

Waterways Management Plan Ipswich, MA



DRAFT
for discussion purposes only
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Prepared by the Urban Harbors Institute at the University of
Massachusetts Boston for the Town of Ipswich



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NOTE: THIS DRAFT IS FOR DISCUSSION PURPOSES ONLY

Executive Summary

I. Purpose, Scope, and Authority of the Plan

The purpose of the Ipswich Waterways Management Plan is to provide the Town and other stakeholders with the information and resources needed to understand, protect, and enhance the waterways' economic, cultural, and natural resources within the context of relevant laws, policies, and regulations. The Plan identifies existing and anticipated issues in Ipswich waterways, and provides goals, objectives, and recommendations related to the working waterfront, water quality, natural resources, recreational boating, management of waterways, commercial and recreational fishing, and access. As a municipally-approved document that resulted from varied public and stakeholder input, various entities in Ipswich should use this Plan as a tool to guide actions related to the waterways.

The planning area for this report includes all tidal waterways, including the Ipswich River (up to the Ipswich Mills Dam), Plum Island Sound, the town's portions of the Great Marsh and Parker River/Essex Bay Area of Critical Environmental Concern (ACEC), and the municipal waters of Ipswich Bay. The planning area also includes the nearshore land areas as they pertain to visual and physical access to the waterways and protection of natural resources—including water quality. The planning area was used to help focus planning efforts; however, the plan's recommendations may extend beyond the planning area.

II. The Planning Process

The Ipswich Waterways Advisory Committee, with assistance from the Urban Harbors Institute (UHI) at the University of Massachusetts Boston, guided the plan development process. The first meeting for the Waterways Management Plan occurred in late 2019. During that meeting, the Waterways Advisory Committee provided input on the planning area, the planning process, and the goals of the plan.

Next, UHI conducted interviews with relevant local and state stakeholders to collect information on issues and opportunities within Ipswich waterways. Public input on the plan was also sought through an online survey (rather than at an in-person meeting, due to COVID-19 restrictions). More than 380 people responded to the survey, including residents, recreational boaters and fishers, business owners, commercial fishers, and other waterway users. The information gathered in the survey helped identify the needs and opportunities detailed in this plan and informed many of the recommendations.

III. Key Findings

The Plan identifies existing and anticipated issues and opportunities in Ipswich waterways, and provides goals, objectives, and recommendations related to each topic area. A brief summary of the issues and recommendations covered in the Plan for each topic area is below. More details on each topic can be found in the Plan.

Economic Benefits of Ipswich Waterfront

The town's coastal environment and marine resources are important to the town's economy, character, and culture. Ipswich's marine economy consists of commercial fishing, recreational fishing, recreational

boating, tourism, seasonal housing, general recreation, eating and drinking establishments, motels and B&Bs, and special events.

Though not fully documented, there is general recognition in the community that the commercial and recreational activities dependent on the waterfront and coastal waters provide both livelihoods for Ipswich residents and broader economic benefits to the community. The plan recommends better quantifying these benefits to increase appreciation and support for maintaining and improving facilities and management.

Water Quality

Water quality is critical to both recreational activities and commercial uses, specifically including the shellfishing industry. Over the past decades, Ipswich has made significant progress in improving the water quality in its waterways. Water quality management is an ongoing process, however, and efforts must continue for water quality to be maintained and even improved.

Water quality issues facing Ipswich's waterways include: bacteria issues from failing septic systems, sewer leaks, recreational activities, wildlife, and stormwater runoff; lack of availability of pumpout amenities; liveaboard sanitation problems; and general discarding of trash into waterways. Recommendations focus on continuing and improving water quality monitoring and research; ensuring the town's waterways regulations are maximized and enforced; confirming pumpout amenities are available to boaters; and promoting public education efforts.

Natural Resources

The natural beauty of the Ipswich environment and waterways is a defining characteristic of the Town. Natural resources provide important ecosystem services, such as water filtration and flood mitigation, as well as economic value by supporting commercial industries and tourism. The high quality of the natural environment in Ipswich is among many features that draw visitors to Town throughout the year.

Declining marsh health is a major natural resource issue facing Ipswich, which is being threatened by erosion, sea level rise, and climate change; prior farming practices and mosquito ditching; and powerboat use. Additionally, marsh restoration efforts are facing significant permitting challenges. Further, invasive green crabs pose a threat to marsh health and eat seed clams which negatively impacts the shellfish industry.

Recommendations for natural resource improvements focus on: promoting the health of the marsh; continuing and enhancing invasive species control; and balancing environmental preservation with continued recreational and commercial use of the environment and waterways.

Recreational Boating

Recreational boating is an important source of recreation for the Town, which boating by both motorized (*e.g.*, powerboats, jet skis, motorized sailboats) and non-motorized (*e.g.*, kayaks, paddleboards, canoes, non-motorized sailboats) vessels. Ipswich's motorized recreational boating community is very large, with over 950 locally moored vessels, and thousands of weekend boating visitors to Crane Beach and Plum Island.¹

Issues facing the recreational boating community include: limited vessel access points; need for additional parking; vessel speeding; river vessel congestion; long waiting lists to acquire moorings;

¹ Urban Harbors Institute. 2015. 2015 State of Our Harbors: An Examination of Massachusetts Coastal Harbor Conditions and Related Economic Parameters. Prepared for the Massachusetts Department of Conservation and Recreation.

shifting sandbars; and large demand for kayak and dinghy storage. Recommendations to address these issues focus on ensuring boaters have sufficient facilities and services to access the River, which include sufficient launch sites; moorings; parking space; and shoreside infrastructure.

Management of Waterways

There are many boards, committees, and others engaged in the management of Ipswich's waterways, including the Harbormaster Department, Select Board, and Ipswich Waterways Advisory Committee. At times, coordination efforts between the Waterways Advisory Committee and town offices/engineers on project review and funding expenditures can be challenging, and these various boards and committees often work in silos.

Among other duties, these groups are responsible for safe navigation of the waterways. There are a variety of safety issues occurring in the waterways, including shallow waters; speeding of vessels; boating congestion; and poorly marked navigational hazards. Additionally, funding is limited for dredge projects, and there is some concern over the potential environmental impacts of dredging.

Recommendations for improved management include: enhancing waterways safety through education and enforcement; determining the feasibility and practicality of dredging shallow parts of the River; enhancing intra-municipal coordination; and promoting natural resource management.

Commercial and Recreational Fishing

Ipswich is famous for its soft-shell clams, which are targeted by both commercial and recreational fishermen. In addition to soft-shell clams, other important species landed in Ipswich include American lobster, Atlantic razor clam, Atlantic surf clam, and green crab. Fishing provides a primary source of income for dozens of residents, and supports a recreational fishery enjoyed by hundreds annually.

Issues facing the commercial and recreational fishing communities include: limited shore access and infrastructure; invasive species; poor water quality; shallow water; and site condition requirements limiting shellfish aquaculture. Recommendations to improve on these issues include: enhancing shoreside infrastructure; minimizing conflicts with other users; protecting water quality; exploring potential for aquaculture; and improving management coordination.

Visual Access

Views of the River, Plum Island Sound, the marshes, and the related activities are a draw for residents and visitors alike. The area's natural beauty contributes indirectly to the town's economy through mechanisms such as property taxes, home sales, and spending at local businesses.

Many indicated an interest in maintaining and improving visual access—be it while walking, driving, or engaging in other land-based activities. The plan recommends preserving existing visual access and seeking additional opportunities for more scenic views.

IV. Implementation

The Waterways Advisory Committee will take the lead in promoting the implementation of recommendations within the Town, which include actions such as enhancing municipal coordination, conducting or commissioning studies, and securing funding. None of the recommendations are binding in any way. Some will require additional public processes to determine whether they can and/or should be implemented. The Plan should be reviewed and updated every 5-7 years to ensure that it reflects current conditions.

Introduction

The importance of the shoreline and waterways of Ipswich can be traced back to the Agawam who hunted, fished, farmed, and traded in the region for thousands of years. Many of the activities that the Agawam engaged in continued in some manner as patterns of settlement changed; and new uses such as pleasure boating and commercial shipbuilding also arose.

Today, the waterways and shoreline remain an important part of the town's culture and identity. A trip down the Ipswich River to Plum Island Sound showcases the area's beauty as well as its utility, with houseboats, pleasure boats, recreational and commercial fishermen, beachgoers, and many others taking advantage of the town's coastal location.

Recognizing the significance of its waterways, the Town embarked on this planning process which provides a series of recommendations to ensure continued use and enjoyment of the waterways for generations to come. This plan is an important first step for the Town, and establishes a baseline upon which the Town and the Waterways Advisory Committee can build in the future.

Scope and Authority

The Ipswich Waterways Management Plan broadly encompasses all tidal waterways, including the Ipswich River (up to the Ipswich Mills Dam), Plum Island Sound, the town's portions of the Great Marsh and Parker River/Essex Bay Area of Critical Environmental Concern (ACEC), and the municipal waters of Ipswich Bay. The planning area also includes the nearshore land areas as they pertain to visual and physical access to the waterways and protection of natural resources—including water quality.

This document is intended to complement other planning efforts, including the Municipal Vulnerability Preparedness (MVP) Plan, the Hazard Mitigation Plan, the Community Development Plan, and the Open Space and Recreation Plan. As such, the waterways plan integrates climate change, open space protection, recreation, and community development into many of its recommendations, but does not have separate sections dedicated to each of these topics.

The recommendations in this plan are focused on those actions that the Town of Ipswich can implement to achieve its goals—either on its own, or in partnership with other municipalities, state and federal entities, and other organizations. The Waterways Advisory Committee will take the lead in promoting the implementation of recommendations within the Town, which include actions such as enhancing municipal coordination, conducting or commissioning studies, and securing funding. None of the recommendations are binding in any way. Some will require additional public processes to determine whether they can and/or should be implemented.

The plan should be reviewed and updated every 5-7 years to ensure that it reflects current conditions.

Planning Process

The first meeting for the Waterways Management Plan was held in December of 2019. During that meeting, the Waterways Advisory Committee provided input on the planning area, the planning process, and the goals of the plan.

The Urban Harbors Institute conducted several interviews with municipal officials from the planning department, the harbormaster's office, and the Recreation Department. In addition, the team interviewed staff from the Massachusetts Office of Coastal Zone Management, the Massachusetts

Division of Marine Fisheries, the Great Marsh Coalition and MassBays Program, and the Trustees of Reservations.

Due to COVID-19 and the restrictions on public gatherings, initial public input on the plan was sought through an online survey rather than at an in-person meeting. More than 380 people responded to the survey. Participants self-identified as Ipswich residents (345 people), recreational boaters (267 people), recreational fishers (135 people), owners or employees at an Ipswich business (66 people), commercial fishers (23) and other users of the shoreline and waterways. (Respondents could identify as multiple types of responders, therefore the number of types of responders is greater than the number of people who responded to the survey as a whole.) The information gathered in the survey helped identify the needs and opportunities contained in this plan and informed many of the recommendations.

This draft plan is to be posted for online review period in advance of a public meeting dedicated to review and comment. Comments and suggestions presented at the public meeting will be taken into consideration as additions or modifications to the plan as appropriate. The final version of the draft Harbor Plan will be presented to the Select Board for approval and acceptance.

Recommendations

This section provides recommendations to achieve the goals identified through the planning process. The recommendations are organized by topic and their order does not reflect any priority. Background information on each topic area provides context to enhance understanding of the needs, opportunities, and recommendations.

Economic Benefits of Ipswich Waterfront

Like most other waterfront communities, the town's coastal environment and marine resources are important to the town's economy, character, and culture. Along with ecological and aesthetic values, the town's coastal and marine resources support commercial and recreational activities that contribute considerable economic value through employment, business and personal income, municipal fees, and local, state, and federal tax revenue.

In recent years, communities, regions, and states have recognized the need to and benefits of quantifying the economic impacts of what is becoming known as the “blue economy”, defined as the sustainable use of ocean resources for economic growth, improved livelihoods and jobs, and ocean ecosystem health. An initiative, led by the University of Massachusetts, was recently



updated to assess, and identify opportunities to strengthen and grow the blue economy of the North Shore region. The current version of the study can be found at:
https://www.umass.edu/identity/northshore/NSBE-Report_ADA2b.pdf

It is beyond the scope of this plan to conduct such a study for Ipswich as detailed data below the county or regional levels on employment, wages, and value of goods and services on select industries within economic sectors is not readily available. However, perhaps an update of the town's Economic Development Strategy being undertaken currently by the Department of Planning and Development offers an opportunity.

Ipswich's marine economy consists of commercial fishing (harvesters, brokers, processors), recreational fishing, recreational boating (boatyards, yacht clubs, marine supplies, boat and engine maintenance and repair, kayaks/canoes), recreation (beaches, birdwatching, ecotours), tourism, seasonal housing, and some eating and drinking establishments, motels and B&Bs, and special events.

This plan's sections on recreational boating and commercial and recreational fishing present some relevant data on the size and value of these activities. For example, commercial fishing landings in Ipswich yielded an ex-vessel value of nearly three million dollars. Additionally, the Town received more than \$76,300 in shellfish permitting fees in 2020.

The importance of boating is indicated by the over 1,000 moorings in town waters for which the Town collected over \$124,000 in 2020; the \$8,025 collected from launch fees at the Town Wharf in 2020; and the \$17,831 provided to the Town in 2020 from boat excise taxes.²

Beach recreation and recreational fishing garnered \$127,160 and \$5,100 in fees, respectively, in 2018.³ In 2020, beach sticker sales brought in approximately \$128,000.⁴

The Ipswich Economic Development Plan (2003) supports the survival of resource-based businesses as being essential to the character of the Town and livelihoods of local residents. The rivers and coastal waters, waterfront infrastructure, beaches, and marshes all support and attract local and visiting boaters, fishers, beachgoers, and other recreationists who contribute to the local economy through spending on local goods and services. In fact, town planning documents propose strategies for downtown (and other) businesses to better connect with and benefit from adjacency to the river and the town's water-based activities as one way to improve commercial vibrancy. The 2014 Downtown Retail Assessment⁵ suggests extending the Riverwalk and opening up and integrating river access with downtown commercial enterprises. The discussion draft of the Community Development Plan (CDP) 2020 update⁶ also suggests expanding the Riverwalk from Green Street to the Town Wharf to enhance access between the two. The Downtown Assessment also notes that among the existing and potential business clusters that could be expanded are those supporting river canoeing and kayaking and serving visitors to the town's beaches and coastal resources. The CDP update recommends the Town prepare a five-year strategic tourism plan focusing on enhanced public access to the Ipswich River via the Riverwalk and other access points and the beach.

² Town of Ipswich, 2020 Annual Report. Online at: <https://ipswichma.gov/ArchiveCenter/ViewFile/Item/729>.

³ Town of Ipswich, 2018 Annual Report. Online at: <https://ipswichma.gov/ArchiveCenter/ViewFile/Item/661>.

⁴ Town of Ipswich, 2020 Annual Report. Online at: <https://ipswichma.gov/ArchiveCenter/ViewFile/Item/729>.

⁵ FinePoint Associates. 2014. Downtown Assessment: Ipswich, Massachusetts. For Town of Ipswich Department of Planning and Development. Online at: <https://www.ipswichma.gov/621/Economic-Development>.

⁶ Ipswich CDP Steering Committee, 2020 (November draft) Ipswich Community Development Plan, FY2022-FY2036. Online at: https://ipswichma.gov/DocumentCenter/View/12693/Ipswich-CDP-Draft-Report_111720

These documents and interviews suggest that the Town is committed to maintaining and strengthening what it has and do it in ways that protect present and future environmental conditions and quality. There has been little expression of interest in having the Town move into other marine-based industries—other than perhaps aquaculture—such as marine technologies, excursions/water transportation, and offshore energy.

Needs and Opportunities

Several needs and opportunities have been identified for consideration in this Waterways Plan. They include:

- Though the nature and extent of the economic benefits and impacts are not well documented, there is general recognition in the community that the commercial and recreational activities dependent on the waterfront and coastal waters provide both livelihoods for Ipswich residents and broader economic benefits to the community. Better quantifying these benefits could increase appreciation and support for maintaining and improving facilities and management.

Goals, Objectives, and Recommendations

Goal: To maintain and expand the economic value and return of the town's coastal- and marine-based businesses and activities.

Objective 1: Quantify the direct and indirect economic impacts of coastal- and marine-based commercial and recreational activities

Recommendation: Conduct an economic impact study of public and private marine -and coastal-based activities commercial and recreational activities. Useful information about conducting such studies, including data, methodologies, and other resources, can be found on the National Oceanic and Atmospheric Administration's (NOAA) Economics: National Ocean Watch website: <https://coast.noaa.gov/digitalcoast/data/enow.html>.

Objective 2: Manage the waterways to increase economic return and improve user experience

Recommendation 1: Conduct a review of fees and fee structures in comparable communities for perspective. Consider modifying fees in Ipswich as appropriate.

Recommendation 2: Review management of waterfronts in similar coastal communities for best practices that might be considered for adoption by Ipswich.

Recommendation 3: Study the use pattern of the Town Wharf to determine what changes or investments could improve efficiency for recreational and commercial users, increase economic return, and enhance user experience.

Objective 3: Increase the economic benefits of the Town's coastal- and marine-based recreational and commercial activities

Recommendation 1: Generate additional economic value by implementing physical, programmatic, and marketing strategies that connect waterfront activities, especially those attracting visitors, with non-waterfront businesses.

Water Quality

Water quality is critical to both recreational activities and commercial uses, in particular the shellfishing industry.

Over the past decades, Ipswich has made significant progress in improving the water quality in its waterways. Water quality management is an ongoing process, however, and efforts must continue for water quality to be maintained and even improved.

Water quality is significantly influenced by both land-based and water-based human activities. Ipswich waters are influenced by activities not only within the Town but also throughout the included watersheds. Most of Ipswich lies within the Ipswich River Watershed, while the southeastern portion of Town is within the Essex River Watershed and the northern portion of Town is in the Parker River Watershed.

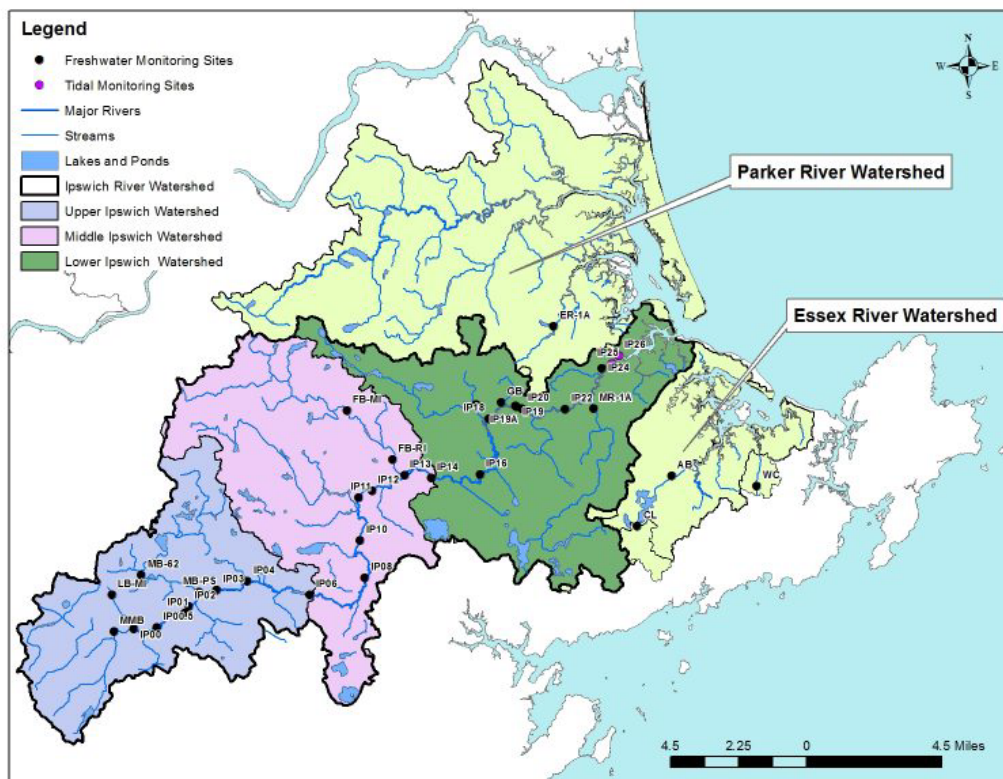


Figure 1: Map of Ipswich River, Parker River, and Essex River Watersheds⁷

Pollution Status and Sources

Under Section 303(d) of the Clean Water Act, Massachusetts is required to monitor state waters, identify impairments in waterbodies that fail to meet established water quality standards established by that state and approved by the U.S. Environmental Protection Agency, and develop a plan to bring the waters back into compliance with those standards.

⁷ Ipswich River Watershed Association. 2019. River health index. Online at: <https://www.ipswichriver.org/river-health-index/>

The Ipswich River (from the Ipswich Mills Dam to the mouth of the Ipswich River) and Plum Island Sound (including Ipswich Bay) are identified as failing to meet water quality standards due to fecal coliform levels.⁸ Both are listed as a Category 5 waterbody, meaning the waterbody is impaired and requires a Total Maximum Daily Load (TMDL).⁹ Based on this listing, the state must develop a plan to identify the maximum amount of a pollutant (the TMDL) that can enter a waterbody and still allow the waterbody to continue to meet water quality standards for a given pollutant, and to determine strategies to reduce pollution to achieve the TMDL.¹⁰ Massachusetts has developed draft TMDLs for the Ipswich River Watershed and Parker River Watershed.

Most of the bacteria sources in the Ipswich River Watershed are believed to be storm water related.¹¹ Likely bacteria sources include failing septic systems, sanitary sewer overflows (SSO), sewer pipes connected to storm drains, certain recreational activities, wildlife including birds and domestic pets and animals, and direct overland storm water runoff.¹² Likely bacteria sources for the Parker River Watershed were the same, except that SSOs and sewer pipes connected to storm drains were not identified as sources.¹³

Low dissolved oxygen levels are also found in the Ipswich River, particularly in the summer and in the upper areas of the watershed.¹⁴ The primary causes of impairments include both low flows as a result of water withdrawals and impervious surfaces that disrupt groundwater recharge and contribute to stormwater runoff.¹⁵

Monitoring Programs

The Ipswich River Watershed Association has run a volunteer water quality monitoring program for more than 30 years.¹⁶ The program, called RiverWatch, currently includes over 50 volunteers monitoring a total of 35 sites each month.¹⁷ There are 21 monitoring sites on the mainstem of the Ipswich River, nine sites on major tributaries, and several other sites, including on the Egypt River in Ipswich and other locations in Essex, Hamilton, and Gloucester.¹⁸ Data are collected on dissolved oxygen, water temperature, conductivity, color (visual inspection), clarity, odor, depth, and velocity.¹⁹

From March to October, the Massachusetts Division of Marine Fisheries (DMF) conducts weekly water quality monitoring for harmful algal blooms (red tides), which can produce biotoxins that can accumulate in shellfish, potentially causing serious illness, including Paralytic Shellfish Poisoning.²⁰ There

⁸ Commonwealth of Massachusetts. 2019. Massachusetts Year 2016 Integrated List of Waters. Online at: <https://www.mass.gov/doc/final-massachusetts-year-2016-integrated-list-of-waters/download>

⁹ *Ibid.*

¹⁰ U.S. Environmental Protection Agency. 2018. Overview of Total Maximum Daily Loads (TMDLs). Online at: <https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls>

¹¹ Massachusetts Department of Environmental Protection. 2016. Draft pathogen TMDL for the Ipswich River watershed. Online at: <https://www.mass.gov/files/documents/2016/08/vk/ipswich1.pdf>

¹² *Ibid.*

¹³ Massachusetts Department of Environmental Protection. 2016. Draft pathogen TMDL for the Parker River watershed. Online at: <https://www.mass.gov/files/documents/2016/08/st/parker1.pdf>

¹⁴ Ipswich River Watershed Association. 2019. RiverWatch. Online at: <https://www.ipswichriver.org/river-watch/>

¹⁵ *Ibid.*

¹⁶ Ipswich River Watershed Association. 2019. RiverWatch. Online at: <https://www.ipswichriver.org/river-watch/>

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ *Ibid.*

²⁰ Commonwealth of Massachusetts. 2021. PSP (red tide) monitoring. Online at: <https://www.mass.gov/service-details/psp-red-tide-monitoring>

are four sampling locations on the North Shore, including one at Pavilion Beach in Ipswich.²¹ DMF also communicates with other state agencies around New England to share information and data during the monitoring season.²² If biotoxin levels rise above 50 micrograms/100 grams of shellfish meat, DMF increases sampling at affected sites.²³ If the area reaches a threshold of 80 micrograms/100 grams of shellfish meat, the area is closed to all shellfishing and DMF notifies town and state personnel.²⁴ In Plum Island Sound, shellfish beds are closed approximately 45 days per year due to water quality impairments from rainfall and runoff.²⁵ See the section on Commercial and Recreational Fishing for further discussion of water quality and impacts to shellfishing, including harmful algal blooms and associated shellfish area closures.

Vessel Pollution

The two types of pollution of concern related to vessels are fuel and sewage. Accidental or intentional leaks of these contaminants into the water can degrade water quality, particularly given the large number of boaters using Ipswich waterways. There is concern that sanitation for liveaboards is not adequately covered by the town regulations or enforced in practice.

While the terms “houseboat” and “liveaboard” are not specifically mentioned in the Ipswich Rules and Regulations of the Waterways, a vessel is defined as “watercraft of every description, including documented boats or ships, used or capable of being used as a means of transportation on the water and including all means of propulsion and appurtenances thereto.”²⁶ Vessels required to have a mooring permit include: Any vessel berthed on the waters of Ipswich; other objects, either anchored to or extending from private property; or any vessel required by the state to be registered and/or in excess of 12 feet in length and secured to a permitted floating dock or moored float.²⁷ A mooring permit will be denied or revoked to “any vessel not capable of reasonably maneuvering reliably and safely under its own power.”²⁸

In 2014 all Massachusetts waters were designated as a No Discharge Zone (NDZ), meaning the discharge of all boat sewage, whether treated or untreated, is prohibited.²⁹ This designation recognizes that boat sewage can contain various contaminants, including bacteria, viruses, nutrients, and chemicals that can be harmful to water quality and public health.³⁰ Type I and Type II Marine Sanitation Devices (MSDs) discharge sewage into the water after varying levels of pre-treatment.³¹ A Type III MSD is a holding or storage tank that collects sewage for later disposal by a vessel-based or shore-based pumpout service.³² All three types of MSDs cannot be discharged in an NDZ and further must be secured by methods

²¹ Winkler, D. (2020, May 20). Personal communication [Phone interview].

²² *Ibid.*

²³ Commonwealth of Massachusetts. 2021. PSP (red tide) monitoring. Online at: <https://www.mass.gov/service-details/psp-red-tide-monitoring>

²⁴ *Ibid.*

²⁵ Winkler, D. (2020, May 20). Personal communication [Phone interview].

²⁶ Town of Ipswich. 2015. Rules and regulations of the waterways. Online at:

<https://www.ipswichma.gov/DocumentCenter/View/34/Harbormaster-Rules-and-Regulations-PDF>

²⁷ *Ibid.*

²⁸ *Ibid.*

²⁹ Commonwealth of Massachusetts. 2021. No discharge zones. Online at: <https://www.mass.gov/service-details/no-discharge-zones-ndzs>

³⁰ *Ibid.*

³¹ Commonwealth of Massachusetts. 2021. Requirements for boaters in No Discharge Zones (NDZs). Online at: <https://www.mass.gov/service-details/requirements-for-boaters-in-no-discharge-zones-ndzs>

³² *Ibid.*

approved by the U.S. Coast Guard to prevent discharge within the NDZ.³³ In Ipswich, a mooring permit will be denied or revoked to any vessel with a Type III MSD that does not have a pumpout deck fitting.³⁴ These no discharge requirements do not apply to vessels with portable toilets or other portable sewage reception systems, grey water from bathroom or kitchen sinks, and vessels outside of state waters, typically three miles from shore.³⁵

The Waterways Advisory Committee recognizes the critical importance of water quality, which is being addressed at a local, regional, state, and national level. Some of this work is beyond the purview of the Committee, but the Committee is committed to addressing the topic as it relates to boating and use of the Ipswich waterways. The Committee will stay informed about this issue and will participate and lend support as needed in the future.

Needs and Opportunities

Several needs and opportunities have been identified for consideration in this Waterways Plan. They include:

- While water quality management has increased significantly over time, continued management is necessary to ensure progress is maintained and improved.
- Water quality is impacted by pollutants from a variety of sources, so multi-faceted management is necessary.
- Pumpout amenities are not always consistently and easily available throughout the boating season.
- There is concern that sanitation for liveaboards is not adequately covered by the town regulations or enforced in practice.
- General discarding of trash into the waterways by users has been increasing, most notably in the high use areas of Sandy Point on the south end of Plum Island, Steep Hill, and Loudmouth Beach are causing a pollution problem. Education and enforcement options should be explored.

Goals, Objectives, and Recommendations

Goal: Promote improved water quality in Ipswich waterways

Objective 1: Pursue continued monitoring and research efforts where needed

Recommendation: Continue to support existing monitoring programs and research efforts and expanded efforts into new topics or geographic areas as needed. These initiatives are ways of engaging and educating the community about the importance of water quality and its impact on recreational and commercial uses of the waterways. In addition, long-term data collection is necessary for creating effective initiatives, policies, and regulations for ensuring the continued health of town waterways.

Objective 2: Ensure the town's waterways regulations are maximized and enforced to promote improved water quality

Recommendation 1: Review and update waterways regulations to address sanitation concerns related to liveaboards. The requirements for all types of Marine Sanitation Devices, including the town

³³ *Ibid.*

³⁴ Town of Ipswich. 2015. Rules and regulations of the waterways. Online at: <https://www.ipswichma.gov/DocumentCenter/View/34/Harbormaster-Rules-and-Regulations-PDF>

³⁵ Commonwealth of Massachusetts. 2021. Requirements for boaters in No Discharge Zones (NDZs). Online at: <https://www.mass.gov/service-details/requirements-for-boaters-in-no-discharge-zones-ndzs>

requirement of a pumpout deck fitting for vessels with a Type III MSD, only apply to vessels with an installed toilet. The Ipswich waterways regulations do not require an installed toilet on liveaboards or any other type of vessel. The regulations should be reviewed and updated to address concerns about the potential use of portable toilets on liveaboards.

Recommendation 2: Maintain adequate enforcement of existing rules and regulations to deter polluters. Regular review and enforcement are needed to ensure liveaboards have adequate sanitation, vessels with a Type III MSD have a pumpout deck fitting as required, owners of vessels with portable toilets are legally disposing of waste, owners of vessels with installed toilets meet regulatory requirements, and boaters are not polluting the waterways through illegal sewage discharges or marine debris, in particular at popular gathering places, such as Sandy Point.

Objective 3: Ensure pumpout amenities are available to help boaters keep the waterways clean

Recommendation 1: Ensure the pumpout boat is consistently in service and well-publicized during the season to provide easy access to boaters. The pumpout boat is not always reliably available for easy use during boating season. Improved maintenance and scheduling or a backup service are needed to ensure boaters have dependable access and do not resort to illegal discharges. Contact information and associated procedures related to the pumpout boat should be prominently displayed on the Harbormaster website, at town landings, and included with boating-related permits and other information at the beginning of the season.

Objective 4: Promote public education efforts related to water quality

Recommendation 1: Enhance public education about pollution, including pet waste, lawn and garden management, and boating-related debris. Provide easy access to information about sources of water quality impairments. This information could be prepared by the Town or could come from existing information compiled by local organizations. Such information could be publicized in the local newspaper, on the local cable channel, and on the town website; mailed to residents; posted at town landings, town hall, and the town library; and/or included with mooring permit paperwork.

Natural Resources

The natural beauty of the Ipswich environment and waterways is a defining characteristic of the Town. Natural resources provide important ecosystem services, such as water filtration and flood mitigation, as well as economic value by supporting commercial industries and tourism. The high quality of the natural environment in Ipswich is among many features that draw visitors to Town throughout the year.

The Town recognizes the importance of preserving the environment for current and future generations. The inextricable link between the environment and the economy is clear, and protecting the environment is a significant aspect of maintaining the economy of the community. At the same time, many residents feel strongly that there needs to be a balance between environmental preservation and continued access and recreational and commercial use of the waterways and environment.

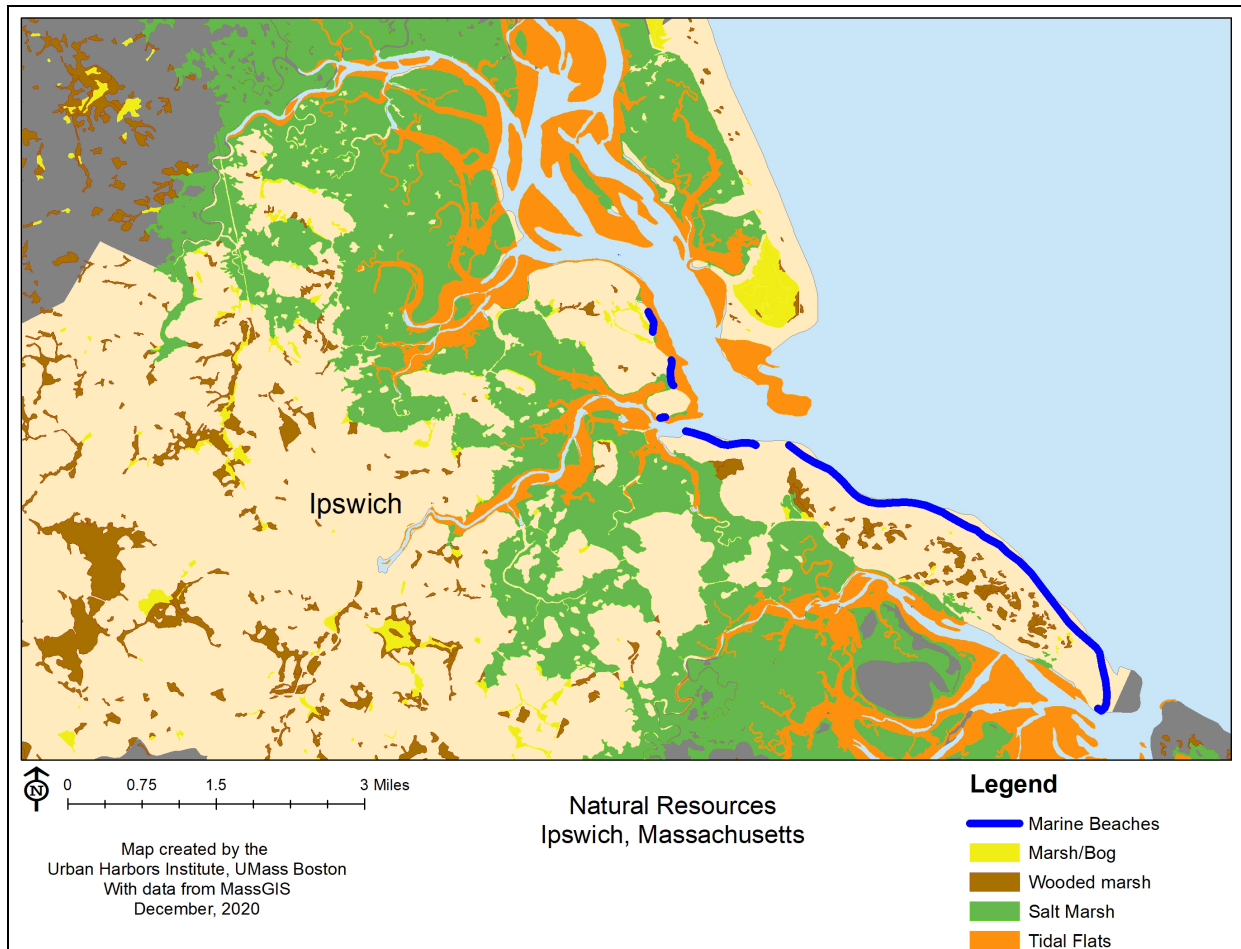


Figure 2: Natural Resources

Great Marsh

The Great Marsh Area of Critical Environmental Concern (ACEC), originally called the Parker River/Essex Bay ACEC, is an area of 25,500 acres that extends across portions of Newbury, Rowley, Ipswich, Essex, and Gloucester.³⁶ The area is comprised of varied ecosystems including barrier beach, dunes, salt marsh, and water bodies.³⁷ With more than 10,000 acres of salt marsh, the area is the largest contiguous salt marsh system in New England.³⁸

³⁶ Commonwealth of Massachusetts. 2021. Great Marsh ACEC. Online at: <https://www.mass.gov/service-details/great-marsh-acec>

³⁷ *Ibid.*

³⁸ *Ibid.*

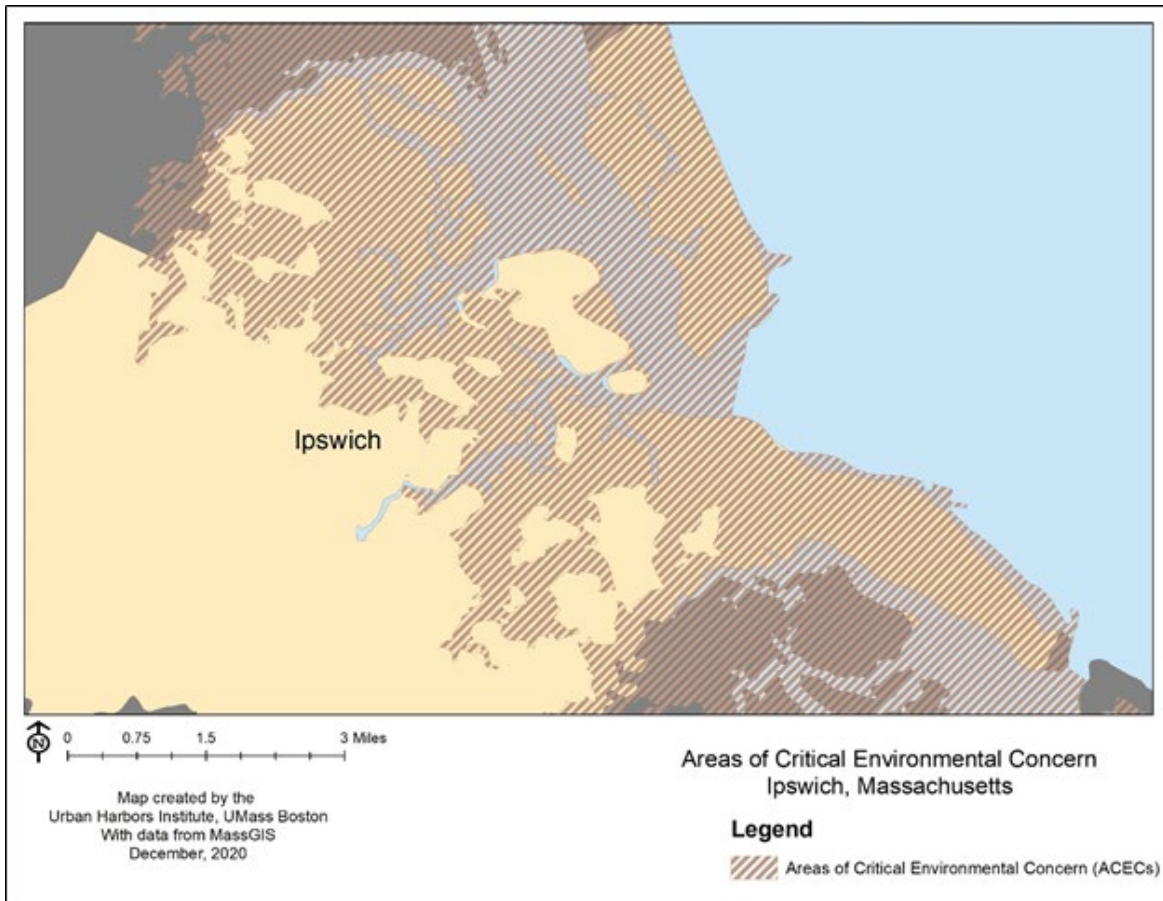


Figure 3: Great Marsh Area of Critical Environmental Concern

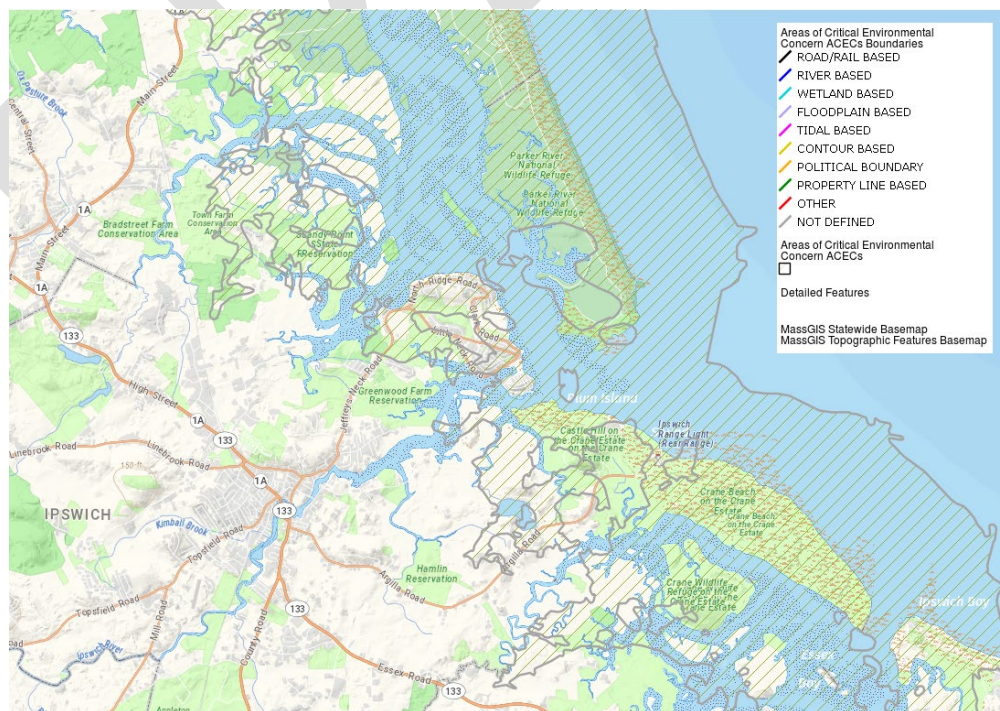


Figure 4: Great Marsh Area of Critical Environmental Concern

In Massachusetts, an Area of Critical Environmental Concern (ACEC) is a state-designated area that “receives special recognition because of the quality, uniqueness, and significance of its natural and cultural resources.”³⁹ The purpose of the ACEC Program is “to preserve, restore, and enhance critical environmental resources and resources areas” in the state.⁴⁰ The goals of the program are “to identify and designate these ecological areas, increase the level of protection for ACECs, and to facilitate and support the stewardship of ACECs.”⁴¹ ACEC designation triggers increased environmental oversight in state permitting through elevated performance standards and lower thresholds for review.⁴²

A potential area is identified and nominated by a local community and then is reviewed and designated by the Secretary of Energy and Environmental Affairs.⁴³ The ACEC Program is administered by the Massachusetts Department of Conservation and Recreation (DCR).⁴⁴ In the case of the Great Marsh ACEC, the area was initially nominated by the Ipswich Conservation Commission and designated by the State in 1979.⁴⁵

The Great Marsh ACEC covers more than 20 percent of the Town and comprises a significant portion of the natural resources in Ipswich.⁴⁶ The variety of ecosystems supports a diverse array of fish, shellfish, plants, birds, and mammals, including numerous rare and threatened species.⁴⁷ The Great Marsh also provides important ecosystem services, including water filtration, storm surge reduction, and erosion control.⁴⁸ The ecological features of the Great Marsh also create natural beauty and scenic vistas enjoyed by residents and visitors.

The Great Marsh faces challenges from traditional farming practices that began during the colonial settlement era. Such practices involved creating berms to increase the area used to grow hay and dykes to direct water flow towards and away from specific locations.⁴⁹ In the early 1900s ditches were dug in some marsh areas in an effort to drain them to reduce mosquito breeding.⁵⁰ These various practices continue to have an adverse effect on the health of the marshes, with some marsh areas flooding too much, while others are stagnant and degrading.⁵¹ Leveling or filling in the ditches is being considered as a mitigation measure in some areas, although some ditches still serve an important purpose.⁵² In other areas, such as the marsh near Crane Beach, pools have formed which cannot drain effectively and as a result are starting to destroy the marsh vegetation.⁵³ Creating runnels (shallow ditches) to connect

³⁹ Commonwealth of Massachusetts. 2021. ACEC Program Overview. Online at: <https://www.mass.gov/service-details/acec-program-overview>

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

⁴² *Ibid.*

⁴³ *Ibid.*

⁴⁴ *Ibid.*

⁴⁵ Commonwealth of Massachusetts. 1979. Designation of Parker River/Essex Bay Area as an Area of Critical Environmental Concern and supporting findings. Online at: <https://www.mass.gov/files/documents/2016/08/wp/preb-des.pdf>

⁴⁶ Town of Ipswich. 2019. Municipal Vulnerability Preparedness Plan. Prepared by the Ipswich River Watershed Association. Online at: <https://www.mass.gov/files/documents/2019/07/11/Ipswich%20Report.pdf>

⁴⁷ *Ibid.*

⁴⁸ *Ibid.*

⁴⁹ Phippen, P. (2020, May 11). Personal communication [Phone interview].

⁵⁰ *Ibid.*

⁵¹ *Ibid.*

⁵² *Ibid.*

⁵³ *Ibid.*

these pools to the creek in order to allow and promote drainage has been proposed; however, this restoration effort would require significant permitting.⁵⁴

The Great Marsh also faces threats from climate change, including sea level rise, coastal storm surge, erosion, and non-point source pollution.⁵⁵ Due to the low elevation and tidal nature of the marsh habitat, the majority of marsh area in Ipswich may become inundated under one foot of sea level rise.⁵⁶ The marsh also faces degradation from standing water due to poor drainage and a limited ability to migrate inland due to coastal development.⁵⁷ These changes will impact plant and animal life in numerous ways, and in particular are likely to impact the recreational and commercial fish and shellfish resources in Town.⁵⁸ The mudflats, estuaries, and seagrass that these species depend on may be inundated by sea level rise, reduced in size by erosion, and impacted by runoff from increased precipitation.⁵⁹ For example, the marshes at Eagle Hill are in a highly erosive area. Various mitigation measures are being considered, such as marsh sloping, mussel beds, runnels, and berms.

In recent years, the Town has conducted several resiliency planning efforts to address climate change threats. One initiative was the Great Marsh Resiliency Planning Project, a collaboration between the Town of Ipswich, National Wildlife Federation, Ipswich River Watershed Association, and five other coastal towns that border the Great Marsh (Salisbury, Newburyport, Newbury, Rowley, and Essex).⁶⁰ The final report was completed in 2017 and includes a town-specific vulnerability assessment and recommended adaptation strategies.⁶¹

Green Crabs

European green crabs (*Carcinus maenas*) are thought to have arrived in the Northeast United States in the 19th century and now can be found across the globe.⁶² One of the world's most effective marine invasive species, green crabs are highly adaptable, with a voracious appetite and wide-ranging diet, and the ability to thrive in a variety of temperature, salinity, and water quality conditions.⁶³ In addition, as an invasive species, they have no natural predators and also can reproduce rapidly and in abundance, allowing the population to expand quickly over a relatively short period of time.⁶⁴ In recent years, rising ocean temperatures combined with occasional warmer winters have contributed to a proliferation of the local green crab population.

⁵⁴ *Ibid.*

⁵⁵ Town of Ipswich. 2019. Municipal Vulnerability Preparedness Plan. Prepared by the Ipswich River Watershed Association. Online at: <https://www.mass.gov/files/documents/2019/07/11/Ipswich%20Report.pdf>

⁵⁶ *Ibid.*

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ Schottland, T., Merriam, M., Hilke, C., Grubbs, K., and W. Castonguay. 2017. *Great Marsh Coastal Adaptation Plan*. National Wildlife Federation Northeast Regional Office, Montpelier, VT. Online at: www.nwf.org/greatmarshadaptation

⁶¹ *Ibid.*

⁶² Tepolt, C. (no date). Seeing green (crabs). Online at: <https://www.who.edu/news-insights/content/seeing-green-crabs/>.

⁶³ *Ibid.*

⁶⁴ Wilson, G. and M. Walsh. (2019). Invasive green crabs vs. soft-shelled clams in the Gulf of Maine. Online at: <https://www.gulfofmaineinstitute.org/single-post/2019/05/13/Invasive-Green-Crabs-Vs-Soft-Shelled-Clams-In-The-Gulf-of-Maine>.

Green crabs pose a significant threat to native shellfish populations, including clams, oysters, and mussels.⁶⁵ Scientists have found that one green crab can eat up to 40 half-inch juvenile clams per day.⁶⁶ As a result, these juvenile clams are consumed before they are able to reproduce, impacting both current and future clam populations. In addition, although green crabs do not eat eelgrass, they do forage for other food in the marshes, destroying eelgrass in the process.⁶⁷ Further study is needed on whether this digging in the marshes causes marsh erosion and destabilization.⁶⁸

Since 2014, a green crab monitoring and management program has been conducted by a collection of project partners, including the MassBays National Estuary Partnership, Merrimack Valley Planning Commission, MA Division of Marine Fisheries (DMF), Green Crab R& D, towns of the Great Marsh, local volunteers, and fishermen.⁶⁹ The goals of the program are to (1) gather baseline green crab population information in the mid/lower Great Marsh, with a short-term goal of understanding how the abundance may fluctuate seasonally and annually, and a long-term goal of developing a management plan to reduce the population; (2) develop culinary demand for green crabs to encourage market forces to create incentive for trapping and removal; and (3) removal of the green crab through a state and local green crab trapping bounty program.⁷⁰ During the spring, summer, and fall green crabs are trapped at approximately 20 locations in Rowley, Ipswich, Essex, and Gloucester. Data are collected on the number, size, and gender of the green crabs.

Beginning in fiscal year 2015, the State has provided at least \$50,000 per year to the DMF for a Great Marsh green crab trapping program.⁷¹ Although this funding was not included as a specific line item in the fiscal year 2021 budget, potentially due to the fiscal challenges of the coronavirus pandemic, there may still be funding available from DMF. In addition to the state funding, the Town of Ipswich also provides approximately \$10,000 per year towards the green crab trapping program. There is an enhancement fee for shellfish permits that provides additional funding.⁷² The trapping program pays \$0.40 per pound of green crabs. In recent years, participants in the town program have trapped nearly 100,000 pounds of green crabs per season.⁷³ Although the trapping program has been successful thus far, due to the widespread nature of this invasive species, these efforts are not expected to eliminate green crabs from the area but could provide an important method of helping to control their populations.

In addition to the trapping and bounty program, there are other efforts aimed at expanding the market for green crabs to creative incentives for increased trapping and removal. For example, GreenCrab.org, a local non-profit organization that includes ecologists, researchers, concerns citizens, and others, works to develop culinary markets for green crabs with both restaurants and private consumers and to

⁶⁵ Salem Sound Coastwatch. (no date). Guide to marine invaders in the Gulf of Maine: Green crab. Online at: <https://www.mass.gov/doc/cmaenaspdf/download>

⁶⁶ Wilson, G. and M. Walsh. (2019). Invasive green crabs vs. soft-shelled clams in the Gulf of Maine. Online at: <https://www.gulfofmaineinstitute.org/single-post/2019/05/13/Invasive-Green-Crabs-Vs-Soft-Shelled-Clams-In-The-Gulf-of-Maine>.

⁶⁷ Phippen, P. (2020, May 11). Personal communication [Phone interview].

⁶⁸ *Ibid.*

⁶⁹ Phippen, P. (2018). Green crab monitoring/management in the Great Marsh. Online at: https://www.umass.edu/ses/sites/default/files/Phippen_SMWG%20Green%20Crab%20lightening%20talk%20_120518.pdf

⁷⁰ *Ibid.*

⁷¹ Commonwealth of Massachusetts. (2020). Operating budgets (FY21 and previous). Online at: <https://www.mass.gov/operating-budgets-fy21-and-previous>

⁷² LaPreste, S. (2020, January 21). Personal communication [Interview].

⁷³ Parks, M., Alexanian, N., and S. LaPreste. (2020). Green crabs in the Great Marsh. Online at: <https://www.greencrab.org/blog/2020/7/26/green-crabs-on-the-great-marsh>

educate the public with recipes and cooking demonstrations, information about the ecological impacts of green crabs, and guidance on how to get involved in the fishery and other trapping resources.⁷⁴ There are also markets to sell green crabs as bait to catch conch, tautog, and eel.⁷⁵

Shellfish

Harvesting of soft-shell clams is one of the most iconic and important natural resources within the area of Ipswich Waterways. Given the commercial significance of the soft-shell clams to the Ipswich economy and its relationship to the global identity of the town, it is a priority to maintain and grow this natural resource. This natural resource, its value, and suggestions for future direction are addressed in greater detail in other sections of the Harbor Plan, especially the section covering Commercial and Recreational fishing.

Ipswich Mills Dam

The Ipswich Mills Dam is located at the upper extent of the planning area for the Waterways Management Plan. This boundary was chosen because it is the limit of upstream navigation. This granite block dam is owned by the Town of Ipswich and was originally built to power nearby mills, although it has no current functional use.⁷⁶ It is located 3.7 miles upstream from the mouth of the Ipswich River at the “head-of-tide”, the farthest point upstream where a river is affected by the tides.⁷⁷ Although a fishway was installed in 1995 to assist in migratory fish runs, it is not effective for all species.⁷⁸ The Massachusetts Division of Ecological Restoration ranks the Ipswich Mills Dam in the top 5% of all Massachusetts dams for the potential of removal, which would open 49.19 miles of habitat, restore a freshwater tidal habitat, and remove a head-of-tide dam.⁷⁹ A feasibility study on the potential removal of the dam was completed by Horsley Witten Group in 2019.⁸⁰

Although the dam is not addressed in this plan’s recommendations, the Waterways Advisory Committee recognizes the importance of the topic and of staying informed about the current status and impacts of the dam. The Committee will weigh in on this topic as needed in the future.

Needs and Opportunities

Several needs and opportunities have been identified for consideration in this Waterways Plan. They include:

- Prior farming practices and mosquito ditching continue to have an adverse effect on the health of the marshes
- Marshes are facing increased threats from erosion, sea level rise, and climate change
- Marsh restoration efforts face significant permitting challenges

⁷⁴ Greencrab.org. (no date). Online at: <https://www.greencrab.org/about>

⁷⁵ Sargent, B. (2017, May 12). Green crabs: going from bait to the table. *The Daily News*. Online at: https://www.newburyportnews.com/opinion/columns/green-crabs-going-from-bait-to-the-table/article_39051bdd-e9e1-5124-be0e-cc61968334c3.html

⁷⁶ Ipswich River Watershed Association. 2020. Ipswich Mills Dam project. Online at: <https://www.ipswichriver.org/ipswich-mills-dam/>

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*

⁷⁹ *Ibid.*

⁸⁰ Horsley Witten Group. 2019. Ipswich Mills Dam Removal Feasibility Study. Online at: <https://www.ipswichriver.org/wp-content/uploads/2019/12/Final-Report-Ipswich-Mills-Dam-Removal-Feasibility.pdf>

- In the survey, residents expressed concerns about damage to the marsh from powerboats as well as boats being left on the marshes
- Invasive green crabs eat seed clams and pose a significant threat to the shellfish industry
- Invasive green crabs destroy pose a threat to marsh health

Goals, Objectives, and Recommendations

Goal: Preserve and protect natural resources in Ipswich

Objective 1: Promote the continued health of marsh ecosystems

Recommendation: Address erosion and damage of degraded marsh areas and other riverine and coastal banks through protection and restoration. The Town and local organizations are working to address marsh health and conduct coastal bank and marsh restoration where possible. A healthy ecosystem is critical to recreational and commercial use of Ipswich waterways. The Town should continue to support and fund these protection and restoration efforts. Effective marsh protection also requires the ability for the marsh to migrate landwards as sea levels rise. The Town should continue land protection and acquisition efforts to allow for marsh migration.

Objective 2: Continue and improve invasive species control, including green crab management

Recommendation 1: Continue and increase funding for the green crab trapping and removal program. The Town should continue to work with its state legislators to advocate for continued and increased state funding for green crab management. State funding has been a critical asset in the success of the management program thus far but is not guaranteed and must be renewed each fiscal year. Likewise, the Town should continue to provide additional funding for the trapping and bounty program, whether through a direct budget allocation or by means of the enhancement fee for shellfish permits.

Recommendation 2: Reach out to adjacent communities to coordinate management efforts and encourage similar town-funded programs. While state funding is provided to four North Shore towns for green crab management, Ipswich is the only town that provides additional funding toward this effort. Green crabs are found throughout the region and effective management requires coordinated effort across many municipalities. Ipswich should work with other towns to ensure trapping efforts are located and managed effectively and encourage the implementation of similar town-funded trapping and bounty programs.

Recommendation 3: Support innovative management ideas, such as finding markets to develop a commercial use for this species. Local organizations and researchers are working on various marketing efforts for green crabs, including sales for use in restaurants, as bait, and as fertilizer. Such efforts take time to be developed and become popular and effective with the target audience. The Town should continue to support such innovative efforts through participation, education, and funding.

Objective 3: Encourage appreciation, understanding, protection, and utilization of Ipswich natural resources

Recommendation: Balance environmental preservation with continued recreational and commercial use of the environment and waterways. When implementing various town efforts related to conservation, planning, tourism, and other areas, the Town should consider the impacts to both environmental protection and recreational and commercial use of the waterways. Healthy natural resources are critical to many aspects of life in Ipswich.

Recreational Boating

This section covers various forms of recreational boating that occur on the Ipswich River and surrounding marshes, including activity by both motorized (*e.g.*, powerboats, jet skis, motorized sailboats) and non-motorized (*e.g.*, kayaks, paddleboards, canoes, non-motorized sailboats) vessels.

The Ipswich River is a moderate to low flowing river with lazy turns that is approximately 40 feet wide with an 8-foot channel.⁸¹ The marshes surrounding the river are more shallow and are primarily frequented by non-motorized vessels and paddleboards. Recreational boating of all types is extremely popular on the River from June through September, as it provides residents and visitors with the opportunity to explore the River and its surrounding marshes.

Survey respondents noted that recreational boating is an important source of recreation for the Town. Ipswich has a large motorized recreational boating community, with over 950 locally moored vessels, and thousands of weekend boating visitors to Crane Beach and Plum Island.⁸² During the peak summer months, it is estimated that as many as 400 boats use Ipswich River, 1,000 boats use Ipswich Bay, and 200 boats use Eagle Hill River and/or Castle Neck on any given day.⁸³ Many tourists also visit Ipswich by water, creating additional economic activity.

According to the 2012 Northeast Recreational Boater Survey, motorized recreational boating activity in Ipswich Bay and in Ipswich River is highly dense compared to other areas within the Northeast (see Figure 5)⁸⁴. According to this map, boating density is high in Plum Island Sound and Ipswich River, leading all the way out to Ipswich Bay. Note: due to data clipping and processing, some boating density areas may not appear on the map, *e.g.*, white areas in Ipswich River.

⁸¹ Urban Harbors Institute. 2015. 2015 State of Our Harbors: An Examination of Massachusetts Coastal Harbor Conditions and Related Economic Parameters. Prepared for the Massachusetts Department of Conservation and Recreation.

⁸² *Ibid.*

⁸³ Woods Hole Group, Inc. 2019. Upper North Shore Dredge Purchase Feasibility Study. Prepared for the Merrimack Valley Planning Commission.

⁸⁴ Data obtained through the 2012 Northeast Recreational Boater Survey. Data available on the Northeast Ocean Data Portal.

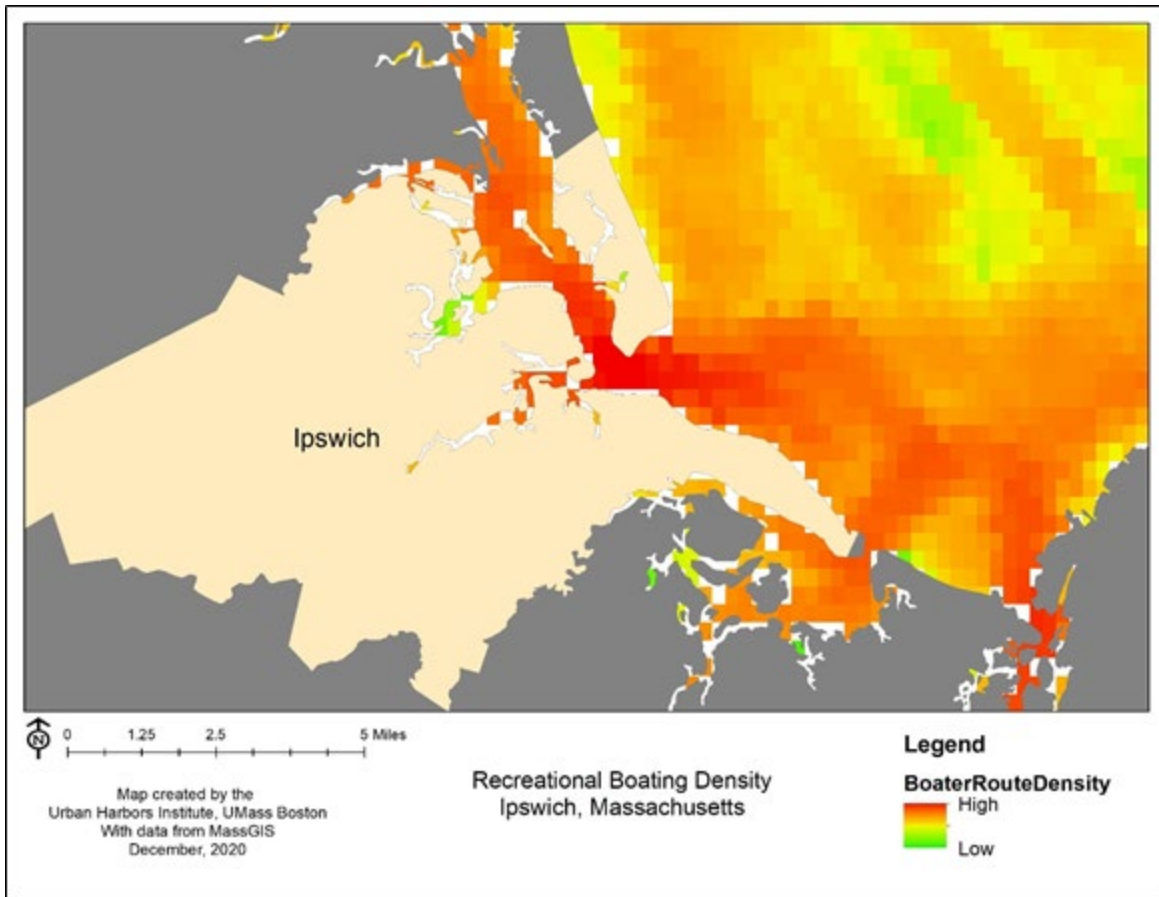


Figure 5: Recreational Boating Density in waters surrounding Ipswich⁸⁵

The Town has three boating facilities: The Ipswich Town Wharf, the Ipswich Bay Yacht Club, and the Ipswich Outboard Club.

Town Wharf

The Town Wharf contains a 2-lane boat ramp that was recently renovated in 2020 and has a launch fee of \$5/launch or \$35/season. The Town Wharf is often busy and crowded with both motorized and non-motorized vessels launching, especially during the summer months. Additionally, the Town Wharf Pump Station located at the Town Wharf, was originally constructed in 1958, and is the largest pump station in the wastewater collection system.⁸⁶ A study conducted by Tighe & Bond recently evaluated the station and concluded that the pump station be demolished and replaced with a new station that is climate resilient.⁸⁷ Construction on the pump station may temporarily impact use of the Town Wharf in the future.

⁸⁵ 2012 Northeast Recreational Boater Survey. Data available on the Northeast Ocean Data Portal.

⁸⁶ Town of Ipswich. Town Wharf Pump Station Project. Online at: <https://www.ipswichma.gov/855/Town-Wharf-Pump-Station>

⁸⁷ *Ibid.*



Source: Ipswich Wicked Local.⁸⁸

Ipswich Bay Yacht Club

Founded in 1940, the Ipswich Bay Yacht Club is a private yacht club located on Plum Island Sound with over 200 moorings, a floating dock, a boat ramp, and a restaurant. The Yacht Club is primarily for the exclusive use of members and guests, but the club does have guest moorings for transient visitors.⁸⁹ Additionally, Ipswich Junior Sailing is operated at the Ipswich Bay Yacht Club, and offers sailing lessons to all young sailors. The Yacht Club also provides berthing for a harbormaster vessel in order to facilitate quick access to Plum Island Sound.

Ipswich Outboard Club

Formed in 1956, the Ipswich Outboard Club (IOC) is a member-only club, providing access to recreational boaters who trailer and launch their vessels. Located on Country Street, with primary access via Water Street, their properties include parking for members as well as a boat ramp and floats. Approximately 200 members are part of the IOC, and the long waiting list for club membership is currently closed.

Moorings

Berthing is provided in mooring areas, and Ipswich waters support more than 1000 moorings. Despite the high number of moorings, many Ipswich residents and residents from other towns are on a long waiting list to obtain a mooring. Mooring areas include Back Beach, Button Point, Clark Beach, Eagle Hill, Eel Run, Gould Creek, Little Neck, Middle Ground, Nabbys Point to Green Street, Sandy Point, South Field Ipswich Bay Yacht Club, and an unnamed mooring area (see Figure 6). For day trips, most boaters from out of town find a place to anchor in the river and sound. The town does not provide transient moorings.

⁸⁸ Ipswich Wicked Local. Ipswich town wharf ramp now available for public use, remaining work to continue. Online at: <https://www.newsbreak.com/massachusetts/ipswich/news/1584998936105/ipswich-town-wharf-ramp-now-available-for-public-use-remaining-work-to-continue>

⁸⁹ Ipswich Bay Yacht Club. About the Ipswich Bay Yacht Club. Online at: https://www.ibyc.org/content.aspx?page_id=22&club_id=191726&module_id=233214

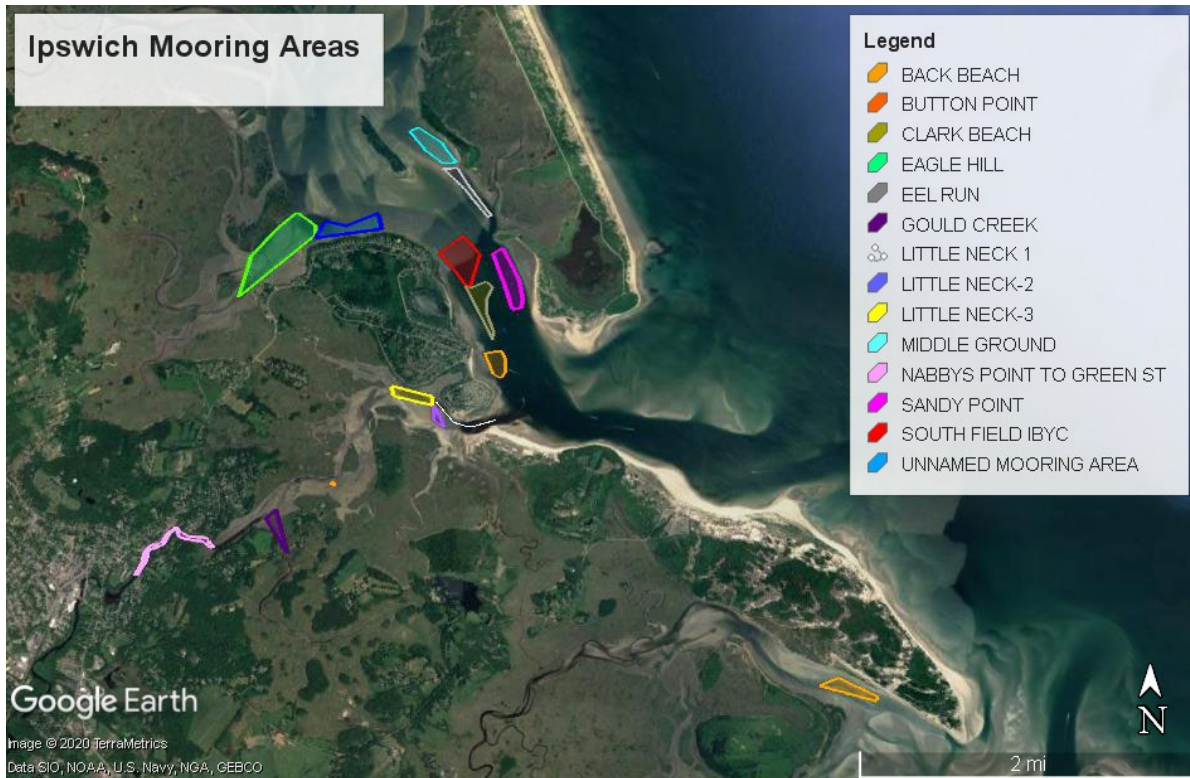


Figure 6: Ipswich Mooring Areas

Non-Motorized Vessel Access

Currently non-motorized vessel access is through several formal and informal locations. The primary access point is the Town Wharf. Additional up-river access is available at the Ipswich River Watershed Association on County Street, and the newly improved Peatfield Street Landing. These locations provide access via improved facilities and docks. Traditional un-improved access is located on Water Street at the foot of Summer Street. This access is via a short foot path and is tide dependent; however, it does have parking options based on its proximity to Town Hall.

Hunting

Though not exclusively conducted via vessels, a large hunting community hunts on town-owned properties in Wildlife Management Areas and Wildlife Conservation Easements in Ipswich (see Figure 7), and on land with written permission by the owner. The Ipswich Fish and Game Association is a members-only organization that sits on 30 acres of land and promotes the responsible enjoyment of hunting, fishing, and target shooting.⁹⁰

Deer and duck hunting both take place in the planning area. When considering additional possible access points for recreational vessels, the Town should be sure to consider and preserve hunting grounds and hunting access.

⁹⁰ Ipswich Fish and Game Association. Welcome. Online at: <https://www.ipswichfishandgame.org/>

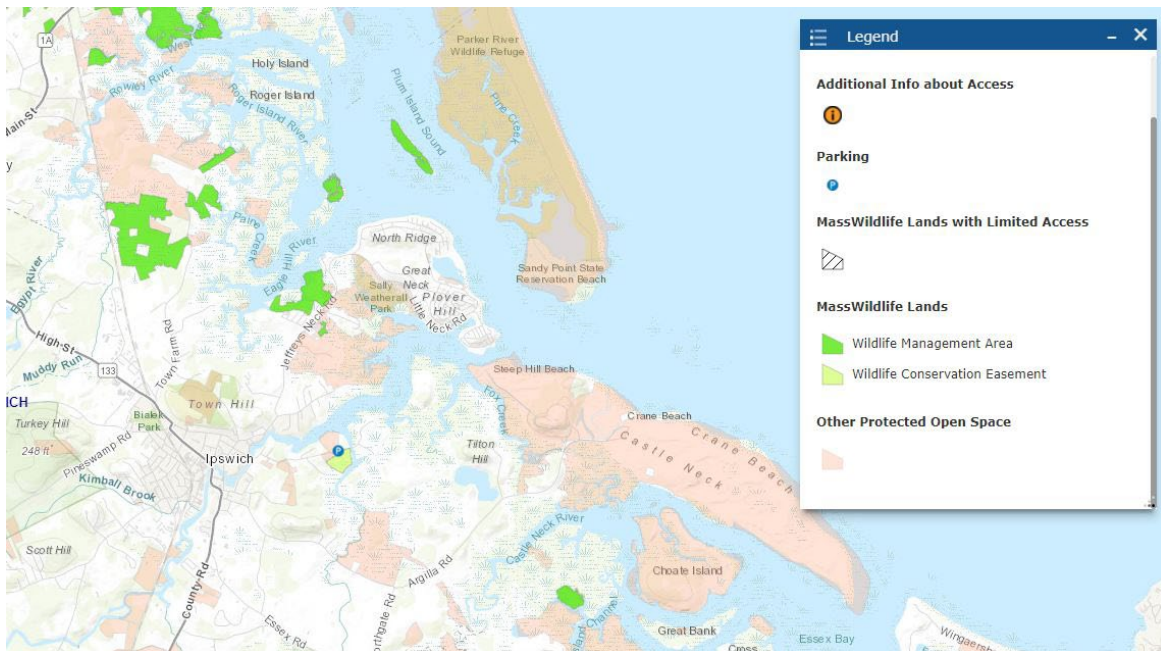


Figure 7: Wildlife Management Areas and Conservation Easements in Ipswich

Needs and Opportunities

Several needs and opportunities have been identified for consideration in this Waterways Plan. They include:

- Vessel access points are limited. Town Wharf is very congested, especially on weekends, resulting in long wait times and potentially dangerous conditions
- Additional parking is needed to meet the demand from recreational boating, especially at the Town Wharf
- The existing no-wake zones require additional enforcement to reduce speeding, which creates large wakes, dangerous conditions, and potential environmental degradation (e.g., waves hitting salt marsh edges resulting in erosion)
- The River is very congested with both motorized and non-motorized vessels, especially on weekends, leading to navigation challenges as well as safety hazards
- There is a long wait list to acquire a mooring
- Sandbars are always shifting, limiting the locations suitable for moorings
- The number and/or location of moorings may change due to upcoming Food and Drug Administration regulations limiting shellfishing in the vicinity of mooring fields (see section on Commercial and Recreational Fishing for more information)
- The demand for kayak and dinghy storage outpaces the supply

Goals, Objectives, and Recommendations

Note: Recommendations regarding boater safety, enhanced enforcement of no-wake zones and speed limits, and boater education can be found in the section on Management of Waterways.

Goal: Promote safe recreational boating

Objective 1: Encourage sufficient facilities and services to allow the recreational boating community to access the River

Recommendation 1: Seek and secure additional points of access for recreational boaters. Launch sites could be designed and/or designated specifically for motorized or non-motorized vessels to help reduce congestion. Considerations for launch sites might include: distance from Town Launch/ability to relieve congestion; the site's ability to promote coastal resiliency (*e.g.*, access and parking designed to handle flooding); impacts on other uses such as hunting, fishing, and private residences; adequacy of parking; and impacts on natural resources. Opportunities to secure access include identifying historic rights of way, exploring road ends (including those on the town's list of unaccepted streets), reconfiguring existing municipal property, and purchasing properties as they come on the market. Given the river and sound arguably comprise the largest and most used open space in town, consideration for purchase of access points should be added as a goal in the Open Space Bond planning.

Recommendation 2: Consider providing varying launch schemes for non-motorized and motorized vessels to maximize the use of the Town Wharf (*e.g.*, a dedicated staging area for paddle craft).

Recommendation 3: The Town should consider all opportunities to expand parking at the vessel launch sites. Some ideas could include:

- Acquiring properties near the Town Wharf for additional parking spaces if they become available for sale.
- Expanding the program with the Town Hall property and investigating opportunities to combine summer parking and winter clammer storage for gear and boats.
- Incorporating parking expansion into the construction plan as the Pump Station at the Wharf is being reconstructed (*e.g.*, the potential to cut into the berm by the Pump Station building and add more spaces for trailers).

Recommendation 4: Ensure shoreside infrastructure that supports recreational boating (*e.g.*, piers, wharves, floats) is updated and repaired as needed. Conduct an inventory of shoreside infrastructure and detail repairs needed and estimated costs. As part of the inventory, the Town should also make note of whether the infrastructure is prepared to withstand the impacts of climate change or if relocation is needed. Seek funding where appropriate to make needed repairs and/or relocate the infrastructure.

Recommendation 5: Update and enhance the town's mooring strategy where possible. The Town should consider conducting a mooring utilization and carrying capacity study. This study would investigate the number of additional moorings needed/desired, the size of vessels that would be accommodated on moorings, types of moorings needed/desired (*e.g.*, transient, commercial, resident recreational), number with tenders or dinghies, impacts to natural resources (*e.g.*, water quality, shading of sea floor, physical impacts to sea floor from contact with the vessel or mooring equipment), distance of moorings from shellfish beds, and any other relevant factors. The Town should also consider the potential to move away from chain rodes to technical cordage or conservation rodes which could reduce the space needed per mooring. Further, since sands are always shifting, the Town should be prepared to adapt the mooring fields to changing conditions. If mooring fields are reconfigured, grid patterns and re-numbering of moorings should be considered to allow boaters to locate moorings efficiently. Consideration of an on-line mooring map would be helpful to track yearly location shifts and provide a visual representation to educate the citizens on the difficulties managing the mooring fields in a dynamic environment like Ipswich.

Recommendation 6: Provide conditions that support professional mooring installation and inspection as much as possible. Moorings need to be inspected each year. Damaged moorings are a safety hazard, as they can cause vessels to break free and create other issues (*e.g.*, safety hazard, environmental

damage). Currently there is only one commercial mooring inspection operation in Ipswich waters. The Town should ensure that professional mooring inspections continue.



Management of Waterways

There are many boards and committees and others within the Town of Ipswich engaged in the management of Ipswich's waterways. It should also be noted that Plum Island Sound is within the jurisdiction of multiple municipalities, including Ipswich, Newburyport, Newbury, and Rowley, and these municipalities share management with the U.S. Coast Guard (USCG) for navigation.

Harbormaster Department

Ipswich waterways are managed primarily by the Ipswich Police Harbor Division, which consists of police officers and two civilian employees. They monitor the 27-mile Ipswich coastline and Ipswich River utilizing patrol boats and a utility boat.

The Police Chief is the Harbormaster, and the Harbor Division's mission is to provide a public safety presence on the waterways of Ipswich. The mission includes law enforcement actions, emergency medical services, and navigational aide. The Harbor Division also manages more than 1,000 moorings located in Ipswich waters, and maintains order at the Town Wharf boat ramp. In addition, the Harbor Division owns, staffs, and manages a pumpout boat. The Shellfish Warden is part of the Harbormaster Department, and the Police Chief is the Shellfish Constable. The Ipswich Yacht Club and the Harbormaster department have an agreement that allows the berthing of the harbormaster vessel at the Yacht Club docks. The Harbormaster establishes, maintains, and enforces the Rules and Regulations of the Waterways as well as permitting moorings and docks. The Police Chief, as Harbormaster, reports to the Town Manager.

Select Board

The Select Board is the main conduit for public input about waterways in town. It appoints the Waterways Advisory Committee to advise and assist the Select Board, town officials, departments, and boards in matters related to the waterways. The Select Board may implement or direct activity or policy

it determines is appropriate for the benefit of the town and its citizens. The Select Board can set and approve fees.

Ipswich Waterways Advisory Committee

The Waterways Advisory Committee is appointed by and reports to the Select Board. The Select Board and Harbormaster engage the Ipswich Waterways Advisory Committee as the subject matter experts on waterways. The Waterways Committee consists of seven members, and meets monthly to discuss issues and happenings related to the management of the waterways. The public also can attend the Waterways Committee meetings each month to share their opinions and/or waterway-related issues. Additionally, the Committee oversees the Harbor Budget and Waterways Fund, which consists of money from mooring fees and 50% of the boat excise tax collected by the Town.

Other Boards and Committees

Several other municipal boards and committees make decisions that have potential impacts on the town's waterways and coastal areas, including the Department of Health, the Conservation Commission, the Building Department, and the Planning Department.

Dredging

One topic of concern related to the management of Ipswich waterways is dredging in the River. The River was last dredged in 1887 as a federal navigation project (see Figure 8) which provided a channel four feet deep at mean lower low water (MLLW)⁹¹. That channel has not been maintained since 1896, and is difficult to navigate in places due to sedimentation and shifting sands. A primary cause has been the increased withdrawal of water from the water table for public water consumption, which has caused a slower water flow rate and an inability to clear out sediment in the previously navigable channel.⁹²

⁹¹ U.S. Army Corps of Engineers New England District. 2005. Ipswich River, Ipswich, Massachusetts Section 107 Navigation Improvement Continuing Authorities Project Fact Sheet Initial Appraisal of Federal Interest.

⁹² Urban Harbors Institute. 2015. 2015 State of Our Harbors: An Examination of Massachusetts Coastal Harbor Conditions and Related Economic Parameters. Prepared for the Massachusetts Department of Conservation and Recreation.



Figure 8: Federal and Non-Federal Waterways in Ipswich⁹³

The 2019 North Shore Dredge Purchase Feasibility Study noted that navigation from Ipswich Town Wharf to the Ipswich River mouth is only possible within 3 hours either side of high tide.⁹⁴ Additionally, there are numerous areas within the channel with less than one-foot depth at low tide.⁹⁵ The shallow waters have caused vessel damage and groundings, and lobstermen offload their catch to skiffs, and then navigate their skiff to the Town Wharf because they cannot land their vessel at the shallow wharf.⁹⁶ Some particularly shallow areas include:

- Ipswich Bay from mouth of the Ipswich River to the bell buoy⁹⁷
- Eagle Hill River and Castle Neck Creek (only navigable 3 hours either side of high tide)⁹⁸

⁹³ Woods Hole Group, Inc. 2019. Upper North Shore Dredge Purchase Feasibility Study. Prepared for the Merrimack Valley Planning Commission.

⁹⁴ Woods Hole Group, Inc. 2019. Upper North Shore Dredge Purchase Feasibility Study. Prepared for the Merrimack Valley Planning Commission.

⁹⁵ *Ibid.*

⁹⁶ U.S. Army Corps of Engineers New England District. 2005. Ipswich River, Ipswich, Massachusetts Section 107 Navigation Improvement Continuing Authorities Project Fact Sheet Initial Appraisal of Federal Interest.

⁹⁷ *Ibid.*

⁹⁸ *Ibid.*

- Essex River mouth (more shallow and narrow)⁹⁹
- Upriver from Wharf into the Cove
- All the way to Saw Mill Point
- Town-side of the Green Street Bridge
- The main channel running parallel to Crane Beach
- Shoaling near red buoys 6 & 8

In 2005, the U.S. Army Corps of Engineers (USACE) conducted a study entitled the “Ipswich River Navigation Improvement Study” which investigated the feasibility of federal involvement in dredging the Ipswich River.¹⁰⁰ Specifically, the USACE determined that maintenance dredging to restore the four-foot channel was economically justified when considering commercial and recreational navigation benefits; but providing depths greater than four-feet was not justified, and maintaining small harbors like Ipswich River was not a priority for federal funds.¹⁰¹ Therefore, no federal funds were provided to Ipswich for dredging.

There are currently several arguments in favor of dredging the River, which include:

- Better ability to navigate the River at all tides
- Fewer safety concerns regarding shallow water; boaters could launch at the Town Wharf at various tides, resulting in less congestion at the Wharf
- Enhanced economic revenue from tourists visiting Ipswich River by vessel
- Less damage to vessels (*e.g.*, vessels scraping the bottom)
- Ability of vessels to access more moorings
- Commercial fishing fleet would not be delayed with landing its catch

On the other hand, there are arguments against dredging the River, which include:

- Dredging would allow larger vessels to enter the River, which may add to the congestion issues
- Long-term benefits of dredging the river are unclear, as it may just fill back in
- Impacts to the marine environment and shellfish beds, including:
 - Impacts to significant marine habitat, including salt marsh, eelgrass, and land containing shellfish, either through direct removal or physical alterations of sediments.
 - Alteration to water circulation patterns, bathymetric contours that directly affect wave activity, and flood storage capacity of coastal areas.
 - Impacts to water quality through the release of chemical contaminants with potentially acute and/or chronic impacts.
 - Impacts to the migration or spawning of fish and shellfish through the physical resuspension of sediment.¹⁰²

It is important to note that a section of the Ipswich River is part of an Area of Critical Environmental Concern (ACEC), which is defined by Massachusetts as “a place in Massachusetts that receives special recognition because of the quality, uniqueness, and significance of its natural and cultural resources.”¹⁰³ (Additional information about the ACEC is in the section on Natural Resources.) New (*i.e.*, “improvement dredging”) projects are not allowed in ACECs in Massachusetts until the project is “incorporated into a

⁹⁹ *Ibid.*

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*

¹⁰² These impacts were identified by the Ipswich Shellfish Advisory Committee.

¹⁰³ Woods Hole Group, Inc. 2019. Upper North Shore Dredge Purchase Feasibility Study. Prepared for the Merrimack Valley Planning Commission

Resource Management Plan approved by participating municipalities and the Secretary of Environmental Affairs” (CZM, 2003).¹⁰⁴

Needs and Opportunities

Several needs and opportunities have been identified for consideration in this Waterways Plan. They include:

- Sediment build-up creates shallow areas in many parts of the River, resulting in navigation issues and safety hazards
- There is a lack of funding to maintain navigable waters, dredge projects can be very costly, and it is unclear how long the benefits of dredge projects will last
- There is concern over the environmental impacts of dredging, and how dredging could impact shellfish beds
- There are many boating safety concerns occurring in Ipswich River, including vessels speeding, inexperienced boaters on the water, and congestion on the waterways and at the Town Wharf
- Human use of Ipswich River has resulted in environmental degradation including erosion, damage to marshes, and fishing ground impacts
- Vessel speed limits are not adhered to
- Some navigational hazards are not well-identified/marked
- At times, there is a lack of coordination between the Waterways Advisory Committee and town offices/engineers on project review and funding expenditures
- Several boards, committees, and departments in Ipswich make decisions that have potential impacts on the town’s shoreline and waterways, yet these groups often work in silos

Goals, Objectives, and Recommendations

Note: Recommendations regarding boater safety, enhanced enforcement of no-wake zones and speed limits, and boater education can be found in the section on Recreational Boating.

Goal: Promote waterways management to enhance use while protecting natural resources

Objective 1: Improve waterways safety for all users through education and enforcement

Recommendation 1: Increase presence of the harbormaster on the River and at the Town Wharf to ensure enforcement of no-wake zones and vessel/jet ski speed limits.

Recommendation 2: The Harbormaster should continue monitoring the Town Wharf for safety concerns, especially during busy launch and landing times (*e.g.*, morning and late afternoon during the summer).

Recommendation 3: The Town should seek funding for additional harbormaster vessels and/or staff given the large area that requires patrolling.

Recommendation 4: The Town should identify and implement strategies to enhance the effectiveness and accessibility of the Harbormaster Department on and off the water. Some potential strategies include:

- Increase patrolling during peak hours, including at high tide in the River in the morning, and in the mooring fields and River when boaters are returning to the dock in the afternoon/evening

¹⁰⁴ *Ibid.*

- Consider hiring and deputizing college students to help patrol the waters
- Determine if 24/7 coverage is possible on summer weekends, similar to Beverly, Marblehead, and Gloucester
- Consider authorizing the personnel running the pumpout vessel to conduct patrols

Recommendation 5: The Town should pursue all opportunities for the education of boaters with respect to the waterway rules and boating etiquette, including education on no-wake zones, fishing grounds, speed limits, and navigational aids. Some strategies for enhancing boater education could include:

- Develop a boating safety course and/or education materials for all boaters that highlight safety issues, no-wake zones, boater regulations, and suggested routes for motorized and non-motorized vessels
- Post boater rules and regulations at the Town Wharf and other places frequently visited by boaters
- Add an educational component to obtaining a mooring permit (*e.g.*, boaters must demonstrate that they understand waterway rules prior to obtaining a mooring permit). Additionally, boaters would have to answer questions regarding waterway rules to obtain a seasonal launch permit
- Provide brief safety/education training to those who own and rent boats, paddleboards, kayaks, and other boats that describes areas that are safe to boat and speed limits
- Require kayakers to purchase a sticker in order to kayak in Ipswich waters, and require that they demonstrate an understanding of waterways rules at the time of sale. Money from the stickers should be used to help pay for enforcement/patrols. The sticker program could also identify kayakers to prevent unnecessary kayak search and rescue.

Recommendation 6: Install additional navigational aids and no-wake zone buoys where needed. The USCG is responsible for most navigational aids, and the Town should work with the USCG and harbor users to review existing navigational aids and identify areas that need additional aids. Based on this assessment, the Town should place buoys and aids where needed, including in the Sound leading to the River. The Town and USCG should also re-evaluate the aid/buoy system throughout the year and monitor water depths to ensure that buoys are located at the deepest areas within the channel, as sediment shifts frequently. Some shoaled areas that were already identified as needing navigational aids include between Rocky Nook and Loud Mouth Beach, at the east end of Eagle River up to Greens Point, and at the submerged jetty. Additionally, more no-wake buoys are needed in various places in the River, including at Ipswich Yacht Club and in the mooring fields.

Recommendation 7: Explore the opportunity to add a full-time position to the Harbormaster Department to enhance access, visibility, administrative, and non-enforcement functions. Evaluate how such a move might impact funding, year-round and seasonal staffing, and other aspects of waterways management.

Recommendation 8: Consider the benefits and drawbacks of creating additional no-wake zones.

Objective 2: Promote continued navigation in Ipswich River

Recommendation 1: Establish a regular dredge maintenance program that will identify long and short-term dredge priorities within Ipswich River, and will consider the economic feasibility/practicality of the projects as well as environmental impacts. When considering dredge projects, the Town should avoid all ACECs, and consider all potential impacts to shellfish beds, including the following recommendations provided by the Shellfish Advisory Committee:

- Engage the Army Corps of Engineers to ensure visibility of Ipswich River as part of its dredging plans

- Prohibit disposal of dredge material on marshes
- If dredging takes place, consultation with the Shellfish Advisory Committee is needed to integrate shellfish interests and concerns (e.g., timing) into consideration

Recommendation 2: Explore the potential for near-term, small dredge projects in Ipswich River, with a focus on navigational and safety hazards.

Objective 3: Enhance Intra-Municipal Coordination to Improve Waterways Management

Recommendation 1: Formalize a process by which departments, committees, boards, and other municipal entities share information about projects, plans, and decisions impacting the shoreline or waterways. This process could include regular meetings between relevant entities (e.g., the Waterways Advisory Committee, Harbormaster Department, the Conservation Commission, the Department of Public Works, and the Health Department), and/or a project review process that incorporates reviews by the Waterways Advisory Committee when those projects have potential impacts on the shoreline or waterways.

Objective 4: Promote the preservation of natural resources in and around Ipswich River through management actions

Recommendation 1: Review current management strategies to identify ways to promote improved water quality (e.g., greater enforcement of vessel discharges, pollution containment strategies), the health of fishing grounds (e.g., enforcement of catch limits), and the marsh ecosystem (e.g., impacts of wakes on marshes, impacts of dinghy and kayak storage near wetlands).

Recommendation 2: Continue investigating best management practices for docks and piers. The Town should ensure that boats are not tied up to docks that are dry at low tide. The Town is already aware of the environmental impacts associated with this, and enforcement should continue.

Commercial and Recreational Fishing

Ipswich is famous for its soft-shell clams, which are targeted by both commercial and recreational fishermen. In addition to soft-shell clams, other important species brought to shore (“landed”) in Ipswich include American lobster, Atlantic razor clam, Atlantic surf clam, and green crab. Fisheries have supported people in Ipswich for hundreds of years, including indigenous people and first settlers. The tradition of harvesting the area’s marine resource continues today, providing a primary source of income for dozens of residents (approximately 35 of the commercial shellfish harvesters are full-time), and supporting a recreational fishery enjoyed by hundreds annually.

Fishing Effort

Overall, Ipswich has seen a growth in commercial fishing activity during the past several years. Between 2014 and 2018, roughly 170 fishermen from Ipswich received commercial fishing permits from MA DFM each year. During that same time period, 50-60 commercial fishing vessels were homeported in Ipswich on an annual basis. The number of commercial harvesters landing their catch in Ipswich has increased from 148 individuals in 2015 to 214 individuals in 2018, as shown in Table 1. While the Town has seen growth in the number of local commercial fishermen overall, Town regulations cap the number of commercial shellfish permits at 125 each year.¹⁰⁵

¹⁰⁵ Town of Ipswich. 2018. Shellfish Rules and Regulations. Online at: <https://www.ipswichma.gov/DocumentCenter/View/207/Shellfish-Rules-and-Regulations-PDF>.

Table 1: Fishing Effort

PERMIT, VESSEL, AND EFFORT COUNTS¹⁰⁶

CATEGORY	2014	2015	2016	2017	2018
# OF HARVESTERS WITH IPSWICH ADDRESS	168	162	168	175	170
# OF VESSELS WITH IPSWICH HOMEPORT	56	53	57	55	54
# OF LANDINGS IN IPSWICH	7,411	7,758	8,265	9,360	9,289
# OF ACTIVE HARVESTERS LANDING IN IPSWICH	152	148	182	191	214
# OF ACTIVE DEALERS PURCHASING IN IPSWICH	11	10	12	11	12

Economic Impacts

The top three commercially landed species for Ipswich—both in terms of pounds landed and value at the point of first sale (“ex-vessel” value)—include the American lobster, Atlantic razor clam, and soft-shell clam.

As a whole, commercial fishing in Ipswich resulted in an ex-vessel value of nearly \$3M in 2018, continuing a general increasing trend in the value of fish, lobster, and shellfish landed in Ipswich.

The largest fishery in Town, the commercial soft-shell clam industry, has increased over the past several years in terms of both pounds landed and dollar value. The most recent data from the Massachusetts Division of Marine Fisheries (2018) indicated an ex-vessel value of more than \$2M for soft-shell clams, as shown in table 2.

While the MA Division of Fisheries data for green crab landings are confidential, the Town reported more than 50,000 pounds of green crab removed from Ipswich waters in 2018.¹⁰⁷

In 2018, the value of municipal commercial and recreational shellfish permits was more than \$72,000.¹⁰⁸

Recreationally, target species include soft-shell clams, razor clams, quahogs, oysters, mussels, and sea clams.

Data from MA DMF (see more information from at: <https://www.mass.gov/doc/ipswich-port-profile-2021/download>) provide an indication of the direct economic value of commercial fishing in Ipswich, however, local estimates of the indirect economic impacts range from 4 to 7 times the direct value, bringing indirect economic effects of as much as \$20 million¹⁰⁹.

¹⁰⁶ SOURCE: MA Permitting Database, SAFIS Dealer Database, 06/01/2020 & ACCSP Data Warehouse, 03/17/2020 TH

¹⁰⁷ Town of Ipswich. 2018. Annual Plan. Online at: <https://ipswichma.gov/ArchiveCenter/ViewFile/Item/661>

¹⁰⁸ Town of Ipswich. 2018. Town Report. Online at: <https://ipswichma.gov/ArchiveCenter/ViewFile/Item/661>.

¹⁰⁹ Ipswich Shellfish Advisory Committee. 2020. Internal document to Waterways Advisory Committee.

Table 2: Top Species Landed in Ipswich and Ex-Vessel Value (2014-2018)

IPSWICH TOP SPECIES LANDINGS (LIVE POUNDS) AND EX-VESSEL VALUE, 2014-2018¹¹⁰

SPECIES	2014		2015		2016		2017		2018	
	LANDINGS	VALUE	LANDINGS	VALUE	LANDINGS	VALUE	LANDINGS	VALUE	LANDINGS	VALUE
American lobster	44,564	\$201,725	58,788	\$258,139	*	*	51,547	\$230,597	*	*
Atlantic razor clam	196,844	\$785,881	196,470	\$882,768	115,264	\$551,958	68,061	\$316,006	108,537	\$515,890
Soft-shell clam	308,034	\$627,347	321,970	\$726,416	813,452	\$1,495,074	1,302,941	\$2,088,487	1,394,999	\$2,232,864

* = CONFIDENTIAL

Table 3: Landings in Ipswich, MA by Species Category

IPSWICH LANDINGS (LIVE POUNDS) AND EX-VESSEL VALUE BY SPECIES CATEGORY, 2014-2018

SPECIES CATEGORY	2014		2015		2016		2017		2018	
	LANDINGS	VALUE	LANDINGS	VALUE	LANDINGS	VALUE	LANDINGS	VALUE	LANDINGS	VALUE
FINFISH	1,272	\$5,801	*	*	*	*	*	*	4,892	\$24,903
INVERTEBRATE	86,487	\$214,299	*	*	70,856	\$279,310	66,936	\$236,065	51,413	\$181,807
SHELLFISH ¹	504,878	\$1,413,228	518,440	\$1,609,184	928,716	\$2,047,032	1,371,002	\$2,404,492	1,503,537	\$2,748,754
GRAND TOTAL	592,637	\$1,633,328	629,232	\$1,891,724	*	*	*	*	1,559,841	\$2,955,464

SOURCE: SAFIS Dealer Database, 06/01/2020 & ACCSP Data Warehouse, 03/17/2020 TH

¹ Exact amounts for the category cannot be displayed due to trace landings of certain species. Only soft shell clam and razor clam data are displayed, which comprise greater than 95% of the total shellfish landings and value in all years.

* = CONFIDENTIAL

¹¹⁰ SOURCE: SAFIS Dealer Database, 06/01/2020 & ACCSP Data Warehouse, 03/17/2020 TH

Aquaculture

Town regulations allow for the farming of soft-shell clams, but with only one active shellfish grant, the Town does not presently have a significant aquaculture industry. This is in part due to the requirement that a farmed area be sited in a location that does not infringe upon competing uses (*e.g.*, mooring areas or public beaches), and that the site be deemed non-productive for 15 years or more.

Several people attempted to establish shellfish farms within the last decade, but none were able to succeed for various reasons.

In addition to limits on available space for aquaculture, there are mixed thoughts about whether shellfish aquaculture provides an unfair advantage for growers who can harvest and sell their catches during times when wild harvesters cannot.

Water Quality

The town's commercial and recreational fishing activities rely on clean water to support healthy marine life and allow for harvesting. The topic of water quality is covered in more depth in the section on Water Quality. As described in that section, pollutants contained in runoff result in state-mandated shellfish closures. These closures typically impact more than half of the days each year.¹¹¹

Of particular importance to Ipswich and other shellfishing communities are new changes to federal guidelines designed to protect public health by preventing consumption of shellfish contaminated with bacteria and viruses known to cause illnesses in humans. In Massachusetts, the Division of Marine Fisheries (DMF) manages for public health by conducting sanitation surveys to designate areas as Approved, Conditionally Approved, Restricted, Conditionally Restricted, and Prohibited. DMF also conducts annual water sampling to monitor for fecal coliform bacteria and tests shellfish for pollution. Due to water quality concerns, most marina areas in Massachusetts are closed during the boating season; however, under previous guidelines, mooring areas could be listed as Approved, which would enable year-round harvesting under most conditions. In 2019, the Interstate Shellfish Sanitation Conference (a partnership between state, federal, and industry representatives that meets every two years) approved a change in the way mooring areas are treated—they can no longer be listed as Approved. Instead, a dilution analysis, which takes into consideration occupancy rates and assumed discharge rates, will be required to determine if an area in/around moored boats can be open while boats are present. The DMF is mapping mooring areas and developing data to conduct the dilution analyses. These new guidelines could have significant impacts on shellfishing areas in Ipswich.

Furthermore, additional changes in Federal Department of Agriculture (FDA) rules pertaining to wastewater treatment facilities will come into effect in the spring of 2021. These new rules involve recalculating the existing dilution analysis for wastewater treatment plants due to viral concerns. The DMF is working on developing GIS tools, testing capabilities, and other strategies to accurately identify the boundaries of closed areas. The new rules could result in the permanent closure of the Ipswich River estuary, which would significantly decrease the quantity and value of shellfish harvested in Ipswich waters.

In addition to the impairments caused by nutrients and other sources, DMF also monitors for red tides. These harmful algal blooms occur under certain environmental conditions including warm surface waters, high nutrient levels, calm seas, and low salinity. The proliferation of these microscopic plankton in the water can result in the accumulation of neurotoxins within shellfish that consume the plankton. The shellfish are not killed by the toxins, but many species, including clams, oysters, whelk, and moon

¹¹¹ Ipswich Shellfish Advisory Committee. 2020. Internal document to Waterways Advisory Committee.

snails, are unsafe for human consumption for a period of time following a bloom. Red tides have caused the temporary closure of shellfisheries in Ipswich in four out of the last ten years (2019, 2017, 2014, 2011).¹¹² Such closures can result in a loss of income for commercial harvesters.

Resource Status - Shellfish

Pressure on shellfish resources in Ipswich are managed through a cap on commercial licenses (125 licenses, issued to residents-only) and limits on the amount of shellfish that can be harvested in a day. Despite these strategies to limit effort, pressure on some shellfishing areas remain a concern. For example, anecdotal reports suggest that the oyster reef at Eagle Hill is being depleted. Despite restoration efforts by the Massachusetts Oyster Project, the population of oysters has not been restored. This may be, at least in part, due to the presence of green crabs.

Predation by the non-native green crab is also a concern for the shellfishing industry. As described in greater length in the section on Natural Resources, green crab management is ongoing in Ipswich and consists of efforts such as culling and creating new markets for green crabs.

Access

Most lobsters are landed at the Town Wharf. Shellfish are landed at the Town Wharf, Eagle Hill, Pavilion Beach, and along the back side of the Bay.

The following is the Shellfish Advisory Committee's analysis of the landings (by shellfish classification area) accessible to commercial shellfish harvesters in Ipswich. The numbers in parentheses correspond to Figure 9.

¹¹² Based on the review of closure notices posted by the Massachusetts Division of Marine Fisheries. Online at: <https://www.mass.gov/lists/psp-notices#2020-notices->.



Figure 9: Map of Clam Flats in Ipswich¹¹³

Eagle Hill Landing (N4)

Positive Aspects:

- Usually ice-free
- Full tide access

Negative Aspects:

- Most utilized launch and the only access point for N-4: May 1-Sept 30
- Parking capacity = 38 total; 6 vehicles above high water, 12 vehicles below high water, 20 vehicles behind those below high water
- Residential disturbance
- Environmental impact to extremely sensitive area

Pavilion Beach Landing (N4)

Positive Aspects:

- Parking capacity sufficient and above high water
- Ice free
- Nearly full tide access

¹¹³ Town of Ipswich MA. Map of Clam Flats. Online at: <https://www.ipswichma.gov/DocumentCenter/View/204/Clam-Map-of-all-Flats-JPG>

Negative Aspects:

- Permitted Oct 1-May 31 only
- Environmental impact
- Exposure to ocean waves

Rowley Town River (N4)

- Competitive

Town Wharf Landing (N5)

Positive Aspects:

- Full tide access

Negative Aspects:

- Seasonal
- Parking capacity competes with recreational boaters
- Ices in
- Conflicts with recreational users; long waits

Patterson's Island Landing (N7)

Positive Aspects:

- Permitted access year-round
- Parking above high water mark

Negative Aspects:

- Parking capacity = 20 vehicles only
- Ices in
- Restricted access: half tide access only
- Congestion and time delays at ramp
- Owned by The Trustees of Reservation

Crane Boat House Landing (N7)

Positive Aspects:

- Parking above high water mark
- Parking capacity 20 vehicles only
- Ice-free
- Full tide access

Negative Aspects:

- Owned by The Trustees of Reservation; highly restricted access

Essex Town Landing & Conomo Point (N7)

- Competitive

Other Lesser Landings; ill promoted

- Eagle Neck Cove Landing (N4)
- Fox Creek Landing (N7)
- Little Neck Beach Landing (N5)
- Quay Road; IBCY (N4)

Fisheries Management

Management of commercial and recreational fisheries resources occurs at the federal, state, and municipal levels, with some aspects of management occurring in partnerships between these entities.

Ipswich shellfish are managed by the Shellfish Department, which patrols more than 900 acres of clam beds spread over more than 50 different named flats.¹¹⁴ Municipal regulations¹¹⁵ establish fees and schedules for obtaining commercial and recreational permits, set caps on allowable harvests, provide guidance on allowable gear types, specify sizes of legally harvestable shellfish, describe enforcement authorities, outline requirements for aquaculture grants, and detail penalties for violations of rules and regulations.

In addition, DMF manages shellfishing grounds to protect human health and preserve natural resources. Most of the shellfish flats in Ipswich are conditionally approved, meaning that the areas can be closed when water quality degrades under certain conditions, *e.g.*, heavy rainfalls, failing septic systems, leaks from aging sewer infrastructure.

The primary pathogen of concern is fecal coliform. As described above, DMF is also working to better understand the impacts of US Food and Drug Administration regulations which could limit shellfishing in areas located near mooring fields due to concerns about vessel discharge of human waste. Also mentioned above, DMF monitors for red tide from late March/early April through early/late October, sampling once per week. They have four sampling locations on the North Shore, including one at Pavilion Beach in Ipswich.

DMF also issues and manages permits for other species not managed by the Town. For example, those seeking to commercially harvest lobster and other species must obtain a state permit and abide by state and federal regulations pertaining to such things as catch limits, gear types, and areas opened/closed to fishing. Those looking to recreationally fish in Massachusetts waters must also obtain a recreational fishing permit from DMF.

In addition to state and municipal management of fisheries, the National Oceanic and Atmospheric Administration (NOAA) requires permits and establishes guidelines for commercial and recreational fisheries. Though important to fishing activities, most aspects of state and federal fisheries management are beyond the scope of this plan.

Needs and Opportunities

Several commercial and recreational fishing needs and opportunities have been identified for consideration in this Waterways Plan. They include:

- Management of commercial and recreational fishing resources involves multiple entities with different jurisdictions and requires coordination
- New federal rules regarding wastewater treatment facilities and mooring areas could significantly reduce areas open for the harvesting of shellfish
- Shore access for commercial and recreational shellfishers is limited, resulting in congestion, long wait times, and reduced productivity. In some cases, the quality of access is insufficient
- Shellfishing is being negatively impacted by invasive crabs, water quality, and other stressors

¹¹⁴ Town of Ipswich. 2012. Town of Ipswich Clam Flats.

¹¹⁵ Town of Ipswich Massachusetts. 2020. Shellfish Rules and Regulations. Online at: <https://www.ipswichma.gov/DocumentCenter/View/12668/Shellfish-Regulations---Nov-2020>.

- Infrastructure and access at the Town Dock could be improved to better serve the commercial fishing industry
- Dredging could improve access for commercial fishermen
- Shellfish aquaculture is limited by site condition requirements and public support for aquaculture is mixed
- The economic impacts of the town's commercial and recreational fishing activities are not well documented, and documentation is needed to build support for maintaining and improving facilities and management

Goals, Objectives, and Recommendations

Goal: To maintain existing levels of commercial and recreational fishing and provide support to expand as needed.

Objective 1: Improve infrastructure at Town Dock for commercial use

Recommendation 1: Install a new electric winch at the Town Dock to be used for loading and unloading commercial vessels. This has already been approved and budget allocated in 2016.

Recommendation 2: Add fresh water and a hose for dockside commercial use.

Recommendation 3: Extend the time during which the floating docks are in the water at Town Wharf for commercial use. Placing them in the water earlier in the spring and keeping them in the water later into the fall/early winter would allow commercial users more space to operate.

Recommendation 4: Explore the potential to create an area for long-term (*i.e.*, several hours or overnight) commercial dockage to allow for improved loading and unloading of gear and catches, to make repairs, to avoid tide restrictions, and for other purposes.

Recommendation 5: Improve signage at Town Wharf to clearly mark areas in the parking lot for commercial parking. Look to expand commercial parking as the pump-house is redesigned.

Recommendation 6: Identify areas for storage of commercial traps and gear. Storage areas may include existing waterfront sites or inland sites that are underutilized.

Objective 2: Minimize conflicts with other users

Recommendation 1: Continue to provide a wharfinger at the Town Wharf during busy summer months to promote safe and efficient use of the facilities.

Recommendation 2: Reduce on-street parking of clamming vessels by identifying off-street locations for vessel parking. Explore under-utilized municipal parking lots such as those at DPW facilities. Explore consolidation of clam vessel parking with gear storage areas mentioned in Recommendation 6.

Objective 3: Protect water quality for shellfishing purposes

(See the sections on Water Quality, Natural Resources, and Waterways Management for additional related recommendations.)

Recommendation 1: The Town should work with DMF to inform and then comply with new regulations resulting from FDA requirements pertaining to mooring fields and waste water treatment facilities. Depending on the outcome of DMF's analyses, consider developing an occupancy reservation system to keep overnight occupancy rates below impactful thresholds.

Recommendation 2: Cap the current number of moorings in sensitive areas near shellfish beds and seek to reduce them over time. The Shellfish Advisory Committee notes that the Coastal Pollution Control Committee final report in 1995 recommended that moorings not be allowed in remote areas near shellfish beds, including Grape Island, Third Creek, and Back Beach. These areas were mapped and approved by the Selectboard; however, the Town has not implemented this recommendation and these areas now have many moorings.¹¹⁶

Recommendation 3: Seek to prevent damage to the oyster beds at Eagle Hill by removing moorings or replacing them with conservation moorings designed to limit contact between the mooring rode and the seafloor.

Recommendation 4: Develop and implement strategies to reduce waste discharged from vessels, including houseboats. These strategies could include clarifying definitions in regulations to define houseboats and liveaboard vessels, enhanced pump out frequency, documentation of pumpouts, and enforcement of compliance with No Discharge Zone rules for locking the seacock in the closed position for a Type I or Type II marine sanitation device¹¹⁷.

Recommendation 5: Continue to Monitor human pathogens and contaminants in conjunction with DMF.

Objective 4: Explore Potential for Aquaculture

Recommendation 1: The Town should develop an aquaculture plan that supplements and informs existing municipal aquaculture regulations. The plan should consider the economic and environmental aspects of different types of aquaculture (both species and growing methods), level of interest in aquaculture, conflicts with other uses, potential locations for aquaculture operations, and any infrastructure improvements needed to advance the aquaculture plan's goals.

Objective 5: Coordinate for Improved Management

Recommendation 1: Place clear physical boundary markers in the water and on land to identify the different municipalities for commercial and recreational diggers. Use these boundary markers to assist with enforcement and management activities.

Recommendation 2: Post important information at each waterway access point, including shellfish regulations, the shellfish closure information telephone number, general marine environment and resource protective precautions, and shellfish consumption safety precautions detailing the dangers of consuming contaminated shellfish.

Recommendation 3: Coordinate with neighboring towns to offer educational programs highlighting ways to protect the shellfish resources (*e.g.*, water quality improvements, overview of regulations, green crab management). As part of these educational activities, engage new audiences through partnerships with entities such as the Ipswich River Watershed Association, the MassBays Partnership, local businesses, boat clubs, neighborhood associations, libraries, schools, and others.

Recommendation 4: Participate in the Interstate Shellfish Sanitation Conference, a cooperative between states, towns, and the federal government. Representatives meet biannually to talk about model ordinances and rules that any state participating in shellfish commerce has to follow.

Recommendation 5: Work with neighboring municipalities, fishing associations, and the DMF to develop an apprentice program for those interested in becoming a fisherman. Several apprentice programs exist

¹¹⁶ Ipswich Shellfish Advisory Committee. 2020. Internal document to Waterways Advisory Committee.

¹¹⁷ 33 CFR 159.7. <https://www.govinfo.gov/content/pkg/CFR-2014-title33-vol2/pdf/CFR-2014-title33-vol2-sec159-7.pdf>

and could serve as models (or partners) for Ipswich, *e.g.*, the Commercial Fishermen Apprentice Program (Rhode Island), and the Cape Cod Commercial Fishermen's Alliance training program.

Objective 6: Improve understanding of the values of commercial fishing in Ipswich

Recommendation 1: Conduct an economic analysis of the direct and indirect value of commercial fishing to the local and regional economy. Incorporate these findings into a potential study on the larger economic impacts of the town's waterfront and waterways. (See the section on the Economic Benefits of Ipswich's Waterways for more information.)

Recommendation 2: Develop and maintain opportunities for people to explore local fisheries, *e.g.*, a local seafood festival (in addition to the chowder festival), a "touch a boat", improved signage at Town Wharf, videos and presentations about the local commercial fishing industries, and educational material presented at restaurants regarding local seafood.

Objective 7: Protect human health

Recommendation 1: Enhance public education about human health and consumption of shellfish from/during closures. Strategies could include posting information at waterway access points and other locations, as well as posting on websites and social media, and sending email reminders about (1) the dangers of paralytic shellfish poisoning (PSP) and virus contraction, (2) the fines for harvesting shellfish on closed days or in closed areas, and (3) the telephone number to call for information about the opened/closed status of shellfish areas.

Objective 8: Increase commercial and recreational access

Recommendation 1. Identify and secure additional public access sites to both improve access and reduce environmental impacts at existing sites. The Shellfish Advisory Committee has developed the following desired criteria for commercial access:

- Multiple landings accessing multiple shellfish growing areas
- Sufficient parking
- All parking above the high water mark and environmentally safe
- Resilience to freezing up with ice during winters
- Having the ability to launch and navigate at all tidal levels
- Minimal residential disturbances
- Minimal environmental impacts
- Less seasonal restrictions

The Shellfish Advisory Committee has identified a need for additional landings in N4, N7 and particularly in N5 if Ipswich River opens for shellfishing in summer.

Recommendation 2: Prohibit the storage of docks and buoys on Town Wharf to reduce loss of parking spaces.

Recommendation 3: Work with the Trustees of Reservation to develop an MOU relative to commercial access on Crane Boat House Landing and Patterson's Island Landing to ensure continued access.

Recommendation 4: Identify an alternative to parking at Eagle Hill Landing to both increase capacity and reduce the environmental impact of vehicular parking in the intertidal zone. Parking for commercial shellfish harvesters should be prioritized.

Recommendation 5: Maintain existing key walk-out access and parking for commercial and recreational shellfish harvesters and employ applicable postings where necessary. These include Argilla Road at Fox Creek, Strawberry Hill, Eagle Hill Causeway, Clark Road and Pavilion, as well as those located within the Parker River Wildlife Refuge.

Recommendation 6: Formalize existing access points.

Objective 9: Manage shellfish resources for commercial and recreational uses

Recommendation 1: Explore strategies to protect the natural mussel beds north of Pavilion Beach and the oyster reef off Eagle Hill.



Visual Access

Public access is an important part of the many uses of the waterways, including commercial and recreational fishing, swimming, hunting, and boating. While the sections above address many of the needs and opportunities for physically accessing the waterways, visual access of the waterways and natural resources is an important piece not covered in sections above. Views of the River, Plum Island Sound, the marshes, and the related activities are a draw for residents and visitors alike. The area's natural beauty contributes indirectly to the town's economy through mechanisms such as property taxes, home sales, and spending at local businesses.

Many survey respondents, plans, and interviewees indicated an interest in maintaining and improving visual access—be it while walking, driving, or engaging in other land-based activities.

Needs and Opportunities

Several needs and opportunities have been identified for consideration in this Waterways Plan. They include:

- A lack of safe places to pull off the road to view the waterways
- A need for additional visual access, including gathering places and walking paths

- A need to protect exiting visual access

Goals, Objectives, and Recommendations

Goal: Maintain and improve visual access to the town's waterways

Objective 1: Preserve existing visual access

Recommendation: Explore opportunities to designate the Ipswich River as Wild and Scenic under state and federal regulations.

Objective 2: Increase opportunities for visual access

Recommendation: Explore options to create safe roadside pull-offs to allow for the enjoyment of views of the waterways. Of particular interest is the Eagle Hill Cove stretch of Jeffery's Neck Road, which is heavily used by motorists, particularly at sunset, but is also a hand vessel landing and shellfish walkout access point.

DRAFT