

# DIVISION OF FISHERIES & WILDLIFE

## Massachusetts Piping Plover Habitat Conservation Plan Handbook

March 9, 2021

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## Introduction

The Massachusetts Piping Plover Habitat Conservation Plan (HCP) is a document that supports MassWildlife's application to the US Fish and Wildlife Service (USFWS) for an Incidental Take Permit (ITP) for the Piping Plover, which is listed as Threatened under the federal and Massachusetts endangered species acts (ESA and MESA, respectively). The ITP legalizes incidental Take that might occur through certain "covered activities," described in the HCP, that are inconsistent with state and federal management Guidelines (see definition, below) for Piping Plovers. In other words, participation in the HCP allows for management flexibility beyond what is acceptable under the Guidelines. This can benefit beach managers and the public by easing restrictions on recreation during the busy beach season. Ultimately plovers will benefit through greater support for conservation activities by the public, and mitigation activities that enhance plover survival and productivity.

## Participation

MassWildlife holds an ITP (which has a 26-year term) and issues Certificates of Inclusion (COI) (essentially, sub-permits) and Conservation and Management Permits (CMP) (state permits pursuant to MESA) to eligible beach managers who wish to participate in the program. MassWildlife is responsible for administering the program and ensuring compliance of its COI-holders so that it can remain in good standing with its ITP. The HCP describes in detail how the program will be carried out.

Beach managers in good standing (i.e., that have a history of compliance with the Guidelines) with an interest in participating are encouraged to request a pre-application consultation with MassWildlife so we can learn more about how the HCP might apply to your program. Following available guidance, a potential participant will then develop its application and submit it to MassWildlife for review.

Your COI and CMP will be good for three years. Once you are issued a COI/CMP, annually you will provide MassWildlife with documentation that you have the resources and are prepared to carry out the work. If you are paying into an escrow or mitigation fund, you will provide proof of deposit annually.

During the nesting season, you will be responsible for documenting compliance with the Guidelines and your permit, submitting weekly reports, notifying MassWildlife whenever new pairs are subjected to activities, reporting problems, and participating in compliance site visits. After the nesting season, you will submit a detailed report in a standard format that details implementation of the HCP at your site. You will also submit your plover and tern census data and other rare species data to online databases.

## Purpose of Handbook

This Handbook is intended to simplify application to and implementation of the HCP program by providing a summary of the basic information necessary to understand the process and responsibilities. It also provides specific application and reporting formats. The program overview in this Handbook is very brief and lacks the detail of the HCP. It is meant to be used in combination with the HCP, site permits, and conversations with MassWildlife for successful application to and implementation of the program. The Handbook should be considered a living document that will be updated as necessary, along with related documents and formats. Before submitting an application or compliance information, please check our website for up-to-date guidance and formats: <a href="https://www.mass.gov/service-details/ma-piping-plover-habitat-conservation-plan-hcp">https://www.mass.gov/service-details/ma-piping-plover-habitat-conservation-plan-hcp</a>. The full HCP is available on MassWildlife's website: <a href="https://www.mass.gov/service-details/ma-piping-plover-habitat-conservation-plan-hcp">https://www.mass.gov/service-details/ma-piping-plover-habitat-conservation-plan-hcp</a>. The full HCP is available on MassWildlife's

## **Abbreviations and Definitions**

Applicant. Entity applying to participate in the HCP; a potential COI-holder.

Application. See "Request for COI."

Credits. A contribution to mitigation, measured in pairs benefitting from the action or payment.

- **Certificate of Inclusion**. Document from MassWildlife acknowledging that the entity named in the certificate is participating in the HCP, *i.e.*, has been approved to carry out the program at a specific site.
- **CMP**. See Conservation and Management Permit.
- **COI**. See *Certificate of Inclusion*.

**COI-holder**. A participant in the HCP that has a COI.

- **Conservation and Management Permit**. Permit issued by MassWildlife that authorizes Take of statelisted species pursuant to MESA.
- Covered Activities. Specific activities that are eligible for coverage under the HCP.
- **Debits**. Mitigation owed as a result of exposing territories, pairs, nests or broods to Take; measured in pairs.

**Endangered Species Act**. A federal law to protect and recover imperiled species and the ecosystems upon which they depend.

ESA. See Endangered Species Act.

- **Guidelines**. State and federal management recommendations to reduce the likelihood of Take of Piping Plovers and terns. Specifically:
  - Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns and Their Habitats in Massachusetts (MassWildlife; **Appendix A**)
  - 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; Appendix B)

Habitat Conservation Plan. A document that supports an application to the USFWS for an Incidental Take Permit.

HCP. See Habitat Conservation Plan.

IAMP. See Impact Avoidance and Minimization Plan.

**Impact Avoidance and Minimization Plan**. An applicant's or COI-holder's strategy to reduce the impacts of covered activities on plovers and other species covered under their permit.

Incidental take. An unintentional, but not unexpected, taking.

Incidental Take Permit. A permit that allows a permit holder to proceed with an activity that is legal in

all other respects, but that results in the "incidental" taking of a listed species.

ITP. See Incidental Take Permit.

- MassWildlife. *Massachusetts Division of Fisheries and Wildlife*; state agency that administers the Piping Plover HCP.
- Massachusetts Endangered Species Act. A Massachusetts law that protects rare species and their habitats by prohibiting the "Take" of any plant of animal listed as Endangered, Threatened, or Special Concern.

**MESA**. See Massachusetts Endangered Species Act.

Natural Heritage and Endangered Species Program. A program within MassWildlife that focuses on conservation of non-game species, particularly those listed as Endangered, Threatened, or Special Concern.

**NHESP**. See Natural Heritage and Endangered Species Program.

- Participant. See "COI-holder."
- PIPLODES. Piping Plover Online Data Entry System. MassWildlife's online database for plover census and monitoring data.

Request. See "Request for COI."

**Request for COI**. An application to participate in the HCP.

Take.

- As defined under the ESA: "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."
- As defined under the MESA: "in reference to animals, means to harass, harm, pursue, hunt, shoot, hound, 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, and in reference to plants, 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."
- **Take exposures**. The subjecting of territories, pairs, nests, or broods to activities that are expected to cause Take.
- **TERNODES**. *Tern Online Data Entry System*. MassWildlife's online database for tern, Laughing Gull, and Black Skimmer census and monitoring data.

**USFWS**. US Fish and Wildlife Service. Federal entity issuing the ITP to MassWildlife.

## MassWildlife contacts

Multiple MassWildlife employees help to administer the HCP. To ensure that communications are routed to the proper staff person and to help keep HCP communications centralized, <u>the primary contact email is</u>:

<u>coastal.waterbirds@mass.gov</u>.

If you communicate with a specific MassWildlife staff person regarding the HCP, please copy <u>coastal.waterbirds@mass.gov</u> to help keep us organized!

The Plan Administrator is:

Carolyn Mostello, Coastal Waterbird Biologist (<u>Carolyn.Mostello@mass.gov</u>)

A lead biologist will be assigned to each site. <u>Site leads</u> are:

- Carolyn Mostello, Coastal Waterbird Biologist (Carolyn.Mostello@mass.gov)
- Andrew Vitz, State Ornithologist (<u>Andrew.Vitz@mass.gov</u>)

You may also receive communications from MassWildlife's administrative, regulatory review, data management, and other staff from time to time.

## **Covered Activities**

The ways in which COI-holders can deviate from the Guidelines within the bounds of the HCP are limited to three types of covered activities:

- **Recreation and beach operations**. Includes activities such as reduced proactive symbolic fencing, reduced fencing around the nest, nesting deterrents, and nest moving.
- **Over-sand vehicle (OSV) use in the vicinity of unfledged chicks**. Allows recreational vehicles to drive past and within 100 yd of unfledged chicks on the beach.
- Use of roads and parking lots in the vicinity of unfledged chicks. Allows vehicles on improved roads and parking lots to drive past and within 100 yd of unfledged chicks on the beach.

Activities that do not fit within these categories are not eligible for coverage under the HCP. When carrying out covered activities, COI-holders must also carry out intensive procedures to avoid and minimize negative impacts, as described in the Impact Avoidance and Minimization Plan (IAMP) that is part of the application. These procedures are separate from mitigation activities.

## Mitigation

To ensure that implementation of the HCP does not cause harm to the Massachusetts plover population, COI-holders are required to provide net benefit mitigation before any covered activities are carried out. At the time of application, the applicant will decide if they will conduct on-site or off-site mitigation, or a combination of both.

• **On-site**. On-site mitigation refers to mitigation that the COI-holder implements either directly or through a contract between the COI-holder and another entity. This mitigation could be conducted at the COI site or at another site that the COI-holder owns or at which they have

permission to conduct mitigation. The work must benefit a sufficient number of piping plover pairs to offset the covered activities.

• **Off-site**. COI-holders who do not wish to conduct on-site mitigation must enter into an escrow or mitigation fund agreement with MassWildlife (**Appendix C**) and provide funds to an account. MassWildlife then uses these funds to enter into contracts with entities that will conduct mitigation activities.

The amount of required mitigation is scaled to the specific covered activities and the permitted number of take exposures. Two of the three types of covered activities (Recreation and beach operations, OSV use) require a benefit to 2.5 pairs of plovers for every one pair of plovers exposed to Take (2.5:1) or a payment of \$5,800 per take exposure. The third type of covered activity (Use of roads and parking lots) requires a mitigation ratio of 3:1 or a payment of \$6,150 per take exposure.

COI-holders earn "credits" when they engage in mitigation activities or provide mitigation funding and accumulate "debits" when they expose plovers to Take. MassWildlife tracks these credits and debits to ensure that required mitigation amounts are met both at the site and state levels.

In a given year, a COI-holder may generate more credits than needed to offset their debits. This might occur through on-site mitigation that benefits a larger number of pairs than required, or because the COI-holder pays into a mitigation fund but decides not to implement all their permitted take exposures. In such cases, those surplus credits can carry over for up to three subsequent years, or through Year 1 of a consecutive permit term. For instance, surplus credits earned in Year 1 of a current term can carry over into Years 2 and 3 of the current permit term and Year 1 of a consecutive term. However, if there is a gap of one or more years between permit terms, or the COI-holder decides not to continue in the HCP program, surplus credits from the previous term will have expired and any payments will not be refunded.

The only USFWS-approved mitigation activity is selective predator management. MassWildlife is responsible for ensuring that overall statewide debits are balanced by credits gained through selective predator management. If that requirement is met, MassWildlife can approve other types of mitigation activities at its discretion, including but not limited to education, outreach, increased law enforcement, and nesting habitat improvement.

## **COI-holder responsibilities and timeline**

Participation in the HCP is a significant undertaking for the COI-holder. It is very important that potential participants understand requirements and timing so that they can evaluate whether their organization has the experience, capacity, and funding to participate. **Figure 1** summarizes applicant and COI-holder responsibilities throughout the year. A detailed COI-holder responsibility checklist can be found in **Appendix D**.



Figure 1. COI-holder responsibilities by time of year.

## Preparing and submitting a Request for COI

If your organization decides to apply, you will start preparing your Request for COI (Request, or application), preferably after an initial consultation with MassWildlife. The Request will detail what your site and current plover management are like (*i.e.*, demonstrate your compliance with the Guidelines), what covered activities you would like to implement, how many plover pairs you are requesting coverage for (within allowable limits of the HCP), how you will avoid and minimize impacts, what type of mitigation you will provide, and how your organization will budget and pay for the program. **Appendix E** provides detailed guidance on preparing your Request.

Note that it is very important to provide legible, well-labeled maps that reference the locations discussed in your Request so that MassWildlife can understand your application. Additionally, among other requirements, you will need to provide template data logs to demonstrate how you will record data related to plover nesting, staffing, and implementation of Guidelines and covered activities (See *"Additional compliance elements,"* below). These template logs demonstrate your readiness to record the data needed to show compliance with the Guidelines and your permit.

Also, for your application to be complete, it must include a discussion of other state-listed species at your site, whether or not they may be exposed to take, and how take will be avoided or how a net benefit will be provided to the species. For a complete list of state-listed species at your site, you can submit an Information Request to MassWildlife (<u>https://www.mass.gov/doc/state-listed-species-information-request-form/download</u>).

MassWildlife is available for assistance and can review drafts of your Request if submitted with sufficient time for review before the **December 15 deadline** for applications. Once your Request is complete, you will submit it to MassWildlife (coastal.waterbirds@mass.gov) along with a MESA Review Checklist & Application Cover Page (**Appendix F**) and the required application and CMP fees (which must be mailed to MassWildlife's physical address). Your complete application will be posted online and is subject to a public comment period of 15 business days. MassWildlife will not process incomplete applications.

## Annual reauthorization

While COIs and CMPs typically have three-year terms, MassWildlife must reauthorize COI-holders on an annual basis before they can implement covered activities in Years 2 and 3. The purpose of this is to ensure that (1) the COI-holder has the funding, staffing, and work plans (*e.g.*, mitigation contracts) in place to successfully implement the HCP in each year and (2) MassWildlife knows who the HCP implementation manager (lead contact) is for each site.

To that end, COI-holders must submit:

- **Proof of escrow (or mitigation fund) deposits**, if applicable, by **February 15**. (Note that for new and renewal COIs, the deadline is **April 1**.) Proof shall consist of a statement or deposit slip with date, amount, and an indication of what it was for. This should be accompanied by an email or cover letter clearly stating with what project the funds are associated.
- A **mitigation work plan** with signed contract, if applicable (**February 15**). (Note that for new and renewal COIs, applicants should have submitted this work plan with their applications.)
- **Proof of sufficient funding** to execute the HCP program (budget assurance, **Appendix G**), in-line with the budget in the Request (**March 15**)
- Contact information for the implementation manager (March 15)
- A request for reauthorization, after the above elements are submitted (March 15)

No covered activities may begin until the COI-holder has received reauthorization.

## Requesting an amendment to an existing COI

During the off-season, COI-holders may decide that they want additional coverage beyond what they initially requested and for which they were permitted; at times they may make "emergency requests" during the nesting season. In cases where additional covered is desired, a COI-holder can request to amend their COI/CMP. There is not a strict deadline for amendment request submittals; however, MassWildlife cannot guarantee that it can issue an amended permit prior to the beach season for

requests submitted after December 15. To limit the need for amendments, our recommendation is for applicants to request all the latitude that they can envision needing during the nesting season in terms of covered activities and number of take exposures. This ultimately makes it easier for both the COI-holder and MassWildlife.

The format of the amendment request will depend on the degree and complexity of the change. Some amendment requests may require a submission similar in scope and detail to the original Request -- for instance, when a new covered activity is desired. Others, such as a small increase in number of take exposures, may be much less involved. This can be worked out through consultation with MassWildlife. Any emergency amendments that are granted (sometimes via email authorizations) during the nesting season must be more formally requested and incorporated into the COI-holder's permit before the next nesting season. Amendment requests are posted online and are subject to a public comment period of 15 business days; however, in the case of emergency Requests, MassWildlife need not wait until the end of the comment period to issue an approval.

## Additional compliance elements

COI-holders must demonstrate that they are compliant with the Guidelines and their permits. The basic compliance elements are these:

Compliance logs or datasheets. These logs should document plover monitoring, staff coverage, implementation of the Guidelines, and implementation of covered activities. Template logs are required as part of your Request for COI. You should review them annually in the pre-implementation phase to ensure that they are up-to-date and meet your needs for the upcoming season. MassWildlife will view these logs during compliance site visits and you will include them (or summarize them) in your annual site report. Logs will be site-specific; however, the following summarizes data that may be appropriate to document for different types of logs. Depending on your permit, some of this may not be necessary or you may need to provide additional data not included below:

- **Staffing.** Hours of coverage by day of week; job categories or specific staff assigned for monitoring, implementation of covered activities, or supervisory responsibilities; daily/weekly staff schedule.
- **Compliance with Guidelines and beach rules**. Installation and maintenance of proactive symbolic fencing and signage; number of site visits; non-essential vehicle restrictions (locations, dates, reasons); expansion of fencing to accommodate accreting beach adjacent to nesting areas, new nests, chick movements, and tern nursery areas; interactions with beach users regarding compliance with Guidelines and other beach rules (dogs, kites, fencing, fireworks, trash policy, etc.); law enforcement effort; violations; warnings and fines issued.
- **Recreation and beach operations**. Dates, mapped locations, acreage, number of territories/nests/chicks, and staffing; use of tern chick shelters; distance between chicks and barriers; checks of barriers for integrity.
- OSV use in the vicinity of unfledged chicks; Use of roads and parking lots in the vicinity of unfledged chicks. Length, width, acreage, and mapped locations of vehicle corridors, roads, and

parking lots affected, and any shifts in these areas through the season; documentation of vehicle operator trainings; dates corridors, roads, or parking lots open vs. closed; daily number of vehicles using corridors, roads, or parking lots in the vicinity of unfledged chicks; daily vehicle trip counts; timing of escorts or caravans; staff assisting with implementation (escorting, chick monitoring, compliance, etc.); raking of vehicle ruts; distance between chicks and barriers, corridors, roads, or parking lots.

• Plover and tern disturbance and mortality associated with covered activities. Observations of birds' reactions to reduced proactive symbolic fencing, nesting deterrent activities, barriers, chick herding, nest moving, and reduced fencing around nests; pre- and post-implementation counts and monitoring of plover and tern chicks near travel corridor, road, or parking lot; locations and observations of broods in, or crossing over, road or parking lot; timing and number of chicks herded; checks of barriers for entanglements or use by chicks for sheltering; documentation of searches for missing chicks

## Implementation notifications.

- Start. At least 24 h before each new covered activity is implemented, and before each new territory, pair, nest, or brood is exposed to a covered activity, the COI-holder must notify MassWildlife using a standard format (Appendix H). <u>Provided that MassWildlife has already issued its annual reauthorization</u>, COI-holders do not need to receive a response from MassWildlife before proceeding with implementation.
- **Stop**. When a territory, pair, nest, or brood is no longer exposed to a covered activity, the COIholder must also notify MassWildlife. This may be reported in the weekly report, described below.

Injuries and mortalities. Observations of dead or injured plovers should be communicated as soon as possible to MassWildlife (<u>coastal.waterbirds@mass.gov</u>) and the USFWS (<u>newengland@fws.gov</u>; 603-223-2541). Observations of dead or injured terns should be communicated as soon as possible to MassWildlife.

Weekly reports. Once per week during implementation, COI-holders must report on implementation activities using a standardized format (**Appendix I**).

Compliance site visits. At least once per season, MassWildlife will conduct a compliance visit at any sites at which implementation of covered activities is occurring. MassWildlife may also elect to visit HCP sites that choose not to implement in a given year. During these visits, MassWildlife will evaluate adherence to the Guidelines and permit; examine logs; observe implementation of covered activities; and discuss any Questions, concerns, or recommendations you may have.

Annual report. Once per year by **October 15**, COI-holders must provide a report in a standardized format summarizing the nesting season (**Appendix J**). The COI-holder must fill out a checklist following the report format, which will be made available online, indicating on which pages the information can be found, and submit it with the report. This information allows MassWildlife to efficiently complete its

reporting requirements to the USFWS, document success of the program, identify challenges, track mitigation credits and debits, and consider COI-holders' recommendations.

Census and rare species data submittals.

- Plover, tern, Black Skimmer, and Laughing Gull census data. By September 30, COI-holders must submit coastal waterbird census data to MassWildlife's online databases, PIPLODES and TERNODES.
- **Other rare species**. By **October 15**, COI-holders must submit observations of other rare species online via MassWildlife's Heritage Hub (https://www.mass.gov/info-details/overview-of-the-heritage-hub). Some COI-holders may have additional specific requirements related to rare species covered in their COIs.

## FAQs

#### How many pairs of plovers can be exposed to Take under the HCP?

There are both statewide and site-specific limits. Statewide, a maximum of 7% of pairs can be exposed; that level will drop incrementally if the population decreases beyond certain thresholds. At a given site, generally no more than 15% of pairs can be exposed. Exceptions are that up to 30% of pairs may be subjected to reduced proactive symbolic fencing and up to 75% of pairs can be exposed to all activities combined at up to eight sites annually.

## Are there acreage limits under the HCP?

Yes. At a given site, generally no more than 2 acres or 10% of nesting habitat, whichever is less, can be impacted, with the exception that up to 4 acres or 20% of nesting habitat, whichever is less, can be impacted at up to five sites annually.

## Do I need to request coverage annually? What happens after my three-year permit term is up?

In most cases, your permit will be good for three years; in Years 2 and 3 of your permit, you must request <u>reauthorization</u> before implementing activities during that nesting season. (See "Annual reauthorization," above.) After Year 3, if desired, you can choose to <u>renew</u> your permit by submitting another application.

#### Do I need to submit an annual report if I didn't carry out covered activities in a given year?

Yes. However, the implementation-specific portions of the annual report need not be filled out.

## Can I be approved for any activity that might cause Take?

No. The HCP only applies to incidental Take that occurs through the implementation of three specific covered activities. (See "*Covered activities*," above.)

## Do I have to provide mitigation if there was no Take?

Keep in mind that Take includes things like disturbance and preventing birds from nesting, not just injury and mortality. MassWildlife and the USFWS have determined that the covered activities will result in Take or one sort or another. Any entity implementing covered activities must provide mitigation.

## **Can I implement on-site mitigation or make mitigation payments** <u>after</u> I carry out covered activities? No. Mitigation is required before implementation.

#### What if a Take occurs while I am carrying out a covered activity?

MassWildlife will discuss with you the particulars of the situation. If the Take occurred while you were carrying out covered activities in a manner compliant with your permit, you have the coverage needed to avoid liability. That is the purpose of the HCP.

#### Can MassWildlife change the HCP requirements, like mitigation ratios?

Typically not without MassWildlife amending the HCP through a formal process with the USFWS. This is a substantial investment of time and effort on the part of MassWildlife, the USFWS, and other stakeholders assisting with the development of the amendment. Amendments require notice in the Federal Register, a public comment period, and sign-offs in Washington, DC. One amendment was approved in 2019. This amendment changed the maximum percentage of pairs that could be exposed from 30% at five sites to 75% at eight sites.

#### Are any other species besides the Piping Plover covered under the HCP?

The HCP specifically applies to the federally-listed Piping Plover. However, at sites where other statelisted species occur, applications must also incorporate discussions of those species. MassWildlife will determine if they require a CMP. Least Tern (guidance in **Appendix L**) and Diamondback Terrapin are species that have been covered along with Piping Plover in CMPs associated with the HCP to date.

#### Where can I learn more about the HCP?

MassWildlife's HCP website is here: <u>https://www.mass.gov/service-details/ma-piping-plover-habitat-</u> <u>conservation-plan-hcp</u>. The HCP document can be downloaded here: <u>https://www.mass.gov/doc/piping-</u> <u>plover-habitat-conservation-plan/download</u>.

#### GUIDELINES FOR MANAGING RECREATIONAL USE OF BEACHES TO PROTECT

#### PIPING PLOVERS, TERNS, AND THEIR HABITATS IN MASSACHUSETTS

Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program Field Headquarters, Rt. 135 Westborough, MA 01581

#### 21 April 1993

#### I. INTRODUCTION

The Massachusetts Division of Fisheries and Wildlife (the Division) has developed the following guidelines to assist beach managers and property owners with protecting piping plovers. least terns, common terns, roseate terns, arctic terns, and their habitats. Implementing these guidelines will help beach managers and property owners avoid potential violations of the Massachusetts Endangered Species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.00) involving recreational use of beaches used by piping plovers and terns for breeding and nesting habitat.

The Division intends to apply these guidelines in its review of Notices of Intent, pursuant to the Massachusetts Wetlands Protection Act regulations (310 CMR 10.37), for vehicular use of beaches where piping plovers and terms occur.

The Department of Environmental Protection has developed a set of recommended conditions for barrier beach management to be used by municipal conservation commissions in drafting Orders of Conditions. In addition, the Massachusetts Barrier Beach Task Force, coordinated by the Office of Coastal Zone Management, has developed a comprehensive set of guidelines covering the full range of barrier beach management issues. The following guidelines should be read and applied in conjunction with these other documents.

Users of these piping plover and tern guidelines are advised that they do not supersede any law, regulation, or official policy of this or any other agency. Rather, these guidelines are intended to complement other regulatory review processes regarding recreational activities on beaches by providing a standard set of scientifically based management recommendations.

This document contains five sections: 1) an introduction, 2) summaries of life histories of these species and threats to their continued existence in the state, 3) a summary of pertinent laws and regulations, 4) guidelines for managing and protecting plovers, terns, and their habitats, and 5) literature cited.

In these guidelines, the Division has sought to provide the necessary protection to piping plovers and terms without

unnecessarily restricting appropriate access along all of the state's beaches. The Division has a long history of promoting the rights of citizens to enjoy a variety of outdoor pursuits, provided that they do not jeopardize the state's wildlife resources. The Division has worked to facilitate fishing and hunting access statewide and has supported the common law right of access to the shorelines of the coast and "Great Ponds" for the purposes of fishing and fowling. Although these guidelines make it clear that it will be necessary at times to restrict vehicular access temporarily on beaches where and when piping plovers and terns are present, the Division will only support such restrictions when it is necessary to protect the habitat, nests, and unfledged chicks of plovers and terns. The Division will continue to seek and consider management measures that offer maximum flexibility in balancing recreational use with protection of rare species and their habitats. Even when vehicular access is restricted, the Division will normally support continued access to beaches for fishermen and other recreational users by foot and by boat.

#### II. SPECIES STATUS, LIFE HISTORY, AND THREATS

#### Piping Plover

Piping plovers are small, sand-colored shorebirds that nest on sandy, coastal beaches from South Carolina to Newfoundland. The U.S. Atlantic coast population is listed as "Threatened" by the U.S. Fish and Wildlife Service under provisions of the U.S. Endangered Species Act of 1973 (U.S. Fish and Wildlife Service 1988), and was estimated at 790 pairs in 1992 (U.S. Fish and Wildlife Service 1992). In Massachusetts, the piping plover is also listed as "Threatened" by the Massachusetts Division of Fisheries and Wildlife under provisions of the Massachusetts Endangered Species Act. In 1992, 213 pairs of piping plovers nested on Massachusetts beaches (Melvin 1992).

Piping plovers nest on coastal beaches above the high-tide line, sand flats at the end of sand spits, gently sloping foredunes, and in blow-outs or washover areas between or behind coastal dunes. They may also nest where sandy dredged material has been deposited. Nests are simple scrapes in the sand or mixtures of sand, gravel, and shells. Nests are placed on open sand or in patches of sparse to moderately dense beach grass and other dune vegetation. Piping plovers depend on natural processes of beach erosion and accretion through wind and wave action to maintain suitable nesting habitat.

Piping plovers return to nesting beaches in Massachusetts

from mid-March to early May. Males establish and defend territories and court females. Nesting may occur from mid-April through late July. Clutch size is usually four eggs, and eggs are usually incubated for 27-28 days before hatching. Piping plovers fledge only a single brood per season, but may renest several times if previous nests are lost. Chicks are precocial and able to move about within hours after 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 (are able to fly) at 25 to 35 days of age. Depending on date of hatching, unfledged chicks may be present from late May until mid-August, although most fledge by the end of July. Adults and chicks feed on amphipods, marine worms, flies, and other invertebrates. The most important feeding habitats for both adults and chicks are intertidal areas and wrack (seaweed, vegetation, shells, and other organic debris deposited on the beach by tides and storms) (Gibbs 1986, Goldin et al. 1990, Hoopes et al. 1992).

Sandy beaches that provide nesting habitat for piping plovers are also attractive recreational habitats for people and their pets. Human recreational activities can be a source of both disturbance and direct mortality to piping plovers (Blodget 1990, Melvin et al. 1991). People on beaches may inadvertently crush eggs, cause nests to be abandoned, and disturb or displace unfledged chicks. Unleashed dogs may chase adults, kill chicks, and eat eggs. Kites and fireworks are highly disturbing to piping plovers (Hoopes et al. 1992; Howard et al. 1993).

Unrestricted use of motorized vehicles on beaches is a serious threat to piping plovers and their habitats. Vehicles can crush both eggs and chicks (Burger 1986, Patterson 1988, Strauss 1990, Melvin et al. 1991). In Massachusetts, biologists documented 7 incidents in which 9 chicks were killed by vehicles between 1989 and 1992 (Melvin et al. 1993). Many biologists that monitor and manage piping plovers believe that many more chicks are killed by vehicles than are found and reported. On sections of Massachusetts beaches used by vehicles during nesting and brood-rearing periods, breeding plovers are generally either absent or less abundant than expected given available nesting and feeding habitat. In contrast, plover abundance and productivity has increased on beaches where vehicle restrictions during chickrearing periods have been combined with protection of nests from predators.

Typical behaviors of piping plover chicks increase their vulnerability to vehicles (Melvin et al. 1993). Chicks frequently move between the upper berm or foredune and feeding habitats in the wrack line and intertidal zone. These movements place chicks in the paths of vehicles driving along the berm or

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through the intertidal zone. Chicks stand in, walk, and run along tire ruts, and sometimes have difficulty crossing deep ruts or climbing out of them. Chicks sometimes stand motionless or crouch as vehicles pass by, or do not move quickly enough to get out of the way. Wire fencing placed around nests to deter predators is ineffective in protecting chicks from vehicles because chicks typically leave the nest within a day after hatching and move extensively along the beach to feed.

Vehicles also degrade piping plover habitat by crushing wrack into the sand and making it unavailable as cover or a foraging substrate, by creating ruts that may trap or impede movements of chicks, and by causing disturbance that may prevent plovers from using habitat that is otherwise suitable (Goldin et al. 1990, Strauss 1990, Melvin et al. 1993).

#### <u>Least Tern</u>

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Least terns are small, white and black seabirds that nest along Atlantic coast beaches from southern Maine to Florida. The least tern is listed as a "Species of Special Concern" by the Division of Fisheries and Wildlife under provisions of the Massachusetts Endangered Species Act. An estimated 2,642 pairs nested at 51 sites in Massachusetts in 1992 (Blodget 1992).

Least terns nest in habitats that are similar to those of the piping plover, and the two species often nest near each other. Least terns arrive in Massachusetts in early May, engage in elaborate courtship rituals, mate, and quickly establish nesting colonies. Actual nesting occurs from about the third week of May to mid-July. Nesting colonies range in size from several pairs to over 500 pairs. Nests are shallow "scrapes" in the sand, usually in sandy areas devoid of vegetation, but sometimes in areas of sparse beach grass, beach pea, and other dune vegetation. Least terns, like piping plovers, have nested along the Atlantic coast for thousands of years and depend on natural processes of beach and dune erosion and accretion to maintain their habitats.

Clutches consist of 1-3 eggs and incubation averages 21 to 23 days. Least terns are single-brooded, but will renest multiple times if previous nests are lost. Chicks are precocial and may move considerable distances along the beach before fledging, which occurs after 20-22 days. Adults deliver fish caught in the surrounding waters to chicks. Soon after chicks are able to fly, least terns gather in pre-migratory flocks and depart southward; most are gone before the end of August.

Least terns are vulnerable to disturbance from humans, pets,

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and vehicles during periods of courtship and egg-laying in May and June. Similar to piping plovers, incubating least tern adults, eggs, and chicks are extremely cryptic. Prolonged or repeated disturbance at colonies can lead to egg and chick loss from exposure, predation, or abandonment. Least tern chicks are also vulnerable to mortality caused by off-road vehicles, and may stand or crouch in or walk and run along vehicle ruts.

#### Common, Roseate, and Arctic Terns

These three similar species of white and black seabirds nest together in mixed-species colonies. All are slightly larger than the least tern. The common tern is indeed the most "common" of the group. In 1992, 8,600 pairs were estimated at 35 sites in Massachusetts, although only 9 of those colonies exceeded 100 pairs (Blodget 1992). The arctic tern, at the southern edge of its natural range in Massachusetts, has been declining since the 1950's and reached an all-time low of only 8 pairs in 1992. Both of these species are listed by the Massachusetts Division of Fisheries and Wildlife as "Species of Special Concern" under provisions of the Massachusetts Endangered Species Act.

The Northeastern population of the roseate tern is listed as "Endangered" by both the U.S. Fish and Wildlife Service under the U.S. Endangered Species Act of 1973 (U.S. Fish and Wildlife Service 1989), and the Massachusetts Division of Fisheries and Wildlife under provisions of the Massachusetts Endangered Species Act. Of an estimated 1,412 pairs in Massachusetts in 1992, 1,375 pairs (97%) nested on Bird Island in Buzzards Bay (Blodget 1992). The rest were scattered among large colonies of common terns.

These three species of larger terns prefer to nest on offshore islands and remote tips of barrier beaches. Unfortunately, gulls have usurped most optimal nesting sites since the 1950's, forcing terns to nest at a limited number of secondary inshore sites where they are more exposed to human disturbance and a host of land-based predators.

The life histories of these three species of terns are generally similar. Exemplifying the three, common terns select dune areas with moderate to dense stands of beach grass and other dune vegetation. Birds arrive from the south in early May and select colony sites before the end of May. Ritualized courtship and pair formation occur on the beach and sandflats adjacent to the colony site. Nesting colonies range from a few to over 4,000 pairs. Nests are usually scrapes in the sand lined with beach grass and seaweed. Clutches of 2-3 eggs are laid and both parents share incubation duties for about 23 days. Young are precocial but are fed and brooded by adults. Diets of these

terns are almost exclusively fish. As the young approach fledging at about 28 days, they congregate in rearing or "nursery" areas on broad expanses of beach and sand flats, where they loaf and are fed by adults. At some sites, thousands of young terns may be present in these nursery areas from late July through mid-August. After mid-August, most terns have fledged and all three species gather at staging areas prior to departing for winter quarters by the end of August.

Prolonged or repeated disturbance at nesting colonies or nursery areas of common, arctic, or roseate terns can lead to egg and chick loss from exposure, predation, or abandonment. Eggs and young chicks tend to be less subject to mortality from vehicles because they occur more often in dune areas, but older chicks are sometimes run over when they move onto the outer beach prior to fledging. Older chicks have also been found dead, tangled in kite string.

#### III. MASSACHUSETTS LAW

This section is provided to give a brief overview of provisions of the Massachusetts Wetlands Protection Act and Endangered Species Act that are pertinent to the management of piping plovers, terns, and their habitats. The reader is strongly advised to read the official texts of the current laws and regulations cited below.

#### Massachusetts Wetlands Protection Act (MGL c. 131 s. 40)

The Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (the Program) acts as the scientific authority to determine what is actual habitat and to provide an opinion about whether proposed activities subject to the Wetlands Protection Act will have adverse effects on rare wetlands wildlife habitat. Opinions issued by the Program are presumed to be correct, although this presumption is rebuttable and may be overcome upon a clear showing to the contrary.

#### Massachusetts Endangered Species Act (MGL c. 131A)

The Massachusetts Endangered Species Act (MESA) and me regulations (321 CMR 10.00) are administered by the Massachusetts Division of Fisheries and Wildlife. The Act prohibits the "taking" of any species of animal or plant listed as

"Endangered", "Threatened", or "Species of Special Concern" in Massachusetts. For animals, "taking" is defined as: "to harass, harm, pursue, hunt, shoot, hound, 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". Regulations implementing the Act state further that: "All state agencies shall utilize their authorities in furtherance of the purposes of MESA and these regulations; review, evaluate and determine the impact on Endangered, Threatened and Special Concern species or their habitats of all works, projects, or activities conducted by them; and use all practicable means and measures to avoid or minimize damage to such species or their habitats." This includes "any work, project, or activity either directly undertaken by a state agency, or if undertaken by a person, which seeks the provision of financial assistance by an agency or requires the issuance of permits by an agency".

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#### IV. MANAGEMENT GUIDELINES

#### VEHICLE MANAGEMENT

#### Protection of Nests and Nesting Habitat

On beaches where vehicles will be driven, all areas of suitable piping plover nesting habitat, as determined by the Division, should be identified and delineated with posts and warning signs or symbolic fencing on or before April 1 each year. Suitable nesting habitat for all species of terms should be identified and so delineated on or before May 15 each year.

All vehicular access into or through delineated nesting habitat should be prohibited. However, prior to hatching, vehicles may pass by such areas along designated vehicle corridors established along the outside edge of plover and tern nesting habitat. Vehicles may also park outside delineated nesting habitat, if beach width and configuration and tidal conditions allow. Vehicle corridors or parking areas should be moved, constricted, or temporarily closed if territorial, courting, or nesting plovers or terns are disturbed by passing or parked vehicles, or if disturbance is anticipated because of unusual tides or expected increases in vehicle use during weekends, holidays, or special events.

#### Protection of Chicks and Chick Habitat

Sections of beaches where unfledged piping plover or tern chicks are present should be temporarily closed to all vehicles not deemed essential. (See the provisions for essential vehicles below.)

When unfledged plover chicks are present, vehicles should be prohibited from all dune, beach, and intertidal habitat within 100 yards of either side of a line drawn through the nest site and perpendicular to the long axis of the beach. The resulting 200 yard-wide area of protected habitat for plover chicks should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bayside intertidal habitat exists. 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. If unfledged plover chicks move outside the original 200 yard-wide area of protected habitat, then the boundaries of the protected area should be adjusted to provide at least a 100 yard buffer between chicks and vehicles.

When unfledged least tern chicks are present, vehicles should be prohibited from all dune, beach, and intertidal habitat within 100 yards of either side of lines drawn through the outermost nests in the colony and perpendicular to the long axis of the beach. The resulting area of protected habitat for least tern chicks should extend from the ocean-side low water line to the bay-side low water line, or to the farthest extent of dune habitat if no bay-side intertidal zone exists. If unfledged chicks move outside the original protected area, then the boundaries of the protected area should be adjusted to provide at least a 100 yard-wide buffer between unfledged chicks and vehicles. However, vehicles may pass through any portions of the protected area considered inaccessible to least tern chicks because of distance, steep topography, dense vegetation, or other naturally-occurring obstacles. Because least tern chicks disperse from nests shorter distances and at older ages than piping plover chicks, under some circumstances it may be possible to allow passage of vehicles through portions of protected least tern chick habitat if, in the opinion of the Division, this can occur without substantially increasing threats to least tern chicks or their habitats.

#### Timing of Vehicle Restrictions in Chick Habitat

Restrictions on use of vehicles in areas where unfledged plover or tern chicks are present should begin on or before the

date that hatching begins and continue until chicks have fledged. For purposes of vehicle management, plover chicks are considered fledged at 35 days of age or when observed in flight, whichever occurs first. Tern chicks are considered fledged when they are capable of flight.

When piping plover nests are found before the last egg is laid, restrictions on vehicles should begin on the 26th day after the last egg is laid. This assumes an average incubation period of 27 days, and provides a 1 day margin of error.

When plover nests are found after the last egg has been laid, making it impossible to predict hatch date, restrictions on vehicles should begin on a date determined by 1 of 3 scenarios:

1) If a plover nest found with a complete clutch is monitored twice per day, at dawn and dusk (before 0600 hrs and after 1900 hrs), vehicle use may continue until hatching begins. Nests should be monitored at dawn and dusk to minimize the time that hatching may go undetected if it occurs after dark. Whenever possible, nests should be monitored from a distance with spotting scope or binoculars to minimize disturbance to incubating plovers.

2) If a plover nest is found with a complete clutch before May 22 (the earliest recorded hatch date for piping plovers in Massachusetts), and is not monitored twice per day, at dawn and dusk, then restrictions on vehicles should begin May 22.

3) If a plover nest is found with a complete clutch on or after May 22, and is not monitored twice per day, at dawn and dusk, then restrictions on vehicles should begin immediately.

If hatching occurs earlier than expected, or chicks are discovered from an unreported nest, restrictions on vehicles should begin immediately.

If, in the opinion of the Division, ruts are present that are deep enough to restrict movements of plover chicks, or vehicle impacts on wrack are so severe that wrack must be allowed to accumulate naturally prior to hatching, then restrictions on vehicles should begin at least 5 days prior to the anticipated hatching date of plover nests. If a plover nest is found with a complete clutch, precluding estimation of hatching date, and availability of wrack has been substantially reduced by vehicle passage, or deep ruts have been created that could reasonably be expected to impede chick movements, then restrictions on vehicles should begin immediately.

Restrictions on use of vehicles in least tern chick habitat should begin as soon as hatching begins (as early as June 12). Restrictions may begin later if, in the opinion of the Division, tern chicks are not endangered by vehicles because of distance or intervening steep terrain, dense vegetation, or other naturallyoccurring barriers.

Areas of dune, beach, or intertidal habitat used as nursery areas by unfledged or recently fledged tern chicks, as identified by the Division, should be delineated with posts, warning signs or symbolic fencing not later than June 21. All access by vehicles into posted tern nursery areas should be prohibited while unfledged or recently-fledged tern chicks are present in these areas, until it is determined that use of nursery areas by young terns has ended (i.e. young terns are no longer being fed by adult terns).

#### Essential Vehicles

Essential vehicles, as defined by municipal conservation commissions pursuant to the Guidelines for Barrier Beach Management in Massachusetts developed by the Massachusetts Barrier Beach Task Force, should only travel on sections of beaches where unfledged plover or tern chicks are present if such travel is absolutely necessary and no other reasonable travel routes are available. Essential vehicles should travel through chick habitat areas only during daylight hours, except in emergencies, and should be guided by a qualified monitor who has first determined the location of all unfledged plover and tern All steps should be taken to minimize number of trips by chicks. essential vehicles through chick habitat areas. Use of open, 3 or 4-wheel motorized all-terrain vehicles (ATVs) or non-motorized all-terrain bicycles is recommended whenever possible for monitoring and law enforcement because of the improved visibility afforded operators. Homeowners should consider other means of access, eg. by foot, water, or shuttle services, during periods when chicks are present. A log should be maintained by the beach manager of the date, time, vehicle number and operator, and purpose of each trip through areas where unfledged chicks are present. Personnel monitoring plovers and terns should maintain and regularly update a log of the numbers and locations of unfledged plover and tern chicks on each beach. Drivers of essential vehicles should review the log each day to determine the most recent number and location of unfledged chicks.

Travel by essential vehicles should avoid the wrack line and should be infrequent enough to avoid creating deep ruts that could impede chick movements. If essential vehicles are substantially reducing availability of wrack or are creating ruts

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that could impede chick movements, use of essential vehicles should be further reduced and, if necessary, restricted to only emergency vehicles.

#### MANAGEMENT OF OTHER RECREATIONAL USES

The activities discussed in this section are not subject to the jurisdiction of the Wetlands Protection Act because they are not considered to be alterations of wetland resource areas. The following guidelines should only be applied in reference to the Massachusetts Endangered Species Act.

On beaches where pedestrians, joggers, sun-bathers, picnickers, fishermen, boaters, horseback riders, or other recreational users will be present in numbers that could harm or disturb incubating plovers or terns, their eggs, or chicks, refuge areas of at least 50 yard-radius around nests and above the high tide line should be delineated with warning signs and symbolic fencing. Only persons engaged in rare species monitoring, management, or research activities should enter refuge areas. Refuge areas should remain fenced as long as viable eggs or unfledged chicks are present.

Refuge areas around nests should be expanded if a 50 yardradius is deemed inadequate to protect incubating adults or unfledged chicks from harm or disturbance. This may include situations where plovers or terns are especially intolerant of human presence, or where a 50 yard-radius refuge provides insufficient escape cover or alternative foraging opportunities for plover chicks. If nests are discovered outside fenced areas, fencing should be extended to create a sufficient buffer to prevent harm or disturbance to incubating adults, eggs, or unfledged chicks. On some beaches where plovers and terns have traditionally nested or where suitable habitat occurs, it may be necessary to symbolically fence portions of habitat during March or April, prior to plover nesting, or during May, prior to tern nesting, if, in the opinion of the Division, failure to do so could discourage plovers or terns from nesting as a result of disturbance from human use.

Rearing or nursery areas used by unfledged or recently fledged tern chicks, as identified by the Division, should be delineated with posts, warning signs, or symbolic fencing not later than June 21. Only persons engaged in rare species monitoring, management, or research should enter posted or fenced tern nursery areas while unfledged tern chicks or tern chicks being fed by adult terns are present, although individuals may pass by outside these areas. Such nursery areas may be re-opened

when all tern chicks have fledged and are not being fed by adult terns.

Pets should be leashed and under control of their owners at all times from April 1 to August 31 on beaches where piping plovers or terns are present or have traditionally nested. Pets should be prohibited on these beaches from April 1 through August 31 if, based on observations and experience, pet owners fail to keep pets leashed and under control.

Kite flying should be prohibited within 200 yards of nesting or territorial adult or unfledged juvenile piping plovers or - terns, from April 1 to August 31.

Fireworks should be prohibited on beaches where plovers or terns nest from April 1 to August 31.

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## 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

## Northeast Region, U.S. Fish and Wildlife Service April 15, 1994

The following information is provided as guidance to beach managers and property owners seeking to avoid potential violations of Section 9 of the Endangered Species Act (16 U.S.C. 1538) and its implementing regulations (50 CFR Part 17) that could occur as the result of recreational activities on beaches used by breeding piping plovers along the Atlantic Coast. These guidelines were developed by the Northeast Region, U.S. Fish and Wildlife Service (Service), with assistance from the U.S. Atlantic Coast Piping Plover Recovery Team. The guidelines are advisory, and failure to implement them does not, of itself, constitute a violation of the law. Rather, they represent the Service's best professional advice to beach managers and landowners regarding the management options that will prevent direct mortality, harm, or harassment of piping plovers and their eggs due to recreational activities.

Some land managers have endangered species protection obligations under Section 7 of the Endangered Species Act (see section I below) or under Executive Orders 11644 and 11989<sup>1</sup> that go beyond adherence to these guidelines. Nothing in this document should be construed as lack of endorsement of additional piping plover protection measures implemented by these land managers or those who are voluntarily undertaking stronger plover protection measures.

This document contains four sections: (I) a brief synopsis of the legal requirements that afford protection to nesting piping plovers; (II) a brief summary of the life history of piping plovers and potential threats due to recreational activities during the breeding cycle; (III) guidelines for protecting piping plovers from recreational activities on Atlantic Coast beaches; and (IV) literature cited.

<sup>&</sup>lt;sup>1</sup> Executive Order 11644, Use of Off-Road Vehicles on the Public Lands and Executive Order 11989, Off-Road Vehicles on Public Lands pertain to lands under custody of the Secretaries of Agriculture, Defense, and Interior (except for Indian lands) and certain lands under the custody of the Tennessee Valley Authority.

#### I. LEGAL CONSIDERATIONS

Section 9 of the Endangered Species Act (ESA) prohibits any person subject to the jurisdiction of the United States from harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting listed wildlife species. It is also unlawful to attempt such acts, solicit another to commit such acts, or cause such acts to be committed. A "person" is defined in Section 3 to mean "an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or of any foreign government; any State, municipality, or political subdivision of a State; or any other entity subject to the jurisdiction of the United States." Regulations implementing the ESA (50 CFR 17.3) further define "harm" to include significant habitat modification or degradation that results in the killing or injury of wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. "Harass" means 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. Penalties for violations of Section 9 are provided in Section 11 of the ESA; for threatened species, these penalties include fines of up to \$25,000, imprisonment for not more than six months, or both.

Section 10 of the ESA and related regulations provide for permits that may be granted to authorize acts prohibited under Section 9, for scientific purposes or to enhance the propagation or survival of a listed species. States that have Cooperative Agreements under Section 6 of the ESA, may provide written authorization for take that occurs in the course of implementing conservation programs. For example, State agencies have authorized certain biologists to construct predator exclosures for piping plovers. It is also legal for employees or designated agents of certain Federal or State agencies to take listed species without a permit, if the action is necessary to aid sick, injured, or orphaned animals or to salvage or dispose of a dead specimen.

Section 10 also allows permits to be issued for take that is "incidental to, and not the purpose of, carrying out an otherwise lawful activity" if the Service determines that certain conditions have been met. An applicant for an incidental take permit must prepare a conservation plan that specifies the impacts of the take, steps the applicant will take to minimize and mitigate the impacts, funding that will be available to implement these steps, alternative actions to the take that the applicant considered, and the reasons why such alternatives are not being utilized.

Section 7 of the ESA may be pertinent to beach managers and landowners in situations that have a Federal nexus. Section 7 requires Federal agencies to consult with the Service (or National Marine Fisheries Service for marine species) prior to authorizing, funding, or carrying out activities that may affect listed species. Section 7 also requires that these agencies use their authorities to further the conservation of listed species. Section 7 obligations have caused Federal land management agencies to implement piping plover protection measures that go beyond those required to avoid take, for example by conducting research on threats to piping plovers. Other examples of Federal activities that may affect piping plovers along the Atlantic Coast, thereby triggering Section 7 consultation, include permits for beach nourishment or disposal of dredged material (U.S. Army Corps of Engineers) and funding of beach restoration projects (Federal Emergency Management Authority).

Piping plovers, as well as other migratory birds such as least terns, common terns, American oystercatchers, laughing gulls, herring gulls, and great black-blacked gulls, their nests, and eggs are also protected under the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712). Prohibited acts include pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting such conduct. Violators may be fined up to \$5000 and/or imprisoned for up to six months.

Almost all States within the breeding range of the Atlantic Coast piping plover population list the species as State threatened or endangered (Northeast Nongame Technical Committee 1993). Various laws and regulations may protect State-listed species from take, but the Service has not ascertained the adequacy of the guidelines presented in this document to meet the requirements of any State law. Appendix B

#### II. LIFE HISTORY AND THREATS FROM HUMAN DISTURBANCE

Piping plovers are small, sand-colored shorebirds that nest on sandy, coastal beaches from South Carolina to Newfoundland. Since 1986, the Atlantic Coast population has been protected as a threatened species under provisions of the U.S. Endangered Species Act of 1973 (U.S. Fish and Wildlife Service 1985). The U.S. portion of the population was estimated at 875 pairs in 1993 (U.S. Fish and Wildlife Service 1993). Many characteristics of piping plovers contribute to their susceptibility to take due to human beach activities.

#### LIFE HISTORY

Piping plovers begin returning to their Atlantic Coast nesting beaches in mid-March (Coutu et al. 1990, Cross 1990, Goldin 1990, MacIvor 1990, Hake 1993). Males establish and defend territories and court females (Cairns 1982). Eggs may be present on the beach from mid-April through late July. Clutch size is generally four eggs, and the incubation period<sup>2</sup> usually lasts for 27-28 days. Piping plovers fledge only a single brood per season, but may renest several times if previous nests are lost. Chicks are precocial<sup>3</sup> (Wilcox 1959, Cairns 1982). They may move hundreds of yards from the nest site during their first week of life (see Table 1, Summary of Chick Mobility Data). Chicks remain together with one or both parents until they fledge (are able to fly) at 25 to 35 days of age. Depending on date of hatching, flightless chicks may be present from mid-May until late August, although most fledge by the end of July (Patterson 1988, Goldin 1990, MacIvor 1990, Howard et al. 1993).

Piping plover nests are situated above the high tide line on coastal beaches, sand flats at the ends of sandspits and barrier islands, gently sloping foredunes, blowout areas behind primary dunes, and washover areas cut into or between dunes. They may also nest on areas where suitable dredge 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 (Bent 1929, Burger 1987a, Cairns 1982, Patterson 1988, Flemming et al. 1990, MacIvor 1990, Strauss 1990).

<sup>&</sup>lt;sup>2</sup> "Incubation" refers to adult birds sitting on eggs, to maintain them at a favorable temperature for embryo development.

<sup>&</sup>lt;sup>3</sup> "Precocial" birds are mobile and capable of foraging for themselves within several hours of hatching.

Nests are usually found in areas with little or no vegetation although, on occasion, piping plovers will nest under stands of American beachgrass (<u>Ammophila breviligulata</u>) or other vegetation (Patterson 1988, Flemming et al. 1990, MacIvor 1990). Plover nests may be very difficult to detect, especially during the 6-7 day egg-laying phase when the birds generally do not incubate (Goldin 1994).

Plover foods consist of invertebrates such as marine worms, fly larvae, beetles, crustaceans or mollusks (Bent 1929, Cairns 1977, Nicholls 1989). Feeding areas include intertidal portions of ocean beaches, washover areas, mudflats, sandflats, wrack lines<sup>4</sup>, and shorelines of coastal ponds, lagoons or salt marshes (Gibbs 1986, Coutu et al. 1990, Hoopes et al. 1992, Loegering 1992, Goldin 1993). Studies have shown that the relative importance of various feeding habitat types may vary by site (Gibbs 1986, Coutu et al. 1990, McConnaughey et al. 1990, Loegering 1992, Goldin 1993, Hoopes 1993) and by stage in the breeding cycle (Cross 1990). Adults and chicks on a given site may use different feeding habitats in varying proportion (Goldin et al. 1990). Feeding activities of chicks may be particularly important to their survival. Cairns (1977) found that piping plover chicks typically tripled their weight during the first two weeks post-hatching; chicks that failed to achieve at least 60% of this weight gain by day 12 were unlikely to survive. During courtship, nesting, and brood rearing, feeding territories are generally contiguous to nesting territories (Cairns 1977), although instances where brood-rearing areas are widely separated from nesting territories are not uncommon (see Table 1). Feeding activities of both adults and chicks may occur during all hours of the day and night (Burger 1993) and at all stages in the tidal cycle (Goldin 1993, Hoopes 1993).

#### THREATS FROM NONMOTORIZED BEACH ACTIVITIES

Sandy beaches that provide nesting habitat for piping plovers are also attractive recreational habitats for people and their pets. Nonmotorized recreational activities can be a source of both direct mortality and harassment of piping plovers. Pedestrians on beaches may crush eggs (Burger 1987b, Hill 1988, Shaffer and Laporte 1992, Cape Cod National Seashore 1993, Collazo et al. 1994). Unleashed dogs may chase plovers (McConnaughey et al. 1990), destroy nests

<sup>&</sup>lt;sup>4</sup> Wrack is organic material including seaweed, seashells, driftwood and other materials deposited on beaches by tidal action.

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(Hoopes et al. 1992), and kill chicks (Cairns and McLaren 1980).

Pedestrians may flush incubating plovers from nests (see Table 2, Summary of Data on Distances at Which Plovers React to Disturbance), exposing eggs to avian predators or causing excessive cooling or heating of eggs. Repeated exposure of shorebird eggs on hot days may cause overheating, killing the embryos (Bergstrom 1991). Excessive cooling may kill embryos or retard their development, delaying hatching dates (Welty 1982). Pedestrians can also displace unfledged chicks (Strauss 1990, Burger 1991, Hoopes et al. 1992, Loegering 1992, Goldin 1993). Fireworks are highly disturbing to piping plovers (Howard et al. 1993). Plovers are particularly intolerant of kites, compared with pedestrians, dogs, and vehicles; biologists believe this may be because plovers perceive kites as potential avian predators (Hoopes et al. 1992).

#### THREATS FROM MOTOR VEHICLES

Unrestricted use of motorized vehicles on beaches is a serious threat to piping plovers and their habitats. Vehicles can crush eggs (Wilcox 1959; Tull 1984; Burger 1987b; Patterson et al. 1991; United States of America v. Breezy Point Cooperative, Inc., U.S. District Court, Eastern District of New York, Civil Action No. CV-90-2542, 1991; Shaffer and Laporte 1992), adults, and chicks. In Massachusetts and New York, biologists documented 14 incidents in which 18 chicks and 2 adults were killed by vehicles between 1989 and 1993 (Melvin et al. 1994). Goldin (1993) compiled records of 34 chick mortalities (30 on the Atlantic Coast and 4 on the Northern Great Plains) due to vehicles. Many biologists that monitor and manage piping plovers believe that many more chicks are killed by vehicles than are found and reported (Melvin et al. 1994). Beaches used by vehicles during nesting and brood-rearing periods generally have fewer breeding plovers than available nesting and feeding habitat can support. In contrast, plover abundance and productivity has increased on beaches where vehicle restrictions during chick-rearing periods have been combined with protection of nests from predators (Goldin 1993; S. Melvin, pers. comm., 1993).

Typical behaviors of piping plover chicks increase their vulnerability to vehicles. Chicks frequently move between the upper berm or foredune and feeding habitats in the wrack line and intertidal zone. These movements place chicks in the paths of vehicles driving along the berm or through the intertidal zone. Chicks stand in, walk, 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). Chicks sometimes stand motionless or crouch as vehicles pass by, or do not move quickly enough to get out of the way (Tull 1984, Hoopes et al. 1992, Goldin 1993). Wire fencing placed around nests to deter predators (Rimmer and Deblinger 1990, Melvin et al. 1992) is ineffective in protecting chicks from vehicles because chicks typically leave the nest within a day after hatching and move extensively along the beach to feed (see Table 1).

Vehicles may also significantly degrade piping plover habitat or disrupt normal behavior patterns. They may harm or harass plovers by crushing wrack into the sand and making it unavailable as cover or a foraging substrate, by creating ruts that may trap or impede movements of chicks, and by preventing plovers from using habitat that is otherwise suitable (MacIvor 1990, Strauss 1990, Hoopes et al. 1992, Goldin 1993).

# III. GUIDELINES FOR PROTECTING PIPING PLOVERS FROM RECREATIONAL DISTURBANCE

The Service recommends the following protection measures to prevent direct mortality or harassment of piping plovers, their eggs, and chicks.

## MANAGEMENT OF NONMOTORIZED RECREATIONAL USES

On beaches where pedestrians, joggers, sun-bathers, picnickers, fishermen, boaters, horseback riders, or other recreational users are present in numbers that could harm or disturb incubating plovers, their eggs, or chicks, areas of at least 50 meter-radius around nests above the high tide line should be delineated with warning signs and symbolic fencing<sup>5</sup>. Only persons engaged in rare species monitoring, management, or research activities should enter posted areas. These areas should remain fenced as long as viable eggs or unfledged chicks are present. Fencing is intended to prevent accidental crushing of nests and repeated flushing of incubating adults, and to provide an area where chicks can rest and seek shelter when large numbers of people are on

<sup>&</sup>lt;sup>5</sup> "Symbolic fencing" refers to one or two strands of light-weight string, tied between posts to delineate areas where pedestrians and vehicles should not enter.

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the beach.

Available data indicate that a 50 meter buffer distance around nests will be adequate to prevent harassment of the majority of incubating piping plovers. However, fencing around nests should be expanded in cases where the standard 50 meter-radius is inadequate to protect incubating adults or unfledged chicks from harm or disturbance. Data from various sites distributed across the plover's Atlantic Coast range indicates that larger buffers may be needed in some locations (see Table 2). This may include situations where plovers are especially intolerant of human presence, or where a 50 meter-radius area provides insufficient escape cover or alternative foraging opportunities for plover chicks.<sup>6</sup>

In cases where the nest is located less than 50 meters above the high tide line, fencing should be situated at the high tide line, and a qualified biologist should monitor responses of the birds to passersby, documenting his/her observations in clearly recorded field notes. Providing that birds are not exhibiting signs of disturbance, this smaller buffer may be maintained in such cases.

On portions of beaches that receive heavy human use, areas where territorial plovers are observed should be symbolically fenced to prevent disruption of territorial displays and courtship. Since nests can be difficult to locate, especially during egg-laying, this will also prevent accidental crushing of undetected nests. If nests are discovered outside fenced areas, fencing should be extended to create a sufficient buffer to prevent disturbance to incubating adults, eggs, or unfledged chicks.

Pets should be leashed and under control of their owners at all times from April 1 to August 31 on beaches where piping plovers are present or have traditionally nested. Pets should be prohibited on these beaches from April 1 through August 31 if, based on observations and experience, pet owners fail to keep pets leashed and under control.

<sup>&</sup>lt;sup>6</sup> For example, on the basis of data from an intensive three year study that showed that plovers on Assateague Island in Maryland flush from nests at greater distances than those elsewhere (Loegering 1992), the Assateague Island National Seashore established 200 meter buffers zones around most nest sites and primary foraging areas (Assateague Island National Seashore 1993). Following a precipitous drop in numbers of nesting plover pairs in Delaware in the late 1980's, that State adopted a Piping Plover Management Plan that provided 100 yard buffers around nests on State park lands and included intertidal areas (Delaware Department of Natural Resources and Environmental Control 1990).

Kite flying should be prohibited within 200 meters of nesting or territorial adult or unfledged juvenile piping plovers between April 1 and August 31. Fireworks should be prohibited on beaches where plovers nest from April 1 until all chicks are fledged. (See the Service's February 4, 1997 Guidelines for Managing Fireworks in the Vicinity of Piping Plovers and Seabeach Amaranth on the U.S. Atlantic Coast.)

## MOTOR VEHICLE MANAGEMENT

The Service recommends the following minimum protection measures to prevent direct mortality or harassment of piping plovers, their eggs, and chicks on beaches where vehicles are permitted. Since restrictions to protect unfledged chicks often impede vehicle access along a barrier spit, a number of management options affecting the timing and size of vehicle closures are presented here. Some of these options are contingent on implementation of intensive plover monitoring and management plans by qualified biologists. It is recommended that landowners seek concurrence with such monitoring plans from either the Service or the State wildlife agency.

#### Protection of Nests

All suitable piping plover nesting habitat should be identified by a qualified biologist and <u>delineated with pos</u>ts and warning signs or symbolic fencing on or before April 1 each year. All vehicular access into or through posted nesting habitat should be prohibited. However, prior to hatching, vehicles may pass by such areas along designated vehicle corridors established along the outside edge of plover nesting habitat. Vehicles may also park outside delineated nesting habitat, if beach width and configuration and tidal conditions allow. Vehicle corridors or parking areas should be moved, constricted, or temporarily closed if territorial, courting, or nesting plovers are disturbed by passing or parked vehicles, or if disturbance is anticipated because of unusual tides or expected increases in vehicle use during weekends, holidays, or special events.
If data from several years of plover monitoring suggests that significantly more habitat is available than the local plover population can occupy, some suitable habitat may be left unposted if the following conditions are met:

1. The Service <u>OR</u> a State wildlife agency that is party to an agreement under Section 6 of the ESA provides written concurrence with a plan that:

A. Estimates the number of pairs likely to nest on the site based on the past monitoring and regional population trends.

### <u>AND</u>

B. Delineates the habitat that will be posted or fenced prior to April 1 to assure a high probability that territorial plovers will select protected areas in which to court and nest. Sites where nesting or courting plovers were observed during the last three seasons as well as other habitat deemed most likely to be pioneered by plovers should be included in the posted and/or fenced area.

### <u>AND</u>

C. Provides for monitoring of piping plovers on the beach by a qualified biologist(s). Generally, the frequency of monitoring should be not less than twice per week prior to May 1 and not less than three times per week thereafter. Monitoring should occur daily whenever moderate to large numbers of vehicles are on the beach. Monitors should document locations of territorial or courting plovers, nest locations, and observations of any reactions of incubating birds to pedestrian or vehicular disturbance.

### <u>AND</u>

2. All unposted sites are posted immediately upon detection of territorial plovers.

### Protection of Chicks

Sections of beaches where unfledged piping plover chicks are present should be temporarily closed to all vehicles not deemed essential. (See the provisions for essential vehicles below.) Areas where vehicles are prohibited should include all dune, beach, and intertidal habitat within the chicks' foraging range, to be determined by <u>either</u> of the following methods:

1. The vehicle free area should extend 1000 meters on each side of a line drawn through the nest site and perpendicular to the long axis of the beach. The resulting 2000 meterwide area of protected habitat for plover chicks should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bay-side intertidal habitat exists. 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.

### <u>OR</u>

2. The Service <u>OR</u> a State wildlife agency that is party to an agreement under Section 6 of the ESA provides written concurrence with a plan that:

A. Provides for monitoring of all broods during the chick-rearing phase of the breeding season and specifies the frequency of monitoring.

### <u>AND</u>

B. Specifies the minimum size of vehicle-free areas to be established in the vicinity of unfledged broods based on the mobility of broods observed on the site in past years and on the frequency of monitoring. Unless substantial data from past years show that broods on a site stay very close to their nest locations, vehicle-free areas should extend at least 200 meters on each side of the nest site during the first week following hatching. The size and location of the protected area should be adjusted in response to the observed mobility of the brood, but <u>in no case should it be reduced to less than 100 meters on each side of the brood</u>. In some cases, highly mobile broods may require protected areas up to 1000 meters, even where they are intensively monitored. Protected areas should extend from the ocean-side low water line to the bay-side low water line or to the farthest

extent of dune habitat if no bay-side intertidal habitat exists. 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. In a few cases, where several years of data documents that piping plovers on a particular site feed in only certain habitat types, the Service or the State wildlife management agency may provide written concurrence that vehicles pose no danger to plovers in other specified habitats on that site.

## Timing of Vehicle Restrictions in Chick Habitat

Restrictions on use of vehicles in areas where unfledged plover chicks are present should begin on or before the date that hatching begins and continue until chicks have fledged. For purposes of vehicle management, plover chicks are considered fledged at 35 days of age or when observed in sustained flight for at least 15 meters, whichever occurs first.

When piping plover nests are found before the last egg is laid, restrictions on vehicles should begin on the 26th day after the last egg is laid. This assumes an average incubation period of 27 days, and provides a 1 day margin of error.

When plover nests are found after the last egg has been laid, making it impossible to predict hatch date, restrictions on vehicles should begin on a date determined by <u>one</u> of the following scenarios:

1) <u>With intensive monitoring</u>: If the nest is monitored at least twice per day, at dawn and dusk (before 0600 hrs and after 1900 hrs) by a qualified biologist, vehicle use may continue until hatching begins. Nests should be monitored at dawn and dusk to minimize the time that hatching may go undetected if it occurs after dark. Whenever possible, nests should be monitored from a distance with spotting scope or binoculars to minimize disturbance to incubating plovers.

<u>OR</u>

2) <u>Without intensive monitoring</u>: Restrictions should begin on May 15 (the earliest probable hatch date). If the nest is discovered after May 15, then restrictions should start immediately.

If hatching occurs earlier than expected, or chicks are discovered from an unreported nest, restrictions on vehicles should begin immediately.

If ruts are present that are deep enough to restrict movements of plover chicks, then restrictions on vehicles should begin at least 5 days prior to the anticipated hatching date of plover nests. If a plover nest is found with a complete clutch, precluding estimation of hatching date, and deep ruts have been created that could reasonably be expected to impede chick movements, then restrictions on vehicles should begin immediately.

## Essential Vehicles

Because it is impossible to completely eliminate the possibility that a vehicle will accidently crush an unfledged plover chicks, use of vehicles in the vicinity of broods should be avoided whenever possible. However, the Service recognizes that life-threatening situations on the beach may require emergency vehicle response. Furthermore, some "essential vehicles" may be required to provide for safety of pedestrian recreationists, law enforcement, maintenance of public property, or access to private dwellings not otherwise accessible. On large beaches, maintaining the frequency of plover monitoring required to minimize the size and duration of vehicle closures may necessitate the use of vehicles by plover monitors.

Essential vehicles should only travel on sections of beaches where unfledged plover chicks are present if such travel is absolutely necessary and no other reasonable travel routes are available. All steps should be taken to minimize number of trips by essential vehicles through chick habitat areas. Homeowners should consider other means of access, eg. by foot, water, or shuttle services, during periods when chicks are present.

The following procedures should be followed to minimize the probability that chicks will be crushed by essential (non-emergency) vehicles:

1. Essential vehicles should travel through chick habitat areas only during daylight hours, and should be guided by a qualified monitor who has first determined the location of all unfledged plover chicks.

2. Speed of vehicles should not exceed five miles per hour.

3. Use of open 4-wheel motorized all-terrain vehicles (ATVs) or non-motorized allterrain bicycles is recommended whenever possible for monitoring and law enforcement because of the improved visibility afforded operators.

4. A log should be maintained by the beach manager of the date, time, vehicle number and operator, and purpose of each trip through areas where unfledged chicks are present. Personnel monitoring plovers should maintain and regularly update a log of the numbers and locations of unfledged plover chicks on each beach. Drivers of essential vehicles should review the log each day to determine the most recent number and location of unfledged chicks.

Essential vehicles should avoid driving on the wrack line, and travel should be infrequent enough to avoid creating deep ruts that could impede chick movements. If essential vehicles are creating ruts that could impede chick movements, use of essential vehicles should be further reduced and, if necessary, restricted to emergency vehicles only.

## SITE-SPECIFIC MANAGEMENT GUIDANCE

The guidelines provided in this document are based on an extensive review of the scientific literature and are intended to cover the vast majority of situations likely to be encountered on piping plover nesting sites along the U.S. Atlantic Coast. However, the Service recognizes that site-specific conditions may lead to anomalous situations in which departures from this guidance may be safely implemented. The Service recommends that landowners who believe such situations exist on their lands contact either the Service or the State wildlife agency and, if appropriate, arrange for an on-site review. Written documentation of agreements regarding departures from this guidance is recommended.

In some unusual circumstances, Service or State biologists may recognize situations where this guidance provides insufficient protection for piping plovers or their nests. In such a case, the Service or the State wildlife agency may provide written notice to the landowner describing additional measures recommended to prevent take of piping plovers on that site.

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#### Table 1. Summary of Chick Mobility Data

Source	Location	Data
Patterson 1988 (p.40)	Maryland and Virginia	18 of 38 broods moved to feeding areas more than 100 meters from their nests; 5 broods moved more than 600 meters (distance measured parallel to wrackline).
Cross 1989 (p.23)	Virginia	At three sites, observers relocated broods at mean distances from their nests of 153 m +/-97m (44 observations, 14 broods), 32 m +/-7 m (8 observations, 3 broods), and 492 m +/-281 m (12 observations, 4 broods).
Coutu et al. 1990 (p.12)	North Carolina	Observations of 11 broods averaged 212 m from their nests; 3 broods moved 400-725 m from nest sites.
Strauss 1990 (p.33)	Massachusetts	10 chicks moved more than 200 m during first 5 days post-hatch while 19 chicks moved less than 200 meters during same interval.
Loegering 1992 (p.72)	Maryland	Distances broods moved from nests during first 5 days post-hatch averaged 195 m in Bay habitat $(n=10)$ , 141 m in Interior habitat $(n=36)$ , and 131 m in Ocean habitat $(n=41)$ . By 21 days, average movement in each habitat had, respectively, increased to 850 m $(n=1)$ , 464 m $(n=10)$ , and 187 m $(n=69)$ . One brood moved more than 1000 m from its nest.
Melvin et al. 1994	Massachusetts and New York	In 14 incidents in which 18 chicks were killed by vehicles, chicks were run over $\leq 10$ m to $\leq 900$ m from their nests. In 7 of these instances, mortality occurred $\geq 200$ m from the nest.

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#### Table 2. Summary of Data on Distances at which Piping Plovers React to Disturbance

Source	Location	Data
Flushing of Incubating Birds by Pedestr	ians	
Flemming et al. 1988 (p.326)	Nova Scotia	Adults usually flushed from the nests at distances <40 m; however, great variation existed and reaction distances as great as 210 m were observed.
Cross 1990 (p.47)	Virginia	Mean flushing distances in each of two years were 47 m (n=181, range = 5 m to 300 m) and 25 m (n=214, range = 2 m to 100 m).
Loegering 1992 (p.61)	Maryland	Flushing distances averaged 78 m (n=43); range was 20 m to 174 m. Recommended use of 225 m disturbance buffers on his site.
Cross and Terwilliger 1993	Virginia	Mean flushing distance for all years on all sites (Virginia plover sites, 1986-91) was 63 m (n=201, $SD=31$ , range = 7 m to 200 m). Differences among years were not significant, but differences among sites were.
Hoopes 1993 (p.72)	Massachusetts	Mean flushing distance for incubating plovers was 24 m (n=31).
Disturbance to Non-incubating Birds		
Hoopes 1993 (p.89)	Massachusetts	Mean response distance (all ages, all behaviors) was 23 m for pedestrian disturbances (range = 10 m to 60 m), 40 m for vehicles (range = 30 m to 70 m), 46 m for dogs/pets (range = 20 m to 100 m), and 85 m for kites (range = $60$ m to $120$ m).
Goldin 1993b (p.74)	New York	Average flushing distance for adult and juvenile plovers was 18.7 m for pedestrian disturbances (n=585), 19.5 m for joggers (n=183), and 20.4 m for vehicles (n=111). Pedestrians caused chicks to flush at an average distance of 20.7 m (n=175), joggers at 32.3 m (n=37), and vehicles at 19.3 m (n=7). Tolerance of individual birds varied; one chick moved 260 m in direct response to 20 disturbances in 1 hour.

## ESCROW AGREEMENT

## 1. <u>Recitals</u>

a. The Conservation and Management Permit No. \_\_\_\_\_.DFW ("<u>Permit</u>") issued by the Division to \_\_\_\_\_ {*permit holder*} contains financial assurance provisions in paragraph #\_\_\_ {insert paragraph from issued permit} of the Special Conditions section requiring that \_\_\_\_\_ {*responsible party*} ensure that funds are available in the sum of \_\_\_\_\_\_ (\$\_\_\_\_) (the "<u>Funds</u>") for habitat protection, habitat restoration and/or management, and/or conservation planning and research to provide a net benefit to \_\_\_\_\_\_ {*list all species; Common name, scientific name*} populations in Massachusetts (hereinafter referred to as "Division-approved mitigation activities").

b. The Parties agree the Funds shall be paid by \_\_\_\_\_ {responsible party} to the Escrow Agent and held in an interest bearing escrow account ("Escrow Account") (further defined in 2 below) and expended pursuant to the terms and conditions described below to mitigate for the "take" of State-listed species and their habitat, as described in the Permit in connection with the \_\_\_\_\_\_ {basic description of project} (the "Project"), located in \_\_\_\_\_ {municipality of project}, Massachusetts.

The Parties enter into this Agreement for the purpose of defining the terms and conditions under which the Funds shall be held and disbursed.

NOW THEREFORE, after consideration of the above recitals, \_\_\_\_\_{responsible party}, the Division and the Escrow Agent hereby covenant and agree as follows:

2. <u>Escrow Account</u>

a. Prior to the start of work, which is defined as the start of any soil or vegetation disturbance, \_\_\_\_\_{responsible party} shall deliver to Escrow Agent the Funds, in the amount of \$\_\_\_\_\_. *{When the Permit requires that funds be set-aside for the management of on-site habitat, add the following sentence*} In addition, \_\_\_\_\_*{responsible party}* shall maintain a minimum balance in the amount of \$\_\_\_\_\_ in the Escrow Account to fund the management of on-site habitat.

b. All funds delivered by \_\_\_\_\_\_{responsible party} to the Escrow Agent shall be deposited by the Escrow Agent in a high yield, interest bearing savings account or held in obligations by the US Government at one or more banks ("Depository Bank"), said account(s) to be at all times insured by the Federal Deposit Insurance Corporation and which shall pay interest on the Funds at a reasonable rate. The Escrow Agent shall ensure that all such account(s) are in

the name of the \_\_\_\_\_\_\_{responsible party} only. In addition, the taxpayer information, including tax identification number, provided by the Escrow Agent to the Depository Bank shall be for the \_\_\_\_\_\_\_\_\_ {responsible party} only. The Depository Bank shall be entitled to charge the Escrow Account for services related to maintenance of the Escrow Account at a rate not exceeding the Bank's standard charges to other customers for similar services, notwithstanding the minimum balance requirement of Paragraph 2(a).

c. The Escrow Account shall be opened by the Escrow Agent and funds may be withdrawn only by the Escrow Agent and no other person. Disbursements shall be made from the Escrow Account only in accordance with the terms of this Agreement.

d. The Escrow Agent shall maintain a record of all deposits, income, disbursements, and other transactions of the Escrow Account. By January 15<sup>th</sup> of each year and upon request, the Escrow Agent shall provide to the Parties a written accounting of all transactions. The Parties shall have the right to inspect all books and records of the Escrow Agent relating to the Escrow Account at reasonable times upon request. Escrow Agent's computation of the Funds is correct in the absence of manifest error.

e. The Escrow Agent shall keep possession of the book(s) and bank statements of the Escrow Account until such time as it is terminated in accordance with the terms of this Agreement, or until a successor Escrow Agent is appointed as provided herein.

## 3. <u>Disbursements</u>

From time to time, the Division may, on or before the date which is 25 years from the date of this Agreement, request in writing that the Escrow Agent to deliver all or portions of the Funds, plus any interest thereon, to be used for Division-approved mitigation activities. Upon receipt of such written request, the Escrow Agent shall deliver the requested portion of the Funds to the Division or any party designated in writing by the Division within ten (10) business days of receiving said written request. Delivery of the Funds in accordance with the terms of this Agreement shall be made by cashier's check, or by federal funds wire transfer, at the option of the payee.

a. The Escrow Agent may make disbursements to the Depository Bank for services rendered in maintaining said account.

b. *{When the Permit requires that funds be set-aside for the management of onsite habitat, add the following sentence}* If the Division-approved mitigation activities are not, in whole or in part, implemented to the satisfaction of the Division, the Division or any party designated in writing by the Division shall have the right to use all or a portion of the Funds to correct or complete any such Division-approved mitigation activities in accordance with the Permit and any other written requirements of the Division.

c. If, at the end of 25 years from the date of this Agreement, any portion of the Funds is still held in escrow under this Agreement, then the Division shall, within six (6) months after such 25 year date, develop a plan for the use of any remaining Funds by the Division or any party designated in writing by the Division for the implementation of Division-approved mitigation activities in accordance with such plan. The Escrow Agent shall release any remaining Funds to NHESP or any party designated in writing by NHESP in accordance with such plan.

## 4. <u>Termination of Agreement</u>

This Escrow Agreement shall terminate, and the Escrow Agent shall be relieved of all liability, after all funds in the Escrow Account have been properly disbursed in accordance with the terms and conditions of this Agreement. When the Escrow Account is terminated, the Escrow Agent shall provide a final accounting of all transactions hereunder to the Parties.

### 5. Duties and Liabilities of Escrow Agent

a. The sole duty of the Escrow Agent under this Agreement is to receive funds from \_\_\_\_\_ {responsible party} and to hold the funds for disbursement according to Section 3 above. The Escrow Agent shall be under no duty to pass upon the adequacy of any documents, to determine whether any of the Parties are complying with the terms and provisions of this Escrow Agreement, or to determine the identity or authority of any person purporting to be a signatory authorized by \_\_\_\_\_ {responsible party} or the Division.

b. The Escrow Agent may conclusively rely upon, and shall be protected in acting on, a statement, certificate, notice, requisition, order, approval, or other document believed by the Escrow Agent to be genuine and to have been given, signed and presented by a duly authorized agent of {responsible party} or the Division. The Escrow Agent shall have no duty or liability to verify any statement, certificate, notice, request, requisition, consent, order, approval or other document, and its sole responsibility shall be to act only as expressly set forth in this Agreement. The Escrow Agent shall not incur liability for following the instructions contemplated by this Agreement or expressly provided for in this Agreement or other written instructions given to the Escrow Agent by the Parties. The Escrow Agent shall be under no obligation to institute or defend any action, suit or proceeding in connection with this Escrow Agreement, unless first indemnified to its satisfaction. The Escrow Agent may consult with counsel of its choice including shareholders, directors, and employees of the Escrow Agent, with respect to any question arising under or in connection with this Agreement, and shall not be liable for any action taken, suffered or omitted in good faith. The Escrow Agent shall be liable solely for its own willful misconduct.

c. The Escrow Agent may refrain from taking any action, other than keeping all property held by it in escrow if the Escrow Agent: (i) is uncertain about its duties or rights under this Escrow Agreement; (ii) receives instructions that, in its opinion, are in conflict with any of the terms and provisions of this Agreement, until it has resolved the conflict to its satisfaction, received a final judgment by a court of competent jurisdiction (if it deems such action necessary or advisable), or it has received instructions executed by both \_\_\_\_\_ {responsible party} and the Division.

d. Escrow Agent is acting, and may continue to act, as legal counsel to \_\_\_\_\_\_ {*responsible party*} in connection with the subject transaction, whether or not the Funds are being held by Escrow Agent or have been delivered to a substitute impartial party or a court of competent jurisdiction. {*If the preceding sentence is not applicable, then use the following sentence*} Escrow Agent is not acting as counsel to \_\_\_\_\_ {*responsible party*} in Escrow Agent's capacity as escrow agent.

e. Each of the Parties admits, acknowledges and represents to each of the other Parties that it has had the opportunity to consult with and be represented by independent

counsel of such party's choice in connection with the negotiation and execution of this Agreement. Each of the Parties further admits, acknowledges and represents to the other Parties that it has not relied on any representation or statement made by the other Parties or by any of their attorneys or representatives with regard to the subject matter, basis or effect of this Agreement.

## 6. <u>Escrow Agent's Fee</u>

a. Payments for services provided by Escrow Agent shall not be made from Escrow Funds.

## 7. Investment Risk

a. In no event shall the Escrow Agent have any liability as a result of any loss occasioned by the financial difficulty or failure of any institution, including Depository Bank, or which holds United States Treasury Bills, or other securities, or for failure of any banking institution, including Depository Bank, to follow the instructions of the Escrow Agent. Without limiting the generality of the foregoing, in no event shall the Escrow Agent incur any liability as the result of any claim or allegation that the Escrow Agent should have invested the escrow funds in United States Treasury Bills rather than hold same on deposit at the Depository Bank, or vice versa.

## 8. <u>Notices</u>

a. All notices permitted or required by this Agreement shall be in writing and shall be deemed duly provided when deposited in the United States mail, postage prepaid, certified or registered mail, return receipt requested, to the other Parties at the addresses set forth in the first paragraph of this Agreement. The Party providing notice may choose alternate methods, including hand delivery, Federal Express, or other recognized overnight courier. Notices provided by hand delivery; Federal Express or other recognized overnight courier shall be deemed duly provided when received at the addresses set forth in the first paragraph of this Agreement.

b. All notices, certification, authorizations, requests or other communications required, or permitted to be made under this Escrow Agreement shall be delivered as follows:

## To the DIVISION:

Assistant Director Natural Heritage and Endangered Species Program ATTN: Regulatory Review, CMP \_\_\_\_\_.DFW (insert Permit Number Here) Division of Fisheries and Wildlife 1 Rabbit Hill Road Westborough, MA 01581

<u>To\_\_\_\_</u>:

Company, Address, & Contact numbers

### To the Escrow Agent:

### Company, Address, & Contact numbers

or to such other place or to the attention of such other individual as a Party from time to time may designate by written notice to all other Parties.

### 9. <u>Resignation, Removal, or Successor Escrow Agent</u>

a. If, for any reason, the Escrow Agent is unable or unwilling to continue to act as Escrow Agent, he/she shall give written notice to the other Parties of his/her inability or unwillingness to continue as Escrow Agent. The parties shall agree upon a successor agent, formally appoint the successor agent, and provide written notification to the Escrow Agent of the subsequent appointment within ten (10) business days. The Escrow Agent shall then, within three (3) business days after receiving notice of subsequent appointment, deliver to the successor escrow agent all cash and other property held by the Escrow Agent under this Escrow Agreement. Upon such delivery, all obligations of the Escrow Agent under this Escrow Agreement shall automatically cease and terminate. If no successor escrow agent is designated within the prescribed ten (10) day period, or if notice of subsequent appointment is not received within such period, then the Escrow Agent may, at its option at any time thereafter, deposit the funds and any documents then being held by it in escrow into any court having appropriate jurisdiction, and upon making such deposit, shall thereupon be relieved of and discharged and released from any and all liability hereunder, including without limitation any liability arising from the Funds, or any portion thereof so deposited.

b. The Escrow Agent may be removed at any time by a written instrument or concurrent instruments signed by the Division and \_\_\_\_ {responsible party} and delivered to the Escrow Agent.

c. If at any time hereafter, the Escrow Agent shall resign, be removed, be dissolved, or otherwise become incapable of acting, or the position of the Escrow Agent shall become vacant for any of the foregoing reasons or for any other reason, the Parties hereto shall promptly appoint a successor Escrow Agent. Upon appointment, such successor Escrow Agent shall execute and deliver to his/her predecessor and to the Parties hereto an instrument in writing accepting such appointment hereunder. Thereupon, without further act, such successor Escrow Agent shall be fully vested with all the rights, immunities, and powers, and shall be subject to all the duties and obligations of his/her predecessor, and the predecessor Escrow Agent shall promptly deliver all books, records, and, other property and monies held by him/her hereunder to such successor Escrow Agent.

## 10. <u>Interest</u>

a. All interest income accrued on funds in the Escrow Account shall become part of the Escrow Account and shall remain in the Escrow Account. The \_\_\_\_\_\_\_ {responsible party} has the responsibility to pay federal and state taxes on the accrued interest on its funds in the Escrow Account, and the Escrow Agent may disburse funds from the Escrow Account for such purpose. Said disbursement may be made by the Escrow Agent only after receiving a written confirmation from \_\_\_\_\_\_ {responsible party}, with a copy sent to the Division, of all itemized federal and state tax liabilities incurred by interest accrued on the Escrow Account.

### 11. <u>Miscellaneous</u>

a. This Escrow Agreement shall be binding upon, and shall inure to the benefit of the respective Parties hereto and their successors and assigns.

b. This Agreement shall be governed by and be construed in accordance with the laws of the Commonwealth of Massachusetts.

c. This Agreement shall be interpreted as an instrument under seal.

d. This Agreement may be executed in any number of counterparts, each of which shall constitute an original, and all counterparts shall constitute one Agreement.

e. This Escrow Agreement may not be amended, altered, or modified except by written instrument duly executed by all of the Parties hereto.

f. If the term, condition or provision of this Agreement, or the application thereof to any circumstances or party hereto, ever shall be held to be invalid or unenforceable, then in each such event the remainder of this Agreement or the application of such term, condition, or provision to any other circumstance or party hereto (other than those as to which it shall be invalid or unenforceable) shall not be thereby affected, and each term, condition and provision hereof shall remain valid and enforceable to the fullest extent permitted by law.

g. Each individual and entity executing this Agreement hereby represents and warrants that he, she or it has the capacity set forth on the signature pages hereof with full power and authority to bind the party on whose behalf he, she or it is executing this Agreement to the terms hereof.

## 12. <u>Effective Date</u>

a. This Agreement shall take effect on the latest date of execution by the Division, \_\_\_\_\_, or Escrow Agent.

## [SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the parties have caused this Escrow Agreement to be duly executed as of the day and year first written above.

FOR THE MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE:

Name: Title:

### COMMONWEALTH OF MASSACHUSETTS

\_\_\_\_\_, SS

\_\_\_\_\_, 20\_\_\_

On this \_\_ day of \_\_\_, 20\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_, and proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

Notary Public My commission expires:

# Appendix C

FOR (proponenet):	
Company Name	
Ву:	
Ву:	
Name:	
STATE OF	_
, SS	, 20
On this day of, 20, before me, the undersigned , and proved to me through satisfact , to be the person whose name is sign	I notary public, personally appeared ory evidence of identification, which were ed on the preceding or attached document, and
acknowledged to me that he/she signed it voluntarily fo	r its stated purpose.

Notary Public My commission expires: Appendix C

### FOR THE ESCROW AGENT:

Company Name

Ву: \_\_\_\_

Name: Title:

### COMMONWEALTH OF MASSACHUSETTS

\_\_\_\_\_ \$\$.

\_\_\_\_\_, 20\_\_\_

On this \_\_\_ day of \_\_\_\_, 20 , before me, the undersigned notary public, personally appeared \_\_\_\_\_\_, and proved to me through satisfactory evidence of identification, which were \_\_\_\_\_\_, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

Notary Public My commission expires:

Due date	Applies to:	Action	Notes, dates completed
	COI-holders participating in offsite		
	mitigation program (Years 2 and 3 of	Deposit escrow funds and provide proof of	
15 February	permit)	payment to MassWildlife	
		Provide mitigation plan (e.g., letter from	
	COI-holders conducting onsite/internal	USDA-APHIS or other contractor) to	
15 February	mitigation	MassWildlife	
		Finalize compliance, covered activity, &	
		monitoring logs to be used during field	
March	All COI-holders	season	
		Provide MassWildlife with budget	
15 March	All COI-holders	assurance	
		Provide DFW with updated contact	
		information of the manager(s) responsible	
		for compliance (name, address, business	
15 March	COI-holders in Years 2 and 3 of permit	and home telephone numbers)	
		Provide DFW with contact information of	
		the manager(s) responsible for	
Prior to		compliance (name, address, business and	
implementation	COI-holders in Year 1 of permit	home telephone numbers)	
		Obtain written reauthorization from	
		MassWildlife to implement covered	
		activities. May be requested once escrow	
		or predator management plans are in	
		place, budget assurance has been	
		submitted, and contact information has	
15 March	COI-holders in Years 2 and 3 of permit	been provided.	
		Erect symbolic fencing around all suitable	
		habitat in accordance with the Guidelines	
by 1 April	All COI-holders	and site-specific permits	

Due date	Applies to:	Action	Notes, dates completed
		Begin regular plover monitoring; keep a	
		log and updated maps documenting all	
		monitoring activities and compliance with	
		the Guidelines (fencing locations/dates;	
		vehicle restrictions/dates; other	
April	All COI-holders	restrictions on dogs, kite flying, etc.)	
	COI-holders participating in offsite	Deposit escrow funds and provide proof of	
1 April	mitigation program (Year 1 of permit)	payment to MassWildlife	
		Notify MassWildlife at least 24 hours prior	
		to implementation of covered activities	
		for each pair; notify MassWildlife upon	
		ternimation of each covered activity for	
		each pair; keep a log thoroughly	
		documenting implementation of all	
Variable	All COI-holders implementing the HCP	covered activities	
		Provide DFW with weekly implementation	
Variable	All COI-holders implementing the HCP	updates using the standardized format	
		Report injuries or mortalities to	
		MassWildlife and USFWS immediately;	
		report other serious issues to	
Variable	All COI-holders	MassWildlife immediately	
		Attend compliance visit(s). MassWildlife	
		may choose not to conduct site visits with	
		COI-holders who do not implement the	
Variable	All COI-holders	HCP.	
		Submit all plover and tern monitoring data	
30 September	All COI-holders	to PIPLODES and TERNODES	
		Submit observations of other state-listed	
15 October	All COI-holders	species via the Heritage Hub	

Due date	Applies to:	Action	Notes, dates completed
		After reviewing guidance for preparation,	
		submit report checklist and annual report	
15 October	All COI-holders	in standard format to MassWildlife	
		Consult with MassWildlife in advance of	
	COI-holders needing to amend or renew	submitting COI renewal or amenedment	
November	permits	requests	
		Submit requests for COI renewals or	
		amendments to MassWildlife. Renewals	
	COI-holders needing to amend or renew	require a filing fee and may require	
15 December	permits	permissions from private landowners.	

# GUIDANCE FOR REQUESTING A CERTIFICATE OF INCLUSION UNDER THE MASSWILDLIFE HABITAT CONSERVATION PLAN FOR PIPING PLOVER

Massachusetts Division of Fisheries & Wildlife February 18, 2021

## 1. How do I apply for a Certificate of Inclusion (COI)?

Submit a Request for Coverage ("Request") with five elements (see draft HCP, p. 5-10):

- a. Request for COI MESA Review Checklist & Application Cover Page
- b. Site Map showing boundaries and with proof of ownership or written assent of landowner(s) to request coverage
- c. Site Specific Impact Avoidance and Minimization Plan (IAMP)
- d. Mitigation Plan
- e. MA Endangered Species Act filing fee (\$300; https://www.mass.gov/how-to/how-to-file-for-amesa-project-review) and Conservation and Management Permit fee (\$600; https://www.mass.gov/how-to/apply-for-a-conservation-management-permit)

The Request must have the title: (*Organization Name*) Request for Certificate of Inclusion (COI) on (*Site Name*).

See below for more information on the IAMP and Mitigation Plan.

### 2. What is the first step?

Although an applicant could elect simply to submit all the required materials to MassWildlife for review, this approach is strongly discouraged. As much in advance of the beach season as possible (preferably no later than November 1), we strongly recommend: (1) contacting us to initiate a pre-filing consultation; and (2) submitting an information request to identify whether any other state-listed species may be present at your site. MassWildlife will contact you to identify information needs and provide assistance to help you develop the draft IAMP and Mitigation Plan prior to submitting a final Request. This approach typically results in a more efficient permitting process by proactively identifying information needs and key measures that will help to avoid, minimize and mitigate impacts to state-listed species. To initiate a pre-filing consultation and request information on other state-listed species that may be pertinent to your site, please submit an Information Request Form (https://www.mass.gov/doc/state-listed-species-information-request-form/download) along with a brief project description (requesting inclusion in the HCP program and which covered activities you anticipate requesting coverage for), map of the property, and \$50 fee to the address listed in the form. To speed up the consultation process, also email your form to <u>Coastal.Waterbirds@mass.gov</u>.

Then we recommend developing the draft IAMP and Mitigation Plan in consultation with MassWildlife prior to submitting a final Request. To initiate a pre-filing consultation, contact Coastal.Waterbirds@mass.gov.

## 3. What is the Request for COI deadline?

Final Requests for COI are due on **December 15<sup>th</sup>.** 

## Impact Avoidance & Minimization Plan (IAMP)

Covered activities and required elements of an IAMP are described in HCP section 3.2. Potential avoidance and minimization measures are summarized in HCP section 4.3.1. This document provides a suggested outline or template for preparing an IAMP.

- I. Site Description
  - a. Map of property or properties, property size, and information about ownership
  - Physical description of property including key natural features and recreational amenities (*e.g.*, parking lots, life-guarded sections of beach) (<u>note</u>: more information about beach operations will be provided in Section III)
  - c. Description of piping plover habitat, past population size and reproductive success, management issues such as predation or storm overwash, and other background information of management significance (<u>note</u>: focus on last 5 years, highlighting earlier major population, habitat, or management changes as necessary)
  - d. If applicable, description of habitat, population, etc... for other state-listed species (*e.g.*, Least Tern)
- II. Responsible Staff
  - a. List names and describe credentials of technical staff responsible for preparing, implementing, and updating the plan. Describe roles and responsibilities of each key staff person
- III. Beach Management Plan (<u>note</u>: this section should be concise, but must be detailed enough to demonstrate adherence to state and federal Guidelines for all beach management and operations, with the exception of carrying out the covered activities)
  - a. Beach operations
    - i. Recreational activities
      - 1. Each recreational activity should be described; for each activity, information should be provided about how management conforms with state and federal Guidelines (include discussion of terns, if applicable)
    - ii. Parking and roads
    - iii. Beach cleaning and refuse management
    - iv. Rules and regulations
    - v. Law enforcement
    - vi. Other operations (*e.g.*, fireworks, public events)
  - vii. Plover monitoring and management (and terns if applicable)
    - 1. Symbolic fencing & signage (e.g., locations and timing)
    - 2. Other management (e.g., vegetation, predator control, exclosures)
    - 3. Monitoring
      - a. Frequency
      - b. Data collection and recording protocols
      - c. Data reporting
      - d. Staffing levels and qualifications

- IV. Covered Activities (note: If applicable, this section must include consideration of Least Tern or other state-listed species on site and describe how take will be avoided or how a net benefit will be provided to the species)
  - a. List covered activities that are proposed and number of pairs/broods/nests/territories to be exposed (<u>note</u>: as beach operators may not be able to predict precisely which combination of covered activities may be carried out in a given year, the list may include contingencies such as reduced fencing buffer *or* nest moving depending on circumstances in a given season).
  - Detailed protocols for implementing required impact minimization measures when carrying out each covered activity (<u>note</u>: guidance on preparing the site-specific impact minimization protocols for each covered activity can be found in the Chapter 3 of the Draft HCP)
  - c. Monitoring plan for covered activities
    - i. Compliance monitoring
      - 1. *e.g.*, logs and or datasheets to document required staffing, hours of escorted vehicle operation, number of vehicles.
    - ii. Effectiveness monitoring
      - 1. *e.g.*, sufficient staffing, protocols, datasheets to document events such as nest abandonment or adult disturbance in response to reduced symbolic fencing buffers, chick loss and potential causes, etc...
      - 2. Detail the measureable objectives of the monitoring
- V. Budget
  - a. Approved annual budget covering all site management and staffing needs associated with implementation of the IAMP (<u>note</u>: If the annual budget cycle does not allow pre-approval of the budget, a draft to be approved later is adequate. However, final annual budget must be approved/authorized prior to implementation of covered activities in a given beach season)

Appendix E

## **Mitigation Plan**

Options (See HCP sections 4.3.2 and 4.3.3):

- I. Provide funding to MassWildlife to implement selective predator management, educational outreach, and increased law enforcement ("off-site")
  - a. DFW will set the amount of funding required to implement mitigation for each brood/nest/territory exposed to covered activities
  - b. Applicant will make payment into a dedicated mitigation fund or place funds in escrow prior to carrying out covered activities (<u>note</u>: after year 1 DFW will set an earlier due date for payment of funds to ensure that mitigation can be carried out in advance of covered activities)
- II. Participant implements mitigation on one or more sites under participant's control
  - a. Submit detailed mitigation plan to MassWildlife
    - i. Detailed description of proposed mitigation activities
    - ii. Description of how the mitigation will benefit Piping Plovers, including a quantitative assessment if possible
    - iii. Monitoring plan including specific criteria to assess effectiveness
    - iv. Itemization of costs for implementing the mitigation program

<u>Note</u>: Mitigation plan must address take of Least Tern and/or other state-listed species if applicable.

Appendix F



## DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581 p: (508) 389-6300 | f: (508) 389-7890 MASS.GOV/MASSWILDLIFE

## Request for Certificate of Inclusion for Piping Plover Habitat Conservation Plan MESA Review Checklist & Application Cover Page

## **Project Location:** Address/Location City(ies)/Town(s) **Applicant:** Individual Organization Mailing address Phone & Email Property Owner(s) Information (if different from Applicant): \*Provide separate sheet if multiple landowners Individual(s) Organization(s) Mailing address Phone & Email **Representative (if any):** Individual Organization Mailing address Phone & Email

Has this project previously been issued a NHESP Tracking Number (either by previous NOI Submittal or MESA Information Request Form)? Y / N. If yes, Tracking no.\_\_\_\_\_

ls coverage for Least Terns also being requested? (Y/N)		
List additional MESA-listed species in project area (if known):		

### **REQUESTED ACTIVITIES FOR PIPING PLOVER**

Covered activity:	Use of roads and parking lots in the vicinity of unfledged chicks	Recreation and beach operations	Oversand vehicle use in vicinity of unfledged chicks	Total*
Mitigation ratio (mitigation credits: exposures)	3:1	2.5: 1	2.5: 1	
Mitigation fee (per pair, nest, brood, or territory)	\$6150	\$5800	\$5800	
No. requested take exposures*				
Max. % of total pairs at site to be exposed				

# MASSWILDLIFE

## Appendix F

<u>Specific activities requested:</u> (mark with "X")		
Reduced proactive symbolic     foncing		
· Reduced fencing around the		
nest		
· Beach raking		
· Chick herding		
· Nest moving		
· Other		
Acreage affected		
Max. % of total nesting acreage affected at site		

\* As beach operators may not be able to predict precisely which combination of Covered Activities may be carried out in a given year, a range of values for *No. requested take exposures* may be presented for individual Covered Activities; however, the *Total* should be a single not-to-exceed value.

#### **PROPOSED MITIGATION**

Туре	Y/N	Total amount	Pairs to benefit/Credits
Pay fee for offsite mitigation (\$5800 - \$6150 per take exposure; see above)		\$	
Applicant-implemented activities:			
· Selective predator management			
<ul> <li>Increased education &amp; outreach</li> </ul>		Submit details in	*
· Increased law enforcement		IAIVIP (See Delow)	*
· Habitat management			*
· Other			*

\* MassWildlife will determine value (credits) for non-selective predator management options

#### OTHER REQUIRED ELEMENTS OF REQUEST FOR COI

(Please attach. Additional guidance is available to applicants; contact Coastal.Waterbirds@mass.gov.)

- $\hfill\square$  Site map showing boundaries and provide proof of ownership
- □ Written assent of landowner(s) to request coverage, if applicant is not landowner
- □ Site-specific Impact Avoidance and Minimization Plan (IAMP)
- □ Mitigation plan, including budget
- □ MA Endangered Species Act filing fee

(\$300 payable to "Comm of MA - NHESP"; https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review)

- Conservation and Management Permit fee
- (\$600 payable to "Comm of MA NHESP"; https://www.mass.gov/how-to/apply-for-a-conservation-management-permit)
- Draft Escrow/Mitigation Fund Agreement, with applicant-specific edits in Track Changes/redline (if mitigation fee will be paid)
   Contact: Coastal.Waterbirds@mass.gov for template agreement.

## MASSWILDLIFE

#### **SUBMITTAL**

 Mail a hard copy of entire application (including signed cover sheet) with checks, to: Environmental Review-HCP, MassWildlife-NHESP, 1 Rabbit Hill Rd., Westborough, MA 01581.
 Also email entire application to: Coastal.Waterbirds@mass.gov.

#### **REQUIRED SIGNATURES**

#### Provide separate sheet if multiple landowners

I hereby certify under the penalties of perjury that the foregoing HCP/MESA filing and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

Signature of Property Owner/Record Owner of Property

Date

Signature of Applicant (if different from Owner)

Date

## Guidance for Budget Assurance Annual Notification Letter for Participation in MA Piping Plover HCP

### Timing

Submit the assurance by March 15 in each year of the permit.

### **Required elements**

- Date of the assurance letter
- COI site to which the assurance pertains
- Statement that the budget presented in the Request for COI has been approved by the organization and the funds have been secured for specifically for implementation. The statement should reference staffing, mitigation activities or payments, and any contracts, if applicable.
- Organizations for which the nesting season spans two fiscal years and for which budget assurance for the new fiscal year is not yet available will be required to submit a subsequent budget assurance for the new fiscal year.
- Amount of funding secured
- Supporting documentation, e.g., account statement or spreadsheet

## Signature

This assurance should be signed by the chief financial officer or appropriate representative of the participating organization.

### Submittal

Scan the signed letter and email to: <u>Coastal.Waterbirds@mass.gov</u>. A hard copy is not necessary.

<b>INSTRUCTIONS &amp; EXAM</b>	1PLES					
Newly reported data	Species	Identification number of affected plover pair/ nest/ brood OR colony identifier	Recreation & beach operations	OSV use in vicinity of unfledged chicks	Use of roads & parking lots in vicinity of unfledged chicks	Notes/specific activities
This worksheet will be a running log of stop/start dates, so indicate new information with an asterisk (*)	Species affected	If implemention is not tied to specific pair/ nest/ brood or colony, indicate "n/a"	Indicate "start" or "stop" a brood/ territory	and the date of <b>notification</b> fo	r each affected pair/ nest/	Provide clarifying information on specific activity, planned <b>implementation</b> date, location, extent (length, acreage)
	PIPL	n/a	start 3/25/21			Starting 3/27, will erect reduced proactive symbolic fencing, with raking, in area normally supporting 1 pair, just south of main access.
	PIPL	2b			start 5/21/21	On 5/22 will erect 50 m barrier along north side of parking lot. Hatch expected ~6/10/21.
	PIPL	2b			stop 6/12/21	All 4 chicks lost (predation?), removed barrier
	PIPL	17a		start 6/28/21		OSV escorting past brood of 4 chicks for 200 m stretch at Washover A starting 6/30
*	PIPL	17a		stop 7/8/21		2 chicks fledged, 2 lost (unk cause) Beginning ~7/1, OSV escorting for 75 m stretch past ~5-10 unfledged
*	LETE	Subcolony B		start 6/30/21		LETE chicks in subcolony located 300 m south of crossover 2.

				Use of roads & parking	
	Identification number of	<b>Recreation &amp; beach</b>	OSV use in vicinity of	lots in vicinity of	
Newly reported data	affected pair/ nest/ brood	operations	unfledged chicks	unfledged chicks	Notes/specific activities

Site name:												
Organization:												
Person reporting:												
Week begin date:												
Week end date:												
	Activities and acreage			Piping Plover								
	Activity		Detail or clarify activity		No. territories affected	No. pairs affected (if						
	implemented		(e.g., barrier length,	Acreage	(if unknown, estimate	unknown, estimate	Specific pairs		Specific nests		Specific broods	ľ
	during week?	Dates activity	crossover opening, type of	affected	based on past nesting	based on past nesting	affected (e.g.	No. nests	affected (e.g.	No. broods	affected (e.g.	No. chicks
Activity	(Y/N)	implemented	deterrent)	(ac)	history)	history)	Pairs 3, 4)	affected	Nests 5A, 6B)	affected	Brood 3B)	affected
Reduced proactive												
symbolic fencing												
Reduced fencing around												
the nest												
Nesting deterrents												
(raking, boards, flagging,												
etc.)												
Chick herding												
Nest moving												
Barriers												
OSV use in the vicinity of												
unfledged chicks												
Use of roads and												
parking lots in the												
vicinity of unfledged												
chicks												
Other (WRITE IN)												
Least Terr	n (or other covered coas	tal waterbi	rd species)									
--------------------------	--------------------------	-------------	-------------	-----------	-------							
No. territories affected	No. pairs affected (if											
(if unknown. estimate	unknown. estimate											
hased on past pesting	hased on past nesting	No nests	No broods	No chicks								
history)	history)	offected	offected	affected	NOTES							
nistory)	nistory)	anected	anected	anected	NOTES							
		+										

Use this sheet to record daily vehicle			
travel associated with implementation of			
the HCP			
Data	Vahiele zone ID (if more then one)	No vohielo trino	Species offected (e.g. DIDL LETE)
	venicie zone iD (il more than one)	No. venicie trips	Species affected (e.g., PIPL, LETE)

Use this sheet to describe any injuries,		
mortalities, or other issues associated with		
implementation of the HCP or violations of		
Guidelines		
	Specific pairs, nests, broods, or chicks	
Issue	affected	Description
	-	
	-	
	-	

Use this sheet to provide important	
information not adequately conveyed in	
other sheets	
Торіс	Detail

#### STATEWIDE PIPING PLOVER HABITAT CONSERVATION PLAN PLAN PARTICIPANT GUIDE FOR PREPARING ANNUAL SITE REPORTS Version: 23 February 2021

Contact for all submissions and communications is: <u>coastal.waterbirds@mass.gov</u>.

The following must be included in plan participant's annual reports to MassWildlife (see HCP Table 4-7 on p 4-17, 5-17). Appendices are also required as described. Sites that have a COI/CMP but did not implement the HCP in the reporting year must still provide a report (Section 1 and Appendix A).

To the best of your ability, please follow the format below (including the numbering and lettering). Your annual report must also include a completed <u>information checklist</u> (available from MassWildlife) that indicates on what page of your report the required information can be found. This will greatly facilitate MassWildlife's review and we appreciate your efforts to adopt this structure for your annual report.

### **Section 1** (Refer to Appendix A)

#### Introduction

- I. A brief summary describing the implementation of the covered activities and the effects on recreation.
- II. A description of any DFW-approved changes made to the site-specific IAMP during the reporting period.
- III. Summary of general shorebird management carried out in accordance with the Guidelines (Reference Appendix A). (See Appendix Section below.)
  - a. Please provide supporting maps to increase clarity.
- IV. In your report, please summarize:
  - a. Population size (number of total pairs and total nesting pairs)
  - b. Number of nests
  - c. Number of nests hatched
  - d. Nest success (number of nests hatched/number of nests)
  - e. Number of fledglings
  - f. Fledging success (number of fledglings/number of chicks hatched)
  - g. Overall site productivity (number of fledglings/number of pairs)
  - h. Causes of nest failure. Provide a text summary and present details in the table format below.

Cause of Nest Loss*	No. nests lost	Nest identifiers	
Predation - Likely	3	3A, 12A, 12B	
Predation - Suspected			
Abandonment - Likely			
Abandonment - Suspected	1	16A	
Overwash / flooding			
Failure to hatch	1	4A	

Cause of Nest Loss*	No. nests lost	Nest identifiers
Sanded-over		
Vandalism		
Trampling		
Run-over		
Mortality of both adults		
Substrate collapse		
Multiple causes		
Unknown	2	5A, 10A
Other		
TOTAL	7	

\*as defined in PIPLODES

V. Please include a section in report stating that census data were submitted to PIPLODES/TERNODES.

Section 2 (Refer to Appendix B and C)

#### Implementation of Covered Activities

I. Provide tables in the following formats summarizing covered activities, exposures, territories/pairs/nests/broods affected, habitat affected, and productivity.

# Permitted Take Exposures	# Take Exposures Used	% of Total Pairs Exposed	Productivity of Exposed Pairs (fledglings/pair)	Productivity of Unexposed Pairs (fledglings/pair)	Overall Site Productivity (fledglings/pair)	Nesting Habitat Affected (acres)
5	3	15	1.6	1.4	1.45	0.33

Covered Activity	Brief Description of How Covered Activity Was Implemented	# Territories/ Pairs/ Nests/ Broods Exposed to Covered Activity	Area of Habitat Affected (acres)
Use of roads & parking lots in			
the vicinity of unfledged chicks	n/a	0	0
	Up to 100 vehicles were escorted past broods twice per day through 10 m-wide		
OSV use in the vicinity of	corridor over		
unfledged chicks	distance of 100 m.	1	0.25

Covered Activity	Brief Description of How Covered Activity Was Implemented	# Territories/ Pairs/ Nests/ Broods Exposed to Covered Activity	Area of Habitat Affected (acres)
Recreation & beach operations: reduced proactive symbolic fencing	Nesting habitat left unfenced 10' from toe of dune to high tide line. Raking and coverboards used as deterrents.	2	1.3 ac total. 1.3 ac left unfenced, 1.2 ac raked, coverboards placed over 0.1 ac.
Recreation & beach operations: reduced fencing around the nest	n/a	0	0
Recreation & beach operations: nest moving	n/a	0	0

Pair Identifier	Covered Activity(ies) Implemented for Territory/ Pair/ Nest/ Brood	# Chicks Exposed	# Fledged from Exposed Pair	Date of Start Notification	Start Date of Implementation	End Date of Implementation	# Days Pair/ Brood Exposed to Covered Activity(ies)	Age of Chicks When First Exposed (hatch day = Day 0)
	Reduced proactive symbolic,							
1A	OSV use	4	3	28-Mar	1-Apr	15-Jul	105	5
17B	OSV use	2	0	22-Jun	23-Jun	19-Jul	26	0

- II. In paragraph form, provide additional details on how covered activities were implemented.
- III. Include one or more maps identifying the location(s) of the covered activities, including:
  - a. Nest/brood/territory location
  - b. Location of symbolic fencing
  - c. Locations of roads, OSV corridors, beach raking, or other covered activities
  - d. Location of habitat impacted by raking or other activity covered by the HCP
  - e. Other key landmarks referenced in report
- IV. Summary of impact minimization measures carried out during implementation of the specific covered activity(s) including:
  - a. Preparation, monitoring, and observations of impacts on exposed pair, nest, brood, territory, or affected habitat area

- b. If applicable, nest success and fledgling success of impacted nests/broods and causes of mortality
- c. Refer to Appendix B and C for additional information
- V. If applicable, describe any incidents in which mortality occurred in association with covered activities, including:
  - a. Date and time of incident
  - b. Description of the incident
  - c. Any actions or changes resulting from the incident
- VI. If any additional species (least terns, diamondback terrapins) are included in your CMP, please note whether these species were exposed to take. If applicable, describe and document the impact minimizations measures and all supporting data collected on species exposed to take. Report observations of terrapins and other state-listed species to VPRS.
- VII. Recommendations for changes in future years.

#### Section 3

#### **Mitigation**

- I. At sites where selective predator management is implemented, include the following:
  - a. Total cost of predator management (include invoice in appendix)
  - b. Timing of predator removal (dates and number of predator removal visits)
  - c. Predators selected for management
  - d. Effectiveness of removing the predators selected for management
  - e. Predation rates and species-specific predator activity during the season
  - f. Number of pairs benefitting from predator management
  - g. Report by USDA-Wildlife Service or other contractor, if applicable
  - h. Recommendations for changes in future years.
- II. At sites where vegetation management, increased law enforcement, or other forms of approved mitigation are implemented, include the following:
  - a. Total cost of mitigation program (include invoices in appendix if applicable)
  - b. Frequency and duration of implementation
  - c. Number of pairs benefitting
  - d. Description of monitoring and effectiveness results as required in the site-specific IAMP
  - e. Recommendations for changes in future years.

#### Section 4

**Recreational Benefits** 

- I. Description of benefits of implementing covered activity including:
  - a. Numbers of days/weeks recreational areas were opened earlier than would otherwise be allowed per the guidelines
  - b. Increased revenue as a result
  - c. Attitude/satisfaction of public
- II. Assessment of program reach and effectiveness, including:
  - a. Number of warnings and citations
  - b. Number of workshops or programs
  - c. Number of symbolic fencing violations
  - d. Measures of attitudinal change
- III. Recommendations for changes in future years.

**Appendices** (Please do not provide scans of all logs unless specifically requested. Please retain original logs for one year after your permit expires and make them available upon request.) If your logs contain information that is not suitable for summary, provide examples of completed logs or datasheets instead.

- A. A summary of your log documenting compliance with the Guidelines (outside of covered activities) should include:
  - a. Timing and frequency of activities such as installment of symbolic fencing, monitoring of plover activity, beach patrols, enforcement of ordinances such as leash rules, timely implementation of temporary prohibitions on non-essential vehicle use
- B. A summary of your log of covered activities should include:
  - a. Initiation date(s) for covered activities, numbers of pairs, broods, nests, chicks, territories exposed, and locations
  - b. For OSV exposures, participants must include: escort corridor length/width, documentation of any shifting/movement of corridor, daily vehicle trip counts, raking of vehicle ruts, and documentation of vehicle operator training.
- C. Standardized observations of piping plover disturbance and mortality associated with covered activities should include
  - a. Standardized datasheets documenting piping plover disturbance and/or activity (e.g., number of chicks in travel corridor, pairs disturbed by reduced symbolic fencing)
  - b. Daily summary of the covered activity (e.g., number of cars allowed past exposed brood(s), travel windows, daily piping plover responses to reduced symbolic fencing, chicks missing or nests abandoned after implementation of the covered activity, etc.)
- D. Documentation of your IAMP and mitigation should include:
  - a. A summary of your activity log to document that the IAMP is being carried out properly by qualified personnel in accordance with the DFW-approved plan and budget
  - b. Copies of invoices associated with predator management or other mitigation programs

E. Other (as appropriate, this may include any summaries of additional logs, qualifications, datasheets associated with your site's specific IAMP and can be referenced as Appendix E, F...)

### Draft

# Guidance on Applying for a Conservation & Management Permit for Recreational Activities Affecting the Least Tern

### **Prepared By:**

Massachusetts Division of Fisheries & Wildlife 1 Rabbit Hill Road Westborough, MA 01581

**Note:** This document provides guidance to the public on how to develop impact minimization and mitigation strategies for the least tern to aid in the process of applying for a Conservation & Management Permit pursuant to the MA Endangered Species Act (MGL c. 131A; 3210 CMR 10.00). Although potentially applicable to any beach with breeding least terns, this guidance was developed to aid potential participants in the Massachusetts Statewide Piping Plover Habitat Conservation Plan in achieving MESA compliance for the state-listed least tern.

The Massachusetts Division of Fisheries & Wildlife will accept public comments on this Draft Guidance through March 25, 2016. Please submit comments to <u>coastal.waterbirds@state.ma.us</u>. Information about the Piping Plover Statewide HCP can be found at <u>http://www.fws.gov/newengland/</u>.

February 2016

### Least Tern and MESA Compliance

### 1.1 Overview

The Massachusetts Statewide Piping Plover Habitat Conservation Plan (Plan) will authorize beach operators (subpermittees) to engage in activities that expose Piping Plovers to potential take (covered activities), subject to certain conditions. Piping plovers (*Charadrius melodus*) are listed as Threatened pursuant to both the federal Endangered Species Act (87 Stat. 884, as amended: 16 U.S.C. 1531, et seq.; ESA) and the Massachusetts Endangered Species Act (MESA; MGL c. 131A; 321 CMR 10.00). In order to authorize take associated with the Plan, the Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (DFW) will obtain an Incidental Take Permit (ITP) from the U.S. Fish and Wildlife Service (FWS), associated with the Plan, and then issue Certificates of Inclusion to subpermittees. The certificates will also serve as Conservation & Management Permits (CMP), to authorize take pursuant to MESA and to ensure both ESA and MESA compliance.

To request coverage, each subpermittee will prepare an application containing site background information, information on the types of proposed covered activities and the amount of requested take exposure, a beach management plan to include a site specific impact minimization plan for implementation of the covered activities, and a mitigation plan.

To ensure MESA compliance, DFW will review each application for potential impacts to piping plover, and any other state-listed plant or animal species present at the site based on DFW's Priority Habitat mapping. In the event that a state-listed species other than Piping Plover is present, DFW will determine if there is a potential take. If there is the potential for take, DFW will first work with the applicant to condition implementation of the covered activities so as to avoid a take (e.g. move the OSV corridor out of state-listed plant habitat). If take avoidance is not possible, the applicant will propose and implement impact minimization and mitigation measures so as to qualify for a CMP (see 321 CMR 10.23).

In general, this process will involve site-specific consultations between DFW and the applicant based on site conditions and the particular species present, the discussion of which lies outside the scope of the Plan. However, the state-listed least tern (*Sternula antillarum*) frequently co-occurs with piping plovers, particularly at some of our larger beaches. Both plovers and terns are covered by DFW's *Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns and Their Habitats in Massachusetts* (Guidelines) (Massachusetts Division of Fish and Wildlife 1993), and at some sites least tern nests and unfledged chicks are very likely to co-occur with piping plover nests and unfledged chicks. In such circumstances, implementation of certain covered activities would likely expose both piping plovers and least terns to potential take. Therefore, subpermittees receiving coverage for an activity such as OSV use in the vicinity of unfledged piping plover chicks might expose least tern chicks to potential take in order to act on their piping plover subpermit. For these reasons, this Guidance document discusses impact minimization and mitigation options for applicants at sites where least terns are also present.

Although the COI will only contain conditions relating to the federally listed piping plover, DFW envisions issuing a connected CMP to ensure an efficient ESA/MESA review process. All CMP's must

meet MESA permitting standards although CMP/COI documents associated with the HCP may contain additional conditions necessary to comply with the USFWS ITP. As described in the draft HCP, any actions undertaken to implement the CMP/COI must be carried out in accordance with applicable state, federal, and local statutes and regulations. For example, if an activity such as OSV use requires a valid Order of Conditions (OOC), the CMP/COI holder will have to obtain a valid OOC before acting on the CMP/COI. Some but not all activities associated with the HCP may trigger a Massachusetts Environmental Policy Act review (301 CMR 11.00), in which case the applicant will file an Environmental Notification Form before implementing HCP-related beach activities.<sup>1</sup> Whether or not an ENF is required, requests for COI coverage, including impacts to least tern or other state-listed species if applicable, will be subject to a minimum 15 day public review and comment period (see draft HCP, page 5-11).

### **1.2 How to Use This Document**

This document assumes familiarity with the Massachusetts Statewide Piping Plover Habitat Conservation Plan (<u>http://www.fws.gov/newengland/</u>). Beach operators preparing a request for coverage should follow the instructions in the Plan when preparing their request (see Plan, Section 5.2). If the proposed covered activities will also impact least tern, this guidance document should be used as a supplemental guide in preparing the Impact Avoidance and Minimization Plan (IAMP) and Mitigation Plan associated with the request for coverage.

Because take of the federally listed Piping Plover requires an ITP from the FWS, the HCP contains binding impact minimization and mitigation commitments for piping plover that *must* be followed by DFW and COI holders. Because exposing the state-listed least tern to potential take requires only a MESA permit (CMP), DFW and beach operators applying for a least tern CMP have greater flexibility in developing, implementing, and approving impact minimization and mitigation measures for the least tern. While potential Plan participants are strongly encouraged to follow the recommendations contained in this guidance document, DFW will consider alternatives that meet the CMP performance standards set forth in the MESA regulations (321 CMR 10.23).

Those 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. Because least terns colonies occur at far fewer sites than piping plovers, and because their distribution at a given site is often much more limited, there may be a greater opportunity in some cases to avoid take of least terns while still meeting recreational beach management objectives. This issue is considered further in Sections 1.5 and 1.9.

Applicants considering submittal of a COI/CMP request including impacts to least tern or other state-listed species in addition to piping plover should refer to section 5.2.2.3 of the HCP as well as DFW's guide on applying for a certificate of inclusion

(http://www.mass.gov/eea/docs/dfg/nhesp/species-and-conservation/coi-guidance.pdf). General information on obtaining a Conservation & Management Permit can be found at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-conservation-and-management-permit-process.html.

<sup>&</sup>lt;sup>1</sup> Or comply with the conditions of a MEPA Special Review Procedure (SRP; 301 CMR 11.09) for the HCP, should a SRP be established in the future.

# 1.3 Least Tern Biology

The least tern is a small tern that breeds primarily in North America, but also in Central and South America, and the Caribbean. In North America, it breeds on the Atlantic coast from Maine to Florida, along the Gulf coast, on the Pacific coast from California to Mexico, and inland, principally along major tributaries of the Missouri, Ohio, and Mississippi rivers. The Interior and California least tern populations are federally listed as endangered while the Atlantic Coast population is not federally listed. In Massachusetts, the least tern is state-listed as a species of special concern pursuant to MESA.

Massachusetts birds arrive in early May and generally leave by early September. In Massachusetts, the least tern nests on sandy or gravelly beaches periodically scoured by storm tides, resulting in sparse or no vegetation; it also takes advantage of dredge spoils. Least terns forage for fish, and occasionally crustaceans or insects, in shallow-water habitats, including bays, lagoons, estuaries, river and creek mouths, tidal marshes, and ponds.

Least terns nest in colonies of varying size from <25 to over 1,000 pairs, generally from late May to mid August. Clutch size is usually 2 - 3 and incubation is about 21-23 days. Adults engage in collective mobbing behavior that can deter predators. Chicks are semi-precocial, and after a few days of age are capable of moving considerable distances over land. Although some chicks may move 200 m or more, most unfledged chicks remain in the general vicinity of the colony, seeking shelter in vegetation or debris. Parents carry prey to chicks in their bills. Older chicks and recent fledglings may move into cooler areas in intertidal zone or at the water's edge. Least tern chicks fledge, or are capable of flight, at about three weeks of age.

For more information about least terns in Massachusetts, see <a href="http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-birds/coastal-waterbird-conservation.html">http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-birds/coastal-waterbird-conservation.html</a>.

# 1.4 Current Management

Current management of least terns on recreational beaches in Massachusetts requires adherence to the Guidelines. Key elements of the Guidelines are described below. Please note that managers should refer directly to the Guidelines and not this summary when making management decisions.

**Symbolic fencing** – In general, suitable breeding habitat in areas where least terns have traditionally nested should be proactively symbolically fenced in March or April to prevent disturbance of courting and nesting birds and trampling of nests. As least tern colony locations tend to shift over time, monitoring by qualified shorebird monitors should be carried out during the nesting season, and locations of symbolic fencing should be adjusted as necessary. At minimum, on beaches with more than de minimus recreational activity, *refuge areas of at least 50 yard radius around nests and above the high tide line* should be delineated with warning signs and symbolic fencing.

**Timing restriction on Oversand Vehicle Use** – When unfledged least tern chicks are present, vehicles are prohibited from all dune, beach, and intertidal habitat within 100 yards of either side of lines drawn through the outermost nests of the colony and perpendicular to the long axis of the beach. The resulting area of protected habitat for least tern chicks should extend from the ocean side

low water line to the bay side low water line or to the farthest extent of dune habitat if no bayside intertidal habitat exists. If unfledged chicks move outside the original protected area, then the boundaries of the protected area should be adjusted to provide at least a 100-yard wide buffer between unfledged chicks and vehicles. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to least tern chicks because of distance, steep topography, dense vegetation, or other naturally occurring obstacles. Because least tern chicks disperse from nests shorter distances and at older ages than piping plover chicks, under some circumstances it may be possible to allow passage of vehicles through portions of protected least tern chick habitat if, in the opinion of the Division, this can occur without substantially increasing threats to least tern chicks and their habitats.

## **1.5 Covered Activities**

Section 3.2 of the HCP describes covered activities that expose piping plovers to potential take, and associated impact minimization measures that must be employed to minimize risk when carrying out the covered activities. These covered activities are considered here as applied to the Least Tern.

- 1. Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks.
- 2. Recreation and Beach Operations.
  - a. Recreation and Beach Operations Associated with Reduced Symbolic Fencing Around Nests.
  - b. Recreation and Beach Operations Associated with Reduced Proactive Symbolic Fencing of Least Tern Habitat.
  - c. Recreation and Beach Operations at Least Tern Nest Sites with Nest Moving.
- 3. OSV Use in the Vicinity of Unfledged Least Tern Chicks.

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

Because least tern chicks generally move less than piping plover chicks and least terns nest colonially, movement of chicks across roads or into parking lots has not been a significant management issue in Massachusetts. Should this become an issue, many of the impact minimization measures described in Section 3.2.1 of the HCP will apply, and beach managers will be welcome to apply for a CMP to address this.

### **Recreation and Beach Operations Associated with Reduced Symbolic Fencing Around Nests**

Recreational and beach operational activities will be allowed to occur in areas less than 50 yards from an unhatched least tern nest that would otherwise have been symbolically fenced and restricted from use under the Guidelines.

At many sites narrow beach width precludes maintenance of a 50 yard buffer on the seaward edge of the least tern colony because fencing would have to extend well into the intertidal zone and would be submerged at high tide. In these cases, the Guidelines do not require maintenance of the full 50 yard buffer. Outside of this circumstance, though, maintaining a full 50-yard buffer may in some circumstances significantly reduce recreational use. For example, if least terns nest within 50 yards of a major beach access point, symbolic fencing would close that access point. Beach managers should refer to section 3.2.2.1 of the HCP for guidance on developing an impact avoidance and

minimization plan for this activity. The IAMP should consider the need to adjust fencing, if necessary to provide chick refugia once the eggs hatch.

### <u>Recreation and Beach Operations Associated with Reduced Proactive Symbolic Fencing of</u> <u>Least Tern Habitat</u>

Recreational and beach operational activities will be allowed to occur in suitable least tern nesting and sheltering habitat that would otherwise be restricted by the placement of proactive symbolic fencing in accordance with the Guidelines—particularly in sections of beach near major access points that tend to have high recreational use. Because least terns aggregate into colonies and generally occupy a relatively small portion of any given beach, the DFW anticipates that the need for this activity will be quite limited. The DFW reserves the right to reject proposals for this covered activity in the event that DFW determines that the symbolic fencing is not significantly impairing access or recreational activities at the site. In the event that DFW does authorize this activity at a given site, strict limits will be placed on the total area of reduced fencing at a given site. In the rare circumstance where a beach operator is able to demonstrate need (e.g. tern colony occupying a significant portion of a particularly high use recreational section of a beach), in general, no more than 15% of the colony may be affected.<sup>2</sup> Should least terns nest outside of the symbolically fenced area, small buffers will be required around nests with eggs to avoid trampling; or DFW will authorize nest moving (see below). Beach managers should refer to section 3.2.2.2 of the HCP for guidance on developing an impact avoidance and minimization plan for this activity, applying the 15% standard as described in this guidance.

### **Recreation and Beach Operations Associated with Nest Moving**

As described in the HCP, moving the nests of piping plovers and least terns has been demonstrated to be effective although the process is complex, movement distances must be small, and the risk of abandonment is significant. If least terns nest in a major beach access trail, OSV corridor or "cut", or other high use recreational area (e.g., the site of an annual beach festival or in front of a train station). reduced symbolic fencing may not be sufficient to facilitate the activity (e.g., opening a beach access trail), or may not be the best way to minimize impacts to least terns. The DFW may also authorize this activity in combination with reduced proactive symbolic fencing because maintaining a small area of reduced fencing around a nest may present a greater risk than attempting to move the nest. If the DFW determines that nest moving is the best impact minimization measure at a given site, the DFW will authorize a qualified shorebird monitor, trained in nest moving procedures by the DFW, to move a nest using protocols similar to the nest moving protocols described in the HCP. Before authorizing nest moving, the DFW would work with the plan participant to determine whether nest moving is necessary or whether the same or similar result could be achieved with other approaches, such as through reduced symbolic fencing around the nest. Because least terns nest colonially and their distribution statewide and on a site-specific basis is much more limited than piping plover, DFW anticipates that circumstances justifying either reduced proactive fencing or nest moving for least tern will be rare (e.g. significant impact on a high use recreational portion of a beach that cannot be adequately addressed through another means).

<sup>&</sup>lt;sup>2</sup> For colonies that have been relatively stable over time, DFW will make a preliminary determination of the extent of fencing reduction to be allowed based on consideration of the approximate areal extent of the tern colony during the previous 1-3 beach seasons and information about nest distributions and densities. Alternatively, the allowable reduction will be determined based on the distribution of terns relatively early in the breeding cycle at a given site. In making its determination, DFW may consider the size and distribution of sub-colonies across the entire site.

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Beach managers should refer to section 3.2.2.3 of the HCP for guidance on developing an impact avoidance and minimization plan for this activity. However, because terns nest colonially and moving nests into the vicinity of other nests can lead to significant conspecific aggression and nest loss, allowable nest moving distances will be significantly smaller than distances for the piping plover (see HCP, page 3-11). Allowable nest moving distances will vary by site, depending on habitat, colony density, and other factors.

#### **Oversand Vehicle (OSV) Use in the Vicinity of Unfledged Least Tern Chicks**

This covered activity allows limited, escorted driving of non-essential OSVs within the 100-yard setback from unfledged least tern chicks required by the Guidelines. The majority of OSVs are expected to be recreational, although some could be used for other purposes (e.g., tending oyster aquaculture beds). The Guidelines allow OSV use outside of the least tern breeding season and during the pre-nesting, egg-laying, incubation, and postfledging periods. Therefore, the need for a CMP related to this activity is specific to the pre-fledging period (i.e., after chicks have hatched but before they have fledged).

As noted in the Guidelines, least tern chicks (particularly younger ones) are less mobile than piping plover chicks. For example, because they are fed by attending parents, they do not forage in the intertidal zone or bayside flats. In general older, pre-fledging least tern chicks are at greatest risk when they move to the beachfront and intertidal zone, seeking wet sand. On the other hand, older chicks may be less vulnerable to direct mortality as they are relatively agile and capable of rapid movement. However, without careful monitoring and vehicle management, least tern chicks may be more likely to become "stranded" seaward of the OSV corridor, resulting in increased risk as escape behavior is triggered. In addition, unlike piping plovers, it can be difficult or impossible to assess the exact number of chicks present at a site (in a colony) at a given point of time. Also chicks do not travel in broods, complicating monitoring.

Therefore we present least tern specific impact avoidance and minimization measures for this covered activity here, rather than referring to a parallel section of the HCP. As a first step, reasonable alternatives must be considered and the number of chicks to be exposed to vehicles must be minimized.<sup>3</sup> In general, escorting will not be allowed past more than 20 unfledged least tern chicks at a given site, although DFW will consider the site configuration and proposed monitoring levels in making a final determination. For example, a narrow beach with a travel corridor near the high tide line may present a greater risk than a site with a large overwash, where vehicles can be routed landward of the main colony.

<u>Narrow Vehicle Corridor, No Parking:</u> Travel in the vicinity of unfledged chicks will be restricted to a single, clearly demarcated vehicle travel corridor less than 5 yards wide. Parking will not be allowed within 100 yards of unfledged chicks. Because chicks are mobile, plan participants will be encouraged to establish a restricted parking zone considerably farther than 100 yards from unfledged chicks in order to reduce the need for constant monitoring of chicks and readjustment of vehicle parking during the course of the day. Exceptions to this rule may be approved by the

<sup>&</sup>lt;sup>3</sup> For example, if significant sections of the beach are already open to OSV use as a result of OSV corridors behind dunes and lack of nesting birds in some sections of beach, then escorting may not be justified.

DFW in limited circumstances. For example, at a site with little traffic (e.g., small numbers of aquaculturists tending oyster beds), a defined vehicle corridor may not be necessary.

<u>Restricted Travel Hours</u>: To limit disturbance of chicks and impacts on foraging, vehicle travel in the vicinity of chicks will be restricted to no more than 6 hours per day in 2–3 travel periods. 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 will specify the restricted vehicle travel timeframes for that site. DFW will consider requests to lengthen the travel windows in cases where fewer than 5 unfledged chicks are affected.

<u>Vehicle Escorting:</u> Vehicle escorting will be performed using one of two options.

- Each vehicle must be escorted by a passenger who walks in front of the vehicle (self-escorting), scanning for chicks.
- A single escort must walk in front of a caravan of 50 vehicles, scanning for chicks.

In lieu of the single pedestrian caravan escort, the DFW may approve a qualified shorebird monitor driving in an open top OSV at a speed of 5 mph or less. In any case, the escorts must have the ability to stop vehicle travel in the event that chicks approach or enter the travel corridor. Vehicle escorting will begin at least 200 feet from the closest chick and terminate 200 feet past the last chick in a given brood.

<u>Staff Training, Enforcement, and Communication:</u> Careful coordination among staff is essential to ensure proper implementation, enforce violations of OSV rules and procedures, and respond to emergency situations. IAMPs should include implementation measures to address issues such as enforcing restricted driving hours and escorting procedures, communication amongst monitors, beach access attendants, law enforcement, and other staff, and protocols for escorting vehicles off the beach during emergencies.

<u>Mandatory OSV Operator Education:</u> All OSV users participating in the escort program must undergo a mandatory orientation each beach season prior to implementation of the escort program.

<u>Monitoring</u>: The IAMP needs to describe the monitoring plan associated with this covered activity. It is difficult to prescribe required minimum monitoring because sites will vary in the number chicks present and in how they are distributed within a site (e.g. diffuse within a loose colony or clustered at a dense colony). The following principles should be applied in developing the site specific monitoring plan:

- 1. Monitor(s) must attempt to verify the locations and count all chicks prior to each travel window, and continue to monitor chick movements and locations periodically during the travel period.
- A minimum of one qualified shorebird monitor must be present continuously during escorting periods at each sub-colony or site where escorted OSV use will occur. At sites with smaller numbers of unfledged chicks present at the time escorting begins (e.g. <10), low traffic rates, and confined to a relatively small geographic area, a single monitor may be adequate to both monitor chick movements and compliance with escorting procedures. However as traffic, number of chicks present, and spatial dispersion increase, the number of monitors will need to be increased. In general, as</li>

described above, escorting will not be allowed past more than 20 unfledged least tern chicks at a given site, although DFW will consider the site configuration and proposed monitoring levels in making a final determination. For example, a narrow beach with a travel corridor near the high tide line may present a greater risk than a site with a large overwash, where vehicles can be routed landward of the main colony. Plan participants will need to demonstrate adequate staffing to implement both routine monitoring elsewhere on the beach and the vehicle escort program simultaneously.

3. Monitors must be able to temporarily halt traffic and take other reasonable measures to manage risk. Special care must be taken if chicks are aggregating in the intertidal zone when vehicles are approaching to minimize the risk of "stranding" chicks on the open beach seaward of the OSV corridor.

### 1.6 Mitigation

In accordance with MESA permitting standards, the applicant must propose and implement mitigation that provides a "net benefit" to the affected species (321 CMR 10.23). Although the applicant may propose other activities that meet this standard, the following information is provided as a guide to applicants.

The mitigation plan should propose to benefit 2-4 breeding pairs of least tern for every breeding pair, nest, or unfledged chick exposed to covered activities. Because it may not be possible to precisely determine the number of breeding pairs or chicks affected, DFW will use a conservatively high estimate of the number pairs/chicks affected. Final determination of the appropriate level of mitigation will take into account the effectiveness of the proposed impact avoidance and minimization measures and the particular mitigation activities proposed at a given site (e.g. modest increased enforcement of pet rules may not be as effective as electric fencing around a colony).

As described in the HCP, plan participants will have the option of providing mitigation funds for outreach and education, increased law enforcement, and selective predator management. DFW will oversee the funds and use them to implement the above-mentioned activities to benefit piping plover at appropriate breeding sites. Because sites chosen for mitigation activities will support breeding piping plovers and least terns, participants proposing to engage in covered activities affecting least tern will also have the option of paying into the mitigation fund. Alternatively, applicants may propose to carry out their own mitigation activities to benefit least tern, including but not necessarily limited to:

- 1. Selective predator management
- 2. Nonlethal predator management including the use of electric fencing
- 3. Increased law enforcement e.g. pet regulations, additional trained enforcement staff presence
- 4. Credible conservation research to benefit least tern (e.g. experimental nonlethal predator management; vegetation management). Any research proposal must provide support for the potential feasibility of the technique for benefitting least terns (e.g. scientific literature). Techniques that DFW considers too experimental or otherwise highly unlikely to provide benefits will not be considered.

5. Education and outreach producing tangible benefits to least terns at specific breeding beaches

# 1.7 Monitoring & Adaptive Management

As described in the HCP, requests for coverage must include a site specific monitoring plan that addresses the need for both compliance and effectiveness monitoring (HCP, Section 4.4). For example, to assist DFW in assuring CMP/ITP compliance, participants will keep daily logs to track staffing levels and specific activities such as frequency of least tern chick counts during OSV travel windows, frequency of rules violations by OSV operators, and numbers of vehicles participating per day.

Effectiveness monitoring requires collecting information about least tern behavior, colony size, and reproductive success that will facilitate an assessment of the impact of the covered activities over time. In addition, collecting such information will enable DFW to make improvements to the program over time (adaptive management). Such improvements might include changes to the impact minimization or mitigation protocols or ratios to reduce risk or increase conservation benefits, and/or improvements to procedures that lower implementation costs or increase recreational flexibility without adversely impacting least terns.

# 1.8 Funding

As described in the HCP (Section 5.4), plan participants must provide a budget and assurances that adequate resources are available to ensure successful implementation. This includes but is not limited to the requirement to secure supplemental staffing as needed to implement the Plan while maintaining standard bird monitoring and beach operations.

## **1.9 Alternatives to Take**

The MESA requires applicants and to assess alternatives to take. As discussed above (Section 1.5), Least Terns are found at far fewer sites than piping plovers in Massachusetts, and tend to be clumped into fairly discrete colonies. Furthermore, least tern chicks are less mobile than piping plover chicks. For these reasons, at some sites it may be easier to avoid take of least terns and still meet recreational objectives than to do so for piping plover. DFW will consider need and the availability of viable alternatives in assessing all CMP/COI applications.