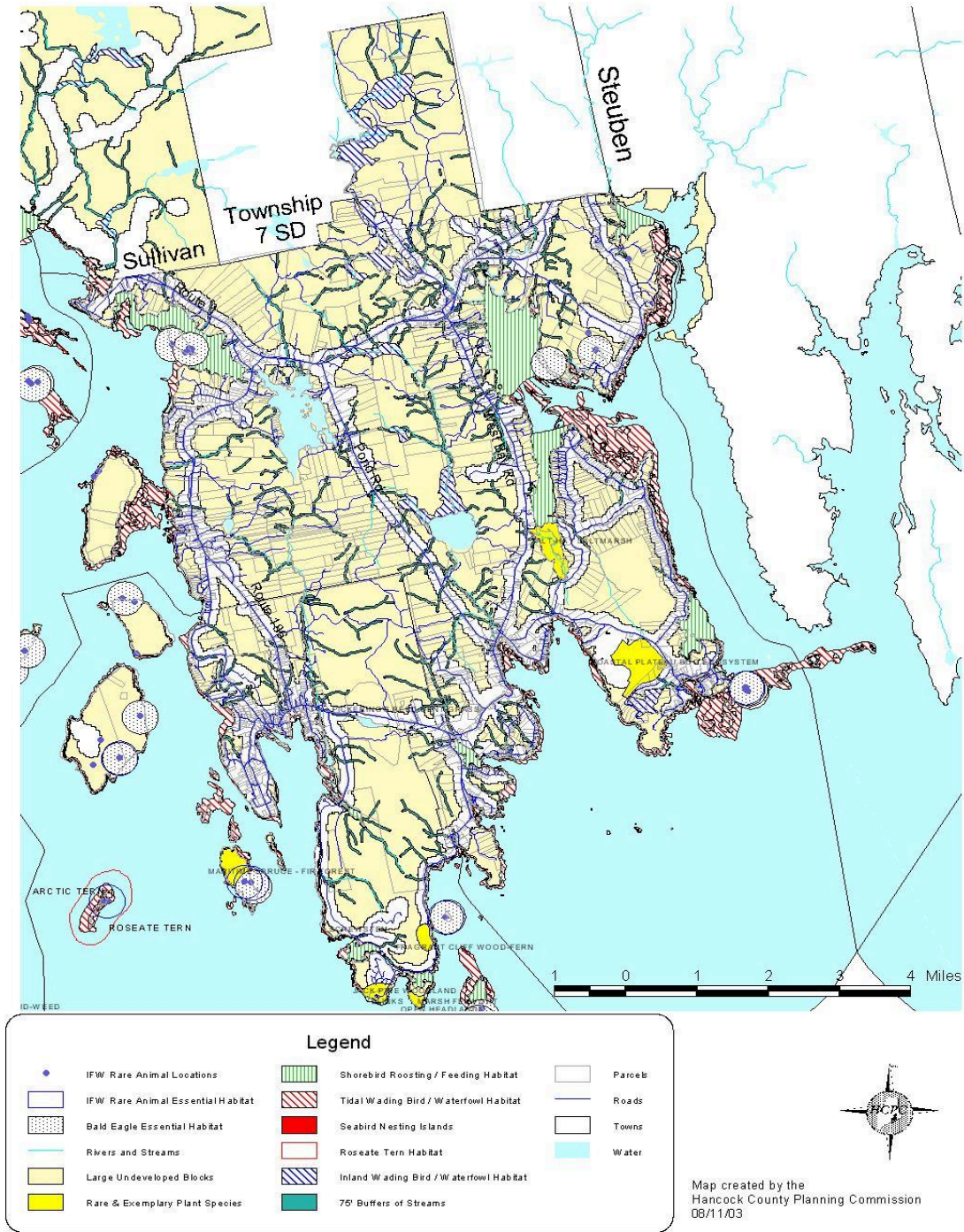
Coastal Plateau Bog Ecosystem: Peatlands in east coastal Maine in which the surface is raised above the surrounding terrain, with the bog perimeter sloping sharply to mineral soil. The raised surface is flat or undulating, generally with few to no trees, and usually features extensive lawns of deer-hair sedge. Black crowberry and baked apple-berry are also characteristic. Some coastal plateau bogs support the rare crowberry blue butterfly.

Salt-Hay Saltmarsh: These tidal marshes consist of expanses of saltmeadow cordgrass, smooth cordgrass, and/or blackgrass. Shrubs are virtually absent, and the herbaceous cover is usually less than 85%. Much of the marsh is high marsh, where saltmeadow cordgrass forms meadows, and where black-grass may be dominant at slightly higher elevations. In the low marsh, along creeks or at elevations just below mean high water, smooth cordgrass is abundant. Salt pannes with abundant seashore saltgrass may dot the high marsh; goose tongue may also be locally common. Sea lavender and seaside goldenrod are often found at the upper tidal fringe. The dominant species typically form bands corresponding to tidal inundation zones. Salt marshes are important nesting habitat for Nelson's sharp tailed sparrow, seaside sparrow, and the rare saltmarsh sharp tailed sparrow. These wetlands also provide foraging habitat for a large number of wading birds and shorebirds, including rare species such as the laughing gull, black-crowned night heron, and least tern. The big bluet, a rare damselfly, inhabits saltmarsh ponds with emergent vegetation in southern Maine.

Jack Pine Woodland: These are open canopy woodlands in which the dominant tree is always jack pine. Red spruce, black spruce, or white pine are common associates. The canopy trees are generally stunted and have poor growth form. Below the canopy, smaller jack pines are common, with scattered shrubs. The extensive herb layer is mostly heath shrubs that may form a thick tangle in canopy openings. At some maritime sites, black crowberry or mountain cranberry reflect the coastal influence. Herbs are very sparse. The bryoid layer varies from extensive to quite sparse, and is dominated by reindeer lichens.

Map J - 3: Gouldsboro/Winter Harbor Critical Natural Areas

Gouldsboro and Winter Harbor
Critical Natural Areas



Note: A current map prior 2003 could not be found

Tidal Wading Bird and Waterfowl Habitat and Shorebird Area

Source: Beginning with Habitat, Maine Department of Inland Fisheries & Wildlife ??

Nearly the entire shoreline of the focus area of West Bay has been mapped as high and moderate value Tidal Wading Bird and Waterfowl Habitat, and defined as Significant Wildlife Habitat under Maine's Natural Resources Protection Act (NRPA). This area provides important intertidal habitat for maintaining viable wading bird and waterfowl populations. Waterfowl (ducks, geese, swans) and wading birds (herons, egrets, bitterns, ibises, coots, moorhens and rails) require certain types of tidal wetland habitat for feeding, roosting, nesting and brood rearing. Several areas have also been mapped as 'Shorebird Areas' for important feeding and resting sites for shorebirds making long migrations.

Tidal Waterfowl and Wading Bird Habitat are defined as Significant Wildlife Habitat under Maine's Natural Resources Protection Act and classified as moderate to high in value. Maine Department of Inland Fisheries and Wildlife has identified and rated intertidal areas along the coast as high or moderate value to waterfowl and wading birds.

Inland Waterfowl and Wading Bird Habitat - represents high and moderate also defined as Significant Wildlife Habitat defined under Maine's NRPA, where MDIFW has classified West Bay and Lower West Bay ponds, marshes, streams and estuaries significant inland habitats for ducks, geese, herons, and associated species of waterfowl and wading birds throughout the state, rating them as having high to moderate value. A high to moderate value inland bird habitat is a complex of freshwater wetland and open water areas plus a 250-foot wide area surrounding the complex itself where some species nest. On "great ponds" (over 10 acres), only the upland area that is within 250 feet of the freshwater wetland is included as part of this bird habitat.

Changes to these Natural Areas and Resources

Changes in land use in these areas may threaten these important species and habitats. It is thus important to protect these areas. It is possible that there are other environmentally valuable areas, interrelationships, and ecological links that have yet to be identified. Furthermore, in the face of climate change and increased sensitivity to the complexity of the natural environment, other locations in Gouldsboro may be identified in the future as ecologically important. An inventory should be conducted by interested citizens under the guidance of the Maine Natural Areas Program.

Other Endangered, Protected or Critical Species:

Gouldsboro also contains the essential habitat and nesting areas along sea coasts, inland lakes and major rivers of the American Bald Eagle, once abundant in Maine, were nearly extirpated throughout their range in the 1990s. Due to extensive habitat protection measures, bald eagles have now made a tremendous recovery and were removed from the Endangered Species List in 2009. Bald eagles are currently listed as Special Concern and protected under the federal Bald and Golden Eagle Protection Act.

The rare endangered Great Blue Heron, found primarily along the coast and also occasionally found inland along marshes, rivers and the shores of ponds also calls Gouldsboro home. The Great Blue Heron has been spotted in the wetlands around Forbes Pond and Grand Marsh Bay.

Another endangered bird found is the Yellow Rail , although nesting sites have not been confirmed, there are known Yellow Rail habitats in the West Bay Pond wetlands. The difficulty of monitoring Yellow Rail populations all contribute to its rarity and little understood distribution in Maine, though scientists believe many factors such as the loss of grassy wetlands, sedge and wet meadow habitats to development, as a result of filling, ditching, and establishment of invasive species, degradation of coastal marshes have likely contributed to its decline.

Horseshoe crabs are also vulnerable to depletion from any harvesting activities. In 2003, taking and possession of Horseshoe Crabs became prohibited in Maine. These crabs live in Gouldsboro's protected sandy beach areas, nearshore shallow waters, intertidal flats, and deep bay waters. Grand Marsh Bay supports horseshoe crab habitat, but shoreline development and subsequent habitat degradation are potential threats to Maine's small populations of Horseshoe Crab. Horseshoe crabs feed primarily on clams and worms, and in turn are fed upon by shorebirds (including the state endangered least tern and the state endangered and federally threatened piping plover), crabs, fish and sea turtles.

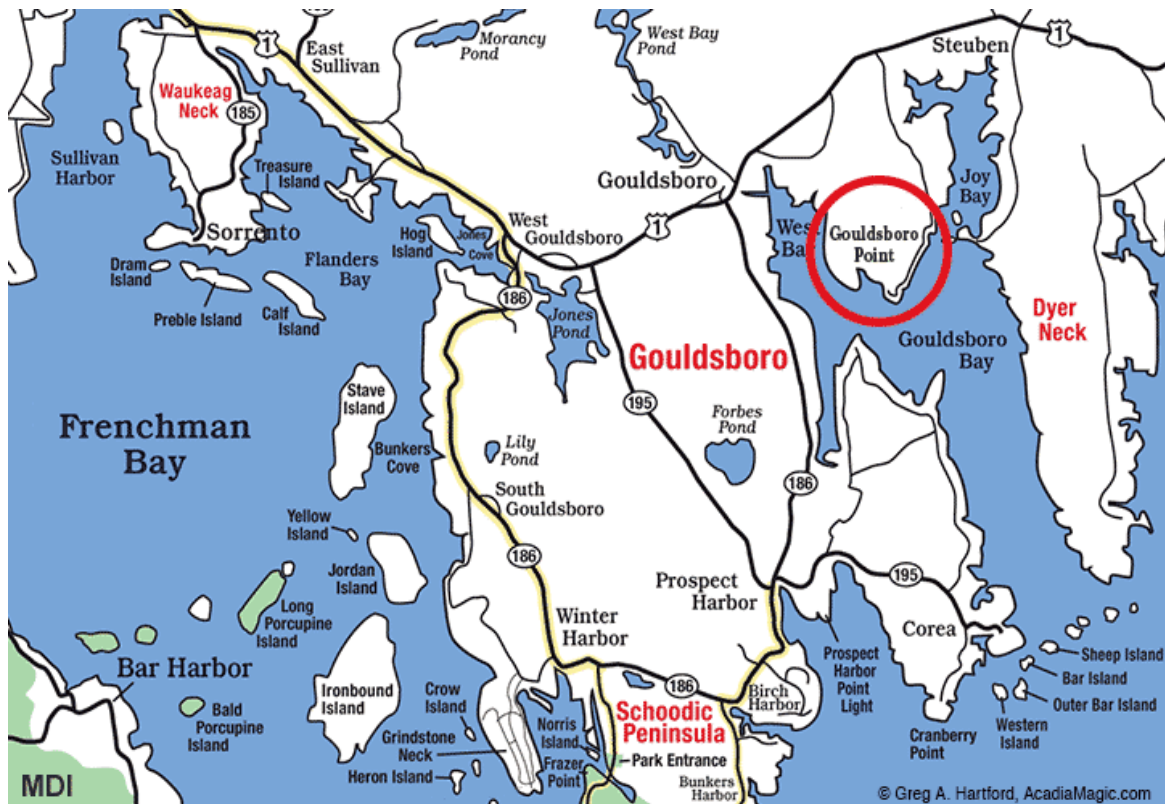
6. Scenic Resources

Gouldsboro is a hidden gem that offers a blend of stunning natural beauty, with amazing scenic views from many public roads and trails, rich history, and a tranquil, laid-back lifestyle . From its picturesque harbors and pristine beaches to its historic lighthouse and local culture, Gouldsboro is a place that captivates the heart and soothes the soul.

The combination of hills, coves, bogs, marshes and farms provide for a rich variety of scenic resources which are integral to the Town's rural character. There are areas of high scenic value that are experienced from the roads along the coastline, many fishing villages, Jones Pond, Forbes Pond and Prospect Harbor, West Gouldsboro, Gouldsboro Point, Grand Marsh Bay Area, Crowley Causeway, Sand Cove and Corea. Gouldsboro is proud to be part of the Schoodic National Scenic Byway. There are many scenic hiking trails that can be found throughout Gouldsboro. There are also spectacular scenic views that are seen from being out on the water.

Gouldsboro also has one of the finest, darkest night skies in the northeast, with spectacular views of the Milky Way, the Persieds Meteor Shower and surrounding planets in our solar system. This should be considered when adding or restricting residential and industrial lighting facilities that could interfere with this valuable resource. *see Map J-4: Scenic Areas in and around Gouldsboro.*

Map J-4:



source: Dept. of Inland Fisheries & Wildlife

The Corea Heath Preserve covers over 600 acres of wetlands and upland forest in Gouldsboro. The Corea Heath Preserve is owned and managed by the Frenchman Bay Conservancy. The 1.4 mile loop trail visits several different habitats, including a jack pine woodland, a coastal plateau bog and a pond created by beavers. You can also find an observation deck overlooking the vast striking bog.

7. Assessment of Existing Efforts to Protect Natural Resources

The Town of Gouldsboro revised its Shoreland Ordinance in 2016 and again in 2020 to exceed the minimum state shoreland protection requirements, detailed in Chapter 1000 “Guidelines for Municipal Shoreland Zoning Ordinances” established under the Mandatory Shoreland Zoning Act (MSZA). This was enacted to provide a more stringent level of protection to natural resources on or near the shoreline as there is no town-wide zoning, so primary protection provided to natural and scenic resources is enforced through shoreland zoning, site-plan and subdivision ordinances.

To further protect Gouldsboro’s natural resources, these restrictions could include larger minimum lot sizes (current size is .5 acre) and stricter setback standards in critical areas identified in this plan, and in the future, where higher-value natural resources are present or

discovered. Portions of the shoreland zone are presently zoned resource protection. These include areas around wetlands, ponds and coves as well as along stretches on the bay and open ocean.

The restrictions in the resource protection zone offer a fairly high level of protection for natural resources located along the shoreline. However, there are locations adjacent to the shoreland that have important habitats and are not zoned “resource protection.” This limits the effectiveness of the State’s shoreland statute to prevent negative environmental consequences, such as algae blooms, run-offs and other pollutants that enter waterways and water bodies.

Greater protection could also be provided by revisions to the Town’s Subdivision Ordinance. These could involve creative lot-layout patterns such as clustering. Often, it is possible to make minor changes in the location of lots in a subdivision to minimize the disruption of views from a neighboring property or public roads. Also, the initial subdivision application to the Planning Board could include a requirement that any important habitats identified by the Maine Department of Fisheries and Wildlife (MDIFW) be noted.

8. Regional Issues

Gouldsboro, along with neighboring towns and the larger region, continue to face pending challenges associated with climate change and sea level rise that will affect natural resources and vital habitat areas. Some negative impacts include: projected tidal marsh migration; changes to tree stands and tree-stand migration; other plant species migration (invasive species such as giant purple loosestrife) non-native insect introductions to Maine (emerald ash borer, brown tailed moth, certain tick populations moving further north); non-native shellfish (green crab, zebra mussel); to increased vector-borne illnesses such as equine encephalitis, Powassan virus, West Nile virus, and even the pernicious norovirus. Regional efforts to address some of these issues include a coordinated approach to revitalize the traditional alewife population in Hancock County and Maine (see Marine Resources). Many towns, including Blue Hill, Brooksville, Sedgwick and others in the region (Tremont, Mount Desert), have formed sea level rise and climate change committees to address the future challenges.

Table J-2: lists some of the organizations dedicated to protecting habitats, natural resources, and public access to natural lands around the region while **Table J-3,** provides helpful conservation strategies and methods for organizations and individuals.

Table J-2: Conservation Organizations of interest for Gouldsboro

Organization - Address	Organization - Address
Downeast Coastal Conservancy	6 Colonial Way, Machias (207) 255-4500
Friends of Schoodic Peninsula	43 Cottage Street, Bar Harbor (207) 288-3340
Forbes Pond Reserve	*see Maine Coast Heritage Trust

Frenchman Bay Conservancy	72 Tidal Falls Road, Hancock 422-2328	(207)
Maine Coast Heritage Trust	1034 Main Street, Bar Harbor 244-5100	(207)
The Nature Conservancy	14 Main Street # 401, Brunswick 729-5181	(207)

Table J-3 : Conservation Strategies and Methods for Organizations and Individuals

1. Identify and conserve wide corridors linking high-value habitats and wetlands
2. Work with willing property owners on purchase or voluntary measures.
3. Work with state agencies to garner support for projects and seek necessary funds.
4. Work cooperatively with neighboring towns on regional conservation issues.
5. Educate officials and citizens to support and manage local conservation initiatives.
6. Continually map boundaries of conservation areas, corridors, and other features.

9. Goals & Objectives

GOAL: Gouldsboro will protect its natural resources to the best of its ability and will address and monitor threats posed by climate change to said resources, as they are vital to the town's health, safety, and economy.			
Objective	Strategy	Responsible Party (ies)	Timeline
Anticipate threats to natural resources posed by climate change and other factors (development, infestations, natural resource extraction, etc.).	Encourage Gouldsboro and current or future community groups/committees/organizations to monitor, assess and make recommendations.	Select Board and/or designees	Immediate and ongoing
Town ordinances should give authority to the Planning Board to require a natural resources assessment to be part of applications for major	Require a natural resource review and assessment for the development application process. Review Ordinances	Select Board, Planning Board	Immediate and ongoing

development.			
Encourage sustainable development, to protect open spaces and public access, pastoral scenic views, and wildlife habitats.	Encourage creative approaches to residential development through tax incentives.	Select Board, Planning Board	Immediate and ongoing
Encourage conservation easements in places with critical habitats and natural resources.	Identify critical habitats and natural resources based upon the map, and document adjacent parcels.	Planning Board, HCPC	Immediate and ongoing
Protect the scenic quality of Goldsboro and its local landscape character.	Identify and document important historic, cultural, or natural landscapes, scenic views in Goldsboro.	Select Board, Planning Board, Historical Society HCPC	Immediate and ongoing
Encourage greater property-owner understanding of the importance of conserving natural resources.	Provide educational opportunities and encourage voluntary activities to increase tree cover, reduce invasive species, protect nesting areas etc.	Any conservation organizations active in Goldsboro	Ongoing