

## Marine Resources

### Overview

Brunswick is bounded on three sides by water – the Androscoggin River to the north (21 miles of river frontage), New Meadows River to the east (19.1 miles of river frontage), and Northern Casco Bay to the south (41.7 miles of coastline). The community has a rich waterfront history, from the mills and parks along the banks of the Androscoggin River to the historic shipbuilding in Middle Bay to the plentiful shellfish harvesting and emerging aquaculture industry that exists today. The Town's coast and waterfront vary greatly in character, and in a broad sense include: steep coastal bluffs, expansive mudflats, shallow and deep waters, tidal estuaries, impoundments, and riverine and tidal freshwater river conditions. These waterbodies support a wide range of recreation, economic activity, and wildlife habitat. Preserving the viability of these marine water resources is vitally important to Brunswick's cultural heritage and economy.

### Coastal Marine Resources

Brunswick has jurisdiction over approximately 3,900 acres of Northern Casco Bay, of which approximately 41% (1,600 acres) is intertidal, 37% (1,450 acres) is shallow water, and 22% (850 acres) is deep water. [See Brunswick Bathymetry Map, Appendix \\_\\_\\_\\_?](#)

#### *Maquoit Bay, Middle Bay, Harpswell Cove*

Brunswick's tidal bays are shallow with extensive mudflats, which make some of the best shell fishing beds in the state of Maine. The majority of Brunswick's marine shoreline is characterized by low gradient saltmarsh frontage, extensive intertidal mudflats, and steep Presumpscot formation bluffs. This is unique to this area of the Maine coast, which is famously quite rocky. Nearly half of the coastal areas in Brunswick have been identified as focus areas of statewide ecological significance due to their rich intertidal communities that support invertebrate diversity, which in turn fuels annual migrations of thousands of shorebirds, wading birds, and waterfowl.

Freshwater flows to the bays by way of numerous streams and intermittent drainages, many of which have headwaters located in the town's current growth zone. [See Watershed Map, Appendix \\_\\_\\_\\_\\_](#) Small creeks (such as the Maquoit Brook and Miller Creek) provide spawning habitat for rainbow smelt and other sea run fish. Eelgrass beds in this region have historically been among the most extensive in Maine. The marsh lands at the head of Harpswell Cove are fed by Mare Brook.

The Bays' future health is balanced between natural forces and management choices the Town makes. Natural erosion is one essential dynamic for the maintaining the health of intertidal mudflats and saltmarsh communities.



*Photo Courtesy Town of Brunswick*

### *The New Meadows River and Lake*

The New Meadows forms the Town's eastern boundary with West Bath and Harpswell. This system of a tidal estuary is referred to as a river, however the New Meadows functions more as an embayment because there is no substantial surface freshwater input. There are two impoundments situated in the upper reaches which are restricted by US Route 1 and the Old Bath Road. Collectively they are referred to as New Meadows Lake. The New Meadows system is approximately 19.1 miles long and is bordered primarily by residential homes with sporadic commercial working waterfront development (including a marina, lobster wharfs and several shellfish aquaculture operations). The accompanying watershed, estimated at approximately 23 square miles, falls within two counties, the western shore being in Cumberland County, the eastern shore in Sagadahoc County. The watershed covers areas in five municipalities, the City of Bath to the north, Brunswick and Harpswell to the west, and West Bath and Phippsburg to the east. All but the City of Bath have shoreline on the New Meadows.

The New Meadows impoundment (New Meadows Lake) was separated from the rest of the New Meadows River with the construction of a causeway by the Department of Defense which replaced a former pile supported bridge. Completed in 1940, the causeway was seen at the time as the cheapest way to transport heavy ship building materials to Bath for construction of naval vessels. The causeway was set at the high tide line thereby cutting off almost all tidal action to the upper portion of the once-tidal inlet. Prior to construction, a deep channel allowed navigation up to what is now US Route 1 at all tides. The Lake has a drainage area of only 1.6 square miles in both Brunswick and West Bath. Its maximum depth is 30 feet, but most of the lake is considerably shallower. Within a tidal cycle there is a 7 percent exchange of New Meadows Lake volume.<sup>1</sup> Without a full flow natural tidal exchange, the "lake" has become highly nitrified resulting in low oxygen zones in deeper portions.<sup>2</sup> Despite these challenges New Meadows impoundment (New Meadows Lake) hosts a thriving quahog fishery. North of a second impoundment (Old Bath Road) is a 91 acre saltwater marsh.

The New Meadows River is home to Thomas Point Beach, the community's only shoreside private campground. Recently, due to increased storm surges, the man-made beaches from the 1950s are eroding, causing concern by park owners about future beaching activities.



Seed Clams

*Photo Courtesy of Freda Farms*

<sup>1</sup> For more information, see:

[https://www.cascobayestuary.org/wp-content/uploads/2021/01/2006\\_wa\\_new\\_meadows\\_lake\\_tidal\\_restoration\\_feasibility.pdf](https://www.cascobayestuary.org/wp-content/uploads/2021/01/2006_wa_new_meadows_lake_tidal_restoration_feasibility.pdf)

<sup>2</sup> State of the New Meadows River, Final Report (2002). Available online here:

<https://digitalcommons.usm.maine.edu/cgi/viewcontent.cgi?article=1271&context=cbep-publications>

In recent years, the New Meadows River has become known for oyster farming boasting several small oyster farms dotting the shoreline. These enterprises have created a new economic dynamic to the Town's economy.<sup>3</sup>

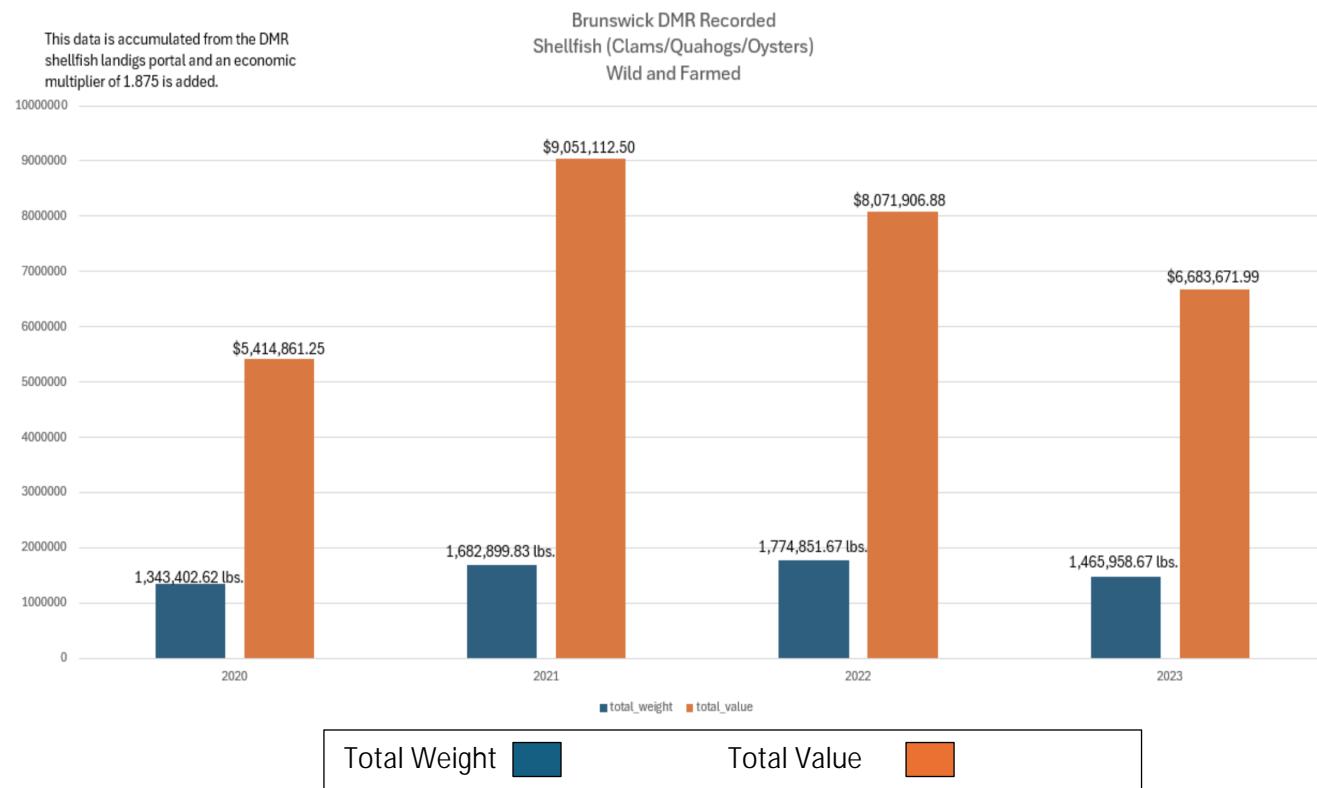
## Commercial Importance Marine Resources

Brunswick's coastal marine setting has offered a viable and sustained resource from Indigenous Peoples' occupation of the region through to today's commercial harvesters. Marine harvests are an essential component to the local economy.

### *Shellfish Harvesting and Aquaculture*

Traditional shellfish harvesting and shellfish aquaculture dominate Brunswick's marine resource industry. The coastal flats are a highly managed and productive resource. This is due to seeding programs of softshell clams and quahogs as well as abatement measures to control invasive predators. Since 2016 there has been an increasing number of aquaculture operations. Wild caught and farmed shellfish sales are an important contributor to Brunswick's local economy by nurturing other businesses such as restaurants, dealers, and marine suppliers. The workforce is dominated by residents who live, shop, and recreate within the town. Shellfish harvesters have been a long serving component to community's cultural heritage. Brunswick is one of the top five producers in the State of soft-shell clams, and the top producer of quahogs.<sup>4</sup>

According to the Town of Brunswick Shellfish Survey Report from 2021, shellfish crop projections for the 2022-2023 harvest season were 1.37 million pounds of softshell clams and 9.7 million pieces of quahogs.<sup>5</sup> Between 2008 and 2019 softshell harvests were initially predominant, but quahog harvests increased after 2015.<sup>6</sup> From 2020 to 2023 the harvest has remained relatively consistent while market value has varied.



<sup>3</sup> For more information, see: <https://www.maine.gov/dmr/aquaculture/maine-aquaculture-leases-and-ipas/aquaculture-web-map>

<sup>4</sup> For more information, see: <https://www.brunswickme.org/DocumentCenter/View/6255/2021-Annual-Shellfish-Report>

<sup>5</sup> For more information, see: <https://www.brunswickme.org/DocumentCenter/View/6255/2021-Annual-Shellfish-Report>  
Note: Quantities of softshell clams are factored in pounds; quantities of Quahogs are factored by number of bivalves.

<sup>6</sup> Per the 2021 Shellfish Initiative Economic Analysis, available on the Town's website [here](#).

The number of commercial shellfish licenses available annually is set by the Town's Marine Resources Committee, in consultation with the State's regional Marine Resource Biologist and based on shellfish population surveys and data concerning resource capabilities. From 2018 to 2024 the number of shellfish licenses issued by the Town of Brunswick have been consistent.

*Chart courtesy of Daniel Devereaux, Coastal Resources Office*

#### *Commercial Fishing Regulated by Maine Department of Marine Resources (DMR)*

There are no statistics available for the total amount of DMR regulated fisheries that are annually harvested from Brunswick's waters, although seasonal commercial pogy (menhaden) harvests occur in Middle Bay. The number of licenses issued by Department of Marine Resources in 2018 to Brunswick residents totaled 113 licenses, 94 for lobster and crab, 15 for commercial fishing, and 4 for scalloping (including dragging and diving)<sup>7</sup>. The number of Brunswick residents with licenses issued by DMR has decreased from 1989 numbers. That year, a total of 254 DMR licenses were issued, 137 for lobster and crab, 93 for commercial fishing, and 24 for scalloping. Whereas the number of locally regulated shellfish licenses has slightly increased other commercial licenses (DMR issued) have decreased. This is attributed to a decline in fishing stock, regulations reducing catch limits, and reduction in the number of licenses issued.

A recent and emerging commercial fishery is netting Elvers. Fishers take advantage of the town's tidal creeks in the spring run. Other than occasional Pogy (Menhaden) purse seining in Middle Bay, finfish fisheries in Brunswick waters are largely limited to recreational pursuits.

*Data Source: Maine Department of Marine Resources*

<sup>7</sup> Lobster/crab, commercial fishing, and scallop licenses are noted by town of residence and not waters fished. The majority of these license holders who are Brunswick residents fish from harbors in neighboring communities.

## Public Importance of Marine Resources

Brunswick's coastal shoreline offers a variety of water dependent uses from recreational activities to scenic opportunities.

### *Access to Shore and Water*

Over the years, Brunswick has steadily worked to increase the number of public access points to the town's waterways, despite this goal frequently being an uphill battle with rising coastal property prices and neighborhood opposition to public uses. However, through cooperative initiatives between the Town of Brunswick, Brunswick-Topsham Land Trust, Maine Coast Heritage Trust, and Maine Department of Inland Fisheries and Wildlife, significant coastal land parcels have been preserved for public use. These provide shoreline hiking, bird watching, and other passive recreational pursuits. They are:

#### Maquoit Bay

- Maquoit Bay Conserved Land, 124 acres
- Maquoit Marsh, 19.5 acres

#### Middle Bay

- Skolfield Preserve, 8.4 acres

#### Harpswell Cove

- Kate Furbish Preserve, 890 acres

#### New Meadows River

- Lower Coombs Island, 23 acres
- Woodward Point Preserve, 87 acres
- Woodward Cove, 18 acres

The quiet tidal waters offered by the Brunswick coastline are popular with sea kayakers. Simpson's Point and Barnes Point on Middle Bay as well as Woodward Point Preserve offer hand carry craft access to the water.

Trailerable craft launch sites include Maquoit Landing (high water only), Mere Point Boat Launch (all tide), Princes Point (1/2 tide only), and Sawyer Park (all tide). In March of 2021 the Town Council approved an expenditure of \$355,000 to improve access and parking at Simpsons Point. [SEE, Public Launch Facilities Map, Appendix](#)

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In addition two local marinas offer private launch services. Paul's Marina on Mere Point also offers a mooring field, small chandler, and pump-out service. New Meadows Marina at the head of the river also offers dockage, marine supplies and service.

Deep water access is only available on the upper New Meadows River and the east side of Mere Point. Because of hard tidal flow bottom silting in these areas has not been an issue. To date formal conversations around dredging in coastal waters have not been documented in planning efforts in Brunswick.

### *Scenic Assets*

Despite having a long coastline at the head of Casco Bay there are relative few open marine vistas or viewsheds. Those are identified in the Parks, Recreation, and Open Space Task Force Report of 2002. It is notable that the report does not recognize two notable viewsheds on Mere Point. [SEE, Vistas Map, Appendix](#)

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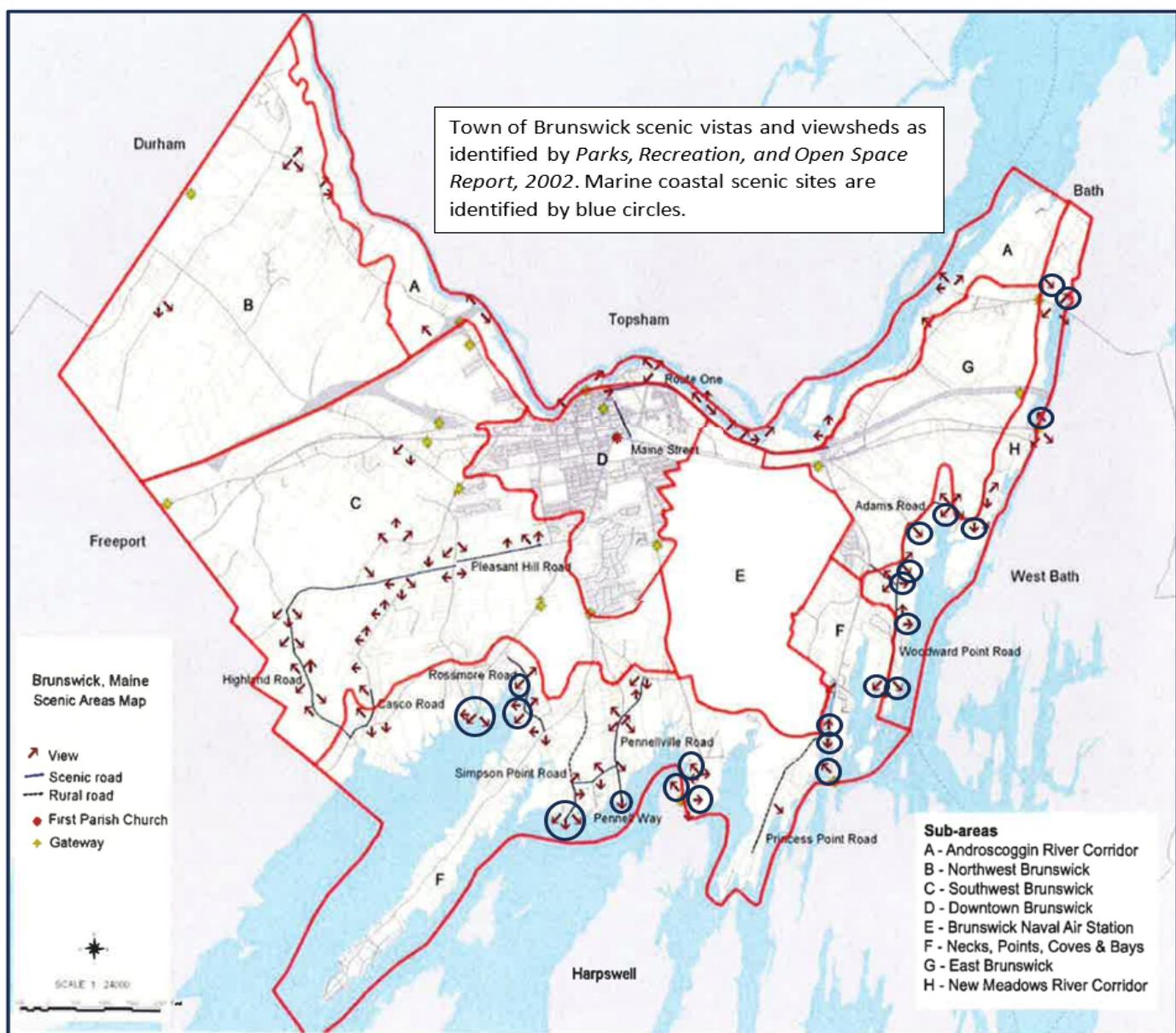
Currently, the only protections for identified scenic areas are through the following provisions of the Town's Zoning Ordinance:

- The Rural Farm and Forest (RF), Rural Residential (RR), and the Rural Protection 1 and 2 (RP1 and RP2) Zoning Districts all cite the protection of, "natural and scenic resources, including wetlands, unfragmented

wildlife habitats, and scenic roads" as reasons for the regulations established in each district. Similarly, the Rural Mixed Use (RM) Districts established supplemental standards, "to protect the area's natural resources and scenic values, minimizing disturbance of existing features and vegetation during development."

- Scenic assets are one of the criteria that can be included within the protected conservation lands required for approval of an Open Space Development.
- Section 4.3.3.B.(1) states that developments within Scenic Areas identified within the 2002 Plan are required to: maintain an existing vegetated buffer of at least 25 feet along existing roads/rights-of-way except where doing so conflicts with the protection of other protected natural resources. The buffers may be broken only for driveways, streets, and stormwater infrastructure where it is impracticable to locate them elsewhere.

The Ordinance has done little to maintain scenic assets. Most of the vistas are on private property and apply only if permitting from the Planning Department is required. Changes that have occurred are largely due to natural growth of vegetation that has altered or eliminated some scenic resources. Some owners are unaware of the scenic designation of their property.



## Threats to Marine Resources and Measures Taken

Brunswick's highly valued marine resources require diligent oversight. Natural forces, inadequate land use policy, and flawed resource management can lead to severe damage of this fragile asset

### *Shellfish Management*

In order to prevent over fishing and to promote the health of the shellfish resource Brunswick has undertaken several measures. These actions include the approval and/or revision of several different ordinances and policies described below.

- In 2009, the Marine Resources Committee (MRC) recommended amendments to the shellfish ordinance to provide more efficient management and strengthen enforcement. The amendments took the responsibility of opening and closing the flats from the Town Council and gave it to the MRC (with input from qualified biologists and other professionals).
- In 2013, the Town partnered with Maine Coast Heritage Trust (MCHT) and the Brunswick-Topsham Land Trust (BTLT) to apply for a grant to purchase a 23-acre property near Woodward Cove to allow for public access for shellfish harvesters.
- In April 2013, the Town approved the creation of a bushel shellfish license for individuals 60 years of age or older and who previously held a commercial license for the last ten (10) consecutive years, or held a bushel license in the prior year, to harvest one (1) bushel (4 pecks / 32 quarts) of soft-shell clams and one (1) bushel of quahogs per day.
- In January 2014, the Town adopted its Harbor Management Plan, which recommended the creation of a River and Waters Commission to focus on general waterfront issues such as access, moorings, and wharf applications so that the MRC could focus on specific commercial resource issues, mainly shellfish management.
- In April 2014, the Town Council unanimously voted to support MRC's effort to strengthen commercial shellfish harvester conservation efforts by increasing the conservation credit points required for commercial harvesters from ten (10) to twenty (20) per year and adding harvester diversity by reintroducing and working to develop methods to propagate oysters and razor clams.
- In 2016, the Town, led by MRC and the Coastal Resource Manager, adopted an aquaculture ordinance that was reviewed and approved by the Maine Department of Marine Resources (MDMR) that established a regulatory structure to place shellfish farms in areas that are less productive, which ultimately helps in juvenile shellfish distribution throughout the public shellfish growing areas. Considering issues such as climate change, nitrogen runoff, ocean acidification, predation, and species changes, etc., that affect and continue to affect the Town's local shellfish production, aquaculture is seen as a valuable tool to help the Town's local shellfish industry.

### *Water Quality Monitoring*

Water quality in the community is monitored in a couple of different ways. The Town's Coastal Resource Office or other designated staff currently collects water quality samples which are then analyzed by the Department of Marine Resources for fecal coliform classification under the Molluscan Shellfish Growing Area Classification Program through the National Shellfish Sanitation Program, a federal/state cooperative through the U.S. Food and Drug Administration (FDA) and the Interstate Shellfish Sanitation Conference (ISSC).<sup>8</sup> This water quality testing is specific to shellfish growing conditions. The data from the samples collected has demonstrated an overall improvement for shellfish growing conditions since 2008, which has allowed the Marine Resources

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<sup>8</sup> For more information, visit: <https://www.fda.gov/food/federal-state-food-programs/national-shellfish-sanitation-program-nssp>

Committee to reopen some of the previously closed clam flats (such as Woodward Cove in 2011).<sup>9</sup> However, at the time of plan drafting in the summer of 2023, fecal coliform had recently been found in Harpswell Cove (east of Gurnet Road). Landowners were notified, and further efforts are underway to identify potential point sources of pollution.

Although site specific, the Town acquires some knowledge of existing water quality from proposed developments subject to Section 4.3.7 – Groundwater of the Zoning Ordinance, as applicants may be required to document existing water conditions and to establish a monitoring system, accessible to the Town, to measure post-development levels of impact. Furthermore, Section 4.3.8 – Surface Waters, Wetlands, and Marine Resources of the Zoning Ordinance allows for a review authority (the Planning Board or Planning Department staff) to consider and/or request reports or statements from qualified wetland scientists, hydrogeologists, the Maine Department of Environmental Protection, the Maine Department of Marine Resources, or other agents that evaluate the impact of development on surface waters or wetlands.

Friends of Casco Bay, a non-profit formed in 1989 after a report entitled “Troubled Waters” labeled Casco Bay as one of the most polluted estuaries in the nation, monitors water quality seasonally (taking samples every three weeks from May through October) at the Mere Point Boat Launch.<sup>10</sup> Friends of Casco Bay measure a variety of parameters of water quality, including temperature, salinity, dissolved oxygen, pH, and chlorophyll fluorescence (a measure that provides an estimate of phytoplankton abundance).<sup>11</sup>

In addition, water quality testing specific to the Mare Brook Watershed occurred in 2016 and in 2020/2021 as part of the Mare Brook Watershed Assessment and Community Engagement Project, which was funded in part through the Maine Department of Marine Resources’ Coastal Communities Planning Grant program. Head of tide is located downstream of the junction of Mare Brook and Merriconeag Stream near Liberty Crossing, where it becomes part of the Harpswell Cove estuary in Upper Harpswell Neck.

Bunganuc Brook, Maquoit Brook, and an unnamed stream from the Rossmore Road pond are the major freshwater inputs to Maquoit Bay. In July and August of 2022, a variety of factors (including extreme heat, heavy rainfall, and the possible presence of lawn fertilizers and pesticides that would have runoff into the bays) contributed to the death of more than four acres of softshell clams in Brunswick, the first significant shellfish mortality event since 2017.<sup>12</sup> This will likely be a reoccurring threat as a result of climate change and the unregulated control of ground water toxins.

Town can contribute to reducing the scale of the issue by limiting the use of nitrogen-rich fertilizers and pesticides, which rains carry from lawns into the freshwater streams and down to the ocean (similar to the Ordinance adopted by the Town in 2022 prohibiting the use of certain pesticides on Town-owned land). While the 4 acres affected by the 2022 event make up only about 0.5% of Brunswick’s approximately 750 productive acres of mudflats, further degradation could lead to other environmental casualties and the loss of the rest of the shellfish, fish, and waterfowl that make up the rich ecosystem of Brunswick’s waters. Another factor is the composition of the upland geology within the watersheds that feed the bays. With beds of sand underlain by marine clay these watersheds contribute to over nutrification of the bays.

Since the 1990s the town has actively attempted to balance residential growth in the Town’s marine watersheds with long-term protection of the bays. Actions have included lowering residential density, attempting to regulate septic maintenance, and increasing required buffers from water resources.

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<sup>9</sup> 2008 Comprehensive Plan Review Draft Report, available on the Town’s website [here](#).

<sup>10</sup> For more information, visit: <https://www.cascobay.org/our-work/science/>

<sup>11</sup> For more information, visit: <https://www.cascobay.org/our-work/science/seasonal-sampling-across-casco-bay/>

<sup>12</sup> <https://www.pressherald.com/2022/10/04/extreme-heat-heavy-rain-lawn-runoff-blamed-for-brunswick-clam-die-off/>

In 2023 the Town Council authorized the formation of the Maquoit Bay Water Quality Task Force charged with "...evaluating the water quality impacts associated with existing and future land uses in the watershed, and developing water quality loading models to assess present and future loadings of nitrogen and fecal coliforms."<sup>13</sup>

#### *Eel Grass Restoration and Shoreline Stabilization*

Since the prohibition on mussel dragging in Maquoit Bay in the 1980s, the town has consistently worked with the Department of Environmental Protection and the Department of Marine Resources to address eel grass declines. This work has included boater education aimed at avoiding propeller wash and clipping in existing eel grass beds, promotion of helix<sup>14</sup> moorings to minimize scour, and prohibitions of certain activities in eel grass beds. In 2020, Brunswick submitted a grant proposal to the Maine Natural Resource Conservation Program for the conversion of 20 traditional moorings located directly within established eelgrass beds to conservation moorings with helical anchors. As part of this conservation mooring conversion, the Town will update their mooring regulations to prohibit conversion of conservation moorings back to block and chain. The data collected from this study will be used by the Town to inform replacement of traditional moorings in eelgrass and develop best management practices for the installation and use of conservation moorings across Maine.<sup>15</sup> The grant was in the amount of \$223,187, and the project is now ongoing.

The Town is currently participating in the Maine Coastal Program (MCP) and Maine Geological Survey's (MGS) project (funded through a Coastal Resilience Grant from the National Oceanic and Atmospheric Association (NOAA)) to design, construct, and monitor living shoreline projects in Maine. A living shoreline is defined by NOAA as, "a protected, stabilized coastal edge made of natural materials such as plants, sand, or rock." The living shoreline project seeks to develop natural Best Management Practices (BMPs) that sustain geological and ecological systems by restoring or enhancing natural functions and values through shoreline erosion management as opposed to traditional shoreline erosion measures such as riprap or structures like retaining walls or bulkheads.

Two Town sites, Wharton Point and the Maquoit Conservation Land, were selected for living shoreline demonstrations projects. The Wharton Point demonstration project consists of recycled oyster shells placed in two (2) different types of bags with one bag being biodegradable and the other being a new synthetic product.

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<sup>13</sup> For more information see: <https://www.brunswickme.gov/714/Maquoit-Bay-Water-Quality-Task-Force>

<sup>14</sup> Helix is an anchor/mooring device that minimizes bottom disturbance by offering security through a screw design.

<sup>15</sup> [https://www.brunswickme.org/DocumentCenter/View/5925/MNRC\\_P\\_Grant\\_Proposal](https://www.brunswickme.org/DocumentCenter/View/5925/MNRC_P_Grant_Proposal)



Shoreline Conservation Project at Maquoit Bay using oyster shells in coir fabric bags along with tree runners.

*Photo: <https://www.maine.gov/dacf/mgs/explore/marine/living-shorelines/>*

The results from the different types of bags will be compared to determine which is optimal for slowing erosion as well as surviving the harsh climate. The Maquoit Conservation Land demonstration project also compares the two (2) different type of oyster shell bags but includes ten-to-twelve-foot (10-12') hardwood tree trunks that create a ramp for ice to ride up and over the demonstration project during the winter months. The demonstration projects were installed in 2020 and will be in place for several years for continued monitoring.<sup>16</sup>

#### *Green Crab Infestation*

European green crab activity in 2012 and 2013 caused the destruction of many of the intertidal areas in Brunswick, which impacted wading bird and shellfish habitat. The town, in partnership with Resource Access International, the New Meadows Watershed Partnership, and the Casco Bay Estuary Partnership, conducted a project to remove the invasive green crab populations by setting up predator fencing and traps in Buttermilk and Woodward Coves. Green crab populations were targeted, temperature data loggers were deployed throughout the season, and shellfish surveys were conducted to provide information on impacts to shellfish populations and recovery. The project was completed in May 2015.<sup>17</sup>

#### *Local Zoning & Coastal Land Use*

All of the Town's coastal properties are located within the Rural Protection Zoning Districts (either RP1 or, further upstream of the New Meadows River, RP2). The Rural Protection (RP) districts apply to coastal watersheds in Rural Areas where environmental systems are preserved and rural resources, including active and productive natural-resource-based uses (particularly those that rely on the coastal waters) are maintained. District regulations are intended to manage land use and development in an effort to protect coastal embayments from

<sup>16</sup> For more information, see this page on the Town's website: <https://www.brunswickme.org/239/Shoreline-Erosion-Management>

<sup>17</sup> For more information, see

[https://www.maine.gov/dacf/municipalplanning/casestudies/docs/19\\_Brunswick%20FY14%20CCG%20%20Green%20Crab%20Study.pdf](https://www.maine.gov/dacf/municipalplanning/casestudies/docs/19_Brunswick%20FY14%20CCG%20%20Green%20Crab%20Study.pdf)

the potential impact of stormwater runoff, nutrient loading, and other nonpoint source pollution by: limiting impervious surfaces; enhancing stormwater management; ensuring maintenance of subsurface wastewater disposal systems; and managing lawn maintenance and agricultural practices. Standards within these zoning districts are also intended to ensure that any development or intensive use maintains rural character and protects natural and scenic resources, including wetlands, unfragmented wildlife habitats, and scenic roads. The districts accommodate marine activities, water-dependent uses, agriculture, and forestry activities. In addition to very-low-density residential development (encouraging open space subdivisions as the preferred form of development), low-intensity businesses and other nonresidential development that support or are based on rural and natural-resource-based uses.

Within the RP Zoning Districts, many commercial uses (excluding marine activities) are either not allowed or are only allowed as conditional uses (with prior approval by the Planning Board). Marine Activity is permitted by right (without additional review by the Planning Board), so long as supplemental use standards as outlined in 3.4.1.S of the Zoning Ordinance are demonstrated to have been met. These supplemental use standards include standards requiring Harbormaster review of applications for docks or wharves and ensuring that proposed activities or construction will not adversely affect fisheries, spawning areas, or other wildlife.

Properties along the coast are also within the Shoreland Protection Overlay (SPO) Zone or its subdistricts. This overlay applies to all land areas within 250 feet, horizontal distance, of the normal high-water line of any river; within 250 feet, horizontal distance, of the upland edge of a coastal wetland, including all areas affected by tidal action; within 250 feet of the upland edge of a freshwater wetland; and all land areas within 75 feet, horizontal distance of the edge of a tributary stream. Additional requirements (those of the Resource Protection Sub-District, or SPO-RP) apply within floodplains along rivers and floodplains along artificially formed great ponds along rivers, defined by the 100 year floodplain as designated on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or Flood Hazard Boundary Maps, or the flood of record, or in the absence of these, by soil types identified as recent floodplain soils. This district also includes 100 year floodplains adjacent to tidal waters as shown on FEMA's Flood Insurance Rate Maps or Flood Hazard Boundary Maps.

Overlay districts are applied over base zoning districts and regulations for overlay districts supplement or supersede the provisions of the underlying base zoning district(s). If regulations for an overlay district directly conflict with those for the underlying base zoning district, the overlay district regulations prevail. All new principal and accessory structures, **excluding** functionally water-dependent uses, must be located outside of any SPO Resource Protection Sub-District (SPO-RP). This means that functionally water-dependent uses are given greater leeway (less restrictions) on building than residential or other uses in this area.

Many seasonal cottages along the coast have been turned into year-round homes, with additional homes being built on vacant land. At this time, moorings were becoming more coveted as access to tidal waters made coastal properties in

Participants in Brunswick High School community engagement program to eradicate green crabs.

*Photo Courtesy of Susan Olcott*



the town more attractive and the Town recognized the need to enhance the existing regulations around moorings. In 2014, the Brunswick Town Council adopted the Town's first Harbor Management Plan which set out to address the need for effective management of the Town's coastal and navigable waters. The plan is used as a guidance document and a tool for the Town's Marine Resources Committee and Rivers and Coastal Waters Commission. After adoption of the Plan, the Rivers and Coastal Waters Commission created an updated set of mooring regulations that set annual permits and inspection requirements, as well as instituting annual renewal fees.<sup>18</sup>

### *Coastal Land Use Mix*

Brunswick has a limited amount of deep water, more than half of which is located in southern Maquoit Bay, with the remainder mainly located in Merepoint Bay, and along the length of the New Meadows River (see table below).

<b>Harbor Area</b>		<b>Total (acre)</b>	<b>Intertidal (% acre)</b>	<b>Shallow (% acre)</b>	<b>Deep (% acre)</b>
1	Maquoit Bay	1,570	32% (510)	39% (610)	29% (450)
2	Merepoint Bay	420	38% (160)	22% (90)	40% (170)
3	Middle Bay	640	56% (360)	41% (260)	3% (20)
4	Harpswell Sound	410	69% (280)	24% (100)	7% (30)
5	New Meadows River	830	33% (270)	45% (370)	22% (180)
<b>Total Coastal</b>		<b>3,900</b>	<b>41% (1,600)</b>	<b>37% (1,450)</b>	<b>22% (850)</b>
6	Androscoggin River	1,050	---	---	---
	Tidal	810	300 (37%)	460 (57%)	50 (6%)
	Non-Tidal	240	---	---	---

*Source: Town of Brunswick Harbor Management Plan (January 2014), prepared by Baker Design Consultants in partnership with Normandeau Environmental Consultants.*

As a result, even though water and water-dependent land uses are allowed (either expressly or through conditional use review) in most of Brunswick's zoning districts, activities dependent on deep water have focused in these areas. The two commercial marinas in Brunswick are located in Merepoint Bay (Paul's Marina), and the New Meadows River (New Meadows Marina). That said, the majority of coastal frontage in Brunswick is represented by either private residential uses or conserved lands. Based on analysis contained in the 2014 Harbor Management Plan, approximately 39% of the Casco Bay coastline and 45% of the Androscoggin River shoreline represent conserved open space in some form. This number has grown following the acquisition of additional acreage of coastal conservation land by both the Town and the Brunswick-Topsham Land Trust. Commercially developed waterfront is limited to only a handful of sites in Town.

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<sup>18</sup> See the Town Code of Ordinances, Chapter 11, Article I: Harbor, Coastal, Tidal and Navigable Fresh Waters.

