

Part I: General Conditions

General Information

Name of Municipality or Organization: State:

EPA NPDES Permit Number (if applicable):

Primary MS4 Program Manager Contact Information

Name: Title:

Street Address Line 1:

Street Address Line 2:

City: State: Zip Code:

Email: Phone Number:

Fax Number:

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed):

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Eligibility Criteria (check all that apply): A B C

National Historic Preservation Act (NHPA) Determination Complete? Eligibility Criteria (check all that apply): A B C

Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

MS4 Infrastructure (if covered under the 2003 permit)

Estimated Percent of Outfall Map Complete? If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YY):
(Part II, III, IV or V, Subpart B.3.(a.) of 2003 permit)

Web address where MS4 map is published:
If outfall map is unavailable on the internet an electronic or paper copy of the outfall map must be included with NOI submission (see section V for submission options)

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted? <i>(Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit)</i>	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="04/23/05"/>
Construction/Erosion and Sediment Control (ESC) Authority Adopted? <i>(Part II, III, IV or V, Subpart B.4.(a.) of 2003 permit)</i>	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="05/25/17"/>
Post- Construction Stormwater Management Adopted? <i>(Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit)</i>	<input type="text" value="Yes"/>	Effective Date or Estimated Date of Adoption (MM/DD/YY):	<input type="text" value="05/25/17"/>

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part II: Summary of Receiving Waters

Please list the waterbody segments to which your MS4 discharges. For each waterbody segment, please report the number of outfalls discharging into it and, if applicable, any impairments.

Massachusetts list of impaired waters: *Massachusetts 2014 List of Impaired Waters*- <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf>

Check off relevant pollutants for discharges to impaired waterbodies (see above 303(d) lists) without an approved TMDL in accordance with part 2.2.2.a of the permit. List any other pollutants in the last column, if applicable.

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Atlantic Ocean	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cape Cod Canal (MA95-14)	39	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDL Completed for Bacteria
Buttermilk Bay (MA95-01)	15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDL Completed for Fecal Coliform. Also impaired for Estuarine Bioassessments, and Nutrient/Eutrophication Biological Indicators
Pocasset Harbor (MA95-17)	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDL Completed for Fecal Coliform. Also impaired for Estuarine Bioassessments
Back River (MA95-47)	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDL Completed for Bacteria.
Red Brook Harbor (MA95-18)	19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDL Completed for Fecal Coliform. Also impaired for Estuarine Bioassessments, and Nutrient/Eutrophication Biological Indicators
Phinneys Harbor (MA95-15)	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDLs Completed for Nitrogen and Fecal Coliform
Herring River	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Queen Sewell Pond (MA95180)	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Harmful Algal Bloom
Great Herring Pond (MA94050)	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shad Swifts Ponds	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Little Buttermilk Bay (MA95-76)	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Estuarine Bioassessments, Nutrient/Eutrophication Biological Indicators
Pocasset River (MA95-16)	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDL Completed for Bacteria
Bourne Pond	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
unnamed stream from Bourne Pond to Cape Cod Canal	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Buzzards Bay (MA95-62)	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PCB in Fish Tissue, Fecal Coliform
Clay Pond	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Eel Pond (MA95-48)	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*TMDL Completed for Bacteria

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Squeteague Harbor (MA95-55)	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Massachusetts Estuaries Project reports have identified this waterbody as having impairments caused by Nitrogen. Also impaired for Nutrient/Eutrophication Biological Indicators as listed in the 2014 List of Waters.				
unnamed tributaries to Squeteague Harbor	8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mill Pond	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flax Pond (aka Picture Lake) (MA95-96087)	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Red Brook Pond	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
unnamed ponds	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lily Pond	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shop Pond	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Click to lengthen table

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs). For municipalities/organizations whose MS4 discharges into a receiving water with an approved Total Maximum Daily Load (TMDL) and an applicable waste load allocation (WLA), identify any additional BMPs employed to specifically support the achievement of the WLA in the TMDL section at the end of part III.

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	BMP Description	Targeted Audience	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal	Beginning Year of BMP Implementation
Meeting	Continue Advisory Committee/ Community Oversight Group that distributes literature and holds meetings open to the public. This group is known as the "Selectmens Task Force on Local Pollution and Phase II Stormwater Management." The Bourne Staff Stormwater Working Group (SSWG) consists of department heads from DPW, Planning, Engineering, Conservation, and the Board of Health.	Residents	Staff Stormwater Working Group (SSWG), Selectmens Task Force on L	Meetings have been ongoing and will continue. Discuss stormwater at a public meeting at least once a year	2018

Web Page	Use outreach materials and guidance from various sources (Think Blue Massachusetts, MassDEP, Cape Cod Stormwater) for posting online. This will implement outreach for relevant impairments town wide. See: https://www.thinkbluemassachusetts.org/for-businesses	Businesses, Institutions and Commercial Facilities	Staff Stormwater Working Group	Provide links to websites within town website. The links will be catered towards commercial facilities.	2020
Web page	A web page containing stormwater education materials posted on the Town webpage marked as "Important Stormwater Management Information for Developers" – with a collection of links to relevant educational material	Developers (construction)	Staff Stormwater Working Group	Education has been ongoing and will continue. Relationship with BBNEP and sharing of findings will continue online and in meetings.	2018
Web Page	Post web links and guidance from various sources (Think Blue Massachusetts, MassDEP, Cape Cod Stormwater, etc.) specific to industrial facilities to the town website. This will implement outreach for relevant impairments town wide.	Industrial Facilities	Staff Stormwater Working Group	Provide links to websites within town website that are catered towards industrial facilities	2019
Brochures/Pamphlets	Flyers distributed at Town Hall and Town Meeting on residential storm water issues	Residents	SSWG, Selectmens Task Force on Local Pollution and Phase II Stormw	Distribute handouts and posters	2020

<p>Brochures/Pamphlets</p>	<p>Use Think Blue Massachusetts outreach materials and guidance This will implement outreach for relevant impairments town wide. Example: https://www.thinkbluemassachusetts.org/for-businesses</p>	<p>Businesses, Institutions and Commercial Facilities</p>	<p>Staff Stormwater Working Group</p>	<p>Distribute brochures to businesses Institutions and commercial facilities</p>	<p>2019</p>
<p>Meeting, Design Recommendations, Hando</p>	<p>Provide education on recommended stormwater / erosion control practices by providing fact sheets and diagrams and through meeting with applicants.</p>	<p>Developers (construction)</p>	<p>SSWG, Planning Board, and Conservation Commission</p>	<p>Provide each developer that applies for a permit with printed brochures and/or advice regarding stormwater management guidelines</p>	<p>2018</p>
<p>Brochures/Pamphlets</p>	<p>Use outreach materials and guidance from various web sources (Think Blue Massachusetts, MassDEP, Cape Cod Stormwater) This will implement outreach for relevant impairments town wide. Example: https://www.thinkbluemassachusetts.org/for-industry</p>	<p>Industrial Facilities</p>	<p>Staff Stormwater Working Group</p>	<p>Distribute brochures</p>	<p>2020</p>
<p>Web Page</p>	<p>Publish Preventing Stormwater Pollution announcement on Town website</p>	<p>Residents</p>	<p>Staff Stormwater Working Group</p>	<p>Continue or update this announcement</p>	<p>2018</p>
<p></p>	<p></p>	<p></p>	<p></p>	<p></p>	<p></p>
<p></p>	<p></p>	<p></p>	<p></p>	<p></p>	<p></p>
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Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
SSO inventory	Develop SSO inventory in accordance of permit conditions	Engineering, Consultant, DPW, Board of Health	Complete within 1 year of effective date of permit	2019
MS4 map	Create map and update during IDDE program completion	Engineering, Consultant, Department of Public Works	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2020
Written IDDE program	Create written IDDE program	Board of Health, Consultant, Staff Stormwater Working Group	Complete within 1 year of the effective date of permit and update as required	2019
Implement catchment investigations portion of IDDE program	Implement catchment investigations according to program and permit conditions	Staff Stormwater Working Group, Engineering, Consultant, DPW	Complete catchment investigations in accordance with outfall screening procedure and permit conditions	2019
Employee training	Train employees on IDDE implementation	Engineering, Department of Public Works	Train annually	2019
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Engineering, DPW, Health Department, Conservation	Complete 3 years after effective date of permit	2020
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Engineering, Consultant, DPW, Health Department	Complete in accordance with outfall screening procedure and permit conditions	2021
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Engineering, Consultant, DPW, Health Department	Complete ongoing outfall screening upon completion of IDDE program if needed	2022

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary *(continued)*

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Building and Inspection, Conservation, Planning	Complete within 1 year of the effective date of permit	2018
Site plan review	Complete written procedures of site plan review and begin implementation	Building and Inspection, Conservation, Planning	Complete within 1 year of the effective date of permit	2018
Erosion and Sediment Control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Building and Inspection, Conservation, Planning	Complete within 1 year of the effective date of permit	2018
Waste Control	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Building and Inspection, Conservation, Planning, Health Department	Complete within 1 year of the effective date of permit	2019

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
As-built plans for on-site stormwater control	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Building and Inspection, Planning, Health	Require submission of as-built plans for completed projects	2019
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	Staff Stormwater Working Group, Planning	Complete 4 years after effective date of permit and report annually on retrofitted properties	2021
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Staff Stormwater Working Group, Planning	Complete 4 years after effective date of permit and implement recommendations of report	2021
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	Staff Stormwater Working Group, Planning	Complete 4 years after effective date of permit and implement recommendations of report	2021

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization <small>(enter your own text to override the drop down menu or entered text)</small>	BMP Description	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Measurable Goal <small>(all text can be overwritten)</small>	Beginning Year of BMP Implementation
O&M procedures	Create written O&M procedures including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	Staff Stormwater Working Group, Parks/Recreation, Schools	Complete and implement 2 years after effective date of permit	2020
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	Staff Stormwater Working Group, DPW, Parks/Recreation, Planning	Complete 2 years after effective date of permit and implement annually	2020
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	DPW, Engineering	Complete 2 years after effective date of permit	2020
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	Staff Stormwater Working Group, Contractor, DPW	Complete and implement 2 years after effective date of permit	2020
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	DPW Operations	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2019
Street sweeping program	Sweep all streets and permittee-owned parking lots in accordance with permit conditions	DPW Operations	Continue to sweep all streets and permittee-owned parking lots twice per year. Once in the spring.	2019
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	DPW Operations	Implement salt use optimization during deicing season	2023

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1 and 2.2.2 that you have identified as not applicable to your MS4 because you do not discharge to the impaired water body or a tributary to an impaired water body due to nitrogen or phosphorus. Provide all supporting documentation below or attach additional documents if necessary. Also, provide any additional information about your MS4 program below.

Notes on Part I:

Endangered Species Determination-

The U.S. Fish and Wildlife Service's (Service) Information for Planning and Consultation (IPaC) species list (Attachment A) indicated these species may be present in the project area: northern long-eared bat (*Myotis septentrionalis*), piping plover (*Charadrius melodus*), roseate tern (*Sterna dougallii dougallii*), and Plymouth redbelly turtle (*Pseudemys rubriventris bangsi*). AECOM submitted a project review request as a non-Federal representative of the EPA pursuant to the requirements of the EPA's process for NPDES/MS4 permits. The intent of the letter is for concurrence with our determination that the project may affect, but is not likely to adversely affect, the species described above. The USFWS provided a reply dated September 24, 2018, which is included in Attachment A. In their response, USFWS acknowledged that they agree with the determination for all species except the long-eared bat, as long as Bourne meets the five criteria listed on page two of their letter. The Town of Bourne does meet these criteria.

There are no known northern long-eared bat hibernaculums or roost trees within town boundaries as of the latest map published by NHESP (<https://mass-eoeea.maps.arcgis.com/apps/Viewer/index.html?appid=de59364ebbb348a9b0de55f6febdf52>). The Town does not have any plans to remove any trees for stormwater related projects. The effect of the stormwater discharges and discharge related activities on the northern long-eared bat have been evaluated using the best scientific and commercial data available by EPA. Based on those evaluations, EPA has made a determination that the stormwater discharges and discharge related activities will have "no effect" on northern long-eared bat. Furthermore, the planned actions under the permit will have no effect on the northern long-eared bat. The town of Bourne will consult with US Fish and Wildlife as needed during the permit term on any future BMPs.

Regulatory Authorities -

Bourne has established regulatory authorities as indicated in Part I, however the Town is currently reviewing the regulations and as necessary may be modifying some regulations as needed so that all development greater than one acre in size is reviewed by the Town.

NHPA Determination-

Bourne's MS4 is covered under the 2003 Permit eligibility with the National Historic Preservation Act was previously determined. There is no expansion planned to the MS4 as part of this permit. Therefore Bourne is covered under Criterion A.

Note on Part II: Summary of Receiving Waters-

Although Megansett Harbor (MA95-19) is in Bourne, the Bourne MS4 does not discharge to this waterbody. See outfall map.

Note on Part III: MCMs-

The Bourne Staff Stormwater Working Group (SSWG) is listed throughout this Part. The group consists of department heads from the Department of Public Works, Planning Department, Engineering Department, Conservation Department, and the Board of Health.

Note on Part III: Actions for Meeting Requirements Related to Water Quality Limited Waters-

Bourne was listed in part 2.2.2.a.i.1 for Nitrogen. No Water Quality Limited Nitrogen impaired waters have been identified in the 2014 List of Waters for Bourne but a Massachusetts Estuaries Project report has identified Squeteague Harbor (MA95-55), as having impairments caused by Nitrogen. Also MassDEP's "Buzzards Bay Watershed 2000 Water Quality Assessment Report" identifies Nitrogen as the source of impairment for Buttermilk Bay (MA95-01), Little Buttermilk Bay (MA95-76), and Pocasset Harbor (MA95-17).

Part V: Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:

Title:

Signature: Digitally signed by Thomas M. Guerino
Date: 2018.10.01 15:36:05 -04'00'

Date:

[To be signed according to Appendix B, Subparagraph B.11, Standard Conditions]

Note: When prompted during signing, save the document under a new file name

Attachment A- ENDANGERED SPECIES
Official IPaC Species List,
Project Review Request, and
USFWS Determination Letter



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

July 26, 2018

Consultation Code: 05E1NE00-2018-SLI-2527

Event Code: 05E1NE00-2018-E-05920

Project Name: Bourne Stormwater MS4 NOI Project Revised

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2527

Event Code: 05E1NE00-2018-E-05920

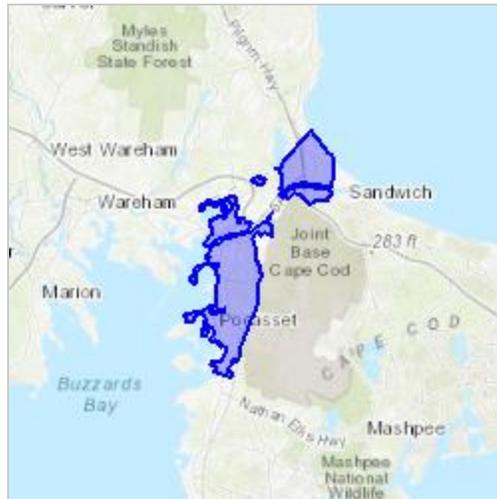
Project Name: Bourne Stormwater MS4 NOI Project Revised

Project Type: Regulation Promulgation

Project Description: The area mapped is for the town of Bourne not including Joint Base Cape Cod. This is for the town's 2018 NOI for coverage under the Small MS4 General Permit. There are outfalls in this area that discharge stormwater from town owned impervious surfaces. There are no new outfalls or structural BMP construction planned at this time.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/41.79162384636371N70.5394885459729W>



Counties: Barnstable, MA | Plymouth, MA

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Roseate Tern <i>Sterna dougallii dougallii</i> Population: northeast U.S. nesting pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Reptiles

NAME	STATUS
Plymouth Redbelly Turtle <i>Pseudemys rubriventris bangsi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/451	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

**Project Review Request
Submitted 7/30/18 to USFWS**

Sean Maxwell
AECOM
250 Apollo Dr.
Chelmsford, Ma 01824

U.S. Fish and Wildlife Service
Attn: David Simmons
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301

July 26, 2018

Re: Project Review Request, Bourne Stormwater MS4 NOI, Bourne, MA, 05E1NE00-2018-SLI-2527

We have reviewed the referenced project using the Environmental Protection Agency's (EPA) project review process for our Municipal Separate Storm Sewer System (MS4) and have followed provided guidance and instructions in completing the review. We completed our review on July 26, 2018 and are submitting our project package in accordance with the instructions for further review. The U.S. Fish and Wildlife Service's (Service) Information for Planning and Consultation (IPaC) species list indicated these species may be present in the project area: northern long-eared bat (*Myotis septentrionalis*), piping plover (*Charadrius melodus*), roseate tern (*Sterna dougallii dougallii*), and Plymouth redbelly turtle (*Pseudemys rubriventris bangsi*). We are submitting this letter as a non-Federal representative of the EPA pursuant to the requirements of the EPA's process for NPDES/MS4 permits.

Our proposed action consists of: permitting of stormwater utilities and associated allowable discharges, improved stormwater management through: public outreach and participation, illicit discharge detection and elimination, construction site erosion and sedimentation control, post construction stormwater management, good housekeeping, and actions to reduce pollutants to impaired waters.

The location action area is identified on the enclosed map that shows the land area within the Town of Bourne that is regulated under the Massachusetts 2016 Small MS4 permit.

Permit implementation will begin in the fall of 2018 and the permit has an expiration date of June 30, 2022.

This is a request for review by the Service pursuant to section 7 of the Endangered Species Act. EPA has determined that our proposed action will have no effect on the northern long-eared bat because clearing trees is not part of our stormwater program. We determined that the project may affect, but is not likely to adversely affect the other above listed species, because:

- Discharges from the project may reach the estuarine and shoreline environments used by the piping plover. However the project will implement BMPs to reduce pollutants to the

extent that the discharges are not known to have measureable impacts on piping plover, their habitat, or the food they eat.

- Although discharges from the project may reach the marine environment used by the roseate tern, the project will implement BMPs to reduce pollutants to the extent that the discharges are not known to have measureable impacts on roseate terns, their habitat, or the fish they eat.
- The range of Plymouth redbelly turtle within the Bourne limits is mapped as the area north of the Cape Cod Canal. This area overlaps with the area regulated by this permit in the most urbanized portion of the area of Bourne (see attached locus map). The Plymouth redbelly turtle can be found in ponds and rivers. There are two small ponds (Queen Sewell Pond and Bourne Pond) within the regulated area and a stream (Herring River) that is adjacent to the regulated area that receive stormwater from Bourne's MS4. These waterbodies are mostly surrounded by developed residential and commercial land. The project area occurs only in urbanized areas, where less upland habitat for the Plymouth redbelly turtle remains. Although discharges from the project may reach the freshwater pond environments that may be used by the Plymouth redbelly turtle, the project implements BMPs to reduce pollutants to the extent that the discharges are not known to have measureable impacts on Plymouth redbelly turtle, their habitat, or the food they eat. Bourne will consider prioritizing retrofits in areas that drain to ponds and streams in the turtle's range.

The enclosed project package provides the information about the species and/or critical habitat considered in our review, and we identified our determinations for the resources that may be affected by the project. We request you concur with our determination that the project may affect, but is not likely to adversely affect the species described above.

For additional information, please contact Sean Maxwell at the address listed above, by phone at (603) 674-0625, or Sean.Maxwell@aecom.com.

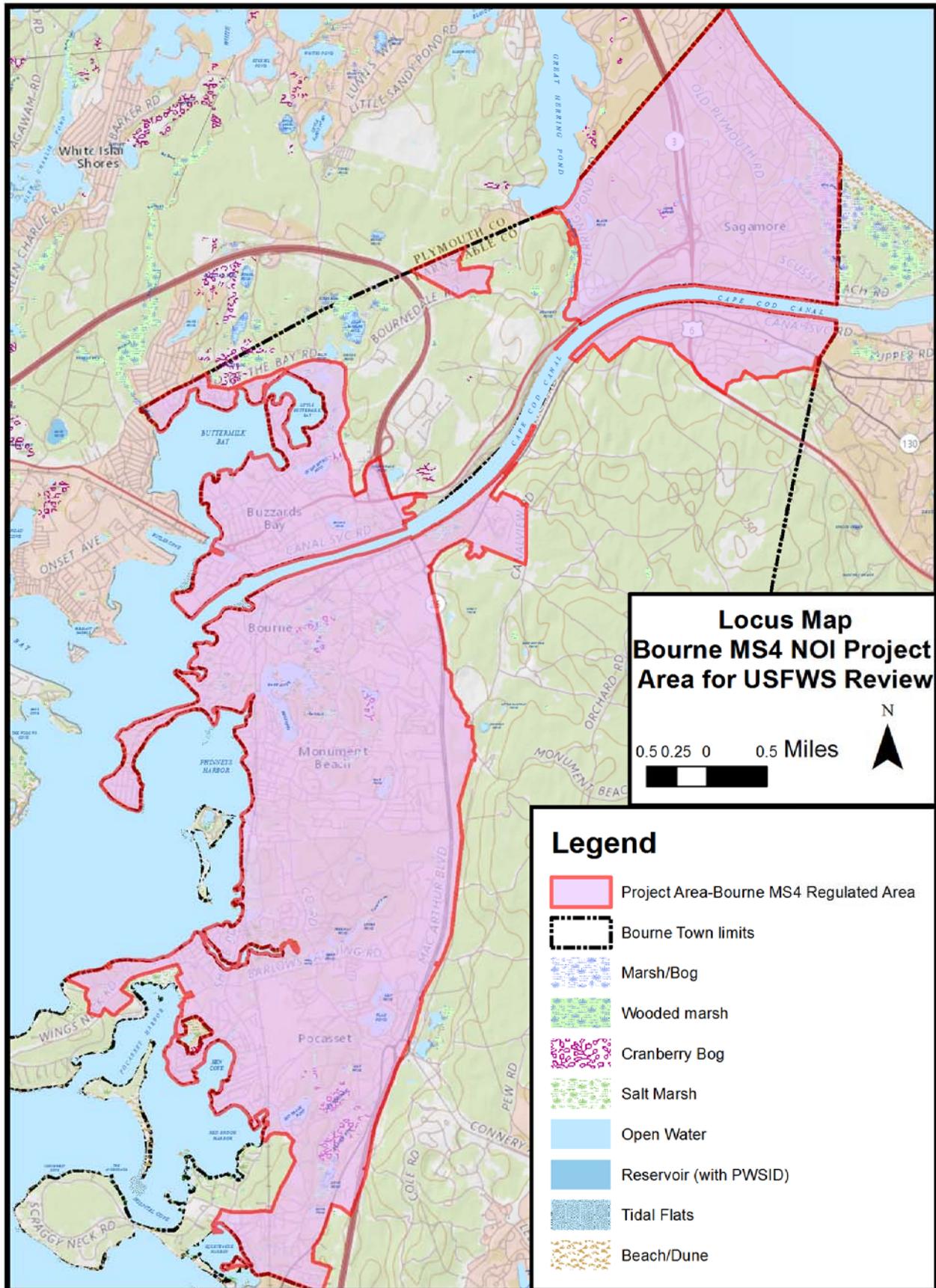
Kind regards,



Sean Maxwell
Environmental Scientist IV
AECOM
T: 978-905-3141
M: 603-674-0625
E: Sean.Maxwell@aecom.com

Enclosures:

- 1) Locus Map of Action Area
- 2) IPaC Official Species List
- 3) Species profiles and fact sheets for listed species



Official Species List



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

July 26, 2018

Consultation Code: 05E1NE00-2018-SLI-2527

Event Code: 05E1NE00-2018-E-05920

Project Name: Bourne Stormwater MS4 NOI Project Revised

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2527

Event Code: 05E1NE00-2018-E-05920

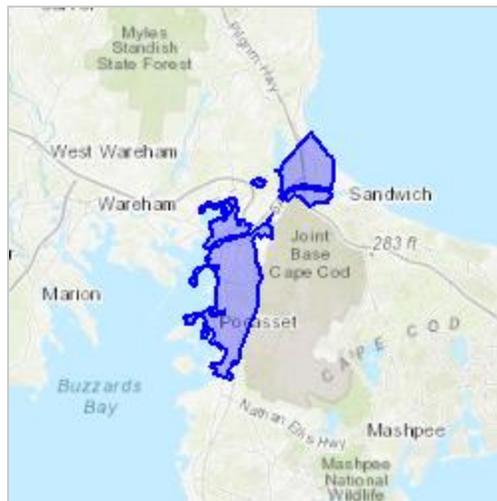
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-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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Birds

NAME	STATUS
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Reptiles

NAME	STATUS
Plymouth Redbelly Turtle <i>Pseudemys rubriventris bangsi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/451	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Piping Plover ECOS Profiles & Fact Sheet



U.S. Fish & Wildlife Service

ECOS

[ECOS](#) / Species Profile for Piping Plover (*Charadrius melodus*)

Piping Plover (*Charadrius melodus*)

[Range Information](#) | [Federal Register](#) |
[Recovery](#) | [Critical Habitat](#) | [Conservation Plans](#)
| [Petitions](#) | [Life History](#)



Taxonomy: [View taxonomy in ITIS](#)

Listing Status: **Endangered** and **Threatened**

General Information

Size: 18 cm (7.25 in) in length. Color: Breeding season: Pale brown above, lighter below; black band across forehead; bill orange with black tip; legs orange; white rump. Male: Complete or incomplete black band encircles the body at the breast. Female: Paler head band; incomplete breast band. Winter coloration: Bill black; all birds lack breast band and head band.

The species historical range included Alabama, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, South Dakota, Texas, Virginia, Virgin Islands, Wisconsin, Wyoming. See below for information about where the species is known or believed to occur.

Population detail

The FWS is currently monitoring the following populations of the Piping Plover

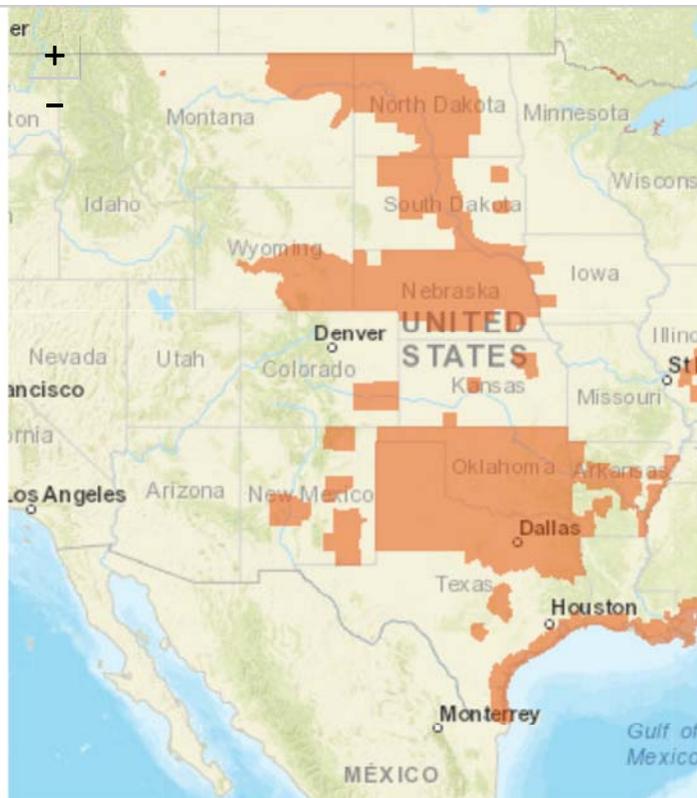
Current Listing Status Summary

Status	Date Listed	Lead Region	Where Listed
Endangered	12/11/1985	<u>Great Lakes- Big Rivers Region (Region 3)</u>	[Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.)
Threatened	12/11/1985	<u>Northeast Region (Region 5)</u>	[Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.

» Range Information

Current Range

- [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.)*
- [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.*



Zoom in! Some species' locations may be small and hard to see from a wide perspective. To narrow-in on locations, check the state and county lists (below) and then use the zoom tool.

Want the FWS's current range for all species? Click [here](#) to download a zip file containing all individual shapefiles and metadata for all species.

- **[Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.)**

Listing status: Endangered

- **States/US Territories** in which this population is known to or is believed to occur: Illinois , Indiana , Michigan , Minnesota , New York , Ohio , Pennsylvania , Wisconsin
- **US Counties** in which this population is known to or is believed to occur: [View All](#)
- **USFWS Refuges** in which this population is known to occur: Blackbeard Island National Wildlife Refuge, Cabo Rojo National Wildlife Refuge, Fergus Falls Wetland Management District, ... [Show All Refuges](#)
- **Countries** in which this population is known to occur: Canada, United States

- **[Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.**

Listing status: Threatened

- **States/US Territories** in which this population is known to or is believed to occur: Alabama , Arkansas , Colorado , Delaware , Florida , Georgia , Iowa , Kansas , Louisiana , Maine , Maryland , Mississippi , Montana , Nebraska , New Jersey , New Mexico , New York , North Carolina , North Dakota , Oklahoma , Rhode Island , South Carolina , South Dakota , Texas , Virginia , Wyoming
- **US Counties** in which this population is known to or is believed to occur: [View All](#)
- **USFWS Refuges** in which this population is known to occur: Amagansett National Wildlife Refuge, Anahuac National Wildlife Refuge, Aransas National Wildlife Refuge, ... [Show All Refuges](#)
- **Countries** in which this population is known to occur: Canada, Mexico, United States

» **Federal Register Documents**

Federal Register DocumentsShow entries

Date	Citation Page	Title
03/16/2016	81 FR 14121 14122	ETWP; Draft Revised Recovery Plan for the Piping Plover
01/21/2016	81 FR 3450	Draft Environmental Assessment, Habitat Conservation Plan for the Piping Plover, Massachusetts Division of Fish and Wildlife
07/08/2014	79 FR 38560 38562	Initiation of 5-Year Status Reviews of Nine Listed Species
09/08/2011	76 FR 55638 55641	90-Day Finding on a Petition To List the Snow Plover as a Threatened Species
05/19/2009	74 FR 23476 23600	Revised Designation of Critical Habitat for the Piping Plover in Texas
10/21/2008	73 FR 62816 62841	Revised Designation of Critical Habitat for the Piping Plover in North Carolina; Final Rule
09/30/2008	73 FR 56860 56862	Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition To List the Snow Plover as a Threatened Species and Information on the Piping Plover (<i>Charadrius melodus</i>)
06/09/2008	73 FR 32629	Correction to Revised Designation of Critical Habitat for the Piping Plover (<i>Charadrius melodus</i>) in Texas
05/20/2008	73 FR 29294 29321	Revised Designation of Critical Habitat for the Piping Plover in Texas; Proposed Rule

Showing 1 to 10 of 32 entries

» Recovery

- [Recovery Plan Information Search](#)
- [Information Search FAQs](#)

Current Recovery Plan(s)Show entries

Date	Title
03/16/2016	Volume II: Draft revised recovery plan for the wintering range of the piping plover (<i>Charadrius melodus</i>) and Comprehensive conservation plan for piping plover (<i>Charadrius melodus</i>) in its coastal migration and wintering range in the continental United States.
03/16/2016	Volume I: Draft Revised Recovery Plan for the Northern Great Plain Piping Plover (<i>Charadrius melodus</i>)
09/08/2003	Recovery Plan for the Great Lakes population of Piping Plovers
05/02/1996	Piping Plover Atlantic Coast Population Revised Recovery Plan

Showing 1 to 4 of 4 entries

[< Previous](#)
1
[Next >](#)

Other Recovery Documents

Show entries

Date	Citation Page	Title
03/16/2016	81 FR 14121 14122	ETWP; Draft Revised Recovery Plan for the Piping Plover (<i>Charadrius melodus</i>)
07/08/2014	79 FR 38560 38562	Initiation of 5-Year Status Reviews of Nine Listed Species
09/30/2008	73 FR 56860 56862	Endangered and Threatened Wildlife and Plants: 5-Year Review of the Piping Plover (<i>Charadrius melodus</i>); review; request for information on the piping plover (<i>Charadrius melodus</i>)
09/16/2003	68 FR 54241 54242	Approved Recovery Plan for the Great Lakes Piping Plover (<i>Charadrius melodus</i>)

Showing 1 to 8 of 8 entries

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Five Year Review

Show entries

Date	Title
09/29/2009	<u>Piping Plover (<i>Charadrius melodus</i>) 5-Year Review</u>

Showing 1 to 1 of 1 entries

< Previous 1 Next >

» Critical Habitat

Critical Habitat Spatial Extents

Population(s)

- [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.)*
- [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.*

Show entries

Date	Citation Page	Title
< >		

05/19/2009	74 FR 23476 23600	Revised Designation of Critical Habitat for the Plover (<i>Charadrius melodus</i>) in Texas
10/21/2008	73 FR 62816 62841	Revised Designation of Critical Habitat for the Plover (<i>Charadrius melodus</i>) in North Carolina
05/20/2008	73 FR 29294 29321	Revised Designation of Critical Habitat for the Plover (<i>Charadrius melodus</i>) in Texas: Proposed
09/11/2002	67 FR 57638 57717	Endangered and Threatened Wildlife and Plants for the Northern Great Plains Breeding Population
12/28/2001	66 FR 67165 67166	ETWP; Proposed Designation of Critical Habitat for the Breeding Population of the Piping Plover; Reclamation and Notice of Availability of Draft Economic Analysis
07/10/2001	66 FR 36137 36143	ETWP; Final Determination of Critical Habitat for the Breeding Population of the Piping Plover (36137-36143)

Showing 1 to 10 of 12 entries

< Previous 1 2 Next >

To learn more about critical habitat please see <http://ecos.fws.gov/crithab>

» Conservation Plans

Habitat Conservation Plans (HCP) ([learn more](#))

Show entries

HCP Plan Summaries
Volusia Beaches
Town of Orlean's Plover Low Effect HCP
Piping Plover HCP (State of Massachusetts)
Magic Carpet Woods Association
Escambia County Beaches

Showing 1 to 5 of 5 entries

< Previous 1 Next >

» Petitions

Show entries

Showing 1 to 4 of 4 entries

< Previous 1 Next >

» Life History

No Life History information has been entered into this system for this species.

» Other Resources

[NatureServe Explorer Species Reports](#) -- NatureServe Explorer is a source for authoritative conservation information on more than 50,000 plants, animals and ecological communities of the U.S and Canada. NatureServe Explorer provides in-

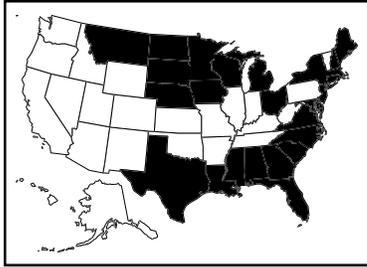
depth information on rare and endangered species, but includes common plants and animals too. NatureServe Explorer is a product of NatureServe in collaboration with the Natural Heritage Network.

ITIS Reports -- ITIS (the Integrated Taxonomic Information System) is a source for authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world.

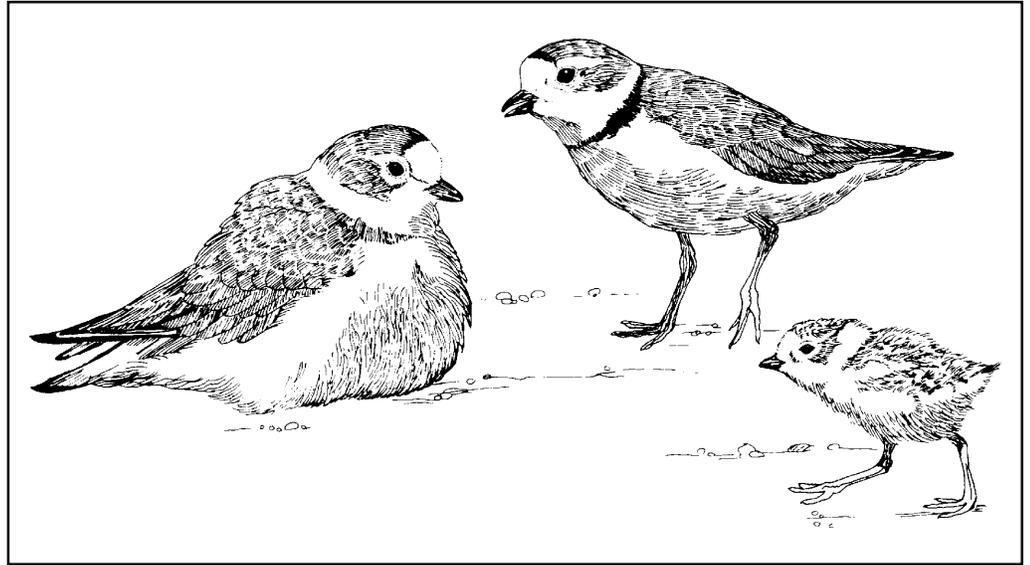
FWS Digital Media Library -- The U.S. Fish and Wildlife Service's National Digital Library is a searchable collection of selected images, historical artifacts, audio clips, publications, and video.



Endangered Species Facts



States in which the piping plover is found. This map includes both summer and winter locations.



Piping Plover

The piping plover in the Great Lakes area is an *endangered species*. Endangered species are animals and plants that are in danger of becoming extinct. The Northern Great Plains and Atlantic Coast piping plovers are *threatened species*. Threatened species are animals and plants that are likely to become endangered in the foreseeable future. Identifying, protecting, and restoring endangered and threatened species is the primary objective of the U.S. Fish and Wildlife Service's endangered species program.

What is the Piping Plover?

Scientific Name - *Charadrius melodus*

Appearance - These small, stocky shorebirds have a sand-colored upper body, a white underside, and orange legs. During the breeding season, adults have a black forehead, a black breast band, and an orange bill.

Habitat - Piping plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands.

Reproduction - The female lays four eggs in its small, shallow nest lined with pebbles or broken shells. Both parents care for the eggs and chicks. When the chicks hatch, they are able to run about and feed themselves within hours.

Feeding Habits - The plovers eat insects, spiders, and crustaceans.

Range - Piping plovers are migratory birds. In the spring and summer they breed in the northern United States and Canada. There are three locations where piping plovers nest in North America: the shorelines of the Great Lakes, the shores of rivers and lakes in the Northern Great Plains, and along the Atlantic Coast. Their nesting range has become smaller over the years, especially in the Great Lakes area. In the fall, plovers migrate south and winter along the Gulf Coast or other southern locations.

The Great Lakes population of the piping plover is at a perilously low level. Since 1983, the number of nesting pairs has ranged from 12 to 32. In 2000, all of the Great Lakes pairs nested in Michigan.

Why is the piping plover endangered?

Habitat Loss or Degradation - Many of the coastal beaches traditionally used by piping plovers for nesting have been lost to commercial, residential, and recreational developments. Through the use of dams or other water control structures, humans are able to raise and lower the water levels of many lakes and rivers of plover inland nest sites. Too much water in the spring floods the plovers' nests. Too little water over a long period of time allows grasses and other vegetation to grow on the prime nesting beaches, making these sites unsuitable for successful nesting.

Nest Disturbance and Predation - Piping plovers are very sensitive to the presence of humans. Too much disturbance causes the parent birds to abandon their nest. People (either on foot or in a vehicle) using the beaches where the birds nest sometimes accidentally crush eggs or young birds. Dogs and cats often harass and kill the birds. Other animals, such as fox, gulls, and crows, prey on the young plovers or eggs.

What is being done to prevent extinction of the piping plover?

Listing - The Great Lakes population of the piping plover was listed as an endangered species in 1986, and the Northern Great Plains and Atlantic Coast populations were listed as threatened species that same year.

Recovery Plans - The U.S. Fish and Wildlife Service developed recovery plans that describe actions that need to be taken to help the bird survive and recover.

Research - Several cooperative research groups have been set up among federal and state agencies, university and private research centers, and the Canadian Wildlife Service. Studies are being conducted to determine where plovers breed and winter, estimate numbers, and monitor long-term changes in populations.

Habitat Protection - Measures to protect the bird's habitat are conducted each year (often by volunteers), including controlling human access to nesting areas, nest monitoring and protection, limiting residential and industrial development, and properly managing water flow. In Michigan, several landowners have formally agreed to protect plover nesting habitat.

Public Education - Many states and private agencies are running successful public information campaigns to raise awareness of the plover's plight. In Michigan, residents of coastal communities where the birds nest have been contacted by an "ambassador" and provided with information about the plight of the plover.

What can I do to prevent the extinction of species?

Learn - Learn more about the piping plover and other endangered and threatened species. Understand how the destruction of habitat leads to loss of endangered and threatened species and our nation's plant and animal diversity. Tell others about what you have learned.

Volunteer - If piping plovers live near you, join the "Plover Patrol" (information about the "Plover Patrol" is on the website to the right). Or volunteer your time at a nearby Nature Center, Wildlife Sanctuary or National Wildlife Refuge. Make sure you control pets, and always remove litter on beaches. Encourage others to do the same.

Roseate Tern ECOS Profiles & Fact Sheet



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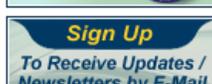
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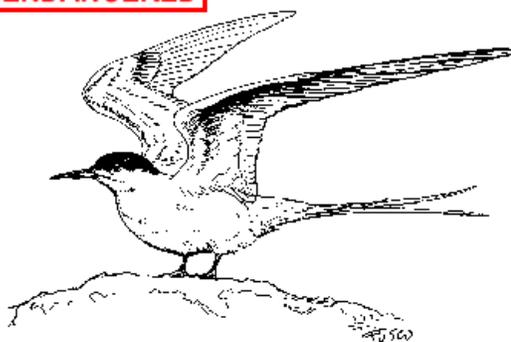
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ROSEATE TERN *Sterna dougallii*

ENDANGERED



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Habitat: Strictly saltwater coastlines; almost never seen inland.

Weight: Approximately 4 ounces.

Length: 14-17 inches.

Wingspan: 30 inches.

Life Expectancy: Banding indicates 9 years of age.

Food: Small fish, occasionally mollusks.

Status: Federally and state endangered.

Identification: Adults have a white body and black head cap. The deeply forked tail measures 6 to 8 inches in length. The black bill is red at the base, varying with the season and the age of the bird; as the breeding season progresses from incubation to the care and feeding of chicks, more and more of the base turns pinkish-red. The rosy tint on the breast is rarely visible in summer, but the bird's bright orange-red legs and feet are easy to distinguish. Both sexes are similar. Chicks and fledglings have black bills, legs and feet. The voice is a high-pitched, rasping "aaak" and soft "chivy."

Range: Roseate terns nest in colonies on sand/gravel beaches or pebbly/rocky offshore islands along the Atlantic coast from Nova Scotia south to Long Island, New York, and on the southern tip of Florida. Roseates that nest in the northeastern United States appear to winter primarily in the waters off Trinidad and northern South America from the Pacific coast of Columbia to eastern Brazil.

Reproduction: Roseate terns arrive in Connecticut in late April and early May. The first eggs are laid by the third week of May in shallow scrapes, or depressions, sometimes lined with dried vegetation. Nests are often concealed by vegetation or rocks. The 1 to 2 eggs are pale buff with small dots of brown. The adults take turns incubating the eggs and bringing small fish to the chicks. The eggs hatch in 23 to 24 days, and the young fledge about 26 to 30 days after hatching. Birds that lose their nests or young will produce new nests into late July and occasionally into early August. Roseate terns usually breed and nest at 3 years of age.

Reason for Decline: Historically, the roseate tern population suffered losses due to the millinery trade. Roseate tern productivity has also been affected by increased human recreation and disturbance in coastal areas, as well as by predation by great black-backed and herring gulls, owls and nocturnal-feeding mammals. Increasing numbers of gulls and human activity on or near coastal barrier islands have greatly reduced available nesting habitat for the roseate tern population in northeastern North America. Many traditional nesting sites in southern New England were abandoned during the 1940s and 1950s when great black-backed and herring gulls rapidly expanded their nesting ranges. These large, aggressive gulls stake out nesting territories in early spring before the terns return from their wintering areas. Gulls have taken over most of the outer islands preferred by nesting terns.

History in Connecticut: In the late 1800s, unrestricted market hunting for the millinery trade devastated the roseate tern population on the Atlantic coast. After harvest for commercial purposes was prohibited by law, the population recovered and at times equaled the number of common terns. Roseate tern numbers declined again in the 1970s and 1980s when gull populations increased.

The third largest roseate tern colony in North America exists in Connecticut at Falkner Island, which is now part of the Stewart B. McKinney National Wildlife Refuge. Approximately 175 to 200 pairs of terns breed there every year. This population has been studied in detail since 1978. Other colony sites that have been used in



Connecticut during 1989 include Tuxis Island near Madison and Duck Island near Clinton. Several small islands in the New London area were occupied by roseate terns in the 1970s.

Approximately one-fourth of the roseate tern breeding population in a given year at Falkner Island does not return the following year. Presently, it is not known if this loss is due to mortality or emigration to other colony sites.

Interesting Facts: According to the U.S. Fish and Wildlife Service (USFWS), islands with manned lighthouses were favorite nesting areas for roseates because the human presence deterred large gulls from nesting. Since the automation of almost all lighthouses, gulls have moved in and displaced the terns. The USFWS officially listed the northeastern breeding population of the roseate tern as endangered in December, 1987.

Adult terns are mainly preyed on by avian species such as owls, gulls and raptors. Eggs and young are also vulnerable to predation, as well as to adverse weather conditions and disturbance. Predation may completely wipe out production in a given colony. The combination of adult mortality, delayed maturity and low productivity can, in a short time, result in serious population declines unless they are offset by subsequent years of high productivity.

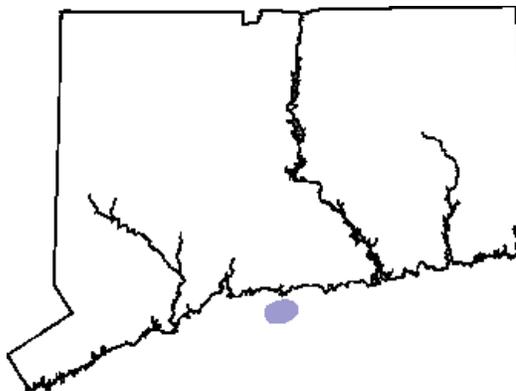
Roseate terns catch their prey by diving headfirst into the water. Their diet of small fish may have led to the alias mackerel gull, which also reflects their membership in the gull family. Graceful tern was another common name given to this adept flier.

In 1975, studies on Gull Island, New York, reported the hybridization of common terns and roseate terns. Similar crosses have not been documented since.

Protective Legislation: *Federal* - Endangered Species Act of 1973, Migratory Bird Treaty Act of 1918. *State* - Connecticut General Statutes Sec. 26-311.

What You Can Do: Respect all roseate tern nesting areas that are fenced or posted for the birds' protection. Do not approach or linger near roseate terns or their nests. Avoid landing vessels at offshore islands inhabited by terns.

Connecticut Range



The production of this Endangered and Threatened Species Fact Sheet Series is made possible by donations to the Endangered Species-Wildlife Income Tax Checkoff Fund. (rev. 12/99)

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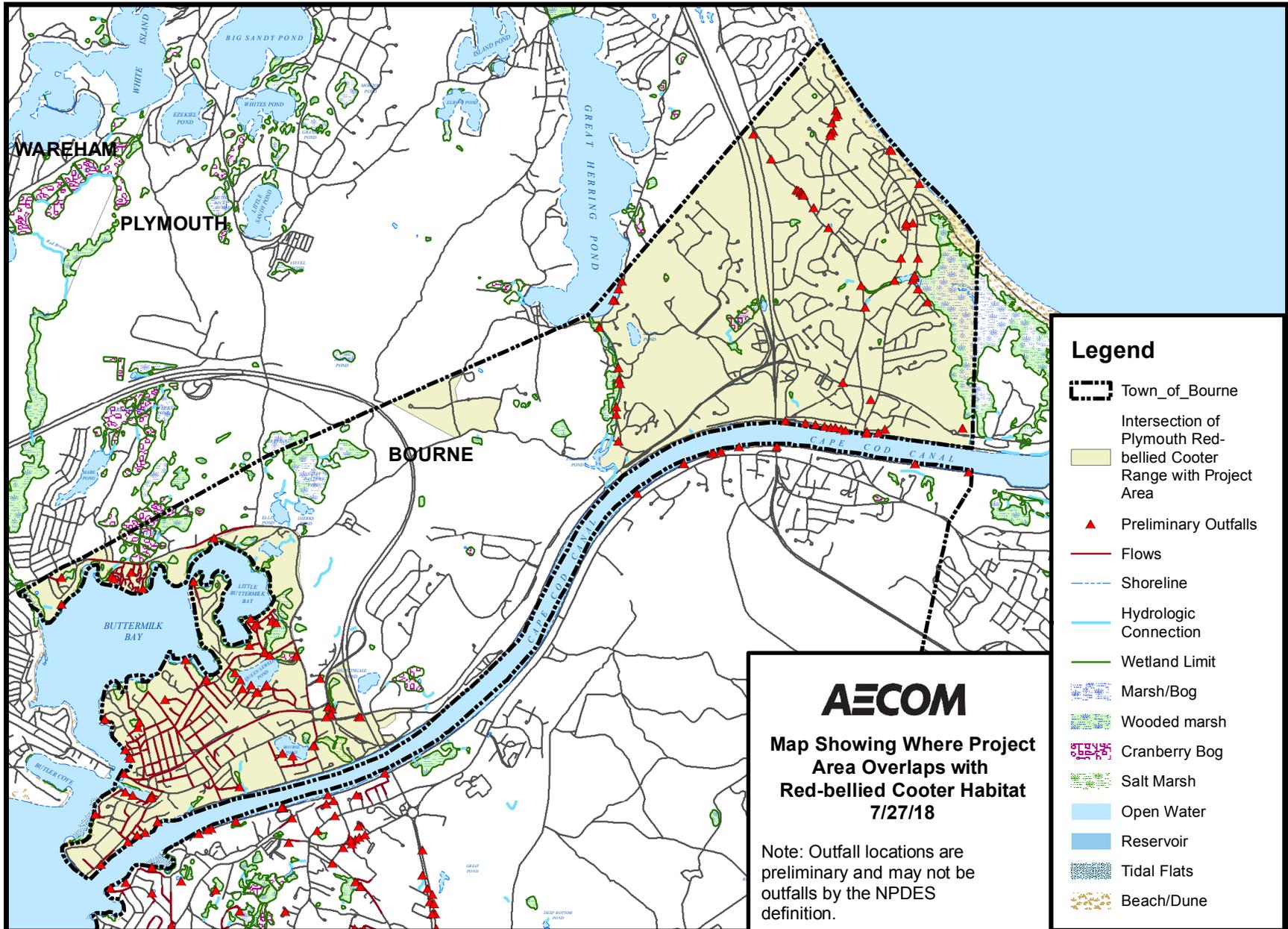
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Plymouth Redbelly Turtle ECOS Profiles & Fact Sheet



WAREHAM

PLYMOUTH

BOURNE

GREAT HERRING POND

CAPE COD CANAL

BUTTERMILK BAY

LITTLE BUTTERMILK BAY

BUTTER COVE

Legend

- Town_of_Bourne
- Intersection of Plymouth Red-bellied Cooter Range with Project Area
- Preliminary Outfalls
- Flows
- Shoreline
- Hydrologic Connection
- Wetland Limit
- Marsh/Bog
- Wooded marsh
- Cranberry Bog
- Salt Marsh
- Open Water
- Reservoir
- Tidal Flats
- Beach/Dune

AECOM

Map Showing Where Project Area Overlaps with Red-bellied Cooter Habitat 7/27/18

Note: Outfall locations are preliminary and may not be outfalls by the NPDES definition.



U.S. Fish & Wildlife Service

ECOS[ECOS](#) / Species Profile for Plymouth redbelly Turtle (*Pseudemys rubriventris bangsi*)

Plymouth Redbelly Turtle

(*Pseudemys rubriventris bangsi*)

Search for images on
digitalmedia.fws.gov

[Range Information](#) | [Federal Register](#) | [Recovery](#) | [Critical Habitat](#) | [Conservation Plans](#) | [Petitions](#) | [Life History](#)

Taxonomy: [View taxonomy in ITIS](#)

Listing Status: Endangered

Where Listed: WHEREVER FOUND

General Information

10-15 3/4" (25.4-40 cm). Carapace brown to black with flattened or slightly concave vertebral scutes; red bar on each marginal scute. Prominent notch at tip of upper jaw flanked by toothlike cusps; arrow-shaped stripe runs atop head, between eyes, to snout. Plastron reddish; dark markings along scute seams fade with age. Male has elongated, straight claws on front feet.

The species historical range included Massachusetts. See below for information about where the species is known or believed to occur.

Current Listing Status Summary

Status	Date Listed	Lead Region	Where Listed
Endangered	04/02/1980	Northeast Region (Region 5)	Wherever found

» Range Information

Current Range



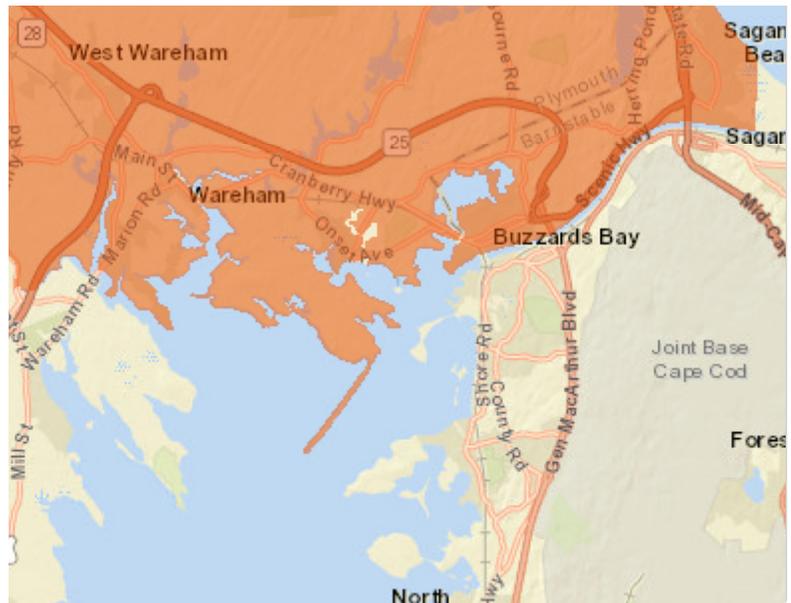
Wherever found





Zoom in! Some species' locations may be small and hard to see from a wide perspective. To narrow-in on locations, check the state and county lists (below) and then use the zoom tool.

Want the FWS's current range for all species? Click [here](#) to download a zip file containing all individual shapefiles and metadata for all species.



• Wherever found

Listing status: Endangered

- **States/US Territories** in which this population is known to or is believed to occur: Massachusetts
- **US Counties** in which this population is known to or is believed to occur: [View All](#)
- **USFWS Refuges** in which this population is known to occur: Massasoit National Wildlife Refuge

» Federal Register Documents

Federal Register Documents

Show entries

Date	Citation Page	Title
10/03/2006	71 FR 58363 58364	Endangered and Threatened Wildlife and Plants; 90-D (Pseudemys rubriventris bangsi)
04/21/2006	71 FR 20717 20718	Initiation of a 5-Year Review of Nine Listed Species: the clava), Northern Red-bellied Cooter (Pseudemys rubri (Helonias bullata), Northern Riffleshell (Epioblasma to (Triodopsis platysayoides), Puritan Tiger Beetle (Cicin heterodon)
04/02/1980	45 FR 21828 21833	ETWP; Listing as Endangered With Critical Habitat for
09/13/1979	44 FR 53422 53424	ETWP; Reproposal of Critical Habitat for the Plymouth

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» Recovery

- [Recovery Plan Information Search](#)
- [Information Search FAQs](#)

Current Recovery Plan(s)

Show entries

Date ▼	Title ◆	Plan Action Status
05/06/1994	Plymouth Redbelly Turtle	View Implementation ▲▼

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Other Recovery Documents

Show entries

Date ▼	Citation Page ◆	Title
04/21/2006	71 FR 20717 20718	Initiation of a 5-Year Review of Nine Listed Species: the <u>perpurpurea</u>, <u>Clubshell (Pleurobema clava)</u>, <u>Northern rubriventris bangsi</u>, <u>Roanoke Logperch (Percina rex)</u>, <u>Northern Riffleshell (Epioblasma torulosa rangiana)</u>, <u>F Snail (Triodopsis platysayoides)</u>, <u>Puritan Tiger Beetle (Wedgemussel (Alasmidonta heterodon)</u>

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Five Year Review

Show entries

Date ▼	Title
09/10/2007	Northern Red-Bellied Cooter 5-Year Review ▲▼

Showing 1 to 1 of 1 entries

» Critical Habitat

Critical Habitat Spatial Extents

Population(s)
 Wherever found

Show 10 entries

Date	Citation Page	Title
04/02/1980	45 FR 21828 21833	<u>ETWP; Listing as Endangered With Critical Habitat for Turtle in Massachusetts</u>
09/13/1979	44 FR 53422 53424	<u>ETWP; Reproposal of Critical Habitat for the Plymouth</u>
05/19/1978	43 FR 21702 21705	<u>Proposed Endangered Status and Critical Habitat for 7 mud turtle and Plymouth red-bellied turtle);</u>

Showing 1 to 3 of 3 entries < Previous 1 Next >

To learn more about critical habitat please see <http://ecos.fws.gov/crithab>

» Conservation Plans

No conservation plans have been created for Plymouth redbelly Turtle.

» Petitions

Show entries

Showing 1 to 1 of 1 entries

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» Life History

No Life History information has been entered into this system for this species.

» Other Resources

[NatureServe Explorer Species Reports](#) -- NatureServe Explorer is a source for authoritative conservation information on more than 50,000 plants, animals and ecological communities of the U.S and Canada. NatureServe Explorer provides in-depth information on rare and endangered species, but includes common plants and animals too. NatureServe Explorer is a product of NatureServe in collaboration with the Natural Heritage Network.

[ITIS Reports](#) -- ITIS (the Integrated Taxonomic Information System) is a source for authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world.

[FWS Digital Media Library](#) -- The U.S. Fish and Wildlife Service's National Digital Library is a searchable collection of selected images, historical artifacts, audio clips, publications, and video.



Northern red-bellied cooter

Pseudemys rubriventris

One of the challenges an animal or plant can face is separation from others of its type. In Massachusetts, a native freshwater turtle – the northern red-bellied cooter – lives more than 250 miles from the rest of the species, which lives along the coast in southern New Jersey, Delaware, Maryland, Virginia and North Carolina. As an ecologically and geographically distinct population, the northern red-bellied cooter faces difficult odds; its small population size and limited range can hinder its long-term survival. This turtle received Endangered Species Act protection in 1980 and is considered endangered.

Northern red-bellied cooters today live in just one county in Massachusetts, but archaeological data indicate that northern red-bellied cooters likely lived farther to the north, south and west in pre-colonial times. Additionally, data from prehistoric Indian middens in New England suggest that humans used cooters for food, perhaps causing local extinctions.

In more recent times, environmental pressures have challenged turtle survival. Extensive residential and agricultural development has altered its coastal plain pond habitat. Development, roads and stream channel alteration have fragmented habitat, eliminating many of the natural movement corridors between ponds. Such habitat modifications are a large part of the northern red-bellied cooter's predicament.

Life as a cooter

With an adult size of 10 to 12 inches and weighing up to 10 pounds, the northern red-bellied cooter is larger than most freshwater turtles except the snapping turtle. Females are larger than males, and the two sexes are differently patterned and colored. Females reach sexual maturity at 15 to 20 years; that timing may be somewhat less for males.



Northern red bellied cooter

In late spring and early summer, females select nesting sites in sandy soil, usually within 100 yards of a pond, though some females travel even greater distances in search of suitable nesting sites. Warmth from the sun and other temperature conditions at cooter nest sites can affect the sex ratio of hatchlings; cool nests will produce more males, while warm nests produce more females.

The nest's five to 17 eggs incubate for up to 80 days. Hatchlings may emerge from nests to enter ponds in late summer, or they may overwinter in the nest chamber and emerge the following spring.

Life is uncertain for cooter eggs and small hatchlings. Skunks and raccoons eat eggs and hatchlings in the nest. Bullfrogs will eat hatchlings; herons, snapping turtles and introduced predatory fish may also eat them. Nearly 100 percent of northern red-bellied cooter hatchlings do not survive their first year.

A head start for turtle babies

Because hatchling survival is essential to building and maintaining a breeding population, biologists have established a headstarting program. When a nest is

found, it is screened to prevent disturbance by predators. When it is time for the eggs to hatch, biologists revisit the nest and take half the hatchling turtles into captivity, where they are kept warm and fed on demand for about eight months. The nest's remaining hatchlings are released directly into their birth pond. The aquarium-residing headstarted hatchlings grow rapidly to become two to six times the size of similar-aged turtles in the wild. Survival of hatchling turtles in captivity is high, as is survival of released headstarted hatchlings, which are too large for most predators to kill and eat. Young headstarted turtles are returned to new pond and river habitats to expand existing populations. The turtles remain faithful to their release pond territory. Headstarted turtles have been found alive and healthy a dozen years after returning to the wild.

It's all about the habitat

While headstarting is an important part of the recovery strategy for northern red-bellied cooter, the strategy's emphasis is on habitat protection. Changes in land use have caused loss of nesting and basking sites. In the past, fires frequently burned the pine barren habitat occupied by this turtle, leaving

openings in the mixed pine and oak forest. For 100 years, the area has been protected from fire; allowing most of the remaining undeveloped areas to grow into closed-canopy pine forest. With these closed-canopy forests surrounding most ponds, suitable nesting habitat with adequate heating from the sun for incubation is scarce.

Biologists are clearing overhanging vegetation from nesting sites to provide sunnier conditions at ponds where red-bellied cooters lay their eggs. Opening vegetation at beaches close to ponds will provide additional nesting opportunities. Trees removed to expose nesting beaches to sunlight can be anchored in shallow water to provide additional basking sites.

In some locations, cranberry growers incidentally maintain open spaces suitable as nesting habitat, and the turtles seek out these locations.

Cranberry growers have cooperated in research and recovery efforts for this endangered turtle in many ways, among them granting biologists access to private lands and alerting employees to watch for turtles and nests.

What's to be done?

With nest protection and headstarting, the number of northern red-bellied cooters is believed to have doubled since 1980. But we need to learn more. Little is known about the effect of pesticides or other agricultural chemicals on northern red-bellied cooters. The same is true for heavy metals or other contaminants. Even though this turtle has been studied for over 100 years, intensively for the past 30, we still do not fully understand what limits the northern red-bellied cooter's distribution to just a handful of coastal ponds. Most likely, a combination of factors is affecting the cooter. Some we do know – the turtle's late maturation, low reproductive rate and the loss of coastal pond habitat. Some we guess at – perhaps the number of nest and hatchling predators has increased, or an introduced aquatic species is devastating the turtle at a vulnerable life stage.

We do know that the cooperation of the private landowners, the state of Massachusetts and the U.S. Fish and Wildlife Service is crucial to continuing the northern red-bellied cooter's slow and steady climb away from extinction.

**U.S. Fish & Wildlife Service
300 Westgate Center Drive
Hadley, MA 01535**

**Federal Relay Service
for the deaf and hard-of-hearing
1 800/877 8339**

**U.S. Fish & Wildlife Service
1 800/344 WILD
<http://www.fws.gov>**

August 2006

Northern Long-eared Bat Fact Sheet



Northern Long-Eared Bat

Myotis septentrionalis

The northern long-eared bat is federally listed as a threatened species under the Endangered Species Act. **Endangered** species are animals and plants that are in danger of becoming extinct. **Threatened** species are animals and plants that are likely to become endangered in the foreseeable future. Identifying, protecting and restoring endangered and threatened species is the primary objective of the U.S. Fish and Wildlife Service's Endangered Species Program.

What is the northern long-eared bat?

Appearance: The northern long-eared bat is a medium-sized bat with a body length of 3 to 3.7 inches and a wingspan of 9 to 10 inches. Their fur color can be medium to dark brown on the back and tawny to pale-brown on the underside. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, *Myotis*.

Winter Habitat: Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. Within hibernacula, surveyors find them hibernating most often in small crevices or cracks, often with only the nose and ears visible.

Summer Habitat: During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. They rarely roost in human structures like barns and sheds.

Reproduction: Breeding begins in late summer or early fall when males begin to swarm near hibernacula. After



This northern long-eared bat, observed during an Illinois mine survey, shows visible symptoms of white-nose syndrome.

copulation, females store sperm during hibernation until spring. In spring, females emerge from their hibernacula, ovulate and the stored sperm fertilizes an egg. This strategy is called delayed fertilization.

After fertilization, pregnant bats migrate to summer areas where they roost in small colonies and give birth to a single pup. Maternity colonies of females and young generally have 30 to 60 bats at the beginning of the summer, although larger maternity colonies have also been observed. Numbers of bats in roosts typically decrease from the time of pregnancy to post-lactation. Most bats within a maternity colony give birth around the same time, which may occur from late May or early June to late July, depending where the colony is located within the species' range. Young bats start flying by 18 to 21 days after birth. Maximum lifespan for the northern long-eared bat is estimated to be up to 18.5 years.

Feeding Habits: Like most bats, northern long-eared bats emerge at dusk to feed. They primarily fly through the

understory of forested areas feeding on moths, flies, leafhoppers, caddisflies, and beetles, which they catch while in flight using echolocation or by gleaning motionless insects from vegetation.

Range: The northern long-eared bat's range includes much of the eastern and north central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. The species' range includes 37 States and the District of Columbia: Alabama, Arkansas, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

Why is the northern long-eared bat in trouble?

White-nose Syndrome: No other threat is as severe and immediate as

this. If this disease had not emerged, it is unlikely that northern long-eared bat populations would be experiencing such dramatic declines. Since symptoms were first observed in New York in 2006, white-nose syndrome has spread rapidly from the Northeast to the Midwest and Southeast; an area that includes the core of the northern long-eared bat's range, where it was most common before this disease. Numbers of northern long-eared bats (from hibernacula counts) have declined by up to 99 percent in the Northeast. Although there is uncertainty about the rate that white-nose syndrome will spread throughout the species' range, it is expected to continue to spread throughout the United States in the foreseeable future.

Other Sources of Mortality:

Although no significant population declines have been observed due to the sources of mortality listed below, they may now be important factors affecting this bat's viability until we find ways to address WNS.

Impacts to Hibernacula: Gates or other structures intended to exclude people from caves and mines not only restrict bat flight and movement, but also change airflow and microclimates. A change of even a few degrees can make a cave unsuitable for hibernating bats. Also, cave-dwelling bats are vulnerable to human disturbance while hibernating. Arousal during hibernation causes bats to use up their energy stores, which may lead to bats not surviving through winter.

Loss or Degradation of Summer

Habitat: Highway construction, commercial development, surface mining, and wind facility construction permanently remove habitat and are activities prevalent in many areas of this bat's range. Many forest management activities benefit bats by keeping areas forested rather than converted to other uses. But, depending on type and timing, some forest management activities can cause mortality and temporarily remove or degrade roosting and foraging habitat.

Wind Farm Operation: Wind turbines kill bats, and, depending on the species, in very large numbers. Mortality from windmills has been documented for northern long-eared bats, although a

small number have been found to date. However, there are many wind projects within a large portion of the bat's range and many more are planned.

What Is Being Done to Help the Northern Long-Eared Bat?

Disease Management: Actions have been taken to try to reduce or slow the spread of white-nose syndrome through human transmission of the fungus into caves (e.g. cave and mine closures and advisories; national decontamination protocols). A national plan was prepared by the Service and other state and federal agencies that details actions needed to investigate and manage white-nose syndrome. Many state and federal agencies, universities and non-governmental organizations are researching this disease to try to control its spread and address its affect. See www.whitenosesyndrome.org/ for more.

Addressing Wind Turbine

Mortality: The Service and others are working to minimize bat mortality from wind turbines on several fronts. We fund and conduct research to determine why bats are susceptible to turbines, how to operate turbines to minimize mortality and where important bird and bat migration routes are located. The Service, state natural resource agencies, and the wind energy industry are developing a Midwest Wind Energy Habitat Conservation Plan, which will provide wind farms a mechanism to continue operating legally while minimizing and mitigating listed bat mortality.

Listing: The northern long-eared bat is listed as a threatened species under the federal Endangered Species Act. Listing a species affords it the protections of the Act and also increases the priority of the species for funds, grants, and recovery opportunities.

Hibernacula Protection: Many federal and state natural resource agencies and conservation organizations have protected caves and mines that are important hibernacula for cave-dwelling bats.

What Can I Do?

Do Not Disturb Hibernating Bats:

To protect bats and their habitats, comply with all cave and mine closures, advisories, and regulations. In areas without a cave and mine closure policy, follow approved decontamination protocols (see <http://whitenosesyndrome.org/topics/decontamination>). Under no circumstances should clothing, footwear, or equipment that was used in a white-nose syndrome affected state or region be used in unaffected states or regions.

Leave Dead and Dying Trees

Standing: Like most eastern bats, the northern long-eared bat roosts in trees during summer. Where possible and not a safety hazard, leave dead or dying trees on your property. Northern long-eared bats and many other animals use these trees.

Install a Bat Box: Dead and dying trees are usually not left standing, so trees suitable for roosting may be in short supply and bat boxes may provide additional roost sites. Bat boxes are especially needed from April to August when females look for safe and quiet places to give birth and raise their pups.

Support Sustainability: Support efforts in your community, county and state to ensure that sustainability is a development goal. Only through sustainable living will we provide rare and declining species, like the northern long-eared bat, the habitat and resources they need to survive alongside us.

Spread the Word: Understanding the important ecological role that bats play is a key to conserving the northern long-eared and other bats. Helping people learn more about the northern long-eared bat and other endangered species can lead to more effective recovery efforts. For more information, visit www.fws.gov/midwest/nleb and www.whitenosesyndrome.org

Join and Volunteer: Join a conservation group; many have local chapters. Volunteer at a local nature center, zoo, or national wildlife refuge. Many state natural resource agencies benefit greatly from citizen involvement in monitoring wildlife. Check your state agency websites and get involved in citizen science efforts in your area.

USFWS Determination Letter



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial St, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

September 24, 2018

To whom it may concern:

The U.S. Fish and Wildlife Service (USFWS) reviewed the stormwater discharge activities associated with the 2016 National Pollutant Discharge and Elimination System (NPDES) Massachusetts (MA) Small Municipal Separate Storm Sewer System (MS4) general permit (MA MS4 General Permit) issued by the Environmental Protection Agency (EPA). We determined those activities may affect, but are not likely to adversely affect, certain species listed under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) when specific conditions are met. When these conditions are met, we do not need to review individual projects. These comments are provided in accordance with section 7 of the ESA and complement existing 2016 MA MS4 General Permit Appendix C Guidance. We understand the applicant is acting as a non-Federal representative of the EPA for the purpose of consultation under section 7. **This letter provides additional guidance for meeting Criterion B and should be submitted as part of your application package to the EPA.**

If the USFWS Information for Planning and Consultation website (<https://ecos.fws.gov/ipac/>) indicates your MA MS4 General Permit project action area may contain one or more of the following federally listed endangered species: roseate tern (*Sterna dougallii*), northern red-bellied cooter (*Pseudemys rubriventris*), dwarf wedgemussel (*Alasmidonta heterodon*), rusty patched bumble bee (*Bombus affinis*), northeastern bulrush (*Scirpus ancistrochaetus*), or American chaffseed (*Schwalbea americana*); threatened species: piping plover (*Charadrius melodus*), bog turtle (*Glyptemys muhlenbergii*), Puritan tiger beetle (*Cicindela puritana*), northeastern beach tiger beetle (*Cicindela dorsalis*), or red knot (*Calidris canutus rufa*); or their federally designated critical habitat; and the specific conditions listed below are met, you may submit this letter to complete the **MA MS4 General Permit Appendix C: Step 4** in place of a concurrence letter for informal consultation as documentation of ESA eligibility for **USFWS Criterion B**.

In addition, this letter also satisfies the requirement in the **MA MS4 General Permit Appendix C: Step 2 (3)** to contact the USFWS and obtain a concurrence letter, if you have not yet done so. If your project action area includes one or more of the above-listed species *and* one or more of the

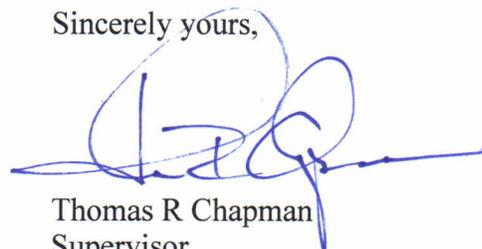
species listed under **Criterion C**,¹ you may still use this letter to certify under **Criterion B**. All existing guidance regarding requirements for certifying eligibility according to the USFWS Criterion A, B, or C for coverage by the 2016 MS4 Permit (see MA MS4 General Permit Appendix C – Endangered Species Guidance) remains unchanged.

We have determined that proposed stormwater discharge activities covered under the 2016 MS4 Permit *may affect, but are not likely to adversely affect*, the above-listed species and the species' critical habitat when the following are true:

1. all stormwater discharges are pre-existing or previously permitted by EPA;
2. any planned operations and maintenance work covered by this permit will only affect previously disturbed areas where stormwater controls are already installed. In these situations the chance of encountering any of the subject species is discountable;
3. the project implements EPA MS4 Best Management Practices (BMPs) and meets Clean Water Act and Massachusetts Water Quality Standards. Although permitted discharges may reach the environment used by these species, BMPs reduce pollutants to the extent that discharges are not known to have measurable impacts on these species or their habitat;
4. no new construction or structural BMPs are proposed under this permit at this time; and
5. you agree that if, during the course of the permit term, you plan to install a structural BMP not identified in the Notice of Intent (NOI), you will re-initiate consultation with the USFWS as necessary (see **MA MS4 General Permit Appendix C: Step 2 (5)**).

If the above criteria are met, further consultation with the USFWS under section 7 of the ESA is not required at this time; however, if the proposed action changes in any way such that it may affect a listed species in a manner not previously analyzed or if new information reveals the presence of additional listed species that may be affected by the project, the applicant or the EPA should contact us immediately and suspend activities that may affect those species until the appropriate level of consultation is completed with our office. Thank you for your cooperation, and please contact David Simmons of this office at (603) 227-6425 if you have questions or need further assistance.

Sincerely yours,



Thomas R Chapman
Supervisor
New England Field Office

¹ Criterion C includes guidance for project action areas that may contain species for which EPA has already made a determination. These species include the northern long-eared bat (*Myotis septentrionalis*), sandplain gerardia (*Agalinis acuta*), small whorled pogonia (*Isotria medeoloides*), and/or American burying beetle (*Nicrophorus americanus*) (MA MS4 General Permit Appendix C: Step 3 – Determine if You Can Meet Eligibility USFWS Criterion C).

From: [Doyle-Breen, Jennifer](#)
To: [Vuto, Michelle](#)
Cc: [Maxwell, Sean](#); [Haines, Samuel](#); [Sala, George](#)
Subject: RE: Small MS4 NOI submission - additional or corrected information required
Date: Wednesday, March 27, 2019 11:24:24 AM
Attachments: [Bourne MS4 NOI Attachments A.PDF](#)

Hello Michelle -

On behalf of the Town of Bourne, AECOM provides the below responses to your March 14 email.

- . Attached is the USFWS endangered species correspondence; please note that the final determination letter from USFWS is at the end of the Attachment A
- . The Town of Bourne confirms that the beginning year of the road salt use optimization program and the program to maintain stormwater treatment structures is 2019.

Please let us know if you require any additional information.

Jennifer Doyle-Breen
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-----Original Message-----

From: Vuto, Michelle [<mailto:Vuto.Michelle@epa.gov>]
Sent: Thursday, March 14, 2019 10:02 AM
To: gsala@townofbourne.com
Cc: Reports Stormwater; Maxwell, Sean
Subject: Small MS4 NOI submission - additional or corrected information required

Hi George,

EPA requires additional or corrected information to receive a complete NOI submission for your MS4 and continue the review process.

Please respond to this email with the requested details in the attached report. You do not need to resubmit your entire NOI form. Please respond with the requested information as soon as you can. If the additional information is not received within 30 days of the date on this email EPA may initiate the process to deny your NOI, unless additional time is granted by EPA for such submission.

Please let me know if you have any questions.

Best,
Michelle

Michelle Vuto
Stormwater & Construction Permits
U.S. EPA Region 1
5 Post Office Square-OEP06-4
Boston, MA 02109-3912
617-918-1222