



# Cape Cod Bridges Program

## Bourne, Massachusetts

### Appendix 4.11 Threatened, Endangered, and Protected Species and Habitats Material

**SUBMITTED TO:**  
Federal Highway Administration  
Massachusetts Division  
220 Binney Street, 9th Floor  
Cambridge, MA 02142

**PROPONENT:**  
Massachusetts Department of Transportation  
Highway Division  
10 Park Plaza  
Boston, MA 02116

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**massDOT**  
Massachusetts Department of Transportation

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## Acronyms and Abbreviations

| Acronym/Abbreviation           | Definition                                                                                        |
|--------------------------------|---------------------------------------------------------------------------------------------------|
| <a href="#">DMF</a>            | <a href="#">Division of Marine Fisheries</a>                                                      |
| EFH                            | Essential Fish Habitat                                                                            |
| <a href="#">ESA</a>            | <a href="#">Endangered Species Act</a>                                                            |
| FHWA                           | Federal Highway Administration                                                                    |
| FWCA                           | Fish and Wildlife Coordination Act                                                                |
| MassDOT                        | Massachusetts Department of Transportation                                                        |
| <a href="#">MMPA</a>           | <a href="#">Marine Mammal Protection Act</a>                                                      |
| NOAA                           | National Oceanic and Atmospheric Administration                                                   |
| <a href="#">NOAA Fisheries</a> | <a href="#">National Oceanic and Atmospheric Administration National Marine Fisheries Service</a> |
| Program                        | Cape Cod Bridges Program                                                                          |
| SAV                            | submerged aquatic vegetation                                                                      |
| USFWS                          | U.S. Fish and Wildlife Service                                                                    |



# 1 Introduction

This Threatened, Endangered, and Protected Species and Habitats Material Appendix includes reports prepared in part to support the Environmental Impact Statement (EIS) for the Cape Cod Bridges Program (Program), in accordance with the following federal and state statutes, regulations, and guidance:

- National Environmental Policy Act (NEPA) of 1969, as amended, 42 United States Code (USC) 4321 et seq.
- *Efficient Environmental Reviews for Project Decisionmaking and One Federal Decision*, 23 USC 139.
- Federal Highway Administration's (FHWA) regulations implementing NEPA, *Environmental Impact and Related Procedures* (23 Code of Federal Regulations [CFR] 771), and corresponding guidance, Technical Advisory (T 6640.8A): *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (October 30, 1987).
- [Section 7 of the Endangered Species Act of 1973, 16 United States Code \(USC\) 1531, et. seq; 50 CFR 402](#)
- [Magnuson Stevens Fishery Conservation and Management Act, 50 CFR 600.905](#)
- [Fish and Wildlife Coordination Act](#)
- [Marine Mammal Protection Act, 16 USC 1361-1423\(h\)](#)

[The reports — Biological Assessment for Terrestrial Species, Biological Assessment for Marine Species, Essential Fish Habitat Assessment and Fish and Wildlife Coordination Act Consultation Worksheet, and Marine Mammal and Sea Turtle Monitoring and Mitigation Plan — are described in Sections 2, 3, 4, and 5, respectively. Sections 6.1, 6.2, 6.3, and 6.4 describe correspondence and documentation of coordination between Massachusetts Department of Transportation \(MassDOT\) and federal agencies to document compliance with federal regulations protecting species and habitats.](#)

## 2 Biological Assessment for Terrestrial Species

MassDOT prepared **Attachment 1, Biological Assessment for Terrestrial Species**, to address the potential effects of the Program on terrestrial species listed or proposed as endangered or threatened under [the Endangered Species Act \(ESA\)](#). Pursuant to Section 7 of the ESA, FHWA and MassDOT completed an informal consultation for effects to species under the jurisdiction of the [U.S. Fish and Wildlife Service \(USFWS\)](#) that could result from the Program. Section 7 of the ESA is intended to ensure that, through consultation with USFWS, federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat.

Attachment 1, Biological Assessment for Terrestrial Species, addresses the potential effects of the Program on the following ESA-listed and ESA-proposed terrestrial species under the jurisdiction of the USFWS:

- Mammals
  - Northern long-eared bat (*Myotis septentrionalis*)
  - Tricolored bat (*Perimyotis subflavus*)
- Reptiles
  - Northern red-bellied cooter (*Pseudemys rubriventris*)/Plymouth red-bellied turtle (*Pseudemys rubriventris bangsi*)
- Plants
  - Sandplain gerardia (*Agalinis acuta*)
- Insects
  - Monarch butterfly (*Danaus plexippus*)

Based on the analysis conducted for **Attachment 1, Biological Assessment for Terrestrial Species**, FHWA and MassDOT have determined that the Program would have **no effect** on sandplain gerardia and northern red-bellied cooter, and the Program is **not likely to adversely affect** the northern long-eared bat and tricolored bat. Program construction could cause direct and indirect impacts on monarch butterflies in the form of direct mortality of individuals and/or permanent and temporary removal or disturbance of breeding or migration habitat. However, FHWA and MassDOT have determined that, based upon MassDOT's conservation commitments, the Program is **not likely to jeopardize** the continued existence of the monarch butterfly.

### 3 Biological Assessment for Marine Species

MassDOT prepared **Attachment 2, Biological Assessment for Marine Species**, to address the potential effects of the Program on marine species listed as endangered or threatened under the ESA and designated critical habitat. Pursuant to Section 7 of the ESA, FHWA and MassDOT completed informal consultation for effects to species under the jurisdiction of [the National Oceanic and Atmospheric Administration National Marine Fisheries Service \(NOAA Fisheries\)](#) that could result from the Program. Section 7 of the ESA is intended to ensure that, through consultation with NOAA Fisheries, federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat. **Attachment 2, Biological Assessment for Marine Species**, addresses the potential effects of the Program on the following ESA-listed marine species and designated critical habitat under the jurisdiction of NOAA Fisheries:

- Fin whale (*Balaenoptera physalus*)
- North Atlantic right whale (*Eubalaena glacialis*) (Critical Habitat)
- Green turtle (*Chelonia mydas*)
- Kemp's ridley turtle (*Lepidochelys kempii*)
- Leatherback turtle (*Dermochelys coriacea*)

- Loggerhead turtle (*Caretta caretta*)
- Shortnose sturgeon (*Acipenser brevirostrum*)
- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)

**Attachment 2, Biological Assessment for Marine Species**, includes an acoustic analysis of the Program's in-water construction activities for assessing the Program's potential effects on species protected under the ESA as well as those protected under [the Marine Mammal Protection Plan \(MMPA\)](#).

Based upon the analysis conducted for **Attachment 2, Biological Assessment for Marine Species**, FHWA and MassDOT have determined that the Program **may affect, but is not likely to adversely affect** the identified marine species. Additionally, FHWA and MassDOT have determined that the Program is **not likely to adversely affect** physical and biological features associated with critical habitat for the North Atlantic right whale, and therefore would not adversely modify or destroy, designated critical habitat for the North Atlantic right whale.

## 4 Essential Fish Habitat Assessment and Fish and Wildlife Coordination Act Consultation Worksheet

MassDOT prepared **Attachment 3, Essential Fish Habitat (EFH) Assessment and Fish and Wildlife Coordination Act (FWCA) Consultation Worksheet**, for review by NOAA Fisheries Greater Atlantic Regional Fisheries Office to address the potential effects of the Program relative to the following:

- The Magnuson Stevens Fishery Conservation and Management Act, which requires federal agencies to consult with NOAA Fisheries on any action or proposed action authorized, funded, or undertaken by such agency that may adversely affect EFH identified under the Act, pursuant to 50 CFR 600.905.
- The FWCA, which requires federal agencies to consult with NOAA Fisheries when proposed actions might result in modifications to a natural stream or body of water. The FWCA also requires that federal agencies consider the effects of projects on fish and wildlife, including aquatic resources such as shellfish, diadromous species, and other commercially and recreationally important species that are not federally managed and do not have designated EFH.

There is designated EFH for 29 finfish and invertebrate species within Cape Cod Canal. Additionally, there are two types of Habitat Area of Particular Concern (HAPC): Inshore Juvenile Cod HAPC and Summer Flounder HAPC. In addition to EFH species, the FWCA recognizes 16 [National Oceanic and Atmospheric Administration \(NOAA\)](#) Trust Resources with the potential to be present in the area and therefore exposed to Program impacts. This includes two areas with eelgrass (*Zostera marina*) [submerged aquatic vegetation (SAV)], and areas of shellfish habitat at both bridge sites.

MassDOT has committed to measures for avoiding, minimizing, and mitigating effects to EFH. Based on the analysis and the proposed avoidance, minimization, and mitigation measures, and in coordination with the FHWA, MassDOT has determined that the **adverse effect on finfish and shellfish species**

**would not be substantial**, meaning that the adverse effects would be no more than minimal, temporary, or can be alleviated with minor Program modifications or conservation recommendations.

The Program would affect SAV present at the Bourne Bridge site. In coordination with NOAA Fisheries, MassDOT has committed to monitor the SAV beds with photographic surveys before and after construction, provide the survey results to NOAA Fisheries, and provide compensatory mitigation for effects to eelgrass beds. MassDOT is developing an Eelgrass Survey and Mitigation Plan and is consulting with the [U.S. Army Corps of Engineers \(USACE\)](#) and NOAA Fisheries to pursue the most effective approach to mitigate for the loss of the SAV.

## 5 Marine Mammal and Sea Turtle Monitoring and Mitigation Plan

In compliance with the MMPA, MassDOT prepared **Attachment 4, Marine Mammal and Sea Turtle Monitoring and Mitigation Plan**, to document the monitoring protocols, operational procedures, and best management practices that would be implemented as part of the Program to limit the potential for an incidental take of marine mammals and sea turtles, and to minimize potential effects on sea turtles and marine mammals protected under ESA and MMPA, respectively. This plan, and the monitoring commitments and mitigation measures contained within, were developed to be consistent with the ESA Section 7 Biological Assessment for Marine Species described in Section 3. ESA prohibits the take or attempted take of species listed as threatened or endangered. MMPA prohibits the take or attempted take of any marine mammal species in U.S. waters per 50 CFR 216. Incidental take of marine mammals may occur during non-fishing activities, including construction projects, if approved by NOAA Fisheries through the issuance of permits and authorizations to ensure mitigation measures are implemented to reduce the impact and keep track of the activities and how they impact protected species.

There are four sea turtle species and 34 marine mammal species with potential to occur in the Cape Cod Study Area. Of these, 23 species were determined to have a rare presence likelihood and are not discussed in the Plan. The following 15 species, consisting of 11 marine mammal species and four sea turtle species, were determined to have a regular, common, or uncommon presence likelihood:

- Green turtle
- Kemp's ridley turtle
- Leatherback turtle
- Loggerhead turtle
- Fin whale
- Humpback whale (*Megaptera novaeangliae*)
- North Atlantic right whale
- Sei whale (*Balaenoptera borealis*)
- Minke whale (*Balaenoptera acutorostrata*)
- Long-finned pilot whale (*Globicephala melas*)

- Atlantic white-sided dolphin (*Lagenorhynchus acutus*)
- White-beaked dolphin (*Lagenorhynchus albirostris*)
- Harbor porpoise (*Phocoena phocoena*)
- Gray seal (*Halichoerus grypus*)
- Harbor seal (*Phoca vitulina*)

Of these 15 species, nine species were determined to have a regular or common presence in the Cape Cod Study Area.

MassDOT has determined that by following the avoidance and conservation measures proposed within the Marine Mammal and Sea Turtle Monitoring and Mitigation Plan, the Program would adequately limit the potential for an incidental take of marine species protected under the MMPA. Therefore, MassDOT has concluded that neither an Incidental Harassment Authorization (IHA) nor a Letter of Authorization (LOA) is necessary to pursue under the MMPA.

## 6 Agency Coordination and Concurrence

The following summarizes agency coordination regarding compliance with federal laws and review of the technical support documents prepared in support of the FEIS **Section 4.11, Threatened, Endangered, and Protected Species and Habitats**. Documentation of agency coordination is included within the attachments.

### 6.1 USFWS Coordination: Biological Assessment for Terrestrial Species

Based upon its review of the Biological Assessment for Terrestrial Species (**Attachment 1**), on May 2, 2025, MassDOT received a letter of concurrence from Audrey Mayer, Supervisor, New England Field Office, U.S. Department of Interior, Fish and Wildlife Service. USFWS concurred that the Program **may affect, but is not likely to adversely affect**, the federally endangered northern long-eared bat (*Myotis septentrionalis*) (NLEB), and the tricolored bat (*Perimyotis subflavus*) (TCB), which is proposed to be listed as endangered. USFWS concurred that the Program is **not likely to jeopardize** the monarch butterfly (*Danaus plexippus*), which is proposed to be listed as threatened. USFWS acknowledged MassDOT's determination that the Program would have **no effect** on other federally listed species. Further, USFWS indicated it is **unaware of any substantial impacts** the Program would have on FWCA wildlife resources.

On December 30, 2025, MassDOT apprised the USFWS of refinements to the Program Limits as described in the Biological Assessment for Terrestrial Species. MassDOT determined that by implementing the conservation measures in the Biological Assessment for Terrestrial Species, no additional effect to ESA-listed species or critical habitat would occur in a manner or to an extent not previously considered. Therefore, MassDOT's previous determination that the Program would not be likely to adversely affect northern long-eared bats and tricolored bats would remain valid and a reinitiation of ESA consultation would not be required. On January 5, 2026, USFWS acknowledged

MassDOT's determination that additional ESA Section 7 consultation regarding the effects of the Program on northern long-eared bats and tricolored bats would not be required.

## 6.2 NOAA Fisheries Coordination: Biological Assessment for Marine Species

Based upon its review of the [Biological Assessment](#) for Marine Species (**Attachment 2**), on April 7, 2025, MassDOT received a letter of concurrence from Jennifer Anderson, Assistant Regional Administrator for Protected Resources, U.S. Department of Commerce, NOAA Fisheries, Greater Atlantic Regional Fisheries Office. NOAA Fisheries indicated that the proposed action is **not likely to adversely affect** any ESA-listed species or designated critical habitat under their jurisdiction.

On February 10, 2026, MassDOT provided a technical memorandum to NOAA Office of Protected Resources detailing the potential effects of the riprap pier protection system on ESA-listed species and designated critical habitat. Although the proposed pier protection system would increase the amount of net permanent benthic habitat conversion, the Biological Assessment for Marine Species analyzed the effects of habitat loss in Cape Cod Canal associated with the placement of the new bridge piers and removal of existing piers and concluded that this would not be likely to adversely affect ESA-listed species. Further, the loss of potential foraging habitat would represent a small fraction of similar available habitat throughout the Action Area<sup>1</sup>. As a result, MassDOT concluded that with the application of avoidance and minimization measures described in the Biological Assessment for Marine Species, the riprap pier protection system would not be likely to adversely affect ESA-listed species or designated critical habitat or cause effects thereto that were not previously considered. On February 20, 2026, NOAA Fisheries concurred with MassDOT's determination that the design change would not introduce effects larger in scope than those already considered, and that reinitiation of consultation would not be necessary.

On April 9, 2026, MassDOT informed NOAA Fisheries of investigatory sediment sampling to be conducted in Cape Cod Canal at the bridge sites to support the proposed dredge program. MassDOT indicated that the sampling would incorporate the Program's best management practices, as stipulated in the initial consultation, and would be consistent with the previous determination of not likely to adversely affect ESA-listed threatened or endangered species or their designated critical habitats. On April 20, 2026, NOAA Fisheries acknowledged the Program's updates and MassDOT's determination that reinitiation of consultation would not be needed.

On June 1, 2026, MassDOT apprised NOAA Fisheries of the Program's expected dredge material disposal approach, developed in coordination with USACE, and its plan to dispose of excess existing bridge components at an artificial reef site off the coast of Massachusetts, developed in coordination with the Division of Marine Fisheries (DMF). Pending the results of sediment sampling, MassDOT is proposing to dispose of dredged sediments from the Sagamore and Bourne Bridge projects at one or two sites within USACE's Disposal Area Monitoring System. The proposed sites are the Springhill Beach

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<sup>1</sup> 50 CFR 402.02



Nearshore Placement site, a feeder berm approximately 2,000 feet offshore of Springhill Beach in Sandwich, Massachusetts, and the Cape Cod Bay Disposal (CCBD) site, approximately 16.5 miles northeast of the Cape Cod Bay entrance to Cape Cod Canal. Additionally, MassDOT proposes to place suitable portions of the deconstructed existing Sagamore and Bourne bridge piers, shoreline riprap, and granite bridge pier facing at the DMF Yarmouth artificial reef site, located approximately 2.5 miles off the coast of Yarmouth, Massachusetts, or at another DMF-approved site. MassDOT has determined that the Program's use of USACE and DMF sites would be covered under the two agencies' previously obtained authorizations from NOAA Fisheries and would not be an expansion of the Program requiring additional ESA Section 7 consultation. Vessel transport to and from these sites, however, would be a component of the Proposed Action, as previously described in the Biological Assessment for Marine Species. During vessel transits, MassDOT would adhere to the conservation and mitigation measures to reduce impacts on federally listed species or critical habitats with potential to occur in the vicinity of the Program, including restricting vessel speeds and having a protected species observer onboard vessels from January 1 through May 30, operating in accordance with the Program's Marine Mammal and Sea Turtle Monitoring and Mitigation Plan. By implementing these measures, MassDOT determined that the vessel use for these material disposal activities would be consistent with the previous determinations of not likely to adversely affect ESA-listed threatened or endangered species or their designated critical habitats and would not require further consultation.

Documentation of agency coordination is provided in **Attachment 2**.

### 6.3 NOAA Fisheries Coordination: Essential Fish Habitat Assessment and Fish and Wildlife Coordination Act Consultation Worksheet

Based upon its review of the draft Essential Fish Habitat Assessment and Fish and Wildlife Coordination Act Consultation Worksheet (**Attachment 3**), on February 12, 2025, MassDOT received correspondence from Louis A. Chiarella, Assistant Regional Administrator for Habitat and Ecosystem Services, NOAA Fisheries, that the best management practices provided in the EFH Assessment **may sufficiently minimize impacts** to finfish and shellfish species. NOAA Fisheries provided EFH Conservation Recommendations for anticipated Program effects to SAV.

On March 12, 2025, MassDOT provided written concurrence with NOAA Fisheries' recommendation and committed to measures to avoid, minimize, and mitigate impacts to EFH, consistent with NOAA Fisheries' recommendations.

On February 10, 2026, MassDOT provided a technical memorandum to NOAA Fisheries Habitat and Ecosystem Services Division regarding the potential effects of the riprap pier protection system to EFH. The total area of intertidal and subtidal EFH that would be converted to riprap or bridge piers would encompass approximately 0.5% of the area encompassed by Cape Cod Canal, which would have a minimal effect on EFH in the Aquatic Species Study Area. With application of the avoidance and minimization measures described in the EFH Assessment (**Attachment 3**), MassDOT concluded that the conversion of EFH from coarse sand, shell hash, cobble/gravel, and shellfish reef habitat to riprap would not cause a substantial adverse effect on EFH or NOAA trust resources, and it would not change

the anticipated impacts to eelgrass as reported in the EFH Assessment. On March 4, 2026, NOAA Fisheries' Habitat and Ecosystem Services Division concurred with MassDOT's determination and offered no additional conservation recommendations, provided that the previously identified conservation recommendations and best management practices are incorporated into the Program (**Attachment 3**).

## 6.4 NOAA Fisheries Coordination: Marine Mammal Protection Act/Marine Mammal and Sea Turtle Monitoring and Mitigation Plan

On August 14, 2024, MassDOT and FHWA met with the Deputy Chief, Permits and Conservation Division of NOAA Fisheries' Office of Protected Resources, to review the Program, including the anticipated in-water construction work and underwater noise producing construction activities. On September 18, 2024, MassDOT sent a follow-up email confirming the guidance provided by the Deputy Chief, and identified the next steps for the Program, including ESA consultation.

On April 29 2026, MassDOT provided the Marine Mammal and Sea Turtle Monitoring and Mitigation Plan to the Office of Protected Resources. Additionally, MassDOT provided Program updates to the Deputy Chief, including ESA consultation updates, and requested that the Office of Protected Resources review the Marine Mammal and Sea Turtle Monitoring and Mitigation Plan. Additionally, MassDOT has committed to notifying the Office of Protected Resources prior to construction start and coordinating with the Office through the duration of in-water construction activities as needed.

**Attachment 4** contains documentation of coordination.

## Attachments

- Attachment 1. Biological Assessment for Terrestrial Species and Agency Coordination
- Attachment 2. Biological Assessment for Marine Species and Agency Coordination
- Attachment 3. Essential Fish Habitat Assessment and Fish and Wildlife Coordination Act Consultation Worksheet and Agency Coordination
- [Attachment 4. Marine Mammal Protection Act/Marine Mammal and Sea Turtle Monitoring and Mitigation Plan and Agency Coordination](#)