



L. K. McLean Associates, P.C.

437 South Country Road • Brookhaven • New York • 11719

CONSULTING ENGINEERS

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Associates

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Town of Southampton
Department of Community Preservation
24 West Montauk Highway
Hampton Bays, New York 11946

March 14, 2019

Attn: Janice Scherer, Assistant Town Planning Director

**Re: Town of Southampton Community Preservation Fund
Water Quality Improvement Program Funding Application
Proposed Alewife Creek Restoration Project**

Dear Ms. Scherer:

Please find enclosed seven (7) copies of a complete application package for the 2019 round of the Community Preservation Fund Water Quality Improvement Program. This proposal for the Alewife Creek Restoration Project is submitted on behalf of Mr. Alex Gregor, Superintendent of Highways.

This funding application is requesting local matching funds for a grant that has already been awarded under the 2018 New York State Consolidated Funding Application process. As per the application instructions, seven (7) copies of the following materials are included in this package:

- 1) Grant application, signed by Superintendent Gregor
- 2) Town Board Resolution 2018-727
- 2) Application Attachments, including but not limited to, photos of existing conditions, location map, SEQRA SEAF, pollutant load reduction estimate, project budget proposal

If you should have any questions regarding this, or require any further materials, please do not hesitate to contact myself or Laura Feitner Calarco at (631)286-8668.

Very truly yours,

Christopher F. Dwyer, Associate
L. K. McLean Associates, P.C.

CFD:lfc

Enc.(7): Cover Letters, Grant Applications, Town Board Resolutions, and Attachments

Cc: Mr. Alex D. Gregor, Superintendent of Highways w/enc.



TOWN OF SOUTHAMPTON
Department of Community Preservation
24 W Montauk Hwy, Hampton Bays, NY 11946
Ph: 631-287-5720 Fx: 631-728-1920
WWW.SOUTHAMPTONTOWNNY.GOV/CPF

CP13107 (rev 01/2019)

WATER QUALITY IMPROVEMENT PROGRAM

PROPOSAL SUMMARY

Project Applicant: Town of Southampton

Project Title: Alewife Creek Restoration

Project Manager: Highway Department, assisted by a professional engineering firm

Name	Alex Gregor
Title	Highway Superintendent
Organization	Town of Southampton
Address	20 Jackson Avenue, Hampton Bays, NY 11946
Phone	631-728-3600
Email	Agregor@southamptonny.gov

Property Owner (if different from Project Manager organization):

Name	
Affiliation	
Mailing Address	
Phone	
Email	

Project Location

Address	Alewife Creek Culvert & Vicinity, approx. 230' east of North Sea and Noyack Roads intersection
SCTM#(s)	0900-077.00-02.00-001.000 and vicinity

Type of Project (check all that apply):

- ☒ Reduction
☒ Remediation
☒ Restoration

Project Summary: (add text 2-3 Sentences only)

Requesting matching funds for a \$410,000 NYS grant awarded (see attached) to assist the Town with addressing the environmental impacts to Alewife Creek associated with climate change. Please see attached Project Description & Budget



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1. PROJECT TYPE

Must meet at least one of the definitions of "Water Quality Improvement Project" per State Law Chapter 551 cited above. Check all that apply.

- ☐ Wastewater Treatment Improvement Project
- ☒ Non-point source abatement and control
- ☒ Aquatic habitat restoration
- ☐ Pollution prevention
- ☐ Operation of Peconic Bay National Estuary Program (Grant Match)

Note: Monitoring costs are only potentially eligible for CPF funding within Aquatic habitat restoration projects.

2. PRIORITY AREA(S)

Priority areas are defined in the Water Quality Improvement Project Plan (WQIPP).

- ☒ High
- ☐ 303(d) Impaired
- ☐ Medium
- ☐ Outside High and Medium priority areas*

*If Outside High and Medium priority areas, explain how the project is relevant to WQIPP goals.

3. PROJECT DESCRIPTION

3a. Existing conditions of applicable groundwater/sub-watershed/waterbody and most recent and relevant data available (provide sources).

The North Sea Harbor and tributaries (e.g. Alewife Creek) has been classified on the NYS Priority Water Bodies List as "Impaired" due to pathogens. Refer to attached document.

3b. How the proposed solution addresses the issue in the context of Reduction, Remediation and/or Restoration as per the CPF Water Quality Project Plan. Note all remediation and restoration projects must assure that reduction measures are also addressed.

Stormwater pollutants will be reduced by remediation of direct discharge; Aquatic Habitat will be restored by removal of pollutants, restoration of natural creek flow, and native plantings.

3c. Describe the proposed technology and its demonstrated efficacy in similar settings. May include published data.

Drainage infrastructure will be designed in conformance with proven criteria in the NYSDEC Stormwater Design Manual; native plants will be specified by a certified NYS Native Species Expert



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3d. How the project supports Town of Southampton, Suffolk County, NYSDEC, Long Island Nitrogen Action Plan (LINAP) or other adopted goals/policies (provide references with pages numbers).

WQIPP Goals 2, 3, 4, 5 (pg. 6); Southampton Sustainability Plan Water Goal (pg. 24), Economic Goal (pg. 25), Land Use 006 (pg. 26), Trans 009 (pg. 27), Stewardship 009 (pg. 30)

3e. Review the following statements and indicate whether they are applicable to your project. For all "Yes" responses, please indicate how your project addresses the requirements indicated.

- | Yes | N/A | |
|-------------------------------------|--------------------------|---|
| ☒ | ☐ | If stormwater system or drainage is proposed: The project must indicate compliance with the New York State Stormwater Design Manual (2015 and as updated). |
| ☐ | ☐ | If project is related to farmland: Describe any Agricultural Stewardship Plan or other long term strategy for Nitrogen abatement. |
| ☒ | ☐ | If the project is for habitat restoration: The narrative must address how underlying causes are being ameliorated and expected outcomes for local species populations or other ecological considerations are given. |
| ☐ | ☐ | If project is a Sewage Treatment Plant (STP) or cluster treatment system: Fund allocation request is based on cost for reduction of pre-existing conditions and not for purpose of accommodating new density (describe pre-existing density and associated flow (gallons per day) and total projected nitrogen reduction in narrative). Include detailed information on how many homes the system would treat as well as potential for formation of Sewer District, if required by Suffolk County Health Department or Town Law. |
| ☐ | ☐ | If the project is requesting grant match for the Peconic Estuary Program: Include information related to funding program source and purpose of application and any relevant items on this checklist. Note: A Town Board resolution will be required in order to encumber matching funds for grant applications. |



4. WATER QUALITY BENEFIT

4a. Identify Nitrogen, Pathogen or Pollutant of Concern (POC) including Existing Condition and Target Reduction.

Various pathogens according to the NYS PWL, the PEP, and NYSDEC Shellfish Closure website at http://www.dec.ny.gov/outdoor/103483.html#North_Sea_Harbor4 - see attached maps

4b. Describe plans for collecting and reporting on water quality over time.

Baseline data will be obtained from all organizations currently monitoring the area; post-restoration data will be collected and compared to baseline data

4c. Indicate useful life of proposed technology (must meet or exceed five years).

All installed infrastructure will have a useful life of 20 years, dependent on natural conditions.

5. COST FACTORS

5a. Explain how you have confirmed that the proposed budget is reasonable, appropriate and necessary. If available, provide third party estimates or other documentation of how costs were determined.

A consulting engineering firm (L.K. McLean Associates) who regularly oversees this type of work prepared the cost estimates based on a combination of vendor estimates and data from recent public bid lettings.

5b. Describe any matching funds to be provided.

A NYS grant from the Consolidation Funding Application (CFA) - Climate Change program - was received in the amount of \$410,000. It requires a 50% match, which would be the additional \$410,000 sought from the CPF

5c. Explain: i. Why project cannot proceed and intended benefits cannot be achieved without external funding. ii. if funds are awarded at a lower level than requested, or if there are cost overruns, explain how the project will proceed.

Current funding levels of the Highway Department are not sufficient to support its core mission of protecting the safety of public roadways in the Town; an additional appropriation from Town Board in the amount of \$410,000 would be required for this project to proceed. Should the full amount of matching funds not be granted by the CPF, an application will be made to the 2019 Suffolk County Water Quality and Restoration Program, and other grant programs if needed, for remaining funds.



6. MANAGEMENT, EXPERIENCE, ABILITY

6a. Describe applicant's experience in completing similar projects.

The project budget includes funds to hire an experienced professional engineering firm staffed qualified plant & wildlife specialists to oversee all aspects of construction administration & inspection

6b. Describe community support or opposition to project. If there is opposition, explain how this is to be addressed.

Support letters from The Peconic Estuary Program, The Nature Conservancy and Seatuck Environmental Association from the NYS CFA application are attached.

6c. Describe any permits needed and time frame/status of approvals. If permits are approved, indicate same.

Town Trustees/NYSDEC / Army Corps/ NYSDOS CCA- applications anticipated to be submitted October 2019 based on NYS grant contract execution in April 2019

7. MAINTENANCE, MONITORING, EVALUATION

Estimate ongoing maintenance costs and explain how these will be supported. Explain stewardship and monitoring activities planned for ensuring sustainability of the project.

Roadway/Drainage infrastructure to be maintained by Highway; spring creek debris clearance is performed by Trustees Marine Maintenance crew; Seatuck offered to assist with biological monitoring

8. DURATION OF PROJECT

8a. Provide a projected project timeline. Note: The Committee will only make recommendations for shovel-ready projects that can commence this fiscal year.

Design and permitting is funded under NYS CFA grant; procurement of design consultant will begin upon grant contract execution. See attached project schedule

8b. If project is multi-year or phased, provide a breakdown of budget and milestones for each year and phase.

See attached project schedule

9. ATTESTATION

Allocation of CPF funds will not be for the purpose of accommodating new growth, as this is prohibited by State law.



Check box to certify that funds will not be directed for projects for the purpose of accommodating new growth.

Signature: _____

Date

3/11/19



10. REQUIRED ATTACHMENTS

Confirm that the following required documents are attached to this application:

- ☐ Photos of existing conditions
- ☐ Location Map
- ☐ State Environmental Quality Review Act (SEQRA) Long or Short Environmental Assessment Form (EAF) (<https://www.dec.ny.gov/permits/6191.html>)
- ☒ Completed EPA Spreadsheet Tool for Evaluating Pollutant Load (STEPL) <http://it.tetratech-ffx.com/steplweb/> or similar standardized methodology (describe)
- ☐ Project budget (see attached template)
- ☐ Ownership commitment is provided via letter of intent (LOI) for non-municipal owners or municipal resolution for municipal owners

11. OTHER ATTACHMENTS

List other attachments provided, including cost estimates, bids, plans, documentation of matching funds, and other as appropriate to demonstrate project readiness, quality, feasibility, and cost effectiveness.

A list of attachments follows the application. Note a Pollutant Load Reduction Estimate utilizing a similar standardized methodology (described) is included in lieu of the EPA STEPL form.



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COMMUNITY PRESERVATION FUND (CPF) WATER QUALITY IMPROVEMENT PROGRAM LETTER OF INTENT

CONTACT INFORMATION

Municipality Town of Southampton
 Contact First and Last Name: Alex Gregor
 Contact Address 20 Jackson Avenue, Hampton Bays, NY 11946
 Contact Phone: 631-728-3600
 Contact Email: Agregor@southamptonny.gov

PROJECT INFORMATION

Project Title Alewife Creek Restoration
 Project Location Alewife Creek Culvert & Vicinity, approx. 230' east of North Sea and Noyack Roads intersection
 Project Description (1-3 sentences) Requesting matching funds for a \$410,000 NYS grant awarded (see attached) to assist the Town with addressing the environmental impacts to Alewife Creek associated with climate change. Specifically, the impact of sea level rise and more extreme tides on the alewife habitat and migration.

ANTICIPATED PROJECT TIMELINE

Begin: Spring 2019
 Complete: Spring 2022
 Notes: Dependent on NYS CFA grant contract execution



Southampton Town Board

116 Hampton Road
Southampton, NY 11968

Meeting: 07/24/18 06:00 PM

Department: Central Purchasing and Contracts Compliance

Category: Agreements, Contracts, Leases

Prepared By: Allison Mancuso

Initiator: Allison Mancuso

Sponsors: Councilman Tommy John Schiavoni

DOC ID: 29825

ADOPTED

TOWN BOARD RESOLUTION 2018-727

**Authorize the Supervisor to Sign Any and All Documents
Pertaining to the New York State Consolidated Funding
Application for the Alewife Creek Habitat Enhancement
Project**

WHEREAS, the State of New York has implemented the Consolidated Funding Application (CFA) process for state-wide economic development and environmental projects; and

WHEREAS, North Sea Harbor and its tributaries (including Alewife Creek) are identified by the NYSDEC as an Impaired waterbody; and

WHEREAS, the 2009 Peconic Estuary Program Habitat Restoration Plan identifies the North Sea/Alewife Creek Diadromous Fish Passage Enhancement as a habitat restoration project site for the purpose of maintaining and enhancing a significant alewife run; and

WHEREAS, the Town of Southampton Highway Department has identified a project to replace an existing culvert which runs under Noyac Road with a fish-friendly "right-sized" structure, and install stormwater control measures to treat and capture stormwater runoff and associated pollutants; and

WHEREAS, the identified project is anticipated to improve water quality and increase sea level rise resiliency of this significant alewife run by restoring appropriate creek flow and reducing stormwater pollutants; and

WHEREAS, The Town of Southampton has been granted Bronze Certification as a Climate Smart Community by the NYS Department of Environmental Conservation (DEC); and

WHEREAS, the Town of Southampton Highway Department has identified the Climate Smart Communities Grant Program and Town of Southampton Community Preservation Fund as appropriate potential funding sources for the proposed Alewife Creek Habitat Enhancement Project; and

WHEREAS, The Climate Smart Communities Grant Program requires applicants to provide a resolution authorizing the grant submittal and 50% local share of eligible project costs; and

WHEREAS, the total cost for final planning and construction of the Alewife Creek Habitat Enhancement Project is estimated to be approximately \$820,000; now therefore, be it

RESOLVED, that the Town Board adopts this resolution in support of submitting the grant application for consideration under the NYS Consolidated Funding Application to implement the design and construction of the Alewife Creek Habitat Enhancement Project; be it

FURTHER RESOLVED, that the Town Board authorizes the Supervisor or his designee to execute any and all documents required to prepare and submit the grant application; be it

FURTHER RESOLVED, if the grant request is approved, a separate Town Board Resolution accepting the awarded grant(s) shall be adopted and identify the source of funding for the up-front costs and 50% local share and per the Town Comptroller, no spending is to occur prior to the acceptance of the grant(s) and funding is established.

Financial Impact

If the grant request is approved, a separate Town Board Resolution accepting the awarded grant(s) shall be adopted and identify the source of funding for the up-front costs and 50% local share and per the Town Comptroller, no spending is to occur prior to the acceptance of the grant(s) and funding is established.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Tommy John Schiavoni, Councilman
SECONDER:	Julie Lofstad, Councilwoman
AYES:	Jay Schneiderman, Julie Lofstad, John Bouvier, Tommy John Schiavoni
ABSENT:	Christine Preston Scalera



CPF Application Attachments

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Consulting Engineers

437 South Country Road, Brookhaven, N.Y. 11719

I. Project Description



Project Description, adapted from 2018 NYS CFA

The Alewife Creek Habitat Enhancement project will protect this alewife run from sea level rise associated with climate change by restoring appropriate creek flow through the modification of an existing culvert under Noyac Rd., reducing stormwater pollutants, and including fish-friendly enhancements which will allow a greater portion of the alewife population to reach their freshwater spawning grounds, which will migrate inland due to sea level rise. Alewives are an important part of the local ecosystem as they are essential prey for North Sea and Robins Island ospreys and predatory fish in Big Fresh Pond. Stormwater control techniques, designed in accordance with the NYSDEC Stormwater Management Design Manual, will be installed to capture and treat stormwater runoff in the area.

The current 36" diameter round concrete culvert is likely restricting the flow at the point Noyac Road crosses Alewife Creek. The culvert bottom elevation (i.e. invert) creates a physical barrier to fish migration as migration is not possible during low tides, and during high tides, flow velocities within the culvert are artificially high, which can kill the migrating fish. The grant funds field investigations, including topographical surveys and bathymetry collection, as well as a hydraulic analysis which will determine specific recommendations for culvert flow enhancements.

The construction budget currently can accommodate a modification to the existing culvert with a rectangular opening (i.e. "box culvert") up to 4' wide by 3.5' high, which would be 14 square feet, a 100% increase over the current opening of approximately 7 square feet. It is anticipated, however, that the final design will be refined based on the outcome of the investigations and engineering analyses, as well as stakeholder input from environmental organizations such as the NYSDEC and those who have expressed support for this project. The project budget can be adapted to support a variety of options that will fulfill the project goals.

The project budget also proscribes funding for traditional drainage infrastructure to contain and/or treat the "first flush" of stormwater, removal of polluted sediments from the creek, and stabilization of existing drainage channels, and establishment of native plants to restore any areas disturbed.

The habitat for the alewife is uniquely threatened by climate change, as sea level rise in coastal Suffolk County communities will be pushing their freshwater spawning habitat further from their salt water domicile. Sea level rise is a well-documented threat resulting from climate change which will impact all coastal areas within Suffolk County, NY. Map and model of the range of the threat, created using the Nature Conservancy's Coastal Resilience (NCCR) applications and toolkit, are attached to this application. The Map and Model created using the NCCR contains estimates not only of the amount of sea level rise, but also of the amount of loss of freshwater march habitat. Please also find attached report by Dr. Karen Wilson documenting the threat to the alewife (aka river herring) from climate change. It explains that as sea level rises, salt water will intrude further upland into the freshwater marsh, resulting in a longer travel distance for the alewife from its salt water habitat in Peconic Bay to the its spawning grounds in freshwater marshes. A longer travel time decreases the amount of alewives that survive the trip to lay eggs, and decreases the volume of seedlings that survive the trip to live out their adult lives in the Peconic Bay.



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II. Project Budget Proposal



L.K. McLean Associates, P.C.

COMMUNITY PRESERVATION FUND BUDGET PROPOSAL

Date: 3/13/2019

Project Name: ALEWIFE CREEK CULVERT RESTORATION
Location: NOYACK ROAD, NORTH SEA, SUFFOLK COUNTY, NY
Client Name: TOWN OF SOUTHAMPTON
HIGHWAY DEPARTMENT

LKMA Project No 19019.000

Description	Quantity	Unit	Unit Price	Amount	NYS CFA Award	CPF Matching Funds
<u>PLANNING, ENGINEERING, CONSTRUCTION ADMINISTRATION & CONSTRUCTION INSPECTION</u>						
1 Professional Surveying & Engineering Services	1	LS	\$102,000.00	\$102,000	\$51,000	\$51,000
<u>CONSTRUCTION AND SITE IMPROVEMENTS - CONTRACTURAL SERVICES</u>						
1 General Conditions and Site Mobilization	1	LS	\$60,000.00	\$60,000	\$30,000	\$30,000
2 Maintenance and Protection of Traffic	1	LS	\$35,000.00	\$35,000	\$17,500	\$17,500
3 Sawcut Existing Wall, Removal & Disposal	1	LS	\$11,500.00	\$11,500	\$5,750	\$5,750
4 Soil Erosion and Sediment Control, including turbidity curtain	1	LS	\$28,000.00	\$28,000	\$14,000	\$14,000
4 Unclassified Excavation	1	LS	\$45,000.00	\$45,000	\$22,500	\$22,500
4 Survey and Stakeout	1	LS	\$15,000.00	\$15,000	\$7,500	\$7,500
5 Proposed Temporary Sheet piling to secure roadway during construction	1	LS	\$54,000.00	\$54,000	\$27,000	\$27,000
6 Proposed Culvert Modification	1	LS	\$216,000.00	\$216,000	\$108,000	\$108,000
7 Supply & Install Drainage structures & Drainage pipe	1	LS	\$83,000.00	\$83,000	\$41,500	\$41,500
8 Proposed Timber Railings, Barrier and Guide Rail, remove old	1	LS	\$30,000.00	\$30,000	\$15,000	\$15,000
9 Topsoil and Hydroseed	1	LS	\$12,000.00	\$12,000	\$6,000	\$6,000
10 Native Plantings to restore disturbed wetlands and stabilize existing channels	1	LS	\$55,000.00	\$55,000	\$27,500	\$27,500
11 Rip-rap to stabilize 2 existing drainage channels	1	LS	\$8,500.00	\$8,500	\$4,250	\$4,250
12 Roadway Pavement Restoration, Signage, striping & Site Restoration	1	LS	\$65,000.00	\$65,000	\$32,500	\$32,500
<u>CONSTRUCTION SUBTOTAL</u>				\$718,000	\$359,000	\$359,000
<u>TOTAL PROJECT COST</u>				\$820,000	\$410,000	\$410,000



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III. Project Schedule



Project Schedule, adapted from 2018 NYS CFA

This timeline assumes that a grant contract will be executed by April 2019. Should the state's process for processing a contract require more time, the project schedule will be adjusted accordingly.

Estimated grant award December 2018

Eligible expenditure period begins April 2019

Topographic and Bathymetric data collected May 2019

Hydraulic analyses and Final Engineering Complete August 2019

Environmental Permit Applications submitted October 2019

Environmental Permits/SEQRA complete June 2020

Bid Advertise Fall 2020

Construction contract executed Winter 2020

Construction complete March 2022 (To allow for periods of non-work for habitat protection)

Engineering design has been optimized to expedite environmental permitting. Should funds be received, advanced topographic, bathymetric, and hydraulic analyses will be performed to further support environmental permitting efforts and to provide a baseline for future monitoring efforts



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IV.Location Map





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V. Project Area Photos

Project Area Photos

Alewife Creek



Existing Culvert Opening



Noyack Road in vicinity of Culvert





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437 South Country Road, Brookhaven, N.Y. 11719

VI.NYS CFA Award

NYS CFA Award - 2018 Climate Smart Communities Grant Program

From: Fedyniak, Myra M (DEC)

Sent: Friday, January 18, 2019 3:33 PM

To: 'agregor@southamptontownny.gov' <agregor@southamptontownny.gov>; 'jschneiderman@southamptontownny.gov' <jschneiderman@southamptontownny.gov>; Eileen Quinn <equinn@southamptontownny.gov>

Subject: Alewife Creek Culvert Right Sizing

Dear Grantee,

Congratulations on your recent award of \$410,000 for CFA application 82297, for Alewife Creek Culvert Right Sizing project, awarded through the 2018 Climate Smart Communities Grant Program. A state assistance contract must be developed and executed before grantees can receive any payments under this program. The contract will be developed entirely within the New York State (NYS) Grants Gateway. To become familiar with the functionality of this system see the guidance and tutorials available at <http://grantsreform.ny.gov/grantees>.

The DEC Office of Climate Change (OCC) project manager assigned to this project is John Wimbush; E-mail: john.wimbush@dec.ny.gov, Phone: 518-402-8448. John will be starting in the office on Thursday January 31, 2019. If you would like to start work before he arrives you may contact me at this e-mail or the number below. The contract number will be assigned on Johns start date; the contract term is 3/15/2019 through 3/14/2024. Please use the contract number in all correspondence related to the project.

Work with the project manager to finalize the budget and work plan and move to contract execution. Keep the project manager abreast of all information related to the project, including work plan and budget changes, draft and final RFPs, internal project meetings, meetings with consultants, delays and problems encountered during the project, deliverables as they become available, press events (which must be coordinated with DEC's press office), as well as any additional pertinent information.

The attachment entitled "CSC Next Steps Document" provides instructions regarding the next steps to be taken by the grantee. Please review the document in its entirety and complete the requested actions within 60 days of receipt of this e-mail to ensure timely processing of the contract. OCC will host a webinar on Friday February 1, 2019 to go over the Next Steps Document and other information attached to this e-mail. If you wish to register, e-mail me the names and e-mails of the participants from your municipality. The attendees should be those that will prepare the budget and work plan and manage the project and the grant for the municipality. An e-mail with the link to the meeting will be sent to the registered participants. If the municipality will be utilizing a contractor to complete grant management work, a representative from the municipality must also attend.

If you have technical questions or problems uploading information, editing the work plan, or editing the budget please contact the Grants Gateway Help Desk at 1-800-820-1890. For questions or assistance related to insurance requirements, please contact Janice Mangino at (518) 402-9247 or janice.mangino@dec.ny.gov For administrative or contracting processes questions, please contact the OCC contract manager listed above.

We look forward to working with you to complete this important project.

Sincerely,

Myra Fedyniak

Climate Policy Analyst 1

Office Of Climate Change

NYS Dept. of Environmental Conservation

625 Broadway, Albany NY 12233

P: 518-402-8448

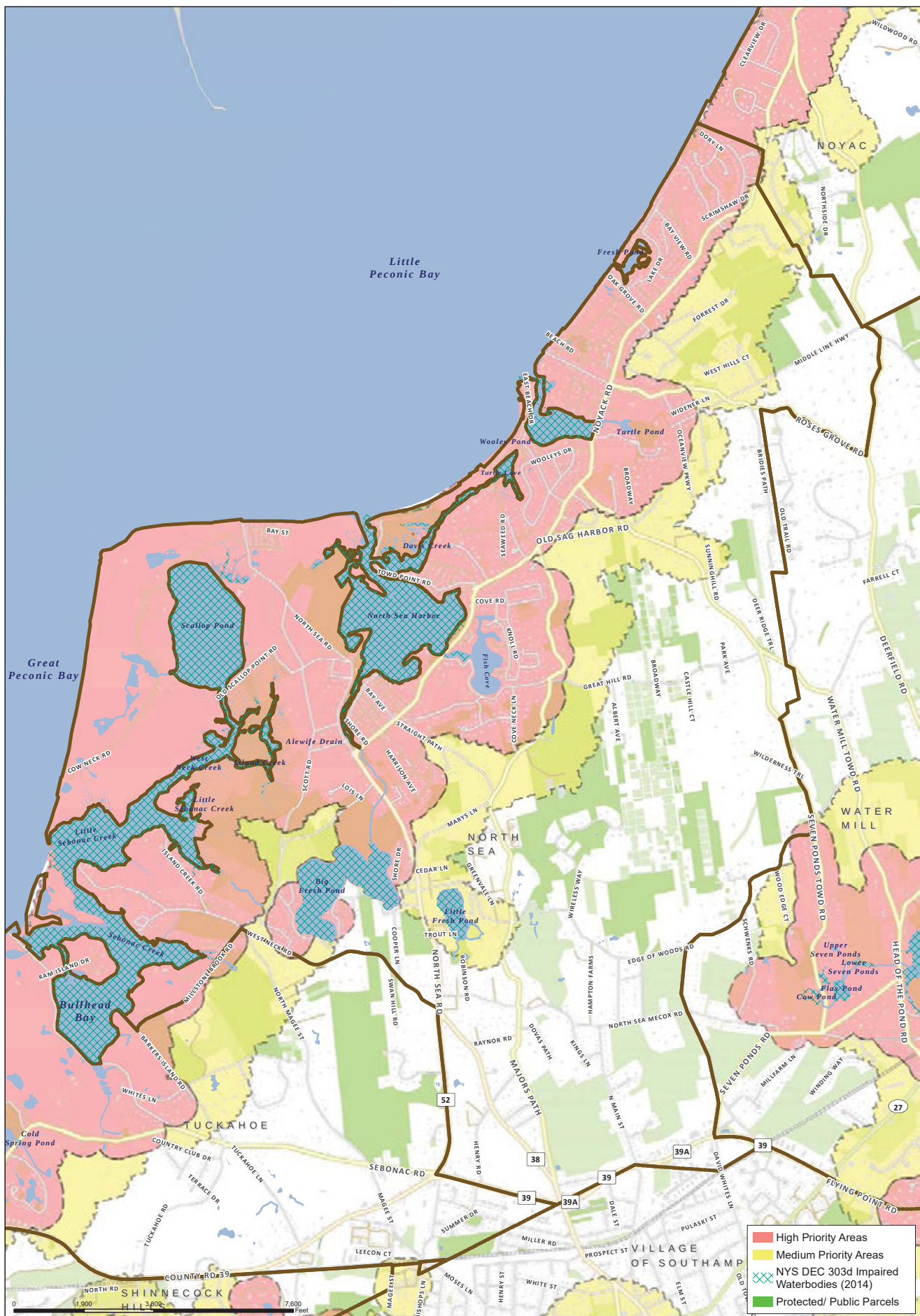


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VII. WQIPP North Sea Priority Area Map



Town of Southampton CPF Water Quality Improvement Project Plan

NORTH SEA

Suffolk County Real Property Tax Service
 COPYRIGHT 2016, COUNTY OF SUFFOLK, N.Y.
 Real Property Taxmap parcel linework used with permission of
 Suffolk County Real Property Tax Service Agency (R.P.T.S.A.)



VIII. NYS Priority Waterbodies Listing (PWL)

North Sea Harbor and tribs (1701-0037)

Impaired

Waterbody Location Information

Revised: 10/30/2015

Water Index No: (MW6.3c) GB..LPB-123-P659 **Drain Basin:** Atlantic-Long Island Sound
Unit Code: 0203020205 **Class:** SA Atlantic Ocean
Water Type/Size: Estuary Waters 196.7 Acres **Reg/County:** 1/Suffolk (52)
Description: entire harbor and selected/smaller tidal tribs

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	Severity	Confidence
Shellfishing	Impaired	Known
Public Bathing	Stressed	Unconfirmed
Recreation	Stressed	Known
Aquatic Life	Fully Supported	Unconfirmed
Fish Consumption	Fully Supported	Unconfirmed
Conditions Evaluated		
Habitat/Hydrology	Good	
Aesthetics	Good	

Type of Pollutant(s)

Known: PATHOGENS
Suspected: - - -
Unconfirmed: - - -

Source(s) of Pollutant(s)

Known: OTHER SOURCE (boat pollution), URBAN/STORM RUNOFF
Suspected: - - -
Unconfirmed: - - -

Management Information

Management Status: Strategy Implementation Scheduled or Underway
Lead Agency/Office: ext/WQCC
IR/305(b) Code: Impaired Water, TMDL Completed (IR Category 4a)

Further Details

Overview

North Sea Harbor is assessed as an impaired waterbody due to shellfishing use that is considered to be impaired by pathogens. This assessment is based on seasonal shellfishing closures.

Use Assessment

North Sea Harbor is a Class SA waterbody, suitable for shellfishing, public bathing and general recreation use, and support of aquatic life.

Shellfishing Use

Shellfish harvesting for consumption is considered to be impaired in these waters. All of this waterbody (included

within Shellfish Growing Area #62) has been designated as uncertified or only seasonally certified for the taking of shellfish for use as food. Year-round restrictions apply to portions of North Sea Harbor and Alewife Creek, Fish Cove, Turtle Cove, and upper Davis Creek, while seasonal restrictions apply to Lower Davis Creek. Shellfish that grow in contaminated waters can accumulate disease-causing microorganisms (bacteria, viruses) that can be eaten with the shellfish. These shellfishing designations are based on results of water quality sampling and evaluation of data against New York State and National Shellfish Sanitation Program monitoring criteria and/or shoreline surveys of actual or potential sources of contamination. Certified/uncertified shellfish area designations are revised regularly; for the most up to date and detailed descriptions of current designations, go to www.dec.ny.gov/regs/4014.html. (DEC/DFWMR, Region 1, July 2010)

Recreational use including public bathing is thought to be stressed based on shellfishing certification monitoring. There are no regularly monitored beaches in this waterbody, but bacteriological sampling conducted through the shellfishing monitoring program indicate elevated pathogen levels. However criteria for shellfishing are lower than those for public bathing and additional bacteriological sampling is needed to more fully evaluate swimming use. Restrictions on shellfishing represent an impact to recreational use. (DEC/DFWMR, July 2014)

Based on other available indicators for other related uses, this waterbody is expected to support a healthy marine water fishery, although no specific fishery or biological reports are included in this assessment.

There are no health advisories in place limiting the consumption of fish from this waterbody (beyond the general advice for all waters). Fish consumption is considered to be fully supported based on the absence of any waterbody-specific advisory, but is noted as unconfirmed since routine monitoring of contaminants in fish is limited. (NYS DOH Health Advisories and DEC/DOW, BWAM, January 2014)

Water Quality Information

Assessments of recreational uses and aquatic life in marine waters are based primarily on information from NYS and local health departments and the NYSDEC Division of Fish Wildlife and Marine Resources. This information is compiled and updated in regularly issued advisories and certifications regarding bathing beaches, shellfishing harvest and sportfish consumption. (NYSDOH and DEC/DFWMR, 2014)

Source Assessment

Based on surrounding land use and other knowledge of the waterbody, the most likely sources of pathogens to the waterbody are largely nonpoint runoff from developed urban and residential areas agricultural activity and open space/forest; direct waterfowl/wildlife inputs; and boats and marinas. Relative contributions from each type of source are very site-specific in nature, particularly in localized areas of study. (DEC/DOW, BWRM, September 2015)

Management Action

North Sea Harbor was among the waterbodies covered by the Peconic Estuary Pathogen TMDL to address shellfishing impairments that was established in 2007. (DEC/DOW, BWAM/WQMS, July 2010)

This segment is included within the Peconic Estuary Program (PEP) study area, situated between the North and South Forks of eastern Long Island and consisting of more than 100 distinct bays, harbors, embayments, and tributaries, covering more than 128,000 acres of land and 121,000 acres of surface water. As part of the National Estuary Program (NEP), the Peconics were charged with developing and implementing a watershed-based comprehensive management plan. To accomplish this goal the PEP established an innovative partnership of local, state, and federal governments, citizen and environmental groups, businesses and industries, and academic institutions. The PEP Comprehensive Conservation and Management Plan (CCMP) was formally approved by USEPA in 2001. There are over 300 specific management tasks included in the CCMP, with priority topics focusing on Brown Tide, nutrients, habitat and living resources, pathogens, toxic pollutants, and critical lands protection. A vessel waste no discharge zone was established for the entire Peconic Estuary in 2002 to address impacts from boat pollution. (PEP, August 2010)

Section 303(d) Listing

North Sea Harbor is not included on the current (2014) NYS Section 303(d) List of Impaired/TMDL Waters. Although it is assessed as an impaired water, it is categorized as an IR Category 4a water that is not listed due to the inclusion of the waterbody in the 2006 Peconic Estuary Pathogens (Shellfishing) TMDL. (DEC/DOW, BWAM, January 2015)

Segment Description

This segment includes the entire harbor and tidal tribs, including Alewife Creek, Davis Creek, Turtle Cove and Fish Cove.

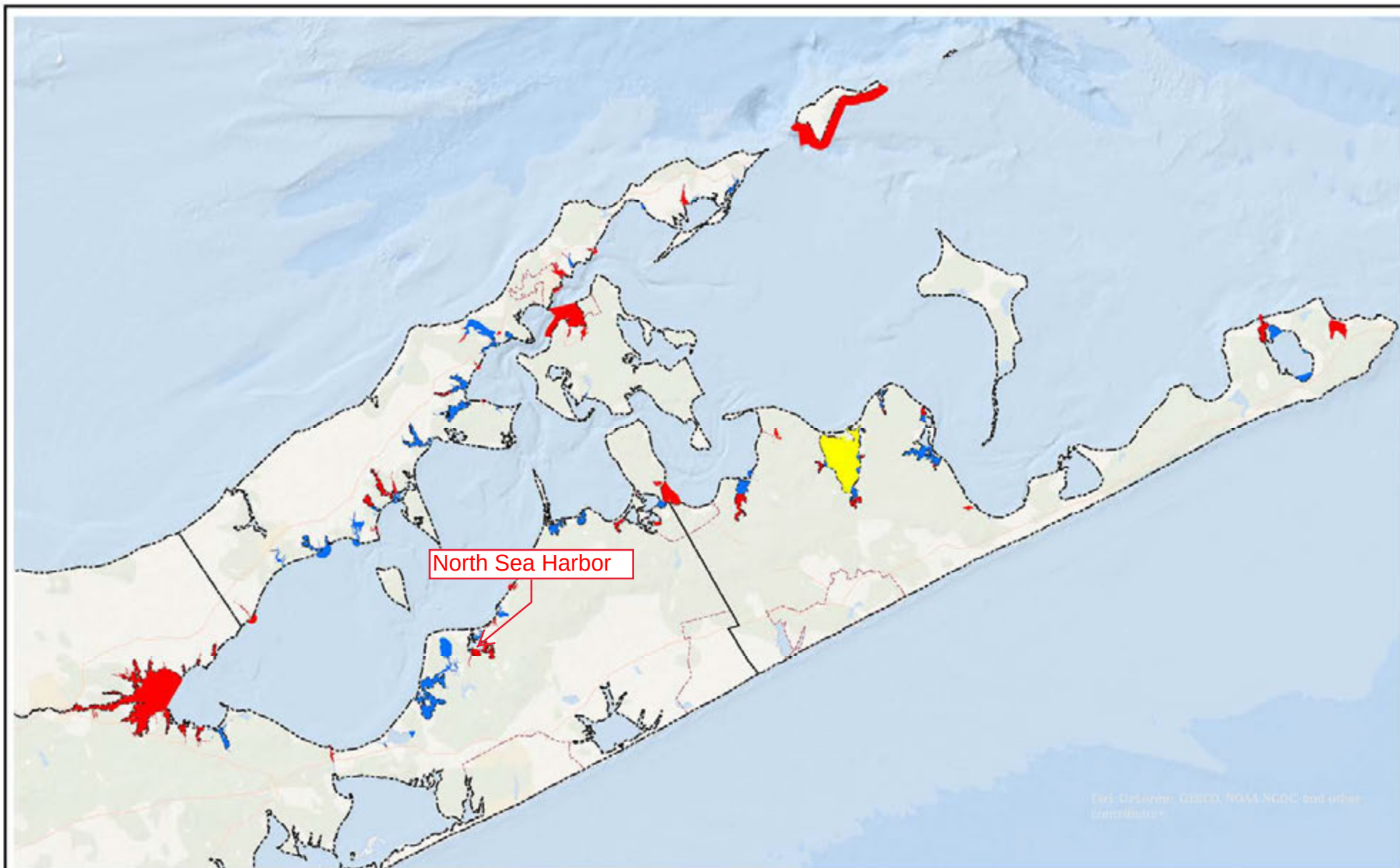


L.K. McLEAN ASSOCIATES, P.C.

Consulting Engineers

437 South Country Road, Brookhaven, N.Y. 11719

IX.PEP Shellfish Indicators Map



Status of Shellfishing Areas

- Uncertified
- Holiday Closures
- Seasonally Certified

NYS DEC
Shellfish Classification Areas
Peconic Estuary Watershed



0 3 6 Miles



X. NYSDEC Shellfish Closure Map

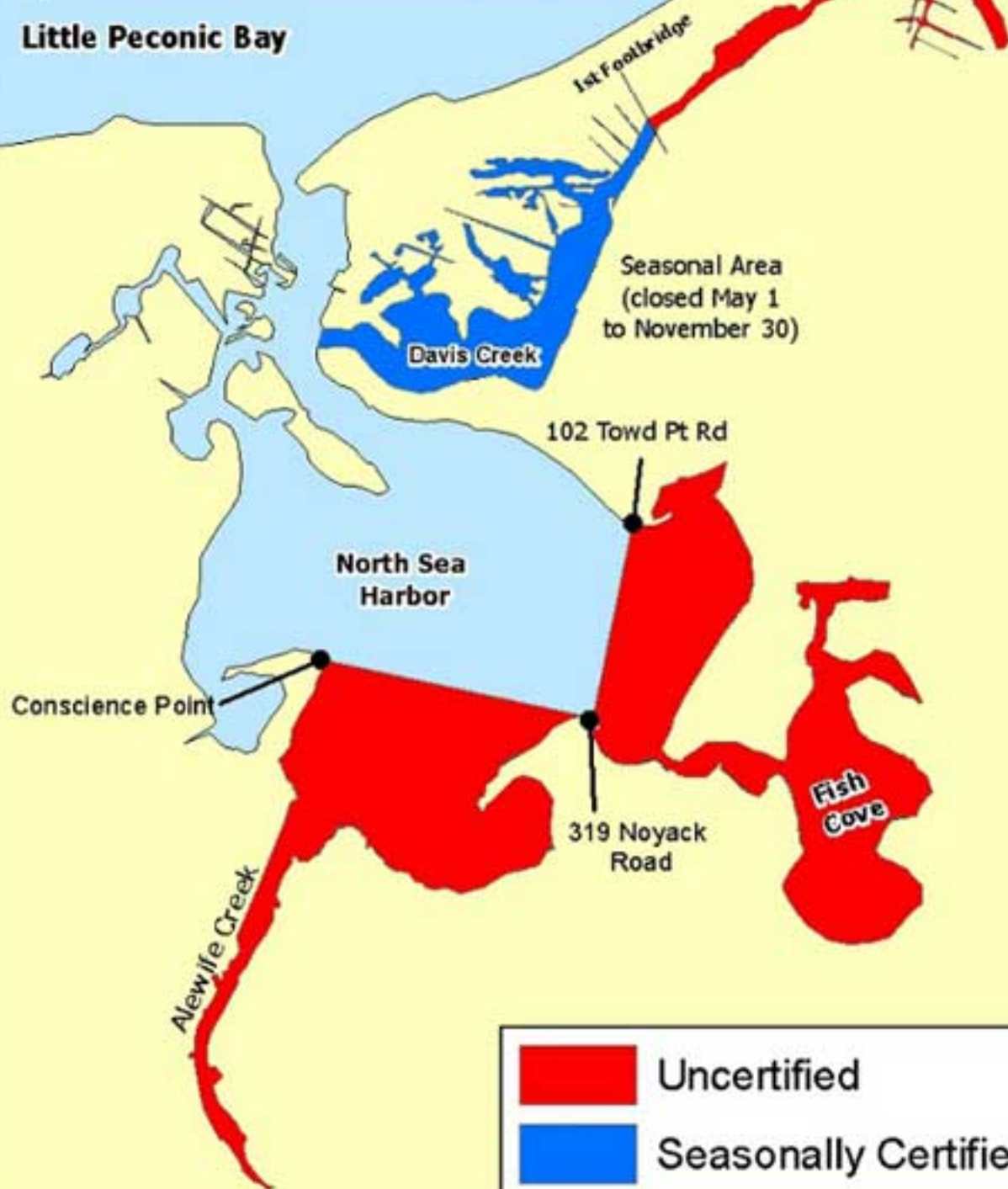
North Sea Harbor

Shellfish Closures

6 NYCRR Part 41.3

Paragraph 4 (x)

Little Peconic Bay





XI.Support Letters

- i. The Peconic Estuary Program
- ii. The Nature Conservancy
- iii. Seatuck Environmental Association



July 26, 2018

Alex Gregor, Superintendent of Highways
Town of Southampton
20 Jackson Avenue
Hampton Bays, NY 11946

Re: Alewife Creek Habitat Enhancement Project

Dear Superintendent Gregor,

I write in support of your proposed Alewife Creek Habitat Enhancement Project. This project aims to protect the pristine alewife run in Alewife Creek from sea level rise by increasing the culvert size and installing a fish friendly culvert bottom at the Noyac Road location. Increasing the diameter of the culvert will allow for greater freshwater flow and an increased capacity of alewife to swim upstream to spawn. This project also aims to reduce stormwater pollutants with (a) increased natural flushing and (b) the removal of sediment from areas of stormwater deposition and the inclusion of natural drainage structures.

Habitat for the alewife is uniquely threatened by climate change because of their position at the interface of marine and freshwater systems. As a result, when sea levels rise in coastal Suffolk County communities marine waters are pushed further up into freshwater systems altering both the ecology of these areas and increasing the distance alewife need to travel to reach their spawning grounds. Right-sizing the culvert at this specific location has been documented as a priority habitat restoration project in the Peconic Estuary Program Habitat Restoration Plan.

This project will help protect the region's fisheries and tourism industries, as well as, protect the roadway passage during severe storms. This will also serve to advance the Long Island Regional Economic Development Council goals related to wetlands protection, sustainability of infrastructure and resiliency to natural weather events.

Sincerely,

Joyce Novak, Ph.D.
Director, Peconic Estuary Program

July 26, 2018

Alex Gregor, Superintendent of Highways
Town of Southampton
20 Jackson Avenue
Hampton Bays, NY 11946

Dear Superintendent Gregor,

The Nature Conservancy (TNC) is very interested in climate adaptation of road-stream crossings for the benefit of both nature and people. It is from this point of view that we enthusiastically support your proposed **Alewife Creek Habitat Enhancement** project to "right size" the culvert that runs under Noyack Road in Southampton, NY. "Right sizing" this culvert for current and future conditions will protect people, infrastructure, and the valuable alewife fish habitat at this location.

TNC has been assessing road-stream crossings across Suffolk County to identify culverts and bridges in need of upgrade or replacement. While we haven't fully assessed this site at Alewife Creek, photographs shared with us by Seatuck Environmental Association (Seatuck) clearly show that the current culvert is undersized and lacks a natural fish-friendly bottom that would encourage fish passage. Indeed, this site has been identified as a priority for habitat restoration by our partners, Seatuck and the Peconic Estuary Program.

While the repairs for this crossing may not be required to follow the guidance of CRRA, it would be a wise investment to build in anticipation of more frequent coastal flooding from higher sea levels, stronger coastal storms, and more extreme precipitation events. More frequent high-water events add considerable stress to infrastructure such as undersized stream crossings and can result in costly, disruptive repairs especially with flooding from undersized culverts.

Undersized, poorly designed, or failing infrastructure like the culverts on Alewife Creek not only restricts the flow of tidal and freshwater streams and degrade natural systems, they can also lead to flooding of the roadway and surrounding area. During heavy rainfall events or major storms, undersized culverts can worsen and prolong flood impacts and result in costly, disruptive repairs. Well-designed, right-sized culverts and bridges bring environmental and safety benefits while also saving communities money, as they tend to last longer and require less frequent maintenance. It is a wise investment to design and build new infrastructure that is resilient to more frequent coastal, stronger coastal storms, and more extreme precipitation events.

There is huge value in upgrading and right-sizing culverts. Our communities and our economies depend on functioning road networks with safe road-stream crossings as well as healthy rivers, streams, wetlands and bays. Investing in right-sizing our road-stream crossings benefits both communities and natural systems. We need connectivity for habitats and fauna, and climate resilience for nature and people. Right-sizing this culvert on Noyack Road will protect the roadway passage from flooding and erosion during severe storms and advance the Long Island Regional Development Council's goals related to wetland protection, sustainability of infrastructure and resilience to increasingly intense natural weather events.

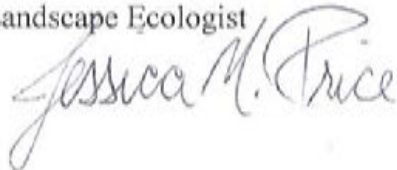
We have enclosed the 1-pager for our Long Island Road-Stream Crossing Improvement Project. Please don't hesitate to contact us if you have any questions.

Best Regards,

Nicole P. Maher, Ph.D.
Senior Coastal Scientist



Jessica M. Price, Ph.D.
Landscape Ecologist



Long Island Road-Stream Crossing Improvement Project



Investing in Road-Stream Crossings Benefits Communities & Natural Systems

Road-stream crossings, which include culverts and bridges, are an essential element of our transportation networks, allowing roads to pass over rivers, streams, tidal creeks, and marshes. Our communities and our economies depend on functioning road networks and safe crossings as well as healthy rivers, streams, wetlands and bays.

Undersized, poorly designed, or failing infrastructure at road-stream crossings restricts the flow of tidal and freshwater streams, which can lead to flooding, road closures, property damage, disconnected and degraded natural systems, and impaired water quality. During major storms, undersized culverts worsen flood impacts. Well-designed culverts bring environmental and safety benefits while also saving communities money, because they last longer and require less frequent maintenance.

THE CHALLENGE: There is no comprehensive source of information on the location, condition, and flood vulnerability of Long Island's road-stream crossings, and their ability to provide passage for aquatic organisms and tidal flows is unknown.

A Path Toward More Resilient Road-Stream Crossings

The Nature Conservancy is seeking the support of state, county, and municipal partners to help identify and prioritize road-stream crossings in Suffolk County for upgrade or replacement based on shared social and ecological criteria.

THE SOLUTION: We are working to locate and assess all stream and tidal crossings in Suffolk county for their condition and ability to allow passage of tidal and freshwater stream dependent organisms. We need partners to provide their perspectives on important criteria for prioritizing infrastructure maintenance, such as road flooding or safety concerns, maintenance needs, and other factors. The Nature Conservancy will bring this information together to create an easy-to-use online atlas that enables partners to map a set of priority crossings for replacement or upgrade based on these social and ecological criteria.

This project builds on our experience throughout the state working with NYS DOT and other partners to identify, fund, and implement projects to upgrade high environmental priority culverts.

Benefits to Highway Departments

This work supports infrastructure planning and maintenance by providing a spatial inventory of all road-stream crossings in the county and information about which crossing upgrade or replacement projects are likely to bring the greatest improvements in road reliability and ecological condition.

With this information, communities can strategically plan capital investments, obtain funding, and identify partners for crossing replacement or upgrade projects. In the longer-term, The Nature Conservancy will work with interested communities and partners to identify and implement solutions for their crossings of concern.

Contact us at The Nature Conservancy:

Jessica Price (jessica.price@tnc.org)

Nicole Maher (nmaher@tnc.org)

250 Lawrence Hill Road, Cold Spring Harbor, NY 11724

(631) 367-3225





March 12, 2018

(Via email: mshea@southamptontownny.gov)

Martin Shea
Chief Environmental Analyst
Town of Southampton
Town Hall, 116 Hampton Road
Southampton, NY 11968

Dear Marty:

Thank you for the opportunity to participate in the discussion regarding the Alewife Creek culvert under Noyak Road in North Sea. We commend the Town on its long-standing commitment to conservation and its particular interest in improving conditions for River Herring in Alewife Creek.

Alewife Creek River Herring

The River Herring run at Alewife Creek is the largest and among the most significant on Long Island. Its size and status is due to the fact that the access to the creek has never been permanently interrupted (by dam or other barrier), as well as to the high quality, protected spawning habitat available in Big Fresh Pond. A survey in the early 2000s by Professor Matt Draud of Long Island University estimated the Alewife Creek run at approximately 80,000 fish.

However, there is reason to believe the creek's River Herring population could be larger. While no generally accepted calculus for assessing spawning potential exists, one rule of thumb is that each acre of spawning habitat can support 2,000 alewives (See e.g., Purinton, T., F. Doyle, R.D. Stevenson. 2003. Status of River Herring on the North Shore of Massachusetts. Retrieved December 3, 2013 from http://ipswich-river.org/wp-content/uploads/2010/03/final_anadromous_fish_report.pdf). In fact, even higher spawning densities have been suggested. For example, according to NOAA Fisheries, the 269-acre Billington Sea, a freshwater pond in Plymouth, Massachusetts, is said to have a potential to host one million River Herring (a rate of more than 3,700 fish per acre)

(https://www.greateratlantic.fisheries.noaa.gov/stories/2014/after_more_than_a_century_river_to_be_opened.html). These rates, if accurate, suggest that the run at Alewife Creek could be larger, especially considering the 83-acres of habitat at Big Fresh Pond.

While Alewife Creek has no dams or other permanent migration barriers, the River Herring run is restricted by the road crossings at both Noyak and North Sea Roads. As you know, under current conditions, the 3-foot cylindrical culvert under Noyak Road is intermittently passable for River Herring. At high tide, and for several hours before and after, there is enough water in the creek to allow the herring to access the mouth of the culvert. But at low portions of the tide cycle, the culvert is perched above the stream bed and impassable. The box culvert at North Sea Road is also perched above the stream bed and subject to low water flows over its concrete bottom. Recent modifications have improved conditions at North Sea Road, but the culvert still presents a significant obstacle to migrating adults and results in high predation rates.

Given the good water quality, the highly protected nature of the stream corridor and the lack of inland fishing pressure, the culverts appear to be impacting the overall success of the River Herring population at Alewife Creek. It is clear from observations that the fish are subject to high predation rates as they gather in shallow water at both locations. We have also observed spawning behavior below the North Sea Road barrier, suggesting that some of the fish might not attempt to continue further upstream to better spawning habitat. Finally, while difficult to document, it is also likely that these migration impediments also impact the fish through elevated physiological stress and physical exhaustion, and thereby reduce overall spawning success.

Culvert Replacement

Given the overall importance of the Alewife Creek river herring run – and the potential for growth – we think it is important to address both culverts to make them fully passable under all conditions. In our opinion, the best way to achieve this goal is to redesign and replace the culverts to allow the stream to flow freely in its natural channel under the roadways. Such culverts would have the added benefit of restoring full connectivity to the creek in both upstream and downstream directions for a wide variety of aquatic species. The New York Department of Environmental Conservation has recently issued extensive guidance on stream crossings and re-connectivity projects (<https://www.dec.ny.gov/permits/49060.html>), including best management practices for culverts (<https://www.dec.ny.gov/permits/49066.html>). We urge the Town to consider implementing such measures at the Noyak Road culvert. We will work with our partners, including The Nature Conservancy and the Peconic Estuary

Program, to urge Suffolk County to take similar actions at the North Sea Road crossing.

Fish Passage

Short of replacing the Noyak Road culvert, we do think there is value in addressing the existing migration restriction during low tides. However, while we appreciate the Town's effort to develop a plan for an engineered solution at the site, we think it's an unnecessary and unwise step. The investment in a permanent Denil-style fish pass would likely preclude or considerably delay action on what we think is the more effective and permanent solution: addressing the culvert itself. We understand that replacing the culvert is a large undertaking that may take years to achieve, but we're confident it would be the right step, especially for a stream with such ecological significance. In the interim, it is likely possible to more affordably achieve modest gains in fish passage at the site by creating a series of rock step pools that would hold water below Noyak Road and allow River Herring to access the culvert during low tides. I have attached the U.S. Fish & Wildlife Service's most recent guidance on fish passage (USFWS, Region 5, "Fish Passage Engineering Design Criteria", February 2017) – it provides comprehensive information to help ensure a successful project.

Finally, regardless of how the Town proceeds, it would be useful to gather additional biological information about the creek and the wildlife it supports. It would be especially helpful to reproduce Dr. Draud's study and obtain more current estimates of the size of the River Herring run. This and other data would assist the Town in making future management decisions about Alewife Creek and Big Fresh Pond. Seatuck is certainly willing to assist with such efforts - please let us know if we can help in any way.

Thank you again for this opportunity to submit our comments. Please let me know if you have any questions or require additional information.

Sincerely,

Enrico Nardone

Enrico Nardone
Executive Director
Seatuck Environmental Association

July 23, 2018

Alex Gregor, Superintendent of Highways
Town of Southampton
20 Jackson Avenue
Hampton Bays, NY 11946

Re: Alewife Creek Habitat Enhancement Project

Dear Superintendent Gregor:

I write in support of your proposed Alewife Creek Habitat Enhancement project, which will protect this pristine alewife run from sea level rise associated with climate change by restoring appropriate creek flow through the "right-sizing" of an existing culvert, reducing stormwater pollutants, and including a fish-friendly culvert bottom.

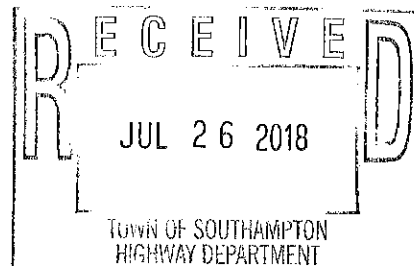
The habitat for the alewife is uniquely threatened by climate change, as sea level rise in coastal Suffolk County communities will be pushing their freshwater spawning habitat farther from their salt water domicile. Right-sizing the culvert at this specific location has been documented as a priority habitat restoration in the Peconic Estuary Program Habitat Restoration Plan.

The project will both protect the region's aquaculture and tourist industries, as well as protect the roadway passage during severe storms, serving to advance Long Island Regional Economic Development Council goals related to wetlands protection, sustainability of infrastructure and resilience to natural weather events.

Sincerely,



Barbara Fair
180 Towd Point Rd.
Southampton, NY 11968-1529





XII. SEQRA Short EAF

Short Environmental Assessment Form

Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information			
Town of Southampton Highway Department			
Name of Action or Project: Alewife Creek Restoration			
Project Location (describe, and attach a location map): Alewife Creek Culvert & Vicinity, approx. 230' east of North Sea and Noyack Roads intersection			
Brief Description of Proposed Action: The Alewife Creek Habitat Enhancement project will protect this alewife run from sea level rise associated with climate change by restoring appropriate creek flow through the modification of an existing culvert under Noyack Rd., reducing stormwater pollutants, and including fish-friendly enhancements which will allow a greater portion of the alewife population to reach their freshwater spawning grounds. The project includes field investigations, including topographical surveys and bathymetry collection, as well as a hydraulic analysis which will determine specific recommendations for culvert flow enhancements. Anticipated construction includes enlarging existing culvert opening, fish-friendly culvert botto, traditional drainage infrastructure to contain and/or treat the "first flush" of stormwater, removal of polluted sediments from the creek, and stabilization of existing drainage channels, and establishment of native plants to restore any areas disturbed.			
Name of Applicant or Sponsor: Alex Gregor, Highway Superintendent		Telephone: 631-728-3600 E-Mail: Agregor@southamptonny.gov	
Address: 20 Jackson Avenue			
City/PO: Hampton Bays		State: NY	Zip Code: 11946
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.		NO ☒	YES ☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: Town Trustees, NYSDEC, NYSDOS, USACOE		NO ☐	YES ☒
3. a. Total acreage of the site of the proposed action?		1.38 acres	
b. Total acreage to be physically disturbed?		.2 acres	
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor?		6+/- acres	
4. Check all land uses that occur on, are adjoining or near the proposed action:			
5. ☐ Urban ☒ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☒ Residential (suburban) ☒ Forest ☐ Agriculture ☒ Aquatic ☐ Other(Specify): ☒ Parkland			

5. Is the proposed action,	NO	YES	N/A
a. A permitted use under the zoning regulations?	☐	☒	☐
b. Consistent with the adopted comprehensive plan?	☐	☒	☐
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	NO	YES	
	☐	☒	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?	NO	YES	
If Yes, identify: <u>Peconic Bay and Environs</u>	☐	☒	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	NO	YES	
	☒	☐	
b. Are public transportation services available at or near the site of the proposed action?	☒	☐	
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☒	☐	
9. Does the proposed action meet or exceed the state energy code requirements?	NO	YES	
If the proposed action will exceed requirements, describe design features and technologies:			
<u>N/a</u>	☐	☐	
10. Will the proposed action connect to an existing public/private water supply?	NO	YES	
If No, describe method for providing potable water: _____			
<u>N/a</u>	☐	☐	
11. Will the proposed action connect to existing wastewater utilities?	NO	YES	
If No, describe method for providing wastewater treatment: _____			
<u>N/a</u>	☐	☐	
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	NO	YES	
	☒	☐	
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☒	☐	
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	NO	YES	
	☐	☒	
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☐	☒	
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____			
<u>Alewife Creek - 200 square feet is equivalent to maximum proposed size of potentially enlarged culvert</u>			

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:		
☒ Shoreline	☐ Forest	☐ Agricultural/grasslands
☒ Wetland	☐ Urban	☐ Suburban
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	NO ☐	YES ☒
16. Is the project site located in the 100-year flood plan?	NO ☐	YES ☒
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	NO ☒	YES ☐
a. Will storm water discharges flow to adjacent properties?	☐	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☐
If Yes, briefly describe: _____ _____		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment: _____	NO ☒	YES ☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____	NO ☒	YES ☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____	NO ☒	YES ☐
I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE Applicant/sponsor name: <u>Alex Gregor</u> Date: <u>3/11/19</u> Signature: <u><i>Alex Gregor</i></u> Title: <u>Superintendent of Highways</u>		



XIII. Pollutant Load Reduction Estimate



POLLUTION REDUCTION ESTIMATE

This document is provided as an alternative to the spreadsheet that can be generated using the US EPA STEPL tool as the STEPL tool does not contain an option to include weather data specific to the East End of Long Island. The STEPL tool also does not estimate pathogen reduction, which is a key pollutant of concern.

An examination of the reference data provided will demonstrate that this estimate is very conservative, and that the true amount of pollutants removed on an annual basis from surface waters by the proposed project is likely much higher.

SUMMARY RESULTS TABLE

Pollutant	mg/L found in stormwater generated by Open Space / Non-Urban Land Use	Pounds of Pollutants Treated by Project Design on an annual basis, in the case of 36 rain events/year
Biochemical Oxygen Demand	0	0.00
Chemical Oxygen Demand	40	154.62
Total Suspended Solids	70	270.58
Total Lead	0.03	0.12
Total Copper	0	0.00
Total Zinc	0.195	0.75
Total Kjeldahl Nitrogen	0.965	3.73
Nitrate + Nitrite	0.543	2.10
Total Phosphorus	0.121	0.47
Soluble Phosphorus	0.026	0.10
Pathogens	400	1546.19
Totals	511.88	1978.66



US EPA POLLUTANT REDUCTION REFERENCE

The amount of pollutants in stormwater is estimated in the following table produced by the USEPA as part of the Final Report produced in 1983 documenting the results of the Nationwide Urban Runoff Program.

Table 4-1. Median Event Mean Concentrations for Urban Land Uses

Pollutant	Units	Residential		Mixed		Commercial		Open/ Non-Urban	
		Median	COV	Median	COV	Median	COV	Median	COV
BOD	mg/l	10	0.41	7.8	0.52	9.3	0.31	--	--
COD	mg/l	73	0.55	65	0.58	57	0.39	40	0.78
TSS	mg/l	101	0.96	67	1.14	69	0.85	70	2.92
Total Lead	µg/l	144	0.75	114	1.35	104	0.68	30	1.52
Total Copper	µg/l	33	0.99	27	1.32	29	0.81	--	--
Total Zinc	µg/l	135	0.84	154	0.78	226	1.07	195	0.66
Total Kjeldahl Nitrogen	µg/l	1900	0.73	1288	0.50	1179	0.43	965	1.00
Nitrate + Nitrite	µg/l	736	0.83	558	0.67	572	0.48	543	0.91
Total Phosphorus	µg/l	383	0.69	263	0.75	201	0.67	121	1.66
Soluble Phosphorus	µg/l	143	0.46	56	0.75	80	0.71	26	2.11

COV: Coefficient of variation

Source: Nationwide Urban Runoff Program (US EPA 1983)

Results for the corresponding study of pathogens in stormwater runoff were highly variable. Reference tables are included below, but to be conservative, a value of 400 mg/L, which represents the minimum amount of fecal coliform anticipated to be found in stormwater runoff, will be used in pollutant load reduction estimates. Note fecal coliform is just one type of common pathogen, and the maximum amount anticipated to be found in stormwater runoff was 50,000 mg/L.

Table 4-5. Densities of Selected Pathogens and Indicator Microorganisms in Storm Water in Baltimore, Maryland Area

Sampling Station	Geometric Mean Densities							
	Enterovirus	Salmon sp.	Pseudomon. aeruginosa	Staph. aureus	Total Coliform	Fecal Coliform	Fecal Strep.	Enterococci
	PFU/10 L	MPN/10 L	MPN/10 L	MPN/100 mL	MPN/100 mL (10 ⁴)	MPN/100 mL (10 ³)	No./100 mL (10 ⁴)	No./100 mL (10 ⁴)
Bush St.	6.9	30	2000	120	38	83	56	12
Northwood	170	5.7	590	12	3.8	6.9	5	2.1

PFU: Plaque-forming units
MPN: Most Probable Number
Source: Field et al, 1993

As shown earlier in Table 4-4, typical fecal coliform concentrations for separate urban storm sewers varied widely, ranging between 400-50,000 mpn/100 ml. An example of fecal coliform concentrations measured in sheet flow associated with different impervious surfaces is presented in Table 4-6. The broad range in concentrations illustrates the highly variable nature of fecal coliform concentrations in storm water.

Table 4-6. Fecal Coliform Concentrations Collected in Sheetflow from Urban Land Uses

Land Use	Median (MPN/100 ml)	Range (MPN/100 ml)
Unpaved driveways and storage areas	26	0.02-300
Roof runoff	1.6	0.56-2.6
Sidewalks	55	19-90
Paved parking and driveways	2.8	0.03-66
Paved roads	19	1.8-430

MPN: Most Probable Number
Source: Field et al, 1993.

ESTIMATED QUANTITY OF RAINFALL TREATED

As the majority of stormwater pollutants are found in the “first flush”, which is defined by the NYSDEC Stormwater Design Manual to be the first .5” in each rain event, the pollutant reduction will conservatively be based on only the average amount of rainfall events exceeding .5” of rain that occur each year. The proposed project will provide stormwater infrastructure to treat the first flush, the estimated concentration of pollutants utilized will be the values presented for Open/Non-Urban land use indicated in Table 4-1 above.

According to weather history data obtained from Weather Underground Personal Weather Station #KNYSOUTH109, rain storms exceeding .5 inches occurred 26 times from July 2018 – December 2018. This averages to 4.3 storms per month. Conservatively, a treated rainfall value of 36 qualifying rain events per year (i.e. 3 storms per month, or 18 inches per year) was utilized, though numerous weather data sources indicate that the area receives anywhere from 43”- 45” per year in 25-75 events per year. So in reality, the proposed project will treat the first .5” of each rain event per year. But to be conservative, this pollutant reduction analysis is based on the proposed design treatment of 1,720 cubic feet of stormwater three (3) times per month, which converts to 463,294 gallons of treated stormwater per year.

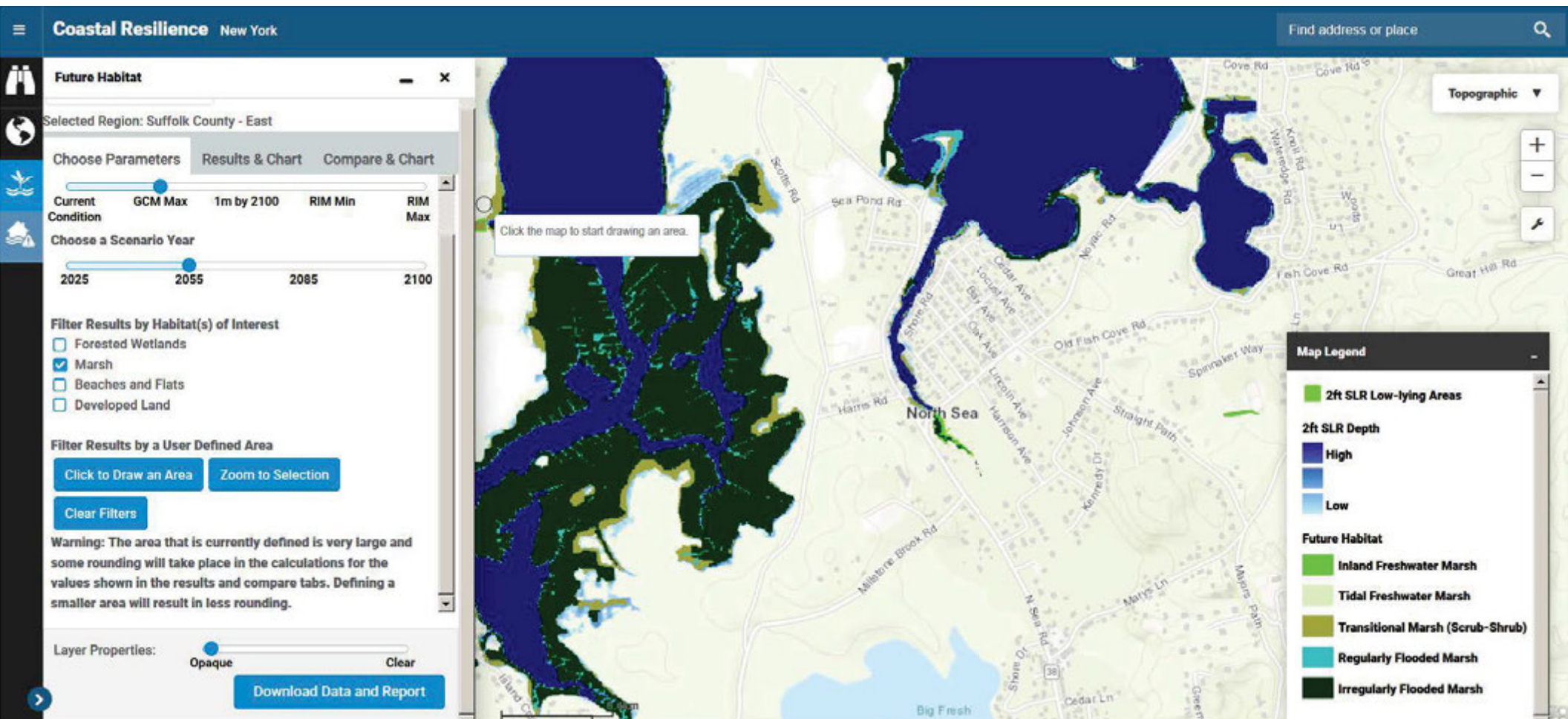


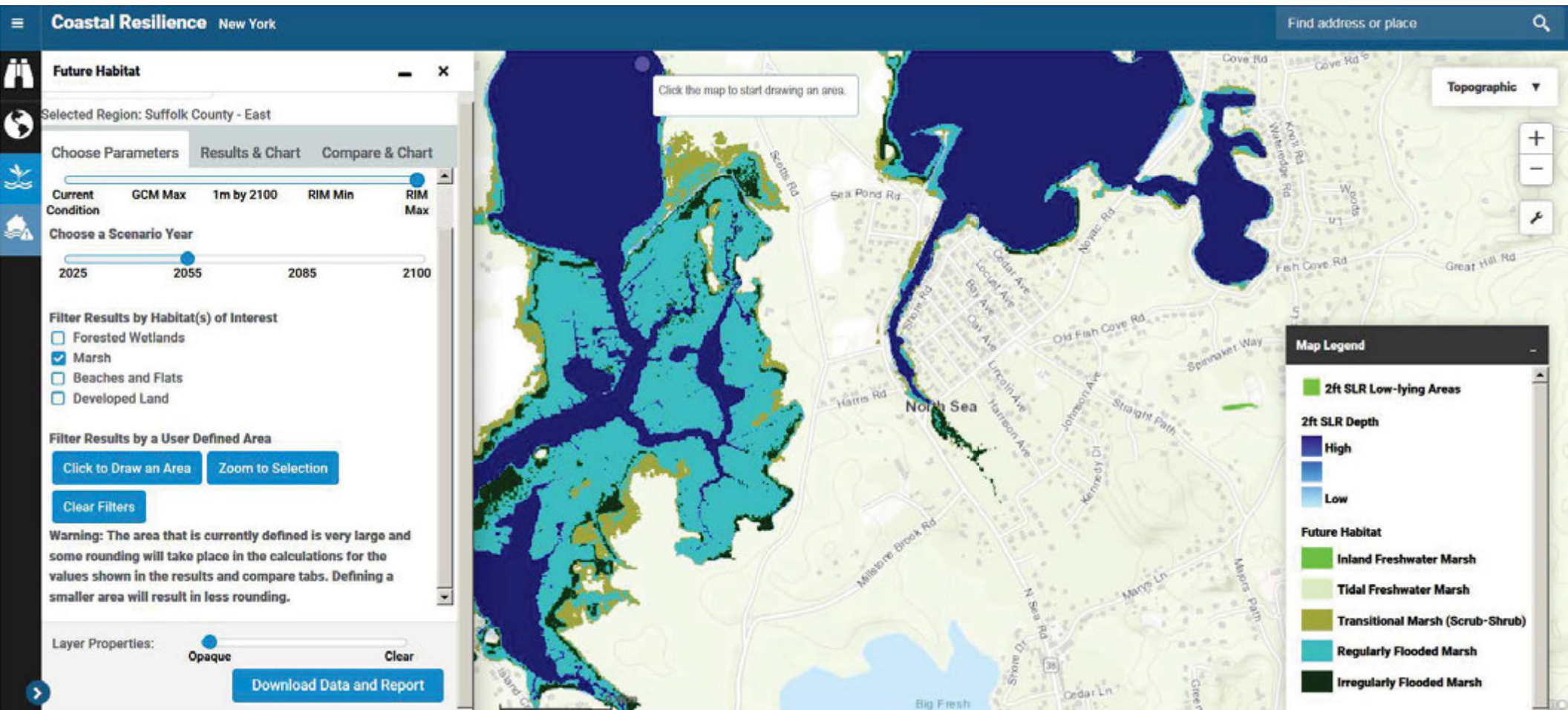
L.K. McLEAN ASSOCIATES, P.C.

Consulting Engineers

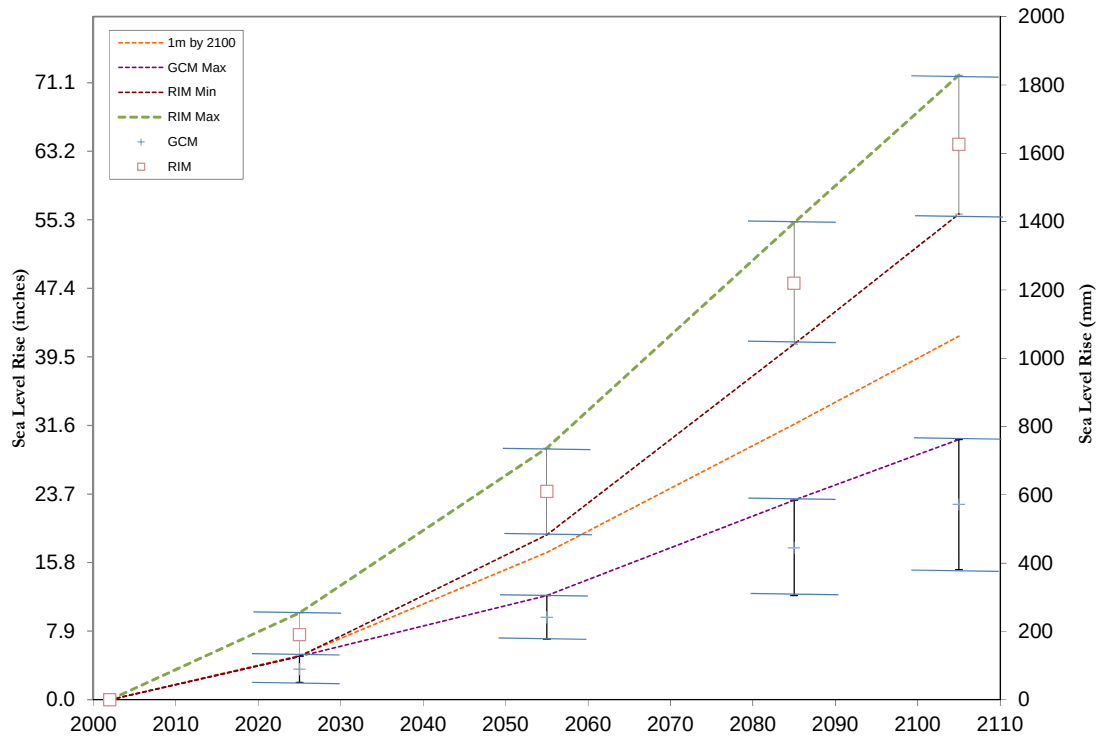
437 South Country Road, Brookhaven, N.Y. 11719

XIV. Nature Conservancy Coastal Resilience Map & Model





Proposed SLR scenarios for NYSDA SLAMM simulations



Four proposed SLR scenarios for SLAMM simulations are shown above

- Scenarios correspond to the maximum of the General Climate Model (GCM) and the minimum and maximum of the and Rapid Ice Melt (RIM) estimates as described in the Climaidd report, as well as 1 meter (39.4 inches) of SLR by 2100.
- GCM and RIM scenarios from the Climaidd report (2020-2080, Lower Hudson and Long Island) and Scenic Hudson (2100, Region 4- New York City and Long Island) are shown for comparison.
 - Horizontal lines on the GCM and RIM models represent the decade in which the predicted sea level rise may occur.

Based on the PAC call of 2/28:

- SLAMM simulations will conclude at 2100. Maps and numerical data will be output for 2025, 2055, 2085, and 2100.
- We will model the predicted sea level rise in the center of the decadal time period, as shown in the graph.
- Rather than running the minimum of the GCM scenario, 1m of SLR by 2100 (relative to a base year of 2002) will be simulated.

Proposed SLR scenarios for NYSDA SLAMM simulations

Table 1. SLR to be simulated under each scenario for each timestep (mm) relative to a base year of 2002.

Year	GCM Max	1m by 2100	RIM Min	RIM Max
2025	127	129.4	127	254
2055	304.8	431	482.6	736.6
2085	584.2	806.7	1041.4	1397
2100	717.6	1000	1327.2	1720.9

Table 2. SLR to be simulated under each scenario for each timestep (inches) relative to a base year of 2002.

Year	GCM Max	1m by 2100	RIM Min	RIM Max
2025	5.0	5.1	5.0	10.0
2055	12.0	17.0	19.0	29.0
2085	23.0	31.8	41.0	55.0
2100	28.3	39.4	52.3	67.8

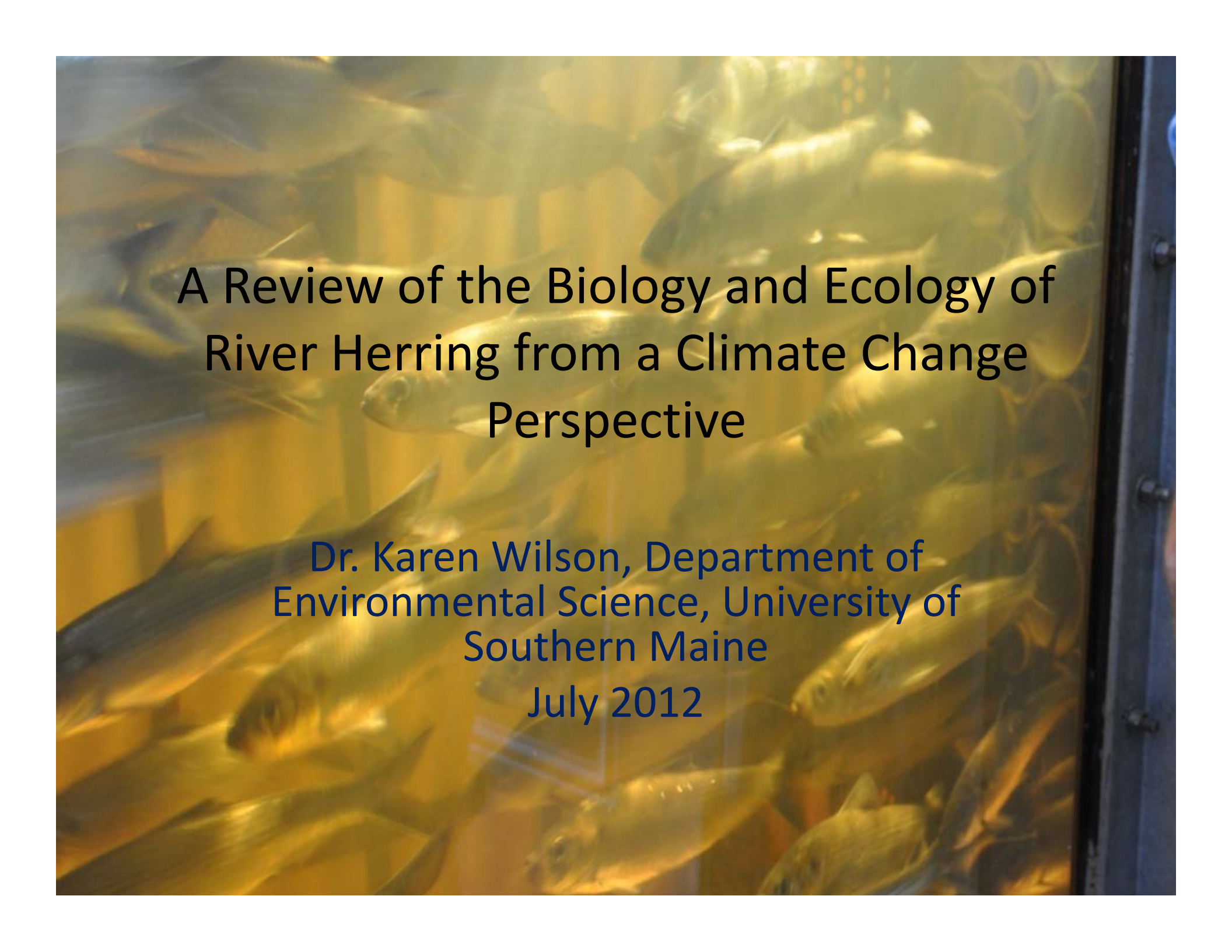


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**XV. Alewife & Climate Change Study by Dr. Karen Wilson,
University of Southern Maine**

A large group of river herring swimming in a tank. The fish are silvery with a hint of blue on their sides, and they are moving in various directions. The water is slightly yellowish, and the background shows some structural elements of the tank.

A Review of the Biology and Ecology of River Herring from a Climate Change Perspective

Dr. Karen Wilson, Department of
Environmental Science, University of
Southern Maine
July 2012

ALEWIFE

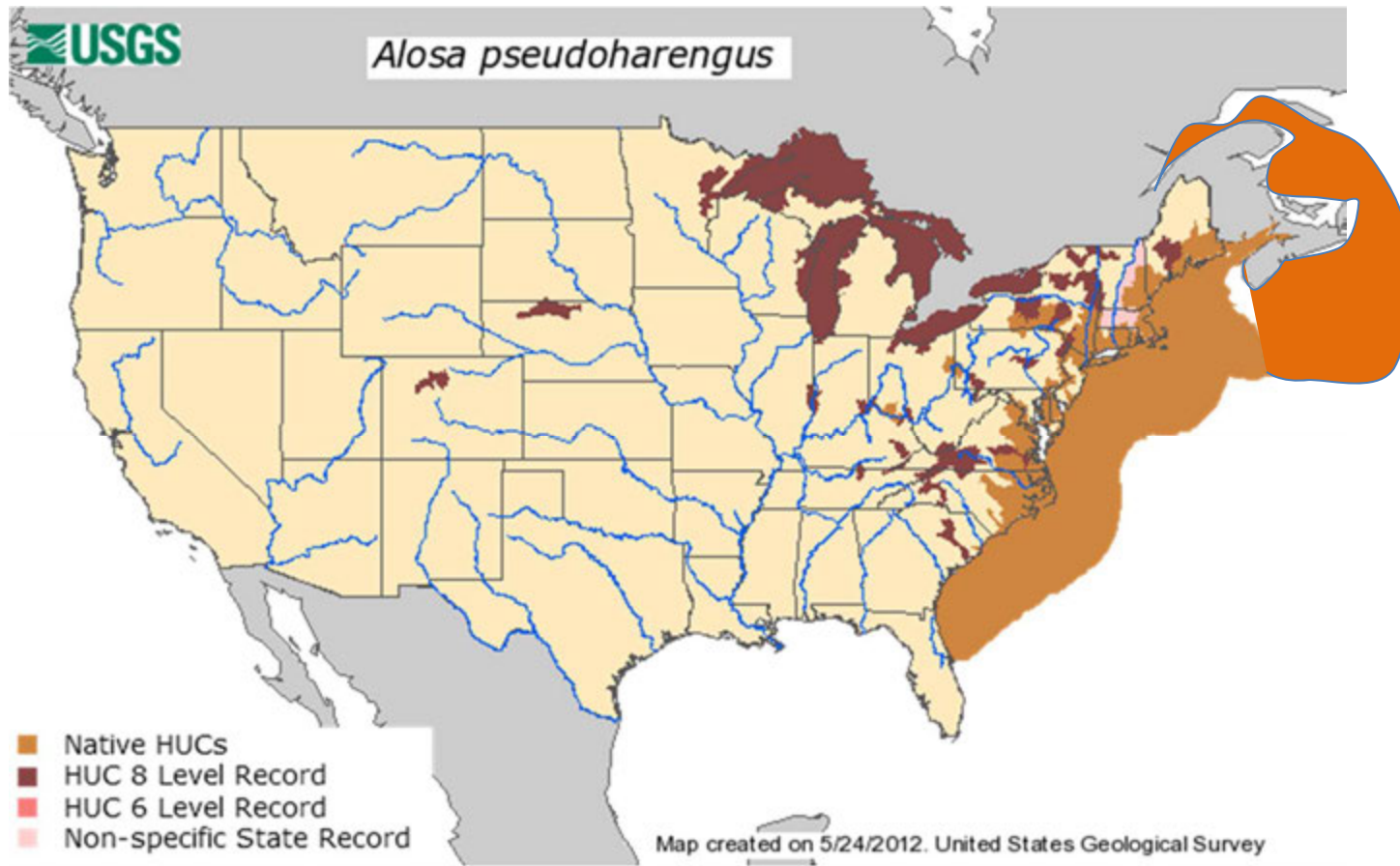
River herring



BLUEBACK HERRING



Alewife



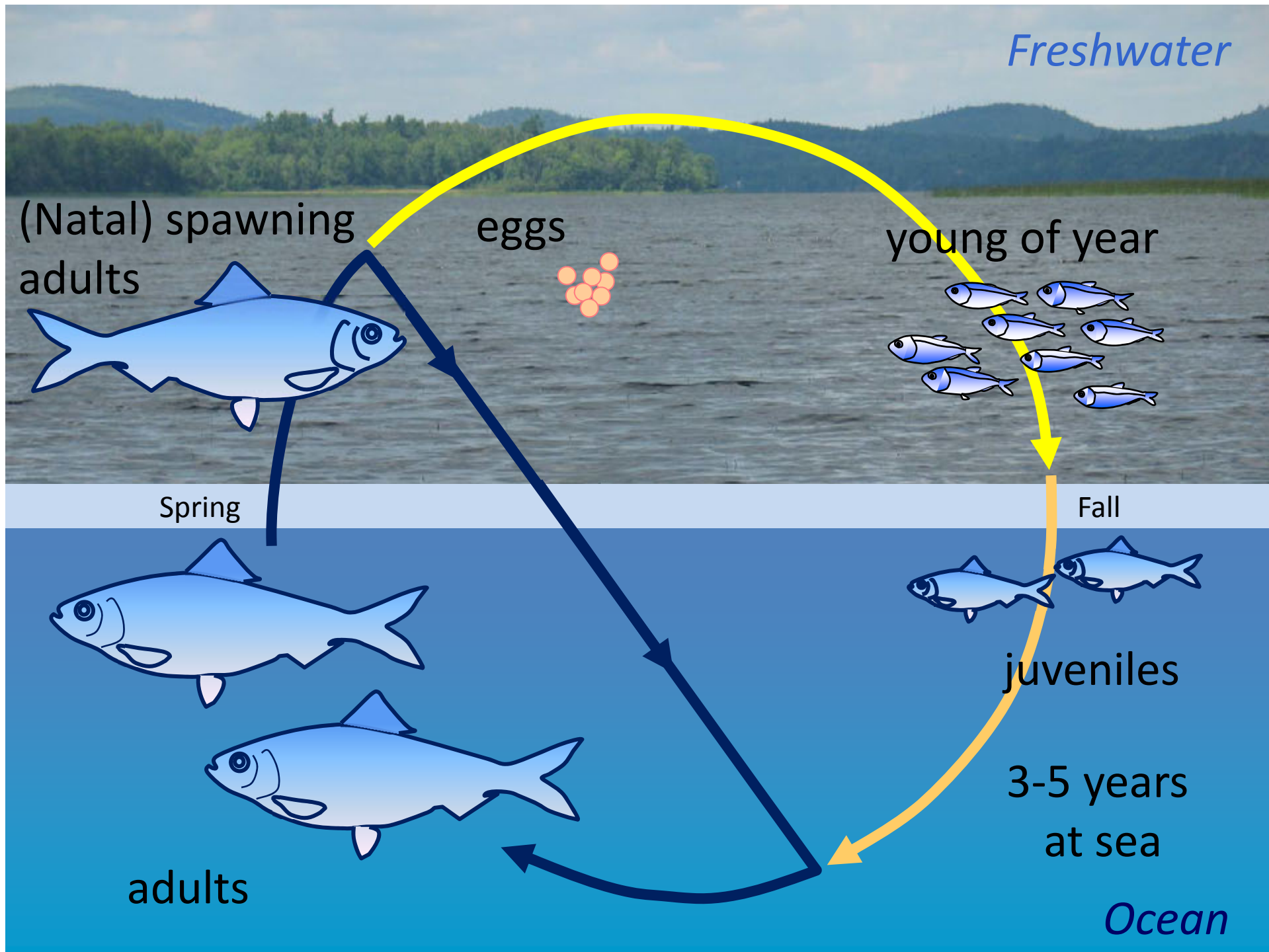
Blueback herring



Population declines

- Stocks depleted relative to 1950, and more depleted relative to historical accounts. (ASMFC River Herring Benchmark Stock Assessment 2012)
- Change in biological data may make residual populations more vulnerable to stochastic events
 - (e.g., loss of repeat spawners, reduction in mean length, mean-length-at-age, and mean age)





Spawning & nursery habitats

Alewife

- Swim up larger river systems to tiny streams
- Spawn in lakes or slow-moving rivers (or impoundments)
- Juveniles grow in lakes until densities/food availability and/or water flows (egress) trigger out-migration
(e.g., Gahagan et al 2012)

Blueback herring

- Spawn in larger, slow moving rivers (but some spawn in lakes & small streams)
- Juveniles appear to move more quickly to estuarine habitats

Considerable variability in life history strategies (and likely considerable variability has been lost).

Reproduction

Alewife

Repeat spawners appear to be more abundant (60%) further north than south (10%) but lit not in agreement

Egg production est. range from 60,000 – 467,000 eggs/female/yr but females often retain some portion of those eggs.

Blueback

Repeat spawners 30-75%

Egg production est. range from 60,000 – 400,000 eggs/female/yr but females often retain some portion of those eggs.

	Alewife	Blueback	Source
Spawning migration	Begins ~ 5 - 10 °C ^(a) Temps < 8 °C and > 18 °C = little adult movement ^(b) Light & flows also important ^(b,c)	Begins ~ 10 – 15 °C ^(a) NS rivers: 13-21 °C ^(ee) Later than ALE when sympatric.	(a) Loesch 1987 (b) Richkus 1974 (c) Collins 1952 (ee) Crawford et al 1986
Spawning	10 – 20 °C ^(d,e) Males arrive before females; larger & older spawn first	Optimal 21-25 °C ^(aa-cc) Min 14 °C, max < 27 °C ^(dd) NS Rivers : 20-22 °C ^(ee)	(d) Rounsefell and Stringer 1943 (e) Carlander 1969 (aa) Cianci 1969 (bb) Marcy 1976b (cc) Klauda et al 1991 (dd) Loesch 1968
Egg incubation	Optimal 17-21 °C 2-3 days @ 22 °C 6 days @ 15.6 °C ^(d,f,g)	3-4 days @ 20-21 °C ^(g) 55-58 hrs @ 22.2-23.7 °C ^(aa,cc)	(f) Mansueti 1956 (g) Jones et al 1978
Hatching success	Max at 20.8 °C, ceases at 29.7 °C ^(h,i,j)		(h) Edsall 1970 (i) Marcy 1971 & 1973 (j) Kellogg 1982
Larval survival	Minimal above 28 °C ^(h, i)	Minimal above 28 °C ^(h, i)	

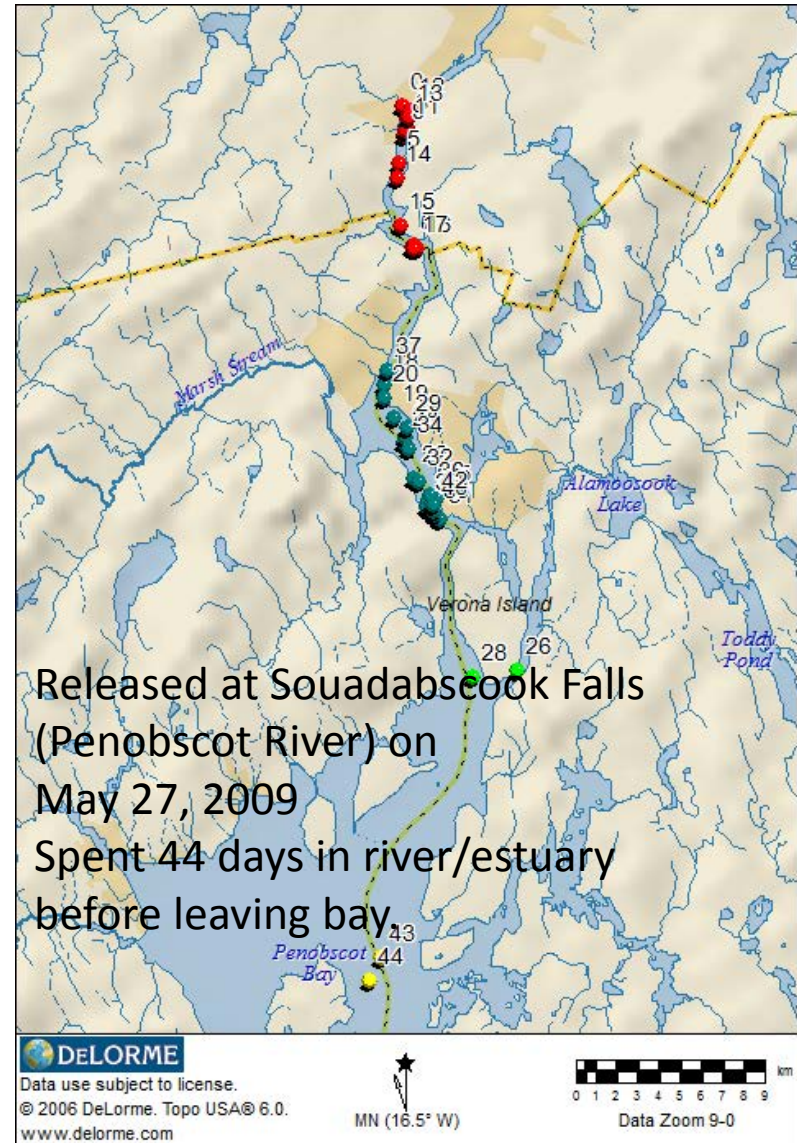
See Collette & Klein-MacPhee, 2002. Fishes of the Gulf of Maine, for review.

Salinity preferences

	Alewife	Blueback	Reference
Larval tolerances	??	Eggs & larvae tolerate up to 18-22 ppt ^(a) Juveniles can use both FW & estuarine habitats up to 28 ppt ^(b)	(a) Johnston & Cheverie 1988 (b) Chittenden 1972b
Adult	FW $\leftrightarrow$ salt land-locked populations are common [often introduced]	FW $\leftrightarrow$ salt some land-locked populations reported (e.g., Cooper-Santee river system in SC)	

At sea distributions

- Based on trawl survey, bycatch or directed fisheries data
- Some very nearshore (lake/river/estuary/bay) tracking studies studying spawning migration behavior



At sea distributions

Neves 1981 suggests (adult?) RH are widely distributed in Mid Atl. Blight in spring & move north to Nantucket Shoals, Georges Bank and GOM in summer and fall, then return. [NMFS Bottom Trawl Surveys]

Year round occurrences of RH
Georges Bank to Long Island.

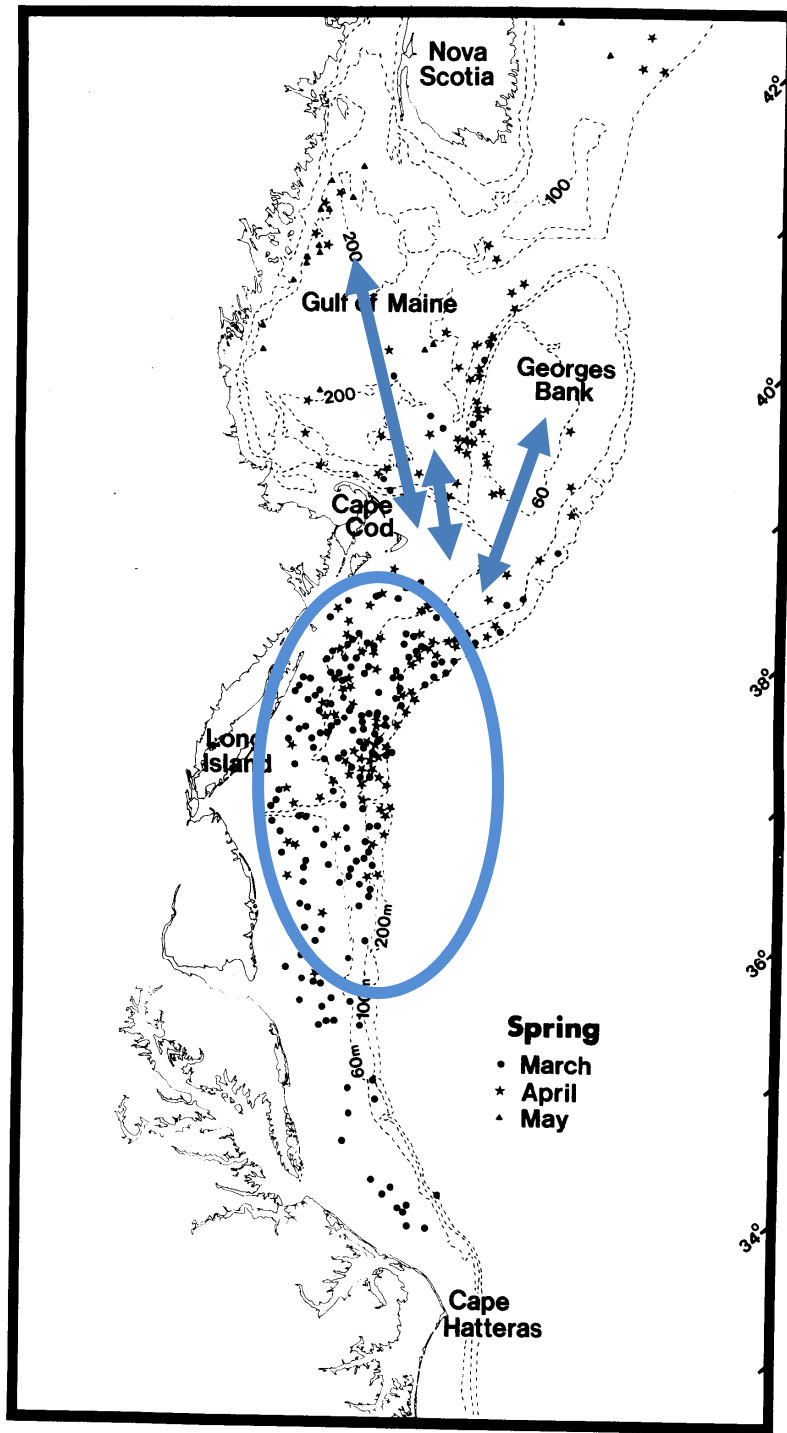


FIGURE 5.—Location of alewife catches during spring bottom trawl surveys, 1968-78, Cape Hatteras, N.C., to Nova Scotia.

At sea distributions

Seasonality inferred from
commercial harvests
1970 – 1978 (Neves et al
1981)

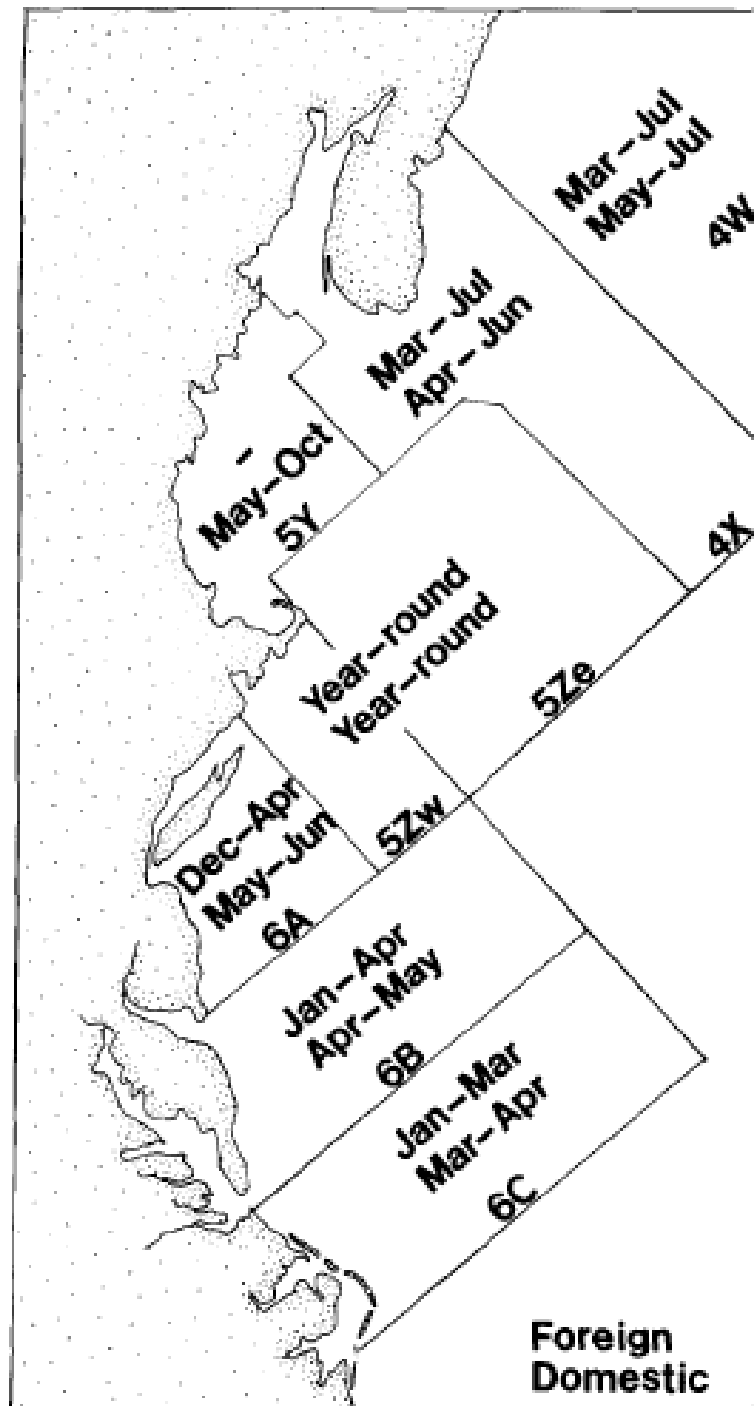


Figure Legend:

Foreign vessels

Domestic (spawning migration) fishery

FIGURE 9.—Seasonal distribution of major catches of alewives and blueback herring in divisions of the International Commission for the Northwest Atlantic Fisheries, 1970-78, Cape Hatteras, N.C., to Nova Scotia. Within each division, the months for major catches are shown separately for foreign vessels (upper entry) and the domestic fishery (lower entry).

At sea distributions

Neves (1981) concluded from NMFS bottom trawl survey data (1963-1978):

- RH most common at depths < 100 m (associated with zooplankton concentrations?)
- Water temperatures:
 - Alewife 3 – 17 °C
 - Blueback 2- 12 °C, 16 °C
- Bluebacks found slightly shallower waters than alewife
- Daily migrations (deeper – day, shallower – night)
- Suggested that populations south of Cape Hatteras would migrate from the north along the coast to avoid 17.5 °C thermal barrier located offshore year round.

At sea distributions

Stone & Jessop 1982 [Canadian groundfish bottom trawls 1970-1989]

Spring: Scotian Gulf, GOM, Bay of Fundy

Summer: Bay of Fundy

Fall: Bay of Fundy, Scotian Gulf

Most catches at $> 5^{\circ}\text{C}$

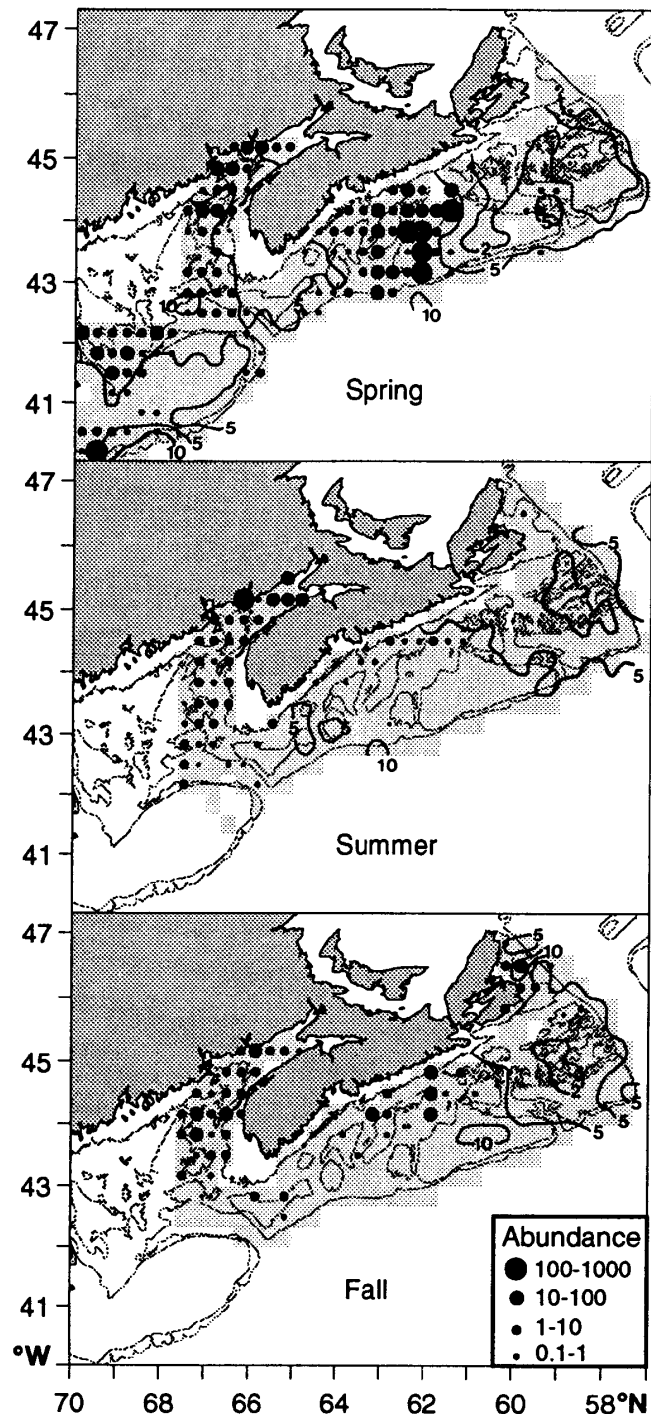
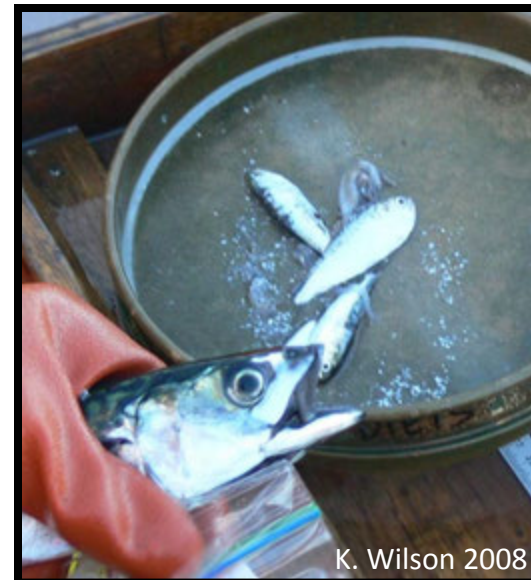


Figure 2

Distribution and relative abundance ($\bar{x}$ catch per 20-min square) of river herring from spring (1979-89), summer (1970-89), and fall (1978-84) groundfish surveys conducted off the Atlantic coast of Nova Scotia. Area sampled is indicated by shading, and mean catch (n/tow) for each 20-min square is represented by a solid circle, scaled to catch level. Isotherms for 2, 5, and 10°C of bottom temperature are also indicated.

River herring food web relationships

- Larvae & juveniles feed on zooplankton and some insects while in FW
- Adults may feed during their spawning run (e.g., bluebacks in the Hudson & Mohawk rivers, Simonin et al. 2007; alewife in Maine Lakes, Willis 2006)
- Heavily consumed by resident predators
- Zooplanktivores at sea (Calinoid copepods, euphausiids & mysids...)
- Prey for numerous marine predators (fish, mammals, birds)



K. Wilson 2008

River herring ecosystem impacts

Bi-directional linking of marine & freshwater systems:

- Export phosphorus from lakes (in the form of juveniles)?
- Import marine-derived nutrients into FW systems?
- Trophic subsidies for low productivity (FW or marine) systems?

Warmer temperatures

- Hypoxia in nursery areas?
(e.g., Chesapeake Bay & Delaware River)
- Slow(er) northward range shifts due to natal homing?
 - What habitats become important? What ones are lost?
- More energetically taxing?
- Upper limits?

Changes in magnitude and timing of freshwater flows

- Increased pollution load?
- Interfere with migratory cues?

Fish passage issues:

- Dams and “hardened” old dam sites offer few or no alternate routes for passage
- Fish passage facilities require attraction flows that can be obscured by high water
- Downstream passage issues for adults (impacts % repeat spawners) and juveniles
- Small lake outlet dams, used to regulate lake water levels, are barriers during low water
- Small streams may dry up entirely

Other potential issues

- Parasite load?
- Correlation between hydrograph and temperature may make it difficult to tease out relative importance of abiotic vs. biotic factors influencing growth & mortality of juveniles (Jessop 1990c, 1994 in C&K)
- Ocean acidification: impact prey base?
- Shifts in ocean currents/patterns?
- Temperature/water regime shifts facilitating invasive species spread in freshwater and marine systems
 - competitors, predators, zooplankton community



A Review of the Biology and Ecology of River Herring from a Climate Change Perspective (Summary)
Dr. Karen Wilson, Department of Environmental Science, University of Southern Maine
July 2012

The term “river herring” refers to two difficult to distinguish species of anadromous Alosid herring, alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*). Both spend most of their life in marine habitats, and return to their natal freshwater rivers and/or lakes to spawn. River herring range from Florida to the St. Lawrence River, with blueback herring more dominant in southern rivers, and, generally, alewife more dominant in northern rivers. In their northern range, it is not uncommon to find “repeat spawners” returning to spawn multiple times (i.e., iteroparity), a degree of life history plasticity that allows individuals to try again next year if environmental conditions make spawning difficult. Adult river herring move up coastal rivers in early to late spring in response to water temperature. Alewife typically spawn in lakes (or, in southern ranges, in slow moving stretches of larger rivers); blueback herring are considered a river-spawning species, again, in slower moving reaches. Both males and females return to the ocean after spawning although alewives, at least, can feed in freshwater and may stay in lakes for weeks to months, particularly if dropping water levels prevent egress. In lakes young of the year (YOY) alewives are pelagic, feeding on zooplankton; as they grow they can move inshore and their diet may include benthic invertebrates. YOY alewives emigrate from lakes as early as July or as late as October depending on numerous factors that may include lake productivity, population density, and access to outlet streams. Juveniles spend their first few years in estuaries and the ocean although details are not well known; adults spend their time well off shore. Adults return to their natal rivers to spawn at age 2-4; there are more repeat spawners (i.e., fish who have spawned the previous year) the further north the spawning run. Climate change could affect river herring in a multitude of ways. Those related to the biology and ecology of river herring include:

Temperature: Temperature is an important river herring spawning and migration cue. For example, in the spring of 2012, many spawning runs in northern states began 2-3 weeks earlier than normal, correlated with unusually warm spring temperatures. In addition, temperature has important energetic implications for river herring. The warmer the water, the more energetically costly it is for the fish to linger in that water. In more northerly rivers, it is not uncommon for water temperatures to drop due to spring storms and for fish to “fall back” into estuaries or larger rivers. Changes in the timing of spawning may contribute to “match – mismatch” between predator and prey.

Water flows: Water flows dictate, in large part, the ability of fish to pass both natural and anthropogenic barriers in rivers. Too much or too little flow can render fish passage ineffective, or delay fish at a barrier long enough as to deplete the fish’s energy stores before spawning, or prevent a spawned-out fish from reaching the ocean. Fish passage devices on dams require an “attraction flow” to attract migrating fish – if this flow is too little compared to that coming over the dam or through turbines fish will not “find” the intended passage. Outmigration is also impacted by flows: greater flows may ease outmigration by reducing time spent while minimal flows may block outmigration of young of year in late summer and fall.