

**FINAL**

**ENVIRONMENTAL ASSESSMENT FOR THE  
PROPOSED MASSACHUSETTS PIPING PLOVER  
HABITAT CONSERVATION PLAN AND  
INCIDENTAL TAKE PERMIT**



U.S. Fish and Wildlife Service  
New England Fish and Wildlife Office  
70 Commercial Street, Suite 300  
Concord, New Hampshire 03301

**July 2016**

This page intentionally left blank.

# Contents

---

List of Tables .....	iii
List of Figures.....	iii
List of Acronyms and Abbreviations.....	iv
<b>Chapter 1 Purpose and Need .....</b>	<b>1-1</b>
1.1 Introduction .....	1-1
1.2 Project Background.....	1-2
1.3 Environmental Assessment Overview .....	1-3
1.4 Public Involvement .....	1-6
1.5 Summary of the Proposed Action Addressed in this EA.....	1-6
1.6 Purpose and Need.....	1-7
1.7 Document Organization.....	1-7
<b>Chapter 2 Proposed Action and Alternatives.....</b>	<b>2-1</b>
2.1 No Action Alternative .....	2-1
2.2 Proposed Action.....	2-1
2.2.1 Location.....	2-2
2.2.2 Covered Activities .....	2-4
2.2.3 Conservation Strategy.....	2-9
2.2.4 Monitoring .....	2-11
2.2.5 Adaptive Management .....	2-12
2.3 Shorter Permit Term Alternative .....	2-13
2.4 Alternatives Considered but Eliminated from Further Consideration.....	2-13
2.4.1 Greater Deviations from the Guidelines.....	2-13
2.4.2 Additional Covered Species .....	2-14
2.4.3 Smaller Plan Area.....	2-15
<b>Chapter 3 Affected Environment .....</b>	<b>3-1</b>
3.1 Biological Resources .....	3-4
3.1.1 Regulatory Setting.....	3-4
3.1.2 Existing Conditions.....	3-7
3.2 Coastal Resources .....	3-13
3.2.1 Regulatory Setting.....	3-13
3.2.2 Existing Conditions.....	3-14
3.3 Recreation.....	3-14
3.3.1 Regulatory Setting.....	3-14
3.3.2 Existing Conditions.....	3-14

3.4	Traffic and Transportation .....	3-16
3.4.1	Regulatory Setting.....	3-16
3.4.2	Existing Conditions.....	3-17
3.5	Socioeconomics .....	3-18
3.5.1	Regulatory Setting.....	3-18
3.5.2	Existing Conditions.....	3-18
<b>Chapter 4 Environmental Consequences .....</b>		<b>4-1</b>
4.1	No Action Alternative .....	4-1
4.1.1	Biological Resources .....	4-2
4.1.2	Coastal Resources .....	4-6
4.1.3	Recreation.....	4-6
4.1.4	Transportation and Traffic.....	4-6
4.1.5	Socioeconomics .....	4-7
4.2	Proposed Action.....	4-7
4.2.1	Biological Resources .....	4-8
4.2.2	Coastal Resources .....	4-21
4.2.3	Recreation.....	4-21
4.2.4	Transportation and Traffic.....	4-22
4.2.5	Socioeconomics .....	4-23
4.3	Shorter Permit Term Alternative .....	4-24
4.3.1	Biological Resources .....	4-24
4.3.2	Coastal Resources .....	4-25
4.3.3	Recreation.....	4-25
4.3.4	Transportation and Traffic.....	4-25
4.3.5	Socioeconomics .....	4-25
<b>Chapter 5 Cumulative Impacts and Climate Change.....</b>		<b>5-1</b>
5.1	Cumulative Impacts Analysis .....	5-1
5.1.1	Study Area.....	5-1
5.1.2	Actions Analyzed.....	5-1
5.1.3	Cumulative Impacts by Resource.....	5-3
5.2	Climate Change .....	5-10
<b>Chapter 6 List of Preparers .....</b>		<b>6-1</b>
6.1	U.S. Fish and Wildlife Service.....	6-1
6.2	ICF International .....	6-1
<b>Chapter 7 References Cited .....</b>		<b>7-1</b>
<b>Appendix A Section 106 Correspondence.....</b>		<b>A-1</b>
<b>Appendix B Responses to Comments.....</b>		<b>B-1</b>

## Tables

---

Table 3-1. Massachusetts Piping Plover Breeding Sites with Ten or More Pairs, 2013.....	3-11
Table 3-2. Unemployment Rates for the Study Area.....	3-19
Table 4-1. Predators Removed under B-120 Restoration Program, 2013–2014.....	4-5
Table 4-2. Estimate of Maximum Predator Removal for EA Analysis.....	4-18
Table 5-1. Mean Sea Level Trends for National Oceanic and Atmospheric Administration’s Massachusetts Tide Gauge Stations .....	5-11

## Figures

---

Figure 2-1. Study Area.....	2-3
Figure 3-1. Number of Breeding Pairs of Piping Plover in Massachusetts, 1986–2015.....	3-10

# Acronyms and Abbreviations

---

AADT	Average daily traffic
APHIS	Animal and Plant Health Inspection Service
B-120	Bouchard Barge 120
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMP	Conservation and Management Permit
CO <sub>2</sub>	carbon dioxide
COIs	certificates of inclusion
Corps	U.S. Army Corps of Engineers
CZMA	Coastal Zone Management Act
DEIS	draft Environmental Impact Statement
EA	environmental assessment
EIS	environmental impact statement
ESA	Endangered Species Act
ESM	Environmental Statement Memorandum
FONSI	Finding of No Significant Impact
HCP	Habitat Conservation Plan
HRRC	Herring River Restoration Committee
IAMP	impact avoidance and minimization plan
ITP	incidental take permit
MADER	Massachusetts Division of Ecological Restoration
MADFW	Massachusetts Division of Fisheries and Wildlife
MassDOT	Massachusetts Department of Transportation
MBTA	Migratory Bird Treaty Act
MESA	Massachusetts Endangered Species Act
MGL	Massachusetts General Law
MWPA	Massachusetts Wetlands Protection Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OSV	over-sand-vehicle
Plan	Habitat Conservation Plan
Service	U.S. Fish and Wildlife Service
SHPO	State Historic Preservation Officer
U.S.	United States
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

### 1.1 Introduction

This environmental assessment (EA) was prepared by the U.S. Fish and Wildlife Service (USFWS or Service) pursuant to the National Environmental Policy Act (42 United States Code [U.S.C.] §§ 4321–4370, et seq.) (NEPA), the Council on Environmental Quality (CEQ) NEPA-implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508), and the Department of the Interior’s complementary NEPA-implementing regulations (43 CFR Part 46) (see section 1.3). The EA evaluates the effects of issuing an incidental take permit (ITP) under section 10(a)(1)(B) of the Federal Endangered Species Act (87 Stat. 884, as amended: 16 U.S.C. 1531, et seq.) (ESA) to the Massachusetts Division of Fisheries and Wildlife (MADFW) for implementation of activities covered by the “*Massachusetts Division of Fisheries and Wildlife Habitat Conservation Plan For Piping Plover*” (HCP or Plan). Under section 10(a)(2)(A) of the ESA, any application for an ITP must include a habitat conservation plan that details the impacts of the incidental take allowed by the ITP on covered species and how the impacts of incidental take will be minimized and mitigated.

The MADFW proposes to deviate from State and Federal guidelines (MADFW 1993, USFWS 1994) when managing some recreational activities on Massachusetts beaches during the piping plover (*Charadrius melodus*) nesting season. These deviations increase the potential for take of the federally threatened piping plover. Therefore, the MADFW prepared an HCP that describes the avoidance, minimization, and mitigation measures they will implement to address impacts to piping plovers. The HCP serves as an umbrella plan whereby other Massachusetts beach managers can receive incidental take coverage by opting into the plan via certificates of inclusion. Covered activities in the HCP include:

1. use of roads and parking lots in the vicinity of unfledged (i.e., unable to fly) chicks;
2. recreation and beach operations
  - a. associated with reduced symbolic fencing<sup>1</sup> around nests,
  - b. associated with reduced proactive symbolic fencing of piping plover habitat, and
  - c. at piping plover nest sites with nest moving; and
3. over-sand-vehicle (OSV) use in the vicinity of unfledged piping plover chicks.

Chapter 2 describes the covered activities in more detail.

The ESA and its implementing regulations prohibit take of federally listed threatened or endangered species without prior approval pursuant to either section 7 or section 10 of the ESA. The ESA defines *take* as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The regulations at 50 CFR § 17.3 define the term *harass* in the take

---

<sup>1</sup> *Symbolic fencing* is fencing that consists of temporary stakes and rope or twine with signage that is erected around piping plover nests and habitat to delineate areas where pedestrians and OSVs should not enter.

definition as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. The regulations define *harm* as an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Issuance of a section 10 ITP constitutes a discretionary Federal action by the Service and is thus subject to NEPA, which requires that all Federal agencies assess the effects of their actions on the human environment. This EA is intended to satisfy the Service's obligations under NEPA to evaluate the effects on the human environment from issuance of an ITP and implementation of the MADFW's HCP.

## 1.2 Project Background

Piping plovers are small, sand-colored shorebirds that nest on sandy, coastal beaches along the eastern shore of North America from South Carolina to Newfoundland. In 1986, the U.S. Atlantic Coast piping plover population was listed as threatened by the Service. In the same year, Massachusetts also listed the piping plover as threatened pursuant to the Massachusetts Endangered Species Act (MESA; Massachusetts General Law [MGL] Chapter [c.] 131A). Since the listing, the MADFW developed a program to manage and regulate activities occurring within piping plover habitat.

In 1993, the MADFW published "Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns and Their Habitats in Massachusetts" (MADFW 1993; hereafter referred to as the State guidelines), which were closely followed by the publication of the Service's "Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act" (USFWS 1994; hereafter referred to as the Federal guidelines). The State and Federal guidelines describe management techniques to prevent disturbance of nesting piping plovers, trampling of nests, monitoring requirements and restrictions on the use of OSVs when unfledged chicks are present. Currently, the vast majority of plover nesting beaches in Massachusetts are managed in accordance with the State and Federal guidelines, including all sites with recreational OSV use.

In Massachusetts, the MADFW coordinates piping plover conservation efforts by (1) providing site-specific technical assistance and advice to beach managers making plover-related decisions, including recommendations to minimize effects on recreation while avoiding take; (2) working with partners to ensure adequate training for new beach managers and plover monitors; (3) coordinating annual piping plover censuses, and ensuring that index count, total count, and other data are collected and reported in accordance with protocols (MADFW 2012); (4) collecting, compiling, and reporting annual census and productivity results, and conducting data quality control; and (5) conducting regulatory reviews for MESA and Massachusetts Wetlands Protection Act (MWPA; MGL c. 131, section 40) compliance.

Since the piping plover's Federal listing in 1986, the Massachusetts plover population has increased from an estimated 139 to an estimated 687 breeding pairs in 2015 (MADFW 2016b). This almost five-fold increase over 25 years has led to management challenges in balancing recreational beach use with the need to avoid take of piping plover nests, eggs, or chicks. There are increasing

incidences of piping plover nests in or near public beach access points, beach parking lots, or access roads. In these cases, avoiding take has resulted in road or parking lot closures and restricted access of recreational beach use. As the piping plover population expanded, beach managers have increased fencing to protect breeding birds. Smaller beaches with high numbers of nesting piping plovers may have large areas symbolically fenced to protect piping plover nests and provide a refuge for chicks, precluding recreational use. Factors such as severe early summer weather or increased predation pressure has led plovers to renest, sometimes multiple times, resulting in a protracted breeding season. Late season nests and chicks further extend restrictions on OSV access or the maintenance of large symbolically fenced areas. For example, under the current State and Federal guidelines, the presence of one or two late-nesting piping plover pairs situated near an OSV access point can lead to its closure, once unfledged chicks are present, to avoid take. This can close miles of beach beyond the access point that may have no nesting plovers and that would otherwise be open for mid-to-late summer OSV use.

To increase flexibility for beach managers and enhance recreational opportunities, the MADFW is applying for an ITP for the statewide plover management program and extend take authorization to beach managers through certificates of inclusion (COIs) and implementation of the Plan.

The Plan's stated purpose is to advance piping plover conservation and recovery in Massachusetts while maintaining and improving recreational beach access and beach operations. To achieve plover conservation and provide flexibility for recreational beach management and operations, the Plan identified broad program goals including (1) developing and implementing a framework that will contribute to the maintenance of a "viable and robust" piping plover population in Massachusetts, (2) community support for piping plover conservation, and (3) streamlining the permitting process in compliance with State and Federal Endangered Species Act regulations for site-level management flexibility (HCP section 1.1.1).

## 1.3 Environmental Assessment Overview

The purpose of an EA is to determine if significant environmental impacts are associated with a proposed Federal action that would require the preparation of an environmental impact statement (EIS). EAs also evaluate the impacts associated with alternative means to achieve the agency's objectives. EAs should be concise documents that focus on aspects of the human environment that may be affected by the proposed action. EAs are intended to:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS;
- Aid an agency's compliance with NEPA when no EIS is necessary; and
- Facilitate preparation of an EIS when one is necessary (40 CFR § 1508.9).

The proposed action consists of issuance of an ITP for recreational activities and beach operations that are already occurring. No new activities are specifically allowed as result of this Plan. Rather, there would be minor deviations from how the activities are currently conducted during the piping plover nesting season. Examples of recreational activities that will occur under the Plan include swimming, sunbathing, picnicking, pedestrian activity, dog walking, fishing, nature study, beach sports, boating, water sports (such as surfing and wind surfing), camping, and OSV use on beaches that currently allow it. Beach operations activities may include but are not limited to beach raking or cleaning of debris and litter, erection of lifeguard stands or beach access structures, maintenance of

beach surface, etc. The proposed action would include minor changes to how these activities are implemented. For example, the State and Federal guidelines allow OSV use outside the piping plover breeding season and during the prenesting, egg-laying, incubation, and postfledging periods. The proposed action would permit limited, escorted OSV use to occur during the prefledging period (i.e., after chicks have hatched but before they have fledged). Thus, the proposed action would not change whether the activities occur or not, but rather it would change details of how they would be managed when piping plovers are present. Therefore, because of the limited scope of the proposed action, the analysis in this EA focuses on a limited suite of environmental resources that have the potential to be affected. These include biological resources (including potential impacts on piping plovers, other shorebirds, and species affected by the Plan's conservation strategy (namely selective predator management and nesting habitat improvements), coastal resources, recreation, transportation and traffic, and socioeconomics.

The CEQ lists two factors that should be considered in determining the significance of environmental impacts of an action: context and intensity. *Context* means that the significance of an action must be analyzed in several settings, such as its impact on society as a whole, the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the impacts in the locale rather than in the world as a whole. Both short- and long-term effects are relevant (40 CFR § 1508.27[a]). *Intensity* refers to the severity of impact, and a number of subfactors are generally considered in evaluating intensity. These include–

- Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect would be beneficial;
- The degree to which the proposed action affects public health or safety;
- Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas;
- The degree to which the effects on the quality of the human environment are likely to be highly controversial;
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks;
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration;
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts;
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources;
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA; and
- Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment (40 CFR § 1508.27[b]).

In addition to considering the above factors, an agency should consider its own procedures in determining whether the action requires an EIS. Additional criteria that the Service uses to determine whether to prepare an EIS include–

- Controversy over environmental effects (e.g., major scientific or technical disputes or inconsistencies over one or more environmental effects);
- Change in agency policy having a major positive or negative environmental effect;
- Precedent-setting actions with wide-reaching or long-term implications (e.g., special use permits for off-road vehicles, mineral extraction, or new road construction);
- Major alterations of natural environmental quality, which may exceed local, State, or Federal environmental standards;
- Exposing existing or future generations to increased safety or health hazards;
- Conflicts with substantially proposed or adopted local, regional, State, interstate, or Federal land use plans or policies that may result in adverse environmental effects;
- Adverse effects on designated or proposed natural or recreation areas, such as wilderness areas, parks, research natural areas, wild and scenic rivers, estuaries, sanctuaries, national recreation areas, habitat conservation plan areas, threatened and endangered species habitats, fish hatcheries, wildlife refuges, lands acquired or managed with Dingell-Johnson/Pittman-Robertson funds, unique or major wetland areas, and lands within a 100-year floodplain; and
- Removal from production of prime and unique agricultural lands, as designated by local, regional, State, or Federal authorities; in accordance with the Department of the Interior's Environmental Statement Memorandum No. (ESM) 94-7 (USFWS 1996b).

On January 14, 2011, the CEQ issued a “Memorandum for Heads of Federal Departments and Agencies” (Memorandum) (CEQ 2011). The Memorandum stresses the importance of mitigation under NEPA, and explicitly approves the use of a “mitigated Finding of No Significant Impact (FONSI)” when the NEPA process results in enforceable mitigation measures (CEQ 2011, p. 7, n.18). The Memorandum builds on previous guidance from the CEQ that states that when an agency develops and makes a commitment to implement mitigation measures to avoid, minimize, rectify, reduce, or compensate for significant environmental impacts (40 CFR § 1508.20), then NEPA compliance can be accomplished with an EA coupled with a FONSI. Using mitigation to reduce potentially significant impacts to support a FONSI may enable an agency to conclude the NEPA process, satisfy NEPA requirements, and proceed to implementation without preparing an EIS. In such cases, the basis for not preparing the EIS is the commitment to perform those mitigation measures identified as necessary to reduce the environmental impacts of the proposed action to a point or level where they are determined to no longer be significant as part of the approved action. That commitment should be presented in the FONSI and any other decision document. The CEQ recognizes the appropriateness, value, and efficacy of providing for mitigation to reduce the significance of environmental impacts; consequently, when that mitigation is available and the commitment to perform it is made, there is an adequate basis for a mitigated FONSI.

Ultimately, the decision whether a significant impact exists and an EIS is required is made after consideration of the issues in question and the matters documented in the EA. The determination must be reasonable in light of the circumstances involved in the particular project being evaluated, and in light of any past, present, or foreseeable future actions.

## 1.4 Public Involvement

The Service published a notice of availability for the draft EA, HCP, and ITP application in the *Federal Register* on January 21, 2016, which started the 30-day public review and comment period. Interested parties were invited to submit comments on the draft EA and HCP. The public comment period ended on February 22, 2016. The Service received 129 individual comment submissions pertaining to the EA and/or HCP.

Appendix B of this EA presents those EA and HCP public comment submissions the Service determined to be substantive and the Service's responses to those comments. As applicable, the Service's responses identify how and where the EA and/or HCP were updated in response to the comments. For a copy of all comments received during the public comment period, please visit the following website: <https://www.regulations.gov/#!docketDetail;D=FWS-R5-ES-2015-0182>.

## 1.5 Summary of the Proposed Action Addressed in this EA

The proposed action considered in this EA is the Service's issuance of an ITP under section 10 of the ESA for incidental take of piping plovers resulting from activities covered in the Plan. The Plan describes the covered activities (described in chapter 3 of the Plan, and in sections 1.3 and 2.2 of the EA) and the conservation measures proposed to protect and conserve the piping plover in the course of carrying out the covered activities and implementing the Plan. The section 10(a)(1)(B) permit holder would be the MADFW. The MADFW intends to extend its take authorization by issuing COIs to MADFW-approved landowners and beach managers, including other State agencies (hereafter referred to as Plan participants) who (1) engage in the covered activities described in the Plan; (2) meet the COI eligibility and application requirements described in the Plan; and (3) agree to implement the Plan, required ITP conditions, and the MADFW conservation and management permit. Recreational activities on Federal beaches are not covered by the Plan, because they are required to undergo a separate consultation with the Service under section 7 of the ESA.

The MADFW is requesting a 26-year permit duration to provide a predictable framework to Massachusetts and Plan participants for permitting of covered activities and Plan implementation. The MADFW expects the 26-year permit duration to ensure enough time to fully implement the proposed conservation measures, the adaptive management and monitoring programs, and the mitigation measures described in the Plan. In order to ensure that the take is fully offset by the mitigation, covered activities will be authorized through the 25<sup>th</sup> year of the permit while the 26<sup>th</sup> year is solely for implementation of outstanding mitigation needed to fully offset the take (if necessary). Additional details on the proposed action are provided in chapter 2.

Accordingly, this EA analyzes the direct, indirect, and cumulative impacts on the human environment of approving the Plan and issuing an ITP. These impacts include the impacts of the covered activities and conservation measures proposed to avoid, minimize, or mitigate potential effects on the piping plover.

## 1.6 Purpose and Need

The purpose of the proposed action is to authorize take of piping plovers incidental to otherwise lawful activities associated with beach operations and recreation while maintaining a Massachusetts piping plover population that continues to contribute to the recovery of the Atlantic Coast piping plover population. The need for action is for the Service to respond to the MADFW's ITP application. The MADFW is seeking a permit under ESA section 10(a)(1)(B) and its implementing regulations and policies because proposed covered activities are likely to result in incidental take of piping plovers. In addition, it is in the interest of both the Service and the MADFW to develop and implement a framework to maintain a piping plover population in Massachusetts that continues to contribute to the recovery of the Atlantic Coast piping plover population. This purpose and need establishes the basis for determining whether other viable alternatives to the proposed action may meet the intended purpose and reduce potential effects from the ITP.

## 1.7 Document Organization

This EA is intended to provide agency decision makers and the public clear and concise information on the proposed action and alternatives, existing environmental conditions, and potential environmental impacts. This EA is organized by the following chapters:

- “Chapter 1—Purpose and Need” introduces the project and states the underlying purpose of and need for Federal action.
- “Chapter 2—Proposed Action and Alternatives” discusses the proposed action and reasonable alternatives.
- “Chapter 3—Affected Environment” discusses the existing environmental conditions in the area that could be affected by the proposed action and alternatives.
- “Chapter 4—Environmental Consequences” discusses the potential direct and indirect impacts on the human environment from the proposed action and alternatives.
- “Chapter 5—Cumulative Impacts and Climate Change” discusses the potential cumulative impacts of the proposed action and the implications of climate change for the environmental effects of the proposed action.
- “Chapter 6—List of Preparers” lists the people who contributed to the preparation of the EA.
- “Chapter 7—References” is a bibliography of literature cited in the text.

This page intentionally left blank.

## Chapter 2

# Proposed Action and Alternatives

---

NEPA requires that Federal agencies consider a range of reasonable alternatives to the proposed action when evaluating the environmental effects of an action. This chapter describes the three alternatives considered in this EA as well as alternatives considered but eliminated from further study. The three alternatives considered are the no action alternative, proposed action, and shorter permit term alternative. CEQ regulations (44 CFR § 1502.14) require Federal agencies to consider a “no action” alternative in their NEPA analyses to compare the effects of not taking action with the effects of the action alternative(s). Thus, the no action alternative serves as a baseline to compare the impacts of the proposed action and the shorter permit term alternative. Evaluation of the three alternatives considered in this EA fulfills the Service’s NEPA responsibility to evaluate a reasonable range of alternatives to the proposed action that are technically and economically practical or feasible and meet the purpose of and need for the proposed action.

## 2.1 No Action Alternative

Under the no action alternative, the Service would not issue an ITP to the MADFW for implementation of the HCP. Implementation of existing piping plover conservation measures consistent with State and Federal guidelines for managing recreational use of beaches would continue unchanged. Beach operations would also continue to be conducted in a manner to avoid take of piping plovers. This alternative presents the status quo or existing conditions under which recreational beaches are currently managed. The MADFW and beach managers would comply with all components of the State and Federal guidelines and by doing so would avoid all take of plovers and other federally listed or State-listed species. Therefore, there would be no need to seek an ITP or to develop and implement an HCP. A conservation plan including increased flexibility in beach management and operations and mitigation measures to benefit the piping plover would not be implemented, and statewide-scale mitigation would not be implemented. If the MADFW or individual beach managers were to need to deviate from the existing beach management guidelines, in a manner that may result in take of a federally listed species, they would apply for individual ITPs as needed and appropriate. The no action alternative does not meet the purpose of and need for the project (see section 1.5).

## 2.2 Proposed Action

Under the proposed action, the Service would issue a 26-year ITP to the MADFW for incidental take of the piping plover during implementation of the HCP. The ITP would authorize take of piping plovers for the first 25 years of the permit and reserve the 26<sup>th</sup> year for mitigation if the take was not fully offset prior to that year. Most beach activities would still follow State and Federal guidelines and most beach operations would continue to be implemented to avoid take. However, the HCP allows deviations (i.e., covered activities) that may result in take of piping plovers. The HCP would function as an umbrella plan whereby incidental take coverage would be extended by the MADFW via COIs to approved landowners and beach managers that meet specified eligibility criteria

(see HCP sections 1.1.1 and 5.2.2.3). One of the principle eligibility criteria is development of a site-specific impact avoidance and minimization plan (IAMP) that details the site-specific activities and corresponding minimization and mitigation measures the Plan participants will implement. COIs would be issued to landowners and beach managers for 3-year periods. The MADFW may grant COI renewals but would reserve the right to require submittal of new applications if requests for coverage exceed the available number of statewide take exposure allowances (see HCP section 3.3.2.1). Also, as part of the process of obtaining a COI under the HCP, Plan participants would be required to achieve compliance under MESA for State-listed species by avoiding take or obtaining a MESA conservation and management permit (see HCP section 1.1.1). Furthermore, because the ITP is only effective for an otherwise lawful activity, each Plan participant's COI would contain a provision stating that it is not actionable unless carried out in accordance with all applicable local, State, and Federal laws and regulations. For example, a COI holder for activities requiring a valid Order of Conditions pursuant to the MWPA (e.g., beach raking or OSV use; 310 CMR 10.00) would not be able to implement covered activities or act on the COI until a valid Order of Conditions is issued (see section 3.1.1 for a description of the MWPA). As the ITP holder, the MADFW would remain ultimately responsible for ensuring proper implementation of the HCP.

The covered activities are divided into three categories:

1. Use of roads and parking lots in the vicinity of unfledged chicks
2. Recreation and beach operations. Recreational activities include swimming, sunbathing, picnicking, pedestrian activity, dog walking, fishing, nature study, beach sports, boating, water sports (such as surfing and wind surfing), camping, and OSV use on beaches that currently allow it. Beach operations include beach raking or cleaning of debris and litter, erection of lifeguard stands or beach access structures, maintenance of beach surface, etc. As covered activities, recreation and beach operations are further sub-divided as follows:
  - a. Recreation and beach operations associated with reduced symbolic fencing around nests,
  - b. Recreation and beach operations associated with reduced proactive symbolic fencing of piping plover habitat, and
  - c. Recreation and beach operations at piping plover nest sites with nest moving.
3. OSV use in the vicinity of unfledged piping plover chicks

These proposed activities include measures to minimize the adverse effects of the activities on piping plovers and monitoring. Under Service policy, monitoring is required to assess the level of take resulting from the HCP (i.e., effects monitoring).<sup>2</sup> The proposed action also includes the Plan's conservation strategy (mitigation measures), as well as additional required monitoring (compliance and effectiveness monitoring—see section 2.2.4) and adaptive management.

## 2.2.1 Location

The study area for this EA is the same as the plan area defined in the HCP. It includes an approximately 300-yard-wide zone along almost the entire coastline of Massachusetts, with the

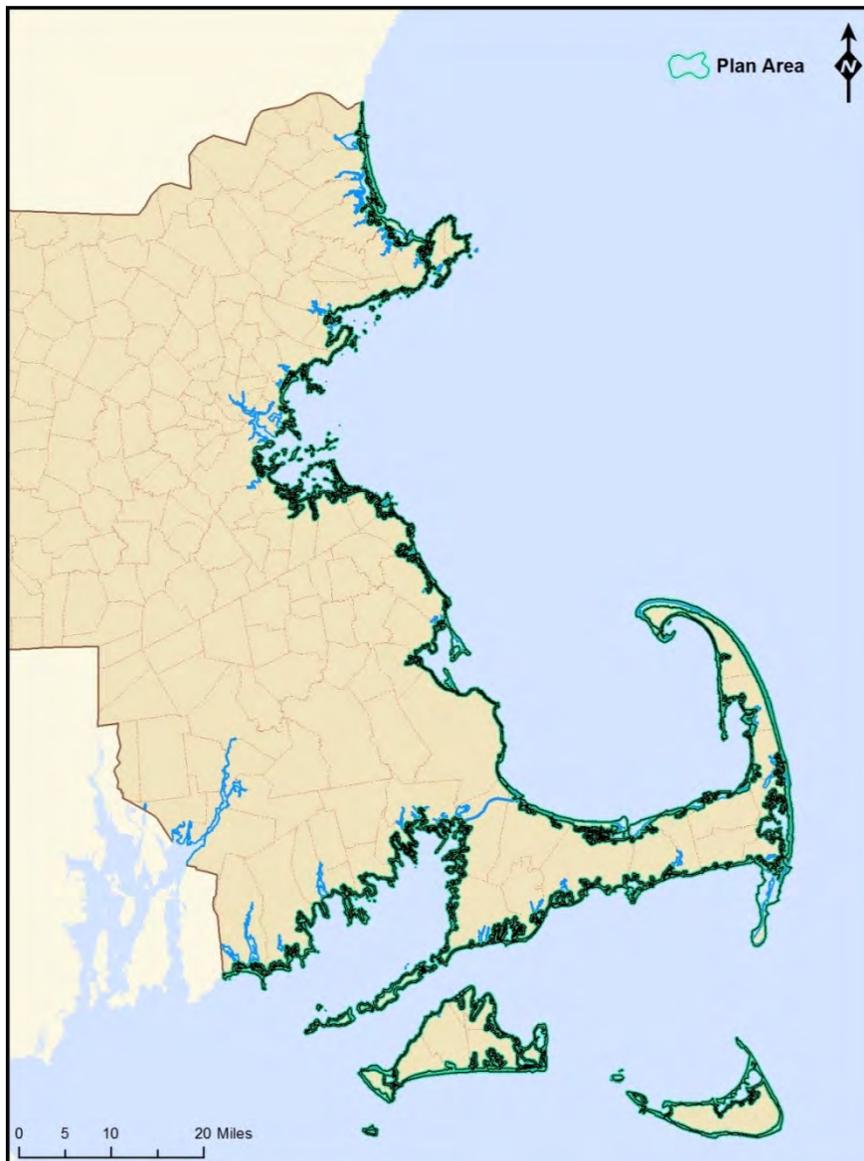
---

<sup>2</sup> *Effects monitoring* is different from *effectiveness monitoring*, which is evaluating the effectiveness of the Plan's conservation strategy (see section 2.2.4).

exception of one small area in Mount Hope Bay in the vicinity of Fall River. The study area incorporates approximately 1,774 linear miles of coastline (see figure 2-1). The study area includes all currently and recently occupied piping plover habitat delineated as priority habitat by the MADFW, as well as other beach and dune areas that could support breeding piping plovers in the future. This area is intended to capture all currently suitable Massachusetts piping plover breeding habitat, as well as the area within which additional plover breeding habitat could develop in the foreseeable future due to the dynamic nature of the coastline. It includes the coastal portions of the following counties: Essex, Suffolk, Norfolk, Plymouth, Barnstable, Bristol, Dukes, and Nantucket.

The study area covers approximately 150,000 acres of land, of which approximately 29,000 acres are currently classified as beach and coastal dune—the land cover types most associated with piping plover breeding habitat. It contains approximately 43,531 acres of current or recently occupied piping plover breeding and foraging habitat delineated by the MADFW.

**Figure 2-1. Study Area**



## 2.2.2 Covered Activities

The covered activities are generally associated with the operation of public or semi-public<sup>3</sup> recreational beaches. Covered activities could also occur on beaches under private ownership or in association with existing aquaculture grants.

Plan participants requesting piping plover take coverage would be required to develop and implement an MADFW-approved, site-specific IAMP, drawing on the information and minimization measures outlined in the Plan. The minimization measures would be adapted for site-specific characteristics.

The covered activities are discussed below, including a description of the beach management action and the required minimization measures and monitoring activities. Refer to chapter 3 of the HCP for a complete, detailed discussion of the covered activities.

### 2.2.2.1 Use of Roads and Parking Lots in the Vicinity of Unfledged Piping Plover Chicks

Road and parking lot use occurs in association with summer recreational beach use in Massachusetts. The State and Federal guidelines state that sections of beaches where unfledged piping plover chicks are present should be temporarily closed to all vehicles not deemed essential.<sup>4</sup> Under this covered activity, limited driving past unfledged chicks would be permitted. This would prevent parking lot and beach access road closures. Specifically, this covered activity would allow driving on improved roads<sup>5</sup> and parking lots when adult plovers and unfledged chicks are present.

Minimization measures that would be required as part of this covered activity include (1) barriers to prevent adults and chicks from accessing road and parking lots, (2) signage, (3) staff training, and (4) managing traffic during periods when birds are crossing. Each of the minimization measures presented in the Plan is summarized below.

- **Barriers.** At some sites, the deployment of barriers, such as silt fencing, would likely be effective in preventing chicks from accessing roads or parking lots. For example, if unfledged chicks are passing through a parking lot located at a road terminus to move from the beachfront to bayside foraging areas, a barrier could be effective at preventing access to the high-risk parking lot while not unduly hindering important chick movements. In contrast, in other settings, such as a parking lot located in the middle of a longer road, deployment of a barrier might simply shift the crossing point from the parking lot to the road and not necessarily reduce the disturbance and/or mortality risk.

---

<sup>3</sup> Semi-public beaches are those owned by a nongovernmental entity that allows public access.

<sup>4</sup> Essential OSVs are defined as those used by shorebird monitors, law enforcement, beach homeowners, or others described specifically in the guidelines.

<sup>5</sup> An improved road is a paved, gravel, or otherwise actively maintained traveled roadway. Improved roads have been graded, realigned, resurfaced, and/or altered through significant drainage improvements. Most sand tracks and OSV corridors used by OSVs would not be considered improved roads.

- **Signage.** Signage alerting motorists to watch for crossing birds and to obey speed limits would be installed. Signs requesting motorists and beach goers to alert staff if they observe piping plovers in or near a road or parking lot may be appropriate at some sites.
- **Staff training.** Plan participants implementing this covered activity would be required to employ shorebird monitors and parking attendants with adequate training prior to implementation. Training conducted by beach managers and/or other qualified staff would ensure that all relevant staff understand basic piping plover biology and behavior, their respective roles and responsibilities, communication procedures, and contingencies. The site-specific IAMP developed by Plan participants would identify those personnel to receive training and provide specific details regarding the training.
- **Managing traffic.** The site's IAMP would include a protocol to be followed when chicks and adults are detected in a parking lot or road. This might include temporarily rerouting traffic away from a section of a parking lot with chicks, having a monitor or parking attendant approach the chicks to herd them out of a parking lot or across a road, reduced speed limits, or temporary road closures to allow chicks to pass. Communication among staff would be important for traffic safety and to minimize risk to chicks, so communication procedures would be described clearly in the IAMP.

Regular monitoring of broods located in the vicinity of roads and parking lots would reduce the risk that chicks cross into traffic without adequate protective measures in place. Monitoring would be described in each IAMP.

### 2.2.2.2 Recreation and Beach Operations

This covered activity would occur as one of the three scenarios described below.

#### Recreation and Beach Operations Associated with Reduced Symbolic Fencing around Nests

According to the State and Federal guidelines, any piping plover nest must be symbolically fenced with a buffer of at least 50 yards around the nest, above the high-tide line, to minimize disturbance and avoid take. In some cases, maintaining a full 50-yard buffer may substantially reduce recreational use. For example, if piping plovers nest within 50 yards of a major beach access point, symbolic fencing could close that access point. Under this covered activity, nests would have smaller than 50-yard buffers to allow recreational access and beach operations. The IAMP for this covered activity would include the following elements:

- Fencing would be reduced only to the extent necessary to achieve specific recreational objectives (e.g., opening a specific beach access trail). Symbolically fenced buffers would not be reduced to less than 10 yards except under very limited circumstances, such as in lieu of moving a nest, and must be approved by the MADFW.
- A fenced buffer larger than the target buffer would be established initially and maintained during egg laying and through at least the first 24 hours after clutch completion. A 50-yard buffer may not be practical in all cases, but every effort would be made to maximize fencing distance from the nest during this sensitive period.
- Fencing distance from the nest would be gradually reduced.

Monitoring during early nesting phases would confirm acceptance of the reduced buffer by the incubating adults. More intensive monitoring would be focused on early periods of intensive recreational use (e.g., the first weekend after the fencing is reduced).

### **Recreation and Beach Operations Associated with Reduced Proactive Symbolic Fencing of Piping Plover Habitat**

Currently, the most suitable piping plover nesting habitat in Massachusetts is delineated with symbolic fencing prior to nesting or at the first signs of courtship or scraping behavior to minimize disturbance of breeding piping plovers. Under this covered activity, recreation and beach operations would be allowed in suitable piping plover nesting, feeding, and sheltering habitat that would otherwise be restricted by the placement of proactive symbolic fencing in accordance with the State and Federal guidelines—particularly in sections of beach near major access points that have high recreational use. Because this covered activity would be carried out in high-use recreational areas, the MADFW may allow beach raking or the temporary placement of material (such as boards) on the beach to minimize the risk of interaction between recreational users and breeding piping plovers. These activities must be outlined in an IAMP. The use of boards would be limited to very early in the breeding cycle, before active courtship, or at the latest at the onset of a breeding pair engaging in territorial behavior and or scraping. In order to ensure early detection, intensive daily monitoring would be required.

These activities may reduce the risk that piping plovers would nest in unfenced areas with a higher potential for disturbance associated with recreational activities. The MADFW would reject a proposal for this covered activity if the symbolic fencing is not substantially impairing access or recreational activities at the site.

Note under the MESA no take determination letters and Order of Conditions under the MWPA both require measures to avoid take from beach raking (such as limits on the frequency, duration, and areal extent of raking; intensive monitoring of adults and chicks by qualified shorebird monitors during raking operations; a monitor walking in front of the beach rake; maintenance of setbacks between raking equipment and unfledged chicks; and retention of beach wrack and vegetation). Therefore, beach raking is not in and of itself a covered activity.

Impact minimization measures for this covered activity include the following:

- Reduced proactive fencing would be limited to 10 percent or 2 acres (whichever is less) of the available nesting habitat at a given site. However, at up to five sites statewide, the MADFW may allow reduced proactive fencing of up to 20 percent or 4 acres (whichever is less) of the available nesting habitat. This measure would minimize the risk of displacing a breeding pair from a given site or substantially increasing competition from other pairs of piping plovers by limiting the amount of nesting habitat that could be lost relative to the amount of habitat available.
- The number of authorizations of this covered activity statewide in a given year will be limited to no more than 50 percent of the allowable take exposure authorizations for any year in which more than 10 take exposures could be authorized. For example, in a year where 30 exposures could be authorized based on the 3-year average piping plover population size, no more than 15 of these could involve reduced symbolic fencing.
- Should piping plovers nest despite the lack of symbolic fencing, the Plan participant would immediately install symbolic fencing around the nest to limit disturbance and prevent

destruction of eggs, consistent with the covered activity scenario of reducing fencing buffers around nests (described above).

Monitoring the area subject to reduced fencing would occur for plover activity in accordance with the IAMP developed by the Plan participant and approved by MADFW.

### **Recreation and Beach Operations at Piping Plover Nest Sites with Nest Moving**

State and Federal guidelines require symbolic fencing to be placed in active courtship areas and around nests, which can result in closures of parking lots, beach access roads and paths, and OSV corridors, and in other restrictions on beach recreation and operations. Under this covered activity, recreation and beach operations would be allowed in the immediate vicinity of piping plover nest sites, subject to the minimization measures contained in section 3.2.2.3 of the Plan. If the MADFW determines that nest moving is the best minimization measure at a site, the MADFW would authorize a qualified shorebird monitor, trained in nest moving procedures by the MADFW, to move nests using the nest-moving protocols described in section 3.2.2.3 of the Plan. Moving a nest would be permitted only in cases where the MADFW determines the nest location is having a major impact on beach access or recreational activities.

A Plan participant who is authorized by the MADFW to move a nest would develop an IAMP following the measures described in the Plan. The IAMP would include timing and weather restrictions, a relocation site in suitable habitat that minimizes the movement distance to the extent practicable, and gradual movement of the nest. The MADFW must review and approve the IAMP prior to the nest being moved.

Monitoring the nests that are moved would occur from a distance to confirm acceptance and incubation per the steps described in the Plan.

### **2.2.2.3 Over-Sand-Vehicle Use in the Vicinity of Unfledged Chicks**

The State and Federal guidelines allow OSV use prior to egg hatching and after chick fledging. When unfledged chicks are present, the Federal guidelines require a vehicle-free area extending 3,280 feet (1,000 meters) on each side of a line drawn through the nest site and perpendicular to the long axis of the beach. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to plover chicks because of steep topography, dense vegetation, or other naturally occurring obstacles. Under this covered activity, limited, escorted driving of nonessential<sup>6</sup> OSVs within the 100-yard or greater OSV setback from unfledged piping plover chicks required by the State and Federal guidelines would be permitted. The majority of the OSVs are expected to be recreational, although some could be used for other purposes (e.g., tending existing aquaculture beds). OSV use outside the piping plover breeding season and during the prenesting, egg-laying, incubation, and postfledging periods would be carried out in accordance with the State and Federal guidelines. Therefore, the need for incidental take coverage related to this covered activity is specific to the prefledging period (i.e., after chicks have hatched but before they have fledged).

---

<sup>6</sup> Vehicles not used by shorebird monitors, law enforcement, beach homeowners, or others described specifically in the guidelines (e.g., not essential vehicles).

The minimization procedures that would be incorporated into the IAMPs are discussed below (see HCP section 3.2.3 for details). These measures would be expected to be applied at most sites. However, at sites with very little beach traffic, some measures may not be required.

- **Narrow vehicle corridor, no parking.** Travel in the vicinity of unfledged chicks would be restricted to a single, clearly demarcated vehicle travel corridor less than 5 yards wide. Parking would not be allowed within 656 feet (200 meters per the Federal guidelines) of unfledged chicks during the first week after hatching, and in no event would parking be allowed within 328 feet (100 meters per the Federal guidelines) of unfledged chicks. Because chicks are mobile, Plan participants would be encouraged to establish a restricted parking zone considerably farther than 100 meters from unfledged chicks to reduce the need for constant monitoring of chicks and readjustment of vehicle parking during the course of the day.
- **Restricted travel hours.** To limit disturbance of chicks and impacts on foraging, vehicle travel in the vicinity of chicks would be restricted to no more than 6 hours per day in two to three travel periods during daylight hours. For example, vehicle travel would be restricted to several hours in the morning and late afternoon to access and exit the beach. The IAMP for each site would specify the restricted vehicle travel timeframes for that site.
- **Vehicle escorting.** Vehicle escorting would be performed in addition to the stationary monitoring of chicks described above, using one of two options:
  - Each vehicle would be escorted by a passenger who walks in front of the vehicle (self-escorting), scanning for chicks; or
  - A single escort would walk in front of a caravan of up to 50 vehicles, scanning for chicks.<sup>7</sup>

Vehicle escorting would begin at least 200 feet from the closest chick and terminate 200 feet past the last chick in a given brood.

- **Staff training, enforcement, and communication.** IAMPs developed by Plan participants would describe how restricted driving hours and escorting procedures would be enforced; the communication among monitors, beach access attendants, law enforcement, and other staff, including specific procedures for temporarily halting traffic if brood monitors observe chicks approaching the travel corridor; and the protocols for escorting vehicles off the beach during emergencies.
- **Mandatory OSV operator education.** All OSV users participating in the escort program would undergo a mandatory orientation each beach season prior to implementation of the escort program.
- **Smoothing of tire ruts.** Tire ruts would be smoothed out at least once per day in the travel corridor—at the end of a travel period—to minimize the risk of plovers or other sensitive species sheltering in the tire ruts. Tire rut smoothing would be performed either by hand raking or dragging appropriate equipment behind a vehicle. This requirement may be waived if all chicks present near the travel corridor are more than 14 days old.

Continuous monitoring of chicks by qualified monitors would be conducted during the travel hours when vehicles are present. Each monitor would be responsible for monitoring no more than one

---

<sup>7</sup> In lieu of the single pedestrian caravan escort, the MADFW may approve a qualified shorebird monitor driving in an open top OSV at a speed of 5 miles per hour or less.

brood. In addition, a compliance monitor would be stationed adjacent to the vehicle corridor and would have radio contact with the brood monitor. The monitors must have the ability to stop vehicle travel in the event that chicks approach or enter the travel corridor. Detailed information on the site-specific thresholds for temporarily halting traffic must be provided in the IAMP. Monitors would also be used to escort vehicle caravans.

## 2.2.3 Conservation Strategy

This section summarizes the conservation strategy provided in the HCP under the proposed action. In addition to the impact minimization measures described in section 2.2.2, the MADFW will implement mitigation measures in partnership with the Plan participants. Specifically to address the ITP issuance criteria, the primary mitigation measure will be implementation of a selective predator management program on Massachusetts beaches. This program is expected to increase piping plover productivity at sites where it is implemented, and is specifically designed to offset any loss of piping plover productivity in Massachusetts associated with the covered activities. In addition to the selective predator management program, the conservation strategy allows the MADFW and Plan participants also to implement education, outreach, increased law enforcement, and nesting habitat improvements on a site-specific basis. These actions are intended to contribute to a net conservation benefit.

### 2.2.3.1 Selective Predator Management

Each fall, the MADFW would determine the amount of take to be authorized under the Plan for the following beach season based on the prior 3-year average (see table 3-1 in the HCP). This authorized level of take would then determine the level of predator management required for mitigation. Predator management would be designed to benefit 2.5 breeding pairs for every brood, nest, or territory exposed to take from covered activities. In the event that the covered activity being implemented is “Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks,” selective predator management to benefit an additional 0.5 adult breeding pairs would be required to offset the small amount of take anticipated by possible adult mortality or wounding. This benefit would be ensured by implementing selective predator management at sites that support more than adequate numbers of breeding pairs to achieve this mitigation ratio, based on the prior season’s count of breeding pairs. A recount of the number of breeding pairs would be conducted in the season during which predator management is implemented. If plover population declines result in a failure to achieve the required mitigation ratio, additional predator management would be implemented during the following season to make up for the deficit.

Site-specific implementation plans would be prepared to focus management on the most problematic predator species and/or individuals (USFWS et. al. 2012). The preferred management approach is to selectively remove individual predators, particularly those predators that have become focused on plover nests, chicks, or adults. Predator removal efforts would use approved lethal techniques for wildlife damage management (USDA 2003, 2004, 2011a). Massachusetts law (MGL c.131 section 80A: Regulations 321 CMR 2.08) requires that only cage- or box-type traps be used to trap mammalian predators (e.g., raccoons [*Procyon lotor*], Virginia opossums [*Didelphis virginiana*], and striped skunks [*Mephitis mephitis*]). No body-crushing traps would be used. All traps used to capture mammals would meet the existing “Best Management Practices for Trapping in the United States” (Association of Fish and Wildlife Agencies 2006). Massachusetts does not permit mammalian predator relocation; therefore, mammalian predators would be humanely euthanized

with the exception of feral cats. If feral cats are among the identified predators, cat control would be coordinated with local animal shelters. All cats that are captured live as part of the proposed program would either be returned to the cat's owner (if proper identification can be determined) or taken to an animal shelter for health evaluation and, if possible, adoption. The final disposition of a feral cat would be determined by the animal shelter in consultation with the MADFW.

In addition to trapping, shooting of nocturnal mammalian predators, such as coyote (*Canis latrans*) and fox (*Vulpes vulpes*), would be employed. The predators would be located at night using spotlights or thermal imaging equipment and then shot with suppressed rifles or shotguns (USDA 2011a). Avian predators would also be removed, using firearms employing a silencing device. Approved toxicants, such as DRC-1339 (3-chloro p-toluidine hydrochloride) may be applied to eggs and placed in plover exclosures to remove American crows (*Corvus brachyrhynchos*) known to target plover nests. Studies have demonstrated that when appropriately applied, DRC-1339 poses a minimal risk of primary or secondary poisoning of nontarget animals (Eisemann et. al. 2001). By applying the toxicant to eggs placed in exclosures, the risk of impacting nontarget mammalian or avian predators is reduced.

Predator removal efforts would be implemented in late winter or spring by U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service's (APHIS) Wildlife Services or other qualified personnel. Removal efforts would be undertaken before or as piping plovers return to nest locations. A second phase of predator removal may be implemented during the plover egg-laying period (late April into June), if the removal activity can be done without adversely affecting plovers. Monitoring for predator presence would be conducted following the predator removal efforts to identify any predators that may still be present and to assess the effects of the selective predator management.

Any predator removal efforts would be conducted only with landowner permission and appropriate local, State, and Federal permits. Predator removal activities are typically implemented at times of the year (late winter and early spring) and times of the day (evening) when human use of the beaches is greatly reduced or absent. As a result, beach closures would not be necessary during implementation (USFWS et al. 2012).

### **2.2.3.2 Education, Outreach, and Increased Law Enforcement**

The proposed education and outreach mitigation strategy is to maintain and increase community support for the continued conservation of piping plovers on Massachusetts recreational beaches. Some sites may benefit from outreach directed specifically to pet owners, OSV operators, or other groups of beach users.

Increased law enforcement may include extra patrols and other enforcement operations during the piping plover breeding season. The purpose of increased law enforcement is to reduce the risk of disturbance, harassment, or mortality of piping plovers resulting from off-leash dogs or other illegal recreational activities. Despite regular plover monitoring and other beach management measures, complex patterns of land ownership and beach use result in enforcement gaps. Supplementing existing law enforcement efforts is expected to benefit piping plovers at some sites although the outcomes are not quantifiable.

Education, outreach, and increased law enforcement efforts would be conducted by Plan participants at sites they manage and also may be conducted at supplemental sites. All site-specific

education, outreach, and increased law enforcement plans would be subject to advance review and approval by the MADFW.

### **2.2.3.3 Nesting Habitat Improvement**

Vegetation management has the potential to provide benefits to piping plovers in some cases. For example, at some sites, plant growth and succession has rendered formerly suitable nesting habitat unsuitable. The MADFW proposes to implement a pilot project by removing vegetation at 2 to 5 sites, although not more than 0.5 acre per site may be affected. The total acreage for all projects may not exceed 2.5 acres.

All proposed vegetation management pilot projects would undergo review by local Conservation Commissions to ensure that the projects would not significantly hinder the ability of resource areas to provide ecosystem functions (e.g., ability of dunes to provide storm protection). Because of concerns about potential adverse impacts of this activity to resource areas, the pilot projects would not be carried out if applicable permitting approvals cannot be obtained. Because nesting habitat improvement through vegetation management actions has rarely been implemented on Massachusetts beaches, there is uncertainty as to its effectiveness and duration. This uncertainty would be addressed as part of the adaptive management process described in section 2.2.5.

## **2.2.4 Monitoring**

Under Service policy (65 Federal Register 35242), HCPs are required to include monitoring to assess whether the permittee is carrying out the terms of the HCP and the ITP (i.e., compliance monitoring), assess the effects of the covered activities on covered species (i.e., effects monitoring), and evaluate the effectiveness of the conservation strategy in achieving the HCP's biological goals and objectives (i.e., effectiveness monitoring). Effects monitoring for each covered activity is discussed in section 2.2.2. This section focuses on the two other types of monitoring: compliance monitoring and effectiveness monitoring.

### **2.2.4.1 Compliance Monitoring**

Compliance monitoring assesses whether the Plan participants are carrying out the terms of the Plan and ITP and whether the MADFW is ensuring compliance with the Plan and ITP. Plan participants would monitor their own compliance and report these monitoring results to the MADFW. The MADFW would conduct its own compliance monitoring and report the results of both Plan participant and MADFW compliance monitoring to the Service (HCP section 4.4.1.1). The Service would evaluate reports from Plan participants and the MADFW to determine whether the HCP is being properly implemented and whether the terms and conditions of the ITP are being met. The Service can check compliance and may request copies of monitoring logs at any time during the Plan's implementation.

Compliance monitoring by Plan participants and/or the MADFW would report the implementation of tasks associated with specific covered activities and mitigation measures as outlined in the Plan, site-specific IAMPs, and selective predator management mitigation plans (if onsite mitigation is conducted by the Plan participant). For example, compliance monitoring would report whether travel corridor locations and setback distances between OSVs and unfledged plover chicks were maintained, whether the appropriate number of monitors were present to implement the intensive

monitoring required for nest relocation or OSV travel in the vicinity of unfledged chicks, and whether monitoring of the results of reduced symbolic fencing was conducted.

#### **2.2.4.2 Effectiveness Monitoring**

Effectiveness monitoring ultimately assesses whether implementation of the Plan is achieving the HCP's biological goals and objectives, and in turn, helps determine if any changes in management (HCP section 4.4.1.2) are necessary. Statewide monitoring data are essential for Plan implementation, as these data are needed to determine the level of allowable take. Virtually all piping plover breeding pairs in Massachusetts are monitored and included in statewide census and productivity estimates. The MADFW tracks the annual population status and documents the population trend by compiling individual beach monitoring reports.

Effectiveness monitoring would evaluate the reproductive success of breeding pairs of piping plovers exposed to covered activities and compare this result to the reproductive success of pairs not exposed. Effectiveness monitoring would also provide information on the benefits of selective predator management. In addition, effectiveness monitoring would qualitatively evaluate the education, outreach, and increased law enforcement mitigation measure. Finally, effectiveness monitoring would evaluate the extent to which nesting habitat improvement projects (i.e., vegetation management) influence patterns of habitat use and reproduction by piping plovers. The Plan outlines the effectiveness monitoring and reporting requirements of various Plan elements in table 4-8 (see HCP section 4.3.2.3).

#### **2.2.5 Adaptive Management**

Adaptive management is a process whereby Plan effectiveness is monitored and the conservation strategy is adjusted in response to monitoring results, new research, or other sources of new information in order to ensure that the Plan's biological goals and objectives are being met. Adaptive management may lead to improvements to minimization protocols and implementation of the mitigation, including temporary increases in mitigation efforts to account for deficits in the expected mitigation results (see HCP section 4.4.2). For example, monitoring may provide information that leads to improvements in the design of barriers to prevent piping plovers from accessing roads or improvements to nest-moving techniques. Similarly, adaptive management could lead to improvements to trapping methods for mammalian predators or temporary increases in the mitigation ratio to make up for a mitigation deficit. In addition, establishing the limits on take exposure would follow an adaptive management process, as the number of permits authorized per year would vary based on the statewide population size.

In general, under the Plan, adaptive management would be limited to refining the minimization and mitigation measures. Prior to implementing adaptive management actions, the actions would be presented as recommendations in the annual monitoring report the MADFW provides to the Service as part of Plan implementation. Adaptive management would be implemented as an iterative process whereby any changes would be followed by additional monitoring to determine the effectiveness of the change, thereby facilitating continued improvements over time.

## 2.3 Shorter Permit Term Alternative

The shorter permit term alternative includes the same study area, covered activities, conservation strategy, monitoring, and adaptive management program as described above for the proposed action. It is the same as the proposed action, except the duration of the ITP would be 10 years and the MADFW would issue COIs to landowners and beach managers for a 1-year period. This alternative is carried forward for detailed analysis because it is an option that the Service is considering at this time. We note that the analysis in the EA on this alternative is short because the annual effects are identical to the proposed action, with the exception that they will be limited to only a 10-year period.

There are benefits to this alternative. First, limiting the ITP to an initial 10-year period would allow the Service and Plan participants to re-assess how the Plan is being implemented relative to management flexibility and piping plover conservation over a shorter length of time. Under the Service's no surprises policy, once an ITP is issued, the agency cannot require additional changes to the Plan that impose financial or land obligations that are not already provided for in the Plan. Therefore, shorter permit duration would allow the Service to better address uncertainty (such as impact of climate change). The Plan could be renewed or revised after the initial permit duration. Secondly, the issuance of annual COIs to Plan participants may simplify aspects of Plan implementation. For example, 1-year COIs may allow Plan participants to more easily demonstrate funding assurances and may allow the Service to more effectively assess whether the Plan is functioning successfully.

There are drawbacks to this alternative as well. First, limiting COIs to 1 year will place a greater administrative burden on the MADFW because of the need to evaluate and issue new COIs annually. Second, Plan participants also would have a greater administrative burden in having to prepare and submit COIs every year instead of every 3 years. Third, Plan participants would have less certainty regarding public recreation if the planning horizon is 1 year instead of 3. Finally, this alternative would require greater Service staff time for oversight for annual reviews of COIs, IAMPs, and Plan participant mitigation plans.

## 2.4 Alternatives Considered but Eliminated from Further Consideration

The following alternatives to the proposed action were not carried forward for detailed analysis in this EA for the reasons described below.

### 2.4.1 Greater Deviations from the Guidelines

The Service considered additional covered activities that are not described in the proposed action that could provide greater access and flexibility to beach managers and recreational users. Specific actions considered included vehicle parking within 100 yards of unfledged chicks, vehicle travel within 100 yards of chicks for more than 6 hours per day, and no vehicle escorting. In addition, greater allowable take exposures were considered for some statewide population sizes.

The additional flexibility provided by inclusion of these additional covered activities may increase beach recreational and operation opportunities, but could increase incidental take of piping plovers.

The Service believes that such measures would not have met the regulatory standard of section 10 of the ESA to minimize and mitigate the impacts of the taking of the covered species “to the maximum extent practicable.” In addition, the avoidance and minimization measures described in the Plan and in the proposed action were developed in close coordination with beach managers and are practical to implement as these measures would allow the desired level of recreational opportunity expressed in the Plan’s Objectives and Goals (HCP section 1.1.1). For these reasons, the Service decided not to further evaluate this alternative.

## 2.4.2 Additional Covered Species

This alternative considered covering additional species in the Plan. Three other federally listed species occur in the study area: roseate tern (*Sterna dougallii dougallii*), red knot (*Calidris canutus rufa*), and northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*). These species are not proposed for inclusion as covered species in the Plan, because incidental take of these species from implementation of the covered activities is unlikely. The MADFW will not issue COIs for activities that would result in take of these or other federally listed species.

There is little overlap between piping plover and roseate tern breeding habitat, and impacts from covered activities on roseate tern staging areas are expected to be minimal. Potential overlap of staging roseate terns and breeding piping plovers may occur on beaches where roseate tern adults and young of the year are concentrated prior to migration, particularly at the tips of barrier beaches adjacent to inlets. These areas are generally symbolically fenced to protect nesting piping plovers and often the fences are in place as roseate terns begin to stage. Occasionally, roseate terns may roost within the symbolically fenced area, but more often they roost above the tide line or in exposed intertidal sand flats. The HCP states that should a covered activity be determined to result in the probable take of roseate terns, a separate HCP will need to be developed or the existing HCP would need to be amended.

There is some overlap between piping plover breeding habitat and red knot migratory/staging habitat in mid-August; however, the peak staging season for red knots during fall migration is in early August to late September (S. Koch, USFWS, pers. comm. , May 5, 2016), after most piping plovers have fledged their young. In the absence of breeding plovers, no measures to avoid adverse effects from recreational and beach operation activities in the vicinity of red knot have been recommended. At this time, based on the most recent scientific information available, these activities are considered to have negligible effects on migrating red knots. The HCP states that should a covered activity be determined to result in the probable take of red knots, a separate HCP will need to be developed or the existing HCP would need to be amended.

The northeastern beach tiger beetle has an extremely restricted distribution in Massachusetts, limited to Federal land and a few private properties where implementation of the covered activities is not anticipated.

Least terns (*Sterna antillarum*) could be included in this alternative, because they occur in the study area and their habitat overlaps extensively with piping plover habitat. Least terns are State-listed as a species of special concern but are not federally listed. Because the species is not federally listed, and the MADFW did not include the species in the HCP, the MADFW currently does not need take exemption under section 10(a)(1)(B) of the ESA.

There are two federally and State-listed fish species in coastal and fresh waters of Massachusetts: the shortnose sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus*). Because the covered activities would not occur in waters used by these species, they are not proposed for inclusion as covered species in the Plan.

The Service decided not to further evaluate this alternative because the desired covered activities are not anticipated to result in take of any federally listed species other than the piping plover. If it is determined later that the desired covered activities are reasonably certain to result in take of any federally listed species other than the piping plover, a permit amendment or a separate ITP would be required.

### 2.4.3 Smaller Plan Area

A smaller Plan area boundary was considered that excluded Federal lands such as the Cape Cod National Seashore, Monomoy National Wildlife Refuge, and Parker River National Wildlife Refuge. Together, these large Federal landholdings include 10 beaches that in 2012 supported 143 of the 676 pairs (21 percent) of piping plovers observed that year. Beach recreation and related uses on Federal land cannot be covered under section 10(a)(1)(B) of the ESA, because take authorization on such land is provided through Federal agency consultations under section 7. However, there may be opportunities to implement mitigation measures on Federal lands that can simultaneously improve the piping plover population and offset impacts of the covered activities as long as such mitigation meets the standards under the Service's Endangered Species Act Compensatory Mitigation Policy.<sup>8</sup> The Service will consider mitigation on public lands to offset impacts to the species on private lands if:

- compensation is an appropriate means of achieving the mitigation planning goal for the species;
- additionality can be clearly demonstrated and quantified and is supplemental to conservation the public agency is foreseeably expected to implement absent the mitigation (only conservation benefits that provide additionality are counted towards achieving the mitigation planning goal);
- durability of the compensatory mitigation is ensured;
- consistent with and not otherwise prohibited by all relevant statutes, regulations, and policies; and
- private lands suitable for compensatory mitigation are unavailable or are available but cannot provide an equivalent or greater contribution towards offsetting the impacts to meet the mitigation planning goal for the species.

Including Federal lands in the Plan area therefore should expand the opportunities to conduct the conservation measures and increases the flexibility of Plan implementation. Excluding Federal lands from the Plan area would unnecessarily limit conservation opportunities. A small Plan area that excludes Federal land would also not meet MADFW's purpose of developing a comprehensive conservation strategy for the piping plover for all of Massachusetts. Therefore, the Service decided not to further evaluate this alternative.

---

<sup>8</sup> <https://www.federalregister.gov/articles/2016/03/08/2016-05142/proposed-revisions-to-the-us-fish-and-wildlife-service-mitigation-policy>.

This page intentionally left blank.

## Chapter 3

# Affected Environment

---

This chapter describes the affected environment, including the regulatory setting and existing conditions. As discussed in section 1.3, EAs are intended to be concise documents that focus on aspects of the human environment that may be affected by the proposed action. The proposed action includes recreational activities and beach operations that are already occurring and does not include new activities. Recreational activities include swimming, sunbathing, picnicking, pedestrian activity, dog walking, fishing, nature study, beach sports, boating, water sports (such as surfing and wind surfing), camping, and OSV use on beaches that currently allow it. Beach operations include beach raking or cleaning of debris and litter, erection of lifeguard stands or beach access structures, maintenance of beach surface, etc.

Under the proposed action, the Service would issue an ESA section 10(a)(1)(B) ITP, and the MADFW and Plan participants would implement an HCP that allows deviations from the State and Federal guidelines for managing recreational use of beaches. All other activities related to beach management and use would comply with the State and Federal guidelines. Therefore, the primary differences between what would be implemented under the no action alternative and the two action alternatives include: recreational activities that occur on areas of the beach that would otherwise be protected by symbolic fencing around nests or proactive symbolic fencing of suitable piping plover habitat; OSV use during the time when access is normally prohibited due to the presence of unfledged piping plover chicks; use of roads or parking lots that may otherwise be closed to protect nesting or adult plovers; required levels of selective predator management for mitigation; and implementation of pilot piping plover nesting habitat improvement projects as a component of the mitigation. Thus, the proposed action or shorter permit term alternative would not change whether recreational activities occur or not, but rather would change the details of how recreational activities would be managed when piping plovers are present. In addition, outside of the small scale (less than 0.5 acre per project for a total of 2.5 acres) pilot nesting habitat improvement projects and vehicle ruts associated with OSV use (which are required to be remediated via raking daily under the Plan—see section 2.2.2), no components of any of the alternatives will result in ground disturbing activities. Therefore, this EA primarily focuses on the following resource areas:

- Biological Resources (section 3.1),
- Coastal Resources (section 3.2),
- Recreation (section 3.3),
- Transportation and Traffic (section 3.4), and
- Socioeconomics (section 3.5).

This EA does not analyze potential environmental impacts on the following resource areas in detail, for the reasons explained below.

- **Air Quality and Climate.** The only components of the action alternatives that have the potential to affect this resource area are OSV use, and additional vehicle use associated with the implementation of predator management, increased law enforcement, and nesting habitat improvements (if motorized equipment is required) through vehicle exhaust emissions. In the event that late season nesting plovers and chicks are present on the beaches, the action

alternatives would allow limited OSV use during the pre fledging period, when such use would otherwise be prohibited. In general, OSV use is allowed most of the time, except during this short time period. Therefore, the action alternatives would allow minimal OSV use on beaches compared to what already occurs (the extent to which this increased allowance of OSV use on beaches would result in a decrease of OSV use on nonbeach areas is unknown). Similarly, predator management, increased law enforcement, and nesting habitat improvements would involve personnel temporarily operating vehicles or motorized equipment and thus temporarily generate exhaust emissions. However, like OSV use during the pre fledging period, air emissions associated with these activities would be minimal compared to the no action alternative. The action alternatives would not result in new stationary sources<sup>9</sup> of emissions and would not result in exceedance of any air quality standards (e.g., National Ambient Air Quality Standards) because they would not substantially add to existing air emissions in study area.

CEQ's revised draft guidance for greenhouse gas emissions and climate change (CEQ 2014) states that Federal agencies should consider the following when addressing climate change in a NEPA document: (1) the potential effects of a proposed action on climate change as indicated by its greenhouse gas emissions; and (2) the implications of climate change for the environmental effects of a proposed action.

To provide perspective on whether vehicle emissions associated with OSV use, predator management, increased law enforcement, and nesting habitat improvements could affect global climate change, it is necessary to consider worldwide greenhouse gas emissions. Greenhouse gas emission rates are quantified in units of million metric tons of carbon dioxide (CO<sub>2</sub>) equivalent (MMTCO<sub>2</sub>E). In 2010, estimated worldwide greenhouse gas emissions from human activities totaled nearly 4,600 MMTCO<sub>2</sub>E (EPA 2015). If the greenhouse gas emissions from predator management, increased law enforcement, and nesting habitat improvements were a conservatively high 10,000 gallons of diesel fuel in a year, those vehicles would emit 110 tons of CO<sub>2</sub>, which would equate to only 0.0001 MMTCO<sub>2</sub>E/year of greenhouse gases. This level of emissions would be a tiny fraction of the worldwide total, and would have a negligible influence on climate both in Massachusetts and globally.

Chapter 5 addresses the implications of climate change for the environmental effects of a proposed action.

- **Cultural Resources.** Based on the nature of the action alternatives (i.e., no construction activities and only very minor ground alteration or disturbance of a temporary nature) and location (beaches with active recreation and OSV use), the Service does not anticipate adverse effects to cultural resources, including historic properties or archaeological resources. The only components of the action alternatives that would potentially lead to ground alteration or disturbance are the pilot nesting habitat improvement projects and vehicle ruts associated with OSV use. Two to five pilot nesting habitat improvement projects (e.g., vegetation removal) may be incorporated as components of the MADFW and Plan participant site-specific mitigation plans. If implemented, these projects would result in vegetation removal to improve beach dune habitat conditions in small (less than 2.5 acres) sandy soil areas over the 26-year ITP term. The

---

<sup>9</sup> A stationary source in air quality terminology is any fixed emitter of air pollutants, such as fossil fuel burning power plants, petroleum refineries, petrochemical plants, food processing plants, and other heavy industrial sources.

represents less than 0.002 percent of the study area that is being analyzed in this EA. Therefore, the ground disturbance would be minimal in size and the sandy dune environment would recover nearly immediately. There is also potential for some ground disturbance from vehicle ruts associated with OSV use. However, the Plan incorporates a commitment to remediate these ruts daily through raking and impacts are anticipated to be both minor and of short duration. For these reasons, the Service does not anticipate any components of the action alternatives would affect cultural resources. In accordance with section 106 of the National Historic Preservation Act, the Service sent a letter to the State Historic Preservation Officer (SHPO) requesting concurrence with the Service's finding of no historic properties affected. The SHPO concurred with the Service's finding (see appendix A).

- **Farmlands.** Activities associated with the action alternatives would occur on coastal beaches in Massachusetts. No aspect of the action alternatives has the potential to affect farmlands. Therefore, the action alternatives would not affect prime or unique farmlands or farmland of statewide or local importance as defined by the Farmland Protection Policy Act.
- **Geology and Soils.** Based on the nature of the action alternatives (i.e., no construction activities and only very minor ground alteration or disturbance of a temporary nature) and location (beaches with active recreation and OSV use), the Service does not anticipate adverse effects to geology or soils. The potential for minor ground alteration or disturbance is described above under the cultural resources section. Based on these impacts, the Service anticipates the effects on soils and geology would be minimal.
- **Hazardous Materials.** The action alternatives do not include any activities that would use hazardous materials or impact any resources related to hazardous materials, such as disturbance of a contaminated site. The use of toxicants in predator management is addressed under the impacts of predator management.
- **Land Use.** The action alternatives include minor changes to how existing recreational activities are managed and implemented. They do not include activities that would change the existing use of the land. Therefore, the action alternatives would have no effect on land use.
- **Noise.** The action alternatives would generate minimal and temporary additional noise compared to the no action alternative. The action alternatives' noise sources are not different from the no action alternative's noise sources. Additional noise would be generated from OSVs being driven in areas where they would otherwise not be allowed during the approximate 8-week piping plover nesting season. Noise would be generated also from vehicles and suppressed firearms used to remove predators from beaches. This noise would be temporary and would not substantially exceed (if at all) ambient noise levels. Noise associated with the action alternatives would not violate local noise ordinances.
- **Public Utilities.** The action alternatives would not affect public utilities because they do not involve any actions that would result in changes to public water supply, electricity, or natural gas.
- **Visual Resources.** The action alternatives would not result in significant visual impacts, because they involve only minor changes to existing activities. Additional fencing and barriers would be minimal (in some cases less) and would not deviate substantially from existing fencing and barriers. Although some beach users may believe that OSV use affects the aesthetic experience, OSV use is currently allowed the majority of the time. Therefore, allowing fencing,

barriers, and OSV use during the piping plover pre fledging period would not result in significant impacts to visual resources.

- **Water Resources (including floodplains, wetlands, surface water, and groundwater).** The action alternatives would have no impact on water resources because the activities implemented under these alternatives would not occur within floodplains or wetlands regulated by the Clean Water Act and would not affect surface water or groundwater. Wetland resources protected under the MWPA are addressed in sections 3.2 and 4.2.2.
- **Environmental Justice.** Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The action alternatives would not result in any identifiable adverse human health or environmental effects on minority or low-income populations and communities.

As stated in section 2.2.1, the environmental setting or study area is the same as the Plan area defined in the HCP. It includes all areas where activities (i.e., covered activities and mitigation measures) would be conducted and thus where all direct, indirect, and cumulative effects of the action alternatives would occur. Generally, the study area includes almost the entire coastline of Massachusetts (see Plan figure 2-1). The study area encompasses all currently and recently occupied piping plover habitat delineated as priority habitat by the MADFW, as well as other beach and dune areas that could support breeding piping plovers in the future. It includes the coastal portions of the following counties: Essex, Suffolk, Norfolk, Plymouth, Barnstable, Bristol, Dukes, and Nantucket.

## 3.1 Biological Resources

This section discusses the regulatory setting and existing conditions for biological resources (i.e., plants, wildlife, fish and other aquatic species, and their associated habitat). Because the proposed action and alternatives would occur entirely on beaches and would not impact the aquatic environment, there is no further discussion of aquatic biological resources.

### 3.1.1 Regulatory Setting

#### 3.1.1.1 Endangered Species Act

The ESA was enacted to provide a means by which threatened and endangered species and the ecosystems on which they depend may be conserved. The ESA and its implementing regulations (50 CFR 17.1 et seq.) include provisions for the protection and management of federally listed threatened or endangered plants and animals and their critical habitats.

Section 9 of the ESA prohibits the take of any endangered or threatened species of fish or wildlife listed under the ESA. *Take*, as defined by the ESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The ESA-implementing regulations define the term *harass* in the take definition as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding,

feeding, or sheltering. Similarly, the regulations define *harm* as an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

The ESA includes mechanisms that provide exceptions to the section 9 take prohibitions. These are addressed in section 7 for Federal actions and section 10 for non-Federal actions. Specifically, section 7 of the ESA requires Federal agencies to consult with the Service and/or National Marine Fisheries Service (NMFS) and obtain a biological opinion prior to carrying out any Federal program or agency action that may adversely affect threatened or endangered species. The section 7 consultation process includes an evaluation of whether a project is likely to jeopardize the continued existence of any endangered or threatened species or result in the “destruction or adverse modification” of critical habitat. Section 10 provides a mechanism for non-Federal entities to obtain take authorization through the ITP process provided in section 10(a)(1)(B). Incidental take is defined by the ESA as take that is “incidental to, and not the purpose of, the carrying out of otherwise lawful activities.” The issuance of an ITP by the Service or NMFS is a Federal action subject to the section 7 consultation process.

### 3.1.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703–712), prohibits the take of migratory birds. A list of birds protected under MBTA-implementing regulations is provided at 50 CFR § 10.13 and includes the piping plover. Unless permitted by these regulations, under the MBTA it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture, or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product. The MBTA provides no process for authorizing the incidental take of MBTA-protected birds; however, the Service has a policy of allowing an ITP to serve as a special purpose permit under 50 CFR § 21.27 for the take of listed, migratory birds that are addressed in an HCP (USFWS 1996c). The piping plover is the only migratory bird species the MADFW is requesting for coverage under the ITP.

The MADFW acknowledges in the HCP that State-listed terns, including least and common terns, may be affected by the covered activities addressed in the HCP. Specifically, the HCP requires Plan participants to either implement measures to avoid impacts to State-listed and MBTA-covered species in conjunction with implementing the HCP covered activities or to seek incidental take authorization under the MESA. In the latter case, Plan participants would need to demonstrate that the proposed activities affect an insignificant portion of the population and that their conservation plan (e.g., IAMP and/or mitigation plan) provides a long-term net benefit to the species (321 CMR 10.23). In February 2016, the MADFW published the draft Guidance on Applying for a Conservation & Management Permit for Recreational Activities Affecting the Least Tern (MADFW 2016c; least tern Guidance) for the application process for a State Conservation and Management Permit (CMP) pursuant to the MESA, for Plan participants that are implementing HCP covered activities that may impact least terns. The CMP permitting requirements include, but are not limited to, avoiding and minimizing impacts and assessing alternatives to both permanent and temporary impacts to State-listed species. Furthermore, in accordance with MESA permitting standards, the Plan participant must propose and implement mitigation that provides a “net benefit” to the affected species (321 CMR 10.23). The least tern Guidance proposes that mitigation should benefit a minimum of 2 to 4 breeding pairs of least terns for every breeding pair, nest, or unfledged chick exposed to covered

activities. By ensuring that Plan participants meet the MESA compliance standards in terms of avoiding or addressing impacts to migratory birds, the MADFW is working to comply with the intent of the MBTA.

In addition, some components of the mitigation program under the Plan may result in selective intentional take of avian predators, such as American crows (*Corvus brachyrhynchos*). However, the Plan's predator management program would comply with the conditions of the Service's depredation order (50 CFR § 21.43), which applies to blackbirds, cowbirds, grackles, crows, and magpies. When other MBTA-protected species are targeted by the mitigation, an MBTA permit would be obtained by the entity conducting the mitigation.

In summary, the Service considers that the HCP will achieve the Service's needs under the MBTA based on the net benefit requirement under the MESA for State-listed species, the minimization and mitigation measures that Plan participants will be required to implement to reduce and/or avoid impacts in order to obtain a CMP for take of least terns, and the requirement that managers targeting MBTA-protected species for predator control must have a depredation order.

### **3.1.1.3 Massachusetts Endangered Species Act**

The MESA was enacted in December 1990. Implementing regulations were promulgated in 1992 and most recently revised and implemented as of October 15, 2010 (321 Code of Massachusetts Regulations [CMR] 10.00). The MESA protects rare species and their habitats by prohibiting the take of any plant or animal species listed as endangered, threatened, or of special concern by the MADFW. *Take*, in reference to animals, means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity or attempt to engage in any such conduct, or to assist such conduct. In reference to plants, take means to collect, pick, kill, transplant, cut or process or attempt to engage or to assist in any such conduct. Disruption of nesting, breeding, feeding, or migratory activity may result from, but is not limited to, the modification, degradation, or destruction of habitat. As part of the process of obtaining a COI under the HCP, Plan participants would be required to achieve compliance under the MESA for State-listed species by avoiding take or obtaining a MESA conservation and management permit (see HCP section 1.1.1).

### **3.1.1.4 Massachusetts Wetlands Protection Act**

Activities in wetland resource areas, such as dunes, beaches, tidal flats, and coastal banks, are subject to performance standards outlined in the MWPA's regulations (310 CMR 10.00), including storm damage prevention and protection of wildlife habitat. The local agency responsible for enforcing this Act and its accompanying regulations is the Town's or City's conservation commission. The local conservation commission implements the regulations as overseen by the Massachusetts Department of Environmental Protection's Division of Wetlands and Waterways. For activities proposed in coastal wetland resource areas, the commission may decide that the proposed activity would not endanger the resource, as long as the activity proceeds subject to certain conditions. If this is the commission's determination, it issues an Order of Conditions, which is the permit for the proposed activity. Orders of Conditions regulate proposed activities to minimize or prohibit impacts on wetland resource areas. Some of the covered activities require an Order of Conditions (e.g., OSV use and beach raking) or are expected to require an Order of Conditions to implement them (e.g., nesting habitat improvement).

## 3.1.2 Existing Conditions

### 3.1.2.1 Plants

The proposed action and alternatives would occur on sandy beaches. Unvegetated expanses are common between the ocean and the foredune<sup>10</sup>. The dominant plant species is American beachgrass (*Ammophila breviligulata*), which is generally found on dunes but also occurs in sporadic sparse patches on the berm (a long narrow wedge of sand with its steep slope facing the ocean). Other commonly occurring species are seaside goldenrod (*Solidago sempervirens*), dusty miller (*Artemisia caudata*), beach pea (*Lathyrus japonicus*), and sea rocket (*Cakile edentula*). Wrack—organic material including seaweed, vegetation, seashells, driftwood, and other organic debris—is deposited on the beach by tidal action and storms. Wrack is an important seed source for vegetation.

There are no federally listed plants in the study area. The federally threatened seabeach amaranth (*Amaranthus pumilus*) historically occurred in coastal Massachusetts but is no longer present. Plant species protected under the MESA with habitat that potentially overlaps with piping plover habitat in the study area includes the oysterleaf (*Mertensia maritima*) (endangered). Oysterleaf is currently known to occur in Barnstable and Nantucket Counties, and was historically found in Bristol County (MADFW 2008). Hereinafter, the analysis relative to plants refers to native and nonnative vegetation that is found in piping plover habitat.

### 3.1.2.2 Wildlife

Wildlife in the study area includes species typically associated with coastal and intertidal marine habitats. Mammals found on Massachusetts beaches include striped skunk, gray fox (*Urocyon cinereoargenteus*), red fox, eastern coyote, raccoon, and Virginia opossum. These mammals are known to prey on piping plover eggs and young. Some bird species are also piping plover predators, including the American crow, gulls, and common grackle (*Quiscalus quiscula*). There are no population estimates for furbearer species (other than coyotes) in Massachusetts, but all populations are considered to be healthy and stable. Coyotes are well established throughout most of Massachusetts (except Nantucket and Martha's Vineyard), and the State's population has likely been stable at about 10,000 animals since the mid-2000s (USFWS 2015a). The American Crow is a common and widespread year-round resident in Massachusetts (Mass Audubon 2015a). It is protected by the MBTA, but hunting is permitted on specific days in Massachusetts except from April 11 to June 30. The American crow population in Massachusetts was estimated at 110,000 crows statewide based on the North America Breeding Bird Survey information (Rich et al. 2004). From 1966 to 2007, trend data from the survey indicates the number of crows observed in Massachusetts during the survey has increased at an annual rate of 1.2 percent (Sauer et al. 2008). The number of crows observed in Massachusetts in areas surveyed during the National Audubon Society Christmas Bird Count has shown a general increasing trend since 1966 (NAS 2010).

The USDA completed an EA for predator management activities conducted on recreation areas in Massachusetts (USDA 2011a). The USDA EA included an effects analysis of management actions for all small mammal predators of ground-nesting birds, including Virginia opossum, red fox, gray fox, raccoon, and striped skunk. Because statewide population estimates are not available for these

---

<sup>10</sup> Named for their position as the first (fore) dunes inland from the beach, foredunes are low, active dunes that parallel the beach.

species, APHIS estimated conservative populations based on typical species densities and amount of available habitat: Virginia opossum (5,100–79,200), red fox (10,200), gray fox (12,200), raccoon (7,900), and striped skunk (32,500).

A great diversity and abundance of shorebirds and coastal waterbirds are found on Massachusetts beaches, although a limited number of species breed on the beaches including (but not limited to) roseate, least, common and arctic terns; laughing, herring, and Great black-backed gulls; black skimmers; and oystercatchers. Foraging habitat for these species may be found in the intertidal zone, in the wrack found along the beaches, and over coastal waters. Massachusetts beaches are also important migratory stopover areas for shorebirds and waterbirds, providing important staging, foraging, and roosting habitat.

Wildlife species protected under the ESA (in addition to the piping plover) with habitat that potentially overlaps with piping plover habitat in the study area include the endangered roseate tern, the threatened red knot, and the threatened northeastern beach tiger beetle. There are no federally listed mammals, amphibians, or reptiles in the study area. Also, there is no terrestrial designated critical habitat in the study area.

Species protected under the MESA with habitat that potentially overlaps with piping plover habitat in the study area include the least tern (*Sternula antillarum*) (special concern), common tern (*Sterna hirundo*) (special concern), arctic tern (*Sterna paradisaea*) (special concern), northern harrier (*Circus cyaneus*) (threatened), and eastern spadefoot (*Scaphiopus holbrookii*) (threatened) (MADFW 2015).

Measures for the protection of least, common, roseate, and arctic terns and their habitats are contained in the State guidelines (MADFW 1993). A description of the federally listed species and their distribution in the study area is provided below. More detail is provided for the piping plover because it is the species that would be most affected by the proposed action and for which the MADFW is seeking an ITP.

## Piping Plover

The piping plover is federally listed across its global range, with the Service recognizing three separate breeding populations: Atlantic Coast (threatened), Great Lakes (endangered), and Northern Great Plains (threatened). No critical habitat has been proposed or designated for the breeding range of the Atlantic Coast population. All piping plovers are classified as threatened on their shared migration and wintering range.

Piping plovers are small, sand-colored shorebirds that nest along the Atlantic Coast on sandy beaches from North Carolina to Newfoundland. Following the breeding season, they migrate farther south to winter on beaches from North Carolina to Florida, the Gulf of Mexico, and the Caribbean. The Atlantic Coast population ranges from maritime Canada (Newfoundland) to North Carolina, with four recovery units: (1) Atlantic Canada, (2) New England, (3) New York–New Jersey, and (4) Southern (Delaware, Maryland, Virginia, and North Carolina) (USFWS 1996a).

Piping plovers begin returning to their Atlantic Coast nesting beaches in mid-March. Atlantic coast piping plover nesting habitat includes sandy beaches above the high-tide line, sand flats at the end of sand spits and barrier islands, gently sloping dunes, and unvegetated “blow-outs” and washover areas created by wind and wave action between or behind coastal dunes. They may also nest on areas where suitable sandy dredged material has been deposited. Nest sites are shallow scraped

depressions in substrates ranging from fine-grained sand to mixtures of sand and pebbles, shells, or cobble. Nests are usually found in areas with little or no vegetation, although, on occasion, piping plovers will nest under American beachgrass or other vegetation. Piping plovers depend on natural processes of beach erosion and accretion through wind and wave action to maintain suitable nesting habitat.

Eggs may be present on the beach from mid-April through late July. Clutch size is generally four eggs. Eggs are incubated by the adult plovers for a period that usually lasts 27 to 28 days. Piping plovers generally fledge only a single brood per season, but they may renest several times if previous nests are lost. Chicks are able to move about and forage for themselves within several hours of hatching. They may move hundreds of yards from the nest site during their first week of life. Chicks remain together with one or both parents until they fledge (i.e., are able to fly) at 25 to 35 days of age. Depending on the date of hatching, flightless chicks may be present from mid-May until late August, although most fledge by the end of July.

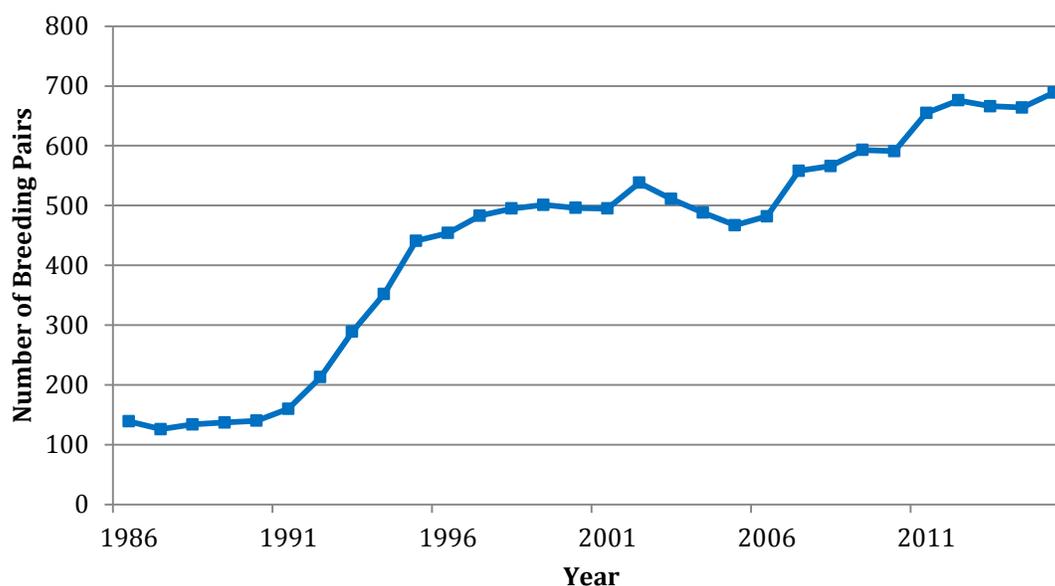
Primary feeding habitats for both adults and chicks are the intertidal zones of both ocean-facing and bay-side beaches (especially wet sand areas) and wrack. Plovers eat invertebrates such as marine worms, fly larvae, beetles, crustaceans, and mollusks.

Threats to piping plovers in Massachusetts include disturbance by humans, pets, and vehicles (usually associated with recreational activity); predation; and habitat modification and loss. Additional threats include beach raking, oil spills, wind turbines, and climate change and storm surge.

New England is the only recovery unit to have consistently exceeded the regional recovery goal for minimum population size established in the Revised Recovery Plan (USFWS 1996a).<sup>11</sup> The recovery goal of 625 breeding pairs was first exceeded in 1998 and has been exceeded in all but 3 years during the period 1998 to 2013 (1999, 2000, and 2005). The Massachusetts population increased from an estimated 139 in 1998 to an adjusted total of 666 breeding pairs in 2013 (MADFW 2015) (figure 3-1). The 2014 estimated population size in the New England recovery unit was 862 breeding pairs, which incorporated an estimated 663 breeding pairs for Massachusetts (MADFW 2016a). The 2015 population estimate for Massachusetts is 687 breeding pairs (MADFW 2016b).

---

<sup>11</sup> The New York-New Jersey unit exceeded its goal for one year (2007).

**Figure 3-1. Number of Breeding Pairs of Piping Plover in Massachusetts, 1986–2015**

The distribution of breeding pairs has generally remained the same over the past few years. In 2015, three regions harbored 67 percent of the total breeding pairs in Massachusetts: the North Shore (17 percent), the Lower Cape (34 percent) and the Upper Cape (16 percent). The 2015 breeding pair distribution differed slightly from 2013 and 2014 by having a modest decline on Cape Cod and a corresponding increase on the North Shore. Fifteen sites had 10 or more piping plover breeding pairs in 2015 (table 3-1) and accounted for 55 percent of the State’s population (based on adjusted total counts) (MADFW 2016b).

There are three Federal properties supporting large numbers of breeding piping plovers (more than 20 breeding pairs) in the study area: Cape Cod National Seashore (72 pairs in 2015), Monomoy National Wildlife Refuge (i.e., South Monomoy Island; 43 pairs in 2015), and Parker River National Wildlife Refuge (37 pairs in 2015). Note that the Cape Cod National Seashore is divided into several sites for management purposes; sites depicted in table 3-1 located within the Seashore include Race Point South, North Beach Island, and Marconi Beach.

Four State-owned properties in the study area collectively supported 39 piping plover pairs in 2015: Revere Beach (16 pairs), Horseneck Beach State Reservation (11 pairs), Demarest Lloyd State Park (7 pairs), and South Cape Beach (5 pairs). Although piping plovers nest on many municipal properties throughout the State, as a rule the Towns of Chatham and Barnstable support the greatest numbers of piping plovers on municipal property, followed by the Towns Orleans and Plymouth. Crane Beach, Duxbury Beach, and Little Beach/Barney’s Joy are the largest piping plover sites owned by nongovernmental organizations.

**Table 3-1. Massachusetts Piping Plover Breeding Sites with Ten or More Pairs, 2015**

Site Name	Town	Number Breeding Pairs (Adjusted Total Count)
South Monomoy Island	Chatham	43
Sandy Neck	Barnstable	40
Parker River National Wildlife Refuge	Newbury/Rowley	37
Crane Beach	Ipswich	37
South Beach (south end)	Chatham	30
Duxbury Beach	Duxbury/Plymouth	25
North Beach Island	Chatham	23
Little Beach/Barney's Joy	Dartmouth	18
Plymouth Long Beach	Plymouth	17
Norton Point/Leland/Cape Pogue Elbow	Chappaquiddick/Edgartown	17
Revere Beach	Revere	16.5
North (Nauset) Beach	Chatham	13
South Beach (Nauset)	Orleans	12
Horseneck Beach State Reservation	Westport	12
Sandy Point State Reservation	Ipswich	10

## Roseate Tern

The endangered North Atlantic roseate tern (*Sterna dougalii dougalii*) population is one of only two temperate populations of *S. d. dougalii*, the other being the federally threatened Caribbean roseate tern population (USFWS 2010). It was listed as endangered in 1987. Roseate terns in the United States greatly declined in the late 19th century due to commercial hunting, primarily for the millinery (hatmaking) trade. In the 1930s, protected under the MBTA, the population reached a high of about 8,500, but since then, population numbers have declined and stayed in the low range of 2,500 to 3,300. Threats to roseate terns include loss of nesting habitat due to erosion, the spread of invasive plants, competition from expanding numbers of large gulls, and impacts on their prey base as a result of climate change (USFWS 2010).

Approximately 85 percent of the northeastern population is concentrated at three colonies: Great Gull Island (New York), Bird Island (Marion, MA; Plymouth County), and Ram Island (Mattapoisett, MA; Plymouth County). Other small nesting colonies in Massachusetts are found on Penikese Island (Gosnold, MA; Dukes County), Monomoy National Wildlife Refuge (Chatham, MA; Barnstable County), and Martha's Vineyard (Edgartown, MA; Dukes County).

Roseate terns begin arriving on breeding grounds at the end of April and begin laying eggs as early as the third or fourth week of May. In Massachusetts, roseate terns nest in common tern colonies located primarily on sandy, gravelly, or rocky islands and rarely in small numbers at the ends of long barrier beaches. Roseate terns select nest sites with vegetation, such as seaside goldenrod (*Solidago sempervirens*) and beach pea (*Lathyrus japonicus*), which is also used for cover by chicks. They feed in highly specialized situations over shallow sandbars, shoals, inlets, or schools of predatory fish, which drive smaller prey to the surface (MADFW 2007a).

The majority of the North Atlantic roseate terns nest on islands in New York, Massachusetts, New Hampshire, and Maine, in vegetated areas, with the exception of two locations on Martha's Vineyard, whereas piping plovers select unvegetated areas to nest. Therefore, in general there is little overlap of piping plover and roseate tern breeding habitat in the study area although they may nest in the vicinity of each other on Martha's Vineyard. The entire North Atlantic population of the roseate tern stages on Cape Cod prior to migration. Migration generally occurs in September, and all birds have left Cape Cod by mid- to late September. The staging habitat used by both adults and young of the year is often at the end of barrier beaches such as Race Point, Provincetown, Nauset Spit, Orleans and Great Point, Nantucket, all locations that also provide piping plover breeding habitat.

## Red Knot

In December 2014, the Service announced Federal protection for the rufa red knot, a robin-sized shorebird, designating it as threatened under the ESA. Since the 1980s, the red knot's population has fallen by about 75 percent in some key areas, largely due to declines in one of its primary food resources—horseshoe crab eggs—in Delaware Bay, an important migratory stopover site. Other threats, including sea level rise, changing climatic conditions, and coastal development, continue to shrink the red knot's wintering and migratory habitat.

The red knot is easily recognized during the breeding season by its distinctive rufous (red) plumage. It breeds in the central Canadian Arctic and winters along the Atlantic coasts of Argentina and Chile, north coast of Brazil, northwest Gulf of Mexico, and southeast United States from Florida to North Carolina. Each year, red knots make one of the longest distance migrations known in the animal kingdom, traveling up to 19,000 miles annually. The peak staging season for red knots passing through Massachusetts during fall migration is mid-August through late September (S. Koch, USFWS pers. comm. 2016), overlapping the tail end of the piping plover breeding season. In Massachusetts, the majority of migrating red knots use sandy beaches for roosting, and tidal sand and mudflats for foraging, although they have been documented in saltmarsh pannes (foraging) and along rocky or cobble shorelines as well. Migratory red knots in Massachusetts are highly concentrated in the Pleasant Bay/Monomoy region of outer Cape Cod, and most major roost sites are closed to OSV use (Harrington et al. 2010) in this area. No known regular counts are currently conducted in Massachusetts, but flocks of over 100 red knots are routinely reported from Monomoy National Wildlife Refuge (USFWS 2013). The Service has reviewed available survey data from areas regularly used by substantial numbers of red knots in the fall and has determined there is insufficient data for a trend analysis for fall stopover areas (USFWS 2013).

## Northeastern Beach Tiger Beetle

In 1990, the Service listed the northeastern beach tiger beetle as a threatened species under the ESA. In 2009, the Service completed a 5-year status review and recommended changing the tiger beetle's status to endangered, due to continuing habitat loss and population decline. At this time, the Service has not formally proposed the recommended status change. Northeastern beach tiger beetle population decline and habitat loss primarily resulted from shoreline development, beach stabilization, and high levels of recreational use. Shoreline erosion and inundation rates are steadily increasing due to accelerating sea level rise induced by climate change, possibly resulting in future beach stabilization projects that may impact tiger beetle habitat. Other known threats are pollution, pesticides, and oil slicks. Some natural limiting factors are beach erosion, flood tides, hurricanes, parasites, and predators (USFWS 2011).

Tiger beetles live their entire lives on the beach and prefer medium to medium-coarse sand (USFWS 2011). They require large, highly exposed beaches with fine sand particles and a low intensity of human disturbance. Adult beetles emerge from mid-June to mid-August, usually peaking in mid-July. The adult beetles forage in the intertidal zone, preying on small invertebrates and scavenging dead fish. They are primarily diurnal, but are occasionally active at night from mid-July to late August. Mating occurs from mid-July to early August, and the females lay their eggs in the intertidal zone. By September, most, if not all, of the adult beetles have died (MADFW 2007b).

The northeastern beach tiger beetle currently has a very restricted distribution in Massachusetts. It is known only from two areas (both are within the study area): Martha's Vineyard and Monomoy National Wildlife Refuge, the site of a translocated population (USFWS 2011).

## 3.2 Coastal Resources

This section discusses the regulatory setting and existing conditions associated with coastal resources.

### 3.2.1 Regulatory Setting

#### 3.2.1.1 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. 1451 et seq.) established a national policy to “preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation’s coastal zone for this and succeeding generations.” The CZMA is also designed to “encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone” (16 U.S.C. 1452, § 303 [1] and [2]). Administered by the National Oceanic and Atmospheric Administration, the CZMA promotes the “effective management, beneficial use, protection, and development” of the Nation’s coastal zone; those goals are met through State involvement in implementation of the CZMA. The CZMA gives States the authority to review Federal projects, federally financed projects, and projects receiving Federal licenses and permits to ensure that they abide by State-defined enforceable coastal policies. This process is referred to as Federal consistency review. The Massachusetts Office of Coastal Zone Management serves as the lead agency for implementing the State’s coastal program.

The Federal consistency regulations (50 CFR 930) explain consistency for Federal agency activities and consistency for activities requiring a Federal license or permit. The term “Federal agency activity” does not include the issuance of a Federal license or permit to an applicant or person (50 CFR § 930.31(a)). The term “Federal license or permit” means any authorization that an applicant is required by law to obtain to conduct activities affecting any land or water use or natural resource of the coastal zone and that any Federal agency is empowered to issue to an applicant (50 CFR § 930.51(a)). Thus, while the MADFW is required to submit a consistency certification (50 CFR § 930.57) to the Massachusetts Office of Coastal Zone Management, the Service is not required to submit a consistency determination.

### 3.2.1.2 Massachusetts Executive Order 190

Massachusetts Executive Order 190 (1980), “Regulation of Off-Road Vehicle Use on Public Lands Containing Coastal Wetland Resources,” directs State agencies to balance the competing uses of public lands and minimize the degradation of wetland resources due to off-road vehicle use through management and monitoring. The “Guidelines for Barrier Beach Management in Massachusetts” (Massachusetts Barrier Beach Task Force 1994) advance this executive order.

## 3.2.2 Existing Conditions

The official Massachusetts coastal zone includes the lands and waters within the seaward limit of the State’s territorial sea to generally 100 feet beyond (landward of) the first major land transportation route encountered (a road, highway, rail line, etc.). Included in the State’s coastal zone are all of Barnstable County, Dukes County, and Nantucket County (i.e., Cape Cod, Martha’s Vineyard, Nantucket, and Gosnold).

Massachusetts’ coastal zone has many types of ecosystems, including saltmarshes, eel grass beds, sand dunes, sand beaches, tidal flats, rocky shores, salt ponds, and barrier beaches. Massachusetts’ barrier beaches perform a variety of important functions, including protection of landward areas from storm damage and flooding. Barrier beaches deflect the force of onshore waves and absorb wave energy during coastal storms. Mainland areas landward of barrier beaches are partially sheltered from high tides and storm surges that accompany coastal storms. Barrier beaches also protect saltmarshes, which in turn serve as major sources of nutrients for shellfish and finfish and provide important spawning and feeding grounds for many commercial fisheries. Barrier beaches also facilitate recreational finfishing and shellfishing by protecting enclosed coastal waters and intertidal flats adjacent to river mouths, bays, and sounds (see *Recreation* below for additional recreational activities). Examples of barrier beaches in Massachusetts include Duxbury Beach, Crane Beach, Sandy Neck, North (Nauset) Beach, Monomoy Island, Coatue Beach, the south beach on Martha’s Vineyard, and Horse Neck Beach. Residences are located on some Massachusetts barrier beaches, such as North (Nauset) Beach. Some barrier beaches, such as Duxbury Beach, also provide the sole means of overland access to non-barrier beach homes.

## 3.3 Recreation

### 3.3.1 Regulatory Setting

The State and Federal guidelines provide management recommendations for recreational activities to avoid take of piping plovers and State-listed terns, and the “Guidelines for Barrier Beach Management in Massachusetts” (Massachusetts Barrier Beach Task Force 1994) provides management recommendations to protect the coastal ecosystem. The MWPA applies to activities, including recreation or beach operations that occur in wetland resource areas, such as dunes, beaches, tidal flats, and coastal banks (see section 3.1.1.4).

### 3.3.2 Existing Conditions

Recreational uses on Massachusetts beaches vary and may include swimming, sunbathing, picnicking, pedestrian activity, dog-walking, fishing, nature study, beach sports, boating, water

sports (such as surfing and wind-surfing), camping, and OSV use. Relatively new recreational activities at some beaches include fat-tire biking and kite boarding. The nature and intensity of recreational uses vary widely among beaches due to beach characteristics, beach use regulations, and accessibility. For example, many beaches have limited parking, parking fees, or resident-only policies that limit the number of beach visitors and the intensity of use. According to the Massachusetts “Statewide Comprehensive Outdoor Recreation Plan” (Commonwealth of Massachusetts 2006), coastal beaches and shorelines have a projected use of nearly 111 million person-trips annually.

Recreational OSVs are permitted at 10 sites that supported 5 or more breeding piping plover pairs in 2013 (refer to table 2-6 in the HCP), subject to the avoidance and minimization measures of the State and Federal guidelines that are designed to avoid take of piping plover (the State guidelines also address terns). OSV access on coastal beaches generally requires a municipal permit or permit issued by the landowner. According to the State and Federal guidelines and the “Guidelines for Barrier Beach Management in Massachusetts,” OSV use is limited to specific OSV corridors, with vehicular access to the open beach limited to specific “cuts” or dune openings. Under the MWPA, landowners allowing OSVs to drive on coastal beaches must have an Order of Conditions issued by the local Conservation Commission that is consistent with the State guidelines.

### **Town of Barnstable**

OSV use at Sandy Neck requires an annual permit, available to both residents and nonresidents (Town of Barnstable 2014). OSV numbers are limited annually by space availability, which is driven by beach closures to protect plover nesting activity, tide, wind direction, and beach topography on any given year.

### **Town of Plymouth**

A maximum of 225 OSVs at any one time are permitted on the northern section of Plymouth Long Beach. OSVs must display a sticker, available to Town of Plymouth residents only. A portion of the beach is closed to OSVs year round and another section is closed to OSVs from April 1 to September 30 (Town of Plymouth 2013).

### **Cape Cod National Seashore, Provincetown and Truro**

Portions of the Cape Cod National Seashore, on the ocean shore of Provincetown and Truro from Hatches Harbor to Longnook Beach, may be open to limited OSV use (NPS 2013). Restrictions may apply, including a long section of beach from Route 6A, Exit 8 to High Head, which is closed to OSVs from April 1 to July 20, and an area from Coast Guard Beach to Longnook Beach, where OSV use is limited to night fishing. OSV permits are required and limited to 3,400 annually.

### **Town of Duxbury**

OSV use at Duxbury Beach requires an annual permit. The Duxbury Beach Reservation leases the beach to the Town of Duxbury, which sells permits and manages OSV use on the beach. OSV numbers are limited annually by space availability, which is driven by beach closures to protect plover nesting activity, tide, wind direction, and beach topography on any given year (Town of Duxbury undated).

### **Towns of Orleans and Chatham**

Recreational OSV use is limited to Nauset Beach, Orleans, extending south to the beach terminus located in Chatham (Town of Orleans 2013). Annual resident and nonresident registration stickers are required. Driving on the north end of Nauset Beach is limited to Orleans residents only. The maximum number of OSVs allowed on Nauset Beach at any one time is 575 vehicles (200 vehicles north of the parking lot and 375 vehicles south of the parking lot).

### **Town of Truro**

The municipal OSV corridor is located on the bay side, with seasonal beach access points at Fisher Beach, Corn Hill Beach, and Beach Point Landing (Town of Truro 2013). OSV use is limited to Town residents with valid beach stickers.

### **Town of Dennis**

Recreational OSV use is permitted at two sites: Crowes Pasture and Chapin Beach. Annual stickers are required and are available to residents and nonresidents. The number of OSVs is limited to a maximum of 125 at each site at any given time (Town of Dennis 2014).

### **Town of Nantucket**

OSV use is permitted along several limited sections of municipal beach (Town of Nantucket 2014). Beaches where OSVs are permitted include portions of Nobadeer Beach, South Shore Beach, Madeket Beach, and 40<sup>th</sup> Pole. Town-issued beach stickers are required and are available to vehicles registered both on- and off-island.

### **Nantucket, Coskata-Coatue Wildlife Refuge**

Seasonal or day use OSV permits may be purchased from the Trustees of Reservations (Trustees of Reservations 2015a).

### **Martha's Vineyard, Norton Point and Long Point Wildlife Refuge**

Seasonal permits may be purchased from the Trustees of Reservations (Trustees of Reservations 2015b).

## **3.4 Traffic and Transportation**

This section discusses the regulatory setting and existing conditions for transportation and traffic. A discussion of local transportation planning (e.g., specific local transportation plans) is not provided because the proposed action and shorter permit term alternative would not change or affect transportation plans.

### **3.4.1 Regulatory Setting**

#### **3.4.1.1 Massachusetts General Laws**

Part I, Title XIV, Chapter 90H of Massachusetts General Laws establishes the Gateway Roads Program for the purpose of undertaking improvements of the gateway roads, including portions of Route 1, Route 2, Route 3, and Route 128, which are deemed to be essential routes for the

convenience of tourists entering the commonwealth and for the movement of commerce within the commonwealth.

### **3.4.1.2 Massachusetts Department of Transportation**

The Massachusetts Department of Transportation (MassDOT) has authority over the State highway and bridge systems, including freeways, interchanges, and arterial State Roads. MassDOT is composed of several divisions, including the Massachusetts Division of Highway Safety, which was established under the Highway Safety Act to help reduce the number of fatalities, injuries, and economic losses from motor vehicle crashes on Massachusetts roadways.

## **3.4.2 Existing Conditions**

### **3.4.2.1 Roadway System**

The primary routes for tourists and recreational visitors to access the study area are listed below:

- Essex County—Routes 1, 1A, and 128
- Suffolk County—Routes 1 and 1A
- Norfolk County—Routes 1 and 3A
- Plymouth County—Routes 3 and 3A
- Barnstable County—Routes 6, 6A, and 28
- Bristol County—Route 6
- Dukes and Nantucket Counties—local island roads

The majority of roadways providing direct access to beaches are local two-lane roads. Routes 1 and 128 are part of the MassDOT Gateway Roads Program; these roads are designated for road improvements because they are used by tourists.

### **3.4.2.2 Traffic Conditions**

Average daily traffic counts (AADT) in 2009 along the routes listed above were as follows (MassDOT 2010):

- Route 1 in Essex, Suffolk, and Norfolk Counties ranged from 8,769 to 186,197 vehicles
- Route 1A in Essex and Suffolk Counties ranged from 8,700 to 54,010 vehicles
- Route 128 in Essex County ranged from 38,500 to 160,200 vehicles
- Route 3 in Plymouth County ranged from 35,320 to 135,235 vehicles
- Route 3A in Norfolk and Plymouth Counties ranged from 11,000 to 22,800 vehicles
- Route 6 in Bristol County range from 9,700 to 50,041 vehicles

Local AADT for Dukes and Nantucket Counties ranged from 6,023 to 13,464 vehicles in 2010 (MassDOT 2010).

A large number of tourists visit Cape Cod (Barnstable County) for the cape's beaches. The Cape Cod Commission has been counting traffic since 1998, and traffic count data show an overall negative

traffic growth. Heaviest travel occurs on the Cape Cod Canal road, and canal bridges, and Route 6/Mid-Cape Highway (Cape Cod Commission 2013).

### **3.4.2.3 Alternative Transportation**

The study area includes bike paths and pedestrian sidewalks for people who live near the beach. Access to Martha's Vineyard (Dukes County) and Nantucket Island (Nantucket County) from the mainland is by ferry, boat, or plane. Cape Code can also be accessed by boat; several seasonal ferry and cruise boats operate between Boston Harbor and Provincetown.

## **3.5 Socioeconomics**

This section discusses the regulatory setting and existing conditions for socioeconomics. Because the action alternatives would not affect the study area's population, income, housing, or community services, this section focuses on the attribute of the human environment that could be impacted—employment. Additionally, this section provides information regarding the coastal economy, specifically the revenue generated from beach recreation.

### **3.5.1 Regulatory Setting**

The CEQ's NEPA implementing regulations state that the human environment "shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment" (40 CFR § 1508.14). This means that economic or social effects are not intended by themselves to require preparation of an environmental analysis. When economic and social and natural or physical environment effects are interrelated, then the environmental analysis will discuss these effects on the human environment (40 CFR § 1508.14).

### **3.5.2 Existing Conditions**

Unemployment rates for the United States, State of Massachusetts, and the counties within the study area for the last 2 years are shown in table 3-2. Unemployment rates from 2013 to 2014 have declined in the study area at a greater rate than in Massachusetts and the Nation. Half of the counties in the study area have a higher unemployment rate than the State and Nation.

**Table 3-2. Unemployment Rates for the Study Area**

Jurisdiction	Unemployment Rate 2013 <sup>a</sup> (%)	Unemployment Rate 2014 <sup>b</sup> (%)	Percent Change in Unemployment Rate
United States	6.7	5.6	-16.4
Massachusetts	6.2	5.3	-14.5
Barnstable County	8.3	6.3	-24.1
Bristol County	9.3	6.5	-30.1
Dukes County	9.2	7.3	-20.7
Essex County	7.0	5.1	-27.1
Nantucket County	7.7	6.2	-19.5
Norfolk County	5.6	3.9	-30.4
Plymouth County	6.7	4.9	-26.9
Suffolk County	6.4	4.6	-28.1

## Notes:

<sup>a</sup> December 2013<sup>b</sup> December 2014

Source: BLS 2015

Massachusetts' marine economy comprises five major sectors, one of which is coastal tourism and recreation (Massachusetts Office of Coastal Zone Management 2006). Within this sector, approximately 11 percent of employment (approximately 13,625 jobs) is related to entertainment and recreation (including fishing and boating), with the remaining employment provided by food services and accommodations.

The University of Massachusetts modeled annual spending associated with day trips to the beach (Massachusetts Office of Coastal Zone Management 2006). The modeling concluded that direct spending associated with day trips to the beach is over \$22 million. The model suggested that over 82 percent (approximately \$18 million) of this total is spent within Massachusetts. The model also showed that day trips to the beach result in direct employment of approximately 325 people and that their wages are over \$7 million. The model also concluded that the direct employment generates an additional 110 indirect and induced jobs within the State, and those jobs account for more than an additional \$4 million in wages.

This page intentionally left blank.

# Chapter 4

## Environmental Consequences

---

The purpose of this EA is to analyze the effects of the proposed action and alternatives on the human environment. The State and Federal guidelines are currently being implemented by beach owners and managers in Massachusetts and are considered the baseline relative to beach activities and impacts. Under the HCP, the MADFW and Plan participants (i.e., landowners and beach managers) would be allowed to implement beach recreational activities and beach operations that deviate from existing piping plover conservation measures identified in the State and Federal guidelines. All other activities related to beach management and use would comply with the State and Federal guidelines. Therefore, the potential for environmental consequences from the proposed action and alternatives is limited to those activities that may occur as result of the beach recreational activities and beach operations covered by the HCP and that deviate from the State and Federal guidelines. Within this context, this chapter discusses the direct and indirect impacts that could result from implementation of the proposed action and alternatives, focusing on the biological, coastal, recreation, transportation and traffic, and socioeconomic resource areas carried forward for detailed analysis as described in chapter 3. For a discussion of resource areas dismissed from detailed analysis, see chapter 3. Cumulative impacts are discussed in chapter 5.

### 4.1 No Action Alternative

Under the no action alternative (i.e., status quo), the MADFW and beach managers would implement beach recreational activities and beach operations that continue to comply with current State and Federal guidelines to protect the piping plover (including its habitat) and would continue to contribute to the recovery effort for the species. Similarly, breeding terns would continue to benefit from implementation of the State guidelines. As these guidelines are intended to avoid the potential for take of piping plovers, there would be no need for the MADFW or beach managers to seek incidental take authorization for such activities. Therefore, an HCP would not be developed and the Service would not issue an ITP.

Under the no action alternative, the MADFW and beach managers would prohibit road use and parking where unfledged piping plover and tern chicks are present (in accordance with the State guidelines), all suitable piping plover habitat would continue to be symbolically fenced to preclude entry into these areas, fifty-yard (150-foot) buffers around established plover and tern nests would continue to be implemented, and OSV travel would be prohibited where unfledged piping plover chicks are present. Predator management activities are currently implemented by some beach owners and managers and may continue to be implemented under the no action alternative. However, under the no action alternative, mitigation measures to benefit the piping plover would not be implemented, and a statewide approach to predator management would not be coordinated. In addition, more flexible beach management and operations would not be allowed. The environmental consequences of the no action alternative on each resource area being carried forward for detailed analysis are described below.

## 4.1.1 Biological Resources

As explained in chapter 3, the assessment of consequences of the no action alternative on biological resources will focus on plants, wildlife, and their habitats. The no action alternative would not impact aquatic resources (such as marine life), and therefore analysis of those resources is not necessary. Under the no action alternative, recreational activities and beach operations consistent with State and Federal guidelines would occur in the beach and foredune areas in accordance with the State and Federal guidelines and the “Guidelines for Barrier Beach Management in Massachusetts.” Section 3.1.2 provides an overview of the existing conditions for coastal plants and their habitat in these areas.

In general, recreational activities and beach operations (swimming, sunbathing, picnicking, pedestrian activity, dog walking, fishing, nature study, beach sports, boating, water sports [such as surfing and wind surfing], and camping), road use and parking associated with beach recreation, and predator management may impact plants if occurring in vegetated areas, preventing plants from establishing through concentrated foot traffic or removing a seed source during wrack removal (beach operations). Delineating areas with symbolic fencing could provide temporary benefits to plants (e.g., protected species) by precluding the entry of pedestrians and OSVs and preventing trampling or crushing of seedlings or mature plants during times of year when symbolic fencing is in place. Often, early successional plants will establish in the symbolically fenced plover areas; however, once the fences are removed and recreationists access these areas, the plants may be impacted depending on the vegetation density and type. Under the no action alternative, any seasonal benefits from symbolic fencing and impacts from recreation on plants would continue at the current level.

OSV use on beaches prior to egg hatching and after chick fledging would continue unchanged under the no action alternative. Frequent OSV use can damage or kill plants resulting in vehicle paths free of vegetation. However, since OSV use is restricted to designated travel corridors and parking areas following the MWPA and associated Orders of Conditions, vegetation growing on the dunes is generally protected. Implementation of existing regulations would continue under the no action alternative, and therefore baseline conditions would not be affected.

Section 3.1.2 provides an overview of the existing condition for wildlife and their habitat on Massachusetts’ beaches. Implementation of the no action alternative would not change the magnitude or extent of recreational activities or beach operations that currently occur in the beach and foredune areas. Recreational activities and beach operations, road use and parking associated with beach recreation, and OSV use on beaches may or may not impact wildlife populations, depending on the species and time of year. Individual birds, flocks of shorebirds, or other wildlife using the beach would be disturbed by pedestrians and OSV use in their vicinity. In particular, the energetic resources of migratory shorebirds may be affected through continued disturbance by recreationists during the early migration (August). Conversely, other wildlife species may adapt to recreational use on beaches and not be as impacted by disturbance. Under the no action alternative, impacts to wildlife would continue at the current level.

OSV use has the potential to result in alteration of piping plover and other shorebird feeding and sheltering habitat through destruction of beach wrack and vegetation, creation of deep sand ruts, and beach erosion. This could result in both direct and indirect effects because OSV use can alter beach characteristics over time. Godfrey and Godfrey (1980) found that 50 vehicle passes on Cape Cod were enough to prevent seaward development of dunes and result in a scarped, rather than

sloped, dune profile. The authors noted that vegetation was completely eliminated after 70 to 175 passes and that the number of vehicles using a path makes little difference once the vegetation was eliminated. Identifying a link between beach driving and beach erosion is complicated by the natural variability of the environment in space and time (Houser et al. 2013). Houser et al. (2013) conducted a study to determine if differences in beach and dune morphology between restricted and open access sections of beach are associated with beach driving. Despite changes in dune morphology between the restricted and open beaches, the authors' results showed no statistically significant difference in beach-dune volume on either side of the beach access road, which suggests that driving on the beach does not lead to a net loss of sediment from the beach-dune system. However, the authors concluded that driving on the beach makes the foredune more susceptible to scarping (erosion) and overwash during tropical storms and hurricanes. OSV use on Massachusetts beaches is required to comply with the MWPA, which prevents OSV use from significantly impairing wildlife habitat functions. OSV impacts to the coastal ecosystem and management recommendations to avoid those impacts are described in the "Guidelines for Barrier Beach Management in Massachusetts" (Massachusetts Barrier Beach Task Force 1994).

Under the no action alternative, existing predator management activities in the study area would continue, at least through 2017. Currently, predator management is being implemented at a number of piping plover beaches to increase local piping plover productivity as part of restoration activities associated with the 2003 Bouchard Barge 120 (B-120) oil spill in Buzzards Bay and nearby waters in Massachusetts and Rhode Island. Table 4-1 shows the numbers of predators removed from Massachusetts beaches funded under the B-120 restoration during the first 3 years of the B-120 predator removal program (2013–2015). Skunks and crows were the most targeted predator removed over the 3 years of predator management from the plover beaches (59 skunks and 340 crows). Crows were primarily removed through the use of toxicants (baited eggs placed in dummy plover exclosures). All skunks removed were from sites in Martha's Vineyard. For most sites, the B-120 predator removal program is likely to continue through 2017 after which the program will be discontinued.

The USDA's EA for predator management activities on recreation areas in Massachusetts (USDA 2011a) shows that most of the wildlife species considered for selective predator management are harvestable in Massachusetts within designated annual hunting and/or trapping seasons. The USDA concluded that removal of a limited number of targeted individuals would not reduce the local populations to the extent that hunting and/or trapping of these species in these areas would be affected. The USDA also concluded that the lethal removal of predators to benefit nesting threatened and endangered species would have a low magnitude of effect to current populations of these predators based on trend data, population estimates, and/or harvest data (USDA 2011b).

Under the no action alternative, there is little potential for impacts to northeastern beach tiger beetles or their habitat because of its restricted distribution in Massachusetts (Martha's Vineyard and Monomoy National Wildlife Refuge) and its Federal listing status. Activities that occur in the vicinity of the beetles must avoid take of the species. Beach operations are limited and occur only on privately owned, occupied northeastern beach tiger beetle beaches that receive limited recreational use. Nonessential OSV use does not occur in occupied northeastern beach tiger beetle habitat. The largest population occurs on Monomoy National Wildlife Refuge and receives little pedestrian recreational use and no nonessential OSV traffic.

Northeastern beach tiger beetle larvae are found in burrows up to 18 inches deep, and adult tiger beetles are generally found at the water's edge or on the beach berm. Light foot traffic, such as

would occur during selective predator management, would not disturb foraging or mating adult tiger beetles above and beyond activities already occurring on the beach (pedestrian activities). Light foot traffic also would not compact the sandy beach habitat to the point larvae need to expend additional energy to repeatedly reopen collapsed burrows. Predator management has been implemented at Monomoy National Wildlife Refuge in the vicinity of northeastern beach tiger beetles but as a rule does not occur in occupied northeastern beach tiger beetle habitat (USFWS. 2015a).

In conclusion, the no action alternative would result in continuation of existing recreational activities and beach operations consistent with the State and Federal guidelines. The type, magnitude, and extent of activities would not change, and the effects to biological resources would not be different from those that currently exist. Therefore, the no action alternative would not significantly impact biological resources.

**Table 4-1. Predators Removed under B-120 Restoration Program, 2013–2015<sup>a</sup>**

Site Name	Predator								
	Skunk	Cat	Crow	Coyote	Opossum	Fox	Raccoon	Rat	Mice
Dogfish Bar, MA	16	4	10	0	0	0	0	0	0
Edgartown Great Pond, MA	6	0	26	0	0	0	0	0	0
Cedar Tree Neck, MA	7	3	3	0	0	0	6	0	0
West Tashmoo, MA <sup>b</sup>	2	1	0	0	0	0	0	0	0
Parker River NWR, MA	0	0	35	6	0	0	0	0	0
Sandy Point State Park, MA <sup>b</sup>	0	0	12	0	0	0	0	0	0
Leland Beach, MA	13	0	58	0	0	0	9	0	0
Norton Point, MA	15	0	53	0	0	0	0	3	0
Coskata-Coatue, MA	0	0	14	0	0	0	0	46	31
Demarest Lloyd State Park, MA	0	0	20	1	0	1	1	0	0
Horseneck Beach State Reservation, MA <sup>c</sup>	0	0	9	1	1	0	1	0	0
South Cape Beach, MA <sup>b</sup>	0	0	52	0	0	0	0	0	0
Allen's Pond/Little Beach, MA <sup>d</sup>	0	4	7	0	0	0	0	0	0
Dead Neck Sampson's Island, MA <sup>b</sup>	0	0	41	0	0	0	0	0	0
<b>Total</b>	<b>59</b>	<b>12</b>	<b>340</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>17</b>	<b>49</b>	<b>31</b>

**Notes:**

<sup>a</sup> Data in the table are a compilation of data provided in individual reports. All reports are on file at the New England Field Office, 70 Commercial Street, Suite 300, Concord, NH 03301.

<sup>b</sup> Predator management implemented in 2014 and 2015.

<sup>c</sup> Relocated 3 owls in 2015.

<sup>d</sup> Predator management implemented in 2014 and 2015, one gull removed.

MA = Massachusetts; NWR = national wildlife refuge; RI = Rhode Island

## 4.1.2 Coastal Resources

The existing conditions for Massachusetts' coastal resources are described in section 3.2.2. Under the no action alternative, beach recreational activities and beach operations would continue to be managed according to the State and Federal guidelines. These activities are consistent with the State's coastal program and thus comply with the CZMA. OSV use on beaches that allow driving would continue to require an Order of Conditions pursuant to the MWPA, which would prevent or minimize impacts to coastal wetland resources, including preventing any short- or long-term adverse effects on the habitat of local species.

Under the no action alternative, the type, magnitude, and extent of recreational activities and beach operations would not change, and the effects to coastal resources would not be different from those that currently exist. Therefore, the no action alternative would not significantly impact coastal resources.

## 4.1.3 Recreation

The existing conditions for Massachusetts' beach recreation are described in section 3.3.2. Under the no action alternative, beach recreational activities would continue to be managed according to the State and Federal guidelines. Beach recreational activities, including OSV use, would continue to be prohibited during the piping plover nesting season in areas that are symbolically fenced to protect suitable piping plover nesting habitat, nests, and young. Similarly, road use and parking would continue to be managed according to the State and Federal guidelines when piping plovers (adults and chicks) are present, which may result in periodic closures of roads or parking lots. A CMP would not be needed for State-listed terns since recreational activities that potentially affect State-listed terns would continue to be managed according to State guidelines, although a beach management entity could pursue a CMP to deviate from the State guidelines irrespective of the HCP. The no action alternative would not affect the State endangered species permitting process.

Under the no action alternative, the type, magnitude, and extent of beach recreational activities would not change, and the effects to recreation would not be different from those that currently exist. Therefore, the no action alternative would not significantly impact recreation at the current piping plover population size. However, if the species' population continues to grow, and beach managers continue to implement State and Federal guidelines, recreational opportunities may be limited in the future beyond the current restrictions.

## 4.1.4 Transportation and Traffic

The existing conditions for transportation resources on Massachusetts' beaches are described in section 3.4.2. Under the no action alternative, recreational activities and beach operations would continue to be managed according to the State and Federal guidelines. In general, Massachusetts' existing roadways, bike paths, and sidewalks would continue to provide beach access to locals and tourists. Ferries, boats, and planes would continue to provide access to Martha's Vineyard and Nantucket Island from the mainland. Consistent with current implementation of the State and Federal guidelines, if piping plovers nest in or near parking lots or beach access points, temporary, localized closures causing traffic congestion in these areas could occur. Beach goers would have to park at another parking lot, or access the beach from another location until the closed parking lot or access point is reopened.

The type, magnitude, and extent of recreational activities and beach operations would not change, and the effects to transportation and traffic would not be different from those that currently exist. Therefore, the no action alternative would not significantly impact transportation and traffic.

### 4.1.5 Socioeconomics

The existing conditions for socioeconomics in the study area are described in section 3.5.2. Under the no action alternative, recreational activities and beach operations would continue to be managed according to State and Federal guidelines. OSV use is currently one of the recreational activities that has been the most constrained by State and Federal guidelines. In accordance with the guidelines, OSVs are not permitted to drive on piping plover nesting beaches when unfledged chicks are present. The sale of OSV permits provides revenue to Towns throughout the study area. When OSV use is prohibited, Towns that sell OSV permits can experience reduced OSV permit-related revenue. For example, the Town of Orleans has stated that the predictable annual and increasing duration of OSV access closures at Nauset Beach was directly linked to a decline in revenue from its OSV management program (Town of Orleans HCP; Town of Orleans 2014). According to the Town of Orleans' HCP, the average revenue produced by the OSV program in the 4-year period prior to and including the first total OSV access closure (2003–2006) was over \$415,000 per year. In contrast, the average revenue over the 7-year period since total OSV access closures at Nauset Beach began (2007–2013) was \$243,000 per year. The Town of Orleans attributed this 41 percent decline in revenue in OSV permit sales to a reduction in OSV access to Nauset Beach as a result of late season unfledged piping plover chicks near the OSV trail.

The no action alternative would not affect employment of those who manage recreation and beach operations according to the State and Federal guidelines during the piping plover nesting season (e.g., those who erect symbolic fencing around plover habitat and nests, manage beach access points when plovers are nearby, etc.). Therefore, the no action alternative would not change the existing unemployment rates in the study area.

Under the no action alternative, the type, magnitude, and extent of recreational activities and beach operations would not change, and the effects to socioeconomic conditions would not be different from those that currently exist. Therefore, the no action alternative would not significantly impact socioeconomic conditions.

## 4.2 Proposed Action

Under the proposed action, the Service would issue an ESA section 10(a)(1)(B) ITP and the MADFW would implement an HCP that allows deviations from current State and Federal guidelines for recreational activities and beach operations. All other activities related to beach management and use would comply with the State and Federal guidelines. Under the proposed action, some activities would be conducted under certain circumstances that would not be conducted under the no action alternative. These include (1) recreational activities that occur in areas of the beach that would otherwise be protected by symbolic fencing around nests or proactive symbolic fencing of suitable piping plover habitat; (2) OSV use in areas that may normally be closed due to the presence of unfledged piping plover chicks; (3) use of roads or parking lots that may otherwise be closed to protect nesting or adult plovers; and (4) a mitigation strategy that includes predator management and in some circumstances, pilot piping plover nesting habitat improvement projects. The HCP

includes avoidance and minimization measures associated with the covered activities. The HCP would allow for some flexibility in beach management and operations and provide a statewide approach to predator management and piping plover conservation. The environmental consequences of the proposed action on each resource area being carried forward for detailed analysis are described below.

## 4.2.1 Biological Resources

Like with the no action alternative (section 4.1.1), the assessment of consequences of the proposed action on biological resources will focus on plants, wildlife, and their habitats. The proposed action would not affect aquatic resources, and therefore analysis of those resources is not necessary. Under the proposed action, some recreational activities and beach operations would differ from management under the State and Federal guidelines. The environmental consequences of each of the covered activities and the conservation strategy on biological resources are evaluated separately in this section. At the end of this section, a summary is provided that considers together the direct and indirect effects of all of the covered activities and mitigation on biological resources.

For all of the covered activities, the proposed action would have no effect on the federally threatened northeastern beach tiger beetle or its habitat. The northeastern beech tiger beetle has a very restricted distribution in Massachusetts. As described in the HCP, the MADFW would not issue COIs for activities that could result in take of the northeastern beach tiger beetle, and would not conduct or authorize mitigation activities that would affect northeastern beech tiger beetles or their habitat.

### 4.2.1.1 Use of Roads and Parking Lots in the Vicinity of Unfledged Piping Plover Chicks

Under the proposed action, driving would be allowed on improved roads and parking lots in the immediate vicinity of unfledged chicks. This covered activity would have no additional impacts to plants because vehicles access the parking lots and roads in the absence of piping plover nests or broods and most plants do not grow on these improved (paved, gravel, or otherwise actively maintained) roads or parking lots.

This covered activity would impact piping plovers by allowing driving in areas where chicks and tending adults may be present. Allowing driving on roads and parking lots in the vicinity of unfledged plover chicks could disturb or harass adults and chicks as they move between breeding, feeding, and sheltering habitat. Increased disturbance by passing vehicles may cause adult plovers to flush (fly away) from the unfledged chicks, thereby increasing chick exposure to predators. If an unfledged chick or chicks go undetected by drivers and beach staff (monitors), one or more chicks could be killed. Adult piping plovers could be injured or killed by vehicles as they are tending their broods. The likelihood of adult plover injury or mortality is less than that of an unfledged chick because adult birds have greater maneuverability and can fly away from approaching vehicles.

The minimization measures (barriers, signage, staff training, and traffic management; see section 2.2.2.1) would limit the amount of take by minimizing the exposure of chicks and adults to vehicles on beach access roads and parking lots. Regular monitoring of broods located in the vicinity of roads and parking lots would reduce the risk that chicks cross into traffic without adequate protective measures in place. The HCP estimates a 50-percent reduction in productivity for those pairs exposed to this covered activity (for example, if the average productivity of pairs at a beach was 2 chicks per

pair the previous 2 years, then after exposure to the covered activity, it is anticipated that only 1 chick would survive to fledging). The HCP (HCP section 4.3.3) estimates that 1 adult plover could be taken for every 20 instances in which this covered activity is implemented (0.05 adult per exposure). Therefore, this activity would impact few adult piping plovers, if any, over the life of the permit and would have a minor impact on the species.

This covered activity would have minor impacts to nesting or staging roseate terns, because there are only one to two small areas in the Plan area where nesting roseate terns and piping plovers occasionally overlap neither of which is located near an improved road or parking lot. Roseate terns do not nest, forage or stage on roads or parking lots (USFWS 2011).

This covered activity would have minor, if any, impacts on red knots. Although there is some overlap of piping plover breeding habitat and red knot stopover habitat in the study area, the likelihood of red knots foraging or roosting on roads or parking lots is discountable (USFWS 2013). Therefore, any impacts of this covered activity on the red knot would be negligible.

#### 4.2.1.2 Recreation and Beach Operations

##### **Recreation and Beach Operations Associated with Reduced Symbolic Fencing Around Nests and Reduced Proactive Symbolic Fencing of Piping Plover Habitat**

Under the proposed action, recreation and beach operations would be allowed to occur in areas less than 50 yards from a piping plover nest that otherwise would be symbolically fenced and restricted from use according to the State and Federal guidelines. Also, recreation and beach operations would be allowed to occur in suitable piping plover nesting, feeding, and sheltering habitat that otherwise would be restricted by the placement of proactive symbolic fencing according to the State and Federal guidelines, in particular, beach sections near major access points with high recreational use.

This covered activity could have impacts on plants if plants were present in the areas that would no longer be fenced. Pedestrian entry into these areas could result in the trampling or crushing of seedlings or mature plants. Impacts on plants are expected to be minor given that most of the piping plover nesting habitat will continue to be symbolically fenced, protecting vegetation that is growing within these areas as long as the fencing remains in place. Moreover, the coastal beaches will continue to be protectively managed per the Massachusetts Beach Barrier Guidelines and the MWPA.

The HCP estimates a 50-percent reduction in productivity for those pairs exposed to this covered activity and no adult mortality. Allowing recreation and beach operations closer to piping plover nests has the potential to result in disturbance or harassment of nesting adults and to result in egg mortality through increased risk of nest abandonment or lower hatch rates due to inconsistent incubation. Increased flushing of incubating adults from nests would expose eggs to predators (e.g., crows, gulls, cats) and could cause excessive cooling or heating of eggs. Repeated exposure of eggs on hot days may cause overheating, killing the embryos (Bergstrom 1991). Excessive cooling may kill embryos or delay their development, thus delaying hatching dates. This covered activity could also result in increased disturbance, harassment, or harm of unfledged chicks after hatching. These effects would be minimized by the required minimization measures and monitoring (see HCP section 3.2.2.1 for a discussion of minimization measures). For example, fencing would be reduced only to the extent necessary to achieve specific recreation or beach operation objectives, and monitoring, which would be focused on early nesting phases and early periods of recreational use of

beaches (e.g., the first weekend after the fencing is reduced), would document whether adults continued to incubate the eggs with the reduced fencing buffer.

Although monitoring of piping plovers is conducted so as not to disturb plovers, it could disturb other shorebirds in the area. However, under the no action alternative, other shorebirds are already exposed to disturbance from pedestrians recreating on beaches and staff monitoring piping plover adults, nests, and broods. Therefore, any additional impacts to other shorebirds or wildlife species from additional monitoring of piping plovers that may be required for a covered activity under the proposed action would be minor.

Similarly, allowing recreation and beach operations in suitable piping plover nesting habitat that otherwise would be restricted could result in disturbance or harassment of territorial and nesting piping plover adults by preventing them from attempting to nest (including courtship) or reneat at that site or by forcing them to seek alternative nesting habitat. If the piping plover population in a region approaches the available habitat's carrying capacity, some adults that are displaced may not breed at all. The reduction of symbolic fencing could also result in increased disturbance or harassment of unfledged chicks by affecting their ability to find shelter and to forage. However, the majority of symbolic fencing at a given breeding site would remain, because the Plan generally requires that this covered activity be limited to the lesser of 10 percent or 2 acres of available nesting habitat. Therefore, although disturbance to adults and chicks is likely to increase, given the relatively small area (the lesser of 10 percent or 2 acres at a breeding site) over which the disturbance would occur, the effects on the piping plover would be insignificant.

This covered activity could also reduce piping plover nesting and fledging success in the event that affected adults relocate to poorer quality habitat or face increased intraspecific competition. Potential effects would be minimized by the measures described in section 2.2.2.2 (see also HCP section 3.2.2.2), which include the requirement that reduced fencing be limited to the lesser of 10 percent or 2 acres of available nesting habitat at a given breeding site. Additionally, annual take exposures for this covered activity may not exceed 50 percent of all take exposures authorized in a given year.

To the extent that fencing around piping plover nests and habitat is reduced, it allows recreational activities and beach operations to occur in areas in which they would otherwise (under the State and Federal guidelines) not occur. This may affect other shorebird species that are also protected from disturbance, such as the American oystercatcher [*Haematopus palliatus*] and State-listed least tern where they might occur outside of protected habitat (e.g. loafing or roosting). However, if fenced according to the guidelines, the reduced fencing under the Plan is not anticipated to significantly impact those resources because of the relatively small amount of habitat that would be exposed and the limited extent to which it may occur at a site. Furthermore, Plan participants would be required to achieve compliance under MESA for the least tern and other State-listed species by avoiding take or obtaining a conservation and management permit.

Pursuant to MESA and MWPA requirements, protective measures are required to avoid take of piping plovers by beach raking. In the absence of these requirements, beach raking in suitable plover habitat exposed as a result of reduced symbolic fencing could destroy plover scrapes and disturb or harass courting and scraping piping plover adults. It could also interrupt adult and chick feeding and reduce feeding habitat through the removal of beach wrack, an important food source for piping plovers and other shorebirds. These effects also could increase chick energy expenditures. However, the protective conditions required pursuant to the MESA and MWPA would avoid these

effects. These conditions may include, but are not limited to, limits on the frequency, duration, and areal extent of raking, intensive monitoring of adults and chicks by qualified shorebird monitors during raking operations, a monitor walking in front of the beach rake, maintenance of setbacks between raking equipment and unfledged chicks, and retention of beach wrack and vegetation, particularly in those areas that remain symbolically fenced. These conditions would continue to apply under the Plan with the exception of the areal extent to be symbolically fenced.

The reduction in proactive symbolic fencing would be limited to the lesser of 10 percent or 2 acres. However, if the MADFW determines it is necessary to meet recreational objectives, the symbolically fenced area may be reduced by 20 percent or up to four acres for up to 5 sites. The combined number of piping plover nests, broods, and territories exposed to this covered activity at a given site would not exceed 15 percent of the number of breeding pairs present at the site during the prior year with the exception of up to 5 sites where up to 30 percent of the pairs may be exposed to covered activities if the MADFW determines that this is also necessary to meet recreational objectives. Even for sites where implementation may affect up to 30 percent of pairs, sites with fewer than seven pairs may only expose one nest, brood, or territory to covered activities (see HCP sections 3.2 and 5.2.2.3). Furthermore, the authorizations for this activity in a given year will be limited to no more than 50 percent of the statewide allowable take exposures for any year in which more than 10 take exposures could be authorized.

Impacts from this activity on piping plovers may include disruption of territorial and breeding behaviors resulting in a 50-percent reduction in productivity and possible displacement of breeding pairs. Adult mortality is not anticipated. Even under the scenario of implementation at 5 sites affecting 30 percent of the nesting pairs, effects on distribution of the population and productivity are likely to be minor. At least 70 percent of pairs at any site will be unaffected. Furthermore, the distribution of breeding pairs is maintained through dispersal of chicks from their natal beaches to other sites (albeit in the general region) when they recruit into the breeding population. Thus, out-year effects of productivity losses are likely to be homogenized across many sites, and probably the entire state.

This covered activity would have insignificant effects on red knots. Red knots do not breed in Massachusetts, and when present in the study area during migration, red knots primarily forage offshore on mud and sand flats where most beach recreational activities do not occur. If they were present (e.g. roosting) during the piping plover nesting season in areas where fencing was reduced, they could be disturbed by pedestrians. It is unknown how repeated disturbance from pedestrians affects the energetic resources of red knots migrating through New England. However, this disturbance is ongoing at almost all Massachusetts beaches during the red knot spring and fall migration, and the impact of the additional exposure to recreation, beach operations, or pedestrian presence in areas with reduced symbolic fencing would be incremental and minor because the number of incidences would be limited and 80 percent of the habitat would remain symbolically fenced at any given site. The MADFW would not issue a COI to a Plan participant if a covered activity would cause take of red knots.

This covered activity would have insignificant impacts on roseate terns. There are only one to two small sites in the Plan area where nesting roseate terns and piping plovers occasionally overlap, these are isolated sites with relatively low recreational use. Staging roseate terns may occur within symbolically fenced habitat although not on a predictable basis since their staging sites may be tide and prey-base dependent. Where they do occur within fenced habitat, they also occur between the symbolic fencing and the intertidal zone where they could be affected by pedestrians or vehicles

irrespective of the symbolic fencing. Under the greatest amount of impact to habitat from this covered activity, that is a reduction in fencing of up to 20 percent or 4 acres in locations of high recreational use, would have little to no additional impact on staging roseate terns since they are unlikely to be present in these areas. In addition, activities that could cause take of roseate terns would require a separate take authorization or amendment of the Plan to include the roseate tern as a covered species. The MADFW would not issue a COI under the current Plan for this covered activity if it would cause take of roseate terns (see HCP section 1.1).

Shorebirds and other wildlife would not be impacted at any greater level than is occurring under current levels of beach raking since reduction of symbolic fencing for plovers generally does not protect shorebirds feeding in the intertidal zone and the reduction of the symbolically fenced area would be limited to the lesser of 10 percent or 2 acres.

### **Recreation and Beach Operations at Piping Plover Nest Sites with Nest Moving**

Under the proposed action, trained shorebird monitors would be allowed to move nests under certain limited circumstances and using the nest-moving protocols described in the HCP (HCP section 3.2.2.3). Moving a nest would disturb or harass nesting piping plover adults and could cause egg mortality through increased risk of nest abandonment. If the adults exhibit reduced nest attendance after the nest is moved, eggs would be exposed to predators (e.g., crows, gulls, cats), and if the adults do not immediately return to the nest to incubate the eggs, the eggs could be subject to excessive cooling or heating.

Nest moving can be an effective conservation measure of last resort. For example, biologists have moved piping plover nests to prevent nest inundation elsewhere in the species' range (Prellwitz et al. 1995; Gordon and Kruse 1999). Biologists working on the Great Plains report that piping plovers often return to the nest and continue to incubate eggs if the eggs are moved infrequently and over short distances (Prellwitz et al. 1995). Other observations and evidence indicate that adult piping plovers are capable of moving eggs on their own short distances during incubation and establishing new nests (Wiltermuth et al. 2009). The risk of nest moving causing nest abandonment would be minimized by the required impact minimization measures included in the Plan (see HCP section 3.2.2.3), which include timing and weather restrictions, a relocation site in suitable habitat that minimizes the movement distance to the extent practicable, and gradual movement of the nest. Monitoring nests that are moved would occur from a distance to confirm acceptance of the new nest location by adults and a quick return to incubation per the steps described in the Plan.

The combined number of piping plover nests, broods, and territories exposed to this covered activity at a given site would not exceed 15 percent of the number of breeding pairs present at the site during the prior year. At a site with fewer than seven pairs, no more than one nest, brood, or territory would be exposed to covered activities (see HCP sections 3.2 and 5.2.2.3). The HCP estimates a 50 percent reduction in productivity for those pairs exposed to this covered activity and no adult mortality.

This covered activity would not impact breeding red knots or roseate terns, because red knots do not breed in Massachusetts, and because there is very little overlap of roseate tern and piping plover breeding habitat in the Plan area. Moreover, the MADFW would not issue a COI if it is determined that take could occur to roseate terns or red knots through this covered activity. Nest moving would not occur in the vicinity of roseate terns (the two mainland sites do not receive heavy recreational use, a requirement of allowing nest moving to occur as a covered activity) or foraging red knots. Red

knots may roost in the vicinity of nesting plovers; however, their peak migration is generally after most plovers have initiated their nests and therefore are unlikely to overlap with the implementation of this covered activity since this most likely would occur prior to July. Therefore, these species would be minimally affected, if at all, by piping plover nest moving in piping plover breeding areas.

The presence of monitors observing the nest acceptance could disturb other feeding or roosting shorebirds in the area. However, any additional disturbance from the presence of one monitor for a limited period of time would be minor in comparison to the general ongoing recreational activity on the beach. Therefore, impacts to other shorebirds are anticipated to be very minor.

### **Over-sand-Vehicle Use in the Vicinity of Unfledged Chicks**

Under the proposed action, limited, escorted driving of nonessential OSVs (e.g., tourist vehicles) within the 100-yard or greater OSV setback from unfledged piping plover chicks would be permitted during an approximate 8-week period when such activities would generally be prohibited under the State and Federal guidelines. This covered activity could affect adult, recently fledged, and unfledged plovers.

The HCP estimates a 50 percent reduction in productivity for those pairs exposed to this covered activity and no adult mortality. OSV use in the vicinity of unfledged chicks could disturb adult piping plovers, thereby disrupting essential parental behaviors (e.g., sheltering under their wings chicks that cannot thermoregulate, alerting chicks to remain motionless in the presence of predators). OSV use may also disturb or harass unfledged chicks and recently fledged young of the year by causing them to flush, interrupting their foraging, resting, or movements through the area. Because adult piping plovers and recently fledged chicks can typically maneuver or fly away from an approaching vehicle, and because the Plan requires vehicles to be escorted, adults and fledged young of the year are unlikely to suffer direct injury or direct mortality. Direct unfledged chick mortality may occur if drivers or escorts fail to detect chicks in the vehicle pathway or if chicks attempt to move between vehicles in a caravan after the escort leading the caravan has passed. This potential effect would be minimized by the Plans' required minimization measures and monitoring (see HCP section 3.2.3). For example, to limit disturbance of chicks and impacts on their foraging, vehicle travel in the vicinity of chicks would be restricted to no more than 6 hours per day in 2 to 3 travel periods during daylight hours.

As discussed in section 4.1.1 for the no action alternative, unmanaged OSV use has the potential to result in alteration of feeding and sheltering habitat through destruction of beach wrack (and the invertebrates associated with the wrack) and vegetation, creation of deep sand ruts, and erosion of the beach. Plover chicks stand in, walk in, and run along tire ruts, and sometimes have difficulty crossing deep ruts or climbing out of them (Eddings et al. 1990, Strauss 1990, Howard et al. 1993). Also, because OSV use can lead to changes in beach characteristics later in time, some effects to plovers may lag the OSV use. However, the "Guidelines for Barrier Beach Management in Massachusetts" and the State and Federal guidelines outline OSV travel corridor requirements that avoid or minimize destruction of the wrack line and dune vegetation. Plan participants proposing this covered activity would be required to comply with the relevant portions of the "Guidelines for Barrier Beach Management in Massachusetts" and the MWPA to ensure that this covered activity would not significantly impair habitat function. Also, under the Plan, OSV use in the vicinity of chicks would be limited to a narrow (less than 5 yards wide) corridor located to avoid and minimize impacts to wrack, and tire ruts in the travel corridor would be smoothed out at least daily at the end

of one or more travel periods to minimize the potential for plover chicks or other shorebird chicks to shelter in or get stuck in the tire ruts and be less visible to caravan monitors or escorts. Therefore, this covered activity is not expected to result in any short- or long-term adverse effects to piping plover habitat.

Increased OSV use in the vicinity of unfledged chicks would not impact breeding roseate terns, because they do not nest on beaches with OSV traffic. However, this covered activity could disturb staging roseate terns. Roseate terns stage (congregate in flocks) on barrier beaches prior to migration. At these staging sites, young-of-the-year terns, although able to fly, are still fed by their parents. Both adults and young may rest in between foraging forays, reserving energy prior to their long migration south. OSV access to otherwise isolated staging areas may disturb flocks of resting roseate terns, causing them to flush and move to another location. However, the disturbance to staging roseate terns currently resulting from implementation of the State and Federal guidelines has not been demonstrated to rise to the level of take. And because this covered activity is expected to result in only minor additional disturbance to staging roseate terns, this additional disturbance is also not expected to rise to the level of take. The MADFW would not issue a COI to a Plan participant if a covered activity would cause take of roseate terns.

The combined number of piping plover nests, broods, and territories exposed to covered activities at a given site would not exceed 30 percent of the number of breeding pairs present at a site for up to 5 sites (this includes all covered activities), at most sites only 15 percent of the breeding pairs could be exposed. At a site with fewer than seven pairs, no more than one nest, brood, or territory would be exposed to covered activities (see HCP sections 3.2 and 5.2.2.3).

Similarly, increased OSV use in the vicinity of unfledged piping plover chicks would have insignificant effects on red knots when present during the piping plover breeding season. It is unknown how repeated disturbance from OSV use (or pedestrians) affects the energetic resources of red knots. They primarily forage offshore on mud and sand flats where OSV traffic does not occur. Roosting red knots might be disturbed by passing vehicle traffic or pedestrians exiting OSVs. However, this disturbance is ongoing at almost all Massachusetts beaches during the red knot spring and fall migration, and the impact of the additional exposure to OSV use from this covered activity would be minor. The number of incidences where OSVs could disturb roosting red knots would be limited since there are few beaches in Massachusetts that allow OSV access and the duration would be limited to the weeks when unfledged chicks are present in July and/or August. Depending on how many pairs the covered activity proposes to expose, the duration could be as short as 4 weeks or longer depending on whether multiple pairs overlap during the implementation of the covered activity. The majority of red knots stage later in the plover breeding season and would not be exposed to OSVs as a result of the covered activity. This covered activity would not occur in the areas of known, concentrated red knot staging since these areas are either on Monomoy National Wildlife Refuge (would not participate in the HCP) or do not allow OSV travel (South Beach). The MADFW would not issue a COI to a Plan participant if this covered activity would cause take of red knots.

The covered activity of OSV use that would otherwise (under the full implementation of State and Federal guidelines) not occur may impact other shorebirds nesting, foraging, or roosting in and above the intertidal zone. Migratory shorebirds foraging or resting in these areas are exposed to OSV traffic prior to piping plover egg hatching and after chick fledging. Some may be acclimated to OSV traffic, although they may not be acclimated to disturbance from pedestrians exiting the OSVs. The effect of disturbance on migratory shorebirds was studied by Koch and Paton (2013). The

authors noted that the species and the age of the birds affected the flight initiation distance (response to disturbance); for example, juvenile shorebirds were more likely to fly at shorter distances than adults, allowing pedestrians to approach more closely prior to taking flight. The specific energetic demands of responding to disturbance are unknown; nevertheless, the authors recommended buffers around staging migratory birds to reduce impacts. However, such disturbance is ongoing at almost all Massachusetts beaches during late summer and fall migration, and the impact of the additional exposure to OSVs from this covered activity would be minor. Additionally, the amount of beach habitat that would be affected by this covered activity is relatively small compared to the areas where OSV use is not allowed. Therefore, OSV use under the HCP is not anticipated to compound ongoing impacts to other shorebirds.

Regarding State-listed species, as part of the process of obtaining a COI under the HCP, Plan participants would be required to achieve compliance under MESA for the least tern and other State-listed species by avoiding take or obtaining a conservation and management permit.

### 4.2.1.3 Conservation Strategy

In addition to the impact avoidance and minimization measures, the conservation strategy provided in the HCP includes measures to mitigate potential impacts on the piping plover. These measures include selective predator management; education, outreach, and increased law enforcement; and nesting habitat improvements. The effects of each of these components of the conservation strategy on biological resources are discussed below.

#### Selective Predator Management

Predator management actions would be implemented in late winter or spring by USDA APHIS Wildlife Services or other qualified personnel. Predator management would include trapping smaller mammalian predators of piping plover, such as raccoons, opossums, and skunks, and euthanizing them. All traps used to capture mammals would meet the existing Best Management Practices for Trapping (Association of Fish and Wildlife Agencies 2006). In addition to trapping, shooting with suppressed rifles or shotguns would be employed to manage larger mammalian predators, such as coyote and fox, and avian predators. Toxicants (e.g., DRC-1339) applied to eggs may be used to remove crows known to predate plover nests and chicks emerging from exclosures. Baited eggs would be placed in “dummy exclosures” before or as plovers return in the spring to nest to target crows that have focused on exclosures as a source of food. Baiting eggs reduces the likelihood that nontarget avian predators are impacted. Killing predators that are not targeting piping plovers would be minimized as much as possible. All predator removal efforts would use approved lethal techniques for wildlife damage management (USDA 2003, 2004, 2011a).

The number of predators removed would depend on the amount of piping plover take exposure authorized. Each fall, the MADFW would determine the number of take exposures to be authorized under the Plan for the following beach season, based on a rolling 3-year average of the plover population size (see HCP section 3.3). The authorized level of take would determine the level of predator management required for mitigation. The predator management program would be designed to benefit 2.5 breeding piping plover pairs for every brood, nest, or territory exposed to take from the covered activities. In the event that the covered activity being implemented is “Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks,” selective predator management to benefit an additional 0.5 adult breeding pairs would be required. Predator management would occur at sites that support adequate numbers of breeding pairs to achieve the mitigation ratio, based on

the prior season's count of breeding pairs. A recount of the number of breeding pairs would be conducted in the breeding season following predator management to ensure that a sufficient number of breeding pairs are present and benefiting from predator removal. If fewer plover pairs are found to occur on beaches selected for predator management during implementation, and the required mitigation ratio is not met, additional predator management would be implemented during the following season to make up for the deficit.

Predator removal programs have been implemented at a number of sites in the Northeast, including New York (Cohen et al. 2009), Virginia, New Jersey (NPS 2007a), Maryland (NPS 2007b), Massachusetts (USFWS 2009), Rhode Island (Hartlaub et al. 2007; Hartlaub et al. 2008; Wiitala et al. 2009), and Maine (Vashon 2008), and have demonstrated that selective predator management can increase piping plover productivity. Generally, predator management is conducted on a predator species whose local population densities are high (hence the increase in predation impacts to nesting plovers) or is targeted on a small number of individual predators that have learned to focus on plover chicks and eggs.

As noted above in section 4.1.1, the USDA completed an EA for predator management activities conducted on recreation areas in Massachusetts (USDA 2011a). The USDA concluded that removal of a limited number of targeted individuals would not reduce the local populations to the extent that hunting and/or trapping of these species in these areas would be affected. The USDA also concluded that the lethal removal of predators to benefit nesting threatened and endangered species would have a low magnitude of impact to current populations of these predators based on trend data, population estimates, and/or harvest data (USDA 2011b).

The anticipated exposure to take and the corresponding level of selective predator management required to offset take for the 26-year permit term is discussed in the following analysis. Benefits (e.g., increased productivity) are expected for piping plovers and other ground-nesting shorebirds and would depend on the success of predator removal and the duration of the predator management program.

Predator management activities would have no effect on plant populations. Vehicular use of the beach is not anticipated to be necessary for the proposed predator management strategies. The increased foot traffic associated with predator management is anticipated to cause only minor impacts if occurring in vegetated areas (e.g., erecting a baited dummy enclosure in or near a vegetated dune).

The annual amount of take under the HCP over the 26-year permit duration could range from a low of no nests, broods, or territories exposed to take (if the State population drops below 500 breeding pairs or no COIs are authorized) to a high of 7 percent of the State population's nests, broods, or territories exposed to take. The maximum take exposure of 7 percent of the statewide population would occur only if the State population exceeds 655 breeding pairs and if enough COIs are requested by participating beaches to allocate all of the take authorized under the ITP. Because the maximum take exposure is dependent on plover population size (i.e., as the population increases above 655, allowable take exposure is maintained at 7 percent), the actual amount of take exposure allocated would ultimately be limited by the carrying capacity<sup>12</sup> of the beaches in the study area.

---

<sup>12</sup> Carrying capacity is a theoretical limit of a species' population size based on ecological and physical limits of the environment related to the life history requirements of the species.

For the purposes of the EA analysis, the Service is estimating the highest level of take and mitigation (selective predator management) anticipated to occur over the ITP 26-year term. This ensures that the maximum potential effects of predator removal are estimated. Actual take exposure of plovers and effects of predator removal would likely be less than the effects described in this analysis.<sup>13</sup>

The current (2015) piping plover population size in Massachusetts is estimated to be 687 breeding pairs (MADFW 2016b). This represents an average annual population increase of 2.1 percent since 1998. In 1996, the MADFW estimated the State's carrying capacity of piping plovers at approximately 1,100 breeding pairs (MADFW 1996). Based on this estimate, the Service anticipates that the plover population would not likely exceed a 3-year running average of 1,000 breeding pairs during the 26-year permit duration. In general, it is difficult for species to maintain population levels above their carrying capacity because environmental forces tend to reduce populations below that level. If the population reached this size, the HCP would allow a maximum take exposure of 70<sup>14</sup> broods, nests, or territories annually (7 percent of 1,000). The selective predator management mitigation measure would therefore have to benefit 175 breeding pairs (2.5 times 70).

To estimate the number of nesting sites that would be required to benefit 175 plover pairs, the Service used the predator removal data for the B-120 predator removal program initiated in 2013 (discussed in section 4.1.1). The B-120 data are the best available data specific to Massachusetts to estimate the potential effects of mitigation under the proposed action. The B-120 predator removal program is a similar mitigation measure that would be implemented under the HCP and also the largest and most recent predator removal program conducted to date in Massachusetts. The number of breeding pairs per site where predators were removed ranged from 2 to 38, with an average of 11.5 breeding pairs<sup>15</sup> per site where selective predator management was applied. Applying this average number of breeding pairs per site to the EA analysis, if mitigation under the Plan was required to benefit 175 plover pairs during the year when the maximum take exposure was issued to Plan participants, predator management would need to be conducted at 16 sites across the study area (11.5 pairs/site x 16 sites = 186 pairs), although it is anticipated that fewer sites would be needed if sites with more than 11 pairs of plovers are selected (see table 3-1).

Table 4-3 in the HCP outlines the process for selecting sites to implement predator management. Sites with relatively high plover densities (greater than five breeding pairs) with high predation rates resulting in low productivity (less than one fledgling/pair) would be preferred. Once those sites are identified, and predation is known to be the cause of reduced productivity, landowner permission would be obtained to implement the targeted predator management.

Because of the variation in predator populations across the beaches of the study area, and the variation in their effects on plovers, it is highly unlikely that a single predator species would be targeted at all mitigation sites. The Service recognizes that the determination of which predators to target would be site-specific. For example, at Dogfish Bar on Martha's Vineyard (see table 4-1), the primary predator removed was the striped skunk. Removal of 16 skunks, 4 cats, and 10 crows resulted in an average increase of 0.63 chick fledged per breeding pair after predator management

---

<sup>13</sup> This analysis is performed only for the purposes of the NEPA analysis; it does not represent an upper limit of authorized take or take exposure issued by the Service to the MADFW.

<sup>14</sup> Would equal 70 pairs only if no other take was authorized under section 7 consultations for similar activities (that take would be deducted from the annual allocated take authorized under the HCP).

<sup>15</sup> Based on preliminary analyses of the data.

was implemented. A greater variety of predators was targeted at Horseneck Beach in Buzzards Bay. Over the 3-year period, 9 crows, 1 coyote, 1 opossum, and 1 raccoon were removed and 3 owls were relocated. Productivity increased by an average of 0.86 chick per pair after predator management was implemented.

Table 4-2 shows the predator management achieved in the B-120 predator management program across 14 sites and the USDA's estimate of the statewide population of each of these predators (the most recent data available). Because the populations of these predators are widespread in Massachusetts and occur in a wide range of ecosystems, the effect of the B-120 predator management program on statewide populations is negligible (table 4-2). Also in table 4-2, the Service applied the rate of management for B-120 for 16 mitigation sites that could be managed under the HCP and estimated the number of predators that could be removed. Even when considered cumulatively with the B-120 predator management program (which runs through 2018 for most sites), the HCP's predator management program would have an insignificant impact on the statewide populations of these predators.

**Table 4-2. Estimate of Maximum Predator Removal for EA Analysis**

	Crow	Skunk	Coyote	Opossum	Raccoon	Red Fox
Estimated Statewide Population Size <sup>a</sup>	110,000	32,500	10,000	5,100–79,200	7,900	10,200
# of individuals removed under B-120 predator removal program at 14 Sites (2013-2015) <sup>b</sup>	340	59	8	1	17	1
Percent of population size	0.31	0.18	0.08	0.02 – 0.001	0.22	0.01
Potential # of individuals removed under the HCP in year with estimated maximum take exposure for plover <sup>c</sup>	389	67	9	1	19	1
Percent of population in year with maximum take exposure for plover <sup>3</sup>	0.35	0.21	0.09	0.02-0.001	0.25	0.01

Notes:

<sup>a</sup> Source: USDA 2011a.

<sup>b</sup> See table 4-1.

<sup>c</sup> Assumes same rate of predators removed by B-120 (per site) applied to 16 sites under the HCP analytical maximum, rounded up. Additional assumptions described in text. Estimates of removal are not limits but for analytical purposes only. Actual predator removal, by species, may be higher in some years.

Given the level of predator removal that has occurred under the B-120 predator removal program and based on this conservative analysis of maximum possible levels of predator management, the Service concludes that selective predator removal under the HCP would have negligible impacts on predator populations at the local, regional, and statewide levels. Removal of individual predators would result in short-term, localized reductions in numbers of these predators. Long-term impacts to the predator populations are not anticipated, given their generally large sizes, wide distributions, and high mobility and reproductive rates.

The Service expects the MADFW's predator management program to compensate (i.e., offset) the number of plovers that are authorized for take on an annual basis under the ITP. This will be the

primary type of mitigation that will be considered in the context of assessing the ITP issuance criteria. Additional mitigation measures included in the MADFW HCP will help advance piping plover conservation and recovery in Massachusetts and are described below. The Service expects these additional measures will complement the predator management program and result in benefits to piping plovers.

### **Education, Outreach, and Increased Law Enforcement**

The MADFW and Plan participants can implement site-specific education, outreach, and increased law enforcement efforts under the HCP. The details of the education and outreach efforts would be included in the Plan participant's MADFW-approved, site-specific IAMP. Education, outreach, and law enforcement would have the potential to benefit the piping plover. The purpose of education and outreach would be to increase community support for and compliance with measures to protect and manage piping plovers. Some sites may benefit from outreach directed specifically to pet owners, OSV operators, or other groups of beach users. The purpose of increased law enforcement would be to reduce the risk of disturbance, harassment, or mortality of piping plovers resulting from offleash dogs or other illegal recreational activities (e.g., driving where not permitted and metal detecting). Where education, outreach, and increased law enforcement are applied, these actions are expected to benefit piping plovers by reducing the impacts of recreational use.

### **Nesting Habitat Improvement**

The MADFW and Plan participants can implement pilot nesting habitat improvement projects under the HCP. Vegetation management has the potential to provide benefits to piping plovers in some cases. For example, at some sites, plant growth and succession has rendered formerly suitable nesting habitat unsuitable. As part of this mitigation measure, a pilot habitat management project would be conducted on at least two sites within the first 5 years of the permit term and up to five sites over the permit term in accordance with all applicable Federal, State, and local laws, including the standards outlined in the MWPA. These pilot projects would be limited in scope to no more than 0.5 acre per project and 2.5 acres total, and would mimic natural disturbance processes such as storm overwash.

The nesting habitat improvement program would result in the removal of individual plants, but the effects on plant populations would be localized and minor given the small size of the pilot projects.

Because nesting habitat improvement through vegetation management actions has not yet been implemented on Massachusetts beaches, there is uncertainty in its effectiveness in benefiting piping plovers. However, this activity is expected to increase the amount of suitable piping plover nesting habitat, which could result in increased productivity. Similarly, any other shorebirds using the same habitat could benefit as well.

#### **4.2.1.4 Summary**

The aspects of the proposed action that would affect plants or wrack (and the invertebrates associated with wrack) would be (1) conducting recreation and beach operations in areas that are no longer symbolically fenced, (2) OSV use when unfledged chicks are present, and (3) the nesting habitat improvement mitigation measure. If plants were present in the areas that would no longer be fenced, entry of pedestrians into these areas could crush or trample seedling and mature plants, or prevent plants from establishing in certain areas. OSV use has the potential to destroy beach

wrack and vegetation, although as a rule beach wrack is protected from vehicle traffic per the MWPA and State and Federal guidelines. OSV use in the vicinity of unfledged chicks would be limited to a narrow (less than 5 yards wide) OSV corridor located to avoid and minimize impacts to wrack. Overall, impacts to plant populations and wrack (and associated invertebrates) under the proposed action would be minor. The nesting habitat improvement program would result in the removal of plants in a small area (0.5 acre per project and no more than 2.5 acres), these effects would be localized and would not affect plants at the population level.

Unfledged piping plover chick and egg mortality would be the primary losses resulting from vehicle collision and nest abandonment due to disturbance of nesting adults throughout the ITP term. Although breeding adults would likely reneest after nest abandonment during the early part of the nesting season, later nesting attempts may have smaller clutch sizes and lower egg and chick survival rates. Nest abandonment would decrease the probability of successful nest hatching and chick fledging, thereby reducing average productivity. Similarly, reduction in proactive fencing of nesting habitat could decrease fledging success of affected breeding pairs if the pairs are forced to nest in lower quality habitat or face greater competition with other nesting plovers. Piping plover chicks could be killed as a result of vehicle collisions from expanded road use and parking and OSV use, but the number of chicks impacted by this covered activity would be expected to be small because the conservation measures include requirements to intensively monitor chicks during vehicle operation, to limit the width of the OSV corridor, and to escort vehicles.

Disturbance of foraging chicks from escorted OSVs and pedestrians could be disruptive enough to reduce survivorship of fledglings or postfledglings, primarily by decreasing growth rate and possibly increasing susceptibility to predation. The magnitude of these effects is expected to be small due to the limits on driving hours associated with OSV use and other minimization measures.

Assuming a maximum 3-year running average population size of 1,000 breeding pairs over the course of the permit term, up to 70 breeding pairs (7 percent of the estimated maximum population size) could be exposed to take annually and would experience a 50-percent reduction in productivity. One adult piping plover could be killed by vehicles for every 20 pairs exposed to the parking lots and roads covered activity.

The Plan's conservation strategy, primarily selective predator management (the benefits of education, outreach, increased law enforcement, and nesting habitat improvement are not quantifiable), is expected to result in a net benefit to piping plovers by increasing productivity (number of fledglings per breeding pair) to compensate for the reduced productivity and lost adults. Predator management would result in mortality of individual mammals (e.g., raccoons, opossums, skunks, coyotes, and foxes) and avian predators (e.g., crows) but would not result in significant changes to local, regional, or statewide populations of these species.

The proposed action would be expected to result in minor impacts on other federally listed species (i.e., roseate terns and red knots) and no impacts to northeastern beach tiger beetles. Given the limited overlap of piping plover and roseate tern breeding habitat, most of the covered activities with the exception of extended OSV use would not impact roseate terns. OSV access to otherwise isolated staging areas on some beaches may disturb flocks of staging roseate terns, causing them to flush and move to another location. Similarly, although there is some overlap of piping plover breeding habitat and red knot stopover habitat in the study area, the proposed action would have minor effects on red knots if they were exposed to the covered activities. The northeastern beech tiger beetle has a very restricted distribution in Massachusetts and covered activities are not

anticipated to occur in occupied northeastern beach tiger beetle habitat. As described in the HCP, the MADFW would not issue COIs for activities that could result in take of the northeastern beach tiger beetle, roseate tern, or red knot.

The proposed action would be expected to minimally impact other beach-nesting, foraging, or roosting birds. Expanded piping plover monitoring associated with the covered activities is not expected to impact wildlife such as shorebirds since the additional level of monitoring is insignificant in comparison to ongoing productivity monitoring required under the State and Federal guidelines. To the extent that fencing around plover nests and habitat is reduced, other nesting shorebirds in these areas could be disturbed; however, most of these species are State listed (e.g., least tern) and take of these species would require a State conservation permit. Because foraging shorebirds or shorebirds roosting above the intertidal zone are regularly exposed to disturbance from pedestrians recreating on beaches, the incremental impacts from the covered activities would be minor. OSV use in areas that would otherwise (under normal implementation of the State and Federal guidelines) not occur may affect shorebirds. These areas are exposed to OSV use prior to egg hatching and after chick fledging. The increase in OSV traffic when unfledged plover chicks are present is not anticipated to significantly impact foraging or roosting shorebirds. With respect to mitigation actions, other ground-nesting shorebirds in the study area would be expected to benefit from selective predator management and nesting habitat improvements to the same extent that piping plovers are expected to benefit (increased productivity, less disturbance from predators). Removing a limited number of mammalian or avian predators is not anticipated to affect their local or regional populations.

In conclusion, the proposed action would not significantly impact biological resources.

## 4.2.2 Coastal Resources

Under the proposed action, recreation and beach operations during the piping plover nesting season would be expanded in certain areas in compliance with the HCP. These activities will generally occur on the beach where recreational activities and beach operations currently occur, and thus these activities are not anticipated to affect coastal resources. Amendment of existing Orders of Conditions or issuance of new Orders of Conditions might be necessary for implementing the conservation strategy for expanded OSV use, beach operations, or nesting habitat improvements. As with the no action alternative, the proposed action would not change or affect coastal resources. Therefore, the proposed action would not significantly impact coastal resources.

## 4.2.3 Recreation

Current recreational uses on Massachusetts beaches vary and may include swimming, sunbathing, picnicking, pedestrian activity, dog walking, fishing, nature study, beach sports, boating, water sports (such as surfing and wind surfing), camping, fat tire biking, kite boarding, and OSV use. Under the proposed action, the types of recreational activities on participating beaches would not change. However, the location, timing, and extent of these activities would change as a result of the proposed action. Under the proposed action, beach access points in participating jurisdictions that would normally be temporarily closed or relocated under the current State and Federal guidelines could be opened as a result of the covered activities (limited driving past unfledged chicks, moving nests away from parking lots and beach access points, reducing fencing buffers around nests, and reducing proactive symbolic fencing near beach access points). Thus, the proposed action is

expected to result in an increase in the availability of public recreational access and use during the piping plover nesting season on beaches participating in the HCP.

Allowing OSV use near unfledged chicks would increase the amount of time each year that recreational OSVs are permitted to operate on beaches that allow OSVs (refer to section 3.3.2 for sites that supported five or more breeding piping plover pairs in 2013 and allow OSV use) and could increase the amount of overall OSV use in the study area during the time fledglings are present. The increase in time allowed for OSV operation would vary by participating beach and by year but could be up to 8 weeks depending on when the covered activity is initiated, the number of broods exposed to the activity, and the age at which the broods fledge.

Targeted predator management implemented in the past by the USDA and now being implemented as part of the B-120 predator management program has not required beach closures to recreational use during predator removal efforts. Additionally, no risk to public safety has been documented (M. Spurduto, USFWS, pers. comm. 2014). Therefore, the Plan's selective predator management program is not expected to affect beach recreation.

In conclusion, the purpose of the HCP is to allow limited recreational access to occur on Massachusetts beaches during the piping plover breeding season. This recreational use would otherwise occur in the absence of plovers. The increase in the availability of public recreational access would provide a modest benefit to beach users. Therefore, the proposed action would not significantly impact recreation.

#### **4.2.4 Transportation and Traffic**

Impacts related to transportation and traffic might result from all of the covered activities. Under the proposed action, barriers such as silt fencing would be used to prevent chicks from entering improved roads and parking lots. This would reduce the amount of potential road or parking lot closures during the spring and summer beach season, thereby improving local traffic conditions in participating Towns during the plover fledging period. Plan participants would develop IAMPs, which would include a protocol that would be applied when chicks are detected in a parking lot or on a road. The protocol might include temporarily rerouting traffic away from a section of a parking lot with chicks or having a monitor or parking attendant approach the chicks in an effort to herd them out of a parking lot or off a busy road. This protocol, when applied, could help improve local traffic conditions during periods of heavy beach use during the piping plover breeding season (e.g., warm, sunny weekends).

Nest movement or a reduced fencing buffer may be implemented to prevent the closure of a beach access point, parking lot, or road due to the location of a piping plover nest. These activities could result in localized improvements in beach traffic and parking in areas that may have experienced temporary congestion as a result of closed roads or the closure of all or portions of parking lots. Overall, the proposed action might result in a slight beneficial effect on local traffic during the summer plover nesting season.

The expected increase in OSV use on participating beaches would not cause a significant increase in vehicle use along roads in the study area. Although the exact amount of increased beach use by OSVs as a result of the HCP is unknown, the increase is expected to be minimal relative to existing local traffic. The impacts would be localized (at the beach access points) and temporal (only during access and egress).

In conclusion, implementation of the HCP could result in localized improvements in traffic conditions during the plover nesting season and an increase in OSV use during the latter part of the nesting season. Therefore, the proposed action would not significantly impact transportation and traffic conditions in the study area.

## 4.2.5 Socioeconomics

As a result of increased recreational use (see section 4.2.3), the proposed action could result in an increase in the amount of economic activity in the study area, including spending at local businesses, avoiding temporary closure of fee parking areas, and OSV permit sales. The extent of increased spending, parking revenue, and purchase of OSV permits is not determinable because it is not possible to predict when or for how long parking areas may be closed or expanded OSV access might occur. The Plan generally would allow parking areas to remain open when plovers are present and expanded OSV use on beaches where OSV use is currently prohibited when unfledged chicks are present. Factors such as the number of plovers and broods present and fledging rate will affect the additional parking revenue and amount of time that OSVs may access the beaches on which this covered activity is implemented when compared to the no action alternative. Permit sales, and thus beach revenue, is expected to increase based on the anticipation of increased OSV access, but the increase is unpredictable at this time.

For example, as discussed in section 4.1.5, the Town of Orleans experienced a substantial decline in revenue after Nauset Beach OSV access closures began. According to the Town of Orleans' HCP, the average revenue produced by the OSV program in the 4-year period prior to and including the first total OSV access closure (2003–2006) was over \$415,000 per year. In contrast, the average revenue over the 7-year period since total OSV access closures began (2007–2013) was \$243,000 per year (a 41 percent decline). Thus, under the proposed action, a popular beach site that allows OSV use could experience an increase in revenue over the ITP term.

The proposed action could result in extended beach and law enforcement employee hours or the hiring of additional staff. The impact minimization measures include extensive monitoring to avoid or minimize potential take of piping plovers. Employees conducting the monitoring may work longer hours during the nesting season, earning additional pay, or additional staff may be hired. Similarly, as part of the Plan's conservation strategy, there would be an increase in law enforcement (e.g., natural resources officers) in the study area. Like beach staff, law enforcement personnel may work long hours during the nesting season, or additional staff may be hired. The Town of Orleans' HCP hired additional short-term monitors to implement the flexible OSV management covered in their ITP (Town of Orleans 2014). These jobs were of very short duration since only one brood was monitored at that time. No significant increase in the number of jobs is expected.

Removal of piping plover predators may be contrary to the values of some people. Increasing piping plover survival at the expense of predators such as crows, skunks, or coyotes would be unfavorable to some, while other people may hold the opposite opinion. Predator control would be carefully planned and implemented to target a limited number of individuals of known predatory species. Risks to public safety from removal activities would be avoided by carefully selecting removal times and by employing trained and experienced personnel.

In conclusion, the HCP seeks to strike a balance between environmental protection (i.e., piping plover conservation) and social values (i.e., beach recreation), thereby maintaining community

support for piping plover conservation. Therefore, the proposed action would not significantly impact socioeconomics.

## 4.3 Shorter Permit Term Alternative

The environmental consequences of the shorter permit term alternative on each resource area being carried forward for detailed analysis are described below. In general, the impact mechanisms under this alternative are the same as those discussed above for the proposed action. That is, the types of impacts under this alternative would be the same as the proposed action's impacts on the human environment. The only difference between this alternative and the proposed action is the length of the ITP term (10 years versus 26 years) and the duration of COIs (1 year instead of 3 years). Thus, the amount of take provided to Plan participants would be issued annually rather than every 3 years. Like the proposed action, the MADFW may grant COI renewals but would reserve the right to require submittal of new applications if requests for coverage exceed the available number of statewide take exposure allowances. As explained below, the shorter permit term alternative would not significantly impact the human environment.

### 4.3.1 Biological Resources

Impacts on biological resources, including plants, piping plovers, other shorebirds, and plover predators, would be similar to those impacts described above for the proposed action (section 4.2.1), except these impacts would occur for a shorter period of time. Impacts include minor effects to individual plants and beach wrack (and associated invertebrates); disturbance of piping plover and other shorebird adults and chicks in areas of increased recreational activity (e.g., areas that would otherwise be temporarily closed to pedestrians or OSVs); potential loss of piping plover nests, eggs, and chicks; and removal of piping plover predators.

The shorter permit term alternative would result in the same amount of average annual take of the piping plover during the 10-year permit term as the proposed action would. Provided the ITP is not renewed, this alternative would result in approximately 40 percent of the take of piping plovers authorized under the proposed action, because after 10 years OSV use and other recreational uses would revert back to compliance with the State and Federal guidelines and no take of piping plovers would be allowed without another ITP. Similarly, provided the ITP is not renewed, the 10-year permit term would provide a conservation strategy and mitigation efforts for only 10 years.

Based on the preliminary adjusted total population estimate of 687 breeding piping plover pairs in Massachusetts for 2015 and assuming the ITP permit is issued in 2016, in 10 years (year 2025) it is anticipated that there would be over 900 breeding pairs using a constant population growth rate as described for the proposed action (approximately 2.1 percent). In 2023 and 2024, the population size would be 826 and 845 breeding pairs, respectively. Thus, the 3-year running average population size by the end of the permit term would be 845 breeding pairs. If the population reached this size by 2025, the HCP would allow a maximum take of 59 plover pairs annually (7 percent of number of pairs). The selective predator removal mitigation would therefore have to benefit 147 plover pairs ( $= 59 \times 2.5$  pairs). Using the same rationale described above for the proposed action, predator management could be implemented at up to 17 or 18 sites (based on a site supporting an average of 8.5 pairs). As described above for the proposed action, selective

predator removal conducted on up to 17 sites would have insignificant effects on local, regional, or statewide predator populations.

In conclusion, the shorter permit term alternative would result in similar impacts to biological resources as the proposed action. However, because these impacts would occur for a shorter time period, the overall effect on the piping plover, plants and other wildlife over the course of the ITP term would be less than the impacts that would occur under the proposed action. Therefore, the shorter permit term alternative would not significantly impact biological resources.

### **4.3.2 Coastal Resources**

Impacts on coastal resources would be similar to those impacts described above for the proposed action (section 4.2.2), except these impacts would occur for a shorter period of time. The shorter permit term alternative would not change or affect coastal resources. Each municipality's Conservation Commission would continue to implement the MWPA regulations and issue Orders of Conditions as necessary for OSV use and beach raking. Orders of Conditions may also be necessary for implementing the conservation strategy for nesting habitat improvements. Orders of Conditions regulate proposed activities to prohibit or minimize impacts to wetland resource areas. Therefore, the shorter permit term alternative would not significantly impact coastal resources.

### **4.3.3 Recreation**

Impacts on recreation would be similar to those impacts described above for the proposed action (section 4.2.3), except these impacts would occur for a shorter period of time. Like the proposed action, the shorter permit term alternative would increase public recreational access and benefit beach users, but for a shorter period of time. After the permit term, public recreational access would be similar to the no action alternative. Because the impacts to recreation under the shorter permit term alternative would occur for a shorter period of time, they would be less than the impacts that would occur under the proposed action. Therefore, the shorter permit term alternative would not significantly impact biological resources.

### **4.3.4 Transportation and Traffic**

Impacts on transportation and traffic would be similar to those impacts described above for the proposed action (section 4.2.4), except these impacts would occur for a shorter period of time. Any benefits experienced as a result of improvements in local traffic congestion or increased economic activity associated with recreation (e.g., allowing parking lots and improved roads to remain open) would occur annually for 10 years compared to 26 years under the proposed action. Because the impacts to transportation and traffic under the shorter permit term alternative would occur for a shorter period of time, they would be less than the impacts that would occur under the proposed action. Therefore, the shorter permit term alternative would not significantly impact transportation and traffic.

### **4.3.5 Socioeconomics**

Impacts on socioeconomics would be similar to those impacts described above for the proposed action (section 4.2.5), except these impacts would occur for a shorter period of time. During the course of the ITP term, there could be increases in parking revenue and OSV permit sales due to

avoiding parking lot closures and anticipation of OSV access during the piping plover breeding season. An increase in administrative burden of annual preparation, review, submittal, and issuance of COIs on MADFW and Plan participants could translate to increased administrative costs, although we expect preparation and review of a participant's initial COI to require the vast majority of time and financial obligation. Risks to public safety inherent with predator removal activities would be avoided by carefully selecting removal times and by employing trained and experienced personnel. The HCP's goal is to strike a balance between environmental protection (i.e., piping plover conservation) and social values (i.e., beach recreation), thereby maintaining community support for piping plover conservation. Because the impacts to socioeconomics under the shorter permit term alternative would occur for a shorter period of time, they would be less than the impacts that would occur under the proposed action. Therefore, the shorter permit term alternative would not significantly impact socioeconomics.

# Chapter 5

## Cumulative Impacts and Climate Change

---

This chapter discusses the potential cumulative impacts of the proposed action—namely issuance of an ITP and approval of the HCP—and the implications of climate change for the environmental effects of the proposed action. A cumulative impact as defined by the CEQ (40 CFR § 1508.7) is the impact on the environment that results from the incremental impact of the Federal action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. This chapter presents the spatial and temporal boundaries of the cumulative impacts analysis (section 5.1.1) and summarizes applicable past, present, and reasonably foreseeable actions (section 5.1.2) that are included in the analysis.

CEQ's revised draft guidance for greenhouse gas emissions and climate change (CEQ 2014) states that Federal agencies should consider the following when addressing climate change in a NEPA document: (1) the potential effects of a proposed action on climate change as indicated by its greenhouse gas emissions; and (2) the implications of climate change for the environmental effects of a proposed action. Chapter 3 addresses the potential effects of the proposed action on climate change and dismisses climate as a resource category evaluated in detail in this EA, because increased emissions associated with the proposed action or shorter permit term alternative would be a tiny fraction of the world's emissions and would have a negligible influence on climate either in Massachusetts or globally. Section 5.2 of this chapter addresses the implications of climate change for the environmental effects of the proposed action.

## 5.1 Cumulative Impacts Analysis

### 5.1.1 Study Area

The cumulative impacts study area is the same as the study area defined in chapter 3. The study area includes all currently and recently occupied piping plover habitat delineated as priority habitat by the MADFW, as well as other beach and dune areas that could support breeding piping plovers in the future. This area is intended to capture all currently suitable Massachusetts piping plover breeding habitat, as well as the area within which additional plover breeding habitat could develop in the foreseeable future due to the dynamic nature of the coastline. The time period for this cumulative impacts analysis is the same as the proposed ITP term (26 years).

### 5.1.2 Actions Analyzed

The Service considered past, present, and reasonably foreseeable projects and actions in the study area that could result in impacts that would coincide in time and space with impacts of the proposed action. This section summarizes projects or actions that are included in the analysis of cumulative impacts in this chapter. Given the large size of the study area and the 26-year duration of the proposed ITP, this section presents the general types of projects or actions that occur or are planned

to occur in the study area rather attempting to develop an exhaustive list. Specific projects are noted as examples.

### **5.1.2.1 Town of Orleans HCP**

The Town of Orleans prepared an HCP (Town of Orleans 2014) to support its ITP application for incidental take of piping plovers exposed to late season OSV use beginning on or after July 15. Under the Town of Orleans HCP, OSV access to Nauset Beach South that is often unavailable due to unfledged piping plover chicks would be allowed. The Town of Orleans HCP outlines measures to protect chicks on a nearly 1-mile stretch of Nauset Beach. These measures require a pedestrian escort walking in front of each vehicle, limiting vehicle access to four hours per day, and continuous monitoring during OSV travel windows. In addition, the Town will implement a number of measures to benefit piping plovers in Massachusetts, including educational outreach, experimental management to deter plover nest predators, and funding for targeted predator management at plover sites outside of the Town of Orleans.

After receiving the HCP from the Town of Orleans, the Service prepared a “Low Effect HCP Determination Form and Environmental Action Statement” (USFWS 2015b) and ultimately determined the Town of Orleans HCP was a low-effect plan. Low-effect HCPs are eligible for a categorical exclusion under NEPA as provided by the Department of the Interior Manual (516 DM 2 Appendix 1 and 516 DM 8). The Town of Orleans HCP would not pose potential significant environmental effects or involve unique or unknown environmental threats. The Service issued a 3-year ITP in early 2015 that authorizes the potential effects of escorting OSVs past two plover broods (up to eight plover chicks) per year after July 15. The MADFW issued a parallel State endangered species permit in 2014.

### **5.1.2.2 Beach Stabilization and Nourishment**

Property owners, beach managers, and the Federal government deploy a variety of measures in an attempt to prevent storm damage and beach erosion. Activities include beach nourishment, artificial dune building, and construction of hardened and semihardened structures such as seawalls or sand drift fencing.

Beach projects that involve a Federal action subject to NEPA must assess the potential impacts of the project on the human environment. For example, the U.S. Army Corps of Engineers (Corps) recently conducted a feasibility investigation under section 103 of the 1962 River & Harbor Act, as amended, to examine coastal storm damage reduction alternatives for the Massachusetts Department of Conservation and Recreation’s Reservation at Nantasket Beach in the Town of Hull (USACE 2014). The proposed project would provide shoreline protection along Nantasket Beach through the construction of a stone retaining wall. The Corps prepared an EA and issued a FONSI for this project (USACE 2014).

Another example project is the Corps’ study of the beneficial use of dredged material to be removed as part of maintaining the Cape Cod Canal and directly placing the material on Town Neck Beach in the Town of Sandwich, MA (USACE 2015). As part of the project, the Corps is evaluating the Federal interest in beneficially reusing the dredged material as beach-fill on a 2,500-foot long-eroded section of Town Neck Beach in Sandwich. The Corps prepared an EA and issued a FONSI for this project (USACE 2015).

### 5.1.2.3 Aquatic Habitat Restoration

To help reverse the adverse effects of past aquatic habitat damage, the Massachusetts Division of Ecological Restoration (MADER) works with many partners to implement a wide variety of habitat restoration projects across the State. MADER serves as a facilitator of restoration, working to identify new projects, organize project teams, provide technical assistance, secure project funding, and help manage and coordinate restoration activities. The locations and brief descriptions of MADER's priority projects can be found on MADER's Web site<sup>16</sup>. Two example projects are noted below.

Located on the shores of Little Pleasant Bay, Orleans, a 6-acre salt marsh (Palmisano Marsh) is being restored by removing earthen berms and tide control structures associated with a long-since-abandoned cranberry operation. Tidal influence within Palmisano Marsh is only a fraction of what it once was prior to conversion of the site to cranberry production. Restoring the tide's natural ebb and flow will convert this degraded site into a productive tidal salt marsh.

Farm Pond, a coastal pond and associated salt marsh located in Oak Bluffs, is isolated from Nantucket Sound by an undersized culvert that regularly fills with sand and gravel. This project involves replacing the culvert with a 16-foot wide box culvert to restore tidal flow to the 51-acre site, improving water quality and storm drainage. The primary goal of this tidal restoration is to reduce bacteria levels, thus creating the potential to reopen the productive shellfishery. Water quality improvements will also benefit the pond's extensive eel grass beds and create new recreational opportunities.

The interagency Herring River Restoration Committee (HRRC) is developing a large-scale restoration plan for an 1100-acre tidally restricted estuarine wetland system in Wellfleet and Truro, Massachusetts. A draft Environmental Impact Statement (DEIS) was prepared with the National Park Service as the lead Federal agency and the Service as one of a number of Federal cooperating agencies. The DEIS was released in October 2012 for public comment. The HRRC plans to release the final EIS in late 2015. The Herring River Restoration Project would restore daily and spring tides to approximately 890 acres and indirectly benefit hundreds of acres of additional habitat beyond the influence of normal tidal flow around the periphery of the estuarine floodplain, in upstream herring spawning ponds, and downstream in Wellfleet Harbor and Cape Cod Bay. The project will directly benefit those using the Herring River, Wellfleet Harbor, and Cape Cod Bay for shellfishing, finfishing, and other economic and recreational purposes.

### 5.1.3 Cumulative Impacts by Resource

Because the proposed action would not have any direct or indirect impacts on coastal resources (see section 4.2.2), there would be no potential for cumulative impacts. Therefore, coastal resources are not included in this cumulative impacts analysis.

---

<sup>16</sup> <http://www.mass.gov/eea/agencies/dfg/der/der-priority-projects-map.html>.

### 5.1.3.1 Biological Resources

#### Summary of Proposed Action's Impacts

As discussed in chapter 4, the proposed action would not significantly impact biological resources. If plants were present in the areas that would no longer be fenced, entry of pedestrians into these areas could result in the trampling or crushing of seedlings or mature plants. Although OSV use has the potential to destroy beach wrack (and the invertebrates associated with the wrack) and vegetation, current beach management guidelines provide recommendations for travel corridor locations to avoid destroying fragile coastal vegetation. OSV use in the vicinity of chicks would be limited to a narrow (less than 5 yards wide) OSV corridor located to avoid and minimize impacts to wrack. Overall, impacts to plant populations and wrack (and associated invertebrates) under the proposed action would be minor. The limited amount of area impacted by reduced symbolical fencing (the lesser of 10 percent or 2 acres per site) is not anticipated to significantly impact plants growing on the beach since the majority of suitable plover nesting habitat would remain fenced. The potential mitigation action of nesting habitat improvement program would result in the removal of individual plants in a small area (0.5 acre per project and no more than 2.5 acres). Effects would be localized and would have only minor effects on plant populations.

The primary impact to piping plover pairs exposed to the covered activity is anticipated to be an estimated 50-percent reduction in average productivity. Unfledged piping plover chick and egg mortality would occur mostly as the result of vehicle collision (chicks) and nest abandonment due to disturbance of nesting adults throughout the ITP term. Although breeding adults would likely reneest after nest abandonment during the early part of the nesting season, later nesting attempts may result in smaller clutch sizes and lower productivity. Nest abandonment resulting from the covered activities (e.g., nest movement) would decrease the probability of nesting successfully, thereby reducing average productivity. Similarly, reduction in proactive fencing of nesting habitat could decrease fledging success of affected breeding pairs if the pairs are forced to nest in lower quality habitat or face greater competition with other nesting plover. The number of chicks killed as a result of vehicle collisions from expanded road use and parking and OSV use would be expected to be small because of the requirements to intensively monitor chicks during vehicle operation and to have vehicle escorts.

Disturbance of foraging chicks from OSV use or pedestrian traffic could be disruptive enough to reduce survivorship of fledglings or post-fledglings, primarily by decreasing growth rate and possibly increasing susceptibility to predation. The magnitude of these effects is expected to be small due to the limits on driving hours associated with OSV use and other minimization measures.

Assuming a maximum 3-year running average population size of 1,000 breeding pairs over the course of the permit term, up to 70 breeding pairs (7 percent of population size) could be exposed to take annually while at a minimum 175 breeding pairs would benefit from predator management. The Plan's primary mitigation, selective predator management, is expected to offset the impacts of take at a minimum 1 to 1 by requiring 2.5 plover pairs to benefit from predator management for every 1 pair exposed to take. Additionally, 3.0 plover pairs must benefit from predator management for every pair exposed to the roads and parking lots covered activity to offset the potential adult mortality. Unquantifiable benefits, in addition to increased productivity from predator management, could occur when additional education, outreach, increased law enforcement, and nesting habitat improvements are implemented by the MADFW or Plan participants.

Predator management would result in mortality of individual mammals (e.g., raccoons, opossums, skunks, coyotes, and foxes) and avian predators (e.g., crows) but would not result in significant changes to local, regional, or statewide populations of these species. Additional human presence either as monitoring or law enforcement staff are not anticipated to cause significant impacts to biological resources.

The proposed action would be expected to result in insignificant impacts on other federally listed species (i.e., roseate terns, red knots), and no impacts to the northeastern beech tiger beetle. Given the limited overlap of piping plover and roseate tern breeding habitat, none of the covered activities would impact breeding roseate terns. OSV access to otherwise isolated staging areas at the distal end of beaches may disturb flocks of resting roseate terns, causing them to flush and move to another location. OSV use is allowed at any time that plovers are not precluding access to the beaches and after the plover breeding season irrespective of roseate tern presence (during the peak tern staging period). Such disturbance has not been determined to cause significant impacts to roseate terns. Similarly, although there is some overlap of piping plover breeding habitat and red knot stopover habitat in the study area, the proposed action would have minor impacts on red knots if they were exposed to the covered activities. The northeastern beech tiger beetle has a very restricted distribution in Massachusetts. As described in the HCP, the MADFW would not issue COIs for activities that could result in take of the northeastern beach tiger beetle, roseate tern, or red knot.

The proposed action would be expected to result in minor impacts to other ground-nesting shorebirds (e.g., American oystercatcher and least tern). Piping plover monitoring activities are not anticipated to impact nesting, foraging, or roosting shorebirds in the area since plover monitoring is ongoing irrespective of the proposed action. The additional monitoring would be of short duration (hourly and daily). To the extent that fencing around plover nests and habitat is reduced, shorebirds that might have sought refuge in these areas could be disturbed. Given that recreation is ongoing outside of the symbolically fenced areas, especially near the intertidal zone, shorebirds are exposed to pedestrian disturbance irrespective of the proposed action. OSV use in areas that would otherwise (under the State and Federal guidelines) not occur may affect shorebirds. These areas are exposed to OSV use prior to egg hatching and after chick fledging, and therefore, OSV use under the HCP is not anticipated to significantly impact shorebirds. Like piping plovers, other ground-nesting shorebirds in the study area would be expected to benefit from selective predator management and nesting habitat improvements.

## **Contribution of the Proposed Action to Cumulative Impacts**

The HCP is being proposed in the context of a burgeoning Massachusetts piping plover population that is intensively managed. Plovers are expanding to recreational beaches that previously have not been used for breeding, for example Nahant Beach, Revere in 2014 (MADFW 2016a) and Lovell's Island, Boston in 2016 (J. Ayub, MADCR, pers. comm., 2016). The increased flexibility to manage piping plovers to enhance recreational access will result in reduced productivity for pairs exposed to covered activities; however, mitigation is anticipated to completely offset the take. With the increasing piping plover population, new projects outside of the scope of the HCP that impact plovers may also be on the increase. Currently, there are very few ongoing projects that are impacting plovers that would contribute to cumulative impacts.

The Town of Orleans HCP will have insignificant cumulative impacts on biological resources. OSV travel on Nauset Beach is an ongoing activity that is regulated under the Massachusetts

Environmental Protection Act and requires an approved Order of Conditions to occur. The Orleans Conservation Commission reviewed environmental impacts for the management of OSVs at Nauset Beach, including the installation of temporary symbolic fencing, delineator posts, signage, temporary closings, and management of the sand trail, including crossover, pullout, and parking areas. The Conservation Commission evaluated the effects of OSV operation that currently occurs on the designated sand trail at times when unfledged plover chicks are not present and determined that the existing OSV trail would not promote wind tunneling or erosion or wave washover, nor was any increase from storm or flood damage anticipated. Moreover, the Conservation Commission determined that the design and placement of the OSV trail would not cause a change in vegetation, nor would there be any interference with the landward movement of coastal dunes (USFWS 2015b).

The cumulative impact of the Town of Orleans HCP on piping plovers and its habitat will be minor (USFWS 2015b). The amount of incidental take relative to the State, regional, and rangewide population is of small magnitude and short duration. Breeding habitat is only temporarily impacted. Minimization measures are anticipated to substantially decrease the potential for even the small amount of incidental take expected in the Town of Orleans HCP. The replacement of fledglings through offsite mitigation will further reduce the impact of the Town of Orleans HCP on piping plovers. The Town of Orleans' proposed onsite and offsite predator management for mitigation is also anticipated to result in only minor or negligible effects to predator populations in the study area.

Finally, the Town of Orleans may opt to abandon their low-effect HCP and participate in the statewide HCP, in which case the current impacts will be folded into the impacts anticipated to occur under the HCP and would not be cumulative.

To limit cumulative statewide impacts to piping plover, the limits on take exposure outlined in the Plan are intended to apply to all future or current individual ITPs for piping plovers pertaining to recreational beach activities or operations issued by the Service for such activities in Massachusetts (including, but not limited to, the ITP issued to the Town of Orleans). The MADFW will also apply the statewide take exposure limits in table 3-1 of the HCP to any take authorizations for recreational activities or beach operations made by the Service for Federal actions pursuant to section 7 of the ESA (e.g., at the Cape Cod National Seashore). For example, if the statewide take exposure limit in 2016 was set at 35 exposures based on the statewide population size in the previous 3-year period, the number of take exposure allowances available to Plan participants would be adjusted to 33 to account for the individual ITP issued to the Town of Orleans that would allow escorted vehicle use in the vicinity of 2 piping plover broods. Thus, the amount of take issued to Plan participants under the Plan would account for all take issued by the Service in the study area.

In 2010, the Service completed a non-jeopardy opinion on flexible management, entailing potential exclusion of up to 400 meters of suitable nesting habitat from symbolic fencing on narrow pedestrian lifeguarded beaches at the Cape Cod National Seashore that could affect up to 3 pairs of piping plovers. The biological opinion was amended in 2012 and 2015 to extend the time frame for implementation of flexible management options. The MADFW would deduct the 3 pairs of plovers authorized for take from the statewide take exposure limit for as long as the Incidental Take Statement was in effect (2017). Should the Cape Cod National Seashore request additional take from flexible management in the future, the HCP would deduct that take from the annual take exposure, limiting the cumulative impacts of the HCP to ongoing or new projects of similar activities.

Beach stabilization and nourishment projects have the potential to destroy or degrade individual plants and wildlife habitat, including piping plover and other shorebird nesting, feeding, and sheltering habitat. However, a carefully designed beach nourishment project has the potential to be beneficial to shorebirds, if the project can be implemented outside major overwash areas, so as to preserve nesting habitat, while reducing the short-term risk of nest loss due to storm overwash. Moreover, if created or enhanced shorebird habitat is managed according to the State and Federal guidelines, beach nourishment projects could benefit plovers and other shorebirds by providing additional nesting and foraging habitat. The potential impacts of most of these projects on federally listed species are addressed through section 7 consultations with the Service and NMFS, because a Federal agency (e.g., the Corps) is taking action. The MADFW reviews large- and small-scale projects pursuant to the MESA, and has developed standard conditions for avoiding take when implementing beach nourishment projects (e.g., slope requirements and time-of-year restrictions). The Corps has adopted similar standards that are generally applied to such projects with Corps involvement. Non-Federal projects resulting in take of piping plover or another federally listed species—for example, significant dune building in prime nesting habitat—would require an HCP and ITP if take were determined to occur. Therefore, in the context of past, present, and reasonably foreseeable beach stabilization and nourishment projects, the additive effect of the proposed action (i.e., authorization of incidental take of plovers resulting from beach recreational activities and beach operations) is expected to be negligible to the biological resources in the study area.

Aquatic habitat restoration projects are designed to improve aquatic habitat conditions and benefit species. In the examples noted above, plant and wildlife species associated with salt marshes would benefit from the restoration projects. If any restoration project has the potential to result in take of a federally listed species, it would require compliance with the ESA (i.e., an HCP and ITP for non-Federal projects or a section 7 consultation for Federal projects). The Plan's proposed piping plover nesting habitat improvements could add to the habitat improvements in the study area, including those from aquatic habitat restoration projects. As indicated above, the proposed action's contribution to habitat improvements would be minor (0.5 acre per pilot project and no more than 2.5 acres total). Therefore, in the context of past, present, and reasonably foreseeable aquatic habitat restoration projects, the additive effect of the proposed action (i.e., authorization of incidental take of plovers resulting from beach recreational activities and beach operations) is expected to be negligible to the biological resources in the study area.

In summary, when combined with other actions occurring at the same time and place in the study area, the proposed action could result in minor cumulative impacts on biological resources. Potential impacts on plants include injury or destruction in limited areas in which covered activities would be implemented, primarily through the reduction in proactive symbolic fencing. No significant cumulative impacts on plant populations are expected. Potential impacts to piping plovers and other shorebirds include disturbance, injury, or mortality. There are few ongoing projects that are impacting plovers at this time. Of those projects affecting plovers, the HCP deducts the already authorized take from the annual statewide take allocation to reduce the additive effect of the HCP on the plover population for those projects with activities similar to the HCP covered activities. Impacts on piping plovers would be avoided, minimized, and mitigated by the completion of HCPs, section 7 consultations, and the Service's tracking of take. Therefore, cumulative impacts are anticipated to be minor. Similarly, potential cumulative impacts on State-listed species (e.g., least tern) would be minimized through compliance with the MESA and MWPA. Potential cumulative impacts on general wildlife species would be minimal and not result in significant changes to regional or local populations.

Implementation of the Plan's conservation strategy, along with aquatic habitat restoration projects managed by the MADER, could result in beneficial impacts to wildlife in the study area. In the context of past, present, and reasonably foreseeable future actions, the additive effect of the proposed action (i.e., authorization of incidental take of plovers resulting from beach recreational activities and beach operations) is expected to be negligible to the biological resources in the study area.

### 5.1.3.2 Recreation

#### Summary of Proposed Action's Impacts

As discussed in chapter 4, beach access points in participating jurisdictions that would be temporarily closed or relocated under the current State and Federal guidelines could be opened as a result of allowing limited driving past unfledged chicks, moving nests away from parking lots and beach access points, reducing fencing buffers around nests, and reducing proactive symbolic fencing near beach access points. Thus, the proposed action is expected to result in an increase in the availability of public recreational access and use during the piping plover nesting season. These impacts would occur only on beaches participating in the HCP.

Allowing OSV use near unfledged chicks could increase the amount of overall OSV use in the study area during the time fledglings are present. This covered activity would increase the amount of time each year that recreational OSVs are permitted to operate on those beaches that allow OSVs.

Targeted predator management implemented in the past by APHIS Wildlife Services and currently being implemented as part of the B-120 predator program has not required closures for recreational use during predator removal efforts or been documented to place public safety at risk. Therefore, the Plan's selective predator management program is not expected to affect beach recreation.

#### Contribution of the Proposed Action to Cumulative Impacts

Like the Plan, the Town of Orleans HCP allows OSVs in areas where OSVs were previously prohibited when unfledged plover chicks are present. Monitored OSV use is now allowed on up to 5 miles of beach south of the Pochet (a narrow section of Nauset Beach South) after July 15 when unfledged piping plover chicks are present. The proposed action would add to this increase in recreational use in the study area, thus resulting in cumulative impacts on recreation.

In general, aquatic habitat restoration projects have minimal to no impacts on beach recreation. Beach stabilization and nourishment projects can provide increased recreational opportunities by providing wider beaches (USACE 2015) or restoring heavily degraded beaches (e.g., placing sand over cobble beaches). Beach nourishment plans consider recreational benefits in addition to preventing storm damages. In the Corps study noted above (USACE 2015), the Corps determined that the beneficial use of dredge material would add substantial areas for beachgoers and fishermen to access the beach without trespassing on private lots. In the context of past, present, and reasonably foreseeable future actions, the proposed action (i.e., authorization of incidental take of plovers resulting from recreational activities and beach operations) would result in an increase in recreational benefits. This additive effect to potential beach nourishment projects is expected to be minor in the study area.

### 5.1.3.3 Transportation and Traffic

#### Summary of Proposed Action's Impacts

As discussed in chapter 4, implementation of the HCP could result in localized improvements in traffic conditions during the piping plover nesting season. Barriers such as silt fencing would be used to prevent chicks from entering improved roads and parking lots. This would reduce the amount of potential road or parking lot closures during the spring and summer beach season, thereby improving local traffic conditions in participating Towns during the plover fledging period. Additional protocols implemented by Plan participants could help improve local traffic conditions during periods of heavy beach use during the piping plover breeding season (e.g., warm, sunny weekends).

When a nest's location requires the closure of a beach access point (e.g., the nest is located within 50 yards of a parking lot), the nest could be moved or the symbolic fence buffer could be reduced. Similarly, if proactive fencing closed or limited access, the amount of proactive fencing could be reduced. These activities could result in localized improvements in beach traffic and parking in areas that may have experienced temporary congestion as a result of closed roads or parking lots of the beach.

#### Contribution of the Proposed Action to Cumulative Impacts

The Town of Orleans HCP could result in a slight increase in vehicle traffic near Nauset Beach South after July 15 as a result of allowing OSV use. No measurable impact on traffic or transportation is expected. Beach stabilization and nourishment projects and aquatic habitat restoration projects have minimal to no impacts on land-based traffic and transportation. In the context of past, present, and reasonably foreseeable future actions, the additive effect of the proposed action (i.e., authorization of incidental take of plovers resulting from recreational activities and beach operations) is expected to be negligible to transportation and traffic in the study area.

### 5.1.3.4 Socioeconomics

#### Summary of Proposed Action's Impacts

As discussed in chapter 4, the HCP seeks to strike a balance between environmental protection (i.e., piping plover conservation) and social values (i.e., beach recreation), thereby maintaining community support for piping plover conservation. As a result of increased recreational use, the proposed action could result in an increase in the amount of economic activity in the study area, including spending at local businesses and OSV permit sales. The extent of increased spending and parking revenue and purchase of OSV permits is unknown. However, because the Plan generally would prevent parking lot closures and allow OSV use during the piping plover nesting season in areas where OSV use is currently prohibited when unfledged plover chicks are present, OSV permit sales and beach revenue, are expected to increase.

The proposed action could result in extended beach and law enforcement employee hours or the hiring of additional, short-term staff. The impact minimization measures include extensive monitoring to avoid or minimize potential take of piping plovers. The additional monitoring requirements could result in employees working long hours or the hiring of additional short-term staff during the nesting season. Similarly, as part of the Plan's conservation strategy, there would be

an increase in law enforcement (e.g., natural resource officers) in the study area. Like beach staff, law enforcement personnel may work long hours during the nesting season or additional staff might be hired. No significant increase in the number of jobs is expected.

Removal of piping plover predators may be contrary to the values of some people. Increasing piping plover survival at the expense of predators such as crows, skunks, or coyotes would be unfavorable to some, while other people may hold the opposite opinion. Predator control would be carefully planned and implemented to target a limited number of individuals of known predatory species. Risks to public safety from removal activities would be avoided by carefully selecting removal times and by employing trained and experienced personnel.

### **Contribution of the Proposed Action to Cumulative Impacts**

Under the Town of Orleans HCP, allowing OSV access in areas that were previously prohibited as a result of the presence of unfledged piping plover chicks is expected to result in additional OSV permit sales, which would increase the Town of Orleans revenue generated from OSV permits. This revenue will be used to further manage and protect the beach's natural resources. After the Town of Orleans' ITP expires, the Town could apply for a COI under the Plan. Thus, the proposed action would continue to allow OSV access to Nauset Beach South when unfledged piping plover chicks are present. This would continue to provide the Town revenue from additional OSV permit sales during the piping plover nesting season.

Aquatic habitat restoration projects could result in long-term socioeconomic benefits if the restored habitat is open and accessible to public recreational activities (e.g., bird watching). Potential socioeconomic impacts associated with Federal beach stabilization and nourishment projects would be reviewed in accordance with NEPA. In the Corps study noted above (USACE 2015), the Corps determined the overall effect of the Cape Cod Canal maintenance dredging project would be beneficial, as it would accommodate deep draft vessel traffic through the canal, which would alleviate any additional costs associated with tidal delays or the need to circumvent the canal. Placement of the dredged material on Town Neck Beach would provide needed sediment for the renourishment of the beach to protect nearby homes and businesses from storm damage. Thus, the proposed action could add to these types of positive effects on socioeconomic conditions in the study area. In the context of past, present, and reasonably foreseeable future actions, the additive effect of the proposed action (i.e., authorization of incidental take for plovers for beach recreation and management operations) on socioeconomics in the study area is expected to be minor.

## **5.2 Climate Change**

Section 2.2.3 of the HCP discusses the topics of climate and climate change and is incorporated into this EA by reference. Global climate change is recognized as a potential major threat to wildlife populations and habitats, including the piping plover (Seavey et al. 2010). Climate-related disturbance plays a critical role in both creating and eliminating wildlife habitat, resulting in a shifting mosaic of habitats over time.

Sea level rise is one consequence of climate change, posing a threat to coastal ecosystems that may become inundated, resulting in habitat change or loss, and resulting in adverse impacts to species that depend on these habitats. Additionally, climate change may affect the frequency, severity, and timing of coastal storms. It is generally considered by climate scientists that coastal ecological

resources are likely to be among the most sensitive to the changing climate, and climate change impacts on ecosystems over the next few decades could be most marked in coastal zones.

The National Oceanic and Atmospheric Administration's Center for Operational Oceanographic Products and Services maintains several tide gauge stations across coastal Massachusetts, including long-term stations at Boston, Woods Hole, and Nantucket. Mean sea level trends from these long-term stations are listed in Table 5-1.

**Table 5-1. Mean Sea Level Trends for National Oceanic and Atmospheric Administration's Massachusetts Tide Gauge Stations**

Station	Mean Sea Level Trend and 95% Confidence Interval		Period	Century Rate (feet/100 years)
	millimeter/year	inch/year		
Boston, MA	2.79 ± 0.17	0.11 ± 0.007	1921–2012	0.92
Woods Hole, MA	2.81 ± 0.19	0.11 ± 0.007	1932–2012	0.92
Nantucket, MA	3.52 ± 0.42	0.14 ± 0.017	1965–2012	1.15

Sea level rise and other climate changes pose a substantial, potential long-term threat to coastal wildlife and their habitat. Seavey et al. (2010) assessed the threat of sea level rise to the breeding habitat of piping plover on the barrier islands of Suffolk County, New York. They estimated the extent of habitat change over the next 100 years under several sea level rise assumptions, as well as the interactive effects of coastal development and storm surge. They found that if piping plover habitat cannot migrate, sea level rise is likely to reduce breeding areas. However, if habitat is able to migrate upslope and inland, breeding areas could actually increase with sea level rise. They also found that the spatial configuration of developed areas mattered more than the intensity of development in blocking the migration of potential habitat area.

These results suggest that, as climate change effects increase in intensity, there may be an increased likelihood of conflict between piping plover habitat protection and human recreation. Also, these results highlight increased risk from the combination of sea level rise and more intensive coastal storms as a result of climate change. A large hurricane could flood up to 95 percent of piping plover habitat in some areas. Seavey et al. (2010) concluded that to assure the future of piping plover habitat on the New York barrier islands, management needs to promote natural overwash and habitat migration while minimizing development adjacent to future breeding habitat.

The North Atlantic Landscape Conservation Cooperative is conducting a project to predict how piping plover breeding habitat will change as a result of sea level rise and altered storm patterns. The project will also analyze the effectiveness of conservation strategies, given projected sea level rise. It will provide biologists and managers along the Atlantic Coast with tools to predict the effects of accelerating sea level rise on the distribution of piping plover breeding habitat, test those predictions, and feed the results back into the modeling framework to improve predictive capabilities. Immediate model results will be used to inform a coast wide sea level rise risk assessment and related habitat conservation recommendations that can be implemented by land managers, and inform recommendations to regulators.

Neither the proposed action nor the shorter permit term alternative would contribute substantial greenhouse gases to the environment. Therefore, neither alternative would increase the rate of global climate change or further contribute to the resulting effect of rising sea levels or intensifying

and more frequent storms. Also, both alternatives would result in minor impacts on shorebird habitat, mainly from recreation and OSV use in areas where these activities are currently prohibited during the piping plover nesting season. Compliance with the MWPA through Orders of Conditions would prevent any short- or long-term adverse effects on the habitat of local species. Thus, the proposed action and shorter permit term alternative would not significantly add to the potential long-term effects of climate change on coastal shorebird populations.

Nonetheless, under the proposed action and shorter permit term alternative, the Plan includes provisions for dealing with rising sea levels and flooding in the study area. Specifically, if shorelines change due to erosion and sea level rise, the location of piping plover breeding habitat will shift. As stated in the HCP, the study area (or plan area) automatically adjusts in response to erosion or accretion to include a 300-yard zone along the Massachusetts coast. The MADFW would provide the Service and the public with an updated map of the plan area at least once every 5 years, and more frequently in response to major coastal storms, if practical.

Piping plover habitat as a result of sea level rise or coastal erosion would be taken into account during the annual assessments of population size and population trends. For example, if habitat availability declines as a result of sea level rise or coastal erosion due to more frequent or intense storms and the plover population responds negatively to these events, annual limits of take exposure would be reduced corresponding to the reduced population. If population declines were extreme and fell below the HCP threshold<sup>17</sup>, take exposure allowances would be discontinued altogether. The requirement to adjust the level of take allotted annually based on the 3-year running average population is a mechanism to ensure that HCP impacts are alleviated in times when the population may decline for whatever reason.

The monitoring program described in chapter 4 of the HCP is based on the study area and population levels each year. If piping plover populations increase or decrease in response to shifting habitats associated with coastal erosion, sea level rise, and flooding, the monitoring program would adapt to tracking new population levels and locations.

---

<sup>17</sup> Less than 500 breeding pairs in Massachusetts, as measured by a rolling 3-year average population count.

## **6.1 U.S. Fish and Wildlife Service**

- Susi von Oettingen—Endangered Species Biologist, New England Field Office
- Anne Hecht—Endangered Species Biologist, Northeast Regional Office
- David Simmons—Endangered Species Program Supervisor, New England Field Office
- Lowell Whitney—Northeast Region HCP Coordinator, Northeast Regional Office
- Martin Miller—Threatened and Endangered Species Chief, Northeast Regional Office

## **6.2 ICF International**

- David Zippin—Project Director
- Hova Woods—Project Manager
- Nicholas Baker—Biologist and Technical Lead
- Gretchen Pinkham—Technical Support

This page intentionally left blank.

## Chapter 7 References Cited

---

- Association of Fish and Wildlife Agencies. 2006. *Best Management Practices for Trapping in the United States*. Available: <[http://www.fishwildlife.org/files/Introduction\\_BMPs.pdf](http://www.fishwildlife.org/files/Introduction_BMPs.pdf)>. Accessed: March 31, 2015.
- Bergstrom, P.W. 1991. Incubation temperatures of Wilson's plovers and killdeers. *Condor*. 91: 634–641.
- Bloch, C.P. 2014. An evaluation of predator control as a means to increase fledge rates of protected shorebirds at Duxbury Beach: Final report to the Duxbury Beach Reservation, Inc.
- BLS (Bureau of Labor Statistics). 2015. *BLS Statistics on Unemployment*. Available: <<http://www.bls.gov/bls/unemployment.htm>>. Accessed: April 6, 2015.
- Brady, J., and F. Inglefinger. 2008. Piping plover research and management program at Crane Beach, 2008 report. The Trustees of Reservations, Ipswich, Massachusetts.
- Cape Cod Commission. 2013. *Regional Transportation Plan*. Available: <<http://www.capecodcommission.org/index.php?id=166&maincatid=48>>. Accessed: April 6, 2015.
- CEQ (Council of Environmental Quality). 2011. *Memorandum for Heads of Federal Departments and Agencies: Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*. Available: <[https://ceq.doe.gov/current\\_developments/docs/Mitigation\\_and\\_Monitoring\\_Guidance\\_14Jan2011.pdf](https://ceq.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf)>. Accessed: November 2, 2015.
- CEQ. 2014. Revised draft guidance for greenhouse gas emissions and climate change impacts. Available: <<https://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance>>. Accessed: November 16, 2015.
- Claassen, H., T.W. Arnold, E.A. Roche, S.P. Saunders, and F.J. Cuthbert. 2014. Factors influencing nest survival and renesting by Piping Plovers in the Great Lakes region. *The Condor* 116(3):394–407.
- Cohen, J.B., L.M. Houghton and J.D. Fraser. 2009. Nesting density and reproductive success of piping plovers in response to storm- and human-created habitat changes. *Wildlife Monographs*, No. 173.
- Commonwealth of Massachusetts. 2006. *Massachusetts Outdoors 2006. Statewide Outdoor Recreation Plan*. Available: <<http://www.mass.gov/eea/docs/eea/dcs/massoutdoor2006.pdf>>. Accessed: November 5, 2015.
- DBR (Duxbury Beach Reservation, Inc.). 2012. *Duxbury Beach Management and Habitat Conservation Plan*. Available: <http://www.duxburybeach.com/Duxbury%20Beach%20Management%20and%20Habitat%20Conservation%20Plan.pdf>. Accessed: November 4, 2015.

- Eddings, K.J., and S.M. Melvin. 1991. Biology and conservation of piping plovers at Breezy Point, New York, 1991. Unpublished report submitted to the U.S. Fish and Wildlife Service, Newton Corner, Massachusetts. 38 pp.
- Eisemann, John D.; Linz, George M.; and Johnston, John J. 2001. *Non-Target Hazard Assessment of Using DRC-1339 Avicide to Manage Blackbirds in Sunflower*. USDA National Wildlife Research Center - Staff Publications. Paper 585. Available: <[http://digitalcommons.unl.edu/icwdm\\_usdanwrc/585](http://digitalcommons.unl.edu/icwdm_usdanwrc/585)>. Accessed: December 3, 2015.
- EPA (Environmental Protection Agency). 2015. Climate Change Indicators in the United States. Global Greenhouse Gas Emissions. Available: <<http://www3.epa.gov/climatechange/science/indicators/ghg/global-ghg-emissions.html>>. Last updated: November 10, 2015. Accessed: January 11, 2016.
- Godfrey, P.J., and M.M. Godfrey. 1980. Ecological effects of off-road vehicles on Cape Cod. *Oceanus* 23(4):56-67.
- Gordon K. and C.D. Kruse. 1999. Nest relocation: a management alternative for threatened nest sites. Pages 108-111 in *Proceedings, Piping Plovers and Least Terns of the Great Plains and Nearby*, South Dakota State University, Brookings.
- Harrington, B.A., S. Koch, L.K. Niles, and K. Kalasz. 2010b. Red knots with different winter destinations: Differential use of an autumn stopover area. *Waterbirds* 33(3):357-363.
- Hartlaub, H., J. Parente, and P. Turner. 2007. Management of the Piping Plover (*Charadrius melodus*) and the Least Tern (*Sterna antillarum*). 2007 Report. The Nature Conservancy, Rhode Island.
- Hartlaub, H., N. Hobbs, P. Turner, and C. Wiitala. 2008. Management of the Piping Plover (*Charadrius melodus*) and the Least Tern (*Sterna antillarum*). 2008 Report. The Nature Conservancy, Rhode Island.
- Houser, C., B. Labude, L. Haider, B. Weymer. 2013. Impacts of driving on the beach: Case studies from Assateague Island and Padre Island National Seashores. *Ocean & Coastal Management* 71:33-45.
- Howard, J.M., R.J. Safran, and S.M. Melvin. 1993. Biology and conservation of piping plovers at Breezy Point, New York. Unpublished report. Department of Forestry and Wildlife Management, University of Massachusetts, Amherst. 34 pp.
- IPCC (Intergovernmental Panel on Climate Change). 2007. *Climate Change 2007 Synthesis Report*. Available: <[http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_full\\_report.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf)>. Accessed: February 25, 2015.
- IPCC. 2013. *Climate Change 2013: The Physical Science Basis*. Available: <[http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_ALL\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_ALL_FINAL.pdf)>. Accessed: February 25, 2015.
- Koch, S.L., and P.W. C. Paton. 2013. "Assessing Anthropogenic Disturbances to Develop Buffer Zones for Shorebirds." *Journal of Wildlife Management*; USDI: 10.1002/jwmg.631.
- Massachusetts Barrier Beach Task Force. 1994. Guidelines for Barrier Beach Management in Massachusetts. Available: <<http://www.mass.gov/eea/docs/czm/stormsmart/beaches/barrier-beach-guidelines.pdf>>. Accessed: September 17, 2015.

- MADFW (Massachusetts Division of Fish and Wildlife). 1993. *Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns and Their Habitats in Massachusetts*. Available: <[http://www.town.orleans.ma.us/sites/orleansma/files/file/file/state\\_guidelines.pdf](http://www.town.orleans.ma.us/sites/orleansma/files/file/file/state_guidelines.pdf)>. Accessed: March 30, 2015.
- MADFW. 1996. *Conservation Plan for Piping Plovers in Massachusetts*. Submitted to the U.S. Fish and Wildlife Service. Westborough, Massachusetts. 35 pp. and appendices.
- MADFW. 2007a. *Roseate tern (Sterna dougallii) Fact Sheet*. Natural Heritage Endangered Species Program. Available: <<http://www.mass.gov/eea/docs/dfg/nhosp/species-and-conservation/nhfacts/roseate-tern.pdf>>. Accessed: April 6, 2015.
- MADFW. 2007b. *Northeastern beach tiger beetle (Cicindela dorsalis dorsalis) Fact Sheet*. Natural Heritage Endangered Species Program. Available: <<http://www.mass.gov/eea/docs/dfg/nhosp/species-and-conservation/nhfacts/cicindela-dorsalis.pdf>>. Accessed: April 6, 2015.
- MADFW. 2008. *Oysterleaf (Mertensia maritima) Fact Sheet*. Natural Heritage Endangered Species Program. Available: <<http://www.mass.gov/eea/docs/dfg/nhosp/species-and-conservation/nhfacts/mertensia-maritima.pdf>>. Accessed: April 6, 2015.
- MADFW. 2012. *Instructions for Completing the Massachusetts Piping Plover Census Form*. Available: <<http://www.mass.gov/eea/docs/dfg/nhosp/species-and-conservation/plovercensusinstructions2012.pdf>>. Accessed: March 30, 2015.
- MADFW. 2015. *Summary of the 2013 Massachusetts Piping Plover Census*. Compiled by the Natural Heritage and Endangered Species Program, Massachusetts Division of Fisheries and Wildlife. Westborough, Massachusetts. 17 pp.
- MADFW. 2015. *Massachusetts List of Endangered, Threatened and Special Concern Species*. Commonwealth of Massachusetts. Available: <<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/esa-list/list-of-rare-species-in-massachusetts.html>>. Accessed: April 6, 2015.
- MADFW. 2016a. *Summary of the 2014 Massachusetts Piping Plover Census*. Natural Heritage and Endangered Species Program. March. Available: <<http://www.mass.gov/eea/docs/dfg/nhosp/species-and-conservation/plover-census-report-mass-2014.pdf>>. Accessed: March 31, 2016.
- MADFW. 2016b. *Summary of the 2015 Massachusetts Piping Plover Census*. Natural Heritage and Endangered Species Program. March. Available: <<http://www.mass.gov/eea/docs/dfg/nhosp/species-and-conservation/plover-census-report-mass-2015.pdf>>. Accessed: March 31, 2016.
- MADFW. 2016c. *Guidance on Applying for a Conservation & Management Permit for Recreational Activities Affecting the Least Tern*. February. Available: <<http://www.mass.gov/eea/docs/dfg/nhosp/species-and-conservation/least-tern-mesa-guidance.pdf>>. Accessed: June 28, 2016.

- Massachusetts Office of Coastal Zone Management. 2006. *An Assessment of the Coastal and Marine Economies of Massachusetts*. RFR #: ENV 06 CZM 09. Presented by University of Massachusetts President's Office. Donahue Institute. Available: <<http://www.mass.gov/eea/agencies/czm/program-areas/ocean-management/ocean-management-initiative/ocean-management-initiative-projects.html#economy>>. Accessed: April 6, 2015.
- Mass Audubon. 2015a. Breeding Bird Atlas 1 Species Accounts: American Crow. Available: <[http://www.massaudubon.org/our-conservation-work/wildlife-research-conservation/statewide-bird-monitoring/breeding-bird-atlases/bba1/find-a-bird/\(id\)/108](http://www.massaudubon.org/our-conservation-work/wildlife-research-conservation/statewide-bird-monitoring/breeding-bird-atlases/bba1/find-a-bird/(id)/108)>. Accessed: November 3, 2015.
- Mass Audubon 2015b. Common Grackles. Available: <<http://www.massaudubon.org/learn/nature-wildlife/birds/common-grackles>>. Accessed: November 3, 2015.
- MassDOT (Massachusetts Department of Transportation). 2010. *Traffic Data*. Available: <<http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Data/GISData.aspx>>. Accessed, April 6, 2015.
- Melillo, J.M., T.C. Richmond, and G.W. Yohe (eds.). 2014. *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program, 841 pp.
- NAS (National Audubon Society). 2010. The Christmas Bird Count Historical Results [Online]. Available: <<http://www.christmasbirdcount.org>>. Accessed: November 17, 2015.
- NPS (National Park Service). 2007a. Environmental Assessment: Proposed Update of the 1992 Management Plan for the Threatened Piping Plover on Sandy Hook Unit Gateway National Recreation Area New York–New Jersey. January.
- NPS. 2007b. Management and Monitoring of the Piping Plover (*Charadrius melodus*) at Assateague Island National Seashore, Maryland.
- NPS. 2013. *Off-road Vehicle Activity Report, Cape Cod National Seashore*. Available: <[http://www.nps.gov/caco/planyourvisit/upload/CCNS\\_Final\\_ORV\\_Annual\\_Report\\_2013.pdf](http://www.nps.gov/caco/planyourvisit/upload/CCNS_Final_ORV_Annual_Report_2013.pdf)>. Accessed: April 6, 2015.
- NRC (National Research Council). 2010. *Advancing the Science of Climate Change*. Available: <<http://www.nap.edu/catalog/12782/advancing-the-science-of-climate-change>>. Accessed: February 25, 2015.
- Prellwitz, D.M., K.M. Erickson, and L.M. Osborne. 1995. Translocation of Piping Plover nests to prevent nest flooding. *Wildlife Society Bulletin* 23: 103–106.
- Rich, T.D., C.J. Beardmore, H. Berlanga, P.J. Blancher, M.S.W. Bradstreet, G.S. Butcher, D.W. Demarest, E.H. Dunn, W.C. Hunter, E.E. Inigo-Elias, J.A. Kennedy, A.M. Martell, A.O. Panjabi, D.N. Palsley, K.V. Rosenberg, C.M. Rustay, J.S. Wendt, and T.C. Will. 2004. Partners in Flight North American Landbird Conservation Plan. Cornell Lab of Ornithology. Ithaca, NY. 84 pp.
- Sauer, J.R., J.E. Hines, and J. Fallon. 2008. The North American Breeding Bird Survey, Results and Analysis 1966–2007. Version 5.15.2008. U.S. Geological Service, Patuxent Wildlife Research Center, Laurel, MD.

- Seavey, J.R., B. Gilmer, and K.M. McGarigal. 2010. Effect of sea-level rise on piping plover (*Charadrius melodus*) breeding habitat. *Biological Conservation* 144:393-401.
- Strauss, E. 1990. Reproductive success, life history patterns, and behavioral variation in a population of piping plovers subjected to human disturbance (1982–1989). Ph.D. Dissertation. Tufts University, Medford, Massachusetts. 143 pp.
- Town of Barnstable. 2014. *Sandy Neck Beach Park Management Policies*. Available: <<http://www.town.barnstable.ma.us/SandyNeckPark/FileUploads/SNpolicies.pdf>>. Accessed: April 6, 2015.
- Town of Dennis. 2014. *Rules and Regulations for Beach Vehicles*. Available: <[http://www.town.dennis.ma.us/Pages/DennisMA\\_NaturalResources/ORV/Regs.pdf](http://www.town.dennis.ma.us/Pages/DennisMA_NaturalResources/ORV/Regs.pdf)>. Accessed: April 6, 2015.
- Town of Duxbury. Undated. Duxbury Beach Rules & Regulations. Available: <<http://www.duxburybeach.com/images/BeachR&R.pdf>>. Accessed: November 5, 2015.
- Town of Nantucket. 2014. *2014 Nantucket Beach Map, Rules & Regulations*. Available: <<http://www.nantucket-ma.gov/DocumentCenter/Home/View/5808>>. Accessed: April 6, 2015.
- Town of Orleans. 2013. *Orleans Nauset Beach Rules and Regulations for ORVs*. Available: <[http://www.town.orleans.ma.us/sites/orleansma/files/file/file/orv\\_rules\\_regs.pdf](http://www.town.orleans.ma.us/sites/orleansma/files/file/file/orv_rules_regs.pdf)>. Accessed: April 6, 2015.
- Town of Orleans. 2014. Town of Orleans Over-Sand Vehicle Access Habitat Conservation Plan. Available: <[https://www.fws.gov/newengland/pdfs/Final\\_Orleans\\_HCP\\_20140915.pdf](https://www.fws.gov/newengland/pdfs/Final_Orleans_HCP_20140915.pdf)>. Accessed: November 5, 2015.
- Town of Plymouth. 2013. *Plymouth Long Beach Rules and Regulations*. Available: <<http://www.plymouth-ma.gov/sites/plymouthma/files/uploads/plbpamphlet2013.pdf>>. Accessed: April 6, 2015.
- Town of Truro. 2013. *2013 O.R.V. Regulations*. Available: <<http://www.truro-ma.gov/sites/truroma/files/file/file/orvregulations.pdf>>. Accessed: April 6, 2015.
- Trustees of Reservations. 2015a. About Coskata-Coatue Wildlife Refuge. Available: <<http://www.thetrustees.org/places-to-visit/cape-cod-islands/coskata-coatue.html#t4>>. Accessed: November 5, 2015.
- Trustees of Reservations. 2015b. Cape Poge Wildlife Refuge, Wasque Reservation & Norton Point Beach OSV Permit 2015. Available: <<http://www.thetrustees.org/places-to-visit/cape-cod-islands/mv-osv-permits.html>>. Accessed: November 5, 2015.
- USACE (U.S. Army Corps of Engineers). 2014. Public Notice: Nantasket Beach, Department of Conservation & Recreation (DCR), Reservation, Hull, Massachusetts, Coastal Storm Damage Reduction Project. New England District. Concord, MA. Available: <<http://www.nae.usace.army.mil/Portals/74/docs/PublicServices/PublicNotice/Nantasket13May2014.pdf>>. Accessed: September 22, 2015.

- USACE. 2015. §204 Detailed Project Report and Environmental Assessment for Beneficial Use of Dredged Materials From Maintenance Dredging. Cape Cod Canal, Town Neck Beach, Sandwich, Massachusetts. Available: <<http://www.nae.usace.army.mil/Portals/74/docs/Topics/CCC-TownNeckBeachEA/Cape-Cod-Canal-Section-204-Decision-Document.pdf>>. Accessed: September 22, 2015.
- USDA (U.S. Department of Agriculture), Animal and Plant Health Inspection Service (APHIS), Wildlife Services. 2003. Environmental Assessment and Finding of No Significant Impact: Reducing Bird Damage through an Integrated Wildlife Damage Management Program in the State of New Jersey. Pittstown, New Jersey.
- USDA, APHIS, Wildlife Services. 2004. Environmental Assessment: Reducing Mammal Damage through an Integrated Wildlife Damage Management Program in the State of New Jersey. May. Pittstown, New Jersey. Available: <<https://www.aphis.usda.gov/regulations/pdfs/nepa/NJmammal.pdf>>. Accessed: September 17, 2015.
- USDA, APHIS, Wildlife Services. 2011a. Environmental Assessment: Management of Predation Losses to Threatened and Endangered Species Populations in the Commonwealth of Massachusetts. March. Available: <<http://www.aphis.usda.gov/regulations/pdfs/nepa/MA-Nest%20Predator%20EA%20FINAL.pdf>>. Accessed: September 17, 2015.
- USDA, APHIS, Wildlife Services. 2011b. Decision. Environmental Assessment: Management of Predation Losses to Threatened and Endangered Species Populations in the Commonwealth of Massachusetts. May. Available: <<https://www.aphis.usda.gov/regulations/pdfs/nepa/MA-Nest%20Pred%20EA%20Decision%20FINAL-signed.pdf>>. Accessed: September 17, 2015.
- USFWS (U.S. Fish and Wildlife Service). 1994. *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act*. Available: <<http://www.fws.gov/northeast/pipingplover/pdf/recguide.pdf>>. Accessed: March 30, 2015.
- USFWS. 1996a. *Piping Plover (Charadrius melodus) Atlantic Coast Population Revised Recovery Plan*. Available: <[http://ecos.fws.gov/docs/recovery\\_plan/960502.pdf](http://ecos.fws.gov/docs/recovery_plan/960502.pdf)>. Accessed: March 30, 2015.
- USFWS. 1996b. Department of Interior Environmental Statement Memorandum No. (ESM) 94-7. Prime and Unique Agricultural Lands.
- USFWS. 1996c. Habitat Conservation Planning and Incidental Take Permit Processing Handbook. Available: <<http://www.fws.gov/endangered/esa-library/pdf/HCPBKTOC.PDF>>. Accessed November 5, 2015.
- USFWS. 2009. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. Hadley, Massachusetts and East Lansing, Michigan.
- USFWS. 2010. Caribbean Roseate Tern and North Atlantic Roseate Tern (*Sterna dougallii dougallii*). 5-Year Review: Summary and Evaluation. September. Available: <<http://www.fws.gov/northeast/EcologicalServices/pdf/endangered/ROST%205-year%20final.pdf>>. Accessed: November 5, 2015.
- USFWS. 2011. *Northeastern beach tiger beetle (Cicindela dorsalis dorsalis) Fact Sheet*. Available: <[http://www.fws.gov/northeast/Endangered/tiger\\_beetle/pdf/Tigerbeetle2\\_92711.pdf](http://www.fws.gov/northeast/Endangered/tiger_beetle/pdf/Tigerbeetle2_92711.pdf)>.

- USFWS. 2013. *Rufa Red Knot Ecology and Abundance. Supplement to Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Rufa Red Knot (Calidris canutus rufa)*. Docket No. FWS-R5-ES-2013-0097; RIN 1018-AY17. Available: <[http://www.fws.gov/northeast/redknot/pdf/20130923\\_REKN\\_PL\\_Supplement02\\_Ecology%20Abundance\\_Final.pdf](http://www.fws.gov/northeast/redknot/pdf/20130923_REKN_PL_Supplement02_Ecology%20Abundance_Final.pdf)>. Accessed: April 6, 2015.
- USFWS. 2015a. Monomoy National Wildlife Refuge Final Comprehensive Conservation Plan and Environmental Impact Statement. October. Available: <[http://www.fws.gov/refuge/Monomoy/what\\_we\\_do/finalccpeis.html](http://www.fws.gov/refuge/Monomoy/what_we_do/finalccpeis.html)>. Accessed: November 5, 2015.
- USFWS. 2015b. U.S. Government Memorandum from Thomas R. Chapman (New England Field Office Supervisor) to Paul Phifer (ARD/Ecological Services). HCP Determination Screening Form/Environmental Action Statement. April 3.
- USFWS, National Oceanic and Atmospheric Administration, Massachusetts Executive Office of Energy and Environmental Affairs, Rhode Island Department of Environmental Management. 2012. *Final Restoration Plan and Environmental Assessment for Piping Plover (Charadrius melodus): Impacted by the Bouchard Barge 120 Oil Spill Buzzards Bay Massachusetts and Rhode Island*. Available: <[http://www.fws.gov/newengland/pdfs/FinalBouchardRPEApipingplover\\_%20122012.pdf](http://www.fws.gov/newengland/pdfs/FinalBouchardRPEApipingplover_%20122012.pdf)>. Accessed: March 31, 2015.
- Vashon, A. 2008. Reducing the Effects of Predation on Nesting Piping Plovers and Least Terns at Selected Beaches in Southern Maine. 2007 Final Report of Control Efforts. USDA, APHIS, Wildlife Services.
- Wiitala, C., N. Hobbs and J. Parente. 2009. Management of the Piping Plover (*Charadrius melodus*) and the Least Tern (*Sterna antillarum*). 2009 Report. The Nature Conservancy, Rhode Island.
- Wiltermuth, M.T., M.J. Anteau, M.H. Sherfy, and T.L. Shaffer. 2009. *Nest movement by Piping Plovers in response to changing habitat conditions*. Condor 111:550-555.

This page intentionally left blank.

# Appendix A

## Section 106 Correspondence



### United States Department of the Interior

#### FISH AND WILDLIFE SERVICE

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



RECEIVED

APR 07 2016

MASS. HIST. COMM

59439

April 4, 2016

RE: RC.59439

Ms. Brona Simon  
State Historic Preservation Officer  
Massachusetts Historical Commission  
220 Morrissey Boulevard  
Boston, MA 02125

ATTN: Jonathan K. Patton

Dear Ms. Simon:

The U.S. Fish and Wildlife Service (Service) requests your comment under section 106 of the National Historic Preservation Act regarding the effect of a proposed *Massachusetts Division of Fisheries and Wildlife (DFW) Habitat Conservation Plan for Piping Plover (HCP)* and incidental take permit (ITP) application by the Massachusetts Division of Fisheries and Wildlife (MADFW) for expanded recreational activities and beach management operations on beaches in Massachusetts. The MADFW is proposing flexibility in managing recreation and beach operations by deviating from State and Federal guidelines for managing recreational beaches in the presence of federally listed threatened piping plovers (*Charadrius melodus*).

Currently, most Massachusetts beaches are managed in compliance with both State and Federal guidelines for avoiding take of the piping plover. The intent of the HCP and ITP is to provide management flexibility for recreational activities (pedestrian and over-sand vehicle [OSV]) in areas where access might otherwise have been restricted due to piping plover nests or unfledged chicks, while still contributing to the recovery of the species in Massachusetts. Certain beach operations would be covered, including the management of parking lots and improved roads when unfledged piping plover chicks are present, and ensuring limited OSV and pedestrian access to areas of the beach that might otherwise have been closed. When plovers are not present, beach operations and recreational access are implemented in accordance with beach management guidelines (State plover and tern management guidelines and the Massachusetts Barrier Beach Management Guidelines), site-specific Orders of Conditions and the Massachusetts Wetlands Protection Act.

RECEIVED  
U. S. Fish & Wildlife Service  
APR 15 2016  
New England Field Office  
Concord, NH 03301

Ms. Brona Simon  
April 4, 2016

2

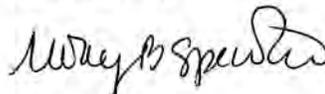
The proposed deviation from State and Federal guidelines will not require any ground alteration or permanent structures to be erected. Pedestrians and OSVs will continue to be required to use designated trails for beach access and travel corridors (for OSVs). Measures that will be implemented to avoid and minimize take of piping plovers include the self-escorting of vehicles in the vicinity of piping plover chicks, additional monitoring of piping plover broods, compliance monitoring of the self-escorted vehicles, and smoothing of vehicle ruts at the end of each day to allow safe passage for flightless chicks when vehicles are not present.

Other activities that may be covered by the Service's ITP include reduced symbolic fencing (stake and twine used to discourage pedestrian entry) around piping plover nests, reduced proactive symbolic fencing of suitable piping plover habitat, or moving plover nests. These activities may be applied to increase pedestrian access, or maintain open parking lots and beach access roads. Mitigation to offset the take of piping plovers primarily focuses on selective predator management. The proposed predator management includes the removal of select mammalian or avian predators and includes trapping smaller mammalian predators of piping plovers, shooting larger mammalian predators or applying toxicants to eggs as bait to attract avian predators targeting plover nests. The proposed predator management is currently being implemented at a number of Massachusetts beaches to increase plover productivity. The proposed management under the HCP is an extension of ongoing activities.

Because the proposed HCP and ITP will not require ground alteration or the erection of permanent structures, and beach operations and recreation, including beach raking and vehicle and pedestrian access, are allowed when piping plovers are not present, we believe no historic properties will be affected (36 CFR 800.4(d)(1)). We would appreciate receiving your concurrence with this finding within 30 days, as prescribed in the Regulations of the Advisory Council on Historic Preservation [36 CFR 800.4 (c)].

We have attached a signature page for concurrence for your convenience. Thank you for your cooperation and please contact Ms. Susi von Oettingen of this office at (603) 223-2541, extension 6418, if you have any questions.

Sincerely yours,

  
Active  
for:

Thomas R. Chapman  
Supervisor  
New England Field Office

Attachment

Ms. Brona Simon  
April 4, 2016

3

The Massachusetts Historical Commission concurs with the U.S. Fish and Wildlife Service that no historic properties will be affected by the Massachusetts Division of Fisheries and Wildlife (DFW) Habitat Conservation Plan for Piping Plover (HCP) and the Service's Incidental Take Permit as described above.

Brona Simon  
Signature SHPO

4/12/16  
Date

RC.59439

This page intentionally left blank.

# Appendix B

## Responses to Comments

---

### B.1 Introduction

This appendix responds to public comments the U.S. Fish and Wildlife Service (Service) received on the draft “Massachusetts Statewide Piping Plover Habitat Conservation Plan” (HCP or Plan) and the Service’s associated draft environmental assessment (EA), and describes how and where those comments led to changes in the final EA and HCP. The Service’s proposed action addressed in the EA is issuing an incidental take permit (ITP) to the Massachusetts Division of Fisheries and Wildlife (MADFW) in association with implementation of the HCP. The MADFW would extend this take coverage to Plan participants through certificates of inclusion (COI). As discussed in the HCP, the MADFW proposes to deviate from State and Federal guidelines<sup>18</sup> when managing some recreational activities on Massachusetts beaches during the piping plover (*Charadrius melodus*) breeding season. These deviations increase the potential for take of the federally threatened piping plover.

A notice of availability for the draft EA, HCP, and ITP application was published in the *Federal Register* on January 21, 2016 for a 30-day comment period. The Service received 129 individual comment submissions pertaining to the HCP and/or the EA.

### B.2 Responses to Comments

This section presents those EA and HCP public comment submissions the Service determined to be substantive as well as the Service’s response to all substantive comments.

The Service received many other submissions that expressed either general support for or general opposition to the HCP and did not provide substantive comments on the EA or HCP. Overall, 15 submissions expressed support for the HCP and 112 submissions expressed opposition to the HCP. Two submissions did not express clear support or opposition. The nonsubstantive comments are not presented in this appendix. For a copy of all comments received during the public comment period, please visit the following website: <https://www.regulations.gov/#!docketDetail;D=FWS-R5-ES-2015-0182>.

---

<sup>18</sup> MADFW. 1993. Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns and Their Habitats in Massachusetts.

USFWS. 1994. Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act.

### Comment ID: FWS-R5-ES-2015-0182-0005

Regulations.gov - Comment

Page 1 of 1



### Submitted Electronically via eRulemaking Portal

This is a Comment on the **Fish and Wildlife Service (FWS)**  
Notice: [Notice of availability, receipt of application.](#)

Comment Period Closed  
Feb 22 2016, at 11:59 PM ET

For related information, [Open Docket Folder](#)

**ID:** FWS-R5-ES-2015-0182-0005  
**Tracking Number:** 1k0-8nig-2dbs

#### Comment

#### Document Information

**Date Posted:**  
Jan 21, 2016

[Show More Details](#)

0005-1

Great Idea, congrats to the State Of Ma Fish and Wildlife to come up with this endeavor, Only Negative comment that could be listed is the Lethal Take of predators. Once you eliminate one Predator, there are very many to follow, and again it does not stop the type of predator from again doing what they do best to live and breed, they have to eat, part of the food chain. Believe more should be done on containing human garbage part of habitate also. This include the daily cleaning or raking of the beaches where these shore birds congregate, and breed, its not just the daily vistor that brings in crumbs food etc, the tide brings in fresh trash twice a day to our area beaches. Also the quick removal of Road kill, and also the containment of trash sites at these beaches, I believe we can do better on the human part and still enjoy balanced access.

#### Submitter Information

**Submitter Name:**  
Don Fillman

**City:**  
Sandwich

**Country:**  
United States

**State or Province:**  
MA

**ZIP/Postal Code:**  
02563

<http://www.regulations.gov/>

2/23/2016

## Response to Comment 0005-1

The Service recognizes that the removal of piping plover predators may be contrary to the values of some people. Effective predator management programs are highly selective, focusing exclusively on sites with documented high predation and low productivity. These programs include elements to minimize the factors that attract common predators to beach sites (e.g., ensuring that trash and food is carried off of beaches).

The Commenter mentioned daily raking and beach cleaning as measures to reduce predator presence, and as stated in the HCP, many beaches are already implementing these activities, often in the presence of plovers and may continue to do so as they implement the covered activity for reduced proactive symbolic fencing. However, beach raking can degrade plover habitat by eliminating vegetation, wrack, and other beach debris used for feeding and sheltering and must be carefully managed in order to avoid impacts to breeding plovers and their young. The Service recommends that wrack remain in areas where adults and their broods occur in order to avoid adversely affecting their habitat. Many beaches already are “carry-in, carry-out” for trash, especially prior to the onset of summer, precluding the attractant of trash in and around garbage cans. And finally, there are a number of beaches with little human visitation during the plover breeding season, for example Parker River and Monomoy National Wildlife Refuges, where the only garbage is found in the wrack line, yet predation is a significant threat to nesting shorebirds. Merely eliminating trash from the environment is not sufficient to relieve the pervasive predation pressure that occurs on many plover beaches.

The loss of piping plover nests, chicks, fledglings, and some adults to predation is a large and increasing threat in Massachusetts and elsewhere along the Atlantic Coast. Predator removal programs have been implemented at a number of plover nest sites in the Northeast, including New York, Virginia, New Jersey, Maryland, Massachusetts, Rhode Island, and Maine, and have demonstrated that selective predator management can increase piping plover productivity. Typically, predator management is conducted on a predator species whose local population densities are high (hence the increase in predation impacts to nesting plovers) or is targeted on a small number of individual predators that have learned to focus on plover chicks and eggs. The potential environmental consequences of the Plan’s selective predator management mitigation measure are discussed in section 4.2.1.3 of the EA.

Massachusetts law requires that only cage- or box-type traps be used to trap mammalian predators (e.g., raccoons, Virginia opossums, and striped skunks). All traps used to capture mammals would meet the Association of Fish and Wildlife Agencies’ “Best Management Practices for Trapping in the United States.” No body-crushing traps would be used. As part of the Plan’s adaptive management process, new methods for managing predators, including improvements to trapping methods or nonlethal methods could be developed.

**Comment ID: FWS-R5-ES-2015-0182-0009**

Regulations.gov - Comment

Page 1 of 2



**Submitted Electronically via eRulemaking Portal**

This is a Comment on the **Fish and Wildlife Service (FWS)** Notice: **Notice of availability, receipt of application.**

Comment Period Closed  
Feb 22 2016, at 11:59 PM ET

For related information, [Open Docket Folder](#)

**ID:** FWS-R5-ES-2015-0182-0009  
**Tracking Number:** 1k0-8nj8-qym5

**Comment**

**Document Information**

I am supportive of efforts to increase flexibility for local beach managers to provide recreational access while meeting Federal requirements of the Endangered Species Act relative to Piping Plovers. Over sand vehicle travel for beach access has many benefits, including reducing the concentration of human activity to small areas near public parking lots. Over sand beach access allows beach users to spread out over a much larger area. This allows lower overall impact to natural resources, a better experience for beach users, and enhanced safety for recreational activities such as surf fishing, surfing and paddling. The long beach closures for unfledged plover chicks have had major impacts to beach users, and has resulted in the loss of beach access when it is in highest demand. This HCP and Incidental Take Permit can go a long way to restoring the historical beach access enjoyed by many.

**Date Posted:**  
Jan 26, 2016

[Show More Details](#)

**Submitter Information**

**Submitter Name:**  
Andrew Gere  
**Country:**  
United States

0009-1

On page 4-12 of the Draft Environmental Assessment, under the heading "Over-sand-Vehicle Use in the Vicinity of Unfledged Chicks" is the following statement: "For example, to limit disturbance of chicks and impacts on their foraging, vehicle travel in the vicinity of chicks would be restricted to no more than 6 hours per day in 2 to 3 travel periods during daylight hours." I could find no references cited for credible scientific studies that lead to this determination. It is plausible that shorter periods of more intense vehicle traffic (as would occur under this management strategy) may in fact be more disturbing to the plovers than a less intense traffic pattern of entry and exit from the beach. In my 30 years of experience of over sand vehicle use on North Nauset (Nauset Spit), South Nauset and Provincelands, I've observed that vehicle traffic is relatively spread out during the day, and that there are long periods during daylight hours when there is no traffic, or just an occasional vehicle passing. If there is peer-reviewed science that indicates the unmetered but less intense traffic on and off the beach is more detrimental to the plovers, it should be directly referenced in the Draft Environmental Assessment.

<http://www.regulations.gov/>

2/23/2016

## Regulations.gov - Comment

Page 2 of 2

0009-2

Similarly, I found no references to the scientific study that recommends what appears to be a prohibition of over sand vehicle travel after daylight hours during the time that unfledged chicks are present. If such a study has been conducted, it should be referenced in the Draft Environmental Assessment. If no such peer-reviewed study has been referenced, what is the reason for preventing after-dark travel by over sand vehicles? Some after dark vehicle traffic may in fact be beneficial in that it may discourage predation by nocturnal animals such as skunks, coyotes and racoons. It is important to recognize that surf fishing is often best in the pre-dawn hours and at dusk when feeding is more common, and prohibition of vehicle travel after dark will substantially limit these activities. Similarly, surf conditions are best when the wind is at it's lowest, which is at first light and at the end of the day approaching dusk. Limiting vehicle traffic to daylight hours would limit surfing at the time of day when conditions are best. For participants in either of these activities who work during normal daylight hours, access to the beach would be effectively eliminated if travel before sunrise or after sunset is prohibited.

Thank you for your consideration of these concerns, I look forward to the response by the Draft Environmental Assessment authors.

Andrew R. Gere, P.E.

<http://www.regulations.gov/>

2/23/2016

### **Response to Comment 0009-1**

Traffic that is distributed throughout the day may interrupt chick foraging more frequently, and to a greater extent, it will preclude the option of smoothing out ruts in between travel periods if that is required to reduce impacts to chicks. If traffic is distributed throughout the day, intensive monitoring of the broods will be required over a longer period of time especially if the travel period includes the daylight hours. Expanding the travel period increases the chance that some traffic will occur at times when the locations of plover chicks are not known by plover monitors. This could have the effect of either reducing the opportunity to manage OSV traffic if chicks approach the travel corridor and are not observed, or requiring the closure of the travel corridor until the chicks leave the area. Therefore, the increased duration of exposure of unfledged chicks to vehicle traffic, the lack of addressing ruts during the travel period (if necessary), and the increased monitoring required to keep track of chicks, may contribute to an increasing risk of take over the proposed covered activity limiting vehicle traffic to confined periods over a 6 hour time frame.

The Service is not aware of any scientific studies that indicate unmetered but less intense over-sand-vehicle (OSV) traffic on and off the beach is less detrimental to piping plovers than the HCP's proposed method of controlling and monitoring OSV use on piping plover nesting beaches. However, the Service finds that OSV traffic that is restricted to several hours in the morning and late afternoon will have less risk of take of chicks than traffic that is distributed throughout the day and concurs with the MADFW that this is a measure that will minimize the likelihood of take to the maximum extent practicable.

### **Response to Comment 0009-2**

The HCP would not impose any restrictions on pre-dawn or nighttime beach access that are not already in place, but the HCP would ease some restrictions on daytime beach access currently enforced under the State and Federal guidelines. The Service is not aware of any scientific studies that investigate the times of day OSVs travel on beaches and the effects to piping plovers. We also are not aware of any evidence that nighttime OSV travel on beaches would reduce predation on piping plovers.

Piping plovers (especially chicks) are not easily detectable during the day due to their natural camouflage with the beach environment. In addition, chicks stand in, walk along, and run along tire ruts, and sometimes have difficulty crossing deep ruts or climbing out of them (refer to EA section 4.2.1.2). Furthermore, monitoring to locate and track plovers would be extremely difficult at night. For these reasons, we expect the risk of plover mortality from driving OSVs on beaches at night would be greater than during the day.

### Comment ID: FWS-R5-ES-2015-0182-0030

Regulations.gov - Comment

Page 1 of 1



### Submitted Electronically via eRulemaking Portal

This is a Comment on the **Fish and Wildlife Service (FWS)**  
Notice: **Notice of availability, receipt of application.**

Comment Period Closed  
Feb 22 2016, at 11:59 PM ET

For related information, [Open Docket Folder](#)

ID: FWS-R5-ES-2015-0182-0030  
Tracking Number: 1k0-8nto-w5mi

#### Comment

#### Document Information

0030-1

I oppose the draft HCP regulation changes. I do not see how streamlining a permit process will benefit the species at all. The ambiguous use of site "flexibility" is also not well described and concerns me. The draft mentions protecting the species on a broad geographic scale but if the species can't or aren't protected on a site specific scale how would the species fare? The disturbance this species causes on the beaches is only temporary and I believe based on the literature that changing the conservation plan in this way would cause undo harm to the breeding of this species.

Date Posted:  
Feb 8, 2016

[Show More Details](#)

0030-2

#### Submitter Information

Submitter Name:  
Hal Mitchell

<http://www.regulations.gov/>

2/23/2016

### **Response to Comment 0030-1**

The HCP has been developed in the context of the vast majority of beaches in Massachusetts that are managed according to State and Federal Guidelines. Continued implementation of these Guidelines is a primary requirement for a Plan participant to obtain a COI for covered activities that deviate from the Guidelines. Currently, any beach manager or landowner can apply to the Service for an individual ITP by submitting a site-specific HCP (as was done with the Town of Orleans for their low effect HCP). Streamlining the permitting process through a programmatic approach to authorization of take of the piping plover can benefit plover conservation by enabling the MADFW to address the plover's needs at the larger, state scale as opposed to numerous, individual small scales at which opportunities for addressing the population's greatest needs are often limited. The programmatic approach will enable the MADFW to focus conservation actions including outreach, increased law enforcement or predator management, where they can do the most good, resulting in more efficient and effective conservation for the piping plover. While the HCP's programmatic approach allows for addressing the species' needs at a larger scale, it does not do so at the cost of sacrificing site-specific plover needs. The HCP requires a Plan participant to develop a site-specific Impact and Avoidance Minimization Plan (IAMP) that must adopt specified avoidance, minimization, and mitigation measures for each covered activity that are tailored to the specific circumstances found at the site.

### **Response to Comment 0030-2**

The MADFW developed the HCP in response to an increasing piping plover population that has significantly expanded in numbers as well as sites due to intensive and protective management. As a result, recreational access at some beaches has been substantially impacted. Although plovers may only be present for a few months of the year, the economic and social impact of restricting recreational access during that limited time period has affected local communities economically to the point that support for continued conservation efforts is eroding. Section 10(a)(2)(B) of the Federal Endangered Species Act (ESA) requires specific criteria to be met before the Service issues an ITP in order to assure the continued conservation of the species. If these criteria are met and the HCP and supporting information are statutorily complete, the permit must be issued. Meeting these criteria would prevent significant harm to the Massachusetts piping plover population. Moreover, the HCP demonstrates that the impacts being requested for coverage are small. The anticipated benefits of mitigation will more than offset the anticipated take and will focus on addressing a threat that seems to be limiting the population, that being predation.

### Comment ID: FWS-R5-ES-2015-0182-0050

Regulations.gov - Comment

Page 1 of 1



### Submitted Electronically via eRulemaking Portal

This is a Comment on the **Fish and Wildlife Service (FWS)**  
Notice: **Notice of availability, receipt of application.**

Comment Period Closed  
Feb 22 2016, at 11:59 PM ET

For related information, [Open Docket Folder](#)

ID: FWS-R5-ES-2015-0182-0050  
Tracking Number: 1k0-8nt2-zf04

#### Comment

#### Document Information

Date Posted:  
Feb 8, 2016

[Show More Details](#)

#### Submitter Information

Submitter Name:  
Thayer Scott

0050-1

0050-2

I understand the pressure to increase access to the beaches, due to the loud and persistent voices of the ORV enthusiasts. Accessing the beautiful beaches of Massachusetts is something that we all value. However, as a person who walks and sunbathes on the beaches, I greatly enjoy the peacefulness of not having trucks constantly driving by me. Why can't we maintain areas where the only access is by foot? The ORV individuals still have access to the beach, they just have to walk to get there. I continue to support protecting wildlife, including the piping plover, and not just based on whether we will lose them due to endangerment. I also worry about the affordability for the Park Service to pay for the escorts, with their resources already stretched too thin to accomplish what is currently under their jurisdiction. If there is extra money available, I suggest using it to improve current park facilities and improving enforcement. I hope that these quiet areas can be maintained for all to enjoy, as long as it isn't in a vehicle.

<http://www.regulations.gov/>

2/23/2016

**Response to Comment 0050-1**

The State and Federal guidelines allow OSV use outside the piping plover breeding season and during the prenesting, egg-laying, incubation, and postfledging periods. The Plan proposes to expand OSV use by allowing limited, escorted driving of OSVs during the prefledging period (i.e., after chicks have hatched but before they have fledged). The Service is not responding to an application to prohibit altogether OSV use on piping plover nesting beaches. Refer to section 3.2.3 of the HCP for a discussion of the conditions associated with this covered activity, which would minimize impacts to piping plovers.

**Response to Comment 0050-2**

Although the HCP plan area encompasses Federal land in Massachusetts, the HCP does not propose any activities on the Cape Cod National Seashore. Further, Federal agencies, including the National Park Service (NPS), are not eligible to apply for a COI to receive incidental take coverage under the HCP. The NPS complies with the ESA through interagency cooperation with the U.S. Fish and Wildlife Service under section 7 of the ESA. Therefore, the NPS would not be obligated to fund activities under the HCP.

**Comment ID: FWS-R5-ES-2015-0182-0117**

Regulations.gov - Comment

Page 1 of 2



**Submitted Electronically via eRulemaking Portal**

This is a Comment on the **Fish and Wildlife Service (FWS)** Notice: **Notice of availability, receipt of application.**

Comment Period Closed  
Feb 22 2016, at 11:59 PM ET

For related information, [Open Docket Folder](#)

**ID:** FWS-R5-ES-2015-0182-0117  
**Tracking Number:** 1k0-8nwo-4isx

**Comment**

**Document Information**

I live in the wildlife refuge in Table 3-1 of the EA "Norton Point/Leland/Cape Poge Elbow", (CPWR). I am in favor of lessening restrictions and issuing ITPs specifically for CPWR. I am in favor of moving nests.

**Date Posted:**  
Feb 12, 2016

[Show More Details](#)

CPWR is unique property where restrictions should be lifted, special consideration for ITPs should be granted and additional guidelines for "move eligible" nests should be formulated.

**Submitter Information**

**Submitter Name:**  
Victor Colantonio

Piping plovers don't do well here. Aside from loss cited in the EA, ocean wash-overs wipe out nests during storms and astronomically high tides. Birds breed a second time causing the closure cycle to begin anew driving people mad. In over-wash prone areas nests should be moved to Mass Audubon's Felix Neck Wildlife Sanctuary or better, to uninhabited Nomans Island, Chilmark. Nomans could be designated a Mass ES Habitat Sanctuary, unprecedented for ES protection and sustainability.

CPWR is akin to Nantucket's Great Point in terms of the public's inability to actually visit the property. Excellent local management, conservation minded visitors and 'eyes-open' residents make it time to lessen the restrictions and grant ITPs.

Lessening restriction increases human experience & enjoyment. Coastal resources are important to the health and welfare of everyone. Public access relies solely a property manager's willingness to accept the risk of compliance with then current ES regs. Strict regs, high cost of non-compliance means the shut down of entire coastal properties until chicks have fledged, often most of the summer season. Land stewards should be given regulations they can manage to versus having to shut down for fear of non-compliance penalties. Given the successful numbers of nesting pairs exceeding targets, the time is right when penalties no longer trump public enjoyment.

0117-1

<http://www.regulations.gov/>

2/23/2016

## Regulations.gov - Comment

Page 2 of 2

ITPs move toward flexibility and incentives to increase management and to implement more site specific HCPs. More detailed HCPs diminish risk to habitat, increase wildlife and allows the public to enjoy the resources.

Energies should be diverted to public awareness of 'best conservation practices' to care for diminishing wildlife habitat. Increased access to the Mass coastline will offer firsthand experiences to help people recognize their responsibility to live and let live, respect all things big and small and perhaps embrace public policies that show promise to preserve habitat and grow sustainable populations of endangered and troubled species.

0117-2 | One size fits all is a mistake. HCPs must be guidelines specific to each property. Distances used to off-set from nests and chicks should be based on dimensions, geography, topology, and marine conditions of each property.

0117-3 | Consider density; extremely sparsely populated nesting should be "move eligible". It is silly that one chick can lock-up ten miles of shoreline for the prime summer season. "Move Eligible" criteria must be developed for "Vacant Nests", "Nests with Eggs" and "Reestablished Nests (second tries)". This doesn't mean that the nests must be moved, only that it is eligible under specific criteria.

<http://www.regulations.gov/>

2/23/2016

### **Response to Comment 0117-1**

Recreational activities and certain beach operations would be allowed in the immediate vicinity of piping plover nest sites, subject to the impact minimization measures contained in the HCP. If piping plovers nest in a parking lot, major beach access trail, OSV corridor, or other high use recreational area, reduced symbolic fencing may not be sufficient to facilitate the covered activity, or may not be the best way to minimize impacts to piping plovers. In these circumstances, the Plan (see section 3.2.2.3) proposes to move nests short distances within a site to minimize impacts on the nest and the parent birds. However, the commenter suggests moving nests much farther.

Although the Service and MADFW have experience using translocations (movement of individuals from one site to another) to help recover or minimize effects on some threatened and endangered species, this approach is not always practical or cost effective. Because plovers are highly mobile, it is not practical to move adults and expect them to remain where they are placed. Further, while piping plover nests have been moved short distances on the Northern Great Plains, moving nests between sites or to an island would be too great of a distance to expect the parent birds to find, accept, and incubate the nest. In short, because such an approach is not likely to be successful, it would not qualify as an impact minimization measure as part of the HCP. Lastly, Nomans Land Island does not have sufficient nesting habitat to support a pair of plovers.

### **Response to Comment 0117-2**

We agree with the commenter. The Plan's covered activities (see HCP section 3.2) strike a balance between providing general, broadly applicable guidance to Plan participants and the need to develop site-specific impact avoidance and minimization plans (IAMPs) based on this guidance. As suggested by the commenter, a "one size fits all" approach is not appropriate, and the IAMP development process is designed to address covered activities and conservation actions on a site-by-site basis.

### **Response to Comment 0117-3**

As described in section 3.2.2.3, the Plan contemplates nest moving only as a last resort to address significant recreational impacts when other alternatives such as reduced symbolic fencing, are unavailable or impractical. The MADFW would work with Plan participants to determine whether nest moving is necessary or whether the same or similar result could be achieved with other approaches. Nests in what the commenter describes as "sparsely populated" areas could be moved if the nest is creating a major bottleneck for recreational use (e.g., a nest in a major beach access trail). Piping plovers make multiple scrapes prior to settling on a final location in which to lay and incubate eggs. These scrapes may be scattered over a wide area. Moving an "empty nest" would not achieve the goal of allowing recreational access, because the plovers might later choose a nearby location in which to lay their eggs. "Reestablished nests (re-nests)" would be eligible to be moved, but this would require a second take exposure allocation (i.e., this would count as two nests/broods/territories exposed).

**Comment ID: FWS-R5-ES-2015-0182-0123**

Regulations.gov - Comment

Page 1 of 2



**Submitted Electronically via eRulemaking Portal**

This is a Comment on the **Fish and Wildlife Service (FWS)** Notice: **Notice of availability, receipt of application.**

Comment Period Closed  
Feb 22 2016, at 11:59 PM ET

For related information, [Open Docket Folder](#)

**ID:** FWS-R5-ES-2015-0182-0123  
**Tracking Number:** 1k0-8nx9-cwqs

**Comment**

**Document Information**

Comment to :FWS-R5-ES-2015-0182

**Date Posted:**  
Feb 16, 2016

[Show More Details](#)

**Submitter Information**

**Submitter Name:**  
Eric Boucher

**City:**  
WESTFIELD

**Country:**  
United States

**State or Province:**  
MA

**ZIP/Postal Code:**  
01085-4152

0123-1

I have read the subject report. I feel it is well written and well thought out. With over 30 years of adult outdoors experience, I believe nature knows best and does the best. The more humans go to extremes to try to protect birds or any animals, the worst it seems to get. The birds and humans are all part of nature and they need to learn to co exist. That means both humans and the birds. I feel the humans are doing all the compromising while the birds do nothing to evolve to be human tolerant. For the Piping Plover to flourish it needs to learn to co exist with humans. In the same manner as the bald eagle, black bears, foxes and deer have learned to do. The more exposure to humans the better off they will be. This is the first proposal that places some of the compromise on the birds. As I understand this report, recreation use including OSV's would be allowed near unfledged chicks. This is a good step forward, however I feel this assessment does not go far enough to increase the recreational use of our beaches during the piping plover season. I feel that providing piping plovers with gradual increasing exposure to humans will ultimately benefit them as they will evolve into being more tolerant to humans. I feel this change is critical to the piping plovers long term survival.

0123-2

The 25 year period for this plan is far too long. Many things can change in that time period that effect the piping plover population. If the current population increase trend of 2.3 % continues, the piping plover population would reach the states carrying capacity of 1,000 breeding pairs in 17 to 18 years. That is without the predicted productivity improvement due to the proposed predator killing that is outlined in this report. If the predator killing produces a 20% improvement in the piping plover population increase, the states carry capacity would be reached in 14 to 15 years. As the piping plover population continues to increase the negative impacts to beach recreation due to piping plovers

<http://www.regulations.gov/>

2/23/2016

## Regulations.gov - Comment

Page 2 of 2

0123-2  
cont.

will increase. As the piping plover population increases there should be corresponding reductions in recreation beach restrictions. Because of these reasons, this plan should be only in effect for a 5 year maximum period, or it should have triggers that reduce restrictions as piping plover populations increase.

Around 30% of the piping plover deaths at the Cape Cod National Seashore were the result of the nest being washed away, the remainder of the deaths were from predators. Eliminating the symbolic fencing prior to nesting along the 27 miles of beach will encourage more recreational use in this area. This will also encourage the piping plovers to move their nest higher up the beach, thus reducing the possibility of their nest being washed away. In addition, the increased human activity on the beach will tend to scare predators away. A win, win for everyone!

0123-3

I am opposed to killing predators. It just seems ethically wrong to kill one animal in favor of another. I feel shooting can be dangerous. There are many, many visitors to the beaches, many at night and early morning fishing. Much of the land contour is flat exposing humans to this danger. No piping plover is worth the possibility of shooting a person. Trapping is not target specific, you never know what you might kill. I have seen eagles at the sea shore and some other endangered predators at Race Point. How do you make sure you do not kill them? Poisoning, again, is not target specific. You never know what you might be killing. All this risk when predator management COULD increase productivity by %20.

0123-4

It seems to me that taking action to eliminate over wash of the piping plover nest is a far better solution than killing the animals.

<http://www.regulations.gov/>

2/23/2016

### **Response to Comment 0123-1**

As discussed in section 1.2 of the EA, the State and Federal guidelines were developed to help beach managers and property owners comply with section 9 provisions of the ESA and help the species survive and recover. The State and Federal guidelines describe management techniques to prevent disturbance of nesting piping plovers, trampling of nests, monitoring requirements, and restrictions on the use of OSVs when unfledged chicks are present. As the Massachusetts piping plover population has increased, it has led to management challenges in balancing recreational beach use with the need to avoid take of piping plover nests, eggs, or chicks.

To increase flexibility for beach managers and enhance recreational opportunities, the MADFW prepared the HCP and applied for an ITP. The Plan's stated purpose is to advance piping plover conservation and recovery in Massachusetts while maintaining and improving recreational beach access and beach operations (see HCP section 1.1.1). The MADFW believes the proposed expansions of recreational use during the piping plover nesting period (approximately 8 weeks) would allow for increased recreational opportunities during this time period while also meeting the criteria necessary for issuance of an ITP, including minimizing to the maximum extent practicable the impacts of taking (see response to Comment 0030-2).

Given the proposed permit term is only 26 years, the HCP cannot address plover behavior on an evolutionary scale. However, in the EA (section 2.4.1), the Service considered additional covered activities that are not described in the proposed action that could provide greater access and flexibility to beach managers and recreational users. Specific actions considered included vehicle parking within 100 yards of unfledged chicks, vehicle travel within 100 yards of chicks for more than 6 hours per day, and no vehicle escorting. In addition, greater allowable take exposures were considered for some statewide population sizes. The additional flexibility provided by inclusion of these additional covered activities may increase beach recreational and operation opportunities, but could increase incidental take of piping plovers. The Service believes that such measures would not have met the regulatory standard of section 10 of the ESA to minimize and mitigate the impacts of the taking of the covered species "to the maximum extent practicable." In addition, the avoidance and minimization measures described in the Plan and in the proposed action were developed in close coordination with beach managers and are practical to implement as these measures would allow the desired level of recreational opportunity expressed in the Plan's objectives and goals. For these reasons, the Service decided not to further evaluate this alternative.

### **Response to Comment 0123-2**

To clarify, we expect selective predator management to increase piping plover productivity at mitigation sites and at least offset reduced productivity as a result of the covered activities. Productivity increases greater than expected at mitigation sites could contribute to an average increase in productivity statewide; however, we do not expect, as suggested by the commenter, the Plan's mitigation program to increase productivity of the statewide plover population by 20 percent or more.

The Plan contains a mechanism that will both provide greater protection for the piping plover if the Massachusetts population declines and reduce restrictions on recreational activities as the population increases. For example, if the population were to increase to 1,000 breeding pairs and stabilize as the commenter suggests, then the allowable number of broods/nests/territories that could be exposed to covered activities would increase to 70, as compared to approximately 47 that

could be exposed in 2016. The Plan is specifically designed to increase flexibility to address recreational impacts as the piping plover population increases. The Plan's approach for allocating take exposures is adaptable regardless of the permit duration and reduces some of the uncertainty inherent in a relatively long, 26-year permit term.

### **Response to Comment 0123-3**

See response to Comment 0005-1.

### **Response to Comment 0123-4**

Storm overwash is believed to be the most important natural process to maintain the availability of suitable piping plover breeding habitat over time, and measures to reduce overwash (e.g., beach plantings and dune building) may have negative long-term impacts on piping plover habitat. Preventing flooding of nests could be a useful, localized conservation measure if we could consistently identify nest sites subject to repeated overwash that result in a high rate of nest failures, and we could implement cost effective measures to reduce risk of nest loss without interfering with maintenance of suitable habitat. However, this approach would be experimental, the effects would be difficult to quantify, it would be logistically challenging and costly to implement, and it could have unintended negative consequences, such as increase in vegetation growth and eventual loss of nesting habitat. For these reasons, the MADFW did not include storm overwash prevention in the Plan.

**Comment ID: FWS-R5-ES-2015-0182-0124**
**THE HUMANE SOCIETY  
OF THE UNITED STATES**

Eric L. Benithal, Esq.  
*Chair of the Board*

Jennifer Leaning, M.D., S.M.H.  
*Vice Chair*

Jason Weiss  
*Second Vice Chair*

Kathleen M. Linehan, Esq.  
*Board Treasurer*

Wayne Pacelle  
*President & CEO*

Michael Makarian  
*Chief Program & Policy Officer*

Laura Maloney  
*Chief Operating Officer*

G. Thomas Waite III  
*Treasurer & CFO*

Andrew N. Rowan, Ph.D.  
*Chief International Officer  
& Chief Scientific Officer*

Roger A. Kindler  
*General Counsel  
Vice President & CLO*

Amy C. Rodgers  
*Secretary*

**DIRECTORS**

Jeffrey J. Arcimando

Eric L. Benithal, Esq.

Jerry Cesak

James Costos

Anita W. Coupe, Esq.

Neil B. Fang, Esq., CPA

Jane Greenspun Gale

Cathy Kangas

Paula A. Kislak, D.V.M.

Jennifer Leaning, M.D., S.M.H.

Kathleen M. Linehan, Esq.

John Mackay

Mary I. Max

Patrick L. McDonnell

Judy Ney

Sharon Lee Patrick

Judy J. Peil

Marian G. Probst

Jonathan M. Ratner

Joshua S. Reichert, Ph.D.

Walter J. Stewart, Esq.

Andrew Weinstein

Jason Weiss

David O. Wiebers, M.D.

Lona Williams

Mr. Thomas Chapman, NE Field Office  
c/o Public Comments Processing  
*Attn: Docket No. FWS-R5-ES-2015-0182*  
Division of Policy, Performance and Management  
U.S. Fish and Wildlife Service  
5275 Leesburg Pike  
ABHC-PPM  
Falls Church, VA. 22041-3803  
*Submitted via. [www.regulations.gov](http://www.regulations.gov)*

**Comment #0124**

February 17, 2016

**RE: Comments on the Application from the Massachusetts Division of Fisheries and Wildlife for an Incidental Take Permit: FWS-R5-ES-2015-0182**

Dear Mr. Chapman:

On behalf of the members and constituents of The Humane Society of the United States (the HSUS), we are offering these comments and concerns with regard to both the application by The Commonwealth of Massachusetts' Division of Fisheries and Wildlife (DFW) to obtain an incidental take permit and the accompanying draft Environmental Assessment (EA). 81 Fed. Reg. 3450 (Jan. 21, 2016). We oppose granting the incidental take permit at this time that would allow the state to deviate from State and Federal guidelines in order to make changes in management of recreational activities on Massachusetts beaches during the piping plover nesting season. With regards to the alternatives presented in the draft EA, we support the No Action alternative. Further, if the preferred Action Alternative is chosen, no take should be permitted unless and until there is a meaningful and timely review and update of goals in the outdated recovery plan.

As explained in greater detail below, we are concerned that, among other things, the plan would allow nests and/or endangered birds to be "exposed" and potentially sacrificed in the name of increased human recreation and that the only compensatory mechanism appears to be to increase the killing of potential predators or rely on the Federal government to take action in its National Seashore properties. We raised similar concerns with the recently proposed "Shorebird Management Plan" put forth by the Cape Cod National Seashore.<sup>1</sup> Additionally, since assessing the impacts of the proposal appears to rely on self-reports, it is not clear how the actual numbers of birds and nests that are sacrificed will be reliably tallied to assure that any annual limits are not exceeded. Importantly, the State and

<sup>1</sup> Cape Cod National Seashore. 2015. Comprehensive Shorebird Management Plan and Environmental Assessment (aka "The Plan") At: <http://parkplanning.nps.gov/documentsList.cfm?projectID=37030>

the U.S. Fish and Wildlife Service (the Service) are also relying on both an aged recovery plan that dates to the 1990's and the Service's 2009 "5-year review" of the Recovery Plan whose review term has expired.

#### Status of Plovers

0124-1 According to the Service's Draft EA, "the current (2015) preliminary piping plover population size in Massachusetts is estimated to be 689 breeding pairs (A. Hecht, USFWS pers. comm. 2015). This represents an average annual population increase of 2.3 percent since 1998. In 1996, the MADFW estimated the State's carrying capacity of piping plovers at approximately 1,100 breeding pairs (MADFW 1996). Based on this estimate, the Service anticipates that the plover population would not likely exceed a 3-year running average of 1,000 breeding pairs during the [proposed] 25-year permit duration."<sup>2</sup> First, we must point out that the census and projections for increases rely on a "personal communication" rather than a published source. Wherever possible, data that inform management should be based on published sources, or at least publically available agency reports. Second, Massachusetts is within, but is only one of several "units" in, the broader Atlantic population that is covered under the piping plover recovery plan and it is but one of the five states in the New England Region, which is itself a geographic subset of the Atlantic population which stretches from the mid-Atlantic through eastern Canada.<sup>3</sup> As of 0124-2 2012 (the most recent report we were able to access), the Atlantic population was preliminarily estimated at 1,898 nesting pairs, with the U.S. portion averaging 1,719 of them, including 690 of nesting pairs in Massachusetts.<sup>4</sup>

The draft EA states that two regions (Lower Cape Cod and Upper Cape Cod) harbor close to 60 percent of the total breeding pairs in the state.<sup>5</sup> As of 2014, 99 pairs were nesting in property of the Cape Cod National Seashore. Other federal properties with nesting pairs included Monomoy National Refuge (50 pairs as of 2013) and Parker River National Wildlife Refuge (32 pairs as of 2013).<sup>6</sup>

According to the species' Recovery Plan, the recovery goal for the Atlantic Recovery Unit is to "increase and maintain for five years a total of 2,000 breeding pairs, distributed among the four recovery units [of which New England is one]."<sup>7</sup> While New England is meeting its recovery goal of 625 nesting pairs, the same apparently cannot be said for other management units within the Atlantic population. Moreover, citing Hecht and Melvin (2009) the Service has stated that "productivity needed to maintain a stationary

<sup>2</sup> USFWS. 2015. Environmental Assessment For The Proposed Massachusetts Piping Plover Habitat Conservation Plan And Incidental Take Permit. (Draft EA) January, 2016. At: page 4-15.

<sup>3</sup> U.S. Fish and Wildlife Service. 1996. Piping plover (*Charadrius melodus*), Atlantic Coast population, revised recovery plan. Hadley, Massachusetts.

<sup>4</sup> USFWS 2012. Preliminary 2012 Atlantic Coast Piping Plover Abundance and Productivity Estimates at: [http://www.fws.gov/northeast/pipingplover/pdf/preliminary2012\\_18April2013.pdf](http://www.fws.gov/northeast/pipingplover/pdf/preliminary2012_18April2013.pdf)

<sup>5</sup> Draft EA, at 3-9.

<sup>6</sup> Id.

<sup>7</sup> At page 140 in: USFWS 2009. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. (Recovery Plan Review) 214 pp. At: [http://www.fws.gov/northeast/endangered/PDF/Piping\\_Plover\\_five\\_year\\_review\\_and\\_summary.pdf](http://www.fws.gov/northeast/endangered/PDF/Piping_Plover_five_year_review_and_summary.pdf) Recovery

population within New England, [is] 1.21 chicks fledged per pair, based on regression analysis.”<sup>8</sup> As of the most recent report, the Atlantic recovery unit is not meeting that fledging goal.<sup>9</sup>

0124-3

The so-called Revised Recovery Plan for piping plovers is 2 decades old<sup>10</sup> and the most recent 5-year update is itself outdated, having been issued in 2009.<sup>11</sup> The Recovery Plan should be updated prior to consideration of authorizing any additional take from this population, or allowing activities said likely to disrupt seasonal nesting, since the overall population is already not meeting the goals for a “stationary population” in New England, let alone its Recovery Plan goals.

#### Alternatives Considered

The draft EA considers three alternatives: the “no action” alternative, the proposed action and what is called a “shorter permit term” alternative. The “no action” alternative would result in no Incidental Take Permit (ITP) being issued to the state to implement their proposed Habitat Conservation Plan (HCP). The proposed action would allow certain “covered activities” to deviate from state and federal guidelines and as a result “may result in take of piping plovers.”<sup>12</sup> Most of these deviations are in service of allowing greater public use of beaches at times that can cost birds their lives or disrupt plover nesting or other key reproductive behavior. The term of the ITP would be 25 years, with “certificates of inclusion” (COIs) issued to landowners and beach managers to allow them take authorizations for a 3-year period.<sup>13</sup> The “shorter permit term” alternative, “is the same as the proposed action, except the duration of the ITP would be 10 years and the MADFW would issue COIs to landowners and beach managers for a 1-year period.”<sup>14</sup> In essence there are really only two alternatives presented, as the “shorter permit term” alternative is identical to the proposed action but for having a shorter duration of the permit. This seems to be an inappropriately limited suite of alternatives.

0124-4

There are also three alternatives that are said to have been considered and rejected. They include two that would actually increase the potential take (i.e., one that would allow “greater deviations” and one that would allow possible incidental take of other protected bird species) and one that would have reduced the size of the plan boundaries and thereby excluded federal lands from this management plan.<sup>15</sup> We thank the Service for recognizing the conservation implications and shortcomings of the first two of these rejected alternatives as they would further weaken the protections for the birds. With regard to the third option, as we will discuss below, we believe that it is inappropriate to have dismissed the option of excluding federal lands since these properties have their own management plans and this plan appears to inappropriately rely on the Federal government taking unspecified actions that are said likely to “offset” adverse impacts of this plan’s covered actions.”

0124-5

0124-6

<sup>8</sup> U.S. Fish and Wildlife Service. 2011. Abundance and productivity estimates – 2010 update: Atlantic Coast piping plover population. Sudbury, Massachusetts. 4 pp. At: <http://www.fws.gov/northeast/pipingplover/pdf/Abundance&Productivity2010Update.pdf>.

<sup>9</sup> Supra note 4, preliminarily estimating annual productivity in New England at 0.84, and Massachusetts itself is also below that regional threshold.

<sup>10</sup> Supra note 3, dated 1996.

<sup>11</sup> Recovery Plan Review .

<sup>12</sup> Draft EA, at 2-1.

<sup>13</sup> Draft EA, at 2-1.

<sup>14</sup> Draft EA, at 2-12.

<sup>15</sup> Draft EA, at 2-13.

**Extent of Actions and Purpose of the HCP**

0124-7 | DFW indicates in its HCP that it feels its proposed deviation from state and federal guidelines is necessary to appease recreational and economic interests who have seen the documented increases in plovers and may reduce support for their conservation.<sup>16</sup> This seems, with some irony, to be saying that unless some can be killed, there will be less incentive to want to save them.

The HCP would allow approved landowners and beach managers to be issued permits for a 3-year period to engage in a variety of activities that would reduce protections for birds attempting to nest, and allow an increase in incidental take of plovers.<sup>17</sup>

0124-8 | The affected area in the state “includes an approximately 300-yard-wide zone along almost the entire coastline of Massachusetts, with the exception of one small area in Mount Hope Bay in the vicinity of Fall River...and it incorporates approximately 1,774 linear miles of coastline. The [ ] area covers approximately 150,000 acres of land, of which approximately 29,000 acres are currently classified as beach and coastal dune—the land cover types most associated with piping plover breeding. It contains approximately 43,531 acres of current or recently occupied piping plover habitat delineated by the DFW.”<sup>18</sup> In other words, there is almost no suitable plover nesting area in the state that could not be vulnerable to exposure and take.

The DFW proposes a ‘sliding scale’ of percentages of allowable takes that would tie the number of allowable takes (as part of the “exposure”) to the number of observed breeding pairs.<sup>19</sup> The Draft EA stipulates that “[b]ased on the preliminary adjusted total population estimate of 689 breeding piping plover pairs in Massachusetts for 2015 and assuming the ITP permit is issued in 2016, in 10 years (year 2025) it is anticipated that there would be over 900 breeding pairs using a constant population growth rate as described for the proposed action (approximately 2.1 percent). In 2023 and 2024, the population size would be 826 and 845 breeding pairs, respectively. Thus, the 3-year running average population size by the end of the permit term would be 845 breeding pairs. If the population reached this size by 2025, the [Plan] would allow a maximum take of 59 plover pairs annually (7 percent of number of pairs).”<sup>20</sup>

0124-9 | The state’s ability to quantify actual numbers of nests, chicks or adults that are exposed or lost to the permitted activities is not clear based on a reading of the monitoring plan that relies on self-reports and/or monitoring longer term population trends. The EA acknowledges that the conservation strategy is primarily selective predator management and “the benefits of education, outreach, increased law enforcement, and nesting habitat improvement are not quantifiable” though DFW expects the plan to

<sup>16</sup> Massachusetts Division Of Fisheries & Wildlife (Dfw) Habitat Conservation Plan For Piping Plover (Habitat Conservation Plan). August, 2015. At page 1-4.

<sup>17</sup> Draft EA, at 2-2 which broadly lists “covered activities” to include use of roads and parking lots near unfledged chicks, off-road vehicle (ORV) use near unfledged chicks, beach use in some areas with ‘symbolic fencing’ and, at other areas, “reduced symbolic fencing around nests and reduced proactive symbolic fencing of piping plover habitat”(see discussion also DEA at 4.2.1.2)

<sup>18</sup> HCP, at 1-6.

<sup>19</sup> HCP, at Table 3-1 where the percentage of allowable “exposure” ranges from zero to seven depending on the three year rolling average number of breeding pairs.

<sup>20</sup> Draft EA, at 4-23.

0124-9 cont. | “result in a net benefit to piping plovers by increasing productivity (number of fledglings per breeding pair).”<sup>21</sup>

#### Predator Removal

0124-10 | To facilitate less restrictive human beach access, the state proposes to expand its program of killing predators. Predator management “could be implemented at up to 7 or 18 sites.”<sup>22</sup> It is not entirely clear in the documents that the DFW HCP or the Draft EA incorporates in its projected exposure or loss estimates the Cape Cod National Seashore’s proposal to sacrifice nests and to kill predators. The compounding impact of the proposed DFW HCP and the Cape Cod National Seashore proposals should be, but is not, clearly discussed and included in the impact analysis. Among the rejected alternatives was one that would state a “smaller Plan area boundary was considered that excluded Federal lands such as the Cape Cod National Seashore, Monomoy National Wildlife Refuge, and Parker River National Wildlife Refuge”<sup>23</sup> so it appears that these Federal lands are in some way considered in plover loss estimates for the proposed alternative.<sup>24</sup> That said, it is not made clear how the proposal by the Seashore for “flexible management” (including the number of incidental takes of plovers or the intentional take of up to 50 predators of multiple species) will be accounted for the state plan. This should be made quite explicit in the HCP.

In order to predict a predator removal level, the Service uses a formula in the draft EA that is based on past observations of fledging success in the face of lethal predator management. According to the draft EA, if the population reached 845 pairs by 2025, the DFW plan “would allow a maximum take of 59 plover pairs annually (7 percent of number of pairs). The selective predator removal mitigation would therefore have to benefit 147 plover pairs (= 59x2.5 pairs).”<sup>25</sup>

0124-11 | Although Table 4-1 lists the number of predators of various species that were removed in two years under the “B-120 predator removal program,” it is not apparent how many animals of each species would be killed if this proposal goes forward under the preferred alternative. This species-specific breakdown should be made clear in the EA.

0124-12 | Trapping of predators is proposed to be done in compliance with best management practices under the “Association of Fish and Wildlife Agencies (2006).”<sup>26</sup> We do not see specification of traps to be used but want to remind the Commonwealth that body-crushing traps, which are designed to snap shut on an animal’s spinal column at the base of the skull cannot control for the size, species, position and direction of the animal entering the trap. The result is that even target animals frequently are not killed, but endure prolonged suffering as the clamping force of the trap crushes their abdomen, head, or other body parts. These types of traps were outlawed in Massachusetts by the passage of a ballot initiative

<sup>21</sup> Draft EA, at 4-19.

<sup>22</sup> Draft EA, at 4-23.

<sup>23</sup> Draft EA, at 2-14.

<sup>24</sup> This was confirmed in a written personal communication with Tom French of MADFW on February 11, 2015

<sup>25</sup> Draft EA, at 4-23.

<sup>26</sup> Draft EA, at 4-14.

0124-12 | (Question One) in 1996.<sup>27</sup> The types of traps to be used for predators should be specified quite clearly in  
cont. | the EA and should specifically preclude the use of body-crushing traps.

0124-13 | We also wish to point out that a recent examination of public attitudes toward coyotes concluded that  
| the public in many areas are more accepting of coyotes and acceptance of lethal management has  
| decreased concurrently.<sup>28</sup>

#### Concerns Regarding Likely Impacts of the Proposed Action

Although the preferred alternative offers suggestions for minimizing adverse impacts from increased human uses in otherwise desirable nesting habitat, the draft EA also acknowledges that reducing protections in some of the selected areas could have adverse consequences:

Allowing recreation and beach operations closer to piping plover nests [has] the potential to result in disturbance or harassment of nesting adults and to result in egg mortality through increased risk of nest abandonment or lower hatch rates due to inconsistent incubation. Increased flushing of incubating adults from nests would expose eggs to predators (e.g., crows, gulls, cats) and could cause excessive cooling or heating of eggs. Repeated exposure of eggs on hot days may cause overheating, killing the embryos (Bergstrom 1991). Excessive cooling may kill embryos or delay their development, thus delaying hatching dates. This covered activity could also result in increased disturbance, harassment, or harm of unfledged chicks after hatching.<sup>29</sup>

Further:

[A]llowing recreation and beach operations in suitable piping plover nesting habitat that otherwise would be restricted could result in disturbance or harassment of territorial and nesting piping plover adults by preventing them from attempting to nest (including courtship) or re-nest [sic] at that site or by forcing them to seek alternative nesting habitat. If the piping plover population in a region approaches the available habitat's carrying capacity, some adults that are displaced may not breed at all. The reduction of symbolic fencing could also result in increased disturbance or harassment of unfledged chicks by affecting their ability to find shelter and to forage.<sup>30</sup>

0124-14 | It is not entirely clear, given the lengthy list of potentially harmful impacts, how the Service or DFW will  
| monitor actual take levels. The HCP simply states in part that "monitoring, which would be focused on  
| early nesting phases and early periods of recreational use of beaches (e.g., the first weekend after the  
| fencing is reduced), would document whether adults continued to incubate the eggs with the reduced

<sup>27</sup> Mass. Gen. Laws Ann. ch. 131, § 80A (generally prohibiting trapping of furbearing mammals, except to protect human health and safety).

<sup>28</sup> Jackman, J. and A. Rutberg. 2015. Shifts in Attitudes Toward Coyotes on the Urbanized East Coast: The Cape Cod Experience, 2005-2012. *Human Dimensions of Wildlife*. 20: 333-348. Available via: [https://www.researchgate.net/publication/281767735\\_Shifts\\_in\\_Attitudes\\_Toward\\_Coyotes\\_on\\_the\\_Urbanized\\_East\\_Coast\\_The\\_Cape\\_Cod\\_Experience\\_2005-2012](https://www.researchgate.net/publication/281767735_Shifts_in_Attitudes_Toward_Coyotes_on_the_Urbanized_East_Coast_The_Cape_Cod_Experience_2005-2012)

<sup>29</sup> Draft EA, at 4-9.

<sup>30</sup> Draft EA, at 4-10.

- 0124-14 cont. fencing buffer.”<sup>31</sup> In a number of places in the draft EA, the FWS states that “[t]he IAMP [impact avoidance and minimization plan] needs to describe the monitoring plan associated with this covered activity.”<sup>32</sup> Thus the IAMP’s would be developed only *after* this ITP and associated overarching management plan have been approved and rulemaking finalized by the Service. The IAMP would be required of each “participant”<sup>33</sup> however, because the DFW plan omits specificity as to what would constitute a valid IAMP, the public has no ability at this point to judge or comment on whether the HCP for allocation of takes or the monitoring of takes is robust or reliable. It is necessary that takes be accurately tallied, reported or verifiable—particularly if it is not in the self-interest of the participant to report excessive levels. This HCP requires greater specificity in how it will monitor incremental or overall impacts in any manner other than waiting for the species’ population trajectory to further flatten or drop.
- 0124-15 It is not clear in the HCP whether or how (or how accurately) the DFW will be able to proverbially “document the negative.” For example, how does the DFW plan to document whether—as a result of the covered activities—plovers are *not* courting or *not* nesting in an area consequent to disturbance or to document whether a particular pair is or is not now re-nesting elsewhere as a result of being disturbed or moved from a preferred site. DFW must be able to document the impact of the covered activities are on piping plovers and their productivity (i.e., whether—or why—something key to the species’ reproductive success did *not* happen).
- 0124-16 According to the State’s plan, “the number of nests/broods/territories to be exposed to covered activities at a given site may not exceed 15% of the number of breeding pairs present at the site during the prior year, or a maximum of one nest/brood/territory for sites with fewer than seven pairs.... Although the DFW supports this approach, which will help to equitably distribute take exposure allowances, the DFW reserves the right to increase the allowable exposure to 30% at up to five sites per year.”<sup>34</sup> It is not clear what situations or criteria would be used to authorize some level of increase from 15% up to as much as 30% in the euphemistically termed “exposure” (which may result in death or nest abandonment). Further, we are not convinced the number of takes can be accurately quantified. That said, DFW proposes that, if the allotted number of takes does not occur in any year (e.g., 45 pairs “exposed”), rather than consider it a conservation gain for the species, DFW will give “mitigation credit” for the “unused takes” that can be rolled over to subsequent years so that those years can be used to allow an *increase* in take in a subsequent year.<sup>35</sup> Rather than allow a maximum number of lives or nest to be sacrificed, DFW should cap an annual take limit and allow it to “expire” at the end of the calendar year rather than allowing it to “roll over” to allow an increased take in a subsequent year.
- 0124-18 With regard to monitoring impacts, as we previously stated, the Cape Cod National Seashore has itself proposed what it calls “flexible shorebird management” that will allow nests, eggs and chicks to be exposed to greater human traffic and disturbance (including loss of or reduction in symbolic fencing) and would allow what the Seashore terms the “sacrifice” of up to 5 nests per year to allow greater human access to beaches. It is not evident—but should be made clear—in the DFW HCP whether (or *that*) these “sacrificed” birds/nests in the Cape Cod Seashore will be included in the total allowable number proposed in this plan for the entire state. The impact analysis in this plan should be augmented

<sup>31</sup> Draft EA, at 4-9.

<sup>32</sup> See, for example, HCP, at 3-7, 3-9, 3-11 and 3-13.

<sup>33</sup> HCP, at 3-1.

<sup>34</sup> HCP, at 5-1.

<sup>35</sup> *Id.*

0124-18 | to make clear the consideration of Seashore impacts both on birds and the impacts of proposed lethal  
cont. | predator control.

0124-19 | In its discussion of rejected alternatives, the draft EA stipulates that one of them (i.e. using a smaller plan area) was rejected in favor of including Federal lands in its preferred action alternative.<sup>36</sup> This appears to make it clearer that the Plan *would* include Federal lands in its consideration of “exposure” or “sacrifice” of plovers. However, the preferred alternative appears to count on unspecified Federal actions taken on Federal property to mitigate adverse impacts to plovers. The draft EA states, in part “...there may be opportunities to implement mitigation measures on Federal lands that can simultaneously improve the piping plover population *and offset impacts of the covered activities*. Including Federal lands in the Plan area therefore expands the opportunities to conduct the conservation measures and increases the flexibility of Plan implementation. Excluding Federal lands from the Plan area would unnecessarily limit conservation opportunities. A small Plan area that excludes Federal land would also not meet MADFW’s purpose of developing a comprehensive conservation strategy for the piping plover for all of Massachusetts.”<sup>37</sup> The EA goes to great length to assure reviewers that the “covered activities” will not unduly harm plover recovery, yet this section and others in the EA, also acknowledge that the DFW is in fact relying on federal actions to mitigate (aka offset) adverse impacts of this proposed expansion of both beach access and incidental take of an ESA listed species. Since no specific federal actions are specified in the plan that will “offset” the adverse impacts, it is inappropriate to simply stated that there “*may* be opportunities” for there to be additional mitigation on Federal lands to offset the proposed state-wide actions.

#### Conclusion

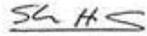
0124-20 | We urge the Service to adopt the no action alternative. Both the Piping Plover recovery plan and its “update” are outdated and should be updated prior to implementing a broad plan that will allow take of these listed birds. Recent information indicates that plovers are not meeting recovery goals throughout their Atlantic range such that one “unit” should now allow plovers and their reproduction to be sacrificed for the purpose of granting greater human access to key breeding areas. The plan for monitoring impacts appears to inappropriately rely on self-reporting by interested parties and the plan is overly vague in describing how DFW will determine what percentage of impacts will be allocated to individual permit holders. We strongly oppose providing “mitigation credit” for any unused takes such that more birds can be taken in a subsequent year. It is also unclear from the permit application and the draft EA how the number of takes may be affected if the National Seashore’s “Flexible Management Plan” is not approved nor how the Seashore actions “may” provide opportunities to mitigate impacts elsewhere. It is also not clear from the EA or the HCP that impacts can be properly tracked. Killing an unknown number of predators in an attempt to compensate for sacrificing plovers and jeopardizing their nesting success simply to allow greater human beach access is inappropriate.

<sup>36</sup> Draft EA, at 2-14.

<sup>37</sup> Id. (emphasis added).

Thank you for this opportunity to comment.

Sincerely,



Stephanie Harris  
Massachusetts State Director  
The Humane Society of the U.S.



Sharon B. Young  
Marine Issues Field Director  
The Humane Society of the U.S.  
syoung@humanesociety.org

### **Response to Comment 0124-1**

When the draft EA was published, the estimated 2015 piping plover population size was not publicly available. The MADFW Natural Heritage and Endangered Species Program recently published the 2015 plover census report. The report can be accessed online at:

<http://www.mass.gov/eea/docs/dfg/nhesp/species-and-conservation/plover-census-report-mass-2015.pdf>. The estimated total number of breeding pairs in Massachusetts for the entire 2015

breeding season is 687 pairs. The EA has been updated accordingly (sections 1.2, 3.1.2.2., 4.2.1.3, and 4.3.1).

### **Response to Comment 0124-2**

Thank you for the comment. The MADFW Natural Heritage and Endangered Species Program's plover census reports can be accessed online at:

<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-birds/coastal-waterbird-conservation.html>.

### **Response to Comment 0124-3**

The Service provided a thorough review of the status of the species in the September 2009 5-year review and we continually incorporate new information into our regulatory reviews (including review of this HCP) and technical assistance activities. The Service also annually updates recovery implementation activities. As stated in section 3.1.2.2 of the EA, New England is the only recovery unit to have consistently exceeded the regional recovery goal for minimum population size established in the Revised Recovery Plan. The recovery goal of 625 breeding pairs was first exceeded in 1998 and has been exceeded in all but 3 years during the period 1998 to 2015 (1999, 2000, and 2005). The Massachusetts piping plover population has had an annual population increase of approximately 2.1 percent since 1998. The Plan proposes to eliminate all proposed take exposure if the Massachusetts population drops below 500 breeding pairs, which is 80 percent of the abundance recovery goal for New England. This is a conservative point at which to cease take exposure that adequately considers trends in the status of the piping plover population in New England and the contribution that piping plover habitat in Massachusetts should make to a robust population of piping plovers and the species' recovery.

An updated Revised Recovery Plan is not necessary for the Service to issue an ITP to the MADFW. The EA concluded that the proposed action would have insignificant impacts on the Massachusetts piping plover population. The Plan's conservation strategy is intended to offset the take attributed to the HCP, and pursuant to MESA, contribute to a net conservation benefit to the species by increasing productivity (number of fledglings per breeding pair). If the ITP issuance criteria are met, the Service must issue the permit (see response to Comment 0030-2).

### **Response to Comment 0124-4**

The Service believes it has adequately considered a reasonable range of alternatives. In 1983, the Council on Environmental Quality (CEQ) issued a memorandum on National Environmental Policy Act (NEPA) regulations (48 *FR* 34263). One of the topics addressed in the memorandum was "selection of alternatives in licensing and permitting situations." The CEQ states:

Neither NEPA nor the CEQ regulations make a distinction between actions initiated by a Federal agency and by applicants. Early NEPA case law, while emphasizing the need for a rigorous

examination of alternatives, did [48 FR 34267] not specifically address this issue. In 1981, the Council addressed the question in its document, “Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations.” The answer indicated that the emphasis in determining the scope of alternatives should be on what is “reasonable.” The Council said that, “Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the applicant.”

Since issuance of that guidance, the Council has continued to receive requests for further clarification of this question. Additional interest has been generated by a recent appellate court decision. *Roosevelt Campobello International Park Commission v. E.P.A.* dealt with EPA’s decision of whether to grant a permit under the National Pollutant Discharge Elimination System to a company proposing a refinery and deep-water terminal in Maine. The court discussed both the criteria used by EPA in its *selecting* of alternative sites to evaluate, and the substantive standard used to *evaluate* the sites. The court determined that EPA’s choice of alternative sites was “focused by the primary objectives of the permit applicant...” and that EPA had limited its consideration of sites to only those sites which were considered feasible, given the applicant’s stated goals. The court found that EPA’s criteria for selection of alternative sites was sufficient to meet its NEPA responsibilities.

The commenter did not provide any suggestions for additional alternatives to consider. Based on CEQ’s guidance, the Service considered additional alternatives to the MADFW’s proposed HCP. All but one of those alternatives were eliminated from further consideration, as discussed in the EA (section 2.4). In consideration of the MADFW’s purposes and needs, there is no practical reason for the Service to consider additional alternatives for detailed analysis in the EA.

Although similar to the proposed action, the additional action alternative considered in the EA—shorter permit term alternative—includes potential benefits and drawbacks compared to the proposed action (see EA section 2.3). This alternative is carried forward for detailed analysis in the EA because it is an option that the Service is considering at this time. The analysis on this alternative is short because the annual effects are identical to the proposed action, with the exception that they would be limited to a 10-year period. Carrying forward an alternative and determining if the effects are not different or are negligibly different from the proposed action is an informative exercise when evaluating the potential environmental consequences of a proposed action.

### **Response to Comment 0124-5**

Thank you for your comment.

### **Response to Comment 0124-6**

See response to Comment 0124-19.

### **Response to Comment 0124-7**

Section 10 of the ESA provides a regulatory mechanism to permit the incidental take of federally listed species by non-Federal entities when conducting lawful activities. See response to Comment 0030-2 regarding the ITP issuance criteria, including minimizing take to the maximum extent practicable.

### Response to Comment 0124-8

Although the plan area includes the entire coastline of Massachusetts, not all of the covered activities would occur along the entire coastline (e.g., OSV use). Also, the Service does not expect that all beach managers would apply for a COI under the HCP. Additionally, Federal landowners (e.g., the NPS) are not eligible to apply for a COI to receive incidental take coverage under the HCP. Therefore, under the HCP, take of nesting plovers would not occur everywhere within the plan area. Also note that the plan area was defined to include all suitable piping plover breeding habitat to provide Plan participants the opportunity to implement mitigation (selective predator management) at sites that would benefit the plover.

The MADFW would track and limit the amount of take authorized as discussed in the HCP (section 3.3.2). All of the ITP issuance criteria (see response to Comment 0030-2) must be met, including minimizing take to the maximum extent practicable. The EA concludes that the proposed action would have insignificant impacts on piping plovers.

### Response to Comment 0124-9

Quantifying the number of nests/broods/territories to be exposed to covered activities would be relatively straightforward given the MADFW's ongoing statewide program of working with beach operators to ensure management in compliance with the State and Federal guidelines. The method for determining the number of territories that would be affected at a given site appears near the end of HCP section 3.3.2.1: "In order to determine the number of territories affected at a given site, each plan participant will calculate the area of suitable nesting habitat subject to proactive fencing, as well as the density of breeding pairs in this portion of the site and the site as a whole during the prior three years. The [MA]DFW will then determine the number of territories affected by using the highest observed density for the site or the affected portion of the site (whichever is higher) for the three-year period. If this calculation is a fraction, the number of territories affected will always be rounded up. Thus, even if a small fraction of a territory is affected, the Plan assumes an impact on the entire territory." The Plan establishes a major disincentive for beach operators to deviate from the State and Federal guidelines or fail to report information to the MADFW, because doing so could jeopardize their eligibility to participate in the Plan.

As the commenter suggests, documenting the actual number of chicks, nests, or adults lost as a result of the covered activities would be more challenging. For example, if a chick disappears from a brood exposed to OSVs, it will be difficult to know (in the absence of direct observation or other evidence) if this is an effect of OSV exposure or other factors. However, by pooling data from multiple sites and years and using appropriate statistical techniques, it should be possible to estimate the effects of most covered activities over time. Nevertheless, when determining exact impacts of the covered activities is not possible, it is reasonable to use the best available data and information in conjunction with best professional judgment of biologists with many years of piping plover conservation experience to estimate those impacts, as described in HCP section 3.3.2.2 and our response to Comment 0124-15. The Plan relies on self-reporting by Plan participants; however, MADFW inspections, the requirement to keep daily data logs, and the involvement of multiple professional staff in data collection all help to ensure the quality of the data and accuracy of reporting.

According to 50 CFR 17.32(b)(1)(iii)(C)(2) and the Service's 5-Point Policy, monitoring is a mandatory element of all HCPs. Thus, in addition to the required contents of IAMPs described

throughout the Plan, the Plan contains adequate, detailed listing of monitoring requirements for each covered activity in the subsections of section 3.2; reference to the ongoing monitoring requirements of the State and Federal guidelines; and in section 4.4.1, additional monitoring information required to be included in each Plan participant's IAMP (tables 4-7 and 4-8). Through the Plan's monitoring provisions, and by extension those in the IAMPs, the MADFW would be able to reliably track compliance with Plan requirements, the effects of covered activities, whether nests exposed to reduced fencing and nest moving hatch, and the number of chicks fledged from broods exposed to roads or OSVs. These data would be provided by Plan participants but would also be verifiable through site inspections. These are key pieces of information necessary to evaluate the effects of the covered activities over time. Evaluating the effects of reduced proactive fencing is more challenging, which is one of the reasons the Plan places additional restrictions on the scope and frequency of this activity. Under the Plan, a minimum of 93 percent of breeding plovers in Massachusetts will continue to be managed in accordance with the guidelines, and the EA determined that the covered activities would have insignificant impacts on the piping plover and other elements of the human environment.

As stated in section 2.2.3 of the EA, to address the ITP issuance criteria, the primary mitigation measure would be implementation of a selective predator management program on Massachusetts beaches. This program is expected to increase piping plover productivity at sites where it is implemented, and is specifically designed to offset any loss of piping plover productivity in Massachusetts associated with the covered activities. In addition to including the selective predator management program, the conservation strategy allows the MADFW and Plan participants to implement education, outreach, increased law enforcement, and nesting habitat improvements on a site-specific basis. These actions are intended to contribute to a net conservation benefit although they will not contribute to offsetting take.

Please see response to Comment 0130-8 for more information on the MADFW's expectation of "net benefit" under MESA.

### **Response to Comment 0124-10**

As stated in the cumulative impacts analysis of the EA (section 5.1.3.1) and section 3.3.2.1 of the HCP, to limit cumulative statewide impacts to piping plovers, the limits on take exposure outlined in the Plan are intended to apply to all future or current individual ITPs for piping plovers pertaining to recreational activities or beach operations issued by the Service for such activities in Massachusetts (including, but not limited to, the ITP issued to the Town of Orleans). The MADFW would also apply the statewide take exposure limits in table 3-1 of the HCP to any take authorizations for recreational activities or beach operations made by the Service for Federal actions pursuant to section 7 of the ESA (e.g., at the Cape Cod National Seashore). For example, if the statewide HCP exposure limit in 2016 was set at 35 exposures based on the statewide population size in the previous 3-year period, the number of take exposure allowances available to Plan participants would be adjusted to 33 to account for the individual ITP issued to the Town of Orleans that would allow escorted vehicle use in the vicinity of 2 piping plover broods. The same process would apply for any incidental take of piping plovers in Massachusetts by Federal activities exempted through consultation with the Service under section 7 of the ESA. Thus, the MADFW would account for other expected incidental take of piping plovers in the Plan area when allocating take exposures to Plan participants.

### **Response to Comment 0124-11**

As stated in the EA (section 4.2.1.3), the number of predators removed would depend on multiple factors, including the amount of piping plover take exposure authorized, the sites at which predator control occurs, and what predator species are impacting plovers at those sites. Each fall, the MADFW would determine the number of take exposures to be authorized under the Plan for the following beach season, based on a rolling 3-year average of the plover population size (see HCP section 3.3). The authorized level of take would determine the level of predator management required for mitigation.

Also, because of the variation in predator populations across the beaches of the study area, and the variation in their effects on plovers, it is highly unlikely that a single predator species would be targeted at all mitigation sites. The determination of which predators to target would be site-specific. Therefore, it is not possible for the Service to estimate the number of individuals of each plover predator species that would be removed under the HCP. However, as discussed in the EA, the Service expects the impacts on predator populations to be insignificant.

### **Response to Comment 0124-12**

As stated in the EA (section 2.2.3.1) and the HCP (section 4.3.2.1), Massachusetts law requires that only cage- or box-type traps be used to trap mammalian predators (e.g., raccoons, Virginia opossums, and striped skunks). No body-crushing traps would be used. All traps used to capture mammals would meet the Association of Fish and Wildlife Agencies' "Best Management Practices for Trapping in the United States."

Section 2.2.3.1 of the EA and section 4.3.2.1 of the HCP were updated to clarify that no body-crushing traps would be used.

### **Response to Comment 0124-13**

Thank you for your comment. See response to Comment 0005-1.

### **Response to Comment 0124-14**

We disagree with the commenter's characterization of the Plan's monitoring program and guidance for development of IAMPs. Please see response to comment 124-9.

### **Response to Comment 0124-15**

As described in our response to Comment 124-9, documenting certain effects of covered activities on piping plovers would be challenging, especially for indirect effects such as those suggested by the commenter—re-nesting elsewhere, disturbance, and moving from a preferred site. The HCP addresses this uncertainty and accounts for these indirect effects by assuming the productivity of each nest/brood/territory exposed to covered activities would be reduced by 50 percent and mitigating for this level of impact even though minimization measures may further reduce the actual impact on productivity. By pooling data collected by the monitoring program over time and using appropriate statistical techniques, the MADFW would be able to estimate the effects of most covered activities over time and determine if adaptive management is necessary. Please see our response to Comment 124-9 regarding how the MADFW would monitor and document effects of the covered activities.

### **Response to Comment 0124-16**

The Plan allows the MADFW to increase site-specific take exposure over 15 percent up to 30 percent of nests/broods/territories present at up to five sites statewide. This would provide the MADFW with increased flexibility at sites with high recreational use. In response to the comment, the MADFW clarified in the HCP that increasing the allowed take exposure beyond 15 percent of nests/broods/territories would be done to achieve recreational objectives. Take exposure allocations at these sites would still be constrained by the HCP's limits on habitat area affected and the statewide limit on take exposures. Because the total allowable take statewide would remain unchanged, this redistribution of take among sites would not alter the impacts of the Plan on the Massachusetts plover population as a whole. The HCP (section 5.2.2.3) contains the process for Plan participants to apply for, obtain, and be allocated take exposure allowances, as well as MADFW's reserved rights to reject applications.

### **Response to Comment 0124-17**

See response to Comment 124-15.

The HCP does not provide for take allowances to be rolled over from year to year. For example, if a Plan participant is authorized to expose two broods to OSVs per year and exposes only one brood in year one, the Plan participant is still limited to two exposures in year two. Therefore, as the commenter recommends, the annual take limit is capped each year and would “expire” annually. Mitigation “credits” can roll over from year to year, but only through the term of the COI (3 years). In the example above, if the Plan participant mitigated for two take exposures in year one, but exposed only one brood, one mitigation “credit” would carry forward, and mitigation for only a single brood would be needed in year two even if two broods were exposed.

### **Response to Comment 0124-18**

See response to Comment 0124-10.

### **Response to Comment 0124-19**

As stated in the Plan (section 1.2.6), Federal agencies, such as the Service (National Wildlife Refuges), National Park Service (Cape Cod National Seashore), and U.S. Army Corps of Engineers, are not eligible to participate in the Plan as they achieve ESA compliance through consultation with the Service under section 7 of the ESA. The HCP included Federal lands in the Plan area to develop a comprehensive conservation strategy for piping plovers in Massachusetts. For example, selective predator management—implemented in accordance with the Plan—could be conducted on piping plover nesting beaches on Federal property, in addition to non-Federal property. In both areas, predator management and implementation would be funded and coordinated by the MADFW and Plan participants (see chapter 5 of the HCP). While the Plan leaves open the option to mitigate on Federal land, it does not rely on Federal actions to mitigate adverse effects to the piping plover, nor does the Plan rely on Federal property to provide mitigation opportunities for take allocated under the Plan.

Regarding consideration of including Federal lands with respect to exposure or sacrifice of plovers, see response to Comment 0124-10.

**Response to Comment 0124-20**

CEQ regulations (44 CFR §1502.14) require Federal agencies to consider a “no action” alternative in their NEPA analyses to compare the effects of not taking action with the effects of the action alternative(s). In the EA, the no action alternative serves as a baseline to compare the impacts of the proposed action and the shorter permit term alternative. The need for Federal action is for the Service to respond to the MADFW’s ITP application. If the ITP issuance criteria are met and the HCP and supporting information are statutorily complete, the permit must be issued (see response to Comment 0030-2).

**Comment ID: FWS-R5-ES-2015-0182-0130**

February 18, 2016

Dan Ashe, Director  
 c/o Public Comments Processing  
 Attn: Docket No. FWS-R5-ES-2015-0182  
 Division of Policy, Performance and Management  
 U.S. Fish and Wildlife Service  
 5275 Leesburg Pike, ABHC-PPM  
 Falls Church, VA 22041-3803

Re: **Piping Plover Habitat Conservation Plan**

Dear Director Ashe,

On behalf of Mass Audubon, we submit the following comments on the Massachusetts Division of Fisheries & Wildlife Habitat Conservation Plan for Piping Plover. Established in 1986, Mass Audubon's Coastal Waterbird Program monitors and protects approximately 40% of the nesting piping plovers in the state through partnerships with state agencies, local municipalities, and private landowners. Our goal is to recover a self-sustaining plover population in the state in accordance with abundance, productivity, and management objectives set forth in the US Fish and Wildlife Service (USFWS) Recovery Plan for Piping Plover.

**General Comments:**

While we recognize that Section 10 of the Endangered Species Act (ESA) accommodates the issuance of an Incidental Take Permit (ITP), the decision to do so requires robust analysis to assure that minimization and mitigation of take results in no net loss of plovers. A take permit must be accompanied by a management plan that ensures the species' progress toward recovery is not impeded and is in fact advanced. Mass Audubon believes that a carefully constructed Habitat Conservation Plan (HCP) for piping plovers nesting on state, municipal and privately-owned beaches may advance plover conservation if exposure to take is strongly minimized, if mitigation enables population benefits that are highly probable, and if plan implementation is continuously evaluated and adaptively managed.

As a result of management and outreach efforts by state agencies, municipalities, non-government organizations, and private landowners, piping plover abundance has increased nearly five-fold in Massachusetts since the population was listed under federal and state endangered species laws in 1986. However, the species' recovery is not secure. Since 1992, reproductive success of plovers in the state has

declined from an annual average of 2 chicks fledged per pair to 1 chick fledged per pair (HCP p. 2-17). Redoubled efforts including selective predator management are needed to raise productivity to ensure a stable population in the state.

Mass Audubon provisionally supports the issuance of an ITP to the Massachusetts Division of Fisheries & Wildlife (MADFW) and implementation of a HCP under Section 10 of the ESA. We believe that the HCP has the potential, through avoidance and minimization of take, to strongly protect piping plovers on beaches where flexible management is granted, and to obtain critically-needed relief from predator impacts through mitigation. The expected benefit to both plovers and local communities of a strong HCP and greater recreational opportunity on nesting beaches will be a significant breakthrough in plover recovery.

It should also be noted that other federal- or state-listed rare species may be present on beaches subject to ITPs pursuant to the HCP, and that the Massachusetts Wetlands Protection Act (WPA) also applies to a variety of activities on beaches and associated wetland resource areas (e.g. dunes). It is important that the federal and state permitting procedures and standards for beach management be clear and consistently applied across sites. To the extent the HCP allows activities not previously allowed under the Massachusetts Beach Management Guidelines, updated state guidance is needed to clarify permitting under the Massachusetts Endangered Species Act (MESA) and WPA.

**Specific Comments:**

0130-1

**HCP Goal:** The stated goal of the HCP is to *contribute to achieving the long-term viability of a robust Massachusetts population of the Piping Plover. Viable and robust is defined as able to persist near current population size (approximately 666 breeding pairs in 2013) or higher for the long-term (p.1-1).* We are concerned that although the plan includes a “fail-safe” mechanism that will disable the take permit if the Massachusetts population falls below 500 pairs (potentially as a result of permitted take and other factors), this abundance is only 75% of the current population (p. 3-17). We recommend that a more conservative lower population limit, more in line with the goal of the HCP, be considered for modifying or disabling the ITP such that the take permit will be disabled if the population falls to 80% of the current population.

0130-2

**Population under Management:** In addition, the “fail-safe” mechanism calculates allowable take based on the entire Massachusetts population including plover pairs nesting on federal lands that are outside the management influence of the MADFW. In 2013, twenty-five percent of the Massachusetts population of Piping Plover (167 pairs) nested at USFWS’ Parker River National Wildlife Refuge and Monomoy National Wildlife Refuge, and the National Park Service’s (NPS) Cape Cod National Seashore<sup>1</sup>. These important nesting beaches are managed at a level of protection that exceeds the federal guidelines under ESA and which is consistent with the missions of USFWS and NPS. Requests for flexible management on these lands are pursued under Section 7 of ESA; cumulative impacts from a state ITP and incidental take on federal lands are managed by the USFWS and is outside the scope of the state HCP (p. 1-12). Including pairs on federal lands in the calculation of allowable take inflates the number of exposures to take proposed in the HCP without the ability (or arguably the need) to protectively manage those pairs within the regional framework provided by the HCP. Based on 2013 abundance data, 45 exposures to

<sup>1</sup> 2013 MADFW. Summary of the 2013 Massachusetts Piping Plover Census. NHESP-MADFW. 15 Sep 2015.

0130-2  
cont. | take are proposed to be allowed in the first year of plan implementation. With the appropriate exclusion of plover pairs at national wildlife refuges and the Cape Cod National Seashore, allowable take would be 35 exposures.

0130-3 | In addition, mitigation should not be proposed to take place on federal lands. If this occurred, managers and agencies of state and municipal beaches would be requested to shoulder the financial burden of protecting birds on designated federal lands whose mandate and budgets should be held accountable for maintaining robust and viable populations on these federal lands managed for conservation. Allowable take under the state ITP should derive specifically from the part of the Massachusetts population under state control; mitigation should be directed at sites not already employing best practices in plover protection from predators and other threats.

0130-4 | **Statewide Plan within Regional Context:** The HCP should include a “fail-safe” mechanism that recognizes the Commonwealth’s role and importance in the range-wide recovery of the Atlantic coast population of Piping Plover. Currently 37.3% of the Atlantic coast population nests in Massachusetts (p. 2-15). Abundance of plovers outside of Massachusetts has been declining at a rate of 42 pairs lost per year since 2007 (p. 2-15). It is critical that the HCP for Piping Plover in Massachusetts be framed within the context of the larger regional population. Although abundance of plovers in the state is relatively stable, productivity is below what is needed to maintain the population and it remains a possibility that Massachusetts serves as an ecological “sink” within the regional population<sup>2</sup>. Fledged young from other states may be attracted to nest in Massachusetts but suffer poor reproductive rates. Provisions allowing for take in Massachusetts under the ESA should take into account the overall regional population and trends including productivity, not just number of adults, in Massachusetts. We recommend the HCP include contingency language that modifies the ITP in the event the fragile status of plovers in surrounding regions continues to worsen.

**Avoiding and Minimizing Risk of Take:** Mass Audubon strongly supports the HCP’s objective to *minimize the impacts of the taking to the maximum extent practicable*. (p. 4-1). We believe that important modifications to the conditions for two covered activities (Recreation and Beach Operations Associated with Reduced Proactive Fencing of Habitat (p.3-7) and Oversand Vehicle (OSV) Use in Vicinity of Unfledged Chicks (p. 3-11) would significantly reduce the risk of a take and not appreciably reduce the flexibility of beach management for recreation.

*Recreation and Beach Operations Associated with Reduced Proactive Fencing of Habitat*

0130-5 | Mass Audubon supports the inclusion of this covered activity when it does not impact a documented plover nesting territory. Piping Plovers are highly site-faithful with individuals returning to nesting territories established and defended for multiple succeeding years<sup>3</sup>. Failing to protect these relatively small areas of known historical nesting amounts to eliminating a territory from the population and potentially causing the territorial pair to fail to nest in a given year or to seek open habitat, if it exists, at another location. Forcing a successful pair out of suitable habitat through the withholding of protective fencing increases the risk of adult predation because the birds are forced to be active in unfamiliar surroundings<sup>4</sup>. In addition, it increases stress to the dislocated pair and pairs it might compete with at a

<sup>2</sup> Robertson and Hutto. 2006. *Ecology* 87:1075-1085.

<sup>3</sup> Ledee et al. 2010. *Condor* 112: 637-643; Gratto-Trevor et al. 2016. *Journal of Field Ornithology* (in press)

<sup>4</sup> Cohen et al. 2006. *Journal of Field Ornithology* 77: 409-417.

new location. Although not studied in piping plovers, territorial behavior and the fate of dislocated pairs has been well-studied in birds; displaced birds are likely to have reduced reproductive success compared to birds nesting in historically-used territories<sup>5</sup>. Furthermore, long-term withholding of protective fencing for established territories near a beach access point amounts to permanent habitat loss, especially in the context of a 25 year ITP.

0130-5  
cont.

In addition, there is evidence suggesting that the Massachusetts population of plovers is at or nearing carrying capacity. This is indicated by the significant negative trend in annual productivity since the mid-1990s when the population had grown to approximately 70% of its current level (p. 2-17), and by the insignificant (<3%) variation in abundance over the past five years<sup>6</sup>. Established pairs forced off beaches through the withholding of protective fencing are unlikely to find suitable habitat elsewhere if the population is at carrying capacity. We strongly recommend that proactive fencing be provided to all historically known (prior five years) nesting territories.

*Oversand Vehicle (OSV) Use in Vicinity of Unfledged Chicks*

0130-6

Mass Audubon believes that allowing vehicles to pass within feet of newly-hatched plover chicks poses a very high risk of a take. To comply with the HCP's objective to *minimize the impacts of the taking to the maximum extent practicable*, it is necessary to condition the covered activity to protect newly-hatched plover chicks. We recommend prohibiting OSV travel within 100 m of broods (or larger distance for highly mobile broods per the federal guidelines) less than 7 days old. The conditions currently proposed in the HCP are inadequate to protect newly-hatched plover broods which are typically less mobile than older chicks, more likely to seek shelter in tire ruts, more likely to lie motionless when alarmed, less likely to be able to climb out of tire ruts, and are very difficult to observe even by trained, qualified shorebird monitors<sup>7</sup>. Although the HCP proposes training of OSV operators on rules and policies of the plan, no training in bird identification is proposed. No training of any kind is proposed for the OSV passenger who will escort the vehicle through a brood territory, yet it will fall to this individual to scan for highly camouflaged plover chicks that are a few inches in size. Trained shorebird monitors will be assigned plover broods for continuous monitoring during driving hours, but it happens not infrequently that some plover nests are not detected before hatching and "surprise" broods appear on the beach where none is expected.

Prohibiting vehicles within a minimum of 100 m of broods less than a week old reduces the risk of a take because older chicks are easier to detect, are more mobile and better able to move out of harm's way, and are less impacted by disturbance to foraging that a vehicle corridor through a brood territory poses to newly-hatched chicks. Allowing vehicle travel by broods at least 7 days old represents a significant improvement in beach management flexibility compared with current practice which is to wait approximately five weeks for unfledged plover chicks to grow out of vulnerability to being run over by vehicles.

0130-7

Finally, Mass Audubon strongly disagrees with the notion that discouraging plovers from nesting in high use recreational areas constitutes a service to the population (p. 3-2) or sound rare species management.

<sup>5</sup> Newton. 1992. *Biological Reviews* 67: 129-173

<sup>6</sup> USFWS. 2016. Preliminary abundance data for Atlantic coast population of Piping Plover; presented 2016 Atlantic Coast Piping Plover and Least Tern Workshop, Shepherdstown, WV.

<sup>7</sup> USFWS. 1996. Piping Plover (*Charadrius melodus*) Atlantic Coast Population Revised Recovery Plan.

0130-7  
cont.

As the HCP states, recent data show that some of the most productive nesting beaches in the state are enjoyed by hundreds to thousands of beach goers (p. 2-21). The five-fold increase in abundance of piping plovers results from the cooperative protection afforded them by coastal communities throughout Massachusetts. Despite the gains made by plovers, their future is not secure and our understanding of them is not complete to allow us to assign nesting to certain beaches and exclude them from other beaches. Fortunately, Massachusetts has proven that plovers can coexist and in many instances prosper with the beach-going public, and the HCP should build on that 30-year legacy.

**Net Benefit of Mitigation:** Mitigation is a crucial component of the HCP and is the principal means for ensuring that recovery of the plover population continues to advance despite permitted exposures to risk of take under the ITP. *Mitigation is designed to benefit the Piping Plover population and provide a net increase in productivity* (p.1-10).

We support the state's avowed precautionary approach to quantifying and monitoring the benefits of mitigation. A precautionary approach (using an upper-bound estimate of loss in productivity resulting from covered activities to calculate mitigation p. 3-18), is properly identified in the plan as required to account for unknown adverse sub-lethal effects to adults, chicks and post-fledging plovers.

In addition, we support the use of the best available science-based information to develop a mitigation program designed to provide a "net benefit" to the plover population. The USFWS Enhanced Management Program (EMP) developed to restore a local piping plover population impacted by an oil spill serves as the model for science-based mitigation and the state HCP assures an approach *nearly identical* (p. 4-6) to the EMP.

Based on a scientific analysis of predator control programs throughout the piping plover's range, the EMP estimates that every breeding pair benefiting from a three-pronged management program including selective predator management, education and enforcement, will show a 20% increase in productivity.

0130-8

Calculation of effects of covered activities (excluding possible mortality of adults) and the mitigation required to provide a net benefit are presented in Table 4-4 (p. 4-12). The calculated negative effects to plover productivity as a result of covered activities is based on a precautionary upper-bound (50%) estimate to quantify loss in productivity. The calculation of mitigation uses a 25% estimated increase in productivity to pairs benefiting from selective predator management. There is no explanation for the use of a more optimistic (25% versus the EMP 20%) estimate of productivity benefit. Only with an unjustifiable estimate of benefit that exceeds 20% is there a net benefit in productivity, unless the ratio of pairs benefiting to pairs exposed is increased.

We **strongly recommend** that three pairs of plovers (rather than 2.5 pairs) benefit from selective predator management for every pair exposed to risk of a take under the ITP. In the case of adult mortality risk associated with operation of roads and parking lots, an additional 0.5 pairs of plovers should benefit from mitigation increasing the ratio to 3.5:1.

In addition, adherence to the EMP for correctly calculating mitigation required to offset loss of productivity resulting from covered activities will require all plan participants to engage in enhanced education and enforcement activities. The USFWS estimated that all three components of management produced a 20% increase in plover productivity; it is assumed that selective predator management alone would produce less than a 20% increase in productivity.

0130-9

**Coordination with Related Regulations:** This HCP is focused on a single federally listed species. The activities and associated beach management practices permitted pursuant to the HCP may also affect other species protected under the Endangered Species Act, e.g. Roseate Tern and/or Red Knot. The HCP indicates that these species are not likely to be affected because of the different seasonal timing of the HCP activities vs. use of these same habitats by Roseate Terns or Red Knots. However, the overall annual plans for management of a beach may include activities at locations and times that would affect other protected species and their habitats. State-listed species including the Common and Least Tern and the Diamondback Terrapin are also protected under MESA and the WPA. Beach management plans including OSV recreation need to address all applicable laws. The draft HCP indicated that MADFW intended to file an Environment Notification Form for review under the Massachusetts Environmental Policy Act (MEPA) concurrently with the federal HCP public comment period (p.1-15). That did not occur, although DFW staff have communicated to us that they intend to provide other opportunities for public input. Mass Audubon intends to submit additional comments to the Commonwealth of Massachusetts regarding clarification and coordination of permitting standards and procedures for beach management plans and practices.

0130-10

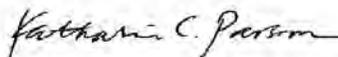
**Habitat Management and Climate Change:** The HCP has an important role to serve as a tool for plover conservation in the face of climate change. The USFWS recovery plan does not reflect recent information on the vulnerability of beach nesting birds to climate change effects such as accelerated sea level rise and stronger storm events. The HCP is an essential opportunity to incorporate new knowledge, especially through adaptive management, into the conservation of the species in the absence of an updated recovery plan. Nesting piping plovers will feel coastal squeeze most acutely in areas of the coast where beach migration is blocked by infrastructure. In addition, coastal engineering to preserve beaches through renourishment (with unknown consequences to nesting and foraging habitat), and with dune planting (which is known to adversely impact nesting habitat), will position piping plovers in the crosshairs as coastal communities struggle to maintain beaches and protect development.

Thank you for your consideration of these comments.

Sincerely,



John J. Clarke  
Director of Public Policy  
& Government Relations



Katharine C. Parsons, Ph. D.  
Director, Coastal Waterbird Program

Cc: Jack Buckley, Director, Massachusetts Division of Fisheries and Wildlife

### **Response to Comment 0130-1**

The piping plover population has experienced remarkable success in Massachusetts. In recent years, Massachusetts has supported approximately 75 to 80 percent of the piping plover breeding pairs within the New England Recovery Unit (e.g., approximately 77 percent in 2014; approximately 75 percent in 2015), and the Massachusetts population alone has regularly exceeded the Revised Recovery Plan goal for New England of 625 pairs. The Plan proposes to eliminate take exposure by covered activities if the Massachusetts population drops below 500 breeding pairs, which is 80 percent of the population size recovery goal for New England. We believe this is a conservative point at which to cease take exposure that adequately considers trends in the status of the piping plover population in New England and the contribution that piping plover habitat in Massachusetts should make to a robust piping plover population and the species' recovery.

The biological goal of the Plan is to contribute to the maintenance of a viable and robust piping plover population in Massachusetts. As described in the EA, we expect the effects of the Plan to have minor impacts on the piping plover, while many factors beyond the control of the MADFW and Plan participants could lead to fluctuations in Massachusetts piping plover population size. Examples include changes in habitat quality on the wintering grounds or changes in habitat availability due to coastal storms and erosion. By reducing the percentage exposure as the breeding population declines (HCP table 3-1), the Plan ensures that the allowable take exposure will decline steeply in response to population declines, whatever the cause. For example, at a population size of 670 breeding pairs (close to current levels), the MADFW could authorize 46 exposures to covered activities. If the population were to decline below 533 breeding pairs (the threshold proposed for no take exposure by the Massachusetts Audubon Society in this comment and Defenders of Wildlife in comment number 0138-1), the MADFW could authorize only 5 exposures across the entire State. Irrespective of the number of take exposures allowed, the minimization and mitigation program in the Plan is designed to ensure that the impacts of the covered activities on the piping plover will be insignificant by offsetting and likely providing a net increase over any loss of productivity caused by the covered activities. Therefore, the conservation implications of allowing 5 versus 0 take exposures at a Massachusetts breeding population size of approximately 533 breeding pairs are minimal. However, maintaining the ability to authorize even a small number of take exposures meets the purpose of MADFW's permit application by providing flexibility to address a limited number of conflicts between recreational activities and the piping plover population.

### **Response to Comment 0130-2**

Use of statewide breeding population size as a benchmark in the Plan reflects a long tradition of cooperative monitoring and management by Massachusetts coastal waterbird cooperators regardless of property ownership, including Federal partners. As stated in the Plan (section 1.2.6), Federal agencies are not eligible to apply for a COI to receive incidental take coverage under the HCP as they achieve ESA compliance through consultation with the Service under section 7 of the ESA. However, the HCP included Federal lands in the Plan area to develop a comprehensive conservation strategy for piping plovers in Massachusetts. Including Federal land within the Plan area facilitated a cumulative impacts analysis in the HCP and contributed to our cumulative impacts analysis under NEPA. Therefore, we disagree with the commenter that considering the cumulative impacts of Federal and non-Federal activities on the piping plover is outside the scope of an HCP.

To minimize the impact of the HCP on the piping plover, the MADFW would adjust the number of annual take exposures to account for impacts to the species by Federal activities. As stated in HCP section 3.3.2.1, “[t]he DFW will also apply the statewide take exposure limits in Table 3-1 to any take authorizations for recreational activities or beach operations made by the FWS for Federal actions pursuant to Section 7 of the ESA (e.g., at the Cape Cod National Seashore).” For example, in a year when 30 exposures to covered activities would be allowable in accordance with HCP table 3-1, and 5 broods would be exposed to take on Federal properties subject to section 7 consultations, the MADFW would reduce the allowable take exposures associated with the Plan to 25 to keep statewide cumulative impacts at or below 30 exposures.

### **Response to Comment 0130-3**

As described in HCP section 2.2.1 and EA section 2.4.3, the Plan area includes suitable piping plover habitat along the entire coastline of Massachusetts, including Federal land. Although take authorization on Federal land would be subject to consultation under section 7 of the ESA, and Federal land managers could not obtain COI coverage through the Plan, including Federal land in the Plan area is consistent with the MADFW’s goal of developing and implementing a comprehensive piping plover conservation strategy for all of Massachusetts.

Accordingly, the Plan’s comprehensive conservation strategy includes potential opportunities for mitigation actions associated with the Plan to be carried out on Federal land. However, any proposal for mitigation on Federal land would be subject to the approval and discretion of the Federal agency managing the land, and would need to be carried out in accordance with any applicable statutes, policies, or relevant agency guidance governing any proposed mitigation activities. Also, any mitigation under the HCP that takes place on Federal land would be funded and coordinated by the MADFW and Plan participants (see chapter 5 of the HCP; see also response to comment 0124-19). Further, the Plan does not rely on Federal lands for mitigation opportunities; it provides the option for Plan participants to mitigate onsite and the option for the MADFW to implement offsite mitigation on non-Federal land. To the extent practical, mitigation should be directed where it can provide the greatest conservation benefit, and Federal lands provide important piping plover breeding habitat. Therefore, the Plan should not unnecessarily preclude the option of mitigation on Federal land.

### **Response to Comment 0130-4**

Contrary to the commenter’s suggestion, the Plan does contain a “fail-safe” mechanism that considers Massachusetts’ place in the context of regional and range-wide (Atlantic) plover populations. The HCP uses the Revised Recovery Plan’s goal for the New England piping plover population to scale allowable take exposures and sets a conservative threshold (80 percent of the New England Recovery Unit goal) at which the MADFW would cease allocating take exposures. The magnitude of this threshold recognizes the importance of the Massachusetts’ population to the regional population and considers the Atlantic coast population, if indirectly, as the recovery plan addressed the entire Atlantic coast population. Beyond these considerations, the condition of the greater Atlantic coast piping plover population is outside the scope of the HCP and the control of the MADFW. As it relates to an ITP, a substantial decline in the larger Atlantic coast population would be addressed under unforeseen circumstances (HCP section 5.3.1 and 50 CFR 17.32(b)(5)(C)) and criteria for revocation [50 CFR 17.32(b)(8)].

We agree that the Massachusetts' piping plover population is generally stable, and the most recent population reports indicate that productivity is above the population maintenance level. Moreover, the best available scientific evidence based on banding studies indicates a strong tendency for hatch-year birds to return to their natal geographic region (e.g., see pages 144–146 of 2009 Piping Plover 5 Year Review). Beginning in 1994, the Massachusetts population has consistently constituted approximately 30 percent of the Atlantic Coast population (with the exception of 2004 to 2006 when the population experienced a brief decline) and 74 to 80 percent of the New England plover population. Over the last 5 years, the Massachusetts population has shown an overall increase and has exceeded the recovery goal of 625 pairs for the New England Recovery Unit. Although we note that the abundance outside of the New England Recovery Unit, in particular the New Jersey-New York and Eastern Canada Recovery Units have declined in recent years (in reference to the statement regarding declining plover abundance outside of Massachusetts), Connecticut, Rhode Island, New Hampshire, and Maine have all demonstrated increasing piping plover populations in the last 3 to 4 years, and the Massachusetts population increased in 2015. We also note that the citation the commenter provided in support of this comment discusses the concept of “ecological traps” but does not appear to provide evidence that Massachusetts is an ecological sink for the piping plover. Dispersal probabilities of Atlantic Coast piping plovers decline with the distance from the natal or previous nesting site. Movements are generally bi-directional (e.g., an adult dispersed from New York to Rhode Island in 2015, despite higher productivity in the latter state in 2014), but it is possible that net movement could somewhat favor Massachusetts if productivity in surrounding New England states is higher. However, it is unlikely that immigration has the potential to counter a long-term or serious deficit in productivity of Massachusetts piping plovers. If, for any reason, low productivity of Massachusetts piping plovers causes a decline in abundance of breeding pairs, the amount of take exposure authorized under the HCP will be automatically reduced.

Nevertheless, consistently low productivity across Massachusetts, whatever the cause, would be expected to ultimately result in a population decline and corresponding reductions in take exposure authorizations associated with the Plan (see HCP table 3-1). As described in the EA, the low levels of proposed take exposure and impact minimization procedures associated with implementation of the covered activities would not cause significant impacts on the piping plover. Factoring in the benefits of the conservation strategy, the Plan would offset any decrease in productivity associated with covered activities (see HCP section 4.3.3). Therefore, Plan implementation would not significantly impact statewide productivity or population trends.

### **Response to Comment 0130-5**

We agree with the commenter's assessment that reduced proactive fencing could negatively impact piping plovers in the Plan area. These impacts, which could include displacement of adults, nest abandonment, reduced productivity, etc., are analyzed and described in the EA and HCP. However, provided that an applicant meets the criteria for ITP issuance (see response to Comment 0030-2), the ESA allows for incidental take of listed species. In accordance with the issuance criteria, the HCP includes measures to minimize the impacts of the covered activity “Recreation and Beach Operations Associated with Reduced Proactive Symbolic Fencing of Habitat” and all other covered activities.

The purpose of this activity is to allow recreational beach use within portions of beach where the symbolic fencing would otherwise hinder such use, and this activity may only be necessary within specific sections of beach at a specific site (e.g., near a major beach access trail or parking lot). The Plan places site-specific limits on the areal extent of reduced fencing and the percentage of breeding

pairs that may be affected. As noted in the Plan, due to site-specific limits on the area of reduced fencing, this activity would not necessarily affect an entire territory and could result in shifting of territory distributions within a site, rather than complete displacement of a breeding pair from a site (HCP section 3.2.2.2). Nonetheless, to address the issue raised by the commenter, the MADFW revised the HCP to limit the number of take exposure authorizations for this covered activity in a given year to no more than 50 percent of the allowable take exposure authorizations for any year in which more than 10 take exposures could be authorized (see HCP section 3.3.2.1). For example, in a year where 30 exposures could be authorized statewide based on the 3-year average piping plover population size, no more than 15 of these could involve reduced symbolic fencing.

We disagree with the commenter that the piping plover is at or is nearing carrying capacity in Massachusetts. Abundance of Massachusetts breeding pairs continues to increase after years with good productivity (e.g., 2008 and 2010) and grow modestly after years with productivity close to 1.2 chicks per pair (e.g., 2011 and 2014). The 2015 Massachusetts piping plover population was 687 breeding pairs (see EA section 3.1.2.2) and represents an average annual population increase of 2.1 percent since 1998. It is not unexpected that a population's productivity and growth rate would taper following years of exponential growth; however, the steady population growth suggests that the population has not yet reached carrying capacity.

### **Response to Comment 0130-6**

As the commenter suggests, risks of OSV use to unfledged chicks are likely greater for younger chicks, and OSV use could negatively impact piping plovers in the Plan area. The Plan's conservative upper bound estimate of a 50-percent reduction in fledging success for broods exposed to covered activities takes this risk into account (see HCP section 3.3.2.2). Beach operators allowing this covered activity will be required to implement intensive impact minimization procedures including assigning a designated shorebird monitor to each brood during all vehicle driving hours (this monitor can stop traffic if chicks approach or enter the OSV corridor), pedestrian escorting of individual vehicles or caravans, limits on driving hours (6 hours/day; daylight only; up to three travel windows), smoothing of tire ruts, and other measures. These protection measures will substantially reduce risk to chicks.

As the commenter mentions, the HCP has to minimize the impacts of the taking to the maximum extent practicable. We agree that expanding OSV-free buffers around plover chicks would minimize impacts to the species. However, there are reasonably foreseeable scenarios based on differential hatching dates and brood locations in which larger buffers could prevent this covered activity from occurring at a given site. A minimization measure that restricts a covered activity to the point of preventing it from occurring is not practicable. The MADFW revised the HCP (section 3.2.3) to state that detailed information on the site-specific thresholds for temporarily halting traffic to further reduce the likelihood of chick mortality must be provided in IAMPs.

We expect relatively few beaches in Massachusetts to propose allowing recreational OSV use under the Plan (see HCP section 2.4), and as described in HCP sections 4.3.2 and 4.3.3, any reductions in plover productivity associated with OSV use and other covered activities will be offset by increases in productivity associated with mitigation measures. Also, the HCP requires monitoring to observe and assess impacts of the covered activities and the effectiveness of the mitigation, so the MADFW can make adjustments through the adaptive management process. Based on these measures and additional measures in the Plan to minimize impacts, we determined that this covered activity would not cause significant impacts to the piping plover.

### Response to Comment 0130-7

As the commenter suggests and as described in the Plan, with intensive monitoring and management, piping plovers can nest successfully and experience high productivity at high-use recreational beaches. However, we disagree that discouraging breeding in areas with particularly difficult management challenges—areas where nests are much more likely to be affected by recreation—does not minimize impacts to the species. Protection at these sites requires a disproportionate amount of resources, allocating take at sites where there is very high human use allows the MADFW to maximize the number of people who benefit from the flexibility in the HCP. That said, we expect these activities to occur at very few sites under the Plan, to cause minor impacts, and ultimately have a net benefit for the species. To address the commenter’s concerns, the MADFW revised the Plan (section 3.2.2.2) to remove this reference and further restrict activities that discourage breeding.

### Response to Comment 0130-8

Although the Plan is designed to result in a net increase in productivity, the issue of “net benefit” mitigation is tied exclusively to MESA permitting. Pursuant to MESA, each COI holder must meet the net benefit mitigation standard as set forth in 321 CMR 10.23.

As stated in the Plan, an expected 25 percent increase in productivity at sites with low productivity is a conservative estimate of the likely benefits of selective predator management, not including the difficult to measure benefits of other proposed mitigation activities. One of the HCP’s objectives is to maintain an average productivity increase greater than or equal to 20 percent at beaches where mitigation measures are implemented (HCP table 4-1, Objective 2). Furthermore, according to the MADFW an average 50 percent reduction in fledging success for broods, nests, or territories exposed to covered activities is a conservative estimate of impacts. As described in HCP section 3.3.2.2, the MADFW expects the actual take to be substantially lower. Because of the assumptions built into the Plan, a 2.5:1 mitigation ratio (noting the exception for covered activities involving chicks in parking lots and roads where the mitigation ratio will be 3:1) is expected to at least offset impacts of take and likely would result in a net increase in productivity. Nonetheless, the 2.5:1 mitigation ratio would ensure that all take associated with covered activities would be at least fully offset, if the selective predator management results in the anticipated 20 percent average increase in productivity.

The MADFW added language to the HCP (section 4.4.2) in response to this comment. To inform the adaptive management program and ensure that objective 2 of the Plan is being met, the MADFW will calculate the number of chicks lost to covered activities in a given year (based on 50 percent loss in productivity for breeding pairs affected by covered activities) and the number of chicks that need to be “produced” by predator management at mitigation sites. Results of effectiveness monitoring could indicate that more chicks were “produced” than predicted. Alternatively, fewer chicks could be “produced” than predicted if predator management resulted in less than the expected 20 percent increase in productivity. Based on the 5-year review process for the effectiveness of selective predator management, the MADFW would track estimated deficits in chicks “produced” and implement additional predator management to make up for a deficit, subject to the limitations set forth in the HCP (Chapter 5). One method the MADFW proposed for accomplishing this is temporarily increasing the mitigation ratio above 2.5:1 and 3:1. This change also addresses the permit issuance criterion requiring an applicant to minimize and mitigate the effects of the taking to the maximum extent practicable.

See response to Comment 0130-6 for additional relevant information regarding monitoring and adaptive management.

### **Response to Comment 0130-9**

As stated in the Plan, all COI holders must implement activities in accordance with applicable State, Federal, and local statutes, regulations, ordinances, and bylaws including, but not limited to, MESA and the Massachusetts Wetlands Protection Act (MWPA; 310 CMR 10.00). In addition, the ITP associated with the Plan would not authorize take of other federally listed species such as the roseate tern or red knot (see HCP sections 1.3 and 5.2.2.3). The HCP ensures that take of any other federally listed species would not occur as a result of covered activities, and a separate ITP would be required for activities that may cause take of any other federally listed species. As noted by the commenter, site-specific beach management plans associated with Plan implementation must address all relevant state and federally listed species. Although this was implied in HCP sections 1.3.5 and 5.2.2.3, the MADFW amended section 5.2.2.3 to further clarify this point. As suggested by the commenter, the MADFW will confer with the Massachusetts Department of Environmental Protection to determine whether updates to the “Guidelines for Barrier Beach Management in Massachusetts” or other State guidance are warranted to assist Conservation Commissions in implementing the MWPA at sites where the property owner wishes to participate in the Plan.

See HCP section 1.3.6 for amendments to clarify the MEPA review process as it relates to the Plan and requests for COIs.

### **Response to Comment 0130-10**

The Plan addresses climate change in sections 2.2.3, 2.3.2.7, 5.3.2.2, and 5.3.2.3. The Plan area was defined in such a way that it can accommodate shoreline shift associated with climate change. In addition, the statewide limits on take were designed, in part, to address uncertainty associated with long-term threats such as climate change (section 3.3.2.1). Continued stakeholder involvement, and cooperation and coordination fostered through Plan development and implementation will facilitate efforts to address climate change and other emerging or unforeseen threats that may develop during the permit term.

**Comment ID: FWS-R5-ES-2015-0182-0138****National Headquarters**

1130 17th Street, N.W. | Washington, D.C. 20036-4604 | tel 202.682.9400 | fax 202.682.1331  
[www.defenders.org](http://www.defenders.org)

**Comment #0138**

February 21, 2016

Dan Ashe, Director  
c/o Public Comments Processing  
Attn: Docket No. FWS-R5-ES-2015-0182  
Division of Policy, Performance and Management  
U.S. Fish and Wildlife Service  
5275 Leesburg Pike, ABHC-PPM  
Falls Church, VA 22041-3803

**Re: Piping Plover Habitat Conservation Plan**

Dear Director Ashe:

On behalf of Defenders of Wildlife, we appreciate the opportunity to submit the following comments on the proposed Massachusetts Habitat Conservation Plan (“HCP”) and Incidental Take Permit (“ITP”) for the threatened piping plover.

Headquartered in Washington, D.C. with field offices around the country, Defenders represents more than 1.2 million members and supporters. Defenders is dedicated to the protection of all native wild animals and plants in their natural communities, and the preservation of the habitat on which they depend. Defenders advocates new approaches to wildlife conservation that will help keep species from becoming endangered, and it employs education, litigation, research, legislation and advocacy to defend wildlife and their habitat.

Defenders has for many years been actively engaged in shorebird and colonial waterbird protection issues on the East Coast from Cape Cod to Delaware Bay to Cape Hatteras and Cape Lookout National Seashores to the Gulf Coast. A Defenders lawsuit convinced the U.S. Fish and Wildlife Service (“FWS”) to designate critical habitat for wintering piping plover in 2001. In 2007, Defenders brought litigation against the National Park Service because of the agency’s 30-year failure to develop an off-road vehicle (“ORV”) management plan at Cape Hatteras National Seashore. From 2008-2010, I served as a member of the Negotiated Rulemaking Advisory Committee for Off-Road Vehicle Management for Cape Hatteras National Seashore. Defenders continues to work to develop appropriate rules for ORVs at Cape Lookout. Over the years, we have met with the Superintendent of Cape Cod National Seashore to help ensure the good and proper stewardship of that national treasure. Defenders also successfully petitioned the FWS to list the red knot *rufa* as a threatened species. We thus have considerable experience working to protect coastal wildlife and understand the complex issues around shorebird protection and recreation management.

The Massachusetts Division of Fish and Wildlife (“MAFDW”) has submitted an application for an ITP for state- and federally-protected piping plover. The MADFW is seeking a 25-year permit for the incidental take of piping plover to cover certain expansions of recreational activities and beach operations that “may also be thought of as deviations from

1

ongoing piping plover conservation measures being implemented consistent with the Guidelines.<sup>21</sup> Accompanying this application is a draft HCP, which specifies the steps that MADFW will take to minimize and mitigate impacts resulting from recreational activities.

Defenders applauds the State of Massachusetts for its successes in helping piping plovers to rebound in the region. We also support the development of meaningful HCPs pursuant to Section 10 of the ESA. We can only support the proposed HCP, however, to the extent the final plan provides for the continued conservation and recovery of the piping plover. To provide a net benefit for the plover, the plan must ensure that take is minimized, that mitigation advances plover conservation in meaningful ways, and that the plan is properly monitored and implemented.

### **Background on Piping Plover Listing and Massachusetts Recovery Efforts**

The FWS first listed the Atlantic Coast piping plover population as threatened in 1986. Massachusetts followed suit, and also listed the piping plover as threatened pursuant to the Massachusetts Endangered Species Act (“MESA”). In 1993, the MADFW issued “Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns and Their Habitats in Massachusetts.” Shortly thereafter, the FWS published “Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act.” These guidelines describe management techniques to prevent disturbance of nesting birds, trampling of nests, and restrictions on the use of ORVs when unfledged chicks are present.

In 1996, FWS issued the Piping Plover Atlantic Coast Population Revised Recovery Plan. Recovery Criterion 1 required the total Atlantic Coast population to increase to 2,000 breeding pairs, maintained for 5 years and distributed among 4 recovery units: Atlantic (eastern) Canada – 400 pairs; New England – 625 pairs; New York-New Jersey – 575 pairs; and Southern (DE-MD-VA-NC) – 400 pairs. The New England recovery unit population has been the most successful of the four units since 1998, when it reached its 625 pair abundance goal.<sup>1</sup> The NY-NJ recovery unit surpassed its goal in 2007 for the first time when abundance reached 586 pairs. However, the NY-NJ population has dipped since 2007; in 2010, the population was estimated at 498<sup>2</sup> and in 2012 the preliminary estimate was 463 pairs.<sup>3</sup> The other 2 recovery units have been even less successful. The Southern recovery unit has yet to reach its 400 pair goal, and the Eastern Canada recovery unit has experienced the lowest population growth (9% net increase between 1989 and 1998).<sup>4</sup>

Implementation of these management techniques has been very successful in Massachusetts and Massachusetts is the heart of the New England recovery unit. In 1986, when the piping plover was first listed, the Massachusetts population was estimated at 139 breeding pairs. Since then, there has been an almost five-fold population increase - preliminary reports

<sup>1</sup> *Piping Plover 5-Year Review: Summary and Evaluation*, USFWS 120 (Sept. 2009) (hereinafter “*Summary*”).

<sup>2</sup> *Abundance and Productivity Estimates – 2010 Update: Atlantic Piping Plover Population*, <http://www.fws.gov/northeast/pipingplover/pdf/Abundance&Productivity2010Update.pdf>.

<sup>3</sup> *Preliminary 2012 Atlantic Coast Piping Plover Abundance and Productivity Estimates* [http://www.fws.gov/northeast/pipingplover/pdf/preliminary2012\\_18April2013.pdf](http://www.fws.gov/northeast/pipingplover/pdf/preliminary2012_18April2013.pdf)

<sup>4</sup> *Summary*, supra note 2, at 120.

estimate 689 breeding pairs in 2015.<sup>5</sup> Given the success of piping plover management in Massachusetts, any policy changes that could undermine these gains must be carefully considered.

### Overview of the HCP

Under the HCP, the MADFW will extend incidental take coverage to approved landowners and beach managers by issuing Certificates of Inclusion (“COIs”). A COI may be issued only if plan participants (1) engage in the covered activities described in the HCP, (2) meet the eligibility and COI application requirements, and (3) agree to implement the HCP and required ITP conditions.<sup>6</sup> Of significance, the number of take allowances authorized is directly linked to the Massachusetts breeding population of piping plovers. The HCP delineates a sliding scale for estimating annual permissible take based on the 3-year running statewide population average. If the population falls below 500 breeding pairs, 0 take is allowed. On the other end of the spectrum, a maximum take exposure of 7 percent of the population is permitted if the population is at least 655 breeding pairs.<sup>7</sup>

### Specific Comments

Defenders generally endorse and incorporates the recommendations of the Massachusetts Audubon Society as stated in their recent comment letter. We wish to emphasize the following points.

#### **A. Improving the Fail-Safe Mechanism**

0138-1

The HCP includes an innovative “fail-safe” mechanism that will automatically curtail take of piping plovers in the state should the total population drop below 500 breeding pair. This amounts to a potential loss of 25% of the current population. Although we support the idea of a “Fail-Safe” trigger, we believe a more conservative approach is required. The HCP’s stated intent is to achieve a viable and robust population of piping plovers in the state. A viable and robust population is defined as one that is able to persist at levels near the current population size (666 breeding pair in 2013) or *higher* (p. 1-1). To ensure that this goal remains within reach, the FWS should consider a higher threshold for discontinuing the ITP. We believe the ITP should be modified or rescinded if the population drops to 80% of current numbers.

In addition, we are concerned that the plan does not contain sufficient safeguards to address population declines. The population could decline continuously over 10 years from 600+ to 500 pairs but the population would still have a three-year average above 500 for the entire time. At some point along this continuum, the FWS should be able to adjust or limit the amount of take allowed, prior to reaching the trigger as conditions warrant.

0138-2

Additionally, the plan does not include a productivity criterion for reducing allowable take under the plan. Although the number of breeding pairs may be an adequate proxy for

<sup>5</sup> Draft EA § 1.2 (quoting A. Hecht, USFWS, pers. Comm. 2015).

<sup>6</sup> HCP, *supra* note 1, § 1.1.1

<sup>7</sup> HCP § 3.3.2.1

0138-2  
cont. productivity, it is not the only factor to consider. If Massachusetts were ever in a situation where outside immigration was propping up the state numbers (which may be happening in other states), the FWS could be allowing take even though productivity in the state is no longer self-sustaining. The FWS thus should also consider including a trigger that would reduce or eliminate take authorizations if the state's productivity falls below 1.24, the level some scientists believe is needed to keep the population level.<sup>8</sup>

We agree with Massachusetts Audubon that take authorization must be viewed in a regional context. As they state in their comments: "Provisions allowing for take in Massachusetts under the ESA should take into account the overall regional population and trends including productivity, not just number of adults, in Massachusetts." The HCP should include "contingency language that modifies the ITP in the even the fragile status of plovers in surrounding regions continues to worsen."

#### B. Recreation Management

0138-3  
0138-4 We continue to have concerns about the impacts of increased ORV use on piping plovers and other beach nesting species. The HCP should minimize the impacts of any taking to the maximum extent possible. To that end, we believe some of the recommendations associated with reduced proactive fencing of habitat and ORV use in the vicinity of unfledged chicks are not sufficiently protective and should be modified.

0138-3 Pre-nesting closures are a proven technique for minimizing disturbance and encouraging nesting. Withholding of protective fencing may reduce site-fidelity and contribute to loss of habitat over the term of the ITP. Proactive fencing should be provided for all historically known (previous 5 years) nesting areas.

0138-4 Additionally, we strongly believe that the HCP does not adequately protect piping plover chicks from ORVs. Allowing ORV use in the immediate vicinity of newly-hatched broods poses a high risk of take. We agree with Massachusetts Audubon that ORV travel at a minimum should be prohibited within 100 meters of broods less than 7 days old. Pursuant to federal guidelines, this buffer should be expanded for highly mobile broods. Trained shorebird monitors must be on site to ensure that chicks are not at risk from ORVs.

#### C. Monitoring

0138-5 As a general matter, this plan will require numerous trained monitors to ensure that take does not exceed authorized levels. The plan does not specify who will be doing the monitoring at permitted sites and what level of training they should have. Moreover, strict monitoring will be required to ensure implementation and effectiveness of predator control.

#### D. Additional Concerns

0138-6 Implementation of this plan may have impacts on other state and federally protected species. In particular, we are concerned that the HCP improperly discounts the potential impact of

<sup>8</sup> Personal conversation with Jonathan Cohen, Assistant Professor, Dept. Environmental and Forest Biology, SUNY College of Environmental Science and Forestry. 2016.

0138-6 | the plan on roseate terns, red knots and other species. We trust that the state and FWS will  
cont. | be alert to any impacts to these species.

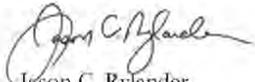
**Conclusion**

Defenders supports the development of robust HCPs that provide for the conservation and ultimate recovery of listed species. Given the remarkable success of plover conservation in Massachusetts, we do not oppose issuance of an ITP to the Massachusetts Division of Fisheries and Wildlife. The proposed “fail-safe” provision is a critical component of the plan and we have recommended some tweaks to ensure that take authorizations are consistent with current population trends. We believe the plan goes too far in allowing ORV use in the vicinity of plover chicks. We also emphasize the need for qualified shorebird monitors wherever take is allowed.

In summary, we are hopeful that the proposed HCP’s emphasis on minimizing take and providing improved predator management through mitigation will provide a benefit for piping plovers while enhancing recreational opportunities in the region. We trust that if this is not the case, steps will be taken swiftly to eliminate take of piping plovers.

Thank you once again for the opportunity to comment and for your careful consideration of our recommendations.

Sincerely,



Jason C. Rylander  
Senior Staff Attorney  
Defenders of Wildlife  
202-682-9400 x145

**Response to Comment 0138-1**

See response to Comment 0130-1.

**Response to Comment 0138-2**

See response to Comment 0130-4 and 0130-8.

**Response to Comment 0138-3**

See response to Comment 0130-5 and 0130-6.

**Response to Comment 0138-4**

See response to Comment 0130-5 and 0130-6.

**Response to Comment 0138-5**

According to 50 CFR 17.32(b)(1)(iii)(C)(2) and the Service's 5-Point Policy, monitoring is a mandatory element of all HCPs. Successful implementation of the Plan will require intensive monitoring, both on the part of COI holders and the MADFW (see HCP sections 4.7 and 4.8). In addition, qualified shorebird monitors would monitor and protect birds during implementation of the covered activities. Qualified monitors charged with monitoring broods associated with OSV use or roads and parking lots must be pre-approved in writing by the MADFW, have undergone training, and had prior work experience implementing beach-related shorebird monitoring. These qualifications were added to HCP sections 3.2.1 and 3.2.3.

**Response to Comment 0138-6**

See response to Comment 0130-9.

**Comment ID: FWS-R5-ES-2015-0182-0139****OFFICERS**

*President*  
Rudy Sawyer  
11 Thurston Street  
Foxboro, MA. 02033

*Vice President*  
Don Fillman  
8 Haystack Lane  
Sandwich, MA. 02563

*Executive Vice President*  
Bill Correia  
28 Belmont Avenue  
Havich, MA. 02645

*Recording Secretary*  
Elena McCarrison  
882 Bumps River Road  
Centerville, MA 02632

*Membership Secretary*  
Rob Osgood  
593 Salem Street  
Rockland, MA 02370

*Treasurer*  
Scott Morris  
18 Church Street  
East Hanwich, MA 02645

*Executive Secretary*  
Steven White  
36 Bridge Street  
Lakeville, MA. 02347



*Affiliations*  
Massachusetts Sportsmen's Council  
Massachusetts Striped Bass Assoc  
Plum Island Surfcasters  
Rhode Island Saltwater Anglers Assoc  
United Mobile Access Preservation Assoc

US Fish and Wildlife Service February 21, 2016  
Division of Policy, Performance and Management  
Public Comments Processing  
5275 Leesburg Pike  
Falls Church VA 22041-3801

Comment #0139

Attn: Docket No. FWS-R5-ES-2015-0182

Dear Director Ashe,

On behalf of the Massachusetts Beach Buggy Association, Inc. (MBBA), please accept the following comments in response to the Federal Register notice of a public comment period for the "Draft Environmental Assessment, Habitat Conservation Plan and Application for an Incidental Take Permit for Piping Plover, Massachusetts Division of Fisheries and Wildlife."

Incorporated in 1950 the MBBA has been advocating for reasonable beach access and conservation of both the beach environment and its living marine resources for well over 65 years. Our membership consists of hundreds of families across New England and beyond. In addition, we are considered the leading voice when it comes to beach access amongst the organized community of sportsmen in Massachusetts.

Over the past two years, the MBBA has been proud to not only be an active participant on the working group that developed this plan, but also as one of the organizations that funded this effort. We wish to acknowledge that this plan reflects a true compromise of ideas and philosophies aimed at advancing piping plover management. Although we cannot support one hundred percent of the details in the Draft EA or the HCP & Application, we support the Proposed Alternative as being selected for a final rule.

Visit our web site at: [www.mbba.net](http://www.mbba.net)



**OFFICERS**

*President*  
Rudy Sawyer  
11 Thurston Street  
Foxboro, MA. 02035

*Vice President*  
Don Fillman  
8 Haystack Lane  
Sandwich, MA. 02563

*Executive Vice President*  
Bill Correia  
28 Belmont Avenue  
Harwich, MA. 02645

*Recording Secretary*  
Elena McCornison  
882 Bumps River Road  
Centerville, MA 02632

*Membership Secretary*  
Rob Osgood  
593 Salem Street  
Rockland, MA 02370

*Treasurer*  
Scott Morris  
18 Church Street  
East Harwich, MA 02645

*Executive Secretary*  
Steven White  
36 Bridge Street  
Lakeville, MA. 02347



*Affiliations*  
Massachusetts Sportsmen's Council  
Massachusetts Striped Bass Assoc  
Plum Island Surfcasters  
Rhode Island Saltwater Anglers Assoc  
United Mobile Access Preservation Assoc

Visit our web site at: [www.mbba.net](http://www.mbba.net)

**MASSACHUSETTS BEACH BUGGY ASSOCIATION, INC.**

0139-1

**Chapter 1: Purpose and Need**

We generally agree with all content within Chapter 1.

**1.1** Specifically, the MBBA agrees with the covered activities as described. We feel the stakeholders related to these activities have been the most affected by piping plover management. It is both fair and reasonable that these are the activities addressed by this plan so that stakeholders related to these activities may experience some relief from the more strict regulations of the past when Piping Plover populations were much lower.

0139-2

**Chapter 2: Proposed Action and Alternatives**

We feel the proposed range of alternatives is reasonable and that range gave us the ability to evaluate each alternative as was envisioned by NEPA.

**2.1** We feel the No Action Alternative accurately describes the status quo. This in and of itself is enough to disqualify it from being selected. Although appropriate at one time, current management of piping plover in Massachusetts is no longer producing population growth. Stakeholders who witnessed the population grow much larger than when restrictions were put in place; now believe current data shows that population growth has hit a plateau, predation caused mortality is exploding even in areas far away from human activity and a new direction in management is clearly required. These observations are widespread and more than ever before, status quo piping plover management is under great scrutiny. We do not support selection of the status quo as an alternative.

0139-3

**2.2** Generally, we support selection of the Proposed Action for the final rule. Although there are elements that cause us concern and there are elements we are likely to oppose when local management is developing a "certificate of inclusion" (COI), we feel the Proposed Action is a well-rounded plan that addresses issues and concerns of multiple stakeholders. We further feel the Proposed Action meets the scrutiny of using best available science. We cannot say the same for the No Action Alternative.

0139-4



0139-5

**2.2.1** We feel the Commonwealth of Massachusetts, its government agencies and its citizens have earned, through past commitment, participation, funding and success, the chance to show that the Proposed Alternative can and will achieve its goals. Most other states in the region have not invested the resources needed to grow piping plover populations as has been experienced in Massachusetts. It is for these reasons the covered lands should be limited to the Massachusetts coastline.

**OFFICERS**

*President*  
Rudy Sawyer  
11 Thurston Street  
Foxboro, MA. 02035

0139-6

*Vice President*  
Don Fillman  
8 Haystack Lane  
Sandwich, MA. 02563

*Executive Vice President*  
Bill Correia  
28 Belmont Avenue  
Harwich, MA. 02645

*Recording Secretary*  
Elena McCornison  
882 Bumps River Road  
Centerville, MA 02632

*Membership Secretary*  
Rob Osgood  
593 Salem Street  
Rockland, MA 02370

0139-7

*Treasurer*  
Scott Morris  
18 Church Street  
East Hanwich, MA 02645

*Executive Secretary*  
Steven White  
36 Bridge Street  
Lakeville, MA. 02347

**2.2.2.1** It is stating the obvious that all land is not equal when it comes to protection of wildlife. A fact of human existence is that animals are displaced and affected by our presence. We cannot envision a time when roads and parking lots will be safe for piping plover, nor can we envision moving roads and parking lots to accommodate this one species. A growing piping plover population must be managed with strategies that are less stringent than to cease human activity. We agree with this description of "roads and parking lots" for inclusion in "covered activities" under the Proposed Alternative.

**2.2.2.2 & 2.2.2.3** Long before piping plover were ever managed, the Massachusetts Beach Buggy Association was waging political battles to conserve the beaches of Massachusetts not just for recreational use, but for preservation of both habitat and living natural resources. We feel a balance between human use and protection of natural resources is not only possible, but is essentially what is best for the long-term health of those natural resources. Government agencies are far more likely to invest in management when supported by the public. It is widely known that complicated management such as that of piping plover is far more likely to succeed with public "buy-in." We feel the description and range of management tools contained within these two sections are reasonable, appropriate and are the main reason we support the Proposed Alternative. We urge selection of these elements and state clearly that without these two sections, our support for the Proposed Alternative as a final rule is withdrawn.



*Affiliations*  
Massachusetts Sportsmen's Council  
Massachusetts Striped Bass Assoc  
Plum Island Surfcasters  
Rhode Island Saltwater Anglers Assoc  
United Mobile Access Preservation Assoc

Visit our web site at: [www.mbba.net](http://www.mbba.net)



**OFFICERS**

*President*  
 Rudy Sawyer  
 11 Thurston Street  
 Foxboro, MA. 02035

*Vice President*  
 Don Fillman  
 8 Haystack Lane  
 Sandwich, MA. 02563

*Executive Vice President*  
 Bill Correia  
 28 Belmont Avenue  
 Harwich, MA. 02645

*Recording Secretary*  
 Elena McCornison  
 882 Bumps River Road  
 Centerville, MA 02632

*Membership Secretary*  
 Rob Osgood  
 593 Salem Street  
 Rockland, MA 02370

*Treasurer*  
 Scott Morris  
 18 Church Street  
 East Hanwich, MA 02645

*Executive Secretary*  
 Steven White  
 36 Bridge Street  
 Lakeville, MA. 02347



*Affiliations*  
 Massachusetts Sportsmen's Council  
 Massachusetts Striped Bass Assoc  
 Plum Island Surfcasters  
 Rhode Island Saltwater Anglers Assoc  
 United Mobile Access Preservation Assoc

0139-8

**2.2.3.1**

Our membership has dictated that the MBBA not support lethal predator control. The extended community of Sportsmen is also of the same opinion. That being said, we acknowledge current piping plover management has reached a plateau, even in remote locations with little or no human activity. We agree with the data that suggests predator caused mortality is the greatest threat to both adult piping plover and their chicks. It is for this reason that the MBBA believes the Proposed Action is the best way forward. We do however offer the following specific comments and suggestions related to predator control.

First and foremost, we feel this section should be edited to make very clear that lethal predator control only be used after non-lethal methods have been attempted and shown to fail. It is our understanding that there exists recent science showing successful predator control using deterrents. We see the COI's as being perfect opportunities for testing various ideas and methods of non-lethal predator control. Before lethal predator control is chosen, these types of non-lethal methods must be given adequate scientific consideration and done so from the point of cooperation and not just "going through the motions" to quickly reach the decision to kill. We suggest this action include less stringent requirements with regard to criteria used to consider if these experimental methods are appropriate as mitigation.

Techniques used to conduct lethal predator control within the beach environment are still considered new and are constantly evolving. Our membership consists of sportsmen and professionals with expert training when it comes to safe use of firearms in the outdoors. It is a fact that on beaches across Massachusetts, it is common for the lone surfcaster or hiker to quietly cover miles of beach on foot and these stealth walkers can approach a location easily unnoticed. This knowledge leads us to suggest that the final rule mandate any location where lethal predator control will be conducted must be 100% monitored beginning 6 hours prior to the "action" and last until the shooting has been completed and all poison has been removed from the location. Box traps should be exempt from this requirement.

Visit our web site at: [www.mbba.net](http://www.mbba.net)



0139-9

**OFFICERS**

*President*  
Rudy Sawyer  
11 Thurston Street  
Foxboro, MA. 02035

*Vice President* 0139-10  
Don Fillman  
8 Haystack Lane  
Sandwich, MA. 02563

*Executive Vice President*  
Bill Correia  
28 Belmont Avenue  
Harwich, MA. 02645

*Recording Secretary*  
Elena McCornison  
882 Bumps River Road  
Centerville, MA 02632

*Membership Secretary* 0139-11  
Rob Osgood  
593 Salem Street  
Rockland, MA 02370

*Treasurer*  
Scott Morris  
18 Church Street  
East Harwich, MA 02645

*Executive Secretary* 0139-12  
Steven White  
36 Bridge Street  
Lakeville, MA. 02347



*Affiliations*  
Massachusetts Sportsmen's Council  
Massachusetts Striped Bass Assoc  
Plum Island Surfcasters  
Rhode Island Saltwater Anglers Assoc  
United Mobile Access Preservation Assoc.

Visit our web site at: [www.mbba.net](http://www.mbba.net)

We understand that scientific evidence related to shorebird protection supports removal of specific "smart predators" that have learned to feed within piping plover breeding locations. We do not see explanation of the process to identify these "smart predators" within any section of the document. We further do not understand how lethal predator removal conducted in late winter and/or early spring will effect predation during the nesting and pre fledge periods. We request these subjects be explained within the final rule or the approved EA.

We hesitate when we are told that successful predator removal will lead to increased beach access. Besides our already stated objection to killing one animal to save another, we see evidence of reduced access where predator removal is considered successful. Both Plymouth Beach and Parker River Wildlife Refuge have lethal predator control programs that are reported as successful. These are two of the least accessible beaches in Massachusetts. It is for this reason we request the final rule also mandate all COI's be required to include clear language explaining how current levels of access will be maintained when piping plover populations have grown as a result of any type of predator control.

**2.2.3.2** The MBBA has been a leader in bringing person-to-person education on how to minimize impact of recreation within the beach environment. We strongly support development of innovative methods of educating the general public and stand ready with manpower and finances to partner with government agencies and other stakeholder groups to increase awareness of all issues related to the Proposed Alternative.

We also support increased law enforcement and increased penalties as being required in each and every COI developed under this plan.

**2.3** We choose no preference between the twenty-five year permit length of the Proposed Alternative, and the ten-year permit length of the Shorter Permit Term Alternative. We see both pro and con to both options.



**OFFICERS**

*President*  
Rudy Sawyer 0139-14  
11 Thurston Street  
Foxboro, MA. 02035

*Vice President*  
Don Fillman 0139-15  
8 Haystack Lane  
Sandwich, MA. 02563

*Executive Vice President*  
Bill Correia  
28 Belmont Avenue  
Harwich, MA. 02645

*Recording Secretary*  
Elena McCornison  
882 Bumps River Road  
Centerville, MA 02632

*Membership Secretary*  
Rob Osgood  
593 Salem Street  
Rockland, MA 02370

*Treasurer*  
Scott Morris  
18 Church Street  
East Harwich, MA 02645

*Executive Secretary*  
Steven White  
36 Bridge Street  
Lakeville, MA. 02347



*Affiliations*  
Massachusetts Sportsmen's Council  
Massachusetts Striped Bass Assoc  
Plum Island Surfcasters  
Rhode Island Saltwater Anglers Assoc  
United Mobile Access Preservation Assoc

**OFFICERS**

0139-13 Even if a ten-year permit was adopted we oppose limiting COI's to only one year. Although a one-year COI should remain an option, we feel there is experience learned from prior small scale but similar opportunities that local government and other management bodies will not invest as much as a year's time and resources to develop a COI that will only be granted for one year. With the many issues that compete for local government resources, short duration efforts are far less valuable and less likely to pass a risk/reward analysis.

2.4 We agree and support the decision to not include the alternatives as described in this section.

**Chapters 3-7:**

We have reviewed Chapters 3 through 7 and consider all of the information contained within to be in order and appropriate. We have multiple minor concerns, mostly with assumptions and interpretations of data, however none of these concerns rise to a level that disqualifies our comments as written.

Sincerely,

Rudolph Sawyer  
President, Massachusetts Beach Buggy Association, Inc.

Visit our web site at: [www.mbba.net](http://www.mbba.net)

**Response to Comment 0139-1**

Thank you for your comment.

**Response to Comment 0139-2**

Thank you for your comment.

**Response to Comment 0139-3**

Thank you for your comment. As stated in section 4.2.1.3 of the EA, the Massachusetts piping plover population has experienced an average annual population increase of approximately 2.1 percent since 1998, including an average annual increase of approximately 4 percent in the past 5 years (2011–2015).

**Response to Comment 0139-4**

Thank you for your comment.

**Response to Comment 0139-5**

Thank you for your comment.

**Response to Comment 0139-6**

Thank you for your comment.

**Response to Comment 0139-7**

Thank you for your comment.

**Response to Comment 0139-8**

See response to Comment 0005-1. Also, nonlethal control has not been demonstrated to increase piping plover productivity at this time. It may be an option if research indicates that some measure of increased productivity will occur.

**Response to Comment 0139-9**

Refer to HCP table 4-3 regarding development of selective predator management plans. Predator removal experts would develop a detailed site-specific annual work plan describing predator species to be targeted and methods to be used. The MADFW, in consultation with the Service, would approve the site-specific work plan.

Note that implementation of the Guidelines requires annual piping plover monitoring to include documentation of the causes of egg, chick, and adult mortality (when possible), including identification of predators responsible for the mortality or reduction in productivity (e.g., through nest abandonment). Predators targeting plover nests, chicks, and adults may be identified through tracks, camera images, or observations. This information, driven by the implementation of the Guidelines irrespective of the HCP, may be used to target specific predators for management or identify “smart predators”—those predators that have honed in on enclosures as a source of prey.

Selective predator management would be focused in late winter and spring so as to avoid disturbing piping plovers and because this is the time of year when human use of the beaches is lowest. A second phase of predator removal may be implemented during the plover egg-laying period (i.e., from late April into June), if determined to be necessary based on levels of predator activity, and the removal activity does not adversely affect plovers or interfere with recreational activities. Monitoring for predator presence would be completed following the predator removal efforts to identify any predators that may still be present (see HCP section 4.3.2.1).

### **Response to Comment 0139-10**

Part of the MADFW's purpose in developing the HCP was to maintain and improve public access and recreational opportunities associated with Massachusetts beaches (HCP section 1.1.1). Further, in the EA, we determined (1) beach closures would not be necessary during predator management implementation (EA sections 2.2.3.1 and 4.2.3); and (2) the Service's proposed action is expected to result in an increase in the availability of public recreational access and use during the piping plover nesting season on beaches participating in the HCP (EA section 4.2.3). We are not aware of the source of the comment regarding a link between successful predator removal and decreased beach access. It should be noted that the decreased OSV access for the two beaches mentioned as examples in the comment was not as a result of increased predator management. Plymouth Beach has had a history of legal challenges to their beach management that has affected OSV access. Parker River National Wildlife Refuge has a mandate to manage wildlife that supersedes recreational use and implements conservation measures that go beyond the Guidelines in order to protectively manage nesting piping plovers and other natural resources within the Refuge.

A key element of the Plan is allowing increased take exposure as the piping plover population increases, whether the increase is due to predator management or any other cause. Furthermore, the Plan allows the MADFW to increase site-specific take exposure to up to 30 percent of broods/nest/territories at up to five sites statewide, to allow for increased management flexibility to achieve recreational goals at a subset of high recreational use beaches. Thus, the Plan would allow the MADFW and Plan participants to maintain or increase recreational opportunities on beaches participating in the Plan.

### **Response to Comment 0139-11**

Thank you for your comment.

### **Response to Comment 0139-12**

Thank you for your comment.

### **Response to Comment 0139-13**

Thank you for your comment.

### **Response to Comment 0139-14**

Thank you for your comment.

### **Response to Comment 0139-15**

Thank you for your comment.

**Comment ID: FWS-R5-ES-2015-0182-0143**

Regulations.gov - Comment

Page 1 of 2



**Submitted Electronically via eRulemaking Portal**

This is a Comment on the **Fish and Wildlife Service (FWS)** Notice: **Notice of availability, receipt of application.**

Comment Period Closed  
Feb 22 2016, at 11:59 PM ET

For related information, [Open Docket Folder](#)

**ID:** FWS-R5-ES-2015-0182-0143  
**Tracking Number:** 1k0-8o3v-menk

**Comment**

**Document Information**

**Date Posted:**  
Feb 23, 2016

[Show More Details](#)

**Submitter Information**

**Submitter Name:**  
Anonymous Anonymous

- 0143-1 | A) FWS should NOT issue the requested piping plover incidental take permit (ITP):
  - a. The proposal is inequitable and unethical: ALL of the threats to the plover cited by MA and FWS are directly or indirectly caused by humans, but despite this, the request proposes to allow increased human actions that will cause more plover takes, while "mitigating" this by killing predators. Humans caused and continue to cause ALL of the problems for these plovers, and so it is completely reasonable to INCREASE limitations on human actions, not REDUCE human action limitations and then kill predators that are just living their normal life. How is it that FWS, the folks who are supposed to protect species, can veer so far from the core aspects of their purpose that they've convinced themselves that killing raccoons and skunks is justified so that people can drive on beaches and sunbathe? Humans as a species are doing fine; this is not true for many species listed and not listed by FWS (how long did you wait to list rufa?)
  - b. The document says "predation rarely observed", yet it then goes on to unequivocally declare that predation is the main problem. Even if predation has some impact, the cause of this impact is due to humans (not enough plovers to support normal predation levels, killing all wolves that would normally control plover predators, bringing in dogs and cats and rats, driving excessive gull populations due to trash dumps, building residences closer to beaches, etc.)
  - c. FWS does not properly manage human actions now, so I do not trust they will in the future. Dogs are routinely running wild on beaches; additionally, we've observed obscene human actions such as kicking soccer balls at red knots (rufa, another "protected" species), etc.
  - d. For some strange reason, the docs cite that recently use of enclosures has been reduced. It seems you wouldn't do this if you think predation is such a major concern.
  - e. The cold calculus FWS proposes (n possible takes will result in m predators being "mitigated") is horrific. Shame on you!
  - f. The document declares the impacts to the protected
- 0143-2 |
- 0143-3 |
- 0143-4 |
- 0143-5 |
- 0143-6 |

<http://www.regulations.gov/>

2/23/2016

## Regulations.gov - Comment

Page 2 of 2

- 0143-6 cont. | red knot are unknown, and that there is "insufficient data for trend analysis for fall stopover areas". FWS is under a legal obligation to protect rufa, and so issuing this permit may be grounds for legal action; we all know red knots use MA shores in the fall migration.
- 0143-7 | g. The document proposes some trivial mitigation by clearing beach plants to make more plover habitat. Why not propose changing human land use in a way that will make more habitat for plovers instead?
- 0143-8 | B) If FWS does issue the ITP:  
a. It should be for a much shorter term than the proposed 25 years; it is unreasonable that one can predict how the situation will evolve, this this period is on the order of magnitude of the entire listing period of the plover so far. FWS seems to be considering 10 years but I think it should be no more than 3 years.
- 0143-9 | b. OSV use should not be allowed by the permit, especially in "priority habitat".  
c. Too many constraints are proposed in the document for unforeseen changes. FWS has a legal obligation to protect this species; you cannot sign your way out of such obligations.
- 0143-10 | d. Only non-lethal "mitigation" measures should be used.  
e. Human actions should be curtailed more, not allowed more. The whole document is backwards. Please change course and do the right thing!  
f. Start increasing use of exclosures again.

Issuing this ITP would be a huge mistake, and I believe will expose FWS to litigation - costing the government (and therefore the people) a lot of money, and probably FWS will ultimately lose anyhow. Just protect the plovers and humans will be fine; don't start killing innocent animals just so that humans can have no constraints on their behavior (drive around on the beach, sunbathe, chase the plovers, etc.), when humans caused all the problems for the plover, and continue to do so. Wildlife should not have to pay the price of our mistakes - and now, our proposed PURPOSEFUL harming actions. If you issue this ITP, how will you sleep at night?

**Response to Comment 0143-1**

See response to Comments 0030-2 and 0124-20.

**Response to Comment 0143-2**

See response to Comment 0005-1.

**Response to Comment 0143-3**

Threats to piping plovers are discussed in section 3.1.2.2 of the EA and section 2.3.2.7 of the HCP, and include disturbance by humans, pets, and vehicles (usually associated with recreational activity); predation; habitat modification and loss; beach raking; oil spills; wind turbines; and climate change and storm surge.

The loss of nests, chicks, fledglings, and some adults to predation is a large and increasing threat in Massachusetts and elsewhere along the Atlantic Coast. The HCP states that while predation on chicks is rarely observed (because it mostly occurs at night when predators are active), predation is believed to account for the great majority of prefledging chick loss. A review of plover census forms submitted to the MADFW by cooperators indicates that predation or suspected predation is the dominant cause of nest failure in the State. Predator species and predation intensities vary widely by site and may include skunks, raccoons, foxes, crows, coyotes, feral cats and dogs, gulls, and rats. The reasons for the recent increase in predation are unknown. Some of this increase may be due to greater exposure to predators by a growing population of piping plovers. Furthermore, some predator populations may have increased in response to changes in land use (e.g., residential development) or recreational activity on and in the vicinity of nesting beaches (although predation rates may also be high at remote sites with low recreational activity).

The Service agrees that nonnative species and anthropogenic activities have exacerbated the problem of predation; however, addressing these larger issues is outside the scope of the EA.

**Response to Comment 0143-4**

As stated in the HCP (section 2.3.2.8), in recent years, there has been increasing concern that exclosures could be associated with increased rates of nest abandonment and adult mortality as predators hone in on the exclosures as a source of food. Monitoring at sites where nest abandonment has occurred has documented predators (by their tracks)—such as foxes and coyotes—circling the exclosures. This could significantly reduce the benefits of exclosures or even cause them to have a net negative effect on piping plover populations. MADFW annual plover census reports document episodes of systematic harassment of incubating piping plovers (primarily by foxes, coyotes and American crows) and depredation at exclosures, elevated rates of nest abandonment, and incidents of adult mortalities associated with exclosed piping plover nests on the Atlantic Coast. Analysis of 2015 Massachusetts data found abandonment rates for exclosed nests that were four-fold those for unexclosed nests (J. Regosin, MADFW, pers. comm., 2016). This concern has led to decreased deployment of exclosures in Massachusetts, although they are still fairly widely used, particularly at sites with high predation pressure. A Structured Decision Making Workshop in December 2013 developed and tested a prototype decision-support model with potential to increase the efficacy of exclosures and identify site-specific environmental factors that

affect the demographic benefits and risks of exclosures. Regardless, beach managers in Massachusetts have shown a consistent willingness to deploy exclosures where appropriate, with up to 75 percent of Massachusetts nests exclosed in some years.

### **Response to Comment 0143-5**

We are not certain to which mitigation formula the commenter is referring. The HCP proposes to provide predator control such that 2.5 piping plover pairs are benefited for each pair exposed to take. The exact number of predators that could be affected would vary annually and from site to site (see explanation in response to comment 0124-11). To satisfy MESA, the HCP's conservation strategy must ensure that a "net benefit" is provided to the Massachusetts population of piping plovers (321 CMR 10.23). Additionally, section 10(a)(2)(B) of the ESA requires the applicant to minimize and mitigate the impacts of taking to the maximum extent practicable. The conservation strategy is based on the best scientific data available and stems from the biological goals and objectives developed for the Plan. The selective predator removal mitigation measure is expected to benefit piping plovers and offset impacts associated with the covered activities. The EA concludes that the proposed action would have insignificant impacts on predator populations in Massachusetts.

### **Response to Comment 0143-6**

As discussed throughout section 4.12 of the EA, the Service expects minor, if any, impacts on the red knot. Take of red knot from implementation of the covered activities is not expected. In the event that migrating red knots are present during implementation of the covered activities, the effect of those activities is likely to be insignificant. Covered activities such as nest moving, reduced symbolic fencing around nests, and reduced proactive symbolic fencing are unlikely to cause significant effects to red knots, because these activities will occur over a small area of a beach. At this time, based on the most current scientific information, recreation has not been determined to adversely impact migrating red knots in Massachusetts. This disturbance is ongoing at almost all Massachusetts beaches during the red knot spring and fall migration, and the impact of the additional exposure to red knots from recreation, beach operations, or pedestrian presence in areas where covered activities might be implemented would be incremental and minor. The number of incidences where red knots would be exposed to increased recreational disturbance would be limited since the majority of red knot roosting habitat in Massachusetts would be unaffected (they may roost in areas not suitable for plovers). For those sites where red knots and nesting plovers overlap, at least 80 percent of the suitable plover nesting habitat would remain symbolically fenced (for the reduced symbolic fencing covered activity), providing sufficient roosting habitat for transient, migratory red knots at those sites. As stated in the EA, nest moving is not expected to impact red knots at all, and only a few areas where staging red knots might occur might be affected by increased OSV access. The vast majority of red knot roosting and foraging habitat in Massachusetts will not be impacted by the HCP. Under the HCP, the MADFW would not issue COIs for activities that could result in take of the red knot, because the HCP requires that a permit amendment or separate permit would be pursued if it is later determined that covered activities would result in take of this species.

### **Response to Comment 0143-7**

The commenter's suggestion of changing human land use is not within the scope of the HCP.

**Response to Comment 0143-8**

Thank you for your comment. One of the alternatives evaluated in the EA that the Service considered is a shorter permit term—a 10-year permit term. The benefits and drawbacks of this alternative are discussed in section 2.3 of the EA. Also, see response to Comment 0124-4.

**Response to Comment 0143-9**

See response to Comment 0030-2. Additionally, note that “priority habitat” is State-designated and is not regulated by the Service. Further, State and Federal guidelines currently allow OSV use on piping plover nesting beaches during the prenesting, egg-laying, incubation, and postfledging periods. The Plan proposes to expand OSV use by allowing limited, escorted driving of OSVs during the prefledging period (i.e., after chicks have hatched but before they have fledged).

**Response to Comment 0143-10**

See response to Comments 0005-1 and 0139-9.

**Comment ID: FWS-R5-ES-2015-0182-0147**

RECEIVED  
 FEB 22 2016  
 Div. of Policy, Perf. &  
 MGMT. Programs



Comment #0147

February 19, 2016

Public Comments Processing  
 Attn: Docket No. FWS-R5-ES-2015-0182  
 Division of Policy, Performance and Management  
 U.S. Fish and Wildlife Service  
 5275 Leesburg Pike, ABHC-PPM  
 Falls Church, VA 22041-3803

**RE: Massachusetts Division of Fisheries and Wildlife  
 Draft Habitat Conservation Plan for Piping Plover**

To Whom It May Concern:

The Association to Preserve Cape Cod (APCC) is the Cape’s leading nonprofit environmental and advocacy organization. Founded in 1968 and today representing over 5,000 members across the region, APCC’s mission is to preserve, protect and enhance the natural resources of Cape Cod. APCC has reviewed the Massachusetts Division of Fisheries and Wildlife (DFW) Draft Habitat Conservation Plan for Piping Plover (HCP) and offers the following comments.

Summary

APCC supports efforts to facilitate recreational activities on Massachusetts beaches when and where feasible, but not to the extent that piping plover exposure to those activities increases direct impacts on the species that result in harm or death to adult plovers, chicks or eggs. Such impacts to individual plovers should not be a justifiable consequence of accommodating increased recreational access in plover habitat areas. Although good progress has been made in increasing the number of breeding pairs in Massachusetts, it is premature to declare a success in species recovery efforts. Permitted activities should not compromise protections of plover that result in measurable adverse impacts to the population or to the breeding program.

0147-1

APCC supports a greater emphasis on measures to avoid and minimize impacts to plovers, and encourages DFW to explore additional efforts that will further reduce the likelihood of impacts to the species.

Background

The stated purpose of the HCP is to “advance piping plover conservation and recovery in Massachusetts while maintaining and improving the public access, recreational opportunities, and economic activity associated with the state’s beaches.” The HCP describes covered activities that potentially expose piping plovers to “take.” The take of piping plover will be authorized by an incidental take permit (ITP) issued to the DFW by the U.S. Fish and Wildlife Service (FWS) in association with the HCP. Covered activities in the HCP are:



- Permitting the use of roads and parking lots in the vicinity of unfledged chicks.
- Increasing flexibility for recreation and beach operations, including:
  - Reduced symbolic fencing around nests in certain areas
  - Reduced proactive symbolic fencing of piping plover habitat in certain areas
  - Permitting piping plover nests to be physically moved away from certain areas of recreation and beach operations
- Permitting escorted over-sand vehicle (OSV) use in the vicinity of unfledged piping plover chicks

The HCT proposes to mitigate incidental take from the above covered activities through:

- selective lethal predator management
- enhanced monitoring and enforcement
- public outreach
- conservation research
- habitat improvements, including potential vegetation removal to increase habitat area

However, according to the FWS, the only mitigation measure that will fulfill federal Endangered Species Act (ESA) permitting requirements is selective predator management.

Based on current estimates of 655 breeding pairs of plover in Massachusetts, the HCP estimates that 3.4 percent “upper bound estimate” and 1.7 percent “realistic estimate” of chicks will be subject to a take as a result of the permitted activities in the plan. In this case, “take” means chicks actually killed or lost. These percentages amount to 22.27 chicks (3.4 percent) and 11.13 chicks (1.7 percent) allowed as a take per year. The plan also assumes a 5 percent risk of adult mortality associated with each incidence of covered activities.

0147-2

Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks

In considering the allowance of roads and parking lots to be used in the vicinity of unfledged chicks, every attempt should be made to create a protective buffer or barrier between chicks and human activity. The proposed use of trained staff to monitor, manage and direct activity at these sites is critically important in helping ensure that any potential impacts to plovers are avoided or minimized.

Reduced Symbolic Fencing Around Nests

Under this proposed covered activity, fencing buffers around nests would be reduced from the existing 50-yard restriction in limited locations, and recreational and beach operational activities would be permitted in areas that would otherwise have been fenced under existing guidelines. Less intense monitoring could be allowed. APCC is concerned that reduced symbolic fencing around nests would unnecessarily increase potential for adverse impacts to nests and chicks. APCC is particularly concerned that the plan includes the possibility of less intense monitoring at these sites. With a reduction in the

0147-3

- 0147-3 cont. | area of protective fencing, continuous, vigilant monitoring is especially important to ensure that adults do not abandon nests or that human activities do not otherwise imperil the success of nesting attempts.  
Reduced Proactive Symbolic Fencing of Piping Plover Habitat
- 0147-4 | As described in the HCP, the extent of symbolic fencing of piping plover habitat would be reduced in order to provide more access for beach-goers. This proposed action is directed at suitable habitat and not habitat currently occupied by piping plover, seemingly making this scenario not as likely to result in adverse impacts to plovers. However, a reduction in proactive symbolic fencing around suitable plover nesting habitat, especially habitat historically used by breeding pairs, could result in unmanaged human traffic within the habitat area that frightens plover pairs away from these potential nesting locations, possibly resulting in failure of the pair to successfully reproduce during that breeding season. Continuous monitoring should be required so that appropriate fencing can be immediately erected if courtship behavior or nest scraping is observed within the unfenced area.
- 0147-5 | Moving Piping Plover Nests Away from Recreation and Beach Operation Areas  
Under the HCP, parking lots and access points may be allowed to stay open, which could increase the risk of piping plover nest destruction or abandonment if nests are built in those areas. The HCP would permit some nests to be moved under certain circumstances, following an established protocol. According to the HCP, nest moving has been done in other regions of the country in situations when flooding threatens the nest. However, the plan does not provide information about the rate of success vs. nest abandonment when nest moving is attempted. APCC recommends that nest moving should be attempted only as a last resort, when the nest is in imminent danger of being abandoned or destroyed. Restricting area around the nest to the extent possible should be undertaken first.
- 0147-6 | OSV Use in the Vicinity of Unfledged Piping Plover Chicks  
The HCP proposes to allow escorted OSVs to drive past a limited number of unfledged piping plover broods. In these circumstances, individual vehicles are to be escorted on foot by a passenger of the vehicle, or a single individual will escort a caravan of up to 50 vehicles. APCC does not support allowing OSV access to areas where unfledged chicks are located under the procedure described in the HCP. Even though OSV operators would be required by the HCP to attend an orientation, it appears that the passenger escorts are not subject to this training. Relying on private citizens to safely guide a vehicle or vehicles through areas occupied by unfledged chicks is far too risky and invites incidents that would likely result in the death of chicks or even adult plovers. There is too much potential for citizen escorts to not spot chicks or to not respond appropriately when chicks are spotted.
- 0147-7 | Selective Predator Management as Mitigation  
As noted above, based on guidance provided by the FWS during plan development, the only mitigation measure being proposed to fulfill ESA permitting requirements is selective predator management. According to the HCP, the plan *"commits the DFW to ensure that, on an annual basis, sufficient selective predator management will be carried out to offset the take associated with implementation of that year's covered activities. Predator management will be designed to benefit 2.5 breeding pairs for every brood, nest, or territory exposed to take from covered activities. Selective predator management to benefit an additional 0.5 breeding pairs will be implemented for each instance of the Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks covered activity."*
- 0147-7 | APCC acknowledges the negative impact predation on plover nests and chicks has had on piping plover recovery goals, and realizes that selective predator management using lethal control may sometimes be necessary to sustain breeding productivity. However, lethal control should be used only as a last resort

- when other non-lethal measures have failed, and should be limited to targeting specific “bad actor” individuals known to prey on plover nests and chicks.
- 0147-7 cont. APCC cannot support the predator management program as proposed in the HCP, which essentially establishes a predetermined quota of predators to be lethally removed to compensate for allowing plover take—including an anticipated percentage of plover mortality—in order to accommodate enhanced beach accessibility and recreational uses. According to the HCP, predator removal will take place in late winter or early spring, before plovers arrive and presumably before individual predators can be identified as targeting plovers. As described in the HCP, the predator lethal management plan hardly appears to be “selective.”
- APCC strongly supports adoption of other strategies to discourage predation of nests and chicks before resorting to lethal control, particularly those measures that would reduce the attraction of predators to beach areas. This would include an aggressive education and enforcement program to remove food sources in the form of trash and food waste from beaches and parking lots. APCC encourages such proactive measures to be included in the HCP.
- Education, Outreach and Enforcement  
APCC supports the education, outreach and enforcement programs described in the HCP as conservation actions to benefit piping plover populations. As mentioned above, greater enforcement of litter removal regulations in order to discourage predator activity in beach areas should also be included in these proposed actions.
- Vegetation Management  
The DFW proposes to implement a habitat improvement pilot project that would remove vegetation at two to five sites, with a limit of not more than 0.5 acre per site to be affected. In considering removal of existing vegetation, caution should be exercised to ensure that the vegetation community in question is not aiding in minimizing beach erosion or dune stability. Removal of beach area vegetation could, among other impacts, potentially adversely affect existing plover habitat by exacerbating beach erosion. A study of the town of Brewster’s coastal area conducted by APCC in 2015 showed a correlation between the presence of some vegetation communities and shoreline stability.
- 0147-8
- Climate Change Impacts  
The HCP contains little discussion of the potential for adverse impacts to piping plover conservation efforts as a result of sea level rise and climate change. One consequence of climate change is the loss of plover breeding habitat due to coastal erosion and narrowing beaches. Loss of beach area will also likely increase conflicts between the need to protect plover habitat and demands to accommodate pedestrian and OSV beach use. The HCP should include climate change planning as part of its plover conservation plan.
- 0147-9
- Adaptive Management and Monitoring  
APCC strongly supports the proposed inclusion of adaptive management in the HCP. Conservation planning in the HCP should be capable of responding immediately to changes in plover populations or to unexpected outcomes from a proposed action. APCC also strongly endorses the critically important monitoring component of the plan, which according to the HCP will be closely integrated with adaptive management.
- Conclusion

0147-10

A piping plover Habitat Conservation Plan should include efforts to accommodate beach access and recreational interests when and where feasible, but should not do so to the extent that piping plover individuals are unnecessarily exposed to take. Instead of justifying an anticipated number of plover subjected to a take as a consequence of increased recreational access, and then compensating for those impacts with lethal predator control, the HCP should place a greater emphasis on avoiding and minimizing the risk of take to piping plover.

Thank you for this opportunity to provide comments.

Sincerely,



Edward DeWitt  
Executive Director



Don Keeran  
Assistant Director

### **Response to Comment 0147-1**

The piping plover population has experienced remarkable success in Massachusetts. A major factor contributing to this success is beach management according to the State and Federal guidelines, which ensures human activities do not cause take of piping plovers. The HCP's purpose is to deviate from the State and Federal guidelines and alleviate some of the restrictions on recreation resulting from adherence to the guidelines. As described in the EA and HCP, the HCP's covered activities could negatively impact piping plovers in the Plan area. These impacts could include displacement of adults, nest abandonment, reduced productivity, etc. However, provided that an applicant meets the criteria for ITP issuance (see response to Comment 0030-2), the ESA allows for incidental take of listed species.

In accordance with the issuance criteria, the HCP includes measures to minimize impacts to the piping plover. Key elements of the Plan include statewide limits on take exposure (see HCP section 3.3.2.1), measures to avoid and minimize impacts when implementing covered activities (HCP sections 3.2 and 4.3.1), and mitigation to at least offset impacts of take and reduced productivity associated with the covered activities (HCP section 4.3.2). Based on our analysis of the effects of the covered activities, minimization and avoidance measures, and mitigation measures, we determined that the covered activities would not cause significant impacts to the piping plover or other elements of the human environment. Additional permitting standards under MESA contribute to the assurance that implementation of the Plan will not lead to significant impacts to the piping plover population or impede species recovery.

### **Response to Comment 0147-2**

The Plan assumes 5 percent risk of adult mortality only for the covered activity "Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks," but anticipates zero adult mortality for all other covered activities.

### **Response to Comment 0147-3**

The commenter suggests that reduced symbolic fencing under the Plan would create unnecessary potential for adverse effects to plovers. The ITP issuance criterion at 50 CFR 17.32(b)(2)(B) requires HCPs to minimize the impacts of covered activities to the maximum extent practicable, and unnecessary potential for adverse effects would not comply with this criterion. Accordingly, the Plan includes measures to avoid and reduce effects on plovers to the lowest level possible while still achieving the purpose of the Plan.

According to 50 CFR 17.32(b)(1)(iii)(C)(2) and the Service's 5-Point Policy guidance, monitoring is a mandatory element of all HCPs. As part of the Plan, COI holders will implement monitoring associated with Plan implementation in addition to continuing to implement monitoring that is currently ongoing to manage beaches in accordance with the State and Federal guidelines. The Plan does not allow reduced monitoring at sites with "Reduced Symbolic Fencing Around Nests" (HCP section 3.2.2.1).

### **Response to Comment 0147-4**

See response to Comment 0147-1 and 0147-3. The HCP requires intensive monitoring in association with "Reduced Proactive Symbolic Fencing." Although COI holders implementing this covered activity would not be required to install fencing if scraping is detected, they would be required to

install symbolic fencing around nests (HCP section 3.2.2.2). The primary objective of this covered activity is to provide increased recreational access. To that extent, take for reduced proactive fencing includes disturbance of territorial and scraping plovers and may include the destruction of scrapes, but not nests (unless an undiscovered egg that is not being incubated was accidentally stepped on). Should piping plovers nest despite the lack of symbolic fencing, plan participants must immediately install symbolic fencing around the nest to limit disturbance and prevent the destruction of eggs, consistent with the covered activity scenario of reducing fencing buffers around nests, as described in HCP section 3.2.2.1. The EA and HCP recognize the possibility that breeding pairs may be displaced and this is taken into account in the impact analyses. The EA determined that this covered activity would not cause significant impacts to the piping plover population, and the HCP provides for appropriate mitigation to offset these impacts.

### **Response to Comment 0147-5**

The Plan prioritizes reduced symbolic fencing buffers around a nest over nest moving, with nest moving only to be authorized as a last resort. In response to the comment, the MADFW revised the HCP to include a brief summary of the results of nest moving studies cited in the HCP.

### **Response to Comment 0147-6**

See response to Comment 0130-6. In addition, although the commenter is correct that the operator and not the passenger/escort is required to undergo training, having a pedestrian escort walk in front of the vehicle will still reduce the risk of chick mortality by ensuring that vehicles do not exceed the speed limit, and increasing the opportunity for broods to safely pass through the vehicle corridor prior to vehicle passage. It is important to note that, in addition to the escort, each brood in the vicinity of an OSV corridor would be monitored by a qualified shorebird monitor who can stop traffic if chicks approach or enter the travel corridor (HCP section 3.2.3). The MADFW revised the HCP (section 3.2.3) to state that detailed information on the site-specific thresholds for temporarily halting traffic must be provided in the IAMPs. Escorting and enhanced monitoring are two complementary, overlapping risk reduction strategies that would combine to reduce impacts to plovers below the level described in the Plan for this activity—50 percent reduction in fledging success for broods exposed to OSVs.

### **Response to Comment 0147-7**

As described in the Plan, selective predator management as a mitigation strategy would only be implemented at sites with a pattern of low productivity clearly linked to high predation rates (HCP section 4.3.2.1 and table 4-3). For example, it is believed that an average productivity of approximately 1.2 fledglings per pair is needed to maintain a stable population size in New England. The Plan generally calls for selective predator management at sites with productivity less than 1 fledgling per pair and where the low productivity is attributed to high predation. In addition, every attempt would be made to select sites with high densities of nesting plovers to maximize the benefits of predator removal. Finally, in addition to the selective site selection process, the predator management itself will be selective and focused on predator species or individual predators that have been documented the prior plover season to be active at a particular site and preying upon plover eggs and/or chicks. Should predators be documented to prey on plover nests or chicks during the breeding season (based on routine monitoring required under the Guidelines), additional predator management may be implemented as long as the activity does not adversely affect piping plovers or their young. This is the standard procedure implemented by the B120-funded beaches at

which predator management is ongoing. The Plan does not establish a predetermined quota of predators to be removed, although it does establish a formula for determining the number of plover breeding pairs that must benefit from selective predator management in a given season. In the unlikely event that Plan participants and the MADFW are unable to identify enough sites for selective predator management that meet the selection criteria, the number of authorizations to implement covered activities would be reduced accordingly (HCP section 5.2.2.1).

### **Response to Comment 0147-8**

Vegetation management has the potential to benefit piping plovers in some cases. All proposed vegetation management pilot projects would undergo review by local Conservation Commissions to ensure that the projects would not significantly hinder the ability of resource areas, such as dunes, to provide ecosystem functions, such as storm protection. Because of concerns about the success and feasibility of this activity, the Plan acknowledges that pilot projects will not be implemented if applicable permitting approvals cannot be obtained (HCP section 4.3.2.3).

### **Response to Comment 0147-9**

See response to Comment 0130-10.

### **Response to Comment 0147-10**

As described in HCP section 1.1.2, the Plan builds on over two decades of successful management and recovery of the Massachusetts piping plover population, undertaken by the MADFW in partnership with landowners and beach managers throughout the State. Currently, the vast majority of plover nesting beaches in Massachusetts are managed in accordance with the State and Federal guidelines, including all sites with recreational OSV use. Under the Plan, the overwhelming focus of piping plover management in Massachusetts will continue to be take avoidance through adherence to the guidelines. The Plan would allow deviations from the guidelines for a small percentage of broods, nests, or territories. In these cases, a major emphasis is placed on impact avoidance and minimization to reduce risk associated with implementation of covered activities.

Also, see responses to Comments 0130-5, 0147-1, and 0147-3.