York River Watershed Stewardship Plan

Draft – June 2018

Prepared by the York River Study Committee

York River Wild and Scenic Study

Draft York River Watershed Stewardship Plan

June 15, 2018

Comments, questions, corrections, or other feedback on the draft plan are welcomed. **The York River Study Committee requests all comments by Friday, July 6, 2018.** Please provide your input to the York River Study Coordinator, Jennifer Hunter, by emailing jh.yorkriver@gmail.com or calling (207)641-9122. You can provide input in person at the York River Study Committee meeting held from 5:30 to 7:30 pm at the Grant House in York on Tuesday, June 26, 2018.

This draft plan is available on the York River Study website: www.YorkRiverMaine.org.

Limited numbers of photos were included to keep the overall document size manageable. The final plan will include additional images.

An acknowledgements section and executive summary will be included with the final draft, anticipated by late July.

The plan design and layout are not final.

Cover photo credit: Michael Beland

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Agency members include Jamie Fosburgh and Jim MacCartney, National Park Service; Paul Dest, Wells National Estuarine Research Reserve; David Gardner and Judy Gates, Maine Department of Transportation; and Claire Enterline, Maine Department of Marine Resources.

York River Study Coordinator: Jennifer Hunter

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Separate Volumes

Aman, Jacob. (2018) *An Assessment of Spring Fish Communities in the York River, Maine*. Report to the York River Study Committee. Wells National Estuarine Research Reserve, Wells, Maine.

Hudgell, Gemma-Jayne, Stephen R. Scharoun, Robert N. Bartone, and Ellen R. Cowie. (2017) *Archaeological Survey of the York River Headwaters: A Community Approach for Identification and Management*. Prepared for the York River Study Committee. Northeast Archaeology Research Center, Inc., Farmington, Maine.

Mallory, Steven and Scott Stevens. (2017) *Architectural Survey of the Upper York River.* Prepared for the York River Study Committee. Groundroot Preservation Group, LLC, Cape Neddick, Maine.

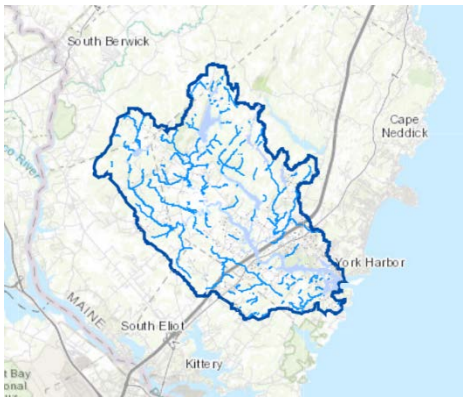
Southern Maine Planning and Development Commission. (2018) *York River Watershed Study: Regulatory and Non-regulatory Recommendations Report*. Prepared for the York River Study Committee. York, Maine.

Spatial Alternatives, Inc., and Southern Maine Planning and Development Commission. (2018) *York Watershed Build Out Scenarios*. Prepared for the York River Study Committee, York, ME.

Photo: Chuck Maranhas

Section I – Introduction

The York River Watershed Stewardship Plan (Stewardship Plan) provides recommendations to protect and enhance the water quality, ecology, historic resources, scenic qualities, and cultural resources that collectively contribute to the region's special character and identity. It provides a framework and strategies for a local York River Stewardship Committee to follow in planning future outreach and conservation work. To help shape this advisory plan, the York River Study Committee engaged the citizens of the four watershed towns, local boards and committees, conservation and preservation groups, local experts, and state agency representatives to identify important watershed resources and develop recommendations for long-term protection.



The York River watershed, which includes over 100 miles of rivers and streams, is an exceptional natural and cultural resource. The 33 square mile watershed includes lands in the towns of York, Eliot, Kittery, and South Berwick, Maine. The exemplary biodiversity, large areas of undeveloped habitat, clean water, significant historic resources, vibrant harbor and waterfront area, and scenic qualities all make this watershed a special place.

A watershed is an area of land where all the water that is under it or drains from it flows to the same place. The York River watershed includes all the lands that drain to the York River, either directly or first to a smaller tributary stream that eventually flows to the York River.

York River watershed resources are generally in good condition, due in part to existing conservation and outreach actions by watershed towns, conservation organizations, and other community groups and to the existing regulatory and land use management frameworks in place. Communities' regulations, comprehensive plans, and funding for resource protection initiatives demonstrate commitment to long-term resource stewardship. Because of the area's unique resources, the region and, in particular, the watershed area face increasing demands for development and recreational uses.

A Partnership Wild and Scenic River designation for the York River and tributary streams in the National Wild and Scenic Rivers System could provide the structure and key funding to implement the Stewardship Plan, enable a watershed approach across the four-town area, leverage additional technical and financial resources, engage key partners and citizens in river stewardship, and bolster ongoing initiatives to protect watershed resources.

A. Purposes of the Stewardship Plan

The Stewardship Plan describes community-valued watershed resources and their importance, and it identifies actions intended to protect those resources for the benefit of current and future generations. The plan is based on data, assessments, and information available in state and regional plans and reports; goals and priorities from locally developed and approved plans, such as town comprehensive plans; expert, user, and community member input solicited by the York River Study Committee on priorities and management needs; and data and findings from additional studies conducted during the York River Wild and Scenic Study. The Stewardship Plan is advisory, not regulatory. It sets a vision for resource conservation, and it identifies a range of actions that can be undertaken to protect or improve watershed resources.

In addition, the Stewardship Plan describes the approach used by the York River Study Committee to conduct the York River Wild and Scenic Study. It describes the findings and recommendations from the York River Study Committee's evaluation of possible designation of the York River into the National Wild and Scenic Rivers System. The Stewardship Plan documents the eligibility and demonstrates the suitability of a Partnership Wild and Scenic River designation for the York River and its major tributaries. The plan also recommends and describes an administrative framework to enable a watershed approach and implement the plan if there is designation.

B. National Wild and Scenic Rivers System / Partnership Wild and Scenic Rivers

Under the Wild and Scenic Rivers Act, enacted by Congress is 1968, a river that possesses outstandingly remarkable scenic, recreational, geological, fish and wildlife, historic, cultural, or other similar values can be designated into the National Wild and Scenic Rivers System to preserve the river and its special values for the benefit and enjoyment of present and future generations. As of the last river designation in December 2014, there are 208 rivers in the National Wild and Scenic Rivers System, totaling 12,733 miles in 40 US states and Puerto Rico.

Outstandingly Remarkable Value (ORV), a term taken from the Wild and Scenic Rivers Act, is used to characterize river-related values or features that are unique, rare, or exemplary at a regional or national level. The York River watershed has many ORVs, such as historic structures, archaeology sites, rare wildlife and habitats, and excellent water quality.

A subset called Partnership Wild and Scenic Rivers (PWSRs) are designated rivers that flow through primarily privately-owned, not federally-owned lands. The PWSR model has been used for over 20 years and was developed to meet the needs of communities with rivers characterized by private land ownership and well-established local processes for governance and stewardship of river resources. Working in partnership through cooperative agreements with the National Park Service and through a local stewardship committee, communities with designated PWSRs preserve their river-related resources. A locally developed stewardship plan that guides conservation activities must be in place prior to PWSR designation by Congress. There are currently 13 PWSRs, primarily located in the northeast. The Lamprey Rivers Advisory Committee has implemented its local stewardship plan for over twenty years, following designation of the Lamprey River in Lee, Durham, Epping and Newmarket, NH, as a Wild and Scenic River in 1996. Common principles of PWSRs include:

- River and land use is governed by existing local municipalities and state laws and regulations.
- An advisory stewardship plan, which is locally developed and approved by watershed communities prior to federal designation, forms the basis of the designation and guides subsequent voluntary conservation actions.
- Administration is through a local stewardship committee consisting of members from the watershed communities, local partner organizations, and state and federal agencies.
- Nationally-designated river status, anchored by National Park Service funding, leverages additional federal, state, local, and private funding to implement the local stewardship plan.
- The National Park Service will not own or manage lands associated with the designation. Other federal agencies such as US Fish and Wildlife Service (USFWS) are unaffected by designation. USFWS owns and manages lands in the York River watershed as part of the Rachel Carson National Wildlife Refuge.
- Partnership Wild and Scenic Rivers are not considered units of the National Park System and are not subject to regulations that govern Park units.
- The National Park Service is responsible for implementing Section 7 of the Wild and Scenic Rivers Act to ensure federal consistency in preserving the river's ORVs that have been identified in the local stewardship plan. This responsibility is coordinated with each river's stewardship committee.

A Partnership Wild and Scenic River designation ensures local control. It does not:

- put land under federal control
- require public access to private land
- change any existing land uses
- force any changes in local land-use decision-making processes or objectives
- create new federal permits or regulations
- prevent access to or use of the river or watershed lands
- affect hunting and fishing laws

Photo: David J. Murray, ClearEyePhoto.com

Section II – York River Wild and Scenic Study

Congress passed the York River Wild and Scenic Study Act (P.L. 113-291) in December 2014, which authorized the York River Wild and Scenic Study, to evaluate the York River and its tributaries for potential inclusion in the National Wild and Scenic Rivers System. Wild and Scenic River studies are typically completed over the course of three years, starting from the initial appropriation of funds from the National Park Service's Partnership Wild and Scenic Rivers Program. Federal funding initially was awarded for the York River Wild and Scenic Study in December 2015.

A. Background

Starting in 2009, a group of watershed residents called the Friends of the York River led an exploratory effort to determine if designation of the river as a Partnership Wild and Scenic River in the National Wild and Scenic Rivers System would be an effective way to recognize and protect the York River and its resources. The group garnered widespread support from watershed residents, town leaders, businesses, river users, conservation groups, riverfront landowners, and historic preservation organizations to proceed.

The York River Wild and Scenic River Study Bill was initially introduced in the US House of Representatives by Representative Chellie Pingree in 2011, though the Study Bill failed to make it through the complete legislative process. In 2013, at the request of Representative Pingree, the Northeast Region of the National Park Service (NPS) conducted a reconnaissance survey of the York River as a candidate for potential Wild and Scenic River designation and as a preliminary step toward authorizing a full Wild and Scenic River Study. The preliminary findings were that eligibility and

suitability criteria for a PWSR designation were likely to be met, and that a Wild and Scenic River Study for the York River would be appropriate and productive. In May 2013, Representative Pingree re-introduced the legislation in House Bill 2197, and in September 2013, Senator Angus King introduced it in Senate Bill 1520. This time the bills made it through the full legislative process, with Congress authorizing the York River Wild and Scenic Study in 2014.

If at the end of the York River Wild and Scenic Study, the river is deemed eligible and suitable for designation as a PWSR and there is local support for such a designation, a new bill must be introduced and authorized by Congress to designate the York River and its tributaries into the Wild and Scenic Rivers System.

B. Study Overview

The York River Wild and Scenic Study has consisted of two related components: river designation evaluation and watershed stewardship plan development. Public knowledge, involvement, and support were key to both parts of the study. Eligibility and suitability of a PWSR designation for the rivers in the York River watershed were evaluated. Rivers eligible for designation must be generally free-flowing and possess at least one outstandingly remarkable value (ORV), a feature that is rare, unique, or exemplary at a regional or national scale. Suitability for PWSR designation is demonstrated through existing local capacity and support for river protection and stewardship. Community approvals of the Stewardship Plan further substantiate suitability by demonstrating local commitment to long-term river conservation.

The York River Wild and Scenic Study provided the opportunity for the four watershed towns to work together for their shared resources at a regional scale. It provided the structure and forum to help identify key issues and goals for long-term river and watershed resource protection. The process was entirely voluntary and locally determined. This Stewardship Plan is a key product resulting from this collaborative, watershed-scale effort.

If the York River and its major tributaries are designated by the US Congress into the National Wild and Scenic Rivers System, this York River Watershed Stewardship Plan would serve as the "comprehensive management plan" required for all PWSRs. It provides the implementation framework and recommended actions that can be voluntarily undertaken whether or not there is PWSR designation for the watershed rivers and streams.

C. York River Study Committee

The York River Study Committee was formed in mid-2015 to conduct the York River Wild and Scenic Study. Representatives for the committee were sought from York, Eliot, Kittery, and South Berwick through a public application process open to all communities' residents. Town officials appointed committee members from their respective towns. The Study Committee includes voting members

(individuals appointed by town boards/councils) and non-voting members (representatives of public agencies). The Committee hired a part-time Study Coordinator in early 2016.

The Wells National Estuarine Research Reserve (Wells Reserve) serves as fiscal agent for the York River Study Committee. Funding from the National Park Service Wild and Scenic Rivers Program to conduct the York River Wild and Scenic Study was awarded through a Cooperative Agreement with the Wells Reserve. The Study Committee developed and approved annual budgets and authorizes expenditures of all funds used in conducting the study.

Study Committee members represent a broad range of knowledge and interests related to the York River and its watershed. From the start, there was agreement among Study Committee members around key aspects that helped guide their approach to the York River Wild and Scenic Study: the York River and its watershed resources have great value worthy of protection for current and future generations; a watershed focus, rather than river focus, would best achieve overall resource protection; and community support and involvement was critical to implementing a successful study.

D. Study Area

A key decision was made early on by the York River Study Committee to pursue a watershed-based approach, rather than a narrower river or river corridor focus, for the overall York River Wild and Scenic Study and for Stewardship Plan development, in particular. Therefore, the study area was the full watershed area, though Partnership Wild and Scenic River designation would apply to specific river segments.

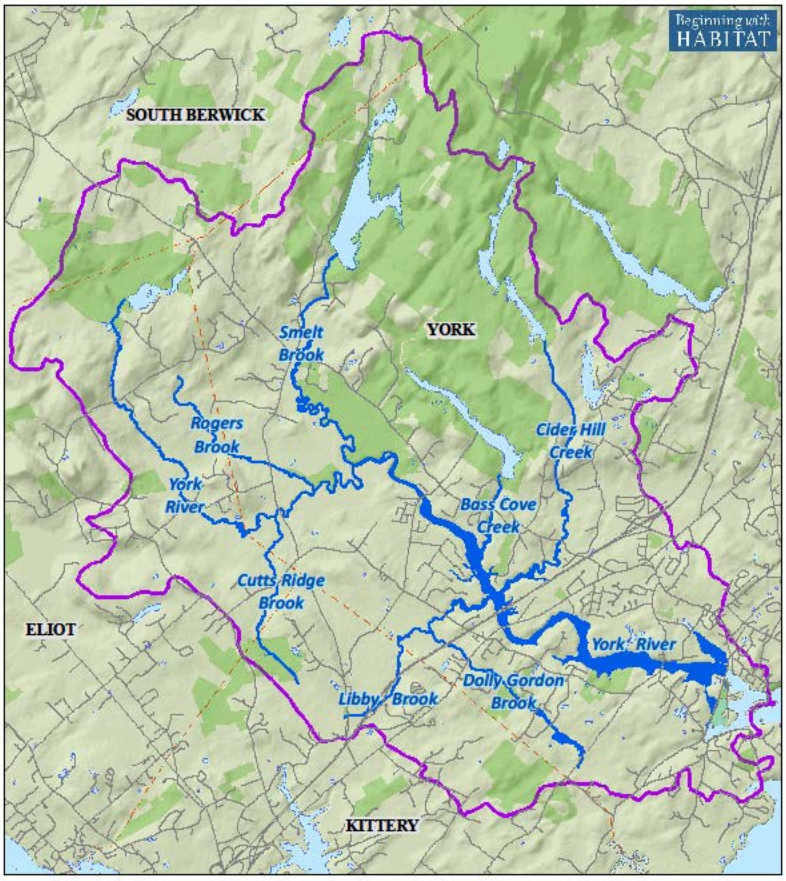
The Stewardship Plan identifies protection strategies for all important watershed resources located from the headwaters of all watershed streams to York Harbor, and across all the land areas that are part of the York River watershed. Key resource areas addressed in this plan are: historic resources; working waterfront; scenic and recreational resources; water quality; open spaces and large unfragmented habitats; headwater streams and riparian habitat; and biodiversity, including rare and threatened species and natural habitats. Not all the community-valued resources included in this Stewardship Plan meet the ORV definition for PWSR designation eligibility. Some locally important watershed resources are not directly river-related, and some are not unique, rare, or exemplary at a regional or national scale.

The scope of the York River Watershed Stewardship Plan is watershed-wide. Its implementation will help preserve all outstanding watershed resources identified in the plan, not only the ORVs associated with designated river segments.

E. PWSR Designation Recommendation

The York River Study Committee recommends designating the York River and its major tributaries in the National Wild and Scenic Rivers System. A PWSR designation would provide key financial resources, technical assistance, and a local structure to best enable implementation of the York River Watershed Stewardship Plan.

River segments recommended for designation are the York River from the York Pond outlet in Eliot to the Route 103 bridge in York and some or all portions of its major tributaries including Cutts Ridge Brook in Kittery, Eliot, and York; Rogers Brook in Eliot and York; Smelt Brook in York; Bass Cove Creek in York; Cider Hill Creek in York; Libby Brook in Kittery and York; and Dolly Gordon Brook in York. The Study Committee voted to recommend designation of these river segments, subject to community approvals, at its November 28, 2017 meeting.



Stream Reaches Recommended for PWSR Designation	Length (miles)
Bass Cove Creek, from Boulter Pond outlet to York River	0.95
Cider Hill Creek, from Middle Pond dam to York River	3.77
Cutts Ridge Brook, in entirety	2.15
Dolly Gordon Brook, in entirety	3.17
Libby Brook, in entirety	1.65
Rogers Brook, in entirety	2.43
Smelt Brook, from Bell Marsh Reservoir dam to York River	4.54
York River, from York Pond outlet to 103 Bridge, including Barrell Mill Pond	12.14
Total length:	**30.81**

Summary of Eligibility and Suitability Findings

The York River and its major tributaries meet the eligibility and suitability criteria for PWSR designation. Additional information on the eligibility and suitability of the York River and its tributaries for PWSR designation are described elsewhere in the plan, as noted below.

There are many ORVs present throughout the watershed rivers and streams, including:

- Historic resources: numerous archaeological sites, historic properties including National Register sites, and structures such as bridges and tidal mill dams

- Water quality: clean water supporting many uses and providing high quality aquatic habitats for fish and other species
- Biodiversity and natural communities: exceptional biodiversity including many rare, threatened and endangered species; high value habitats identified as regionally important conservation priorities
- Working waterfront preservation: unique approach involving the purchase of a conservation easement to sustain future dock use for commercial fishing
- Scenic views: visual qualities and scenic viewsheds created by a combination of historic resources, traditional uses of the river and watershed lands, natural resources, and the built environment
- Watershed ecosystem: undeveloped headwater streams and riparian buffers, large forested areas, good stream connectivity, and quality salt marsh habitat throughout much of the watershed create a natural system that provides ecological services and can likely adapt to sea level rise and other environmental changes

Some ORVs are located at discrete points – for example, the John Hancock Warehouse, one of eight National Register sites in the watershed area. Some are associated with different river segments or habitats throughout the watershed – for example, rainbow smelt, a threatened diadromous fish species that uses tidal water habitats and freshwater habitats in several watershed tributaries for spawning. York River resources have been documented as unique and exemplary at regional and national levels. *[See Section VIII – Partnership Wild and Scenic River Designation for a list of ORVs for the York River and tributary streams.]*

The York River and its tributaries that are recommended for PWSR designation are generally free-flowing. Designated reaches begin below the drinking water supply dams. Historic dams and structures still present in or along the rivers do not impede overall river flow. Similarly, while there are many opportunities to improve fish passage and tidal river flows, culverts at road crossings of streams are not severely restricting or altering river flow.

There are over 100 miles of waterways in the York River watershed. Though not part of the designated areas, streams such as Southside Brook, Johnson Brook, Moulton Brook, and Macintire Junkins Brook provide key aquatic habitats, contain ORVS or directly support ORVs in designated stream segments, and contribute to overall health of the watershed ecosystem.

Watershed communities' regulatory and non-regulatory approaches to resource protection were documented and reviewed by the Southern Maine Planning and Development Commission (SMPDC). *[See SMPDC's York River Watershed Study: Regulatory and Non-Regulatory Recommendations Report, included as a separate volume.]* The communities have policies and management frameworks in place that demonstrate the capacity for and commitment to river and watershed resource conservation. Some examples include:

- Community developed and approved comprehensive plans set the vision, priorities, and recommended policies for resource protection through land use regulation and other measures, including protection of water quality, marine resources, historic and archaeological resources, natural resources, open spaces and recreation. Comprehensive plan policies support undertaking regional and watershed approaches for resource conservation.
- Communities' existing zoning and ordinances that regulate land use provide the framework to protect water resources and ORVs. Site plan and subdivision regulations, stormwater management regulations, and harbor use ordinances are some of the local ordinances that protect and govern management of resources. Recommendations for further protections are identified in the Stewardship Plan. The four watershed towns maintain capacity through code enforcement offices, planning departments or planning staff, planning boards, and harbor masters to enforce ordinances.
- Three of the four watershed communities' ordinances have requirements that exceed minimum protection requirements set forth in the Maine Mandatory Shoreland Zoning Act that requires municipalities to adopt, administer, and enforce local ordinances that regulate land use activities in the shoreland zone.
- Watershed communities, working in partnership with local land trusts, state agencies, and other state and regional conservation organizations, have helped conserve thousands of acres in the watershed. Voters consistently have approved use of town funds for key land protection projects in the watershed, including the recent examples of Rustlewood Farm in Kittery and Eliot, and Fuller Forest in York.

NPS Study Report to Congress

Following town votes on whether to accept this Stewardship Plan and endorse PWSR designation, the National Park Service (NPS) summarizes the research and findings from the York River Wild and Scenic Study in a Study Report to Congress. The finalized Study Report is a separate document from this Stewardship Plan and is presented to Congress. The completion of the NPS Study Report to Congress, anticipated in early 2019, is followed by a public comment period. To achieve designation of the York River and its tributaries in the Wild and Scenic Rivers System, a bill must be passed by Congress and signed by the President.

Photo: Jennifer Hunter

Section III – Stewardship Plan Development

The Stewardship Plan identifies actionable strategies to protect important community resources for current and future generations. It recommends an implementation framework achieved through Partnership Wild and Scenic River designation to best enable long-term implementation of the watershed plan.

A. Goals and Principles

The stewardship objectives and recommended actions developed for this plan are intended to help achieve broad goals for watershed resource protection:

- Identify and preserve cultural and historic resources of the York River watershed.
- Protect valuable natural communities, habitats, biodiversity, and water resources of the York River watershed.
- Preserve working waterfront, sustainable recreational uses and scenic qualities of the York River and watershed lands that are important to regional identity and community character.
- Strengthen stewardship of watershed resources by river users, watershed landowners and citizens.

The York River Study Committee adopted a watershed approach to the York River Wild and Scenic Study and Stewardship Plan development. A watershed approach recognizes the connections

between resources, land use, economy, and a changing environment and that the watershed ecosystem as a whole is greater than sum of its individual parts.

The York River watershed's ecosystem and resources are outstanding. The overall watershed landscape supports intact natural habitats, large forested areas, and historic and rural contexts that are interrelated. With good water quality, a high degree of stream connectivity throughout most of the watershed, large areas with undeveloped shorelines, and forested wetlands and headwater streams, the watershed rivers and streams provide quality aquatic habitat, support a range of uses, and are resilient to environmental change.

In pursuing a watershed-based approach to plan development, the Study Committee sought to promote greater understanding of the resources to be protected and their importance to community character; to create or support partnerships for long-term stewardship; and to develop proactive recommendations that account for resource status, threats and protection opportunities. Several principles guided the Study Committee's development of the Stewardship Plan and its recommendations:

The Stewardship Plan is voluntary. The plan is intended to serve as a guidance document that recommends a set of actions and approaches to protect watershed resources. It is not enforceable, and it does not change existing federal, state or local regulations. Primary responsibility for the river and protection of watershed resources remains with property owners through stewardship of their lands, with local governments through adoption and enforcement of regulations for land use and resource management, and with those who enjoy the scenic and recreational value of the river and watershed lands.

The Stewardship Plan integrates, builds upon, and supports the work of others. Communities (through work of various department staff and the volunteers on town boards, commissions and committees), land trusts and regional conservation organizations, historic societies, other community groups, state agencies and individual landowners are undertaking many successful efforts to raise awareness of watershed resources and to protect those resources. Recommended actions included in the plan are intended to support these ongoing initiatives and demonstrate how actions collectively contribute to watershed scale objectives and goals. The Stewardship Plan does not supersede existing plans.

Recommended actions are proactive. Protection of existing high-quality resources is easier, more efficient, and more cost-effective than restoration of degraded resources. Some resource losses or degradation are irreversible.

The Stewardship Plan and its recommendations are intended to be adaptive. Knowledge of resource threats and status is incomplete, and resource conditions can change. Strategies and priorities will need to be reevaluated as new information becomes available, as resource threats and conditions change, or as new stewardship opportunities occur. Recommended actions may need further

development or refinement for implementation to account for changes, and additional actions may be needed.

Watershed resources identified in this plan and stewardship recommendations are consistent with existing community-supported values, priorities, and policies. Voter-approved funding for land conservation and harbor infrastructure projects, priorities identified in towns' comprehensive and open space plans, and local ordinances that have been adopted all demonstrate a public appreciation for and commitment to protect watershed resources.

B. Stewardship Plan Development Approach

The Study Committee identified outstandingly remarkable values (ORVs) for the watershed, characterized resource status and conditions, identified threats and management needs, defined stewardship objectives, and developed key actions to achieve conservation and stewardship objectives. To complete these tasks:

- The committee reviewed the four watershed towns' comprehensive plans and ordinances for goals, priorities, and policies; other local and regional plans; and state agency plans and programs.
- The committee compiled and reviewed existing data, assessments, studies and reports on watershed resources, and, for newer studies, sought presentations on findings and recommendations from resource experts.
- The Study Committee's ORV subcommittee convened a series of topic-based meetings that allowed in-depth review of data and discussion of resource status and management needs. These meetings provided a forum to bring together local stakeholders, state agencies, resources experts, local groups, and interested citizens for discussion and helped identify opportunities for regional collaboration and partnerships.

ORV subcommittee meetings included presentations on and discussions of key resources and values: salt marsh habitat, sea level rise, and marsh migration; water quality; infrastructure and opportunities for improved fish passage; working waterfront and harbor use; drinking water supplies; conservation lands; historic resources; fish, wildlife, and habitats; and data from recent assessments of water quality and fish habitat.

- The committee identified several areas where new or updated data were needed to better characterize and document potential ORVs and commissioned several new studies to provide data and inform stewardship recommendations.
- The committee engaged the public and key stakeholders in developing stewardship plan goals, objectives, and strategies to protect valued resources and gathered other input through attending various board meetings, public events, and informal meetings with interested groups and individuals (see outreach activities and public/stakeholder input section below).

C. New Studies

The York River Study Committee identified several priorities for further study in 2017 and awarded or helped secure funding to complete projects:

- *Diadromous Fish Species and Habitat Study* conducted by the Wells National Estuarine Research Reserve. The project was primarily funded with National Park Service York River Study funds, with partial funding provided by the Wells Reserve and the Laudholm Trust. Wells Reserve conducted surveys to generate up-to-date data on existing fish species in the York River and identify the presence of diadromous fish species of greatest conservation need, in particular.
- *Historic Resources Survey of the Upper York River* conducted by Northeast Archaeology Research Center, Inc. and Groundroot Preservation Group, LLC. The project was funded with the National Park Service York River Study funds and grant funds awarded to the York River Study Committee by the New Hampshire Charitable Foundation and the York Community Initiatives Fund of the Maine Community Foundation. Archaeological and architectural history surveys were conducted around the upper York River and York Pond in York and Eliot, an area identified by the York River Study Committee in need of surveys and documentation.
- *York River Watershed Build-out Study and Regulatory Review* conducted by the Southern Maine Planning and Development Commission (SMPDC) and its subcontractor Spatial Alternatives, Inc. This project was funded primarily by a grant from the Maine Coastal Program to SMPDC, with additional matching funding and in-kind support from the York River Study Committee and SMPDC. The project involved two related components: (1) a watershed build-out study to provide an overall assessment of development potential under current zoning provisions, and (2) a comprehensive review of the four towns' existing regulatory and non-regulatory approaches for resource protection, with recommendations for improvements.

Data, findings, and recommendations from these newly commissioned studies were used to help characterize resources, further evaluate PWSR designation eligibility and suitability, and develop stewardship actions.

D. Outreach Activities and Public/Stakeholder Input

Throughout the York River Wild and Scenic Study, the Study Committee sought input from and involvement by citizens, watershed landowners, conservation and preservation groups, town staff, members of town boards and commissions, commercial users and interests, representatives of state agencies, York River Study advisors and other resource area experts. Outreach conducted by the Study Committee also helped in assessing and building community support for river and watershed resource protection.

All meetings convened by the Study Committee were open to the public and were listed on the York River Study website: www.YorkRiverMaine.org

- Regular meetings of the York River Study Committee were held monthly for the duration of the study. Meeting notices were posted in all four communities, and meeting agendas and minutes were available on the York River Study website.
- The Study Committee ORV subcommittee's nine resource topic meetings (described above) were held from January 2017 to February 2018. Detailed notes for each meeting, along with any presentations given at the meetings, were posted on the York River Study website. In addition, the subcommittee convened three public meetings from October 2017 to April 2018 to discuss the ongoing watershed build-out study. Cumulative attendance at these subcommittee meetings was 245 people.

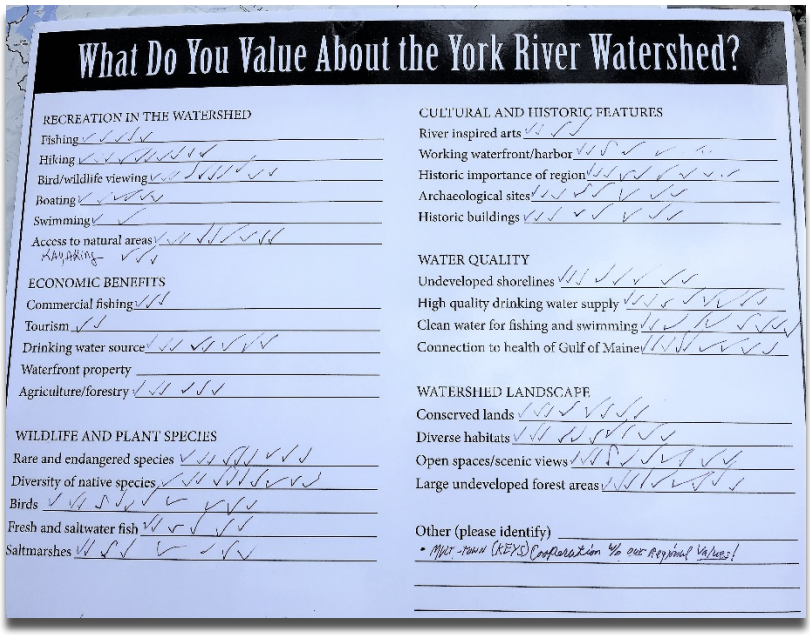
Presentations and updates to boards and community groups, project activities, and participation in community events provided additional opportunities for the York River Study Committee to gather input, provide information, and answer questions about the York River Wild and Scenic Study, including designation and Stewardship Plan development.

- The Study Committee hosted two community forums in June and October 2016 to introduce the York River Wild and Scenic Study to citizens.
- Presentations and updates were given to town boards and committees, including Eliot Selectmen in December 2016 and December 2017; Kittery Council in October 2016 and December 2017; South Berwick Council in November 2016 and 2017; York Selectmen in October 2016 and 2017; South Berwick Conservation Commission in October 2017; York Harbor Board in December 2017; York Historic District Commission in June 2018 and Eliot, Kittery, South Berwick and York planning boards in May and June 2018.
- The Study Committee conducted two different watershed walks in July 2017 to connect citizens to the history and habitats of the York River watershed. Walks were fully subscribed, with over 25 participants for each event.
- The Study Committee invited hands-on citizen participation in two of the projects it commissioned. York High School students participated in the diadromous fish survey conducted by Wells National Estuarine Research Reserve in spring 2017, and 28 citizen volunteers participated in the June 2017 four-day dig that was part of the archaeological survey conducted by Northeast Archaeology Research Center. The Study Committee and its contractors for the historic resources surveys met with the Eliot Historical Society at three of its monthly meetings from October 2016 to January 2018 to get input and provide results from the surveys. All landowners in the historic resources survey area were mailed a letter and invited to attend an informational meeting about the surveys.
- The Study Committee made presentations to many groups, including the York Lobsterman's Association, Great Works Regional Land Trust, Eliot Historical Society, York Rotary, and York High School students in three marine science classes.
- The Study Committee had informational tables at a number of community events, including York Marketfest, Eliot Festival Days, community markets, and at Eliot and York voting centers.

Information table at York Marketfest 2016

Information and outreach products developed and used by the York River Study Committee are listed below.

- The York River Study website (www.YorkRiverMaine.org), launched in June 2016, was the primary ongoing outreach tool during the study. News and updates were regularly added; meeting minutes, notes, presentations, and final project reports were posted for review; events and activities were noted in the online calendar; background information was provided; outreach documents and materials were available; an overview video was on the home page; and a Stewardship Plan development page noted updates and provided access to draft documents.
- The York River Study Coordinator maintained an email list with over 300 email addresses. Emails sent generally monthly provided updates on meetings, reports, events and Stewardship Plan development.
- Media releases were issued by the Study Committee in June 2017, December 2017 and June 2018 to provide updates on the York River Wild and Scenic Study. Separately 21 stories that provided information on meetings, projects and overall study progress were published by Seacoast Media Group in print and online versions of the York Weekly or Portsmouth Herald from December 2015 to June 2018.
- Outreach products developed over the course of the study included: a three minute video overview, designation overview 2-page document (2017-18), York River Study overview 2-page document (2016-17), Frequently Asked Questions document, volunteer recruitment flyer for the archaeology dig (2017), landowner letter to residents in the historic resources survey area (2017), Watershed Walks promotional flyer (2017), postcard mailed to all Kittery residents in the York River watershed and to shoreland property owners in York and Eliot (2016), a public input poster used at community events (2016), many presentations, and several project-based online Story Maps.



Public input poster from Eliot Festival Day 2016

Opportunities for groups and individuals to review and provide input on sections of the Stewardship Plan were provided from October 2017 to July 2018. Stewardship objectives and recommended actions, considered the "heart" of the plan, were distributed first to allow for more extensive review and input. An initial draft of stewardship objectives and actions developed from the ORV topic meetings was developed, posted on the York River Study website, and distributed broadly for review in October 2017.

- Preliminary working drafts of the stewardship objectives and actions were developed, reviewed, and shared with partner groups, resource experts, and municipal boards and staff from October 2017 through April 2018, including the York River Study advisors, Eliot Historical Society, York Harbor Board, York Lobsterman's Association, Mt. Agamenticus to the Sea Conservation Initiative partner organizations, Maine Department of Inland Fisheries and Wildlife, and the York Code Enforcement Office, among others.
- Updated draft stewardship objectives and actions for the three broad resource areas were posted and distributed for public review and comment from May 8-29, 2018. During this time, the draft objectives and actions also were included in meeting packets and publicly posted on town websites for York, Kittery, and Eliot planning board workshops and a York Board of Selectmen meeting. Reviewers were invited to provide feedback by email, phone or in person at the York River Study Committee monthly meeting in May.
- A draft York River Watershed Stewardship Plan that included updated objectives and actions was posted and distributed for public review and comment from June 15-July 6, 2018. Reviewers were invited to learn more or provide feedback by email, phone or in person at the York River Study Committee monthly meeting on June 26, 2018.

Photo: Stefan Claesson

Section IV – Administrative Framework for the York River Stewardship Committee and Stewardship Plan Implementation

This section describes the administrative structure for the ongoing coordination, implementation, and oversight of the York River Watershed Stewardship Plan (Stewardship Plan) if the York River and its major tributaries are designated into the National Wild and Scenic Rivers System. The York River Stewardship Committee (Stewardship Committee) will be created to continue the efforts of the York River Study Committee to ensure there is a cooperative and participatory management framework in place to advance the goals of the Stewardship Plan. Protecting and enhancing the outstandingly remarkable values (ORVs) identified in the Stewardship Plan will be the Stewardship Committee's highest priority.

The Stewardship Committee will be responsible for implementing the Stewardship Plan, including identifying and undertaking the highest priority actions; encouraging collaboration and coordination among the watershed communities and partner groups; and raising public awareness of the watershed's importance, threats to resources, and the challenges faced in balancing protection, access and use. Where possible, the Stewardship Committee will seek to encourage local, State, and Federal efforts to study, develop, and implement options to protect watershed ORVs.

A. Core Responsibilities

The core responsibilities and functions of the Stewardship Committee will be as follows:

- Coordinate the implementation of the Stewardship Plan;
- Promote public understanding, awareness, and appreciation of the York River watershed;
- Encourage the stewardship of the watershed through public engagement;

- Convene periodically those parties interested in, and responsible for, activities in the watershed;
- Provide a forum for the communities in the York River watershed to identify and address issues important to the York River and its ORVs;
- Facilitate projects and agreements to enhance watershed stewardship and protection;
- Encourage cooperation and coordination among the York River watershed communities and partners;
- Monitor activities related to the York River;
- Foster responsible use of the York River watershed;
- Review and comment on proposed projects and activities that might potentially affect the York River and its ORVs;
- Receive, manage, and account for funds from the National Park Service to implement the Stewardship Plan;
- Coordinate fund raising for watershed-related projects and make funding decisions;
- Disburse funding for activities that advance the goals of the Stewardship Plan;
- Review periodically and update the Stewardship Plan, incorporating local community, partner and public comments;
- Prepare and distribute regular reports on the status of the goals of the Stewardship Plan to communities, key partners, and representatives from State and Federal agencies and the Congressional delegation; and
- Decide on staffing arrangement and structure, if any, to coordinate Stewardship Plan implementation and to assist the Stewardship Committee, and oversee the hiring and management of any staff.

The Stewardship Committee can advise local, State and Federal management and regulatory agencies/institutions on issues concerning the stewardship and use of the York River and its primary tributaries, and their ORVs. The Stewardship Committee has no regulatory power. Rather, it will seek to coordinate and communicate with local, State and Federal authorities on potential threats to the watershed's ORVs, as well as opportunities to maintain or enhance ORVs. The Stewardship Committee is not responsible for and has no authority for the following:

- Enforcement of local ordinances
- Enforcement of State or Federal regulations
- Acquiring and/or owning title to land
- Requiring adoption of specific local ordinances

B. Membership

The Stewardship Committee will include members appointed by the four watershed communities and representatives of State agencies and the National Park Service. In addition, the Stewardship Committee will include members appointed by key local partner organizations or groups that could include, among others:

- Landowners
- Land trusts
- Historical societies
- Regional conservation organizations
- Businesses, commercial interests, or user groups
- Certain town boards or committees

Agency representatives to the Stewardship Committee may be sought from Maine Department of Marine Resources, Maine Department of Environmental Protection, Maine Department of Agriculture, Conservation and Forestry, Maine Department of Transportation, or other State agencies. Representatives of other organizations identified by the Stewardship Committee that demonstrate an interest in and capacity for achieving goals from the Stewardship Plan may be appointed as well.

Appointments: The Town of York appoints four representatives, the Town of Eliot and the Town of Kittery each appoint two representatives, and the Town of South Berwick appoints one representative. Each town shall be able to appoint an alternate member. Key partner groups appoint one representative and an alternate.
Terms: The community and key partner appointees will have three-year terms. Representatives may serve additional consecutive three-year terms with the agreement of the appointing entity. To accommodate staggered terms, in the initial appointments to the Stewardship Committee, half of the appointees from York, Eliot and Kittery, will have a four-year term of appointment. All subsequent appointments will be for three-year terms.
Voting: Only representatives (not alternates) appointed by the towns and by local partner organizations have voting rights. Representatives of state and federal agencies do not have voting status.
Conflicts of interest: All members must complete a conflict of interest form and follow conflict of interest guidelines as applicable.

C. Procedures to Establish the Stewardship Committee

Actions identified below will guide the establishment and provide the foundation for operating procedures of the Stewardship Committee. Ultimately, the committee will develop and adopt bylaws, as described below. The procedures adopted in the bylaws replace procedures outlined in this section of the Stewardship Plan.

Establishment: The Stewardship Committee will be established following the approval of the designation of the York River and its major tributaries into the National Wild and Scenic Rivers System by the local communities and the US Congress. The York River Study Committee and its coordinator will work with towns to solicit members for appointment, providing support as requested by the town boards that would make appointments. The York River Study Committee members will make initial determinations of key local partner organizations and groups, as well as State agency

representatives, for inclusion on the Stewardship Committee and will seek appointments of representatives from those organizations or agencies.
Decision-making: As much as possible the Stewardship Committee operates by consensus. In those cases where consensus is unachievable, decisions are made based on majority vote.
Officers: Each year, the Stewardship Committee members elect from its membership a chair, vice chair, treasurer, and secretary.
Quorum: A majority of the voting membership must be present for the Stewardship Committee to deliberate and take binding action.
Bylaws: Bylaws will be developed and adopted by the Stewardship Committee to guide conduct of the committee. Bylaws cover membership (including the ongoing identification of key partner organizations and groups), decision-making and voting, meeting frequency and location, frequency and scope of reviews of Stewardship Plan implementation and associated reporting, processes for updating and revising the Stewardship Plan, and other procedural matters. The voting membership of the Stewardship Committee adopts the bylaws and, with notice, may amend them.
Team building: In addition to adhering to the committee's bylaws and committing to a cooperative and collaborative approach to the stewardship of the York River watershed, Stewardship Committee members can periodically participate in team building activities intended to facilitate improved decision-making, communications, and group effectiveness.

D. Stewardship Plan Review and Updates

The Stewardship Committee will annually review its progress in achieving the Stewardship Plan's goals and outcomes, identifying challenges and opportunities, and adjusting priorities where necessary. The Committee will provide a report on those accomplishments and challenges to the communities in the watershed, partner organizations, the public, appropriate State and Federal agencies, and the Congressional delegation.

Every five years, the Stewardship Committee will conduct a more extensive review, seeking broad input from watershed communities, partnership groups, the public, appropriate State and Federal agencies, and the Congressional delegation. The review may result in recommendations on changes to the Stewardship Plan. Any proposed changes, as well as review of overall progress and Stewardship Committee activities, will be documented in a five-year review report. Minor changes to the Stewardship Plan are to be approved by the Stewardship Committee. Changes determined to be major by the Stewardship Committee are subject to full review and comment by the communities, key partners, the public, and State and federal agencies. Major changes that substantially alter the characterization of ORVs or the stewardship recommendations to meet resource protection goals would require Stewardship Committee approval and approvals by town governing bodies.

E. Funding and Expenses

Funding for the Stewardship Committee operations, including a Coordinator or other staff, is anticipated to come from annual Congressional appropriations through the National Park Service's

Partnership Wild and Scenic River Program. In addition, funds from other sources (private foundations, private trusts, and other government agencies) will be pursued by the Stewardship Committee for operations, projects, and outreach activities.

Fiscal management will be outlined in a cooperative agreement between the National Park Service and a government or non-profit organization or agency identified and approved by the Stewardship Committee. The appointed entity will serve as the fiscal agent for the Stewardship Committee, and it will disburse funds at the direction of the committee. Expenses could include costs associated with administration, such as a Coordinator or other staff, and any projects that advance the goals and the protection or enhancement of watershed resources outlined in the Stewardship Plan.

Watershed communities, partner organizations, State agencies and any other members or representatives on the committee are under no obligation to provide funding for the Stewardship Committee's operations or for the implementation of the Stewardship Plan.

F. Review of Proposed Projects

The Stewardship Committee requests notification and opportunity to comment from town boards and the State on activities that might impact the watershed's outstandingly remarkable values (ORVs). Those activities may include zoning changes, major development projects or other land use activities, changes to State programs or policies (such as statewide water quality standards), and applications for State permits. The Stewardship Committee will provide comments as appropriate.

Federally assisted projects

The National Park Service (NPS) will represent the Secretary of the Interior in fulfilling the legislative mandates under the Wild and Scenic Rivers Act. The NPS will review proposed federally assisted projects, including those that require a federal permit or use federal funding, for consistency with the Wild and Scenic Rivers Act. Any such projects will be evaluated by the NPS to ensure protection of the ORVs, water quality and free-flowing condition, which caused the river to be designated as a component of the National Wild and Scenic Rivers System. The Stewardship Committee also can comment on federally assisted projects and provide local input into the design and outcome of such projects; however, the determination regarding consistency with the Wild and Scenic Rivers Act rests solely with the NPS.

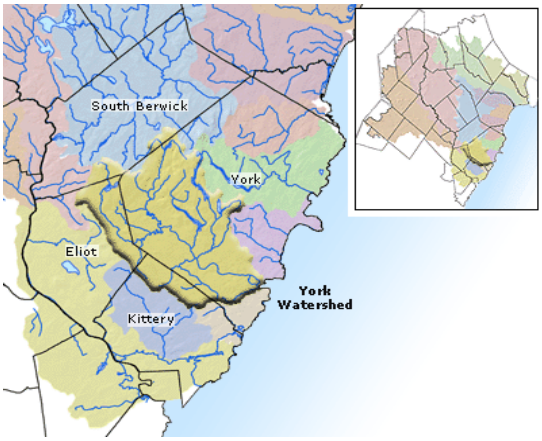
There are no new regulatory permits associated with the designation. NPS conducts its reviews through existing federal regulatory programs such as permitting under Section 404 of the Clean Water Act by the US Army Corps of Engineers or the US Environmental Protection Agency, and through the processes required by the National Environmental Policy Act, which provides for environmental impact reviews of proposed federal actions. There is no new land use regulatory authority associated with designation; the towns and the State retain their existing land use authority and responsibility.

Photo: Jennifer Hunter

Section V – York River Watershed

A. Overview

The York River watershed is located in southern Maine and covers 33 square miles within the towns of York, Eliot, Kittery, and South Berwick. It includes the York River mainstem and numerous tributaries, extensive wetlands, and several ponds, as well as four drinking water supply reservoirs. There are 109 miles of streams and rivers in the watershed. The York River is a tidal river for almost nine of its roughly 12 miles, with smaller, generally non-navigable tributaries feeding into a relatively large tidal basin. The tidal fluctuation can be more than 10 feet. The York River estuary is notable for its extensive intact salt marshes that define much of the upper estuary area.



York River watershed in dark yellow (map from WNERR)

The York River begins at the outlet of York Pond in Eliot flowing southeast through the remnants of the upper and lower Bartlett mill ponds, woodlands, former mill sites and forested wetlands. Before reaching the Eliot-York line, the river becomes tidal. After crossing into York, it is joined by tributary streams starting with Cutts Ridge Brook and Rogers Brook and then by Smelt Brook at an area historically called the Partings. Heading downstream, residential docks begin to appear in the York River near Scotland Bridge, which is also the first public boat launch site. Further on, the river is joined by Bass Cove Creek, Cider Hill Creek, and Dolly Gordon Brook. Continuing under Interstate 95 and US Highway Route 1, the river makes several sweeping bends as it meanders along its scenic shores, and the first town boat mooring area is encountered. Crossing under historic Sewall's Bridge and continuing to the

harbor, the number of private docks increases, stately waterfront homes and historic buildings can be viewed, and lobster boats and other signs of an active working waterfront contribute to the river's character. York Harbor, with two busy town docks, numerous town moorings and boat slips, a private marina, many docks, and adjacent walking trails, is a vibrant area, supporting diverse commercial and recreational uses. From the Harbor, the river continues its journey to the Gulf of Maine after traveling around Stage Neck which creates a protected entrance at the mouth of the river.

The York River and its tributaries have provided a safe harbor and human access to abundant coastal, riverine, and inland natural resources for thousands of years. The protected entrance and navigable harbor area enabled Colonial settlement of the region starting in the early 1600s.

There are six dams throughout the York River watershed that form four public water supply reservoirs, as well as York Pond and Scituate Pond. The drinking water supplies include Folly Pond, Middle Pond, Bell Marsh Reservoir, and Boulter Pond, which are owned and managed by the Kittery Water District. The water district provides drinking water to customers in Kittery and parts of Eliot and York.

B. Land Cover, Land Use and Population

The watershed area includes large unfragmented forested areas, extensive wetlands, some agricultural lands, rural and suburban residential development, and smaller areas of commercial zones and denser village-type development. The transportation corridor created by Interstate 95 and Route 1 divides the watershed, with generally less developed areas to the northwest, and much of the denser development occurring to the southeast along the coast, in the York Village area, and near the highways, particularly the Route 1 corridor north of the York River. Based on the National Land Cover Database, forest habitats (deciduous, evergreen and mixed forest types) and shrublands account for 55 percent of the land cover in the watershed. Wetlands and open water account for almost 25 percent of the land area. Developed areas account for 12.3 percent of the land cover, with open space and low intensity development types associated with rural and suburban housing accounting for most of the developed areas. Pasture and hay fields account for 6.4 percent of land cover.

Land Cover Type	Watershed Coverage (%)
Open Water	4.2
Developed, Open Space	7.6
Developed, Low Intensity	3.3
Developed, Medium Intensity	1.1
Developed, High Intensity	0.3
Barren Land (rock/sand/clay)	0.6
Deciduous Forest	14.0
Evergreen Forest	13.7

Mixed Forest	**24.7**
Shrub/Scrub	**2.6**
Grassland/Herbaceous	**0.3**
Pasture/Hay	**6.4**
Cultivated Crops	**0.4**
Woody Wetlands	**15.3**
Emergent Herbaceous Wetlands	**5.3**

Source: National Land Cover Database, 2011

There are over 5,500 acres of watershed lands protected from development, representing about 26 percent of the area. This includes approximately 2,500 acres of the Kittery Water District's water supply lands that are maintained as undeveloped conservation lands but do not have permanent protection. The area land trusts (York Land Trust, Kittery Land Trust and Great Works Regional Land Trust) own or hold conservation easements on roughly 2,000 acres in the watershed. The balance of protected lands is owned by Maine Department of Inland Fisheries and Wildlife, municipalities, US Fish and Wildlife Service, and The Nature Conservancy. The water district lands, many of the larger land trust holdings, and all the publicly-owned lands allow public access and use, enabling varied recreational opportunities.

The large undeveloped forest areas, convergence of southern and northern New England forest types in the watershed area, large intact salt marshes, and high quality estuary and freshwater systems create many important habitat areas that support rare and endangered plants and wildlife and contribute to the region's exceptionally high overall species diversity.

Approximately 70 percent of the watershed area lies in York, 15 percent in Eliot, 10 percent in Kittery and 5 percent in South Berwick. Population of the watershed land area, calculated by the Southern Maine Planning and Development Commission (SMPDC) and based on US Census and American Community Survey data, was estimated at 6,449 people in 2010 and 7,032 people in 2017. **This nine percent population increase in the watershed over the 2010-2017 period is much higher than the percentage increases for any of the watershed towns or for York County** *(note in table below that the town and county data are for 2010 and 2016, and the watershed data are for 2010 and 2017)*. The population living in the York River watershed is predicted to grow to 7,380 people by 2022, about 14 percent greater than the 2010 population level.

Census data for York County and York River watershed municipalities (US Census Bureau)

	York	Kittery	Eliot	South Berwick	York County	York River Watershed
Population **April 1, 2010**	12,529	9,490	6,204	7,220	197,131	6,449
Population **July 1, 2016**	12,947	9,644	6,442	7,433	202,343	7,032*
Population percent change **2010 to 2016**	3.3%	1.6%	3.8%	3.0%	2.6%	9.0%*

** For the York River watershed, population is for 2017 and percent change is for the 2010 to 2017 period.*

A watershed build-out study conducted by SMPDC and Spatial Alternatives provided a snapshot of current development status. There are an estimated 3,037 buildings in the watershed. Building density per acre in 2017 was about 0.14 unit per acre, or about one building for every seven acres. There are roughly 115 miles of roads in the watershed, and about four percent of the watershed is covered by impervious surfaces (i.e., hard, impermeable surfaces such as roof tops, roads, driveways, parking lots, and other paved or compacted surfaces that don't allow rainwater to seep into the ground).

C. Town and Regional Plans

Existing plans that have been developed through public processes to identify and protect regionally important resources serve as a basis for many of the recommendations in this plan. Protection of water quality, drinking water supplies, wildlife and valuable habitats, archaeological and historic sites, scenic beauty, rural landscapes, working waterfront, and recreational resources are priorities for residents of the watershed communities.

The following brief summaries of town and regional plans provide an overview of priorities and highlight consistencies with the resources and recommendations contained in this plan. For a more complete summary and review of towns' comprehensive plans and open space plans, Southern Maine Planning and Development Commission's (SMPDC's) *York River Watershed Study: Regulatory and Non-Regulatory Recommendations Report*, included as a separate volume. SMPDC reviewed the towns' plans and summarized strategies and recommendations related to protection and maintenance of water resources, wildlife and habitats, open space and conservation lands, recreational resources, historic resources, working waterfront, and agriculture and forestry uses.

Town Comprehensive Plans

All four watershed communities have developed and adopted Comprehensive Plans that set the vision and recommend policies and actions to manage growth; preserve natural, water, historic, and marine resources; and maintain rural, scenic and other qualities important to community character. The towns' comprehensive plans address the State goals identified in Maine's *Growth Management Act*. The towns' plans identify existing practices, policies and capacities to meet the State goals, as well as associated town goals and specific additional or continued actions recommended to achieve the overall goals.

Maine's *Growth Management Act* goals and policies that provide the foundation for watershed communities' comprehensive plans are listed below:

Topic/Resource	State Goal
Growth and Development	To encourage orderly growth and development in appropriate areas of each community, while protecting the State's rural character, making efficient use of public services, and preventing development sprawl.

Water Resources	To protect the quality and manage the quantity of the State's water resources, including lakes, aquifers, great ponds, estuaries, rivers, and coastal areas.
Natural Resources	To protect the State's other critical natural resources, including without limitation, wetlands, wildlife and fisheries habitat, sand dunes, shorelands, scenic vistas, and unique natural areas.
Marine Resources	To protect the State's marine resources industry, ports and harbors from incompatible development and to promote access to the shore for commercial fishermen and the public.
Agricultural and Forest Resources	To safeguard the State's agricultural and forest resources from development which threatens those resources.
Archaeological and Historic Resources	To preserve the State's historic and archaeological resources.
Recreation	To promote and protect the availability of outdoor recreation opportunities for all Maine citizens, including access to surface waters.
Economy	Promote an economic climate that increases job opportunities and overall economic well-being.
Housing Opportunities	To encourage and promote affordable, decent housing opportunities for all Maine citizens.
Public Facilities and Services	To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated growth and economic development.

For coastal communities, the *Growth Management Act* further requires that comprehensive plans address the State's coastal management policies:

- To promote the maintenance, development, and revitalization of the State's ports and harbors for fishing, transportation and recreation;
- To manage the marine environment and its related resources to preserve and improve the ecological integrity and diversity of marine communities and habitats, to expand our understanding of the productivity of the Gulf of Maine and coastal waters and to enhance the economic value of the State's renewable marine resources;
- To support shoreline management that gives preference to water-dependent uses over other uses, that promotes public access to the shoreline and that considers the cumulative effects of development on coastal resources;
- To discourage growth and new development in coastal areas where, because of coastal storms, flooding, landslides or sea-level rise, it is hazardous to human health and safety;
- To encourage and support cooperative state and municipal management of coastal resources;
- To protect and manage critical habitat and natural areas of state and national significance and maintain the scenic beauty and character of the coast even in areas where development occurs;

- To expand the opportunities for outdoor recreation and to encourage appropriate coastal tourist activities and development;
- To restore and maintain the quality of our fresh, marine and estuarine waters to allow for the broadest possible diversity of public and private uses; and,
- To restore and maintain coastal air quality to protect the health of citizens and visitors and to protect enjoyment of the natural beauty and maritime characteristics of the Maine coast.

The towns' plans all include extensive inventories of resources and documentation of existing conditions that provide much of the background and context for this Stewardship Plan. That voluminous information is not replicated or reproduced in this plan. The Stewardship Plan, in this section and in Section VI, does provide resource data and information to complement and update data contained in comprehensive plan inventories and to show features at a watershed scale. The towns' comprehensive plans are listed below, with links provided to digital copies.

- Town of Eliot. *Celebrating Our Past While Planning for Our Future: Eliot Comprehensive Plan 2009*, Eliot, Maine, 2009. https://www.eliotmaine.org/sites/eliotme/files/uploads/comprehensive_plan_2009_0.pdf
- Town of Kittery. *Kittery Comprehensive Plan 2015-2025* (draft pending town adoption in 2018), Kittery, Maine, 2017. The different volumes of the plan are available on the Town of Kittery website: http://www.kitteryme.gov/kittery-2015-2025-comprehensive-plan
- Town of South Berwick. *South Berwick Draft Comprehensive Plan*, 2006 update to 1991 plan, approved in May 2008, South Berwick, Maine 2006. https://digitalcommons.library.umaine.edu/towndocs/998
- Town of York. *York Comprehensive Plan*, adopted May 22, 1999 and as amended through November 7, 2017; includes separate chapters such as Adaptation to Sea Level Rise Chapter (adopted 2013), Stormwater Chapter (adopted 2015), and the Conservation Plan by Mount Agamenticus to the Sea Conservation Initiative (adopted by reference in the Regional Coordination Program section of Volume 1). The Town of York web page for its Comprehensive Plan includes links to all volumes, chapters, and maps: http://me-york.civicplus.com/188/Comprehensive-Plan

Open Space Plans

Open space plans create a framework by which to identify and prioritize areas for local land conservation efforts. Within the York River watershed, the towns of Eliot and South Berwick have open space plans that were developed with public input. For both plans, existing conservation lands and open spaces were inventoried, priorities from state, regional, and local conservation initiatives were identified, and local knowledge and priorities were added to identify locally important resources and areas of focus. The plans include strategies and possible funding options to help achieve conservation goals. In addition, each plan shows the connections to its town's comprehensive plan goals and strategies.

The 2010 Eliot Open Space Plan identifies geographic regions in town that were found to be the most critical for maintaining local natural resource values. The York Pond area and the length of the York River in Eliot were two of the highest priorities identified. In addition, working farmland was a priority for open space preservation. The plan identified 18 working farms throughout Eliot that are over 10 acres each, eight of which are at least partially in the York River watershed. The *Eliot Open Space Plan* is available from the Maine Farmland Trust website: http://www.mainefarmlandtrust.org/wp-content/uploads/2013/10/EliotOpenSpacePlan.pdf

The planning process that developed priorities for the 2012 South Berwick Conservation/Open Space Plan involved using a co-occurrence model of resources and features. Several primary areas clustered around regions where significant conservation efforts are already underway, including the Mount Agamenticus and York Pond regions, were identified as priorities. The York River watershed lands in South Berwick overlap with these priority regions. The *South Berwick Conservation/Open Space Plan* currently is available from the town's website: http://www.southberwickmaine.org/boards&committees/conservation%20commission/OpenSpacePlan_2012.pdf

Regional Conservation Plans

The Mount Agamenticus to the Sea Conservation Initiative (MtA2C) is a coalition of ten organizations working together to conserve the most important forests, fields, wetlands and marshes in a regional focus area that includes part of Kittery, Eliot, York, Ogunquit, Wells, and South Berwick. Most of the York River watershed is within the MtA2C focus area. *[See Stewardship Plan Appendix for a map of the MtA2C focus area.]* MtA2C's work is guided by a 2005 conservation plan designed to protect unique and important features of the region. The MtA2C Conservation Plan identifies six broad areas as conservation targets:

- Significant contiguous forestlands, unfragmented forested uplands and freshwater wetlands
- Water quality and quantity, coastal and tidal communities
- Rare or sensitive habitat patches
- Early successional habitat, Blanding's turtles and vernal pools
- Working farms, forests and waterfronts and traditional sustainable uses of the land and waterways
- Cultural landscape and historic structures, features and viewsheds

For all the conservation targets, the MtA2C plan identifies threats, resource values, goals and strategies. Priority habitats, landscape features, and other watershed resources identified in the York River Watershed Stewardship Plan are consistent with those in the MtA2C Conservation Plan. The strategies and recommendations from the MtA2C Conservation Plan served as a guide in developing some of the stewardship objectives and key actions for the Stewardship Plan. See the *MtA2C*

Conservation Plan, available from the MtA2C website: http://www.mta2c.org/01/wp-content/uploads/2015/09/mta2c_conservation_plan.pdf

The Great Works Regional Land Trust (GWRLT) works with landowners and communities of Eliot, South Berwick, Berwick, North Berwick, Wells and Ogunquit to conserve important resources including clean water, working landscapes (farmland and woodlots), unfragmented forests, wildlife habitats, cultural and historic features, recreational opportunities, and scenic views. GWRLT developed a plan, *Piecing Together the Puzzle: Farms, Forests & Water – A Conservation Plan for the Communities of Wells, Ogunquit, Eliot, South Berwick, Berwick and North Berwick,* to guide its conservation activities through the year 2025. The plan is available from the GWRLT website: http://www.gwrlt.org/index.php/our-work/priorities/strategic-conservation-plan

The GWRLT Conservation Plan identifies key resources and features to help prioritize and compare conservation opportunities. The plan also identifies five geographic focus areas where continued, proactive conservation efforts will preserve multiple resources. Two of the five areas include York River watershed lands. GWRLT's Mount Agamenticus Focus Area includes an area of the watershed in South Berwick, and GWRLT's York Pond/York River Focus Area includes an area of the watershed in South Berwick and Eliot*. [See Stewardship Plan Appendix for maps and descriptions of GWRLT's two focus areas that contain York River watershed lands.]* The recommendations in this Stewardship Plan are consistent with many of the implementation actions, conservation strategies, and funding options identified in the GWRLT Conservation Plan.

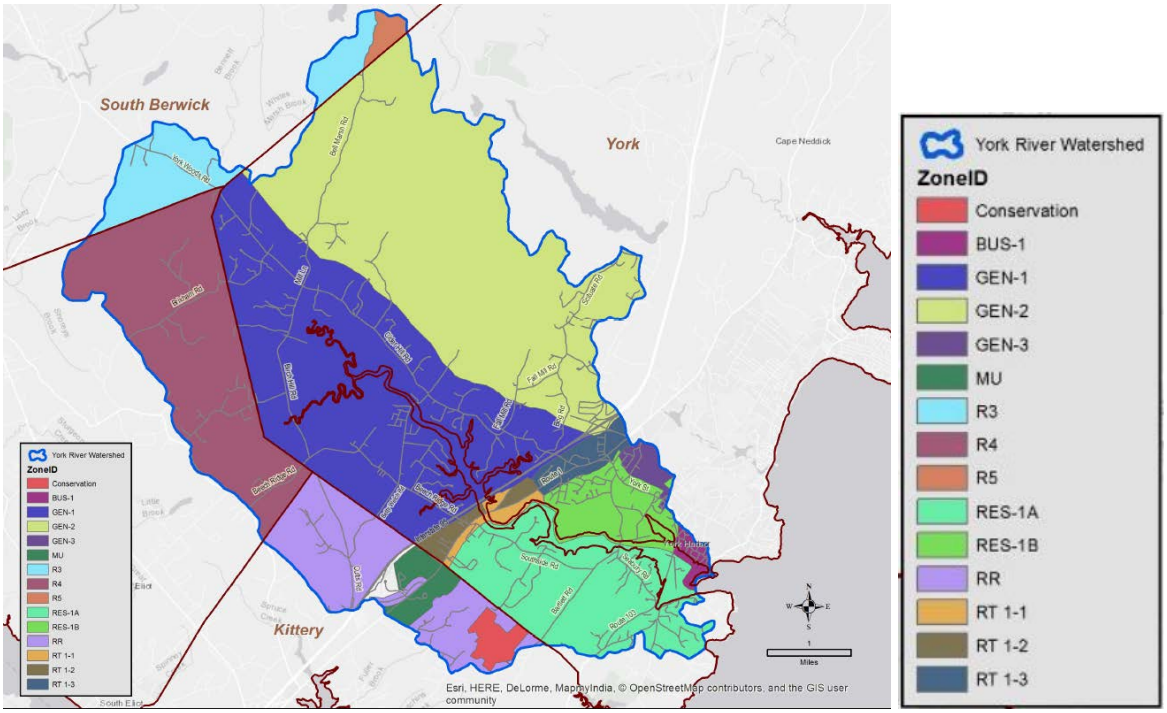
D. Local Regulatory Framework

A comprehensive plan, which must be adopted by the voters, establishes the policies of the town. State law requires a town's zoning, growth control, and impact fee ordinances to be consistent with its comprehensive plan. Other regulations affecting land use and development, most notably the site plan and subdivision regulations, limit approval of development applications to those that are consistent with the comprehensive plan.

> *"Zoning and subdivision review is probably the most critical part in assessing how and where development takes place within the watershed. While subdivision activity is governed principally by state statute, zoning within the watershed varies considerably by town. Fifteen zoning districts, a watershed overlay district, and four different shoreland overlay districts can be found in the watershed."* – SMPDC's York River Watershed Study report

All watershed towns have zoning to divide sections of each town into districts to which different restrictions or requirements apply. The York River watershed includes 15 different zoning districts. Each zone may have different allowable uses and different development requirements such as minimum lot sizes or maximum coverage per lot. The minimum lot sizes for development vary widely across the different zones. For example, York and Eliot have three-acre minimum lot size in their rural zones northwest of Interstate 95 (zones GEN-1, GEN-2, and R4). Kittery's adjacent rural zone (zone RR) has a minimum lot size of 40,000 square feet, or just under one acre, which is comparable to the

minimum lot sizes of York's more densely populated zones that are served by public water and/or public sewer (zones RES-1A and RES-1B).



General zoning in the York River watershed (map by Spatial Alternatives)

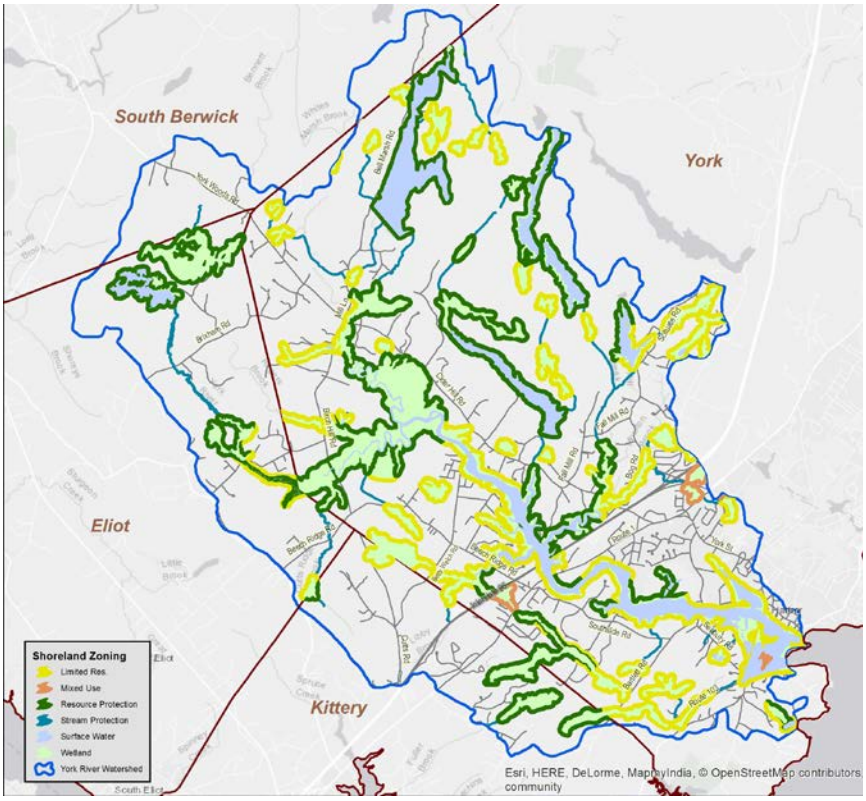
To limit development and land use impacts on water quality, aquatic habitats, and other resources, watershed towns have implemented various regulatory measures by adopting and enforcing shoreland zoning ordinances, resource protection districts and ordinances, a watershed overlay district for water supply protection, and subdivision and site plan review standards, among others. Maine's Mandatory Shoreland Zoning Act (MSZA) requires municipalities to adopt, administer, and enforce local ordinances that regulate land use activities in the shoreland zone. The purposes of the MSZA are:

- to prevent and control water pollution;
- to protect fish spawning grounds, bird and wildlife habitat;
- to protect buildings and lands from flooding and accelerated erosion;
- to protect archeological and historic resources;
- to protect commercial fishing and maritime industries;
- to protect freshwater and coastal wetlands;
- to control building sites, placement of structures and land uses;
- to conserve shore cover, and visual as well as actual points of access to inland and coastal waters;

- to conserve natural beauty and open space; and
- to anticipate and respond to the impacts of development in shoreland areas.

The shoreland zone is comprised of all land areas within 250 feet of the normal high-water line of any pond over 10 acres or of any river, the upland edge of a coastal wetland including all areas affected by tidal action, and upland edge of defined freshwater wetlands; and all land areas within 75 feet of the normal high-water line of certain streams. Shoreland zoning regulations are administered and enforced by each municipality through its ordinances.

As part of its data synthesis and analysis for the build-out study, SMPDC conducted a zoning review for the four towns, including shoreland zoning and ordinances. SMPDC's zoning review, contained in its *York River Watershed Study: Regulatory and Non-Regulatory Recommendations Report*, includes narrative descriptions of the zones as well as general descriptions of the shoreland zones by town, and a tabular summary comparing various requirements and applicability of towns' shoreland zoning. Protections provided by Kittery, South Berwick, and York's shoreland ordinances exceed the minimum standards set by the State. Eliot's shoreland protections meet the State minimum requirements.



Shoreland zoning in the York River watershed (map by Spatial Alternatives)

SMPDC reviewed regulatory and non-regulatory approaches used by the towns to protect resources. Its analysis, presented in a matrix of strategies by town, also indicates where strategies are recommended in comprehensive plans. *[See Stewardship Plan Appendix for the Watershed Protection Strategies Matrix from SMPDC's report.]*

E. Major Threats

Two major threats that have the potential to impact all watershed resources are described below: Development and Climate Impacts. Additional threats are listed or described in Section VI – Watershed Resources.

Development Impacts

One of the most significant threats to watershed resources is the effects of ongoing and future development. In the York River watershed, the threat is largely residential development and the associated road construction, suburban landscaping, and increases in impervious surfaces. At a watershed scale, development can alter and fragment natural habitats, change the visual landscape and historic contexts of watershed lands, increase water pollution and the volume of stormwater runoff with more impervious surfaces, destroy historic resources, affect wildlife with more roads and habitat loss, impact traditional land uses on watershed lands, increase demand for drinking water supplies, and add additional septic systems.

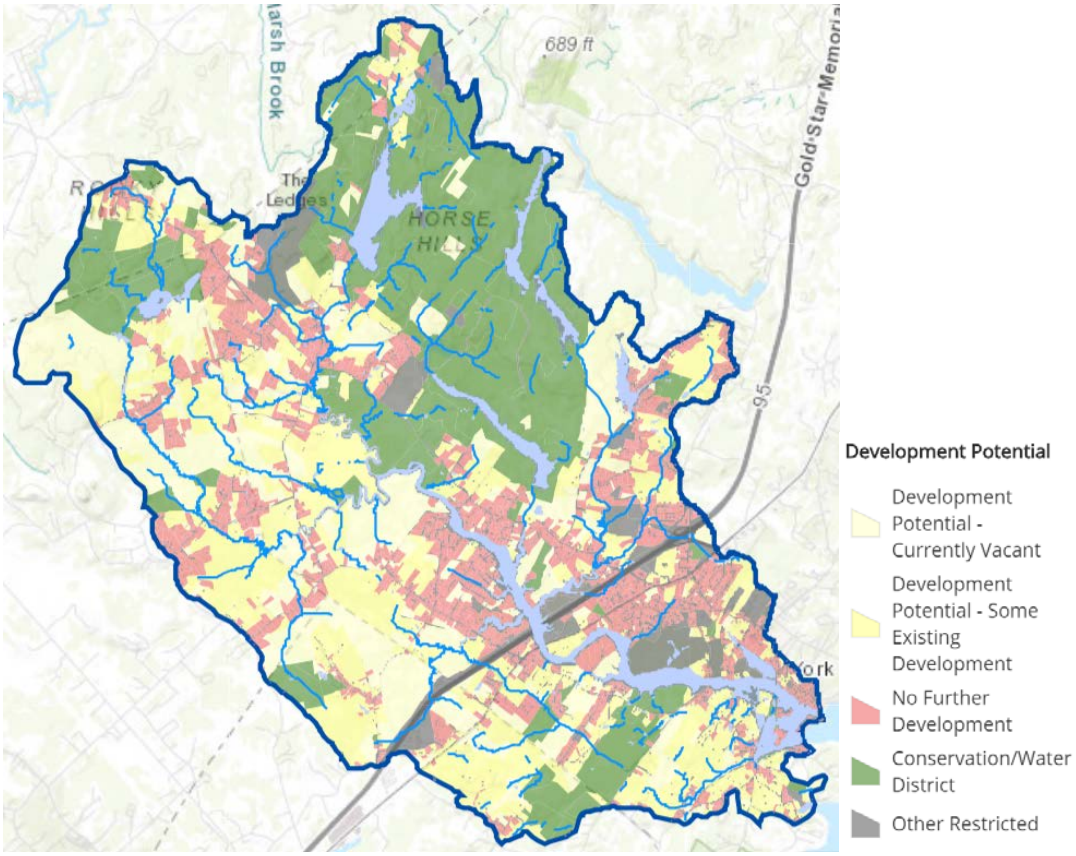
The York River Study Committee was interested in understanding how much additional development could occur in the watershed. The Study Committee worked with Southern Maine Planning and Development Commission (SMPDC) to submit a project proposal to the Maine Coastal Program to conduct a York River watershed build-out study and develop recommendations to minimize development impacts to resources. SMPDC received funding from the Maine Coastal Program and hired subcontractor Spatial Alternatives, Inc. to conduct the GIS-based build-out analysis. SMPDC used the build-out results and its analysis of watershed towns' zoning and other approaches for protecting resources to develop regulatory and non-regulatory recommendations to improve watershed resource protection.

Some watershed build-out results are summarized below. Project results and recommendations are available in two project reports and in an online interactive map and data viewing tool:

- *York Watershed Build Out Scenarios*, Spatial Alternatives, Inc. and SMPDC, June 2018. Available on the "Study Documents" page of the York River Study website: www.YorkRiverMaine.org
- *York River Watershed Study: Regulatory and Non-Regulatory Recommendations Report*, SMPDC, May 2018. Available on the "Study Documents" page of the York River Study website: www.YorkRiverMaine.org
- York River Watershed Tool, an Esri-based Story Map developed by Spatial Alternatives, Inc. and SMPDC: http://arcg.is/C1e8O

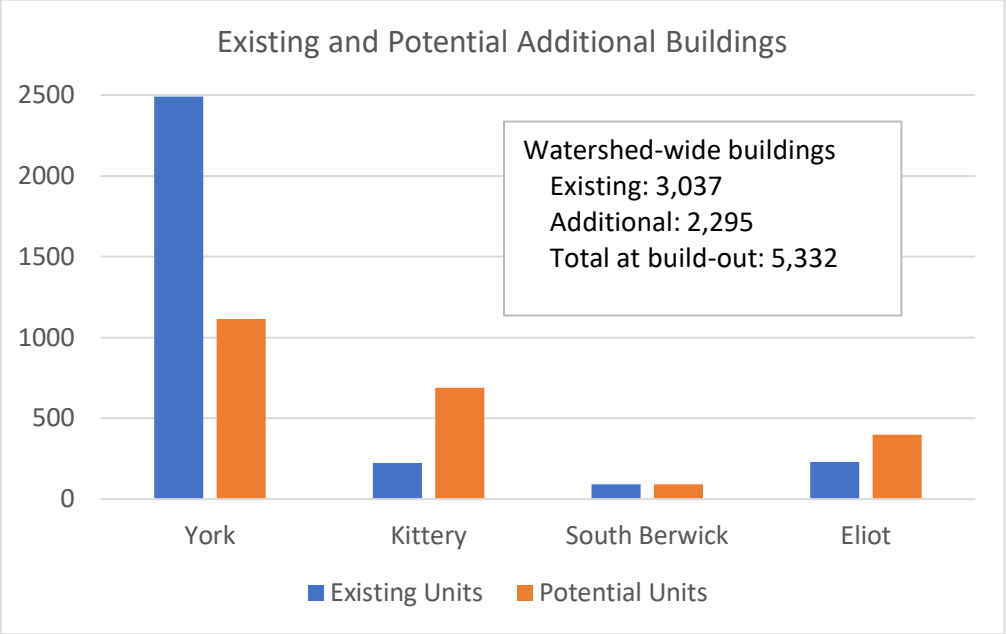
The York Watershed Build Out was designed to provide some baseline information related to potential residential growth within the watershed. It is important to understand that this model developed a numeric value for potential new units, not where or when those units will be developed. This is a basic build out methodology meant to provide a first pass at understanding the implications of current zoning regulations. Indicators were developed to identify potential growth impacts under several scenarios and the base scenario of the current zoning. – Spatial Alternatives, Inc.

A build-out model was used to calculate the possible number of buildings that could be added in the watershed under current zoning. Development assumptions, site level characteristics, and intricacies of towns' zoning and regulations were simplified in the model for the four-town watershed region. The results do not depict actual development capacity on any given parcel but are intended to reflect the potential for additional development at a watershed scale when all developable parcels are developed (i.e., when the watershed is at maximum "build-out"), subject to current zoning regulations. Developable parcels in the watershed are shown in the figure below – light and dark yellow parcels are developable.



Development potential of parcels in the York River watershed (map by Spatial Alternatives)

There are 3,037 buildings currently in the watershed, with the possible addition of 2,295 buildings at build-out using existing zoning regulations. Existing and potential buildings by town are shown in the following chart, and additional information is provided in the following table.



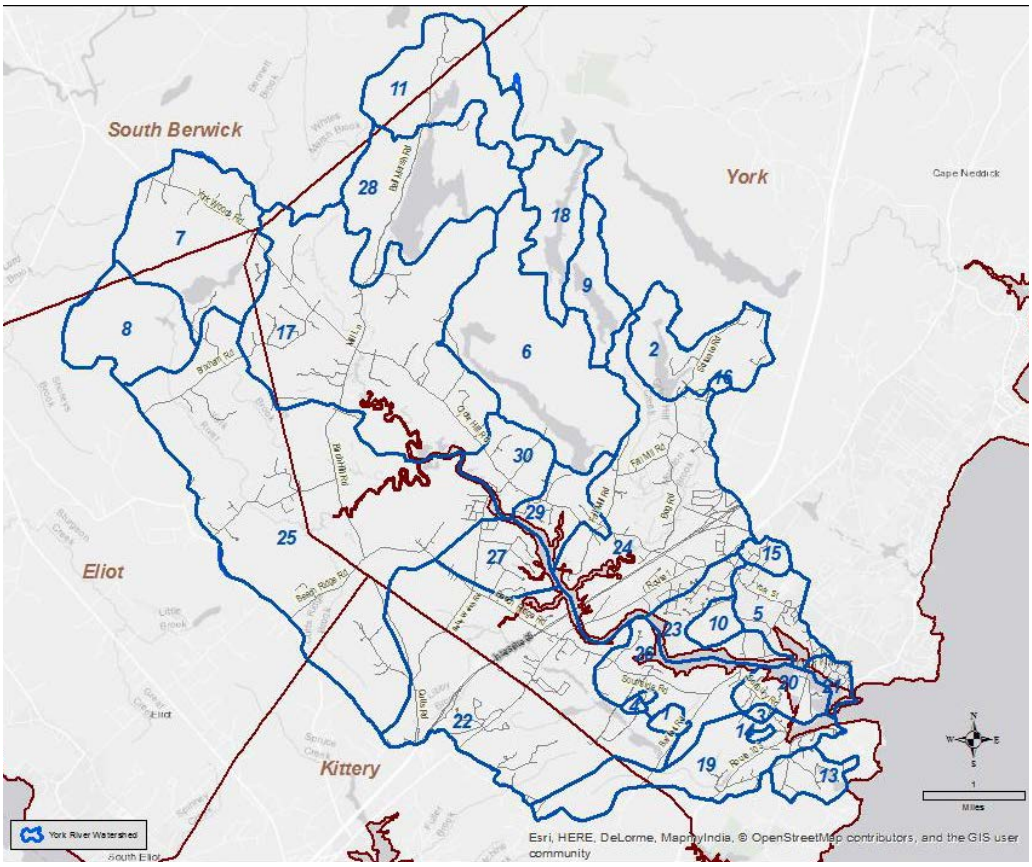
	Watershed Area (acres)	Watershed Area (% total)	Conservation Lands (acres)	Conservation Lands (% watershed lands)	Existing Buildings	Existing Buildings (%)	Existing Density (DU/Acre)	Potential Buildings	Potential Buildings (%)	Total Buildings	Total Buildings (%)	Build-out Density (DU/acre)
York	15,172	71%	4,344	29%	2,489	82%	0.16	1,116	49%	3,605	68%	0.24
Eliot	3,032	14%	387	13%	230	8%	0.08	399	17%	629	12%	0.21
Kittery	1,981	9%	322	16%	225	7%	0.11	690	30%	915	17%	0.46
South Berwick	1,099	5%	531	48%	93	3%	0.08	90	4%	183	3%	0.17
Watershed total	21,284		5,584	26%	3,037		0.14	2,295		5,332		0.25

Building density, measured as dwelling units per acre, increases for the watershed from 0.14 under current conditions to 0.25 at build-out. Stated another way, currently there is one house for about every seven acres of watershed land, and at build-out, there would be one house for every four acres of land. The density change is most extreme for the Kittery part of the watershed that is currently a largely rural area but has a minimum lot size for development of about one acre (Kittery's density is 0.11 units per acre currently; 0.46 units per acre at build-out).

The watershed currently has an impervious cover level of 3.9 percent of the area. At build-out, 5.2 percent of the watershed is covered by impervious surfaces. The table below shows current and build-out impervious cover by town zones. About 35 miles of additional roads would be added to the existing 115 miles of roadways in the watershed.

Town	Zone	Areas (acres)	% Impervious Area (current)	% Impervious Area (build-out)
York	GEN-1	5,363	4.2%	5.0%
	GEN-2	6,063	1.5%	1.9%
	GEN-3	150	12.6%	15.9%
	RT 1-1	143	6.9%	8.2%
	RT 1-2	162	10.6%	12.3%
	RT 1-3	268	29.3%	30.0%
	RES-1A	2,172	5.3%	7.7%
	RES-1B	729	11.1%	11.9%
	BUS-1	117	20.1%	20.6%
Kittery	RR-S	478	4.8%	9.2%
	RR-N	983	3.5%	7.8%
	MU	271	6.9%	9.7%
South Berwick	R3	991	1.7%	2.8%
	R5	108	4.0%	5.1%
Eliot	R4	3,032	1.9%	3.5%
Watershed Total		**21,284**	**3.9%**	**5.2%**

Sub-watershed areas are depicted in the following figure. Much of the potential development is in area south of the York River in York and Kittery and heading northwest through Eliot, including the subwatershed areas for Southside Brook, Dolly Gordon Brook, Libby Brook, Cutts Ridge Brook, and Rogers Brook, and the York River heading northwest of Scotland Bridge. These streams are included in sub-watershed areas 19 (Southside Brook), 22 (Dolly Gordon Brook and Libby Brook), and 25 (upper York River, Cutts Ridge Brook and Rogers Brook), where there is potential for 201, 523, and 702 additional houses, respectively, in each sub-watershed. **These three sub-watersheds account for about 33 percent of the watershed land area and 62 percent of the potential additional houses that could be built**, according to the model. Most of these potential new houses are in rural areas of the watershed not served by public sewer.



Approximate sub-watershed boundaries for watershed ponds and streams (map by Spatial Alternatives)

Recommendations

Using information from the watershed build-out study and its summary of town regulatory and non-regulatory approaches to protecting resources, SMPDC provides additional analysis and recommendations focused on several areas:

- Shoreland zoning
- Land conservation
- Open space subdivisions
- Stormwater management/low impact development
- Sea level rise and marsh migration
- Watershed-wide approaches

Many of the recommendations from SMPDC's *York River Watershed Study: Regulatory and Non-Regulatory Recommendations Report* are included in the Stewardship Plan as key actions to meet resource protection and stewardship objectives.

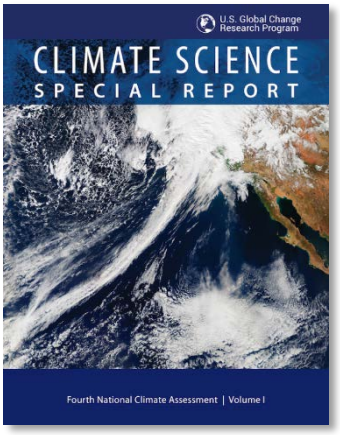
Climate Impacts

Coastal communities throughout the US and beyond are facing threats from climate-related impacts such as sea level rise, coastal storm surge, extreme flooding events and rising temperatures. While the York River watershed is more resilient than many other coastal areas, proactive measures are needed to protect natural resources, historic resources, and the local economy from future climate-related impacts.

US and Global Context

In 2017, the US Global Change Research Program released a *Climate Science Special Report* as part of the Fourth National Climate Assessment. This authoritative assessment draws from the latest scientific research and serves as a foundation for efforts across the United States to assess climate-related risks and inform efforts to mitigate and adapt to climate impacts.

Key findings from the report include:



- Global annual average surface air temperature has increased by about 1.8^{o} F between 1901 and 2016 making this the warmest period in the history of modern civilization.
- The United States has experienced record breaking, climate-related weather extremes, and the last three years have been the warmest on record for the globe.
- Thousands of studies have documented changes in surface, atmospheric, and oceanic temperature; melting glaciers; diminishing snow cover; shrinking sea ice; rising sea levels; ocean acidification and increasing atmospheric water vapor.
- Average sea level has risen by 7 to 8 inches since 1900, with almost half of that increase occurring since 1993. The incidence of daily tidal flooding is accelerating across Atlantic and Gulf Coast communities.
- Global average sea levels are expected to continue to rise by at least several inches in the next 15 years and by 1 to 4 feet by 2,100. A rise of as much as 8 feet by 2,100 cannot be ruled out. Sea level rise on the East and Gulf Coasts of the United States will be higher than global averages.
- Heavy rainfall is increasing in intensity and frequency across the United States and globally and is expected to continue to increase. The largest observed changes in the United States have occurred in the Northeast.

Regional and Watershed Context

Climate impacts are already being observed in the Gulf of Maine region where seas are rising faster than the global average, and ocean waters are warming at an alarming rate. What was once a startling observation among ecosystem modelers is now common knowledge: over the course of a decade, the Gulf of Maine has warmed faster than 99 percent of the global ocean (Pershing, 2018).

Warming waters are impacting fisheries and habitat throughout the region with lobsters migrating to colder waters while invasive species such as green crabs are showing up in increasing numbers.

A 2014 report, *Encroaching Tides: How Sea Level Rise and Tidal Flooding Threaten US East Coast and Gulf Coast Communities over the Next 30 Years*, prepared by the Union of Concerned Scientists, highlighted the potential impacts of sea level rise on tidal flooding events. As sea level rises, many tidal flooding events will shift from being minor to more extensive, with accompanying increases in disruptions and damage. By 2045, many coastal communities are expected to see roughly one foot of sea level rise, which will result in substantial tidal flooding. A growing proportion of these floods could be extensive, and as floods reach farther into communities they would also last longer.

The cumulative impact of sea level rise and extreme storms is becoming one of the most significant threats to coastal communities in New England. During the winter of 2017 / 2018, New England experienced multiple back-to-back Nor'easters that caused coastal erosion, damage to infrastructure, and negative impacts on valuable coastal habitat. The January 2018 storm resulted in storm tides at levels that had not been experienced since the Blizzard of '78.

Communities with developed waterfront in low-lying regions are the most at risk, while coastal areas with protected tidal marshes surrounded by natural buffers are in a much better position to be resilient to sea level rise and associated storm surge.

In a 2017 study of resilient coastal sites in the Northeast and Mid-Atlantic US, The Nature Conservancy highlighted the potential threat to tidal habitats from sea level rise. Without proactive protection, an estimated 83 percent of tidal habitat could be lost to severe inundation. At the same time, the study identified uniquely resilient coastal ecosystems, including the York River watershed, that have the capacity to expand through landward migration. With the upper reaches of the York River estuary surrounded by undeveloped blocks of wetlands and forest, salt marshes have the potential to migrate into these adjacent undeveloped lands as sea level rises. Protecting resilient sites such as the York River watershed could significantly offset tidal habitat loss, providing critical habitat for birds and other wildlife, and buffering people from the effects of storms and floods into the future.

Photo: Wayne Boardman

Section VI – Watershed Resources

Specific watershed resources and values are identified in this section. Three broad resource areas were developed to capture the diverse range: cultural and historic resources; natural resources; and working waterfront, recreational resources and community character. The areas are not mutually exclusive, but this categorization afforded a way to characterize wide-ranging watershed resources, manage a variety of data and information, engage interested stakeholders and community groups, and develop specific recommendations for stewardship and protection. A fourth resource area – community stewardship – was added to capture cross-cutting needs and opportunities, and to recognize the capacity and key role of the watershed communities' citizenry in the long-term stewardship of the York River and watershed resources.

The scope of the Stewardship Plan is watershed-wide. The plan includes strategies and recommendations to protect important watershed resources located from the headwaters of all watershed streams to York Harbor, and across all the land areas that are part of the York River watershed. Not all the community-valued resources included in this Stewardship Plan meet the National Wild and Scenic Rivers Act "outstandingly remarkable values" definition for river designation eligibility. Some locally important watershed resources are not directly river-related, and some are not unique, rare, or exemplary at a regional or national scale.

York River watershed resources summary

Resource Area	Values and Features	Stewardship Goal
Cultural and Historic Resources	• Cultural landscapes • Archaeological heritage • Historic districts, buildings and structures	Identify and preserve cultural and historic resources of the York River watershed.
Natural Resources	• Watershed lands • Wildlife, habitats, and biodiversity • Water resources • Watershed resilience	Protect valuable natural communities, habitats, biodiversity, and water resources of the York River watershed.

Working Waterfront, Recreational Resources and Community Character	• York Harbor and waterfront • Recreational • Scenic resources	Preserve working waterfront, sustainable recreational uses and scenic qualities of the York River and watershed lands that are important to regional identity and community character.
Community Stewardship	Watershed landowners, citizen volunteers, towns' board and committee members, and voters	Strengthen stewardship of watershed resources by river users, watershed landowners and citizens.

A separate sub-section is devoted to each watershed resource area. For each, the resources are characterized, their "outstandingly remarkable values" and significance are described, and additional threats or management needs are noted. Following that characterization, stewardship objectives and key actions to meet those objectives are listed. To develop the resource characterizations and stewardship recommendations for this plan, the York River Study Committee reviewed existing watershed reports and data, towns' comprehensive plans, other state and regional plans and programs related to resource areas, and new data and information gained from recent studies. In addition, the Study Committee sought extensive input from resource experts, local boards and committees, conservation and preservation groups, state agency representatives, and towns' citizens through a series of meetings, presentations, and discussions. A list of plans, studies, programs, information sources, and references relevant to each resource area and used in development of the Stewardship Plan is provided at the end of each sub-section.

The objectives and key actions in this Stewardship Plan complement, reinforce and build upon important work already being undertaken by the towns of York, Eliot, Kittery, and South Berwick, as well as local land trusts and conservation organizations, community groups, and public agencies. Several ongoing actions are included in this plan to emphasize their importance to achieving long-term resource protection goals.

The Stewardship Plan is a voluntary guidance document intended to support and help facilitate the work of communities, conservation organizations, community groups and individuals interested in the long-term protection of the York River and its watershed resources. Wide-ranging strategies and opportunities to protect or enhance key resources and values are identified. Recommended actions in the Stewardship Plan were developed to protect and enhance the water quality, ecology, historic resources, scenic qualities, and cultural resources that collectively contribute to the region's special character and identity. Implementation of key actions is not mandatory.

Watershed communities are not required to undertake any recommended actions, nor are they expected to commit funding to implement the Stewardship Plan.

Photo: Jennifer Hunter

VI.1 Cultural and Historic Resources

A. Overview

Native Americans have lived in the York River watershed for thousands of years. Located two miles west of York Pond in Eliot is one of only a handful of known Paleoindian archaeological sites in York County, firmly establishing a Native American presence in the watershed ca. 11,000 BP (Before Present). Coastal and estuarine archaeological sites, such as shell middens, documented by archaeologists along the York River, date to as early as 5,000 BP. A Native American presence in York in more recent times also has been confirmed by archaeological finds such as pottery fragments recovered by scuba divers dating to ca. 1550-1620. Furthermore, historical records document early contacts between Native peoples and European explorers in the region including John Verrazano in 1524 and Bartholemew Gosnold in 1602, both occurring at the Cape Neddick peninsula. As a result of recurring epidemics and a plague in the winter of 1616-1617, no Native peoples were known to be living in the York region at the time of European settlement in the early 1630s.

In 1622, during the reign of England's King James I, Sir Ferdinando Gorges, a military commander and governor of Plymouth, England, and Captain John Mason of Norfolk, England, were given a land grant patent by the Plymouth Council for New England from the Merrimack to the Kennebec River. In 1629, Gorges and Mason divided the grant with Gorges receiving lands north of the Piscataqua River known as the "Province of Maine." Settlements known locally as Agamenticus (subsequently Gorgeana, Bristol, and eventually York) and Piscataqua (Odiorne Point, Strawbery Banke, and Dover) commenced in the immediate years following the grants. Early European settlement within the York River watershed was mostly along the lower reaches of the York River, as settlement was also occurring along the shores of the Piscataqua River. The initial settlements (ca. 1630) in Kittery, the Berwicks, and Eliot were at Quamphegan Falls, Spruce Creek, Sturgeon Creek, and Kittery Point.

Kittery submitted to the government of Massachusetts in 1652, and the Massachusetts Bay Colony purchased the Province of Maine from the Gorges descendants in 1677.

Conflicts between European settlers and Native Americans were heightened during what is referred to as King Philip's War (1675-1678). In the subsequent King William's War (1688-1697), a devastating raid by the Wabanaki and French war parties in the winter of 1692, known as the Candlemas Massacre, destroyed most homesteads in York north of the river. Subsequent raids on fringe settlements killed handfuls of people discouraging settlement along the frontier, but also stimulated the construction of fortified garrison houses. These conflicts and raids led to the near complete abandonment of early Maine settlements until the defeat of the French in the Seven Years' War ca. 1760. As a result, many of the 17th- and early 18th-century buildings have not survived, but their remains are now well preserved and represented as time capsules in the archaeological record. Consequently, the archaeology of the York River region offers a unique glimpse into the lives of some of the earliest European settlers in the country and documents the formative period in the nation's history and development.

The York River watershed possesses numerous unique cultural features, landscapes, archaeological sites, and historic buildings and structures. The watershed is largely a rural landscape with small village communities, pockets of open meadows and fields amongst extensive woodlands, saltmarsh, numerous stream tributary corridors, and inland wetlands and ponds. The watershed has well-preserved archaeological resources with some of the earliest known pre-contact Native American sites as well as European settlements in New England. The relatively limited amount of modern development within the watershed allows for the possibility of discovery of many additional intact archaeological sites. Both pre- and post-contact archaeological sites known in the area demonstrate a high degree of integrity.

When compared to other watersheds in Maine and New England, the archaeological resources and historic buildings of the York River and its watershed comprise an outstanding and truly exceptional cultural and historic landscape.

Cultural and historic resources in the York River watershed:

- Cultural landscapes (marsh hay fields, historic and working waterfronts)
- Archaeological resources (Native American, Euro-American, maritime industrial sites)
- National Register of Historic Places (one district, eight individual properties)
- Historic buildings and structures (Colonial-era homesteads, farms, dams)
- Bridges (Sewall's Bridge, Wiggly Bridge, Thermoplastic Bridge)
- Living history (Old York Historical Society, Old Berwick Historical Society, Eliot Historical Society, Kittery Historical and Naval Society and Museum, Gundalow Company)
- Artistic inspiration (visual and literary arts)

B. Cultural Landscapes

Cultural landscapes tell the story of how humans have interacted with their environment over time. Characteristics and features of cultural landscapes can include gardens, trails, roads, rivers, and farmland with significant historical associations. Built resources and archaeological sites also can contribute to the composition of a cultural landscape. The U.S. National Park Service (NPS) notes that, "in the broadest sense, a cultural landscape is a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions."

The cultural landscapes of the York River watershed include both Native American (pre-contact) and post-contact (or historic) resources that are recognized as nationally and regionally significant. Specifically, historic structures and archaeological sites of past and present human activity found along the watershed streams (e.g., tidal mills and dams) are exceptional examples of Maine's and the New England region's cultural and economic development. These landscape components allow for the interpretation of the initial European settlement as well as their exploitation of the region's natural resources in the early 17th century.

Along the upper portions of the York River between Smelt Brook and the western portion of the river, referred to by English settlers as "the Partings," is a broad salt-water marsh. Saltmarsh grasses along the banks of the brook and river were harvested for marsh hay that was cut and transported downriver by small craft and gundalows to support livestock in the winter. Timber harvesting on lands around the upper reaches of Smelt Brook and the York River in the second half of the 17th century resulted in the construction of mills to take advantage of stream power to saw timber into marketable lumber. Among these early upriver mills was one built by Samuel Came by the 1720s in the marsh near what is now Birch Hill Road. Centuries-old stone walls, originally dividing agricultural and pasture lands are visible across these upper river landscapes.

[Add photos: Historic photos of salt marsh hay, fishing, brickmaking, farming, timbering, milling]

C. Archaeological Heritage

The York River is not only a place of important archaeological sites and resources, but also the site of some of the earliest archaeological investigations that have contributed to the development of the field of archaeology in the northeastern U.S. The first archaeological study on the river was conducted in 1891 when Henry Mercer, from the University of Pennsylvania, surveyed, recorded, and partially excavated a total of eight groups of pre-contact Native American shell heaps, or middens. The largest midden measured about "80 ft in length by 20 ft wide and 32 inches deep," and although numerous middens were destroyed to make way for waterfront buildings and cottages, "…the workmen found among the heaps a skeleton buried in a sitting posture, between several large stones; and also, though not with the skeleton, a broken stone-scraper" (Mercer 1897:121).

[Add photos: Images of artifacts from Mercer archaeological report]

Prehistoric Archaeology

Despite these early investigations, and until relatively recently, York County has received limited attention from prehistoric archaeologists. However, during a recent archaeological survey (2017) of the upper York River watershed, artifacts including lithic debitage and tools, a projectile point, and a sample of burned bone representing food remains were excavated. The projectile point is a Small Stemmed point of the Late Archaic tradition, and dates to approximately 5,000-4,500 BP. Additionally, other pre-contact sites identified during the survey recovered lithic materials including locally available quartz as well as other materials from greater distances: rhyolites, cherts, and Mistassini quartzite, which together demonstrate a far-reaching network of mobility, trade, and exchange. The archaeologists concluded that "the rate of site identification within tested areas as well as a local record of identified artifacts from the York River watershed implies that the York River possesses potential significant pre-contact cultural resources." Furthermore, within the 2,000 acres surveyed in 2017, researchers identified many areas with archaeological sensitivity – that is, areas with characteristics that are likely to contain prehistoric (or pre-contact) archaeology sites.

[Add photo: Photo of two large rim sherds of a Late Ceramic period CP7 pot (A.D. 1550-1620) were recovered from the York River by a diver under Sewall's Bridge]

There are 23 documented prehistoric archaeology sites within the York River watershed, including the six identified in 2017. Several of the sites are river-related (e.g., shell middens) and regionally significant, and contribute directly to Partnership Wild and Scenic River (PWSR) designation eligibility for the York River.

Historic Archaeology

Contrary to the relative dearth of prehistoric archaeological investigations in the watershed, the towns of York and South Berwick, in particular, have witnessed numerous archaeological surveys and excavations (including several in the 1980s) to locate and document 17th-century homesteads and garrison sites. There are currently 94 historic period archaeological sites within the watershed, including the six identified in 2017. Given early settlement patterns along waterways and early use of water resources, saltmarshes, and riparian habitats, many of the sites are river-related and contribute directly to PWSR designation eligibility.

These archaeological studies have filled a gap in our collective understanding of early European lifeways, settlement patterns, and trade that cannot be interpreted or gleaned from existing historical documents and literature. It is only through the study of artifacts, architectural remains, and their archaeological contexts that archaeologists and historians can piece together the stories of the region's earliest settlers, and a narrative for racial and ethnic groups or communities that are not well represented in the historical record. While 17th-century New England remains an important focus of research and preservation, there are contemporaneous and later period archaeological sites

throughout the watershed lands, in tidal flats, and underwater that merit further research and documentation, including brick and shipyards, mills, dams, and shipwrecks.

A recent archaeological survey (2017) of the upper York River identified numerous historic Euroamerican sites including the remnants of 18th- and 19th-century dwellings, mills, and a small hydroelectric facility. These sites are representative of some of the earliest post-contact Euroamerican settlement of the upper watershed. The 19th-century community and architectural remains of Punkintown at the outlet of York Pond was surveyed, and a variety of domestic artifacts uncovered. The study recommends nomination of Punkintown as an archaeological district to the National Register of Historic Places.

[Add photo: archaeological survey/excavation underway – from Punkintown survey]

D. Historic Districts, Buildings, and Structures

For more than 100 years, the Town of York has undertaken efforts to preserve its built environment. The historic buildings and structures of York Village and the many extant historic buildings that line the shoreline of York River are representative of nearly 300 years of national, regional, and state architectural heritage. York Village was established as a National Register Historic District in 1973. The district encompasses approximately 1,700 acres and includes the Old York Gaol, one of the oldest public buildings in the State of Maine and a National Historic Landmark since 1968. There are eight individual sites in the York River watershed that are listed in the National Register of Historic Places, in addition to the historic district listing.

National Register Listing	Significance	Type	Other information
York Historic District	Architecture	Historic district	River-related
John Hancock Warehouse	Commerce	Warehouse	River-related
Old York Gaol	Politics/government	Correctional facility	National historic landmark
Old Schoolhouse	Education	School	
Isabella Breckinridge House	Architecture	Single dwelling	River-related
Barrell Homestead	Politics/government	Single dwelling	River-related
John Sedgley House	Architecture	Single dwelling	
McIntire Garrison House	Architecture	Single dwelling	River-related; National historic landmark
Frost Garrison and House	Architecture	Single dwelling	River-related

Established in 1985, the York Historic District Commission manages and provides preservation incentives within three designated local historic districts: Village Center, Lindsay Road, and York Harbor, with a total of 76 individual historic properties and landmarks in the three districts. These buildings and properties represent some of the finest examples of Colonial, Georgian, Federal, Classical and Colonial Revival, Victorian, and Shingle-style architecture in the region and nation. The York River watershed area includes the entire Lindsay Road and York Harbor districts and part of the Village Center districts.

Beyond the core of York Village and Harbor, numerous historic buildings from the 18th and 19th centuries remain on the landscape. Particularly notable are the McIntire Garrison (ca. 1709) on Cider Hill Road in York and the Frost Garrison (ca. 1732-1734) off Frost Hill Road in Eliot. The Frost Garrison is a unique historic resource constructed during the threat of Indian raids and a period of long-term political instability. It retains its original exposed log-and-plank construction and survives in largely unaltered condition. Although the Frost Garrison is a single-story structure, its log construction is similar to the nearby McIntire Garrison – a two-story blockhouse. In addition, the Colonel John Frost House, built ca. 1740 and adjacent to the Frost Garrison, is one of the finest examples of early Georgian architecture in York and Eliot. A two-and-one-half-story, five-bay, two-room-deep, double-pile Georgian building, it retains its original proportions, exterior wooden architectural details, and windows. The only surviving comparable local structure from this period is the Captain John Bulman House (built ca. 1719) in the heart of York Village.

[Add photo(s) of the Frost Garrison and John Frost House (from NRHP)]

The York River region is notable for its many early industrial and milling sites. The earliest known tidal powered mill in New England was in operation on Old Mill Creek (now Dolly Gordon Brook) by 1639, and the remains of numerous historic tide and water-powered mills are still visible on the river landscape today.

[Add photo of Old Mill Creek tide mill remains]

The York River also is notable for its innovative historic and modern bridges. Sewall's Bridge, a historic civil engineering landmark, was originally a wooden trestle bridge that crossed the York River. It was designed and constructed in 1761 and remained in use as a river crossing until 1934, when it was replaced by a similarly designed wooden pile bridge. Although the more recent reconstruction of the bridge in 2013 removed all its historic wooden elements, the historic character of the bridge has been retained. Built in the 1930s, Wiggly Bridge, a pedestrian bridge, is one of the smallest suspension bridges in the U.S. Additionally, the Birch Hill Road Bridge, which spans Rogers Brook, a tributary of the York River, is one of the world's first thermoplastic bridges built entirely from recycled plastic bottles.

As of 2017, more than 200 historic structures in the York River watershed are inventoried in the Maine Historic Preservation Commission's Cultural and Architectural Resource Management Archive (CARMA). They are notable both for the sheer number and for the diversity of sites. Clusters of the many well-preserved historic structures – largely found in the local historic districts, around water resources, or as part of the rural landscape – contribute to the region's scenic qualities, character, and identity. Many historic structures in the watershed are directly river-related, are nationally or regionally significant, and contribute to Partnership Wild and Scenic River eligibility for the York River.

E. Resource Threats

The historic, cultural, and archaeological resources of the York River watershed remain in a relatively high state of integrity due in large part to limited development in many areas. Consequently, one of the most significant threats to these resources comes from the effects of ongoing and future development, including residential and commercial development projects, road and utility corridor construction, increases in impervious surfaces, filling in and altering of wetlands, and increases in suburban landscaping. These activities also have the potential to significantly change the character and integrity of the area's cultural landscapes and can impact traditional uses of the river corridor such as farming, timbering, fishing, and recreational activities. Historic farms and pasture fields may be lost to development, road construction may destroy important archaeological sites, and removal or alteration of historically significant buildings may result in the loss of historic views and vistas of rural agricultural landscapes and loss of economic vibrancy in historic town centers. Furthermore, the removal and disappearance of stone walls and old-growth trees can affect the sense of place associated with historic communities and landscapes.

The following list identifies a wide range of activities that threaten historic and cultural resources, some of which have potential to impact York River watershed resources:

- Coastal development (coastal residential and commercial development, port and harbor facilities)
- Transportation and infrastructure projects (roads, bridges, rail, culverts, hydro-electric and tidal dams, discharge outlets, under-river cables and pipelines, overhead power lines, geological testing)
- Coastal/riverine engineering (sea walls, dams, dikes, breakwaters, storm barriers, flood bank protection, flood control projects, dredging, beach recharge/nourishment)
- Natural hazards (flood and storm damage, sea level rise, responses to natural disasters including cleanup and reconstruction, erosion of river banks and intertidal flats or sandbars)
- Habitat restoration (environmental remediation activities including dam removal, wetland restoration, dune and beach replenishment, stream enhancement, riverbank stabilization, vegetation planting, infilling of historic wetland ditches)
- Pollution (oil and chemical spills including chemical/physical alteration, aesthetic or recreational/tourism impacts, sewage outfall pipes, waste water treatment facilities, acidic rain or poor air quality)

- Overuse or misuse (looting, vandalism, development of facilities for access, parking lots, foot paths, boat ramps, wave erosion from recreational boating, noise pollution, off-road recreational vehicles, scuba diving)
- Oil, gas and minerals management (pipeline construction, offshore mineral and aggregates extraction, disturbance of natural offshore submerged barriers)
- Emergency response (shipping/boating accidents, oil and chemical spills, removal of contaminated soils)

In the coming decades, sea level rise and coastal erosion may eclipse population increases and associated development pressures as the primary threat to coastal cultural and historic resources. Based on local tide gauge data, sea levels in southern Maine and New Hampshire have been rising on average 0.7 inches each decade since 1900. This rate has increased to approximately 1.3 inches per decade since 1993. Seacoast sea levels are expected to rise 0.6-2.0 feet by 2050, and 1.6-6.6 feet by 2100.

Numerous archaeological sites as well as historic buildings and structures located along the York River are threatened with sea level rise. Already, most of the York River archaeological sites recorded by Henry Mercer in 1891 have been destroyed due to shoreline erosion. In 1986, one York River landowner interviewed during an archaeological survey had remarked that about 10 feet of shoreline had washed away in his lifetime.

A secondary threat is the general lack of available and accessible information about cultural and historic resources – what makes them unique and valuable, where they are found in the watershed, and what can be done to protect them. Consequently, this plan includes a comprehensive set of stewardship objectives and key actions to mitigate threats to resources. The wide-ranging recommendations can be used to help inform and support local communities, boards, town staff, and preservation groups in land use planning and permitting activities, resource stewardship, outreach, and information sharing.

F. State and Federal Protections and Preservation Programs

In the 1960s, the efforts of the burgeoning community-based preservation movement, with the aid of archaeologists and architectural historians, resulted in a national historic preservation program and the US Congress enacting the National Historic Preservation Act (NHPA) in 1966. The federal government, acknowledging the need to protect the human and natural environment, also passed the National Environmental Policy Act (NEPA) in 1969. NHPA and NEPA form the foundation of heritage preservation today and require that federal agencies: 1) consider the effects of all their actions on cultural resources, 2) inventory, evaluate, and nominate all significant cultural resources under their jurisdiction to the National Register of Historic Places, and 3) mitigate adverse effects upon significant cultural resources.

The legislative umbrella of NHPA, in particular, shapes how state and federal governments interact, and how state and federal agencies are funded for the management of cultural resources. NHPA

mandates that a State Historic Preservation Office (SHPO) administer the national historic preservation program at the state level. The state provides matching funds and designates a state office to promote and administer preservation activities. The Maine Historic Preservation Commission (MHPC) is the agency within the Executive branch of Maine's state government that functions as the SHPO.

The National Park Service (NPS) provides funding, technical support and tools for SHPOs to develop statewide preservation programs. Through Sections 106 and 110 of NHPA (16 U.S.C. § 470 et seq.), all federal agencies and SHPOs are mandated to consider the impacts of government activities upon historic and cultural resources and to manage historic properties. The MHPC programs include the nomination of properties to the National Register of Historic Places, review and comment on the effect of federal undertakings on historic properties, assistance to property owners to obtain federal and state rehabilitation tax credits, inventory and evaluation of archaeological sites as well as historic buildings, objects and districts, and promotion of historic preservation through planning and public education.

The U.S. Army Corps of Engineers (USACE), Federal Highway Administration (FHWA), and Department of Transportation (DOT) are bound by Sections 106 and 110 to consider the effect of any proposed federal, federally assisted, or federally licensed "undertaking" on a historic property that is eligible for the National Register of Historic Places. NEPA also necessitates that federal agencies consider the effects of their actions on cultural resources (42 U.S.C. § 4321 et seq.). Such actions include USACE-licensed projects such as dredging and seawall construction, DOT bridge construction, and waterfront maintenance and development projects. Other Section 106 projects reviewed by the MHPC may include:

- Maine DOT projects funded by the FHWA
- Community development and housing rehabilitation projects that utilize US Department of Agriculture Rural Development and/or US Housing and Urban Development funding
- Department of Defense base closures or military construction projects
- Residential and commercial pier and dock projects requiring permits from USACE
- Projects undertaken by the NPS at Acadia National Park and elsewhere in the state
- Telecommunication tower and antennae installations

Furthermore, Maine's *Site Location of Development* (Site Law) (Title 38, Chapter 3, §§ 481-490) is significant as it protects cultural resources in the state by requiring MHPC consultation on projects larger than 20 acres, large structures and subdivisions, and oil terminal facilities, and their associated infrastructure activities (e.g., stormwater management), that may not come under Section 106 jurisdiction. The MHPC reviews approximately 300-500 projects under this law each year.

G. Local Protections and Preservation Programs

Shoreland zoning ordinances are the primary and currently the only consistent means of protecting historic and archaeological sites throughout all the watershed communities. *[See Stewardship Plan*

Appendix for a list of the four towns' historic preservation-related ordinances and codes.] However, these protections exclude areas that are generally more than 250 feet from the normal high-water line of great ponds, rivers, tidal waters, and the upland edge of some wetlands. Additionally, local protection of historic resources is non-existent for small developments and construction of single-family homes. This poses a significant risk especially to some of the very early historic archeological sites and historic buildings that are not within a designated historic district – sites which may be of importance to towns and the State of Maine but remain unprotected.

Each town has codified some ordinances or regulations that require properties to be evaluated for the presence of archeological or historic resources for larger planned residential and mixed-use developments, cluster and multifamily developments, subdivisions, and mobile home parks. Applicants are required to obtain an opinion from the local historic district commission, MHPC, or other experts as to the impact of the proposed development upon historic and archaeological resources, and where significant resources are highly likely to be present. Planning boards are then empowered to act to help conserve these resources.

Historic and archeological resources in South Berwick and York also can be protected by designating local historic districts, historic landmarks and historic sites. Designation in York requires approval of the voters in the form of an ordinance amendment, and the resources listed are then afforded regulatory protection by the town. Kittery and Eliot currently do not have any ordinances or regulatory framework for designating local historic districts, landmarks, or sites. York is one of only ten communities in Maine, and the only one in the watershed, to be designated a Certified Local Government (CLG). The CLG program has funded over 20 archeological and architectural inventories in York over the past three decades.

Since the early 1900s, the York River watershed communities have recognized the importance of their towns' history to local, regional, and national history. This is reflected in their commitment to historic resources preservation through the formation of numerous preservation groups and organizations including the Old York Historical Society, Old Berwick Historical Society and Counting House Museum, Eliot Historical Society, and the Kittery Historical and Naval Society and Museum. These mostly volunteer organizations play a significant role in the development, institutionalizing, and sharing of local culture, history, art, and educational programming. The historical societies are responsible, in a large part, for the preservation of the historic character and resources found in these communities today, and equally important, the cultivation of public interest in historic preservation.

Gaps in Cultural and Historic Resource Protection

Despite state and federal protections, local ordinances and regulations vary from town to town, lack uniformity, and apart from those adopted by the Town of York, are generally inadequate to protect the historic built environment, cultural landscapes, and archaeological resources that are important to the economy, character, and identity of local communities. Examples of regulations, policies and

tools that are in use in some towns, but not in others, include nomination and protection of local historic districts and landmarks, reviews as part of renewable energy development projects (solar, wind, tidal), regulations that address adaptive reuse of historic buildings or waterfronts, and regulations that protect traditional uses such as fishing, timbering, and agriculture.

The comprehensive plans of all watershed towns recommend conducting complete inventories of their historic and cultural resources. Although the Town of York has benefitted considerably from its CLG status to conduct inventories of buildings and archaeological sites, the other watershed towns have been unable to implement these recommendations due to a lack of funding and organizational or governmental support. Consequently, despite best intentions, local governments often must make ad hoc and uninformed decisions regarding preservation of historic and cultural resources within their communities.

H. Plans, Studies and References

Some of the studies, data, plans, programs and other information sources related to understanding and implementing actions to protect the cultural and historic resources of the York River watershed are listed below.

Planning documents

Town of Eliot. *Celebrating Our Past While Planning for Our Future*, Comprehensive Plan, Eliot, Maine, 2009. https://www.eliotmaine.org/sites/eliotme/files/uploads/comprehensive_plan_2009_0.pdf

Town of Kittery. Kittery Comprehensive Plan 2015-2025, Kittery, Maine, 2017. http://www.kitteryme.gov/kittery-2015-2025-comprehensive-plan

Town of South Berwick. *Draft Comprehensive Plan*, South Berwick, Maine, 2006. https://digitalcommons.library.umaine.edu/towndocs/998

Town of York. *Historic and Archeological Resources Chapter, Comprehensive Plan Inventory & Analysis*, Comprehensive Plan, York, Maine, 2007. http://www.yorkmaine.org/DocumentCenter/View/355/Historic-and-Archeological-Resources-Chapter-110607-PDF

Additional sources of information and references

Clayton, W. W., "History of York County, Maine: with Illustrations and Biographical Sketches of its Prominent Men and Pioneers" (1880). *Maine History Documents*. 26. https://digitalcommons.library.umaine.edu/mainehistory/26

Cultural & Architectural Resource Management Archive (CARMA), Maine Historic Preservation Commission, http://www.maine.gov/mhpc/carma_disclaimer.html.

Hudgell, Gemma-Jayne, Stephen R. Scharoun, Robert N. Bartone, and Ellen R. Cowie. *Archaeological Survey of the York River Headwaters: A Community Approach for Identification and Management*, Northeast Archaeology Research Center, Inc., Prepared for the York River Study Committee, 2017.

Maine State Planning Office. *Nomination for the Official List of Maine Heritage Coastal Areas, Region I, York River/Harbor*, State of Maine, 1987.

Mallory, Steven and Scott Stevens. *Architectural Survey of the Upper York River,* Groundroot Preservation Group, Prepared for the York River Study Committee, 2017.

Mercer, Henry C. An Exploration of Aboriginal Shell Heaps Revealing Traces of Cannibalism, *Researches upon the Antiquity of Main in the Delaware Valley and the Eastern United States, Publications of the University of Pennsylvania Series in Philology, Literature and Archaeology*, 6:111-137, 1897.

National Park Service. *Wild and Scenic River Reconnaissance Survey of the York River*, National Park Service Northeast Region, 2013.

New Hampshire Coastal Risk and Hazards Commission. *Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation: Draft Report and Recommendations*, New Hampshire Department of Environmental Services Coastal Program, 2016.

Town of York Maps and GIS. http://www.yorkmaine.org/153/Maps-GIS

Historical Society Websites:

Eliot Historical Society. http://www.eliothistoricalsociety.org/

Kittery Historical and Naval Museum. http://www.kitterymuseum.com/

Old Berwick Historical Society. http://www.oldberwick.org/

Old York Historical Society. http://oldyork.org/

Photo: Stefan Claesson

Goal: Identify and preserve cultural and historic resources of the York River watershed.

Objective 1: Enhance funding and financial incentives for historic resources protection in the watershed.

Key Actions:

- Stimulate wider community participation in the Certified Local Government (CLG) program to help promote and fund historic resources preservation.
- Promote federal and state rehabilitation and tax incentive programs and historic preservation grant programs.
- Promote historic districts, highlighting the importance of maintaining clusters of historic resources.
- Explore opportunities and help identify funding sources to implement local financial incentives for historic resource preservation, such as reduced or waived permitting fees.
- Implement education and advocacy efforts to inform citizens of the importance of protecting historic resources for economic values, scenic views, community character, and tourism.

Objective 2: Improve understanding and coordination of activities under the National Historic Preservation Act and Maine's preservation laws.

Key Actions:

- Foster collaboration and exchange of information with municipalities, transportation and housing agencies, National Park Service and Army Corps of Engineers, as well as other state agencies.
- Expand network of preservation partners by engaging select boards and town councils, land trusts, historical societies, regional planning commissions, and other community officials.
- Provide toolkits, support, and guidance to community partners and landowners on the importance of surveys and on advantages of designation to the State and National Registers of Historic Places and the associated review processes.

Objective 3: Identify and document watershed archaeological, architectural, and historic resources.

Key Actions:

- Assess gaps in surveys and nominations to State or National Registers.
- Update and expand historic context information, including archaeologically sensitive areas, for use in identifying and evaluating archaeological and historic resources in watershed.
- Conduct new and update existing surveys to identify and document archaeological and historic architectural resources throughout the watershed, including updated locational information for historic structures in the Maine Historic Preservation Commission's (MHPC's) CARMA database.
- Utilize state and federal preservation practices to ensure proper documentation and showcase application of the MHPC and Secretary of the Interior's standards and guidelines.

- Maintain up-to-date inventories of historic resources, historic contexts, and scenic values in towns' comprehensive plans.
- Increase nominations of eligible archaeological and historic resources to the State and National Registers of Historic Places, with an emphasis on those associated with underrepresented regions and resource types. For example, work with stakeholders to investigate and pursue Punkintown Historic District/National Register of Historic Places nomination.
- Undertake new research and scholarship at historic sites to improve understanding of the significance of the archaeological and historic resources in the watershed.

Objective 4: Improve ability to respond to impacts of sea level rise and other natural disasters on historic resources, including documentation, management and protection actions.

Key Actions:

- Create pre- and post-disaster resiliency and recovery plans that include efficient review and compliance efforts.
- Work with the National Park Service, Federal Emergency Management Agency, and Maine Historic Preservation Commission to develop guidance for historic property owners to address scenarios such as disaster recovery and how to navigate government assistance.
- Establish effective communication methods to ensure information sharing with stakeholders and reviewers at all levels.

Objective 5: Improve towns' abilities to identify and protect historic resources through local regulatory and non-regulatory approaches.

Key Actions:

- Amend site plan and subdivision regulations, as needed, to ensure that historic and archaeological resources are identified and protected through the review process.
- Provide training to planning board members on ways to protect historic resources through the site plan and subdivision review process, as well as training for code enforcement officers to assist in identifying and protecting historic resources with single-family home construction projects.
- Adopt building codes that allow flexibility in building renovation to accommodate important design features of historic buildings.
- Review options for tax abatement or other financial incentives for home and business owners and developers that undertake efforts to preserve historic resources.

Objective 6: Improve public access to information on local historic resources, and facilitate research and exchange of historic preservation information.

Key Actions:

- Update and maintain existing state and local databases, and create a single online archive for collecting and sharing information for identification and documentation purposes (e.g., ArcGIS online maps). Seek funding for an integrated online database of historic resources and associated archives.

- Collaborate with the Maine Historic Preservation Commission on the sharing of historic resource data.
- Provide links to photographs, histories, drawings, and other research and documentation.
- Develop training materials and programs on preservation techniques.
- Conduct or coordinate consultant and preservation partner trainings and workshops.
- Work with historic district commissions and historic societies to create a forum for the dissemination of information on key issues and opportunities related to historic preservation.
- Create and promote a network of local homeowners that have completed historic preservation or restoration efforts that are willing to share their experiences with others interested in preserving historic properties and building features.

Objective 7: Raise the profile of historic preservation through promotion and stewardship of historic resources.

Key Actions:

- Partner with state agencies (Maine Historic Preservation Commission and Maine Department of Transportation), Maine Archaeological Society, town departments and commissions, historic societies, local museums and land trusts to implement local programs that emphasize history, archaeology, and historic preservation, including Maine Archaeology Month activities.
- Celebrate designations to the State and National Registers of Historic Places, and successful rehabilitation projects to encourage other historic preservation efforts.
- Work with organizations that support historic preservation-related tourism, including the York Region Chamber of Commerce, Maine Humanities Council, and state agencies involved in tourism and marketing, to promote the region's historic resources.
- Compile local summaries of historic properties, including notable features and preservation techniques, to facilitate self-guided walking tours in areas that have clusters of historic resources along the York River or within a historic district.

Photo: Jerry Monkman, Ecophotography.com

VI.2 Natural Resources

The overall quality, abundance, and diversity of the York River watershed's natural resources make it an exemplary watershed that provides clean water and diverse habitats for key species. It is one of the most biodiverse regions of Maine, and with continued proactive stewardship and preservation initiatives, the watershed ecosystem is likely to provide important habitat functions under changing environmental conditions. The York River watershed includes part of the largest intact coastal forest in the area between Acadia and the New Jersey Pine Barrens, as well as the largest intact saltmarsh area in southern Maine. The presence of both salt and freshwater ecosystems and the convergence of those systems in an estuary also contribute to the wide range of special habitats present.

Natural Resources for the York River watershed are characterized in four sub-sections:

- Watershed landscape
- Wildlife, habitats, and biodiversity
- Water resources
- Watershed resilience

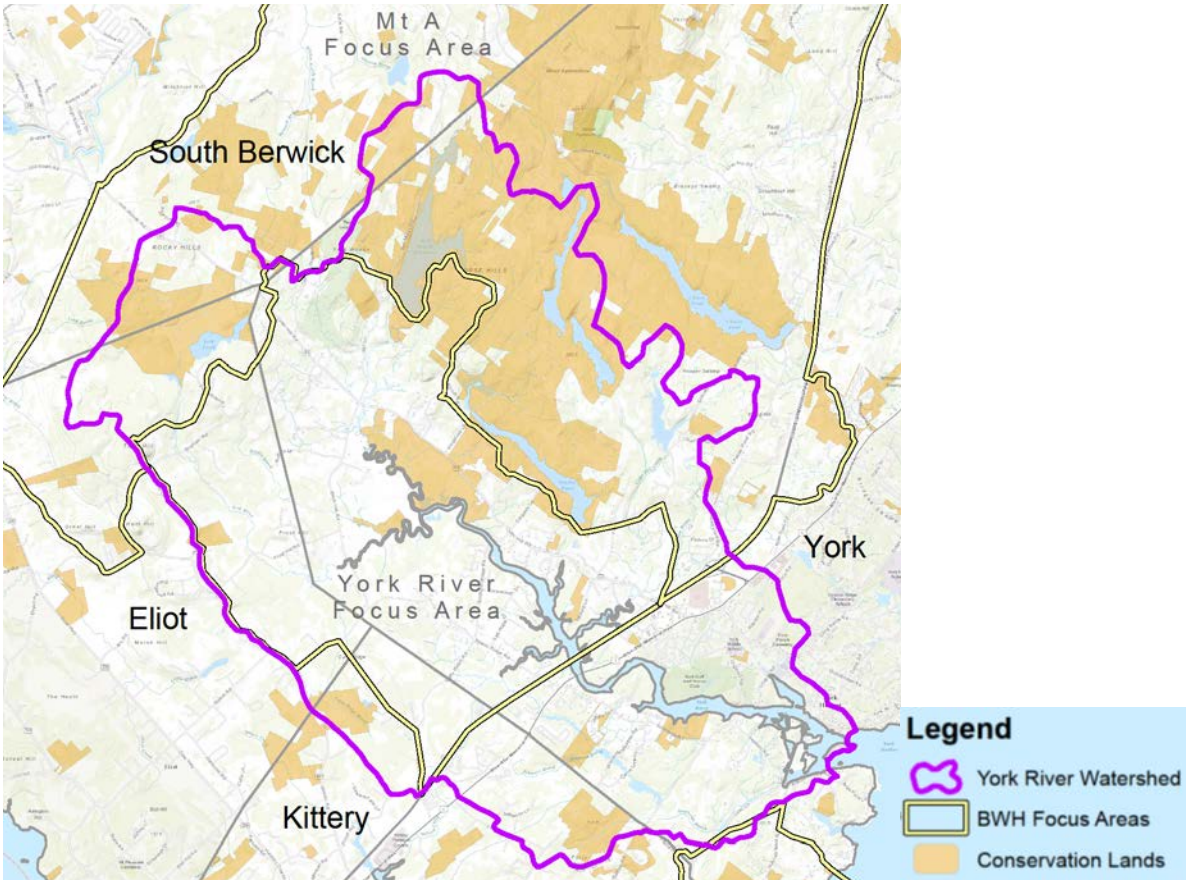
Statewide Ecological Significance

The Maine Department of Inland Fisheries and Wildlife's Beginning with Habitat Program identifies focus areas of statewide ecological significance based on an "unusually rich convergence of rare plant and animal occurrences, high value habitats, and relatively intact natural landscapes." The York River watershed includes two adjacent state focus areas: the York River Focus Area and the part of the Mount Agamenticus Focus Area.

The York River Focus Area of statewide ecological significance covers 8,750 acres of watershed lands in York, Eliot, and Kittery, including the uplands and wetlands surrounding the upper York River and its tributaries. The focus area includes the extensive saltmarshes and the upper estuary system where fresh and saltwater mix. The area is mapped as important tidal wading bird and waterfowl habitat and provides habitat for many diadromous fish species. Rare plant and animals and other high value habitats are found throughout this focus area.

The York River focus area is notable for the tidal marsh estuary ecosystem that includes the intertidal bays and one of the largest unprotected Spartina saltmarshes, a rare community type, in the state. The extensive York River Estuary is one of the Gulf of Maine's least disturbed marsh-estuarine ecosystems and may be the most ecologically diverse coastal drainage for its size in the Gulf of Maine. – Maine Department of Inland Fisheries and Wildlife, Beginning with Habitat Program

The York River watershed also includes 7,170 acres in the much larger Mount Agamenticus Focus Area that extends from York Pond region in Eliot and South Berwick northeast through the Tatnic Hills area in Wells and includes the drinking water supply ponds and surrounding lands in York. This focus area includes rugged terrain, several lakes and ponds, and numerous small wetlands that together comprise the largest contiguous block of lightly developed land in southern York County and one of the largest remaining areas of undeveloped forest in coastal New England. The focus area has one of the richest concentrations of vernal pool habitat in the state, supporting state-listed Blanding's and spotted turtles in concentrations rarely encountered elsewhere. The uplands and wetlands in this focus area provide habitat for 12 animal species and 21 plant species that are considered rare in Maine.



Overlap of the York River watershed with State Focus Areas (map by Wells Reserve)

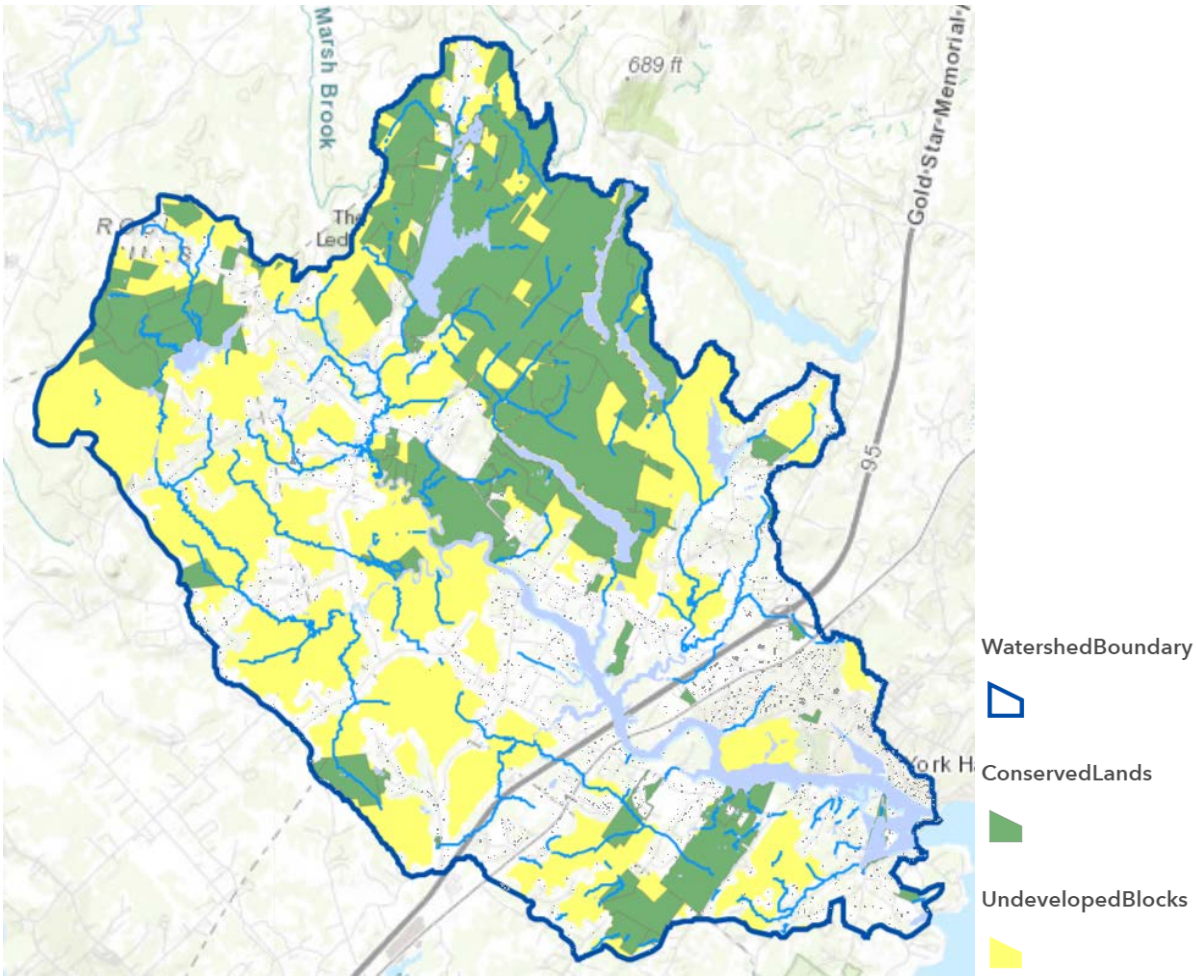
A. Watershed Landscape

Forests and Undeveloped Habitat Blocks

Over 50 percent of the York River watershed includes forested areas, some of which are part of one of the largest remaining areas of undeveloped forest in coastal New England. Southern and northern New England forest types converge in the watershed area, and this biome transition is another factor contributing to the area's rich biological diversity. Many of the headwater streams in the York River watershed overlap with forested areas, and the forested wetlands and riparian areas along these streams play a key role in providing good water quality and aquatic habitats for species further downstream.

Much of the watershed's forestlands occur in large, unfragmented blocks. Certain species need these large undeveloped blocks for habitat including many of Maine's iconic species, as well as its more common native species. Bobcat, coyote, fisher, black bear, moose, bald eagle, goshawk, raven, and red-tail hawk all need undeveloped habitat blocks greater than 500 acres. Species such as hare, porcupine, beaver, mink, weasel, woodchuck, deer, sharp-shinned hawk, cooper's hawk, harrier, broad-winged hawk, kestrel, horned owl, barred owl, osprey, turkey vulture, turkey, garter snake, ringed neck snake, and wood frog need habitat blocks in the range of 100-500 acres.

Over 11,000 acres of York River watershed lands, which is just over half to total area, are in unfragmented blocks greater than 100 acres. The watershed lands contribute to several large undeveloped blocks in the greater region, including a 2,800-acre block around York Pond, a 3,800-acre area west of Bell Marsh Reservoir and into South Berwick, and the 6,460-acre block around the Kittery and York water districts' water supply ponds. Habitat connections, wildlife migration areas, riparian corridors, and road crossing areas for wetland dependent species moving between waterways are important to identify and preserve or improve, especially as habitat blocks are further developed and fragmented.



Undeveloped habitat blocks and conservation lands (map by Spatial Alternatives).

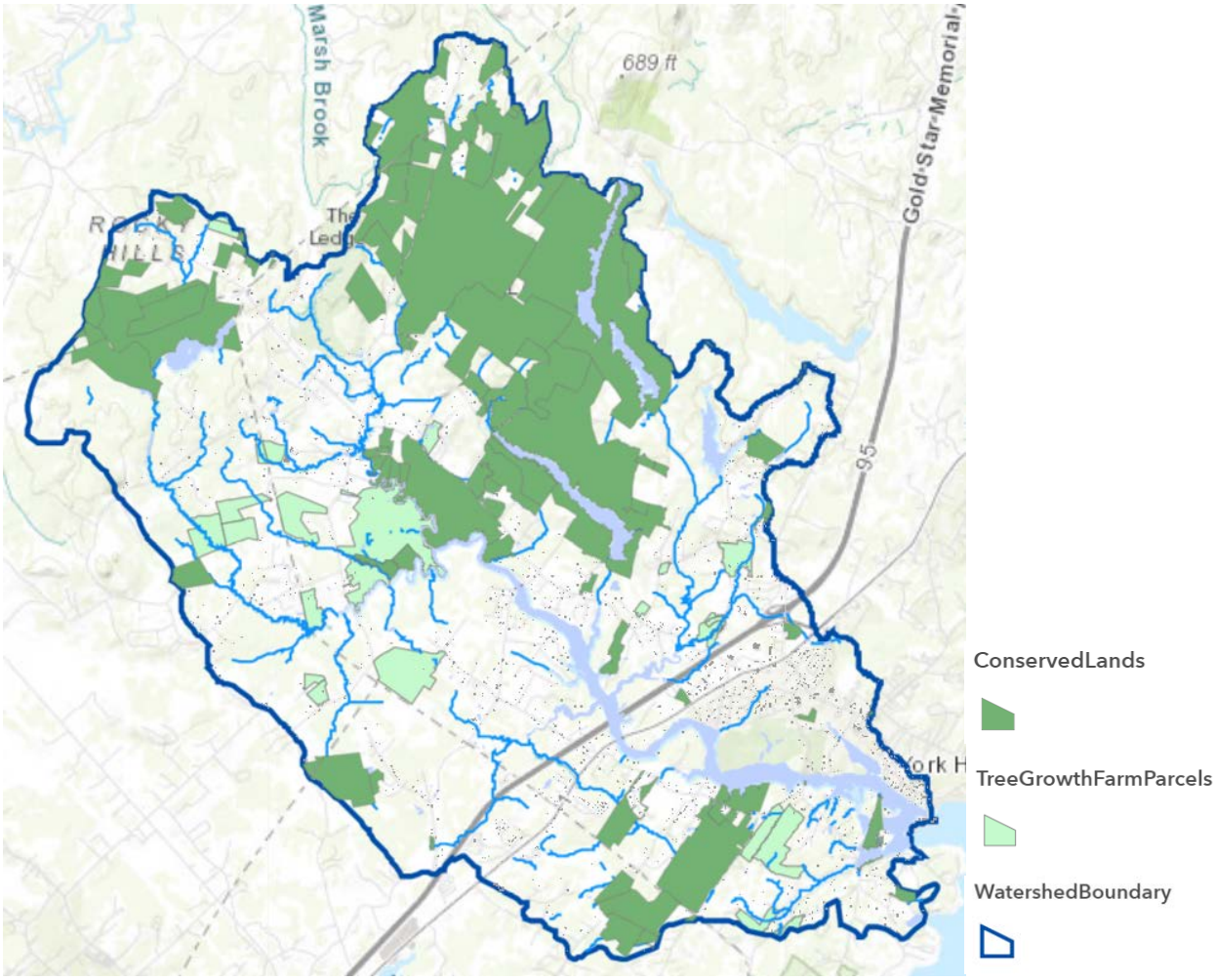
Conservation Lands

The significant natural resources of the York River watershed have made this region a priority area for many local and regional conservation initiatives. There are roughly 5,600 acres of conserved lands, which is about 26 percent of the watershed area. This includes about 2,500 acres of the Kittery Water District's water supply lands that do not have permanent protection from development. Local land trusts and regional conservation organizations have a long history of successfully completing many proactive land conservation initiatives, building community support for conservation, and working collaboratively with towns and other partners to facilitate conservation projects. Planning and support for additional priority projects and for management of existing conservation lands are needed to continue to protect the important habitats, water quality, and rare species found in the watershed.

Conservation plans for the Mount Agamenticus to the Sea Conservation Initiative and the Great Works Regional Land Trust are described in Section V – Watershed Resources. Some of the land trust's sizable preserves are described later in this section under recreational resources.

Working Farms and Working Forests

Agricultural and forestry uses of watershed lands, once a large part of the landscape, still have a role in providing open spaces and scenic views, maintaining traditional uses of lands, and contributing to the local economy. These lands also can provide wildlife habitat and connections between habitat blocks. To encourage farming and forestry, as well as working waterfront and open spaces for public recreation, the State of Maine has four "current use" taxation programs that offer the property owner a reduction in assessed value: Farmland, Open Space, Tree Growth, and Working Waterfront. The programs establish valuation of property at its current use, rather than at market value or development value. All four programs are available to property owners through an application process with the local municipality. Within the York River watershed, parcels enrolled in tree growth or farmland programs account for about 930 acres. All of the towns' comprehensive plans note the importance of maintaining local working farmlands and forests.



Conservation lands and parcels enrolled in current use programs (data compiled by Spatial Alternatives)

B. Habitats, Wildlife and Biodiversity

The diverse habitats and natural communities in the watershed make it rich with plant and animal species, including many that are rare or of special concern. The presence of both salt and freshwater ecosystems and the convergence of those systems in an estuary contribute to the wide range of special habitats present – including fringing marshes, salt marshes, tidal flats and the nutrient-rich tidal marsh estuary. The York River estuary and its saltmarshes provide critical habitat for many fish and bird species. An estimated two-thirds of commercially valuable fish, shellfish, and bait species in the Gulf of Maine depend on estuaries and salt marshes at some point in their life cycles.

Natural Communities and Wildlife Habitats

The Beginning with Habitat Program and the Maine Natural Areas Program (MNAP) provide information on rare and exemplary natural communities, significant wildlife habitats, and species of special concern that are present in the watershed. MNAP has classified 104 different natural community types that cover the state's landscape and has assigned a rarity rank of 1 (rare) through 5 (common) within Maine and globally. MNAP is interested in natural community types with state rankings of S1 (critically imperiled, with 5 or fewer occurrences statewide), S2 (imperiled, with 6-20 occurrences statewide), or S3 (rare, with 20-100 occurrences statewide), as well as exemplary examples of S4 (apparently secure) and S5 (demonstrably secure) community types.

Rare and exemplary natural communities in the York River watershed, with state rarity ranking:

- Tidal marsh estuary ecosystem (S3)
- Spartina saltmarsh (S3)
- Oak-pine forest (S4)
- White oak-red oak forest (S3)
- Oak-hickory forest (S1)
- Pitch pine bog (S2)

Significant wildlife habitats are defined under Maine's Natural Resources Protection Act, which is administered by the Maine Department of Environmental Protection. Four types of significant wildlife habitats exist in the York River watershed. **Deer wintering areas** are forested areas used by deer when snow gets more than 12 inches deep in the open and in hardwood stands and when mean daily temperature is below 32 degrees. **Inland wading bird and waterfowl habitat** are mapped wetland complexes with specific characteristics and the 250-foot upland zone surrounding them. **Significant vernal pools** are natural, temporary to semi-permanent bodies of water occurring in shallow depressions that typically fill during the spring or fall and may dry during the summer. Vernal pools provide the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp, as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. **Tidal wading bird and waterfowl habitat** can include mapped eelgrass beds, mussel beds, emergent wetlands, and mudflats.

Significant wildlife habitats in the York River watershed:

- Tidal wading bird and waterfowl (2,490 acres)
- Inland wading bird and waterfowl (2,870 acres)
- Significant vernal pools
- Deer wintering areas (460 acres)

Salt Marsh Habitat

Salt marshes provide critical feeding, migrating, wintering and breeding habitat for many fish and bird species, in particular. They are important nesting habitat for Nelson's sharp-tailed sparrow and the rare saltmarsh sharp-tailed sparrow. These tidal wetlands provide foraging habitat for numerous wading birds and shorebirds, including rare species such as the black-crowned night-heron and least tern. Salt marshes provide important nursery and spawning habitat for many fish species, and they protect aquatic habitat for migratory fish such as American eel, rainbow smelt, and alewife. Salt marshes provide water quality benefits and flood protection. Threats to this important habitat and the wildlife species associated with it include pollution, human disturbance, sea level rise, invasive species, and predation.

The York River estuary ecosystem includes about 500 acres of salt marsh habitat, most of which is in the upper reaches of the estuary surrounding the confluence of the York River and Smelt Brook to near head of tides. Smaller salt marsh complexes exist in other parts of the estuary such as the tidal portions of Dolly Gordon and Libby Brooks and Cider Hill Creek. The York River salt marsh is one of the largest, intact tidal marshes in southern Maine. Many of the remaining high quality salt marshes in Maine are on public lands or private conservation lands; however, the majority of the York River salt marshes and the adjacent uplands are not protected.

Rare and Endangered Species

The greater Mount Agamenticus region, which includes the York River watershed, has the greatest diversity of threatened and endangered species of any Maine region. The estuary system provides valuable roosting and feeding area for tidal wading birds and waterfowl. The estuary and streams provide excellent spawning habitat, with 28 species of estuarine and freshwater fish present including many diadromous fish species that are of conservation concern. The marshes also provide habitat for rare species such as the saltmarsh sharp-tailed sparrow. The estuary and waterways provide extensive habitat and a migration corridor within the Atlantic flyway for birds. The endangered Blanding's turtle is present in the watershed. Some additional species inhabiting the wetland-upland complexes include the threatened spotted turtle and ringed boghaunter dragonfly, one of the rarest dragonflies in North America. Rare plant species of the watershed include saltwater false-foxglove, spongy arrow-head, and water pimpernel, among many others.

The 2015-2025 Maine Wildlife Action Plan, developed by the Maine Department of Inland Fisheries and Wildlife in coordination with other agencies and conservation partners, identifies **species of greatest conservation need** (SGCN) – those species under greatest threat from primarily human induced habitat loss or change and requiring direct conservation actions to restore or sustain their populations. SGCN prioritization (ratings of 1, 2, or 3, with 1 being most at risk) is based on factors such as risk of extirpation, population trend, endemicity, and climate change vulnerability. SGCN include endangered and threatened species and species of special concern, among other species. A **species of special concern** does not meet the criteria of an endangered or threatened species but is particularly vulnerable, and could easily become an endangered, threatened, or extirpated species due to restricted distribution, low or declining numbers, specialized habitat needs or limits, or other factors.

The watershed towns of York, Eliot, Kittery, and South Berwick have 185 different wildlife species of greatest conservation need (SGCN). *[See Stewardship Plan Appendix for lists of priority 1, 2, and 3 SGCN found in each watershed town.]* Within the watershed there are numerous endangered, threatened and special concern species (ETSC species). Mapped habitats in the York River watershed supporting some of these species of special concern include 700 acres of New England cottontail habitat, 100 acres of ringed boghaunter habitat, and about 1,200 acres of habitat for endangered and threatened turtles. Additional species surveys and habitat mapping are needed for the full watershed area.

ETSC wildlife species in the York River watershed

- Great blue heron
- Northern spring salamander
- Spicebush swallowtail
- Ringed boghaunter
- New England cottontail
- Scarlet bluet
- Blanding's turtle
- Spotted turtle
- Harlequin duck
- Saltmarsh sparrow
- Juniper hairstreak
- Eastern ribbon snake
- Saltmarsh tiger beetle
- Northern black racer
- Eastern box turtle
- Swamp darter
- Brook stickleback

Diadromous fish SGCN in the watershed

- Atlantic sturgeon (priority 1)
- Shortnose sturgeon (priority 1)
- American eel (priority 2)
- Blueback herring (priority 1)
- Alewife (priority 2)
- American shad (priority 1)
- Rainbow smelt (priority 1)
- Brook trout (priority 3)

[Add photos of rare species]

Plant species of special concern in the watershed include featherfoil, spotted wintergreen, broad beech fern, sassafras, spongy-leaved arrowhead, mudwort, upright bindweed, Eaton's bur-marigold, spicebush, sweet pepperbush, water pimpernel, saltmarsh false-foxglove, and pale green orchis.

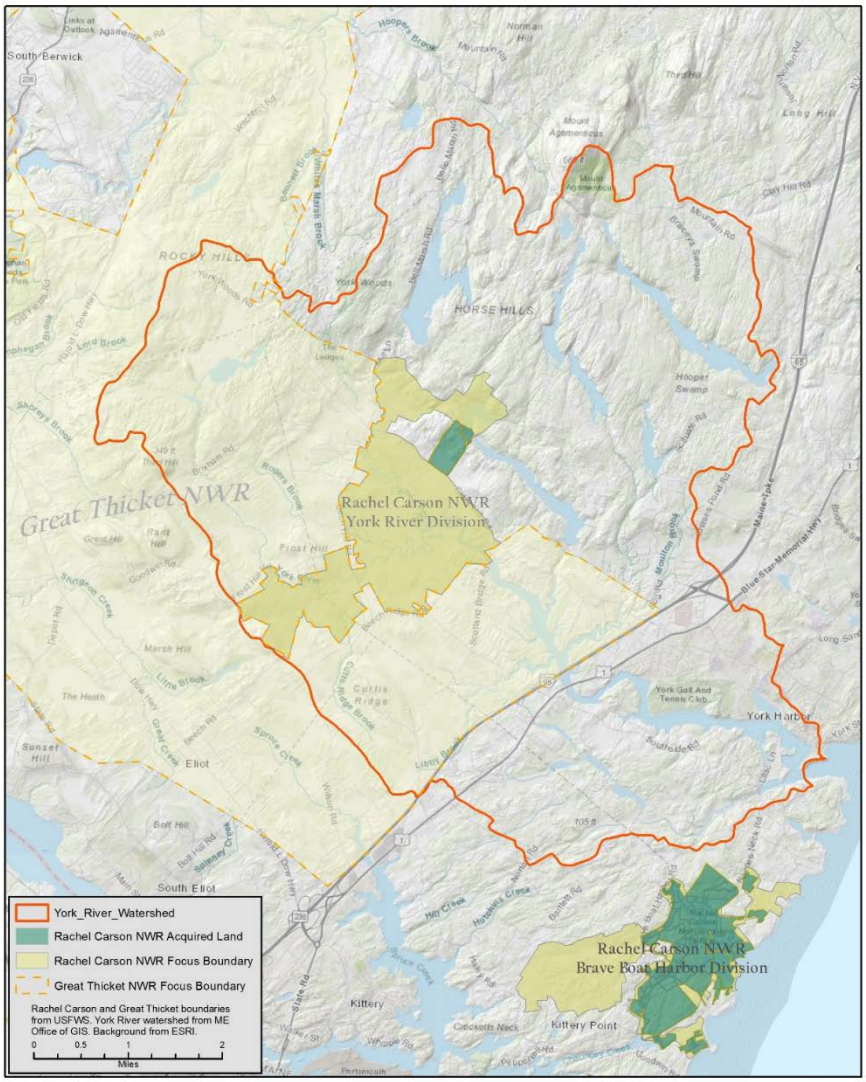
Maps and data from the Maine Department of Inland Fisheries and Wildlife Beginning with Habitat Program for the York River watershed (produced in 2017):

- Undeveloped habitat blocks, connectors, and conservation lands
- High value plant and animal habitats
- Wetlands characterization
- Water resources and riparian habitats
- Natural resources co-occurrence

Maps are best viewed electronically or in a printed format too large to include in this plan. All maps are on the York River Study website: www.YorkRiverMaine.org

Federal Priority Species and Wildlife Habitats

Convergence of quality wildlife habitats, natural communities and rare species in the region makes the York River watershed lands and surrounding landscape priorities for the US Fish and Wildlife Service in protecting federally-listed and threatened wildlife species and migratory birds. The 2,200-acre York River Division of the Rachel Carson National Wildlife Refuge includes the extensive salt marsh habitat around the York River and Smelt Brook, as well as adjacent shrublands and uplands, providing key habitat for New England cottontail, saltmarsh sharp-tailed sparrow, American eel, and alewife, among other species. US Fish and Wildlife Service only acquires lands within its focus boundary from willing sellers. It currently owns about 90 acres in its York River Division.



The Great Thicket National Wildlife Refuge includes several areas across New England, including York River watershed lands in all four watershed towns and extending northwest outside of the watershed boundary. The Great Thicket focus area includes shrubland and young forest/early successional habitats intended to support declining shrubland wildlife, such as New England cottontail, prairie warbler, blue-winged warbler, field sparrow, American woodcock, and brown thrasher.

Fisheries

The York River watershed provides habitat for a diverse community of fish, especially for a watershed of its size. Research conducted in 2001 by the Wells National Estuarine Research Reserve identified 23 fish species including marine, anadromous, catadromous, estuarine and freshwater species. Important migratory species include rainbow smelt, alewife, and American eel. The study also documented a range of fish habitats, including marine and estuarine rocky and sandy substrates, salt marsh, cold water streams, and a natural headwater pond. Results were published in a 2006 report, *Fish Communities and Habitats of the York River Watershed*.

2017 Fish Assessment

The York River Study Committee contracted with Wells National Estuarine Research Reserve to update and expand information about fisheries in the York River watershed by conducting a fish assessment during 2017. The study focused primarily on surveying rainbow smelt and alewives, two fish species designated in the Maine Wildlife Action Plan as Species of Greatest Conservation Need. The designation Species of Greatest Conservation Need was created to help prioritize important species that may require conservation actions to restore or sustain their populations from threats associated with habitat loss or other impacts.

The Wells Reserve study focused on assessing adult rainbow smelt and alewives during their respective spring migration periods. Based on historic presence of fisheries or potential spawning habitat, fyke nets were placed at four sites - the main stem of the York River, Smelt Brook, Bass Cove Creek, and Dolly Gordon Brook. Water quality monitoring stations were deployed near each fyke net to measure water temperature, depth and salinity during sampling.

Fyke net deployed in Smelt Brook.

Findings from the 2017 assessment show that the York River provides productive habitat for a diverse fishery which includes at least five Maine Species of Greatest Conservation Need: alewife, brook trout, rainbow smelt, and winter flounder. Three of these species, alewife, American eel, and rainbow smelt, have also been designated as Species of Concern by the National Marine Fisheries Service. Other fish species identified during the study included striped bass, Atlantic silversides, Atlantic tomcod, banded killifish, common sea robin, common shiner, fourspine stickleback, grubby sculpin, mummichog, ninespine stickleback, pumpkinseed sunfish, threespine stickleback, white perch, and white sucker. Invasive or non-native species included European green crab, bluegill, and yellow perch.

The presence of spawning populations of rainbow smelt and alewives indicates that the York River watershed provides productive habitat for anadromous species. These fish provide an important seasonal forage base for many aquatic and terrestrial species, including larger recreational and commercial fish, marine and freshwater dependent mammals, and fishing birds. The presence of a sizable run of rainbow smelt in the York River has regional significance as populations in other areas have been in decline.

Key findings from the assessment include:

- The 2017 fisheries assessment identified a significant population of rainbow smelt in the York River watershed. By factoring in fyke net efficiency, researchers estimate that the spawning rainbow smelt population in the York River likely numbers in the tens of thousands.
- Relative abundance of smelt in the York River appears to be higher than other areas that have been studied in the region including Great Bay in New Hampshire and Casco Bay in Maine.
- Despite lack of access to upstream ponds and lakes, alewives are spawning in the watershed by making use of low velocity pools, riparian wetlands and backwatered stream reaches. Because the fyke net design is more effective for catching rainbow smelt than alewives, additional study would be needed to estimate the size of alewife populations in the watershed.
- Brook trout were found in the upper reaches of the York River as well as in the estuary and migrating between the tidal and freshwater reaches of Smelt Brook. Size, location and timing of the catch indicate that the trout were likely from a wild population and they may represent an anadromous population, a rarity in coastal ecosystems today.
- Priorities for ensuring long-term protection of rainbow smelt and other anadromous fisheries include conserving riparian corridors, ensuring adequate streamflow, and providing unimpeded fish passage by improving stream crossings with adequately sized structures and natural substrate.

Detailed results from the study have been published in *An Assessment of Spring Fish Communities in the York River, Maine: Report to the York River Study Committee, 2018*.

York River Smelt Spawning and Riparian Habitat

As a companion study, Wells Reserve staff also conducted a field assessment of rainbow smelt spawning habitat in study reaches, and a GIS desktop assessment of riparian habitat condition in the York River in 2017.

Field reviews identified potential rainbow smelt spawning areas in the upper York River, Smelt Brook and Bass Cove Creek. Diversity of spawning habitat for rainbow smelt found in multiple tributaries of the York River will likely enhance resiliency of the species. While the study included some field observations about the productivity of spawning habitat, further assessment is needed to identify the location and extent of spawning habitat being utilized in the York River.

Riparian habitat in the York River watershed is largely undeveloped with forest and wetlands making up approximately 78 percent of the natural areas bordering the York River and its tributaries. Almost a third of the riparian buffer is conservation land. Development along the riparian buffer is concentrated primarily in the southern area of the watershed near the center of York and along the Route 1 and I-95 corridors.

Riparian Habitat in the York River		
Type of land	Acres	% of total
Forest (Deciduous, Evergreen, Mixed)	2,025	40%
Wetlands (emergent, woody, herbaceous)	1,926	38%
Developed (High, Medium, Low, Open)	559	11%
Open Water	233	4%
Crop / Pasture	225	4%
Scrub – Shrub	85	2%
Barren land (gravel pit)	51	1%

Protecting riparian habitat from future development was identified as a top priority for long-term conservation of rainbow smelt habitat in the York River watershed.

Stream Connectivity

Maintaining and enhancing stream connectivity is crucial to supporting healthy migratory fish populations in any watershed. The Maine Stream Connectivity Work Group, a partnership of state, federal, industry and non-government organizations, has been working to improve Maine's stream restoration efforts. Together the following partners developed the Maine Stream Habitat Viewer, an innovative tool that displays stream habitats for species important to Maine's economy, ecology and way of life and provides information about dams and road crossings that can act as barriers to fish passage and stream health.

- Gulf of Maine Coastal Program, U.S. Fish and Wildlife Service
- Maine Audubon
- Maine Coastal Program
- Maine Department of Marine Resources
- Maine Department of Inland Fisheries and Wildlife
- Maine's State Wildlife Grant Program
- The Nature Conservancy in Maine
- State Wildlife Grants Program, U.S. Fish and Wildlife Service

The Maine Stream Connectivity Work Group analyzed stream barriers in the York River watershed to help prioritize locations with high habitat and infrastructure value. The analysis was conducted using a spatial Decision Support Tool to assign a score to stream crossings in the watershed. Rankings are now helping to guide maintenance and restoration efforts in the watershed that will benefit both habitat connectivity and public safety. Overall, 95 stream crossings including bridges, dams and other

road crossings have been identified in the York River watershed. Five of these crossings have been placed in the top two highest categories of priority for needing action to improve both stream connectivity and ensure adequate capacity for tidal flows. One such priority site is the crossing of Route 91 and Smelt Brook where the culvert design creates a barrier to aquatic passage at low and mid tides and may also be restricting tidal flow during certain conditions.

[Add photo of culvert at Smelt Brook]

Watershed communities are working in partnership with state and federal agencies to improve stream crossings in the York River watershed.

[Add example(s) of improvements completed or in the works]

C. Water Resources

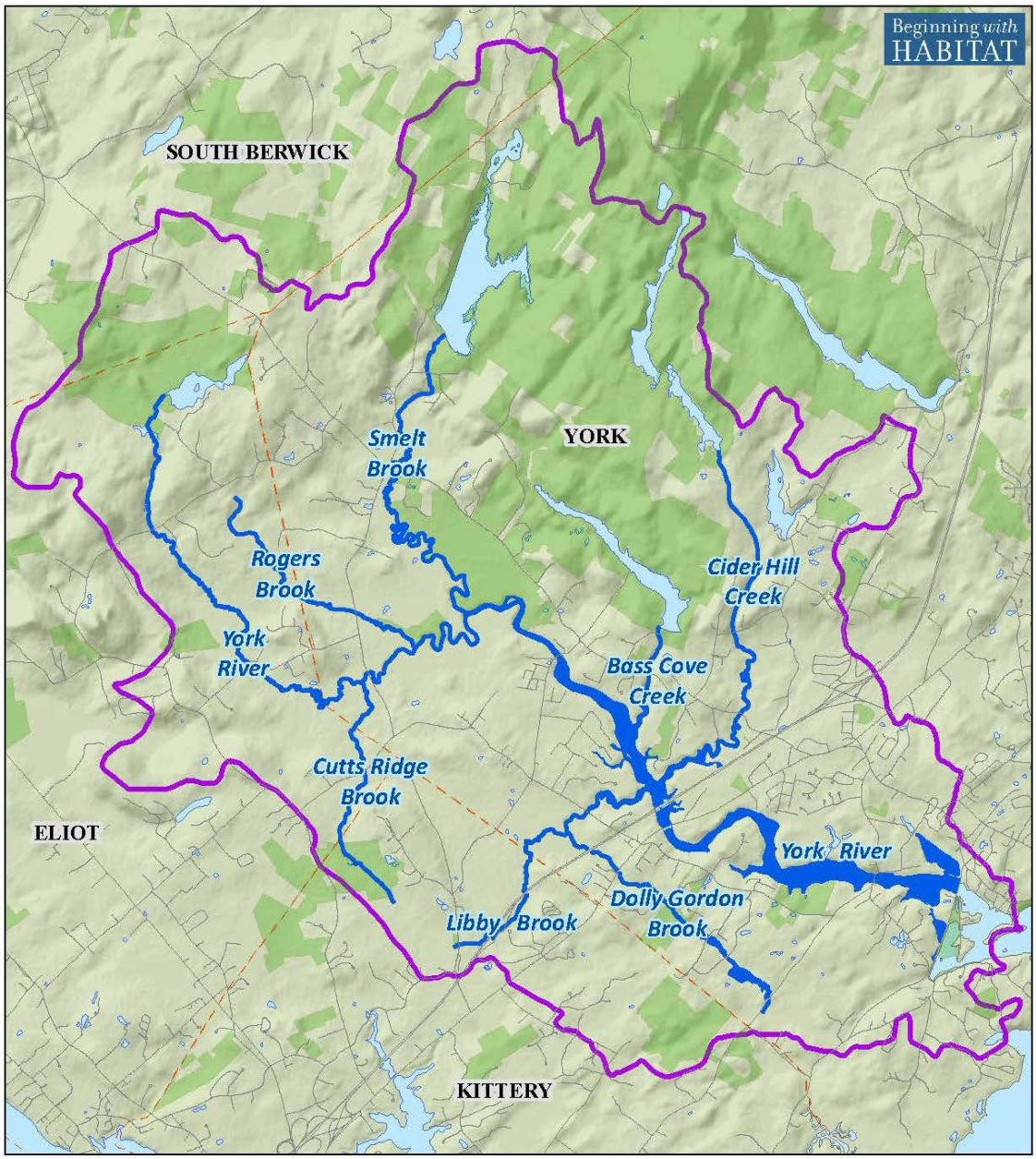
The rivers, streams, ponds and wetlands that make up the York River watershed provide valuable habitat for wildlife, support a wide range of recreational opportunities, and provide an important source of drinking water to local communities. The headwaters region of the York River is comprised of unfragmented forested areas that have helped to preserve natural landscape, wildlife habitat and excellent water quality conditions in the watershed. The York River system is further protected by extensive fringing salt marshes and naturally vegetated buffers found throughout the watershed.

The York River watershed covers 33 square miles in parts of York, Eliot, Kittery, and South Berwick. The watershed includes approximately 109 miles of rivers and streams and 568 acres of ponds. The York River begins at York Pond and travels through Eliot and York before emptying into York Harbor and the Gulf of Maine. The 12-mile York River is a largely tidal system with tidal influence extending just upstream of the York and Eliot town boundary. The following freshwater streams and their tributaries feed into the main stem of the York River:

- Smelt Brook – York
  - MacIntire Junkins Brook (tributary to Smelt Brook)
- Rogers Brook – Eliot and York
- Cutts Ridge Brook – Eliot, Kittery and York
- Bass Cove Creek - York
- Cider Hill Creek – York
  - Moulton Brook (tributary to Cider Hill Creek)
- Libby Brook – Kittery and York
- Dolly Gordon Brook – York
  - Johnson Brook – York and Kittery (tributary to Dolly Gordon Brook)
- Southside Brook – Kittery and York

The York River watershed includes York Pond and Scituate Pond as well as a series of man-made ponds and reservoirs that make up the Kittery Water District water supply system that provides drinking water for Kittery, the Portsmouth Naval Shipyard, and portions of York and Eliot. Bell Marsh Reservoir, Middle Pond, Folly Pond and Boulter Pond are all part of the drinking water supply system.

[Adjust the map below to add names for ponds / reservoirs]



Water Quality

The York River watershed is often considered a reference site by Maine state environmental agencies as its rivers, streams and ponds exhibit very good water quality conditions. In addition to protections afforded by its largely preserved natural landscape, the York River and its tributaries are not impaired by major industrial or wastewater discharges that often impact rivers of similar size in Maine and New England.

Preserving the quality of water resources in the York River watershed is crucial to sustaining many of the other watershed values. Recreational swimming, kayaking and other water activities all rely on clean water. Commercial and recreational fishing depend upon healthy ecosystems that support diverse fisheries. And finally, the watershed's rich wildlife, biodiversity, and riverine habitat are all supported by rivers and streams that meet or exceed water quality standards. Maine's water classification program and results from monitoring programs underscore the condition and value of water resources in the York River watershed.

Water Quality Classification

The Maine Department of Environmental Protection (Maine DEP) established a water quality classification system to help guide management of surface waters, protect the quality of those waters for their intended management purposes, and where standards are not achieved, direct the state to enhance water quality to achieve those purposes. The classification standards establish designated uses, related characteristics of those uses, and criteria necessary to protect the uses, and establish specific conditions for certain activities such as the discharge of wastewater.

The York River watershed is categorized by the state of Maine as Class B for freshwater and Class SB for marine and estuarine waters that attain fishable, swimmable standards established by the federal Clean Water Act. Class B / SB waters maintain high water quality criteria even though they may not have the most stringent restrictions on activities. Class SB marine waters support all indigenous estuarine and marine species.

ME DEP Integrated Water Quality Monitoring and Assessment

In February 2018, Maine DEP finalized its 2016 Integrated Water Quality Monitoring and Assessment Report, also known as the 305(b) report and the 303(d) list of impaired waters. The report utilizes water quality assessments and other available information to communicate information about the health, status, and trends of waters in Maine. Water bodies are assigned categories based upon how well water quality is meeting designated uses and water quality standards. Water quality assessments in the report were primarily based upon data collected in 2013 and 2014.

Water Quality – Assessment Categories	
Category 1	Attaining all designated uses and water quality standards, and no use is threatened.
Category 2	Attains some of the designated uses; no use is threatened; and insufficient data or no data and information is available to determine if the remaining uses are attained or threatened (with presumption that all uses are attained).
Category 3	Insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).
Category 4	Impaired or threatened for one or more designated uses but does not require development of a TMDL (Total Maximum Daily Load) report.
Category 5	Waters impaired or threatened for one or more designated uses by a pollutant(s), and a TMDL report is required.

Several years ago, Maine DEP removed the York River from the state's Impaired Coastal Watershed / Priority Coastal Watershed 305(b) / 303(d) list as nonpoint source pollution does not appear to be a cause of water quality issues in the watershed. In the 2016 assessment, Smelt Brook is listed as a Category 2 water body to reflect updated mapping and a revised length. In March 2017, Maine DEP issued an updated Nonpoint Source Priority Watersheds Lists identifying 71 impaired streams and 77 threatened streams in the state. In the York River watershed, there were no priority impaired streams on the list. However, Moulton Brook and an unnamed tributary were included on the priority threatened streams list due to potential development threats associated with highway access.

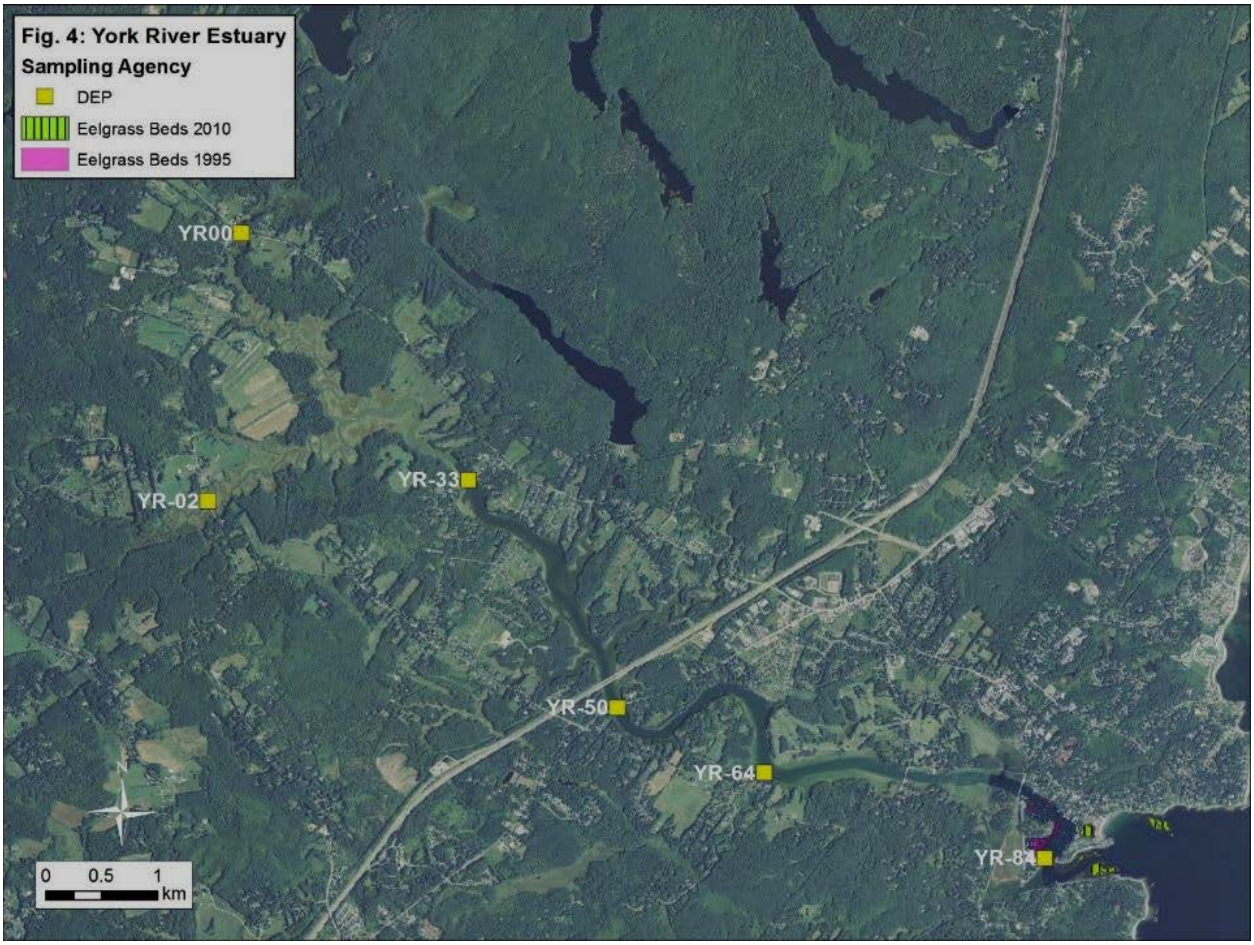
Water Quality Characterization of the York River Watershed

During 2017, Maine DEP's Marine Unit conducted field monitoring to characterize water quality conditions in the York River estuary. Maine DEP's Marine Unit conducts regular monitoring throughout the state's coast to determine whether water quality standards are being met. Historically, monitoring in the York River watershed has been limited as conditions are known to be much better than other watersheds that may not be meeting water quality standards. Maine DEP included the York River watershed in the study to serve as a reference water with high water quality conditions in contrast to other more impaired watersheds in Southern Maine.

The York River Study Committee worked in collaboration with Maine DEP staff to help inform monitoring plans and identify specific sampling locations so that the study could serve the dual purpose of functioning as a reference site, while also providing additional baseline information about water quality conditions in the York River watershed.

Maine DEP staff conducted water quality monitoring at six sites in the York River watershed every three weeks from June through September 2017. Sites were selected to characterize conditions at the head of tides, middle and lower estuary and to match sites previously monitored in 1996 and 2009. Samples were evaluated for parameters including dissolved oxygen, pH, chlorophyll, total suspended solids and nitrogen. Continuous sondes were placed at two locations along the York River. The monitoring program also gathered information about

light characteristics as eel grass beds have been mapped in the York River estuary during 1995 and 2010.



2017 York River Sampling Stations

Preliminary results from 2017 sampling indicate that overall water quality conditions are appropriate for continuing to consider the York River as a refence site that is not impaired. Dissolved oxygen and pH data were consistent with a healthy and productive estuarine environment. Sites at head of tides showed intermittent turbidity indicative of marsh influence. Water clarity levels met thresholds suitable to support and protect eel grass beds at two-meter restoration depth. Maine DEP staff also identified the following issues that may warrant further assessment: 1) investigate higher than expected nutrient levels at Smelt Brook as this site provides valuable spawning habitat for rainbow smelt, and 2) evaluate sedimentation to determine if total suspended solids affecting clarity at head of tides are due to natural sedimentation associated with this marsh dominated system (Maine Department of Marine Resources may be conducting related research in 2019 as part of a marsh elevation study). Information from Maine DEP's 2017 sampling program will be used to inform the 2020 Assessment Report for Maine rivers.

Water Quality Monitoring for Maine's Shellfish Program

The Maine Department of Marine Resources monitors bacteria levels at seven stations in the York River six times per year to help inform decisions about classifying shellfish growing areas. Samples are tested for fecal coliform on a regular basis and each site is assigned a P90 Score which factors in sampling results over five years. To be eligible for shellfish harvesting without needing depuration, sampling sites must have a P90 score below 31.

Based upon sampling results and other information, the state designates shellfish harvesting areas with one of the following classifications.

Maine Shellfish Harvesting Classifications		
Classification	**Status**	**Description**
Approved	Open	Meets water quality criteria / harvesting allowed for direct marketing
Conditionally Approved	Open / Closed	Meets approved water quality criteria but only during seasonal or other manageable times
Restricted	Open	Does not meet water quality criteria due to limited pollution / shellfish must be cleansed via depuration before marketing
Conditionally Restricted	Open / Closed	Meets restricted criteria, but only during predictable and manageable periods
Prohibited	Closed	Does not meet water quality criteria, pollutants may be present in concentrations that pose a health risk to shellfish consumers

[Add photo of shellfishing / York River watershed]

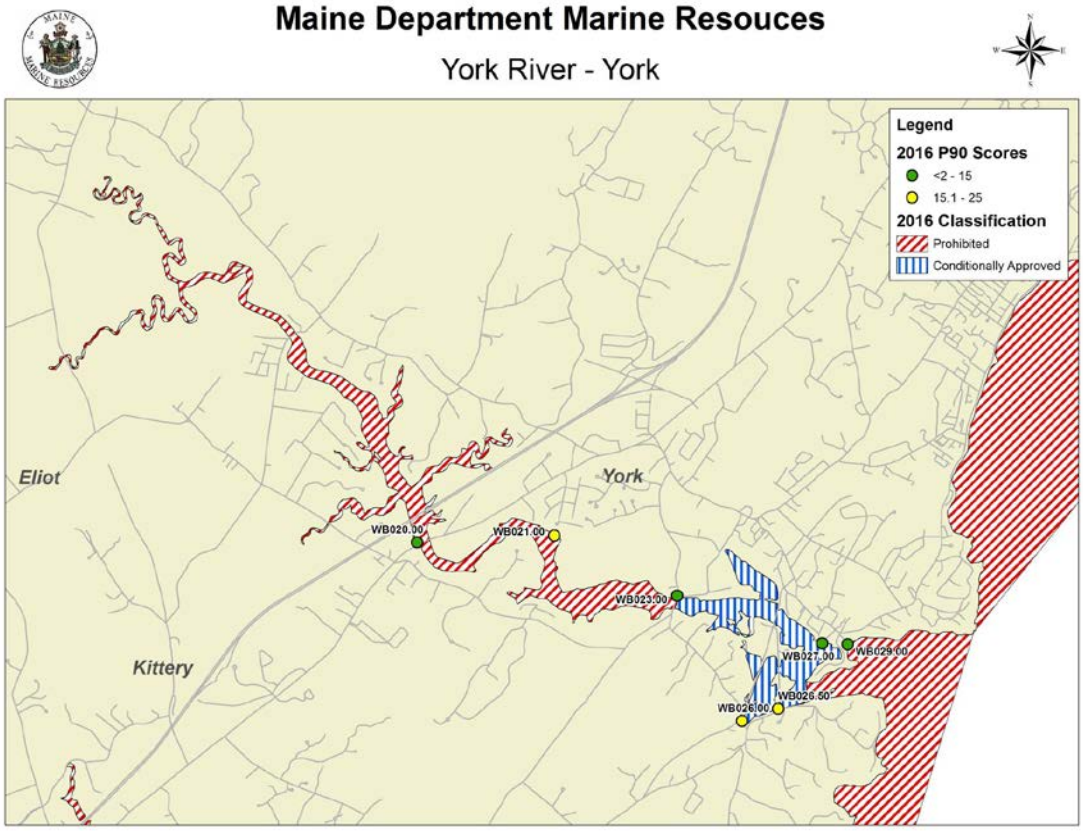
Results from the Department of Marine Resources monitoring program indicate that the York River has very good water quality conditions with little impairment from bacteria as all of sampling stations located in the York River had P90 scores lower than 31.

2016 DMR Bacteria Monitoring Results – York River Sampling Stations			
Station	**Classification**	**Geometric Mean**	**P90 Score**
WB020.00	P	3.8	13.1
WB021.00	P	3.8	17
WB023.00	CA	2.3	5
WB026.00	CA	4.8	23.1
WB026.50	CA	3.1	20.2
WB027.00	CA	2.2	4.5
WB029.00	P	2.7	7.7

The state's classification for shellfish growing areas goes beyond results from the bacteria monitoring by conducting shoreline surveys and evaluating potential sources of pollution that could have a negative impact on shellfish beds even if problems are not showing up in monitoring results. The state has classified the segment of the York River from Sewall's Bridge

downstream to Stage Neck as conditionally approved for shellfish harvesting, with closures from May through November due to potential sources of pollution associated with marina and boating activity. Other areas of the York River are classified as prohibited or closed to shellfish harvesting.

During the past decade, segments of the York River have been reopened to shellfish harvesting as a direct result of water quality improvements. The area designated as conditionally approved for shellfishing in the York River was most recently expanded in 2014.



Stormwater Management and Nonpoint Source Pollution

Protecting water resources from the negative impacts of stormwater pollution is a high priority for the York River watershed. With population and associated development on the rise, forests and other natural habitats are being replaced with residential development and associated infrastructure. New development increases potential sources of pollutants from roadways and other human uses while also increasing impervious surfaces. This situation is exacerbated by the potential loss of forests, vegetated buffers and other natural habitats with pervious surfaces that protect waterways by filtering pollutants and reducing stormwater volume.

Maine DEP's stormwater laws and regulations were developed to protect and restore surface water and groundwater impacted by stormwater flows. Stormwater runoff from developed

areas carries pollutants and affects the rate and volume of flows in natural waterbodies in ways that can cause damage. Maine regulates stormwater pollution through the following three laws:

- Site of Development. Requires review of environmental standards, including potential stormwater impacts from proposed developments for larger commercial and residential projects that create more than three acres of new impervious area or occupy more than 20 acres of land.
- Stormwater Management. Requires stormwater standards for quality and quantity of runoff for projects that propose more than one acre of disturbed area. Disturbed area generally includes areas that are stripped, graded, excavated, or filled during construction.
- Waste Discharge. Maine DEP administers several general permits, including the Multi-Sector General Permit, the Municipal Separate Storm Sewer Systems (MS4) General Permit, and the Maine Construction General Permit.

All four watershed communities are working together to ensure compliance with Maine's stormwater standards to address the quantity and quality of stormwater runoff associated with developments of an acre or more. These standards require treatment for the first inch of runoff from 95% of a site's impervious area to reduce polluted runoff. The total volume of stormwater runoff must also be controlled to retain predevelopment levels and reduce erosion.

Communities in the York River watershed are also responsible for implementing a Stormwater Management Program to comply with the MS4 General Permit required under the Clean Water Act. The program requires the following six minimum control measures for Urbanized Areas in the watershed, including some portions of York and Kittery in the York River watershed.

1. Conduct public education on stormwater issues
2. Ensure public participation in implementation of the stormwater program
3. Conduct illicit discharge detection and elimination programs
    - map the storm drain system
    - inspect and correct illegal discharges
4. Require construction site runoff controls for sites that disturb one or more acres of land
5. Require post construction site runoff control for sites that disturb one or more acres of land
6. Implement pollution prevention good housekeeping for municipal operations
    - street sweeping
    - catch basin cleaning
    - maintenance of the storm drain system
    - good housekeeping at municipally owned properties

Although nonpoint source pollution is not currently causing significant impairment to water quality in the York River watershed, proactive steps are being taken to ensure that the York River and its tributaries continue to exhibit healthy water quality conditions despite projected increases in development. Ongoing efforts to identify and address nonpoint source pollution have been informed by previous plans and studies including The *York River Watershed Nonpoint Pollution Survey and Watershed Management Plan* prepared by the Wells National Estuarine Research Reserve for Maine DEP in 2005. This report includes information gathered during nonpoint source pollution surveys of the York River conducted from 2001 to 2003, along with other identified water quality issues.

Local communities are working with residents, businesses and non-governmental organizations to ensure long-term protection of water quality in the York River watershed. Many of these efforts go beyond working to comply with state and federal water quality regulations. For example, the Town of York has developed a Shoreland Overlay District that calls for a 250-foot resource protection zone to limit development in sensitive resource areas. The towns of Kittery, South Berwick and Eliot have also implemented local protections and programs to protect water quality in the reservoirs, ponds and streams in the watershed.

In 2015, York adopted a Stormwater Chapter for inclusion in the York Comprehensive Plan. The document provides background about stormwater issues, and an inventory of York's existing infrastructure, policies and management practices, ordinances, development regulations and approach to financing stormwater related expenses.

Watershed communities are implementing creative outreach and education programs such as 'Lawns to Lobsters' that educate residents about the importance of reducing the use of harmful pesticides and fertilizers in the York River watershed. Other efforts include promoting Low Impact Development techniques to minimize the negative impact of development on natural resources and water quality.

The York River Study Committee commissioned a build-out study that included an assessment of existing local zoning aimed at protecting shoreland and other natural resources in the watershed. The study also identifies opportunities and recommendations that would enhance existing protective measures.

Along with local zoning strategies, land conservation efforts have been targeted toward protecting valuable undeveloped lands in the upper reaches of the watershed and extensive natural buffers to the York River and its tributaries. Thanks to collaborative conservation efforts among watershed communities, public agencies and conservation groups such as the York Land Trust and the Mt. Agamenticus to the Sea Conservation Initiative, approximately 26% of all land in the York River watershed is currently protected from development. These proactive land conservation strategies have been critical to protecting water resources that will provide

wildlife habitat, ensure clean drinking water supply and support recreational uses for future generations.

Drinking Water Supply

The York River watershed provides a valuable source of public drinking water for local communities. The Kittery Water District provides water supply service to the Town of Kittery, the Portsmouth Naval Shipyard, and portions of York and Eliot. During 2016, the Kittery Water District provided 910 million gallons of water for residential and commercial customers in the region.

Reservoirs and Dams

The Kittery Water District's water supply area encompasses 2,500 acres of reservoirs surrounded by forested land in the upper portions of the York River watershed. With four major surface water sources, the water supply system provides a maximum total safe yield of 5.6 million gallons per day. The water supply is serviced by four reservoirs and associated dams.

Middle Pond and Dam

About the Impoundment

- 321 MG total available storage capacity
- 1.33 square mile drainage area (combined with Folly Pond)
- 77-acre surface area (combined with Folly Pond)
- Impounds Cider Hill Creek downstream from Folly Pond

About the Dam

- Stone masonry, rock-filled embankments
- 31-foot maximum dam height
- Built in 1901, renovated in 1989

Folly Pond and Dam

About the Impoundment

- 273 MG total available storage capacity
- 1.33 square mile drainage area (combined with Middle Pond)
- 77-acre surface area (combined with Middle Pond)
- Impounds Cider Hill Creek upstream of Middle Pond

About the Dam

- Concrete spillway, gravity dam with earth embankments
- 21-foot maximum dam height
- Built in 1942

Boulter Pond and Dam

About the Impoundment

- 400 MG total available storage capacity
- 2.4 square mile drainage area
- 102-acre surface area
- Impounds headwaters of Bass Cove Creek

About the Dam

- Earth with concrete core wall
- 1,045 feet long
- 31-foot maximum dam height
- Built in 1951, upgrades in 2001, 2006, 2007

Bell Marsh Reservoir and Dam

About the Impoundment

- 1,200 MG total available storage capacity
- 2.8 square mile drainage area
- 280-acre surface area
- Impounds headwaters of Smelt Brook

About the Dam

- Engineered earth embankment dam
- 1,480 feet long
- 62-foot maximum dam height
- Built in 1987

Minimum water flows and dissolved oxygen requirements must be maintained to support habitat in downstream Smelt Brook

Water Treatment and Distribution

The Francis L. Hatch Water Treatment Facility constructed in 1960 is located on Boulter Pond in York. The facility provides treatment for rapid mix, flocculation, sedimentation, filtration, disinfection and corrosion control. Treated drinking water is then pumped to the distribution system by the Boulter Pond Pumping Station. Kittery Water District owns and operates two distribution storage systems; the Rogers Road standpipe with a storage capacity of 3 million gallons and the Eliot Tank with a total storage volume of 1.9 million gallons. The Kittery Water District operates approximately 96 miles of water mains for distribution. Plans to renovate the water filtration plant are underway. During construction, Kittery Water District will purchase treated water from the York Water District and the Kennebunk, Kennebunkport and Wells Water District.

Quality of Drinking Water Supply

During 2016, drinking water from the Kittery Water District met or exceeded all federal and state health safety requirements. While population growth in the region may increase residential demand for water supply, development is not expected to have a major impact on water quality in the reservoirs as about 90% of the land in the water supply area is protected, owned and managed by the Kittery Water District. The undeveloped land surrounding Kittery Water District reservoirs provides an important barrier to sources of nonpoint source pollution. This protected source of surface water supply has significant value in the watershed as development of municipal scale water supplies via groundwater is not feasible due to the absence of major stratified drift deposits.

Activity in the water supply area is also closely managed and regulated to protect water quality. Water related activities are strictly prohibited. No swimming, fishing, boating, ice skating, or ice fishing are allowed on any of the water supply reservoirs. Foot travel is only allowed within 250' of the normal high-water mark of any of the reservoirs, unless on an approved trail. Other prohibited activities include tree cutting, burning of fires of any kind at any time, camping and any other activity that could degrade the land or water supply. There is also a no littering 'carry in, carry out' policy.

Water quality conditions in Bell Marsh Reservoir are sometimes poor during the summer months due to wood debris and tree stumps that were not removed during construction in the 1980s. As a result, Bell Marsh Reservoir is not routinely used during the summer months as its use during this period could prevent the district from complying with regulations and managing aesthetic water quality issues.

Maine Sustainable Water Use Program

Maine DEP has established minimum river and stream flows and lake and pond water levels to protect natural aquatic life and other designated uses in surface waters threatened by significant water withdrawals pursuant to Chapter 587, In-stream Flows and Lake and Pond Water Levels. The rule applies to direct or indirect withdrawal, removal, diversion or other activity or use that alters the natural flow or water levels of a non-tidal fresh surface water of the State. These waters include rivers, streams, brooks, lakes and ponds that are classified state waters. To ensure protection of habitat values, Kittery Water District is required to monitor and maintain water flows from Bell Marsh Reservoir into Smelt Brook. Water flows into the brook are adjusted to meet dissolved oxygen standards.

Existing and Projected Use

Future growth in the service area is anticipated to be primarily residential growth directly related to increases in population. While industrial development is more difficult to predict, there are no major industrial developments currently under consideration in the service area. Population trends and projections were reviewed in the Kittery Water District's Master Plan Update in 2010. The following table summarizes populations trends and projections for communities served by the water district using information available in 2010. Data was obtained from the Maine State Planning Office.

Year	Kittery	% Change	York	% Change	Eliot	% Change
1980	8,482	--	8,465	--	4,498	--
1990	8,912	5.1%	9,821	16.1%	5,329	18.5%
2000	9,602	7.7%	12,951	31.8%	5,997	12.5%
2005	10,453	8.8%	13,490	4.2%	6,413	6.9%
2010	10,757	2.9%	14,236	5.5%	6,945	8.3%
2020	11,754	8.5%	15,577	9.4%	8,066	16.1%
2030	12,387	5.5%	16,443	5.7%	9,083	12.6%

Water supply for the Portsmouth Naval Shipyard makes up a significant portion of the total water demand. From 2002 through 2008, the Portsmouth Naval Shipyard demands accounted for approximately 1.36 million gallons per day out of the entire system average use of 2.54 million gallons per day. Average water consumption in the system is approximately 59 gallons per capita per day for residential users.

Kittery Water District estimated residential demand during the planning period could increase from 670,000 gallons per day in 2008 to about 800,000 gallons per day by 2020. Projections for commercial / industrial water use called for about 260,0000 gallons per day in 2020 as demand in this category had been declining. Water demand for the Portsmouth Naval Shipyard was expected to be flat but use will be monitored closely to inform water demand and planning projections. More recent information about actual water consumption and number of users since 2010 indicates that capacity of the water supply source, filtration and distribution system is sufficient as service needs were significantly lower than projected.

Flow and Hydrology

Historic Dams and Impoundments

Historically, York River flow was impeded by a series of dams, impoundments and mill ponds to power grist, saw and dairy operations. While some remnants of historic tide and water-powered mills are still visible, these structures no longer restrict or impede flow in the York River watershed. The York River has benefited from being in a free-flowing state for a long period of time. The existence of historically significant migratory fisheries such as rainbow

smelt, alewives, herring and American eel are a good indicator that the York River is functioning as a healthy ecosystem with adequate water flow needed to support these important species.

Existing Dams

The Kittery Water Districts owns and operates Folly Pond, Middle Pond, Bell Marsh Reservoir and Boulter Pond dams as part of the water supply / reservoir system that provides drinking water to portions of Kittery, Eliot and York. With their location in the upper portions of the York River watershed, these dams do not impede free-flowing characteristics of the York River. In addition to these publicly owned dams, there are three small privately owned dams in the watershed. The Scituate Pond dam is located on Cider Hill Creek and the Upper Bartlett Dam and York Pond Dam are in the upper reaches of the watershed in Eliot. The only dams linked to the mainstem of the York River are the Upper Bartlett Mill Dam and York Pond Dam located at the headwaters for the York River.

York River Bridge Crossings and Shoreline Hardening

With its largely undeveloped river banks, vegetated buffers and system of fringing marshes, the York River system maintains its natural characteristics and ecological functions. Bank armoring or rip rap areas along the York River are located in the southern portions of the watershed below or near the Route 103 Bridge. In this lower estuarine region, Fishermen's Walk and the Wiggly Bridge causeway have altered shorelines with rocky rip rap and other shoreline hardening to create walkways.

[Add photo of Wiggly Bridge or Fishermen's Walk]

The York River Study Committee is recommending a Wild and Scenic River designation for the York River and its major tributaries upstream of the Route 103 Bridge. Hardened shorelines in this part of the York River are limited to small areas associated with some of the bridges crossing the river. Bridges crossing the main stem of the York River allow for free-flowing water and recreational access, these include:

- Route 103 Bridge
- Sewall's Bridge
- Route 1 Bridge
- Interstate 95 Bridge
- Scotland Road Bridge

[Pending - conduct visual survey of rip rap / shoreline structures associated with above bridges crossing York River (document type / size / photograph – summarize results here). Add more detail about each bridge.]

Stream Crossings

Overall, 95 stream crossing related structures have been documented within the York River watershed. This figure includes dams and bridges previously described as well as other smaller road crossings impacting some of the tributaries to the York River. Many of these crossings have been surveyed by the Maine Stream Connectivity Work Group to identify those that could be improved to enhance wildlife and fish passage. The Maine Stream Connectivity Work Group has conducted an analysis of the stream crossings in the York River watershed to rank and prioritize locations with high habitat and infrastructure value. These rankings will help guide maintenance and restoration efforts in the watershed.

While these crossings generally do not impede the ability for water to flow in the York River watershed, opportunities to improve fish passage at these crossings may also increase the ability of tidal portions of the river and its tributaries to flow into upstream tidally influenced wetlands. These improvements will enhance the watershed's overall ability to become more resilient to sea level rise in the future.

[Add images and detail for a couple sample crossings]

D. Watershed Resilience

The York River watershed has been identified as one of the most resilient coastal ecosystems in the Northeast Atlantic region. As coastal communities throughout the US struggle to adapt and respond to development pressures combined with anticipated rises in sea level, it is more important than ever to identify and protect coastal wetlands that are the most likely to be resilient in the face of rising seas and extreme climate impacts. The York River watershed plays a critical role in the productivity and diversity of natural ecosystems as well as the regional economy.

Because of its topographic features, extensive undeveloped natural areas, high quality habitat, and water quality conditions, the York River is uniquely positioned to adapt to extreme sea level rise while sustaining productive coastal habitats and ecosystem services. Preserving the York River watershed's ability to be resilient into the future will require continued conservation and protection of valuable uplands, unique and diverse habitats, marsh migration areas, and water quality conditions.

Regional Significance

A 2017 report from The Nature Conservancy, Resilient Coastal Sites for Conservation in the Northeast and Mid-Atlantic US, found that the York River's salt marshes and tidal habitats were in the top 1% of over 1,500 northeastern coastal sites surveyed for resiliency – that is, most likely to support biological diversity and ecological functions under extreme scenarios of sea level rise.

In 2017 The Nature Conservancy conducted a study, *Resilient Coastal Sites for Conservation in the Northeast and Mid-Atlantic US*, to assess coastal regions throughout nine Northeast states. US Fish and Wildlife Service provided funding for the study as part of coastal resiliency grants made available following Hurricane Sandy. The study estimated the relative resilience or vulnerability of over 10,000 coastal sites and identified the ones most likely to support biological diversity and ecological functions under multiple-scenarios of sea level rise.

Ecological resilience was estimated and mapped by analyzing region-wide data on factors that influence a site's vulnerability or resilience to sea level rise and other climate driven changes. Tidal habitats were evaluated to estimate their ability to migrate landward with sea level rise based on the size, shape, condition and context of their available migration space. Relative resilience of each site was determined by comparing it to other sites within the same coastal shoreline region.

The York River watershed was evaluated as part of the Northeast region that encompassed over 1,500 river systems in Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, New Jersey and Delaware. Resiliency scoring was based on a 6-foot sea level rise scenario to identify sites most able to adapt to extreme coastal events.

Key findings for the York River watershed:

- The York River was identified as one of the top 10 tidal river systems with the highest estimated resilience score for river dominated systems in this study area.
- The York River is one of very few coastal ecosystems with potential to adapt to extreme impacts associated with six feet of sea level rise.
- The York River's tidal river system has approximately 245 acres of potential space for marsh migration, the area of adjacent low-lying land that is potentially suitable for supporting tidal habitats that could migrate in the future as sea levels rise.

- Resiliency of the York River watershed is enhanced by good water quality conditions and the fact that there are no hardened shoreline areas along the upper marsh system.

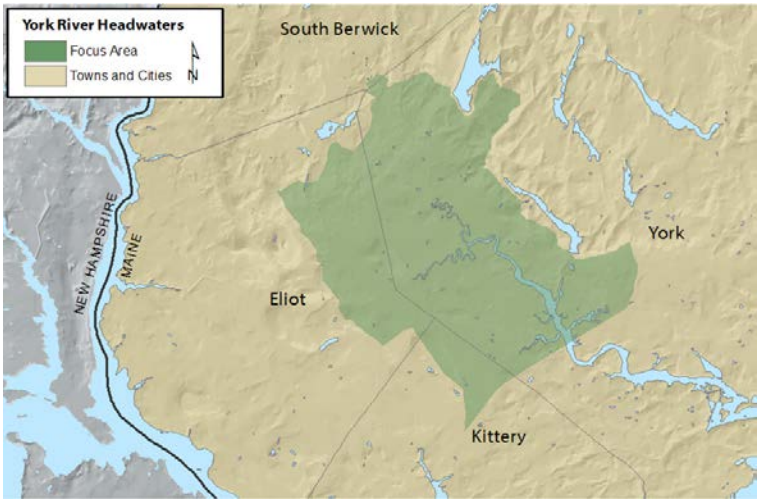
Attributes Used to Estimate Resilience of Coastal Sites	
Tidal Complex and Migration Space	Buffer Area
Physical Attributes • Amount of migration space • Number of tidal height classes • Amount of shared edge • Complexity of current shoreline • Size of current tidal complex • Dynamic coastal response *Condition* • Percent hardened shoreline • Amount of nitrogen (water quality) • Amount of sediment inputs • Amount of freshwater inputs	*Physical Attributes* • Amount of buffer area • Diversity of relevant landforms • Diversity of soil types *Condition* • Connectedness of wetlands • Percent natural cover

Integrating Conservation Planning with Future Resilience

In Maine and throughout the Northeast region, several planning efforts are underway to improve understanding about the relationship between conservation planning and climate impacts such as sea level rise. A 2015 report, *Conservation Planning for Climate Change and Resilience at Multiple Scales in Maine*, began developing methods for integrating climate resiliency science into conservation planning throughout the state and at the smaller landscape scale. The study was a collaborative effort of the Maine Department of Agriculture, Conservation and Forestry, Maine Department of Inland Fisheries and Wildlife, Mt. Agamenticus to the Sea Conservation Initiative (MtA2C), and the Nature Conservancy with results published in a Final Report to the Open Space Institute.

Research was targeted to valuable landscape-scale areas identified by the Maine Natural Areas Program as Focus Areas of Statewide Ecological Significance. As described in other parts of this Watershed Stewardship Plan, the upper York River watershed is part of the MtA2C region and has been designated as a Focus Area due to its extremely valuable habitat, rich biodiversity and largely intact natural landscape. This important region of the York River watershed was also looked at as a pilot study to increase understanding about factors that contribute to climate resilience.

The report to the Open Space Institute noted that this region of the York River watershed and other sites that are part of Maine's network of 'Focus Areas' were generally more resilient than comparable landscapes across the Northeast region from Maine to Virginia. Resilience was supported by landscape connectivity, the ability of an unfragmented landscape to allow movement of wildlife from one place to another.



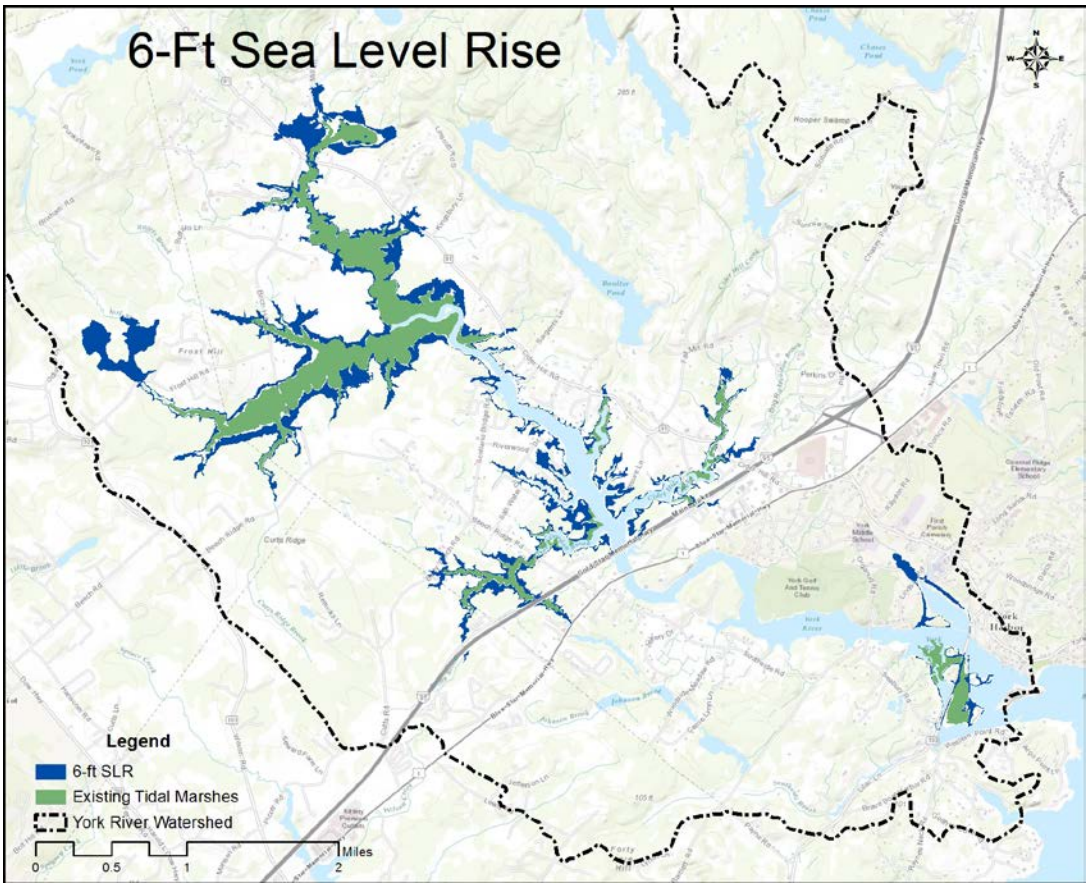
Key findings specific to York River watershed resiliency:

- Results of the study highlighted the importance of the MtA2C area for its biological value, habitat connectivity, and long-term resilience.
- The benefits to resiliency of large unfragmented habitat blocks were affirmed.
- In the York River watershed, several areas with concentrations of rare and threatened species, important areas for marsh migration, and valuable undeveloped coastal blocks were identified.
- The MtA2C area (encompassing much of the York River watershed) remains highly important for conservation as it is the most biodiverse region in the state, and it contains important habitat features and large, connected blocks of intact forest.
- In contrast to the largely intact upper York River watershed, it is a challenge across the entire eastern seaboard to find other similar large blocks of undeveloped habitat in a coastal setting.

The importance of protecting salt, brackish and freshwater tidal marsh habitats from potential impacts of accelerated sea level rise was further assessed by a 2014 NOAA Project of Special Merit, *Potential for Tidal Marsh Migration in Maine*, conducted by the Maine Natural Areas Program and the Maine Geological Survey. This study was aimed at enabling communities, conservation entities, and public agencies to plan for the preservation of those areas of Maine's coastal landscape where tidal marshes are likely to migrate as sea level rises. This effort included extensive tidal marsh mapping and identification of marshes with relatively greater ecological significance. This data was then used to inform coastwide sea level rise simulations for 1-foot, 2-foot, 3-foot and 6-foot sea level rise above the existing highest annual tide.

One key aspect of the study considered the intersection of marsh migration areas under sea level rise scenarios with conserved lands. Modeling indicates that the greater the depth of sea level rise, the greater the proportion of lands impacted that are not conservation lands. Under a 1-foot simulation of sea level rise, only 2,030 acres of land impacted by marsh migration in

Maine would not be already conserved, while 6-feet of sea level rise would impact 10,198 acres of land that is not conserved. Resilience in the York River watershed is supported by large blocks of undeveloped lands that coincide with potential marsh migration areas. Ongoing efforts to expand conservation of these important areas is a priority for sustaining watershed resiliency.



York River Watershed – Potential Change in Highest Annual Tide with 6 Feet of Sea Level Rise

E. Plans, Studies, and References

Some of the studies, data, plans, programs and other information sources related to understanding and implementing actions to protect the natural resources of the York River watershed are listed below.

Planning documents

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Maine Department of Inland Fisheries and Wildlife. (2015) *Maine's Wildlife Action Plan*. Augusta, Maine.

Maine Department of Inland Fisheries and Wildlife Beginning with Habitat: resource maps, data, and planning tools, www.beginningwithhabitat.org/

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Stewardship Goal, Objectives, and Key Actions – Natural Resources

Goal: Protect valuable natural communities, habitats, biodiversity, and water resources of the York River watershed.

WATERSHED LANDSCAPE: LAND USE, CONSERVATION AND STEWARDSHIP

Objective 1: Preserve large undeveloped habitat blocks and wildlife corridors.

Key Actions:

- Conduct surveys and research to help identify and define highly valued natural resources and important large habitat blocks for priority conservation efforts.
- Prioritize the protection of large undeveloped habitat blocks, wildlife corridors, and salt marsh migration areas in local planning documents and regulatory and non-regulatory approaches to protect natural resources.
- Utilize existing information and conservation planning resources, such as Beginning with Habitat focus areas, habitat areas identified as supporting Maine Species of Greatest Conservation Need, or priorities from local conservation plans, to guide conservation and protection efforts.

Objective 2: Support land conservation and stewardship efforts by communities, land trusts, and other conservation organizations to protect and maintain important resource values.

Key Actions:

- Develop and implement stewardship plans for conservation lands that address resource protection measures, public access, sustainable recreational uses, invasive species management, and monitoring.
- Help facilitate opportunities for land conservation projects located in Beginning with Habitat Focus Areas, and in areas likely to provide key functions and support biodiversity in the future.
- Promote the Mt. Agamenticus to the Sea Conservation Initiative to implement public-private approaches to preserve large undeveloped habitat blocks, wildlife corridors and regional biodiversity and build public interest and support for habitat conservation.
- Assist towns, land trusts, and conservation organizations in implementing priority actions and achieving the goals and targets included in open space plans and local and regional land conservation plans.

Objective 3: Encourage continued agriculture and forestry uses of suitable watershed lands, using practices that help maintain and preserve natural resources, scenic resources and rural character.

Key Actions:

- Maintain town policies and practices that promote enrollment in current use tax incentive programs such as Tree Growth, Farmland and Open Space.

- Promote workshops, training, and resources that encourage landowners to utilize sustainable forestry and agricultural practices that enhance wildlife habitat and minimize negative impacts on natural resources.
    - Technical resources for sustainable forestry - Maine Department of Inland Fisheries and Wildlife's regional biologists, species specialists, and Beginning with Habitat program, Maine Natural Areas Program, Maine Department of Agriculture, Conservation and Forestry's State Foresters, Maine Cooperative Extension, US Forest Service
    - Technical resources for sustainable agricultural practices - Department of Agriculture, Conservation and Forestry, Natural Resources Conservation Service programs

Objective 4: Promote local planning and zoning strategies to protect shoreland buffer zones, wildlife corridors, large undeveloped habitat areas, and predicted marsh migration and flooding areas.

Key Actions:

- Assist towns with evaluating and implementing recommendations from the Southern Maine Planning and Development Commission's report, *York River Watershed Study: Regulatory and Non-Regulatory Recommendations Report* related to conservation subdivisions, land conservation, general zoning, shoreland zoning, and stormwater management.
- Promote conservation subdivision design or cluster development through local ordinances to reduce overall development footprint, reduce impervious surfaces, and protect natural resource values.
- Review and enhance Shoreland Zoning strategies to ensure protection of water quality, wildlife habitat, vegetated buffers, and future marsh migration areas. Promote provisions that go beyond Maine's Mandatory Shoreland Zoning Act.
- Review and update local zoning to ensure lot sizes for development are large enough to minimize the potential negative impacts of development on water quality and other natural resources in rural areas of the watershed.
- Consider creating a 'watershed' based overlay among the four York River watershed communities to promote regional conservation strategies while still allowing each town to determine specific land-use regulations within their community.
- Consider creating a Sea Level Rise / Marsh Migration Overlay and associated standards to accommodate future conditions, direct development away from areas at risk from future inundation, reduce density in those areas, promote open space, and enhance resource protection.

WILDLIFE, HABITATS, AND BIODIVERSITY

Objective 5: Maintain, improve and restore habitat to support unique, rare, endangered and threatened wildlife and plants.

Key Actions:

- Target habitat conservation and protection efforts toward:
    - Endangered and Threatened Species
    - Maine Species of Greatest Conservation Need
    - Federal Trust Species
    - Rare plants and exemplary natural communities identified by the Maine Natural Areas Program
- Utilize the Maine Department of Inland Fisheries and Wildlife's Beginning with Habitat resources to ensure that the most up to date information about valuable wildlife and plants in the watershed is incorporated into open space, conservation and comprehensive planning efforts.
- Conduct species and habitat surveys and integrate information into local regulatory and non-regulatory resource protection approaches.
- Identify suitable habitat for viable populations of key species and work with landowners to maintain habitats and connectivity.
- Evaluate options for requiring specific plantings in ordinances governing shoreland permits for vegetation removal. Create educational materials to promote use of native plants and removal of invasive plants to achieve habitat restoration priorities when revegetating areas.
- Maintain and improve protections for tidal and inland wading bird and waterfowl habitat through shoreland zoning.
- Encourage communities to seek botanical review by biologists at the Maine Natural Areas Program when a development proposal potentially conflicts with a mapped resource.
- Conduct a survey of the lower York River estuary to determine the presence and extent of eelgrass beds. Identify and pursue conservation strategies as needed.

Objective 6: Maintain habitat and water quality to support fish Species of Greatest Conservation Need as well as the overall diversity of native fish species in the York River and its tributaries.

Key Actions:

- For Species of Greatest Conservation Need, further assess populations, spawning habitat locations, habitat quality, and stream flow conditions, and identify opportunities to improve habitat conditions and access to spawning habitats in watershed streams.
- Protect riparian habitat surrounding alewife and rainbow smelt spawning habitat from development impacts through land conservation, preservation of natural buffer areas, and low impact development measures.
- Integrate known spawning habitat for Species of Greatest Conservation Need as a priority resource in local planning and regulatory approaches to protect natural resources.

- Implement additional recommendations outlined in the Wells National Estuarine Research Reserve's report, *An Assessment of Spring Fish Communities in the York River, Maine.*

Objective 7: Protect, enhance and restore high quality salt marsh habitats to preserve ecological functions.

Key Actions:

- Identify salt marsh habitat and adjacent buffers and uplands as priorities for land conservation.
- Maintain limits to development, building expansion, clearing activities, and habitat alterations in salt marsh buffer areas through town zoning and shoreland ordinances.
- Monitor and control invasive species that are degrading salt marsh habitat.
- Improve stormwater management practices to minimize impacts to salt marshes adjacent to developed areas.
- Identify and pursue opportunities for salt marsh restoration projects to improve habitat and functions.
- In coordination with the watershed towns and Maine Department of Transportation, integrate tidal flow considerations into road-stream crossing designs to maintain and improve salt marsh habitats.
- Evaluate impacts to salt marsh habitats from sea level rise and increasingly intense storm events.
- Determine whether sediment being exported from marsh is indicative of erosive processes or a healthy marsh.

Objective 8: Improve conditions for aquatic organism passage and tidal flow at road-stream crossings and other man-made structures.

Key Actions:

- Identify and prioritize improvements and/or replacement of road-stream crossings that are potential barriers to flow and aquatic organism passage. Use road-stream crossing data from the Maine Stream Habitat Viewer with habitat data, Maine Department of Transportation work plans, and community culvert-related plans and needs.
- In coordination with the watershed towns and Maine Department of Transportation, integrate tidal flow considerations into road-stream crossing designs to promote improved fish passage.
- Update ordinance language to require consideration of more extreme storm events, tidal flows, and aquatic organism passage in planning for local development projects.
- Integrate data on the cumulative impact of sea level rise scenarios, storm surge, and increased freshwater flows from stronger precipitation events into infrastructure designs.
- Integrate design improvements for terrestrial and riparian species passage in conjunction with aquatic organism passage, when feasible.
- Work with Maine Department of Inland Fisheries and Wildlife fisheries biologists to determine potential impacts of enhanced passage opportunities on aquatic habitats and native species, including impacts of invasive species.
- Explore opportunities with Kittery Water District and other large landowners in the watershed to enhance fish passage and spawning habitat.

Objective 9: Protect valuable wildlife and habitat by addressing invasive species in the watershed.

Key Actions:

- Provide information and workshops for landowners on how to identify, control, and remove invasive species.
- Encourage site-based research, removal, and monitoring projects to improve invasive species detection, control, and eradication methods, and encourage landowner coordination with neighboring landowners to undertake larger-scale projects for greater success and effectiveness.
- Promote awareness of invasive species, efforts to manage their spread, and reporting opportunities through the Maine Natural Areas Program.

WATER RESOURCES

Objective 10: Evaluate and track water quality and quantity conditions in the York River Watershed.

Key Actions:

- Develop and implement a water quality monitoring program in the York River Watershed to build upon the 2017 survey conducted by the Maine Department of Environmental Protection. Ensure dry and wet weather sampling to capture impacts during varied weather conditions and coordinate with any monitoring conducted through local stormwater management programs.
- Coordinate with the Maine Department of Environmental Protection Marine Unit to identify potential future opportunities to collaborate with state water quality sampling efforts.
- Evaluate nutrient levels and nutrient-related impacts such as algal blooms in the York River Watershed. Monitor nutrient characteristics of Smelt Brook to investigate the extent and sources of potential pollution issues identified during 2017 water quality sampling.
- Install additional stream gages to expand understanding about in-stream water flow in the York River.
- Promote adequate stream flow by evaluating and addressing the impacts of unregulated water withdrawals from streams in the York River Watershed.
- Ensure that results from monitoring programs are used to help identify problems and inform efforts to resolve them.

Objective 11: Protect and maintain natural vegetated buffers and forested areas around water resources to sustain water quality, instream habitat, and riparian habitat.

Key Actions:

- Continue to identify the protection of headwater streams, forested wetlands, and riparian zones as high priorities for conservation.
- Identify and pursue opportunities to restore or enhance degraded shoreline or buffer areas through replanting, shoreline stabilization, and reducing stormwater runoff.

- Maintain or enhance shoreland zoning requirements that include protective measures for water resources including all streams, wetlands and vernal pools. Include wetlands less than four acres and vernal pools in shoreland zoning.
- Review shoreland zoning approaches for buffers and setbacks from all waterbodies to identify gaps in protection and opportunities for additional protections.
- Maintain and support local capacity of town code enforcement offices to proactively implement shoreland protection regulations.

Objective 12: Promote sustainable practices by property owners to help protect natural resources and water quality.

Key Actions:

- Support implementation of the Lawns to Lobsters program (York) and YardScaping program (Eliot, Kittery, and South Berwick) to increase the number of watershed property owners taking action to reduce the use and impacts of pesticides and fertilizers on water quality and wildlife in the York River Watershed. These programs also encourage low impact techniques such as rain gardens and vegetated buffers to reduce runoff from lawns and yards into the river.
- Conduct outreach and education to provide landscaping companies with resources and information about sustainable landscaping practices.
- Provide training and information on best management practices such as low-impact landscaping, stream/wetland buffer management and plantings, septic system maintenance, and proper disposal options for household hazardous waste and pharmaceuticals.
- Conduct outreach to increase understanding of existing regulations that govern vegetated buffers, setbacks from wetlands, and septic system maintenance.

Objective 13: Maintain and improve water quality to support shellfish harvesting in the York River watershed.

Key Actions:

- Work in collaboration with the York Shellfish Commission to consider opportunities for expanding shellfish harvesting in the York River.
- Continue working with the Maine Department of Marine Resources to conduct inspections and surveys to identify and resolve any additional potential direct discharges into the York River.
- Identify and pursue opportunities to prevent stormwater pollution from faulty septic systems in shellfish growing areas and throughout the watershed.
- Explore potential for designating the York River estuary and nearby coastal areas as a federally designated No Discharge Area for boater waste. This initiative would enhance local protections and increase funding resources for boat pumpout services.
- Conduct boater outreach to increase awareness about the importance of eliminating boater discharges.

Objective 14: Protect and improve water quality in the York River and its tributaries by preventing and reducing sources of stormwater pollution.

Key Actions:

- Support and enhance capacity for York, Eliot, Kittery, and South Berwick to implement the following six minimum control measures required by the US Environmental Protection Agency's MS4 General Permit:
    - Conduct public education on stormwater issues
    - Ensure public participation in the implementation of the stormwater program
    - Conduct illicit discharge detection and elimination programs (storm drain mapping, inspecting and correcting illegal discharges)
    - Require construction site runoff controls for sites that disturb one or more acres of land
    - Require post construction site runoff control for sites that disturb one or more acres of land
    - Implement pollution prevention good housekeeping for municipal operations (street sweeping, catch basin cleaning, maintenance of the storm drain system, good housekeeping at municipal properties)
- Consider implementing measures required by the MS4 program and expanding stormwater management ordinances to all areas of the York River Watershed, not just in designated Urbanized Areas / MS4 areas.
- Utilize results from the York River Watershed Build-Out Study to increase understanding about how future development could impact water quality and other natural resource values in the watershed.
- Implement proactive strategies to minimize polluted stormwater runoff by reducing impervious surfaces such as paved parking and roads associated with new development *(see Key Actions related to sustainable development, cluster development and shoreland zoning under section on Watershed Lands: Land Use, Conservation and Stewardship).*
- Ensure compliance with Maine's stormwater standards to address both the quantity and quality of stormwater runoff associated with developments of an acre or more.
    - Require treatment of the first inch of runoff from 95% of a site's impervious area to reduce polluted runoff
    - Control the total volume of stormwater runoff to retain predevelopment levels in order to reduce erosion and scouring
- Consider adopting a Fertilizer and Pesticide Ordinance or regulations to control and reduce use within the watershed.
- Evaluate road salt application and storage practices to ensure protection of water resources.

Objective 15: Promote Low Impact Development strategies to manage stormwater while protecting water quality and other natural resource values.

Key Actions:

- Promote Low Impact Development stormwater management strategies that meet Maine state standards by incorporating the following protections to the maximum extent possible:
    - Protect as much undisturbed land as possible to maintain pre-development hydrology and allow rainfall infiltration
    - Protect natural drainage systems such as wetlands, watercourses, ponds and vernal pools
    - Minimize land disturbance including clearing and drainage
    - Minimize the decrease in the time of concentration from pre-construction to post-construction
    - Minimize soil compaction
    - Utilize low-maintenance landscaping that encourages the retention and planting of native vegetation, and minimizes the use of lawns, fertilizers and pesticides
    - Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces
    - Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas
    - Provide other source controls to prevent or minimize the use or exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runoff
- Incorporate Low Impact Development standards and criteria into site plan and subdivision regulations.
- Require operation and maintenance plans for Low Impact Development infrastructure for projects that exceed a specified threshold.
- Create standards and criteria for developers to implement Low Impact Development stormwater management techniques.
- Develop guidance documents for developers to promote understanding of best practices for Low Impact Development stormwater management strategies.

Objective 16: Protect quantity and quality of drinking water supply in the York River watershed.

Key Actions:

- Support proactive watershed conservation strategies being implemented by both the Kittery Water District and the York Water District.
- Support funding and implementation of recommendations outlined in the Kittery Water System Master Plan to ensure adequate management, treatment and transport of drinking water.
- Support and enhance Kittery Water District ownership of lands, or other organizations' land conservation efforts, in the water supply watershed (currently about 90%).
- Support and ensure continued enforcement of recreational restrictions to protect watershed supplies from risks such as fires or negative water quality impacts from swimming.

- Monitor algal blooms and other potential aquatic invasive plants to ensure they don't cause future problems for drinking water supply.
- Ensure continuation of York watershed protection ordinance.
- Continue ongoing efforts for regional cooperation among water suppliers in the York River Watershed to ensure clean, adequate and resilient water supplies during periods of drought or other water supply stressors.
- Conduct outreach to promote sustainable water conservation strategies for homes, businesses and landscaping practices in the watershed.

WATERSHED RESILIENCE AND CLIMATE ADAPTATION

Objective 17: Increase understanding of current and potential future sea level rise and climate impacts on natural resources in the York River watershed.

Key Actions:

- Support continued research and studies to enhance understanding of the potential impacts of sea level rise, temperature changes, storm surge, and increasingly intense and unpredictable storm events on natural resources in the York River Watershed.
    - Conduct regular updates of watershed resilience studies to ensure climate adaptation efforts are informed by up to date sea level rise and storm surge projections.
    - Evaluate how climate conditions will impact key habitats, species and natural communities, and implement measures that protect or enhance habitat resiliency.
- Promote awareness and use of National Oceanic and Atmospheric Administration's Digital Coast interactive trainings and web-based tools to help coastal communities assess vulnerabilities and plan for sea level rise, extreme flooding and other anticipated climate impacts.
- Host technical workshops among community planning and emergency response agencies to increase understanding of innovative tools such as National Oceanic and Atmospheric Administration's National Water Model to help anticipate potential flooding and other impacts associated with increasingly intense coastal storms.

Objective 18: Identify and implement climate adaptation measures needed to protect natural resources in the watershed.

Key Actions:

- Host workshops to increase awareness among local boards, property owners, and developers about innovative strategies to incorporate coastal resilience strategies into site and building designs for new developments in vulnerable areas.
- Incorporate information about storm surge, sea level rise, and increasingly intense rainstorms into community-based resiliency planning efforts. Implement ordinance changes or other strategies to prevent development in areas most vulnerable to future coastal flooding.

- Explore potential for participating in Federal Emergency Management Agency's Community Rating Program by implementing proactive steps to improve floodplain management while reducing flood insurance rates.
- Utilize the latest information from the Northeast Regional Climate Center about Intensity / Duration / Frequency of rainfall related to extreme precipitation events to inform local ordinances, stormwater management planning and design criteria.
- Regularly update design criteria for infrastructure projects to utilize most recent Federal Emergency Management Agency flood insurance maps.
- Support funding to enable implementation of major stormwater infrastructure improvement projects to correct existing flooding problems. In addition to protecting infrastructure, these projects will also reduce stormwater pollution and sediment transport associated with major flooding events.

Objective 19: Protect marsh migration corridors and adjacent wetlands to support future salt marsh areas.

Key Actions:

- Periodically update mapping and analysis to identify priority areas where salt marshes are expected to migrate or expand into adjacent upland areas as a result of sea level rise.
- Integrate likely future salt marsh areas as priority habitats in watershed resource protection measures and conservation planning. Update shoreland zone boundaries to include marsh migration areas and amend ordinance language for protection of future marsh areas and buffers.
- Continue to explore a range of regulatory and non-regulatory options to conserve uplands that are expected to become future salt marshes or provide critical buffer areas for future salt marsh habitat *(see Key Actions highlighted under section on Watershed Lands: Land Use, Conservation and Stewardship).*
- Maintain habitat values and resilience of salt marsh migration corridors by preventing stormwater pollution, removing invasive species, and maintaining or improving natural hydrology.

FUNDING OPPORTUNITIES TO PROTECT NATURAL RESOURCES

Objective 20: Identify and pursue funding opportunities, in-kind support, local revenue strategies, and landowner incentives to promote stewardship of natural resources in the York River watershed.

Key Actions:

- Support Partnership Wild and Scenic River designation for the York River and major tributaries to expand resources for coordination and implementation of the York River Watershed Stewardship Plan.
- Identify and pursue opportunities for grant funding and in-kind technical support from state and federal programs.
- Explore and identify potential opportunities for funding from the private foundations.

- Identify and pursue potential partnerships with local businesses, waterfront property owners, and marine industry to collaborate on site-specific and watershed wide efforts to protect and restore habitat and water quality.
- Create partnerships with local schools and regional universities to enhance environmental research and studies related to understanding and protecting natural resources in the watershed.
- Explore potential for stormwater user fees or other funding mechanisms to support ongoing implementation of stormwater management services.
- Establish and support annual funding for Conservation/Open Space Funds in each watershed town through annual appropriations, dedicated revenues, or other means.
- Create financial incentives for landowners to promote restoration and conservation, e.g., tax credits, cost-sharing of native plants for habitat restoration, and reduced or waived permitting fees.

Photo: D.H. Osborn

VI.3 Working Waterfront, Recreational Resources, and Community Character

A. York Harbor and Waterfront

The York Harbor and waterfront areas support many recreational and commercial activities and are critical components that define the community's character and contribute to the local economy. The combination of commercial fishing boats, pleasure boats, maritime infrastructure, preserved historic buildings and sites, stately homes, natural resources, and shoreline walking paths creates unique scenic qualities and special recreational opportunities, drawing visitors from near and afar.

From the York Comprehensive Plan:

> *A 1990 study of York's waterfront estimated that nearly 8% of persons working year-round in York earn their livelihood from the marine resources industry. Some are commercial fishermen, but others are just as likely to be a tour boat operator, a boat repairman or involved with the sale of lobsters/fish. York's ties to the sea helps establish its character as a coastal marine community.*
>
> *The major change in the waterfront over the last century has been the increasing amount of use by recreation enthusiasts. Many choose to live in or visit York because of the access it offers to the Ocean and the York River. Despite an increasing amount of recreational pressure, York has a stable waterfront; one that is heavily used but is not completely overcrowded. Natural constraints limit the number of moorings that can be located in the York River, and the Town, nearly 20 years ago, adopted strict regulations regarding the size and number of new docks. Managing York's limited active waterfront area will be a growing challenge as the population of the Town continues to increase and more tourists eye it as a convenient get-away from Boston.*

The other watershed towns have identified maintaining waterfront access and protecting marine resources as priorities. However, their harbors, moorings, and recreational waterfront areas are outside of the York River watershed (e.g., Kittery's Pepperell Cove) and therefore are not specifically included in this Stewardship Plan.

Management

The Town of York Comprehensive Plan identifies a number of recommendations to meet town goals to support commercial fishing operations, to sustain a harbor that supports a diversity of uses, and to provide public access to coastal areas, while limiting the number of new docks to be added to the York River. The key actions included in this plan reinforce and support those recommendations.

The Town of York has adopted a harbor ordinance, most recently amended in November 2017, to regulate the use of the town's harbors, channels and tidal waters. The town employs a Harbormaster to enforce town rules and regulations, including assignment of mooring spaces. The town utilizes a Harbor Board to manage harbor planning and operations, including consideration of applications for new and existing structures such as docks. The town collects harbor usage fees for mooring and town float assignments, as well as waiting list fees, winch fees, and bait fees. This revenue, as outlined in the harbor ordinance, is used for improvements to the harbor, channels, and tidal waters including capital improvements, wharf construction and repair, dredging equipment and land acquisitions. Currently harbor usage fees are assigned to a capital improvement fund (55 percent of fee revenue) and a dredging fund (45 percent of fee revenue).

Infrastructure

The built infrastructure, consisting of docks, piers, moorings, slips and boat launch sites, that supports commercial fishing, recreational boating, and public access to the York River is described below.

- The Town of York owns and manages two large docks to support commercial and recreational activities. Town Dock #1 supports recreational and commercial uses. It has a pier, wharf, two hoists, two bait sheds, and is rated for commercial vehicles. It has three ramps to floats that hold roughly 100 dinghies. Town Dock #2 supports recreational and limited (primarily winter) commercial uses. It has a pier with a ramp to floats that accommodate about 50 dinghies. This facility houses the Harbormaster shack and has a ground-out area off the pier.
- There are 45 docks on record from the mouth of the river to the Scotland Bridge area. The town has strict guidelines for construction of new docks or renovations to existing docks, so the number of docks has changed little in many years.
- The Town of York manages 311 moorings and 198 slips to accommodate boat types of various lengths, with high demand for these mooring and slip assignments. In 2017, there were 178 people on the power boat mooring waitlist and 79 on the sailboat mooring waitlist. There also is a temporary mooring list each year so that moorings not used by mooring holders can be utilized temporarily by a person on the waiting list. *[See Stewardship Plan Appendix for a map of the designated mooring areas].*

- Public boat launches on the York River include sites at Strawberry Island for kayaks and other non-motorized boats; Rice's Bridge/Route 1 boat ramp for small motorized and non-motorized boats; and Scotland Bridge boat ramp for small motorized and non-motorized boats. A launch suitable for paddle craft is being installed in 2018 from the new walkway connecting Fisherman's Walk to the Wiggly Bridge causeway. At all sites, parking is very limited; though parking is available for Rice's Bridge at the Grant House parking lot, across busy Route 1.
- There are two private boat launch sites: Coite/Donnell's site and York Harbor Marine Service, a full-service marina with dockage, storage, and boat service. There are several additional privately-owned dockage sites, with limited numbers of spaces available.

Dredging

The original Federal Navigation Project (FNP) for York River was authorized in 1886 and provided for widening of the river's entrance channel largely around Stage Neck. The existing FNP, completed in 1961, provided for the widening of two sections of the inner channel to a depth of 10 feet and construction of two anchorage basins, each about 5 acres, to depths of 8 feet. Maintenance dredging has been needed, and projects were completed in 1975, 1996, and 2018. The most recent project involved the removal of about 45,000 cubic yards of silt and sand from the channel and anchorage areas to return the FNP to its authorized dimensions. Natural river processes had resulted in shoals that hindered navigation and created safety concerns for commercial fishing boats and recreational boats in the river. As much as 80 percent of the anchorage areas had shoaled in before the 2017-18 dredging project. It is anticipated that future dredging will be needed to maintain the FNP over time, to allow for safe use and continued access to the river and anchorage areas.

York depends on its harbor located within the York River to support its commercial fishing industry and recreational boating. The harbor regularly silts in from upriver activities and maintenance dredging is a critical issue to enable its on-going use. – Town of York Comprehensive Plan

Working Waterfront

York Harbor and waterfront areas support an estimated 30-35 commercial fishing boats, primarily lobster boats. The Town of York's policies and practices, including administration of its harbor ordinance, give priority for use and access to commercial fisherman, when possible. The two town docks support fishing operations, particularly Town Dock #1, which is the only access many of the commercial fisherman have to the waterfront. In addition to the town docks, there currently are four privately owned docks that support working waterfront and commercial fishing, including docks at John Hancock Wharf and adjacent to Sewall's Bridge. Unique partnerships and conservation approaches have maintained access for commercial fishermen at these two privately-owned docks. The Old York Historical Society restored the John Hancock Wharf as a commercial fishing facility in 2011 and now leases the wharf to local fisherman, helping to preserve a historic site and a traditional waterfront use.

John Hancock Wharf, a commercially important site for over 300 years (photo: Karen Young)

Maintaining commercial access at the Sewall/Donnell dock at Sewall's Bridge was a unique, first of its kind approach to working waterfront preservation. The York Land Trust partnered with local fisherman in 2003 to maintain access and save the dock as working waterfront. The dock is located in a particularly scenic area of the York River that includes lobster boats and many historic buildings and structures. The dock and adjacent land was on the market for sale, at a time when other local working waterfront sites were being converted to private docks for personal recreational uses. The York Land Trust purchased an easement on the dock and the adjacent 0.15 acre of land, making the dock purchase more affordable for the fishermen. The conservation easement protected the land from future development, and it required that the property be used only as working waterfront, provided for public access to a portion of the property, and protected its scenic beauty. It was the first time a conservation tool for land preservation was used to protect a commercial dock supporting working waterfront.

The York Land Trust's successful partnership with local fishermen to protect Sewall's Bridge Dock through a first in the nation working waterfront conservation easement was a unique approach that has served as a model for preserving working waterfront elsewhere.

Commercial fishing is important to the local economy. The value of commercial landings in York Harbor, primarily from lobster, was $4.24 million in 2016 and $3.67 million in 2017. There are many other economic aspects associated with the lobster fishery including the supporting industries providing bait, fuel, boat repairs, dockage, and trap repairs. Additionally, the local lobster dealers employ many people at their facilities. The total economic impact of this fishery is far reaching and would be difficult to estimate.

2014-2017 York/York Harbor Commercial Landings

Year	Species	Live Pounds	Value
2014	Lobster	694,657	$2,904,404
2015	Lobster	681,854	$3,078,361
2015	Other species**	24,883	$151,654
2016	Lobster	888,925	$4,076,532
2016	Other species**	478	$16,874
2016	Tuna	20,483	$142,990
2017*	Lobster	721,899	$3,556,544
2017*	Other species**	20,075	$109,564

Source: Maine Department of Marine Resources, Landings Program

**Data are preliminary. ** Other species cannot be identified on a species level.*

Other business operations that utilize the harbor and waterfront areas include charter boat companies, paddle craft touring companies, marinas, several inns and restaurants, and other riverfront businesses. A non-profit, private yacht club also uses and provides access to the harbor. A 2012 U.S. Army Corps of Engineers Harbor Information and Navigation Metrics Form, completed by the York Harbormaster and Harbor Board as part of the dredging proposal and documentation, indicated over $5,000,000 in economic activity is directly related to York Harbor, with over 100 jobs dependent upon the harbor and another 100 jobs indirectly dependent on the harbor.

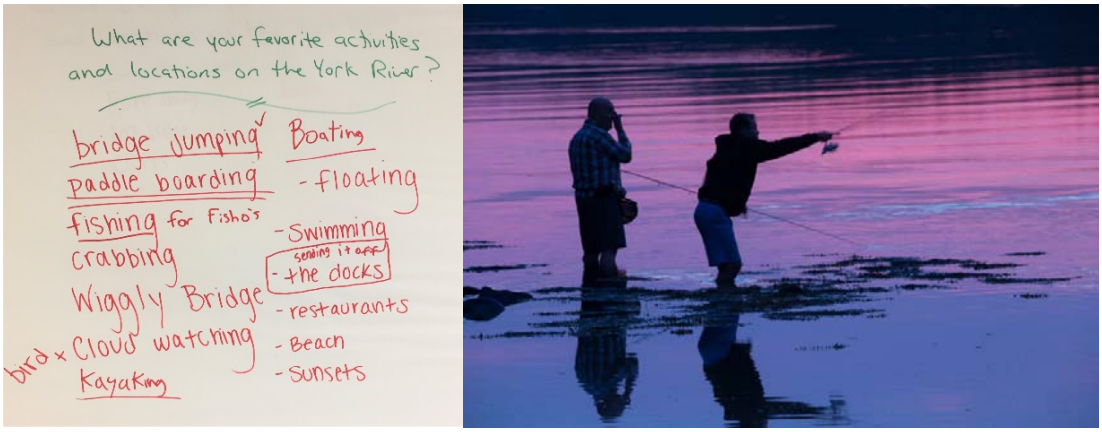
B. Recreational Resources

There are diverse and varied recreational opportunities provided by the York River. Popular recreational uses include boating (motorized and sailboats), as well as paddle boards, kayaks and canoes. Personal watercraft such as jet skis are not allowed in the river. The Town of York's system of moorings and slips in the river provides seasonal sites for roughly 500 boats, the majority of which are recreational. River access for smaller motorized boats is possible at Scotland Bridge and Rice's Bridge boat ramps. The York Harbormaster enforces all town and State rules and regulations for boat use in tidal waters.

Paddle craft use of the river has increased in the last several decades, though exact numbers of users and their extent of use are largely unknown. Popular access points for paddle craft are Strawberry Island and Scotland Bridge. Demand for parking overwhelms existing capacities at both sites on many summer days. With increasing number of users, there are more concerns around issues of boater safety, particularly in the busy harbor area, and of potential impacts on sensitive resources such as tidal flats and saltmarsh habitats. The York Harbor Board conducted a paddler survey in the summer of 2017 to better understand the number, type and location of paddle craft users. The surveys were conducted at Strawberry Island on five Saturdays and involved counts of vehicles and paddle craft, as well as paddler interviews to collect data on location and frequency of use and other user information. Mooring holders were sent a survey to capture information on their paddling uses. The

2017 survey information will help in forming a baseline of paddle craft use. The Harbor Board intends to conduct additional future surveys.

The York River's good water quality allows for recreational activities including swimming, fishing, and harvesting shellfish. There are no river beach areas, however swimming is popular especially around bridges. Recreational saltwater fishing requires individuals over 16 years old to register and hold a saltwater fishing license. Sewall's Bridge, Rice's Bridge, and Scotland Bridge are popular fishing spots, especially when striped bass are present in the estuary. Data for the number of recreational fishermen using the York River, or for the types and amounts of fish caught, are not available.



Favorite river activities of York High School students; fishing in the York River (photo: Chuck Maranhas)

Recreational shellfish harvesting of soft-shell clams is allowed in certain areas of the York River, as defined by Maine Department of Marine Resources (DMR), on Sundays from December through April. Commercial harvest is prohibited. Waters must meet strict water quality standards to allow for the harvest and safe consumption of shellfish. Maine DMR regularly tests waters from shellfish growing areas for bacteria and determines which areas are approved for harvest. The Town of York, though administration of its Shellfish Conservation Ordinance by the Shellfish Conservation Committee, manages the recreational shellfish harvest. The Shellfish Conservation Ordinance, most recently amended in May 2017, establishes the licensing requirements and sets the days, clam size and amounts allowed for harvest. The Shellfish Conservation Committee, with Maine DMR approval, sets an annual number of licenses that can be issued. For 2017, licenses were available for 75 resident and 25 non-resident adults; 22 resident and 3 non-resident seniors; and 22 resident and 3 non-resident juniors. Generally, about half the total available licenses are issued in a given year.

York Pond and Scituate Pond provide additional water recreation options for the public. Both ponds have public access points and limited parking. Non-motorized boating, swimming, and fishing are permitted at both ponds.

The public can enjoy views of the York River from walking paths and trails along its shoreline. York's Fisherman's Walk and Wiggly Bridge provide unique recreational and visual experiences along the York River and are part of a roughly 2-mile scenic shoreline walk through the heart of the harbor and some of York's historic areas. York's Cliff Path traverses the rocky Atlantic Ocean shoreline from Milbury Lane to Harbor Beach where the Fisherman's Walk begins, taking pedestrians along a river path to the Wiggly Bridge. The Town of York manages the Fisherman's Walk and has an ordinance governing its use that aims to promote safe, responsible use and to protect the privacy of citizens that own property along the walk.

The Town should preserve public use and access to the entire length of Fisherman's Walk. York's coastal walk is a jewel that few coastal communities enjoy and warrants preservation. – York Comprehensive Plan

Iconic Wiggly Bridge, perhaps the nation's smallest suspension bridge, was built in the 1930s and connects the Fisherman's Walk to Steedman Woods. Steedman Woods, a 17-acre woodland preserve given to the Old York Historical Society in 1978 by C. Richard Steedman for public enjoyment, provides scenic walking trails along the shoreline and is part of the Town of York's Lindsay Road Local Historic District.

[Add photo of Wiggly Bridge or Steedman Woods]

Further upriver, the 33-acre town-owned Goodrich Park provides shoreline views and passive recreation along the York River. Goodrich Park, which includes Grant House, was donated to the Town of York by Mary Marvin Breckinridge Patterson in the 1970s. The park includes picnic areas, short walking trails, and parking, and is adjacent to the Rice's Bridge public boat ramp. Grant House is home to York's Parks and Recreation Department. The Town of York owns and manages recreational fields within the York River watershed at its Bog Road recreational facility and at the Village Elementary School and York Middle School.

Most watershed lands that provide public access and recreational opportunities are owned by private landowners, including local land trusts and the Kittery Water District. Some of these private lands connect to the York Water District's water supply lands and to the Mount Agamenticus conservation lands, creating an expansive network of undeveloped lands, trails and recreation opportunities. Several of the land trusts' larger preserves in the York River watershed that provide public recreational opportunities and connect users to the region's natural resources and history are listed below:

- Kittery Land Trust's Norton Preserve: 170 acres that include trails through hemlock, beech, oak and maple woodlands. The site includes stone walls, vernal pools, and wetlands that form the headwaters of Southside Brook.
- Great Works Regional Land Trust's Rocky Hills Preserve/York Pond (Eliot and South Berwick): several trails go through this 200-acre preserve that features an old quarry, vernal pools, and

a variety of woodlands. GWRLT's preserve connects to other land conservation projects it helped facilitate, including the Eliot Town Forest and Maine Department of Inland Fisheries and Wildlife lands. Collectively there are over 500 acres of conservation lands that provide several recreation trails along parts of York Pond and Bartlett Mill Pond. The area protects water quality for the headwaters of the York River, and it includes abundant natural resources and historic resources such as cellar holes, wells, and cemeteries from the early Punkintown settlement.

- York Land Trust's (YLT's) Smelt Brook Preserve: roughly 300 acres with trails through forests and along the salt marsh and shoreline. The Preserve trails provide outstanding views of vast saltmarshes along the York River and Smelt Brook. The habitat provides exceptional bird-watching opportunities for shorebirds such as great blue herons, night herons, white egrets and kingfishers. The Preserve also has a quarter-mile "landing trail" that is accessible via boat, starting from Scotland Bridge on the York River.
- YLT's Highland Farm Preserve: trails in this 150-acre preserve provide views of the York River watershed, diverse wildlife habitats, and remnants from early settlement including stone walls, a cellar hole and centuries-old cemeteries. The undeveloped lands help protect the drinking water supply of Boulter Pond. The Preserve provides key habitat for native wildlife including seven rare and endangered species, and it contains a 30-acre habitat restoration project to support the return of New England cottontail.
- YLT's McIntire Highlands Preserve: 420-acre site that connects to Kittery Water District lands and is part of an unfragmented landscape large enough to support such animals as moose, bobcat, and fisher. The Preserve helps maintain regional water quality and contains some of the region's oldest trees. Part of the "Horse Hills" region, the area was historically used for forestry and sheep farming.
- YLT's Fuller Forest Preserve: the newly acquired 220-acre preserve will provide future trail access and recreational opportunities. The Preserve includes forested areas, wetlands, vernal pools, and the headwaters of Dolly Gordon Brook.

The land trusts typically limit recreational use to trails and allow hiking, nature viewing, skiing, and snowshoeing, but don't allow motorized vehicles. Hunting is allowed on many of the land trusts' larger preserves.

The Kittery Water District (KWD) allows public access and recreation on its water supply lands trails. The KWD owns approximately 2,500 acres that include an extensive trail network that connects to the York Water District's lands and trails. The water districts allow use of trails for hiking, biking, and skiing, and by all-terrain vehicles (ATVs) by permit. Use is limited to trails only. No recreational uses are allowed on the water supply ponds. Hunting is allowed on the water districts' lands. The water districts have a Resource Protection/Watershed Patrol Program that utilizes police patrols, largely by ATV, to enforce regulations, observe activities, and interact with users. The outreach and education piece of the patrol officer's job has been instrumental in protecting the water supply resources and keeping lands open for public recreation. Over the last 25 years, the number of recreational users

using water district lands has remained about the same, though types of recreational activities have changed. In recent years, there is more passive recreation and fewer ATVs, and the overall number of hunters has declined.

C. Scenic Resources

The combination of exceptional natural, cultural, and historic resources in the York River watershed creates distinctive scenic views that help define community character and create unique visual experiences. The exemplary scenic values of the river and shoreland areas are documented in the 1987 nomination of the York River/Harbor Heritage Coastal Area (HCA) for inclusion in the Maine Heritage Coastal Areas Program. The State program sought to identify and seek voluntary protection of coastal areas that had natural, historic, and scenic importance. The York River/Harbor HCA included about 9,700 acres in York and Eliot. A scenic assessment conducted by the Maine State Planning Office documented the State significance of the area and found it to be the single largest scenic area in southern Maine. Twenty-one significant points for views of the York River were included in the HCA. Despite the State's repeal of the overall HCA Program in 1993, the nomination demonstrates the unique concentration of so many significant resources in and along the York River and how the natural, historic, and built environment contribute to the overall scenic character of the York River. The scenic qualities that contributed to the York River/Harbor HCA nomination and to the high ranking in the State's scenic assessment largely still exist today.

Preserving scenic views helps maintain the region's historic and rural contexts. Much of the upper watershed area north and west of Interstate 95 possesses rural qualities that relate to traditional forestry and agricultural uses of the lands that defined early settlement and development patterns in the region. Early farming families fished, pastured cattle, and harvested marsh hay from adjacent saltmarsh areas starting in the 1700s. Timber was harvested from lands around Smelt Brook and the upper reaches of the York River. The construction of river mills allowed early settlers to produce marketable lumber. In the 1800s this region's land area was increasingly used for family farms to support livestock and crops. Centuries-old stone walls, originally dividing agricultural and pasture lands, are visible across these landscapes. In conducting its surveys of historic buildings in the upper York River area in York and Eliot in 2017, Groundroot Preservation Group found that the historic context of many buildings has eroded, as much of late nineteenth century agricultural landscapes have been transformed by reforestation and residential development.

Possible remnants of a staddle, a structure used to stack and dry salt marsh hay (photo: Joe Anderson)

All the communities' comprehensive plans note the importance of scenic resources, as well as the need to conduct more thorough inventories and develop strategies to improve long-term protection of important views. Scenic resources generally have not been protected through towns' ordinances. The Town of York's Comprehensive Plan includes an inventory of scenic points and scenic routes, including many locations in and around the York River. The inventory is intended to serve as a "starting point for the development of policies to address protection of scenic resources." The scenic resources inventory includes viewsheds seen from the all the bridges that cross the York River, including the Route 103 Bridge, Sewall's Bridge, Rice's Bridge, Interstate 95 Bridge, Scotland Bridge, and Cooks Bridge, as well as Southside Road toward the York River. Scenic routes identified in the inventory that provide York River views from multiple locations include Route 103, Route 91, and the Fisherman's Walk. The York River itself, from the Atlantic Ocean to the head of tide, is identified as a scenic route.

In its comprehensive plan, the Town of Eliot notes the contribution of its agricultural and forestry resources to the town's scenic and cultural values. The areas of Eliot that are part of the York River watershed still maintain scenic farms and forests that are part of the rural landscape important to community character. Protecting scenic views and rural qualities were important factors used in developing the Eliot Open Space Plan. Similarly, South Berwick's Comprehensive Plan notes the importance of conserving its rural landscapes including farms and forests to preserve scenic vistas, among other values. It recommends amending the town's subdivision ordinance to require scenic view preservation as one option to preserve scenic resources. Specific scenic resources identified in the Kittery Comprehensive Plan are largely outside the York River watershed, with the exception of views associated with the Johnson/Rustlewood Farm, one of the few remaining farms in Kittery, and scenic roads including Cutts Road, Betty Welch Road, Bartlett Road, and Norton Road.

D. Plans, Studies, and References

Some of the studies, data, plans, programs and other information sources related to understanding and implementing actions to protect the working waterfront and recreational and scenic resources of the York River watershed are listed below.

Planning documents

Town of Eliot. *Celebrating Our Past While Planning for Our Future*, Comprehensive Plan, Eliot, Maine, 2009. https://www.eliotmaine.org/sites/eliotme/files/uploads/comprehensive_plan_2009_0.pdf

Town of Kittery. Kittery Comprehensive Plan 2015-2025, Kittery, Maine, 2017. http://www.kitteryme.gov/kittery-2015-2025-comprehensive-plan

Town of South Berwick. *Draft Comprehensive Plan*, South Berwick, Maine, 2006. https://digitalcommons.library.umaine.edu/towndocs/998

Town of York. Comprehensive Plan, York, Maine, 2007. http://www.yorkmaine.org/DocumentCenter/View/351/Volume-1-11072017-PDF http://www.yorkmaine.org/DocumentCenter/View/343/Natural-Resources-Chapter-PDF

Town of Eliot. *Eliot Open Space Plan*, Prepared by Eliot Open Space Committee and Southern Maine Planning and Development Commission, 2010. http://www.mainefarmlandtrust.org/wp-content/uploads/2013/10/EliotOpenSpacePlan.pdf

Mt. Agamenticus to the Sea Conservation Initiative. *A Conservation Plan for the Mt. Agamenticus to the Sea Conservation Initiative*, 2005. http://www.mta2c.org/01/wp-content/uploads/2015/09/mta2c_conservation_plan.pdf

Great Works Regional Land Trust. *Piecing Together the Puzzle: Farms, Forests & Water – A Conservation Plan for the Communities of Wells, Ogunquit, Eliot, South Berwick, Berwick and North Berwick*, Prepared by the Wells National Estuarine Research Reserve for the Great Works Regional Land Trust. http://www.gwrlt.org/index.php/our-work/priorities/strategic-conservation-plan

Additional sources of information and references

Town of York ordinances: Harbor Ordinance, Shellfish Conservation Ordinance, and Ordinance Regulating Use of the Cliff Path and Fisherman's Walk, available from www.yorkmaine.org

Town of York data, maps, and information on docks, moorings, public access, and shellfish conservation program, from Town staff and documents on Town's website: www.yorkmaine.org

Maine Dept. of Marine Resources Commercial Landings Program data

Maine Dept. of Marine Resources Shellfish Program

Army Corps of Engineers Harbor Information and Metrics Form

York Parks and Recreation Department website – listing of recreational resources and amenities

York Land Trust, Kittery Land Trust and Great Works Regional Land Trust conservation lands and preserves information from organizations' websites

York Water District/Kittery Water District Resource Protection Program

Maine State Planning Office. *Nomination for the Official List of Maine Heritage Coastal Areas, Region I, York River/Harbor*, State of Maine, 1987.

Maine State Planning Office. *Scenic Assessment: A Proposed Method for Coastal Scenic Landscape Assessment*, State of Maine, 1987.

Southern Maine Planning and Development Commission. *York River Watershed Study: Regulatory and Non-regulatory Recommendations Report*, SMPDC, Prepared for the York River Study Committee, 2018.

Stewardship Goal, Objectives, and Key Actions – Working Waterfront, Recreational Resources, and Community Character

Goal: Preserve working waterfront, sustainable recreational uses and scenic qualities of the York River and watershed lands that are important to regional identity and community character.

Objective 1: Promote and sustain activities that support commercial fishing operations and an active working waterfront.

Key Actions to be developed and undertaken in coordination with the Town of York, including its Harbor Board:

- Support development of a York Harbor Management Plan that evaluates infrastructure, uses, needs, and current and future capacities for working waterfront and river-dependent businesses; identifies management needs and priorities; and identifies funding needs and possible sources.
- Continue to support and implement maintenance dredges.
- Develop and maintain necessary infrastructure to support commercial and public access, including commercial docks, moorings, boat launch sites, and parking. Support efforts to identify, evaluate and pursue opportunities to enhance commercial fishing dock access and sustainable paddle craft access and parking.
- Evaluate and plan for sea level rise impacts on working waterfront.
- Help maintain commercial fishing as a viable option for future generations and explore ways to diversify operations.

Objective 2: Encourage sustainable recreational uses and foster user stewardship of river resources.

Key Actions to be developed and undertaken in coordination with the Town of York, including its Harbor Board and Parks and Recreation Department:

- Evaluate options for developing a "river steward" position to help support resource management, education, and stewardship initiatives, including engagement of a citizen corps to help with outreach and promote a culture of self-monitoring and stewardship.
- Evaluate options to implement a sticker/registration program for paddle craft use to provide important safety and resource protection information to boaters and to help track the extent and location of users.
- Support development of a Town of York Recreation Plan that identifies river recreation opportunities, infrastructure needs, and management issues, including river access points, parking, launching, and sanitary facilities.
- Develop and maintain safe and sustainable boat launch sites including those at Scotland Bridge, Goodrich Park, Rice's Bridge, Route 103, and Strawberry Island. Support the installation and maintenance of permanent stormwater and erosion control measures at sites.
- Develop and implement boater education programs using a range of existing and new opportunities (e.g., Harbor Masters, ramp/dockside/launch signage, sticker program, river

stewards, boater and water safety classes, online resources, etc.) on topics including responsible, safe boating and paddling practices, wildlife and habitat protection, speed zones, no wake zones, etc.
- Promote opportunities for recreational shellfish harvesting.

Objective 3: Maintain and support sustainable public recreation opportunities on watershed lands.

Key Actions:
- Support public access and recreation opportunities on publicly-owned lands.
- Encourage and provide support for large private landowners, including land trusts and water districts, to continue to provide public access and recreation opportunities consistent with resource protection goals.
- Identify opportunities to promote public access points, trail maps and networks, river walks, and trail connections to scenic and cultural resources.

Objective 4: Identify and help protect important scenic views, including those contributing to historic contexts and rural character, throughout the watershed.

Key Actions:
- Support communities' efforts to undertake scenic resources inventories and integrate information into comprehensive plans, open space plans, recreation plans, or other planning initiatives or documents.
- Identify threats, protection priorities and opportunities to integrate scenic resource protection measures into existing conservation planning, development review processes, and other resource protection strategies.

Photo: Jerry Monkman, Ecophotography.com

VI.4 Community Stewardship

There is an overall awareness and appreciation of the history, natural habitats and scenic landscapes of the York River region, as well as concern for their preservation. Throughout the process to identify watershed resources and management needs, the York River Study Committee heard overwhelming support for protecting the values of the York River. Concerns of resources being "loved to death" – whether through overuse or misuse – was a recurring theme. At the same time, there are countless examples of community and individual stewardship actions and successful resource preservation initiatives.

The citizens of York, Eliot, Kittery, and South Berwick have demonstrated great interest in and capacity for resource preservation and stewardship – as volunteers serving on town boards and committees, as landowners committed to conserving resources, as volunteers with local land trusts and historical societies, as educators sharing their interests and knowledge with others, and as voters supporting policies and funding for resource protection.

The stewardship objectives and key actions listed below recognize the capacity and key role of the watershed communities' citizenry in the long-term preservation of the York River and watershed resources. Implementation will help achieve the stewardship goals for all the resource areas – cultural and historic resources, natural resources, working waterfront, and scenic and recreational resources. Connecting people to watershed resources, educating them about how their actions can affect resources and why resource protection matters, and providing access to information and training will help sustain and strengthen citizen stewardship of resources.

Goal: Strengthen stewardship of watershed resources by river users, watershed landowners and citizens.

Objective 1: Build appreciation for and create connections to watershed resources.

Key Actions:

- Create or support volunteer opportunities to engage residents in watershed projects, research, and citizen science initiatives. Activities could include water quality or other environmental monitoring, storm drain stenciling, habitat restoration projects, archaeology surveys, and archives research and organization.
- Promote, organize or conduct events and activities that showcase resources to the towns' residents.
- Collaborate with educators in developing lesson plans, presentations, and school programs that incorporate the region's history, historic preservation and archaeology, the natural environment, and/or other watershed resources; provide technical assistance and outreach materials; develop and support field trips and other activities to engage school children.
- Create educational materials on a variety of subjects relating to the watershed and its resources, and disseminate through websites, printed materials, presentations, mobile applications, and signage such as historic markers or trailhead kiosks.
- Develop opportunities for visual artist appreciation of watershed resources through activities such as photo contests and plein air painting and drawing.

Objective 2: Educate the public that resource preservation is culturally and financially beneficial.

Key Actions:

- Demonstrate and promote the value of historic resources, working waterfront, natural resources, open spaces, scenic views, and recreational opportunities to the region's economy and identity.
- Develop outreach materials and programs that describe specific resources, threats and management needs, as well as proactive actions and behaviors to protect resources, to help facilitate resource stewardship.

Objective 3: Build capacity and knowledge of the towns' board and committee members and staff to identify and protect resources.

Key Actions:

- Encourage regular site visits and provide training opportunities and workshops for board and committee members on:
    - State and local regulations that protect natural and historic resources
    - Available data, maps and other information on local watershed resources
    - State agency technical assistance through Maine Natural Areas Program, Maine Inland Fisheries and Wildlife/Beginning with Habitat, Maine Historic Preservation Commission, and others

    - General best management practices for protecting resource values
    - Case studies or other examples of successful approaches to resource protection
- Improve data availability and access, as well as consistency in formats, for watershed resource information.
    - Ensure that updated watershed resource data is available in GIS formats and in other formats for viewing.
    - Attempt to standardize watershed towns' boundaries and shoreline boundary data, including a standard set of attributes.
    - Encourage towns to examine the representation of shoreland zoning in their ordinances and on official shoreland zoning maps for consistency.
    - Support efforts to archive and expand access to local historic resources information.

Objective 4: Improve landowner knowledge of resources and stewardship opportunities.

Key Actions (compiled from other resource-specific objectives):

- Improve landowners' knowledge of historic resources, archaeologically sensitive areas, and important habitats and species on their properties.
- Create a network of local homeowners that have completed historic preservation or restoration efforts that are willing to share their experiences with others interested in preserving historic properties and building features.
- Promote workshops, training, and resources that encourage landowners to utilize sustainable forestry and agricultural practices that enhance wildlife habitat and minimize negative impacts on natural resources.
- Provide information and workshops for landowners on how to identify, control and remove invasive species and restore native vegetation.
- Support implementation of the Lawns to Lobsters and YardScaping outreach programs, and other training and outreach on best management practices for low-impact landscaping, stream/wetland buffer management and plantings, septic system maintenance, and proper disposal options for household hazardous waste and pharmaceuticals; and conduct outreach to increase understanding of existing regulations that govern vegetated buffers, setbacks from wetlands, and septic system maintenance.

Section VII – Summary of Stewardship Objectives and Key Actions for Watershed Resource Protection

The summary table will include all objectives and key actions from Section VI – Watershed Resources. A subset of objectives and key actions from each resource area are included below to demonstrate what the summary table will look like.

The list of Objectives and Key Actions below is incomplete and subject to change. The table will be completed once stewardship objectives and key actions included in this Draft York River Watershed Stewardship Plan are finalized.

	Objectives	Key Actions
CULTURAL AND HISTORIC RESOURCES	Enhance funding and financial incentives for historic resources protection in the watershed.	Stimulate wider community participation in the Certified Local Government program to help promote and fund historic resources preservation.
		Promote federal and state rehabilitation and tax incentive programs and historic preservation grant programs.
		Promote historic districts, highlighting the importance of maintaining clusters of historic resources.
		Explore opportunities and help identify funding sources to implement local financial incentives for historic resource preservation, such as reduced or waived permitting fees.
		Implement education and advocacy efforts to inform citizens of the importance of protecting historic resources for economic values, scenic views, community character, and tourism.
	Identify and document watershed archaeological, architectural, and historic resources.	Assess gaps in surveys and nominations to State or National Registers.
		Update and expand historic context information, including archaeologically sensitive areas, for use in identifying and evaluating archaeological and historic resources in watershed.
		Conduct new and update existing surveys to identify and document archaeological and historic architectural resources throughout the watershed, including updated locational information for historic structures in the Maine Historic Preservation Commission's CARMA database.
		Utilize state and federal preservation practices to ensure proper documentation and showcase application of the MHPC and Secretary of the Interior's standards and guidelines.
		Maintain up-to-date inventories of historic resources, historic contexts, and scenic values in towns' comprehensive plans.
		Increase nominations of eligible archaeological and historic resources to the State and National Registers of Historic Places, with an emphasis on those associated with underrepresented regions and resource types. For example, work with stakeholders to investigate and pursue Punkintown Historic District/National Register of Historic Places nomination.
		Undertake new research and scholarship at historic sites to improve understanding of the significance of the archaeological and historic resources in the watershed.

	Objectives	Key Actions
NATURAL RESOURCES – WATERSHED LANDS	Preserve large undeveloped habitat blocks and wildlife corridors.	Conduct surveys and research to help identify and define highly valued natural resources and important large habitat blocks for priority conservation efforts.
		Prioritize the protection of large undeveloped habitat blocks, wildlife corridors, and salt marsh migration areas in local planning documents and regulatory and non-regulatory approaches to protect natural resources.
		Utilize existing information and resources such as habitat areas designated for Maine Species of Great Conservation Need and Beginning with Habitat Focus Areas to guide conservation and protection efforts.
	Support land conservation and stewardship efforts by communities, land trusts, and other conservation organizations to protect and maintain important resource values.	Develop and implement stewardship plans for conservation lands that address resource protection measures, public access, sustainable recreation uses, invasive species management, and monitoring.
		Help facilitate opportunities for land conservation projects located in Beginning with Habitat Focus Areas, as well as habitat areas likely to provide key functions and support biodiversity in the future.
		Promote the Mt. Agamenticus to the Sea Conservation Initiative to implement public-private approaches to preserve large undeveloped habitat blocks, wildlife corridors and regional biodiversity and build public interest and support for habitat conservation.
		Assist towns, land trusts, and conservation organizations in implementing priority actions and achieving the goals and targets included in open space plans and local and regional land conservation plans.
	Promote local planning and zoning strategies to protect shoreland buffer zones, wildlife corridors, large undeveloped habitat areas, and predicted marsh migration and flooding areas.	Assist towns with evaluating and implementing recommendations from the Southern Maine Planning and Development Commission's 2018 *York River Watershed Study: Regulatory and Non-regulatory Recommendations Report* related to conservation subdivisions, land conservation, general zoning, shoreland zoning, and stormwater management.
		Promote conservation subdivision design or cluster development through local ordinances to reduce overall development footprint, reduce impervious surfaces, and protect natural resource values.
		Review and enhance Shoreland Zoning strategies to ensure protection of water quality, wildlife habitat, vegetated buffers, and future marsh migration areas. Promote provisions that go beyond the state of Maine's Mandatory Shoreland Zoning Act.
		Review and update local zoning to ensure lot sizes are large enough to minimize the potential negative impacts of development on water quality and other natural resources in rural areas of the watershed.
		Consider creating a 'watershed' based overlay among the four York River watershed communities to promote regional conservation strategies while still allowing each town to determine specific land-use regulations within their community.
		Consider creating a Sea Level Rise / Marsh Migration Overlay and associated standards to accommodate future conditions, direct development away from areas at risk from future inundation, reduce density in those areas, promote open space, and enhance resource protection.

	Objectives	Key Actions
WORKING WATERFRONT, RECREATIOANAL RESOURCES AND SCENIC RESOURCES	Promote and sustain activities that support commercial fishing operations and an active working waterfront.	Support development of a York Harbor Management Plan that evaluates infrastructure, uses, needs and current and future capacities for working waterfront and river-dependent businesses; identifies management needs and priorities; and identifies funding needs and possible sources.
		Continue to support and implement maintenance dredges.
		Develop and maintain necessary infrastructure to support commercial and public access, including commercial docks, moorings, boat launch sites, and parking. Support efforts to identify, evaluate and pursue opportunities to enhance commercial fishing dock access and sustainable paddle craft access and parking.
		Evaluate and plan for sea level rise impacts on working waterfront.
		Help maintain commercial fishing as a viable option for future generations and explore ways to diversify operations.
	Encourage sustainable recreational uses and foster user stewardship of river resources.	Evaluate options for developing a "river steward" position to help support resource management, education, and stewardship initiatives, including engagement of a citizen corps to help with outreach and promote a culture of self-monitoring and stewardship.
		Evaluate options to implement a sticker/registration program for paddle craft use to provide important safety and resource protection information to boaters and help track the extent and location of users.
		Support development of a Town of York Recreation Plan that identifies river recreation opportunities, infrastructure needs, and management issues, including river access points, parking, launching, and sanitary facilities.
		Develop and maintain safe and sustainable boat launch sites including those at Scotland Bridge, Goodrich Park, Rice's Bridge, Route 103, and Strawberry Island. Support the installation and maintenance of permanent stormwater and erosion control measures at sites.
		Develop and implement boater education programs using a range of existing and new opportunities (Harbor Masters, ramp/dockside/launch signage, sticker program, river stewards, boater and water safety classes, online resources, etc.) on topics including responsible and safe boating and paddling practices, wildlife and habitat protection, speed zones and no wake zones, etc.
		Promote opportunities for recreational shellfish harvest.
	Maintain and support sustainable public recreation opportunities on watershed lands.	Support public access and recreation opportunities on publicly-owned lands.
		Encourage and provide support for large private landowners, including land trusts and water districts, to continue to provide public access and recreation opportunities consistent with resource protection goals.
		Identify opportunities to promote public access points, trail maps and networks, river walks, and trail connections to scenic and cultural resources.
	Identify and help protect important scenic views throughout the watershed.	Support communities' efforts to undertake scenic resources inventories and integrate information in comprehensive plans, open space plans, recreation plans, or other planning initiatives or documents.
		Identify threats, protection priorities and opportunities to integrate scenic resource protection measures in existing conservation planning, development review processes, and other resource protection strategies.

	Objectives	Key Actions
COMMUNITY STEWARDSHIP	Build appreciation for and create connections to watershed resources.	Action
		Action
		Action
	Educate the public that resource preservation is culturally and financially beneficial.	Action
		Action
		Action

Photo: David J. Murray, ClearEyePhoto.com

Section VIII – Partnership Wild and Scenic River Designation

A Partnership Wild and Scenic River (PWSR) designation for the York River and tributary streams in the National Wild and Scenic Rivers System will provide the structure and key funding to implement the Stewardship Plan, enable a watershed approach across the four-town area, leverage additional technical and financial resources, engage key partners and citizens in river stewardship, and bolster ongoing initiatives to protect important watershed resources.

A. River Segments and Classification

The York River Study Committee recommends designating the York River and its major tributaries in the National Wild and Scenic Rivers System as a PWSR. River segments recommended for designation include the York River from the York Pond outlet in Eliot to the Route 103 bridge in York and some or all portions of Cutts Ridge Brook in Kittery, Eliot, and York; Rogers Brook in Eliot and York; Smelt Brook in York; Bass Cove Creek in York; Cider Hill Creek in York; Libby Brook in Kittery and York; and Dolly Gordon Brook in York. [*See Section II – York River Wild and Scenic Study for a list of stream reaches and mileages.*]

Designated rivers are classified as wild, scenic, or recreational based on level of development and shoreline alteration. A "recreational river" classification is best suited for the York River and its tributaries based on the river's characteristics and history of use and development.

From the National Wild and Scenic Rivers System website, https://www.rivers.gov/wsr-act.php:

Wild River Areas – *Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.*

Scenic River Areas – *Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.*

Recreational River Areas – *Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.*

Regardless of classification, each river in the National System is administered with the goal of protecting and enhancing the values that caused it to be designated. Designation neither prohibits development nor gives the federal government control over private property.

B. Outstandingly Remarkable Values

There are many outstandingly remarkable values (ORVs) present throughout the watershed's rivers and streams, including historic resources, scenic qualities, unique working waterfront preservation, water quality, biodiversity, exemplary natural communities, rare and endangered species, and watershed ecosystem resilience. ORVs are river-related features or resources that are unique, rare, or exemplary on a regional or national scale. A summary of ORVs present in the portions of the York River and major tributaries proposed for designation is below.

River Segment	Values	ORV Resource or Feature	Region of Comparison	Example(s) of Unique, Rare, or Exemplary Status
York River watershed rivers and streams (system-wide)	Ecological	• Water quality • Watershed connectivity • Unique and diverse habitats / overall biodiversity • Concentration of rare, threatened and endangered species/species of greatest conservation need • Unfragmented forest areas protecting headwater streams, wetlands, drinking water supplies, and riparian areas	State of Maine	• Largest intact coastal wetland in southern Maine • Greatest diversity of threatened and endangered species of any Maine region • Regional reference site for water quality • 28 species of estuarine and freshwater fish and excellent fish habitat • Diadromous fish and fish habitat
		• Part of largest intact coastal forest between Acadia and the New Jersey Pine Barrens • Salt marsh habitat / coastal resiliency	New England	Top tier of New England saltmarshes for coastal resiliency under various sea level rise scenarios
	Historical and Cultural	• Diverse, well-preserved and documented sites; important to regional culture and identity • Early industry and settlement (Euroamerican) • Formative events and settlement for colonization and early governance (Province of Maine) • Many archaeological sites (pre-contact and colonial)	New England	• High concentration of notable historic structures along river • Early tidal dams and mill structures • Three local historic districts (York) and many local historic landmarks • Native American archaeology sites, including middens
		Historic sites: National Register of Historic Places	United States	National Historic District and 5 river-related individual National Register sites
York River	Ecological	• Diadromous fish and fish habitat • Saltmarsh habitat • Coastal resiliency • Tidal wading bird habitat • Inland waterfowl/wading bird habitat	State of Maine	Identified as State Focus Area for ecological significance
	Historical	• Archaeological sites (pre-contact and colonial) • Numerous historic buildings, National Register sites and district, Scotland area settlement, Punkintown, mill and dam sites • Early industry and settlement, importance to early European colonization and early Maine government	State of Maine & United States	• Contributes to York National Historic District and three local historic districts • NRHP sites: John Hancock Warehouse, Isabella Breckinridge House, McIntire Garrison, Frost Garrison and House • Punkintown settlement archaeology
	Cultural and Scenic	• Working waterfront: Sewall's Bridge dock easement • Iconic bridges: Wiggly Bridge and Sewall's Bridge – America's first wooden pile drawbridge built in 1761	State of Maine & United States	• First in nation conservation easement to maintain working waterfront • Sewall's Bridge - National Historic Civil Engineering Landmark

River Segment	Values	ORV Resource or Feature	Region of Comparison	Example(s) of Unique, Rare, or Exemplary Status
		• Unique river views combining history, natural resources and built environment		• York River/Harbor Heritage Coastal Area • Findings from State Coastal Scenic Landscape Assessment (1987)
Cutts Ridge Brook, and **Rogers Brook**	Ecological	• Diadromous fish and fish habitat • Saltmarsh habitat • Coastal resiliency • Tidal wading bird habitat • Forested stream habitat/forested wetlands	State of Maine	Identified as State Focus Area for ecological significance
Smelt Brook	Ecological	• Diadromous fish and fish habitat • Saltmarsh habitat • Coastal resiliency • Tidal wading bird habitat	State of Maine	Identified as State Focus Area for ecological significance
	Historical	• Historic mill and dam sites • Shipbuilding site • Archaeological sites	New England	Sites of early Colonial industry and settlement
Bass Cove Creek	Ecological	• Diadromous fish and fish habitat • Saltmarsh habitat • Tidal wading bird habitat	State of Maine	Identified as State Focus Area for ecological significance
Dolly Gordon Brook and **Libby Brook**	Ecological	• Saltmarsh habitat • Coastal resiliency • Tidal wading bird habitat • Inland waterfowl/wading bird habitat (Dolly Gordon Brook)	State of Maine	Identified as State Focus Area for ecological significance
	Historical	• Historic tidal saw mill and dam sites • Archaeological sites • Historic site: Barrell Homestead (National Register site)	New England & United States	• One of the earliest known tidal powered saw mills in Colonial America (1634) • National Register of Historic Places site
Cider Hill Creek	Ecological	• Diadromous fish and fish habitat • Saltmarsh habitat • Coastal resiliency • Tidal wading bird habitat • Forested stream habitat/forested wetlands	State of Maine	Identified as State Focus Area for ecological significance
	Historical	• Historic archaeology site: Point Christian remains • Historic mill and dam sites • Other archaeological sites	New England	Remains of the 1634-35 Point Christian manor house (Thomas Gorges, colony governor)

C. River Free-flow Conditions

The York River and its tributaries that are recommended for PWSR designation are generally free-flowing. Recommended stream reaches begin below the drinking water supply dams. Historic dams and structures still present in or along the rivers do not impede overall river flow. Similarly, while there are many opportunities to improve fish passage and tidal river flows, culverts at road crossings of streams are not severely restricting or altering river flow. *[See Section VI – Watershed Resources for more information on free-flow qualities of watershed rivers and streams.]*

D. Local Support and Capacity for River Resource Protection

The York River and its major tributaries meet the suitability criteria for PWSR designation. The watershed towns have policies, management frameworks, ordinances and regulations in place that demonstrate the capacity for and commitment to river and watershed resource conservation. Watershed towns' regulatory and non-regulatory approaches to resource protection were reviewed and documented by the Southern Maine Planning and Development Commission (SMPDC). [See SMPDC's *York River Watershed Study: Regulatory and Non-Regulatory Recommendations Report*, available as a separate volume.] Additional information on communities' approaches for protection and management of specific ORVs are described in Section V – York River Watershed and Section VI – Watershed Resources. A table of towns' ordinances related to historic resource preservation and SMPDC's tabular matrix of towns' zoning are included in the Stewardship Plan Appendix.

Community support for designation is a required step for rivers that will be PWSRs. The watershed communities will vote on whether to endorse pursuing a PWSR designation in the National Wild and Scenic Rivers System for the York River and major tributaries. The Study Committee is aiming for votes in November and December 2018. Citizens in Eliot and York will vote on a warrant article on their town's ballot, and town councils in Kittery and South Berwick will vote on resolutions.

E. Outreach Activities and Public/Stakeholder Input

Throughout the York River Wild and Scenic Study to evaluate a PWSR designation and develop the Stewardship Plan, the Study Committee sought input from and involvement by citizens, watershed landowners, conservation and preservation groups, town staff, members of town boards and commissions, commercial users and interests, representatives of state agencies, York River Study advisors and other resource area experts. Outreach conducted by the Study Committee also helped in assessing and building community support for river and watershed resource protection. Presentations and updates to boards and community groups, project activities, and participation in community events provided additional opportunities for the Study Committee to gather input, provide information, and answer questions about the York River Wild and Scenic Study, including possible designation and Stewardship Plan development.

The outreach, public involvement, and public input activities conducted for the York River Wild and Scenic Study are described in Section III – Stewardship Plan Development.

F. Next Steps

Following the town votes on whether to accept this Stewardship Plan and endorse PWSR designation, the National Park Service (NPS) summarizes the research and findings from the York River Wild and Scenic Study in a Study Report to Congress. The NPS Study Report is a separate document from this Stewardship Plan and is presented to Congress. The completion of the NPS Study Report to Congress, anticipated in early 2019, is followed by a public comment period.

The NPS Study Report will draw on information included in the Stewardship Plan. It will summarize the suitability and eligibility of the York River and major tributaries for PWSR designation, including the ORVs. The Study Report also will include sections required in the York River Wild and Scenic Study Act that authorized the study. Pursuant to the Act, the NPS Study Report shall include, among other required sections, the effect of designation on existing commercial and recreational activities; and identify any authorities (1) that would authorize or require the Secretary of the Interior to influence local land use decisions or place restrictions on non-Federal land or (2) the Secretary of the Interior may use to condemn property.

It is anticipated that the NPS Study Report will include findings that there is no effect of designation on existing commercial and recreational activities; and there are no authorities to influence local land use decisions, place restrictions on private lands, or condemn property as a result of designation of the York River and its major tributaries into the National Wild and Scenic Rivers System.

If there is community support to pursue designation, a new bill must be introduced by Congress to designate the York River and its tributaries into the National Wild and Scenic Rivers System. The bill, which would include the enabling legislation to amend the Wild and Scenic Rivers Act to include the rivers in the National Wild and Scenic Rivers System, must be passed by Congress and signed by the President to achieve designation. If the York River and its major tributaries are designated into the National Wild and Scenic Rivers System by US Congress, this York River Watershed Stewardship Plan would serve as the “comprehensive management plan” required for all designated rivers, providing the framework and priorities for PWSR designation implementation and long-term protection of ORVs.

APPENDIX

1. Mt. Agamenticus to the Sea Conservation Initiative focus area (map image)

2. Great Works Regional Land Trust's focus areas that contain York River watershed lands (two summaries)

3. Watershed Protection Strategies Matrix (8-page excerpt and table from Southern Maine Planning and Development Commission report)

4. List of four towns' historic preservation-related ordinances and codes, compiled by York River Study Committee (2-page table)

5. Lists of Priority 1, 2, and 3 Species of Greatest Conservation Need by town – York, Eliot, Kittery, and South Berwick, from Maine Dept. of Inland Fisheries and Wildlife (2-page table)

6. Map of designated mooring areas in the York River, from Town of York (map image)

SEPARATE VOLUMES

Aman, Jacob. (2018) *An Assessment of Spring Fish Communities in the York River, Maine*. Report to the York River Study Committee. Wells National Estuarine Research Reserve, Wells, Maine.

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