MASSWILDLIFE

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	Revere Beach State Reservation, Nahant Beach State Reservation, Winthrop Shores Reservation
City(ies)/Town(s)	Revere, Nahant, Winthrop

Applicant:

Individual	Priscilla Geigis
Organization	Department of Conservation and Recreation
Mailing address	251 Causeway St, Suite 700, Boston MA 02114
Phone & Email	617-626-1250 / priscilla.geigis@mass.gov

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	Jorge J. Ayub
Organization	Department of Conservation and Recreation
Mailing address	251 Causeway St, Suite 700, Boston MA 02114
Phone & Email	857-214-0207 / jorge.ayub@mass.gov

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. 17-36391

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

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**	8	5	0	36.5
Max. % of total pairs at site to be exposed				

*Specific activities requested: (**mark with "X"**)*				
· Reduced proactive symbolic fencing	☒	☒	☐	
· Reduced fencing around the nest	☒	☒	☐	
· Beach raking	☒	☒	☐	
· Chick herding	☐	☐	☐	
· Nest moving	☒	☒	☐	
· Other	☒	☒	☐	
Acreage affected				4 acres
Max. % of total nesting acreage affected at site				20%

* 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

Type	**Y/N**	**Total amount**	**Pairs to benefit/Credits**
Pay fee for offsite mitigation ($5800 - $6150 per take exposure; see above)	No	$	
Applicant-implemented activities:			
· Selective predator management	Yes	Submit details in IAMP (see below)	36.5
· Increased education & outreach	Yes		*
· Increased law enforcement	Yes		*
· Habitat management	Yes		*
· Other	Y/N		*

* 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.)

☑ 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.

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: 04/11/2021

Signature of Applicant (if different from Owner) — Date

MASSACHUSETTS - DEPARTMENT OF CONSERVATION AND RECREATION

Amendment to the Certificate of Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan #CMP 021.373.DFW

Revere Beach State Reservation, Nahant Beach State Reservation & Winthrop Shores Reservation

Shorebird Protection Program
Natural Resources Office
Bureau of Resource Protection
Department of Conservation and Recreation
251 Causeway Street, Suite #700
Boston, MA 02114

04/10/2021

Table of Contents

1. INTRODUCTION

The Massachusetts Department of Conservation and Recreation is requesting an amendment to the Certificate of Inclusion (COI) under the Conservation and Management Permit #021.373.DFW, as part of the agency's application to participate in the statewide Piping Plover Habitat Conservation Plan (HCP). DCR is requesting the implementation of the following covered activities as described under the HCP section 1.2.1 Covered Activities:

- (1)"Use of Roads and Parking Lots in the Vicinity of Unfledged Piping Plover Chicks",
- (2a) "Recreation and Beach Operations Associated with Reduced Symbolic Fencing" ,
- (2b)"Recreation and Beach Operations Associated with Reduced Proactive Fencing of Piping Plover Habitat"
- (2c) "Recreation and Beach Operations at Piping Plover Nests with Nest Moving".

DCR is requesting up to thirteen (13) nesting territories for inclusion in this covered activity, approximately 50% of the 26 breeding pairs in 2020. The removal or reduction of symbolic fencing and the usage of the recreational pathways on these sites will help maintain access to the beach and reduce potential economic impacts as well as conflicts with recreational activities in an area that hosts over two and a half million visitors per year.

In 2013, DCR launched a new conservation management plan for Winthrop and Revere Beach and expanded to Nahant Beach in 2016, approved under *the general conditions of the Conservation and Management Permit # 013-216.DFW,* that consisted of impact minimization, habitat enhancement, increased monitoring, elevated and coordinated enforcement, internal DCR training, and expanded public education. DCR intends with this application amendment to utilize the HCP as an additional conservation management tool to enhance the success of Piping Plover nesting at these beaches.

2. GEOGRAPHIC SCOPE

The geographic area to be covered under this application includes Revere Beach State Reservation, Winthrop Shores Reservation and Nahant Beach Reservation (Figure 1). Revere and Winthrop beaches are located about two miles apart, and are connected by public transportation to the Greater Boston Metro Area. Nahant Beach is about 5 miles northeast from the southern part of Revere Beach and is mainly accessible via automobile. However, public transportation options are available nearby via bus, commuter rail, and taxi services. The covered activities permitted under this application include all suitable Piping Plover habitat along the length of Revere Beach, Winthrop Beach and Nahant Beach.

The current DCR management and protection of listed shorebird species assumes that Piping Plovers nesting on Winthrop Beach, Nahant Beach and Revere Beach are represented together as a whole urban population, and that management actions at all three beaches will benefit this entire urban population. Therefore, management efforts to benefit piping plovers are applied equally to all three beaches.

3. SITE DESCRIPTION

Revere Beach is the oldest public beach in the United States, founded in 1896. Today, this beach boasts almost 120 acres of shoreline with up to a quarter million visitors each week during the peak of the summer. Along Revere Beach Boulevard there is a bandstand for summer concerts, a bathhouse and many shade shelters. Revere Beach is accessible by public transportation, making it a popular spot for people from the Boston metro area.

Winthrop Beach was used from the mid-1600s until the late-1800s mostly for utilitarian purposes: clam digging, lobster fishing, kelp for fertilizer, rocks and gravel for ship ballast. The arrival of public transportation to the north shore in 1875 along with the acquisition of the reservation in 1900 by the Commonwealth of Massachusetts, spurred the popularity of Winthrop Beach as a destination for city dwellers and tourists alike. Winthrop Beach consists of nearly 18 acres of coastal habitat. Today, Revere and Winthrop Beaches are regarded as centerpieces of a year-round community, which has replaced the hotels and cottages of the past.

Nahant Beach, also called Long Beach, is situated along a man-made causeway connecting the town of Nahant to the city of Lynn. The beach is part of DCR's Lynn Shore Reservation, a protected coastal region covering 67 acres with a connected multi-use paved path. The accessibility of this location and presence of a large parking lot along the beach draws in large crowds during the summer season.

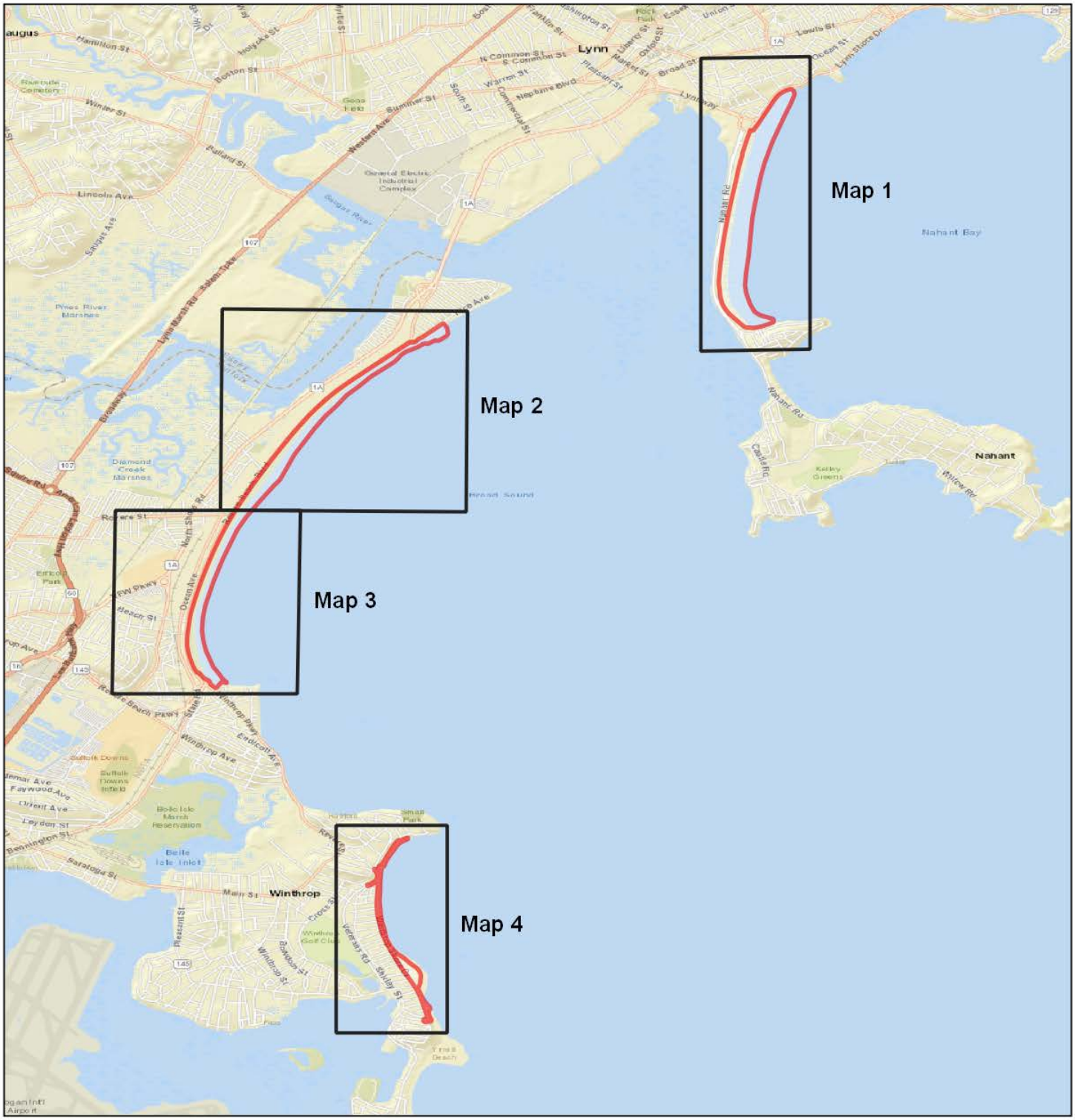
In recent years, Revere, Winthrop and Nahant Beaches have also served as nesting habitat for the urban populations of piping plovers and least terns. Due to the favorable beach conditions, the support of the local communities, and recent resource management efforts by DCR, the nesting habitat has improved on these sites. However, portions of the primary nesting habitat continue to be reshaped year after year, influenced by storm wave activity during the winter months and sand drifting during the summer months. This dynamic environment requires DCR to perform maintenance operations to preserve the sand resources on the beach.

Figure 1

Massachusetts Department of Conservation and Recreation

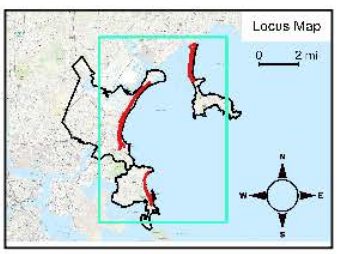
Urban Beaches with Breeding Piping Plovers

DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan



DCR Map Index

- ☐ Map 1 - Nahant
- ☐ Map 2 - Revere North
- ☐ Map 3 - Revere South
- ☐ Map 4 - Winthrop



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4. DCR CONSERVATION MANAGEMENT OF SHOREBIRD SPECIES

Intensive recreational use by local residents and visitors from the Boston Metro Area impacts Revere Beach State Reservation, Winthrop Shores Reservation and Nahant Beach Reservation and their nearby salt marsh habitat. The presence of breeding piping plovers, state-listed terns and other coastal bird species of conservation concern (Table 2), including fifteen (15) focal species identified under [1] "Birds of Conservation Concern of 2008" (Table 1), share these urban coastal habitats with hundreds of thousands of visitors annually. DCR takes in consideration this rich biodiversity in our stewardship efforts with a comprehensive approach for conservation in all coastal habitats of the Boston Metro Area.

The combination of popularity for recreation and importance of habitat has created a unique opportunity for urban wildlife conservation, to proactively educate local residents and visitors from the nearby communities about the coastal conservation goals and statutory protections for focal priority species.

Table 1. USFWS Birds of Conservation Concern at Nahant, Revere, and Winthrop Area*****

American Oystercatcher	Least Bittern	Short-billed Dowitcher
Black Skimmer	Least Tern	Short-eared Owl
Buff-breasted Sandpiper	Peregrine Falcon	Snowy Egret
Greater Shearwater	Pied-billed Grebe	Whimbrel
Hudsonian Godwit	Semipalmated Sandpiper	Wilson's Plover

**Species list compiled from BCC 2008-list 30, table 28 BCR - New England/Mid Atlantic Coast*

Table 2. Federal and State listed species at Nahant, Revere, and Winthrop Beaches

Common Name	Scientific Name	Official Conservation Status
American Oystercatcher	*Haematopus palliatus*	Considered as "Species of High Concern"
Common Tern	*Sterna hirundo*	Threatened under MESA
Least Tern	*Sterna antillarum*	Threatened under MESA
Piping Plover	*Charadrius melodus*	Threatened under MESA & ESA
Rufa Red Knot	*Calidris canutus rufa*	Threatened under ESA

M.E.S.A: M.G.L. c.131A and regulations 321 CMR 10.00; and M.G.L. c.131 S5, 74 & Title 50 CFR Federal E.S.A: Act of 1973, as amended, 16 U.S.C §§ 1531 et seq.

[1] The Fish and Wildlife Conservation Act mandates the U.S. Fish and Wildlife Service (USFWS) to identify species, subspecies, and populations of all migratory nongame birds that without additional conservation actions are likely to become candidates for listing under the Endangered Species Act (ESA).

5. DCR CONSERVATION MANAGEMENT OF PIPING PLOVERS

In July of 1991 a beach nourishment project consisting of 600,000 cubic yards of sand was completed on Revere Beach. Following completion of the project a beach monitoring/survey program was implemented by the Army Corp of Engineers (ACOE), and since 1991 surveys have been taken at least every three years, but typically more frequently. The beach fill material had an approximate D_{n50} of 0.45mm which was significantly coarser than the native beach material. The northern one third of the beach has experienced erosion, which is most likely due to end losses at the end of the beach fill project. It is uncertain if this is an issue or not, and would have to be evaluated based on flooding and storm damage impacts. The southern two thirds of the project have been stable or subject to minimal loss of sand since construction. This is likely due to the containment at the southern end of the project by the headland feature, and the relatively coarse sand used in the beach fill project. The overall conclusion is that the beach fill project on Revere Beach has been performing well.

Piping plovers first arrived on DCR urban beaches in 2007, in search of nesting habitat at Revere Beach, and they have been back every year since. Up until 2011, there was an average of five (5) piping plover pairs nesting at Revere Beach and Winthrop Beach combined per year. Thanks to the increased DCR conservation efforts and continued support of visitors and the local residents, that number grew to thirteen (13) PIPL pairs in 2012, an unprecedented over 250% increase. The trend has continued from 2012 through 2020 (Table 3).

In 2020, DCR's Revere Beach hosted 14 nesting PIPL pairs; Winthrop Beach hosted 5 pairs, and nearby Nahant Beach hosted 7 pairs. Together, these sites have provided a sizable contribution of new birds to support the recovery efforts for the species. DCR has committed funding to promote and improve coastal conservation by developing a staffing plan with five (5) Conservation Biologists to help with protection, monitoring, and development of outreach programs to engage the local urban communities. In addition to the conservation staff, two (2) seasonal DCR Rangers are hired for 24 weeks to increase enforcement of the guidelines and protection of nesting shorebirds. DCR provides outreach to visitors by conducting formal and informal educational programming. DCR may also install permanent educational panels and boards. This level of monitoring and protection represents a five-fold increase in field presence compared to what is required by the guidelines for shorebird protection.

Emergency circumstances related to public health and safety may arise as observed with the Covid-19 pandemic. Details related to the monitoring and public outreach plan, as well as the enforcement and education programming, may be subject to change with advanced written approval from the Division to mitigate these public health and safety concerns. However, in all cases, both state and federal guidelines for managing recreation uses of beaches will be adhered to and implemented.

Symbolic fencing is installed in late-March on known breeding territories to prepare for the start of pair bonding and territory establishment in early-April. For these highly populated areas, symbolic fencing stakes are made of fiberglass of light gray color, which is less visually intrusive than wood-stakes or metal poles. Twine is strung between the poles. Materials and signs are made of light blue and white colors that blend in with the local beach environment.

Table 3. Numbers of Breeding Piping Plovers at Nahant, Revere, and Winthrop from 2007 - 2020

Site	2007	2008	2009	2010	2011	2012	2013
Nahant Beach	No data	No data	No data	No data	No data	0	0
Revere Beach	1	2	1	3	3	10	9
Winthrop Beach	No data	2	2	2	2	3	4
	2014	2015	2016	2017	2018	2019	2020
Nahant Beach	1	1	1	0	1	6	7
Revere Beach	9	16	15	16	12	12	14
Winthrop Beach	6	6	8	8	7	6	5

Table 4. Number of Breeding Least Tern Pairs and Fledglings at Winthrop Beach from 2016-2020 in Pre- A, A, and B Counts**.**

Year	Pre -A - Count	A - Count	B - Count	Productivity	Fledglings
2020	35	50	-	Good	55
2019	-	6	2	None	0
2018	-	34	1	Poor	6
2017	-	90	35	Poor	20
2016	-	77	-	Good	50

Charts - Historical Trends of Breeding Piping Plovers at Revere Beach, Winthrop Beach and Nahant Beach

CHART 1: Number of breeding piping plover pairs in the period of 2007-2020 at Revere Beach.

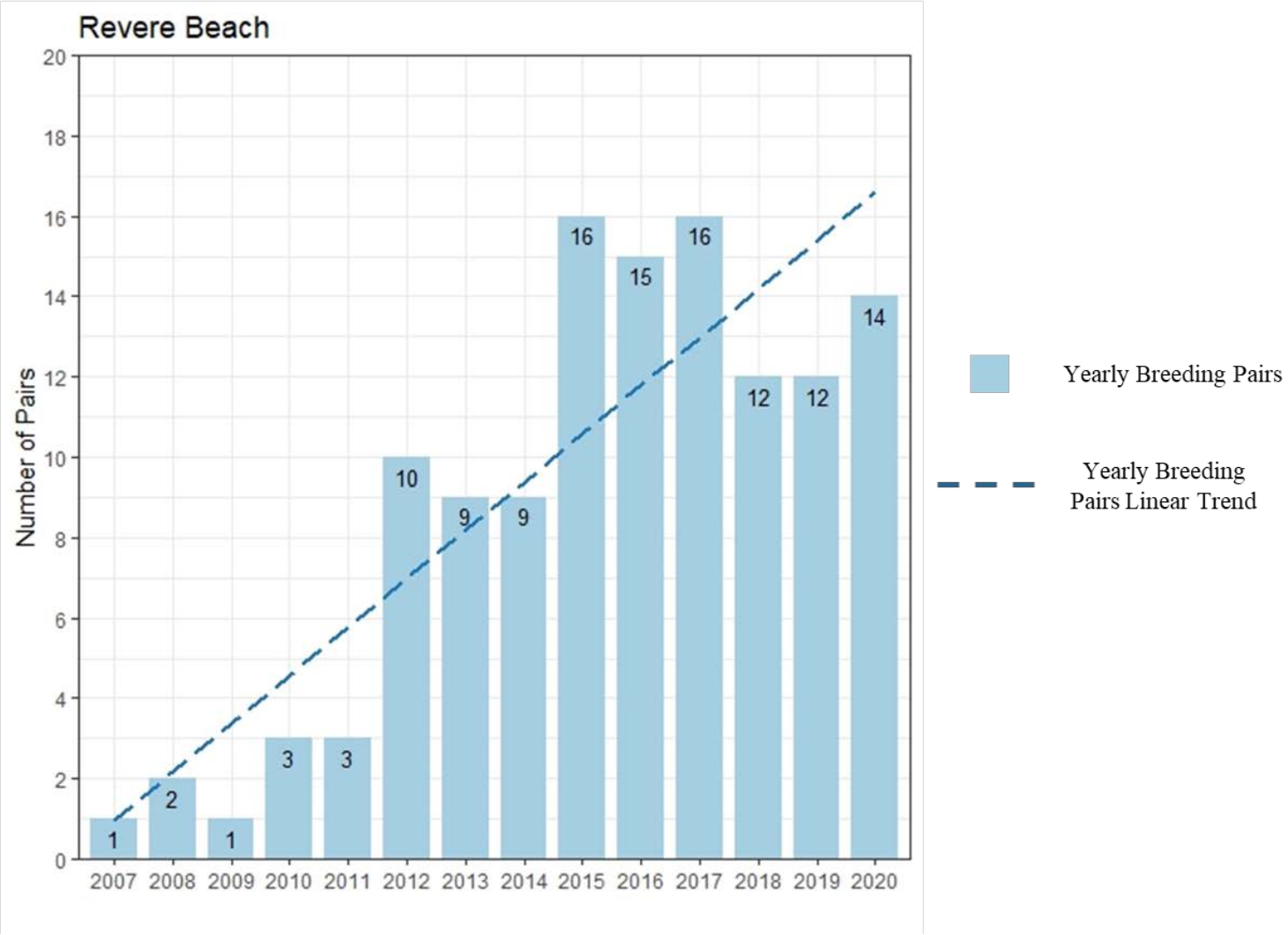


CHART 2: Number of breeding piping plover pairs in the period of 2008-2020 at Winthrop Beach.

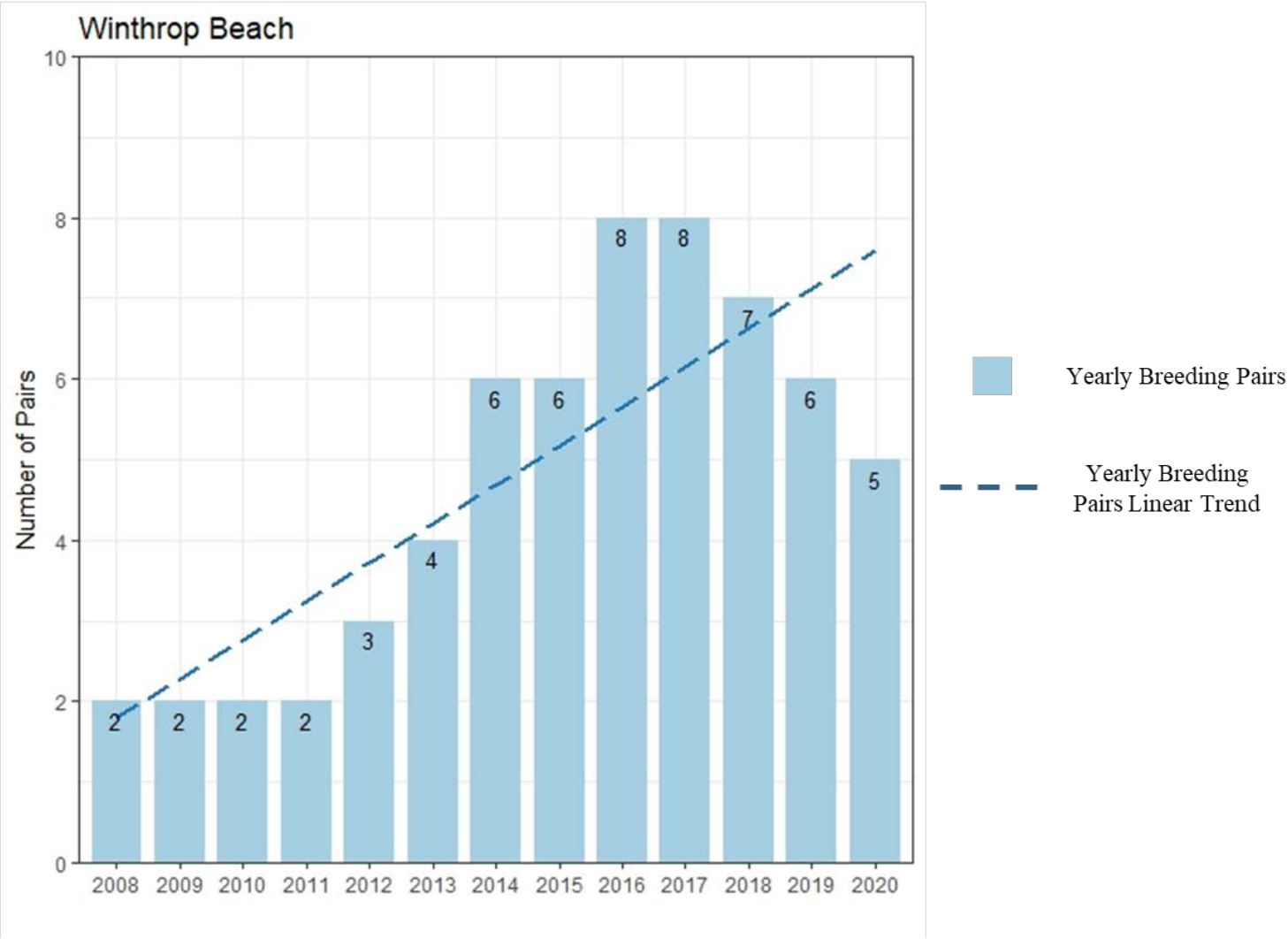
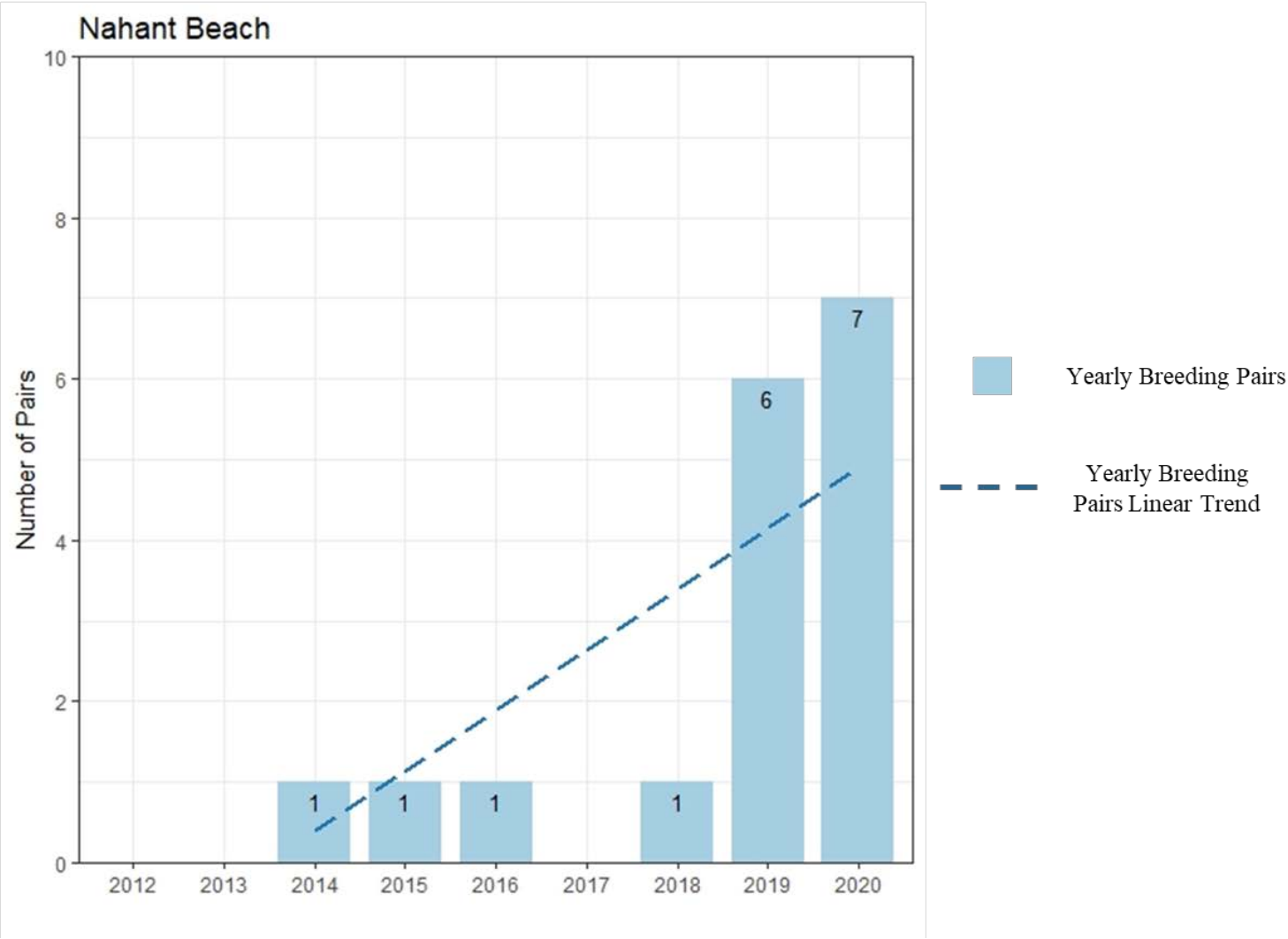


CHART 3: Number of breeding piping plover pairs in the period of 2012-2020 at Nahant Beach.



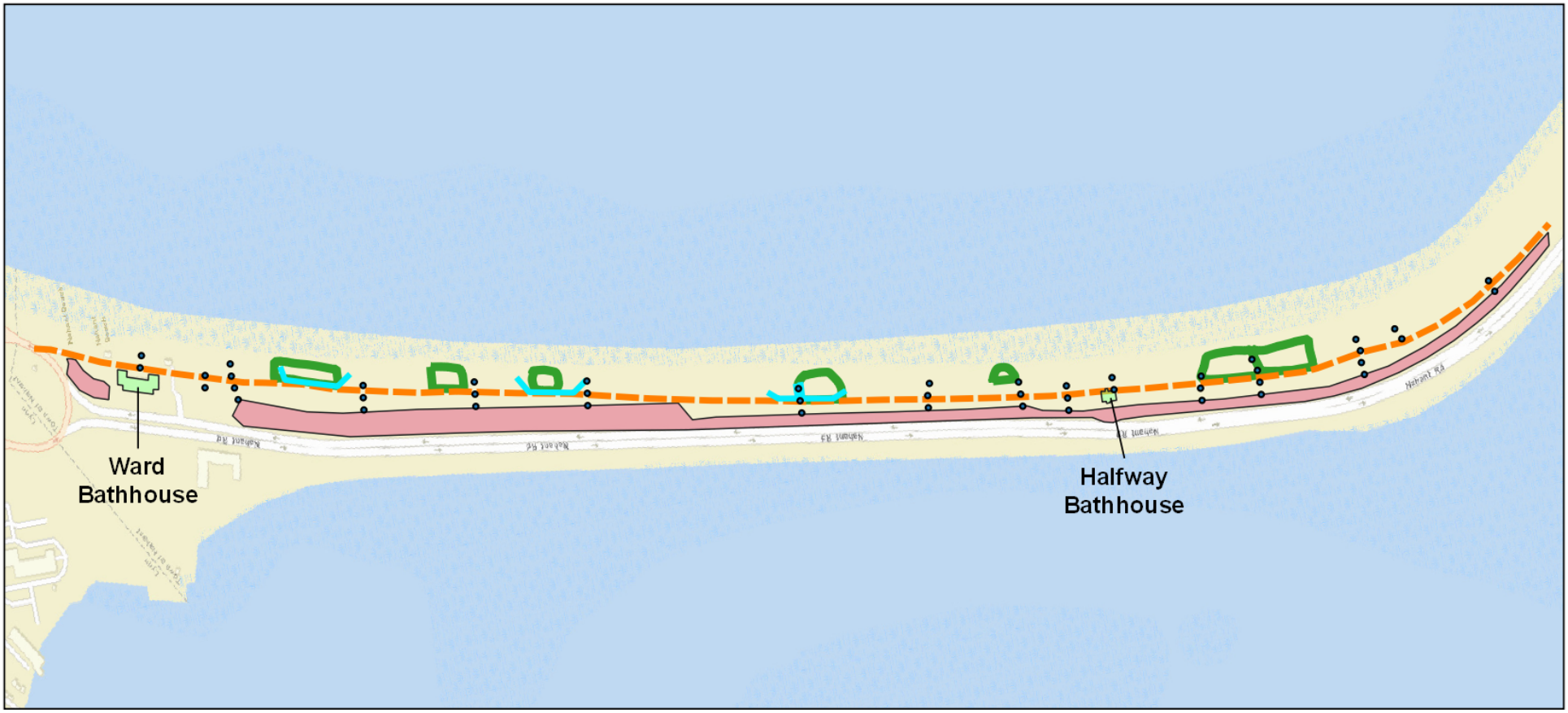
Maps –Piping Plover and Least Tern Nesting Areas at Nahant, Revere, and Winthrop Beaches

Figure 2

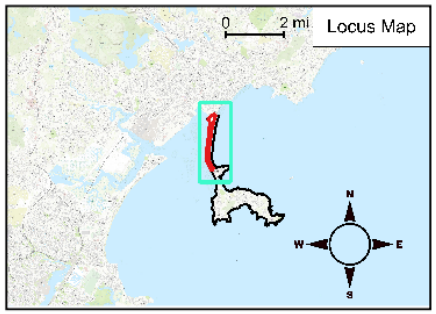
Massachusetts Department of Conservation and Recreation

Map 1 - Nahant Beach Reservation

DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan



- DCR Buildings
- Parking
- Beach Access
- Recreational Path
- 2020 Chick Barriers
- 2020 PIPL Fencing



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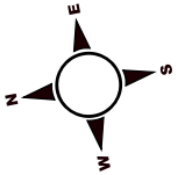

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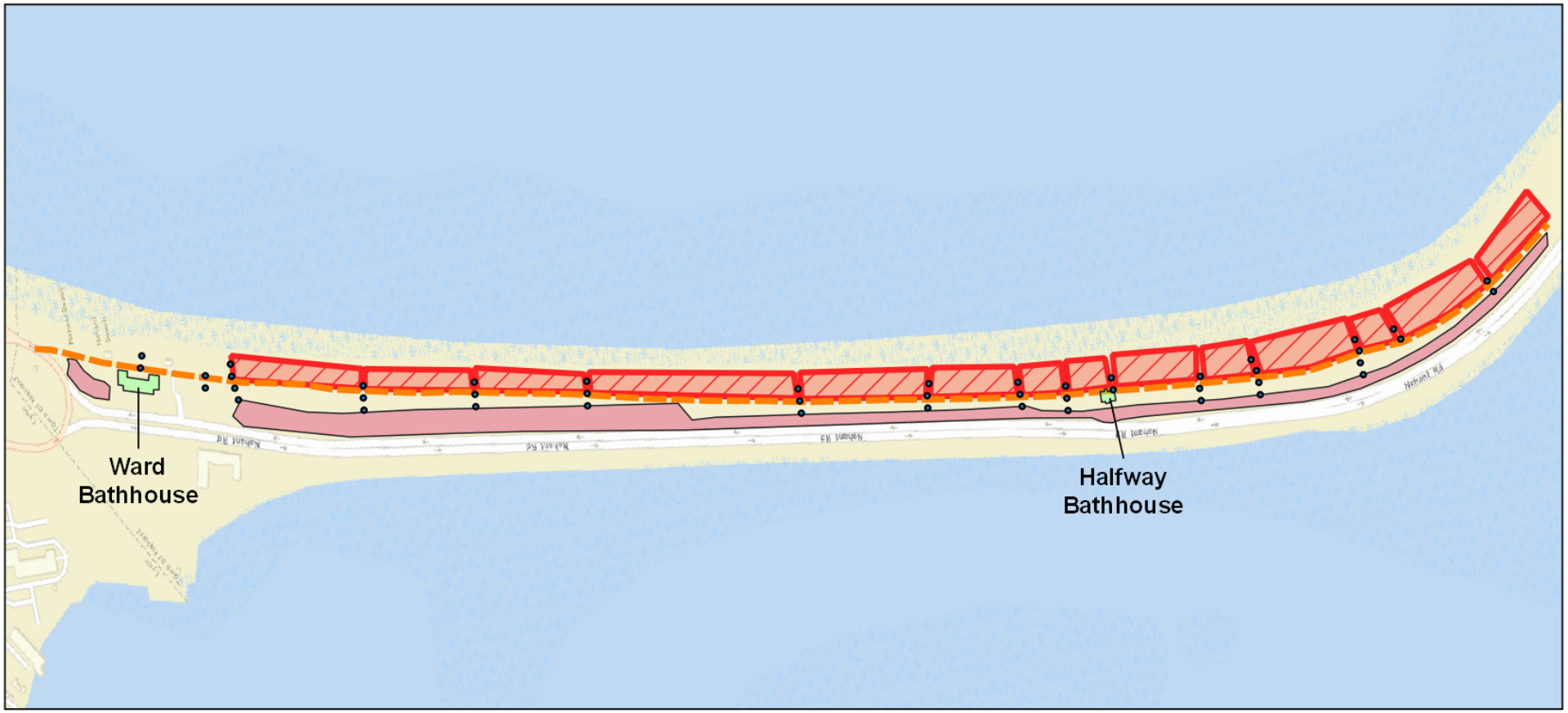
Figure 3

Massachusetts Department of Conservation and Recreation

Nahant Beach Reservation

DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan



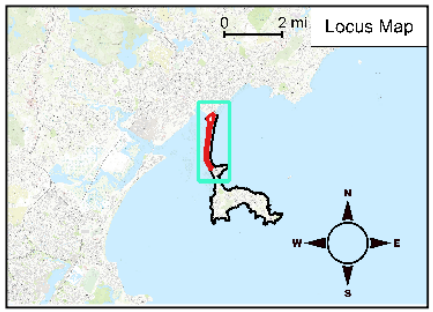
DCR Buildings

Parking

Beach Access

Recreational Path

2021 Expected Fenced Area



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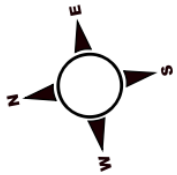

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Figure 4

Massachusetts Department of Conservation and Recreation

Map - 2 Revere Beach Reservation (North)

DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan

DCR Buildings

2020 PIPL Fencing

Beach Access

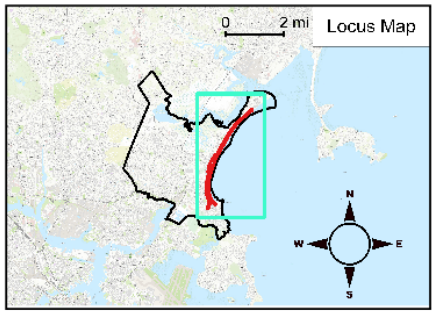

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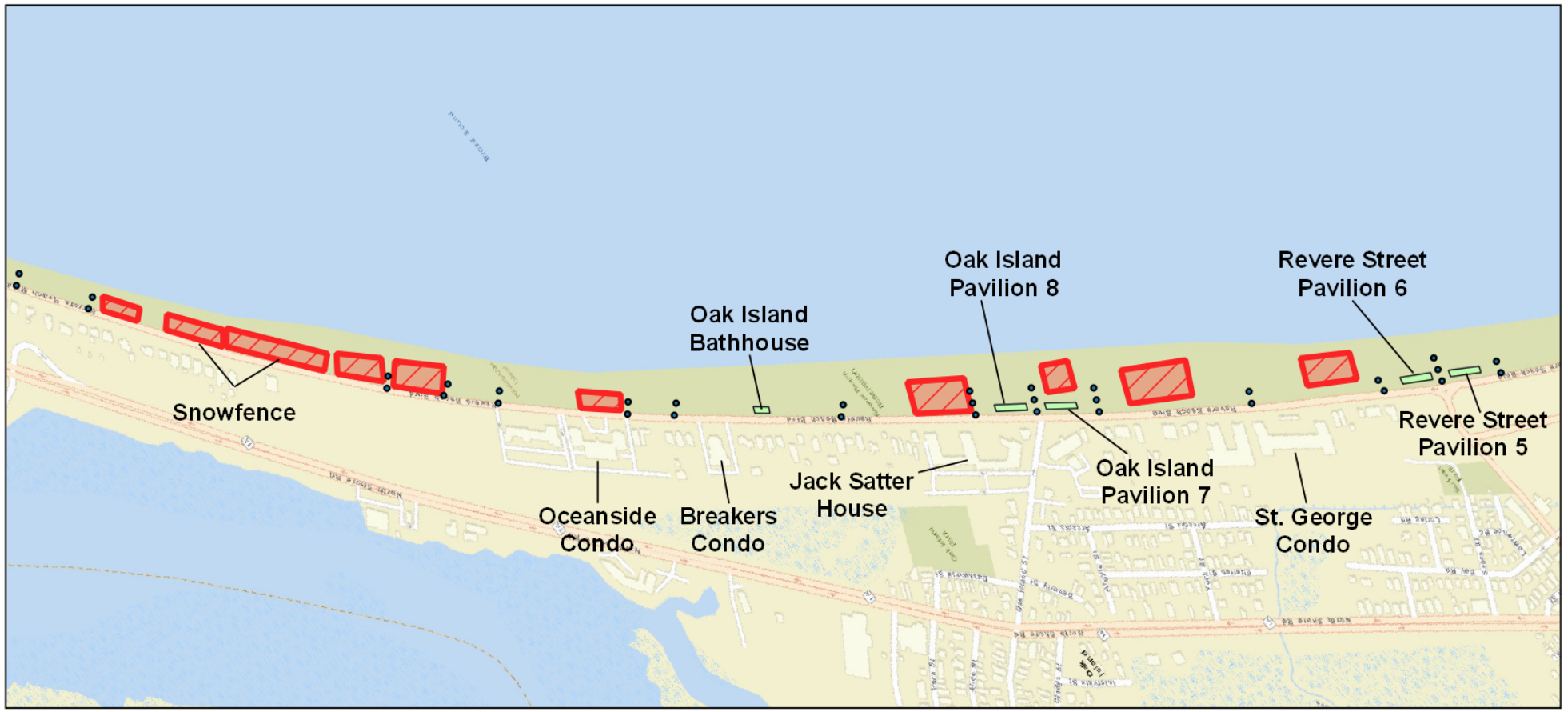
Figure 5

Massachusetts Department of Conservation and Recreation

Revere Beach Reservation (North)

DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan



DCR Buildings

2021 Expected Fenced Area

Beach Access

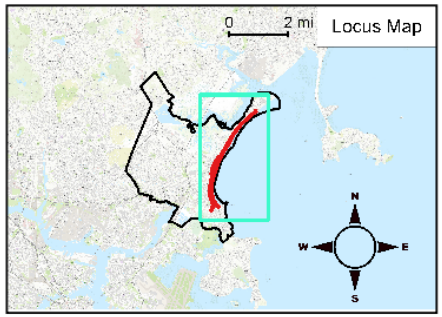


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Figure 6

Massachusetts Department of Conservation and Recreation

Map 3 - Revere Beach Reservation (South)

DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan

DCR Buildings

2020 PIPL Fencing

Beach Access

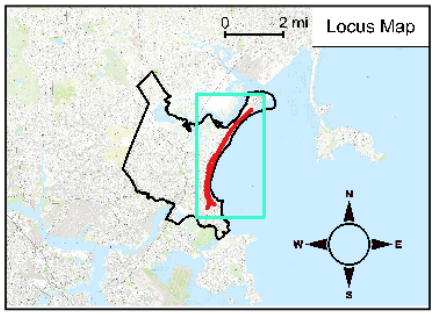

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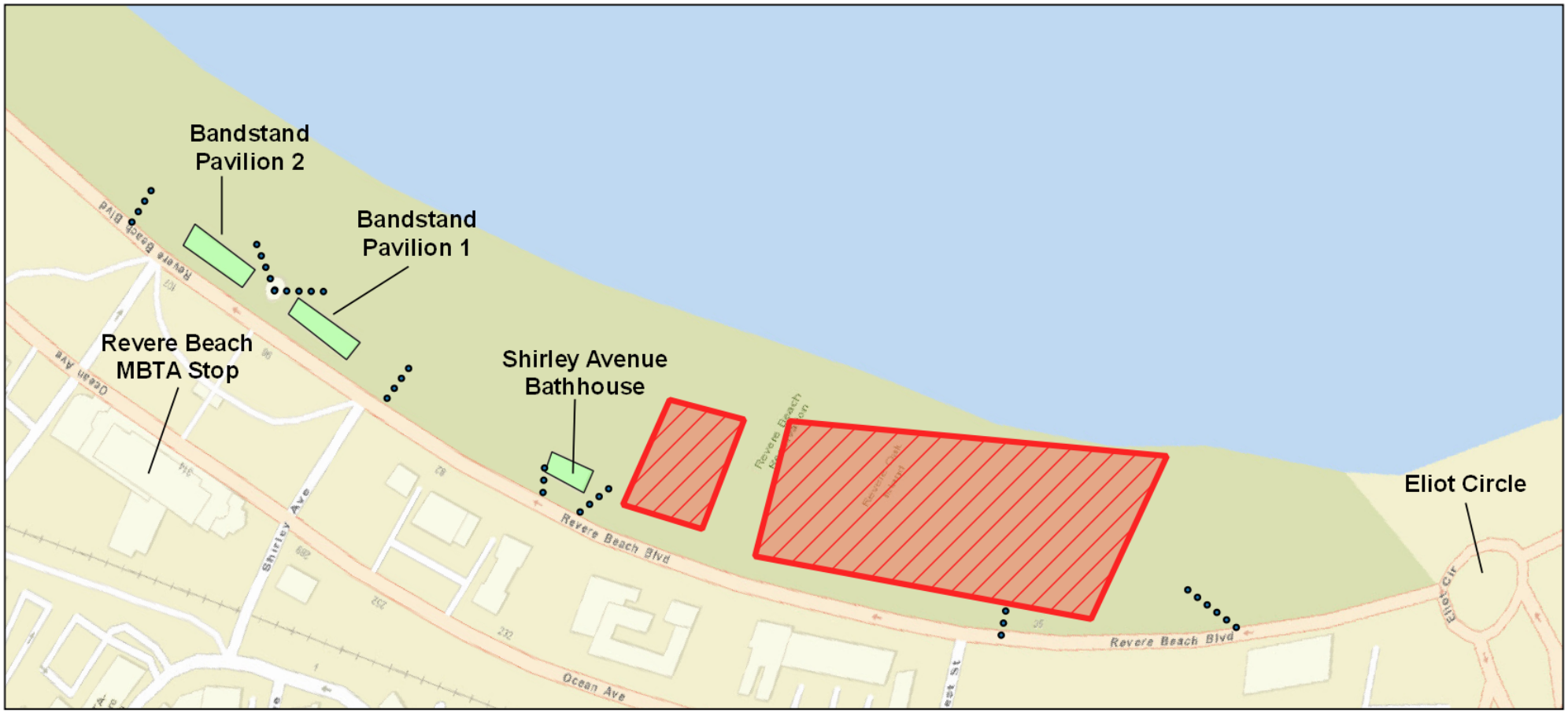
Figure 7

Massachusetts Department of Conservation and Recreation

Revere Beach Reservation (South)

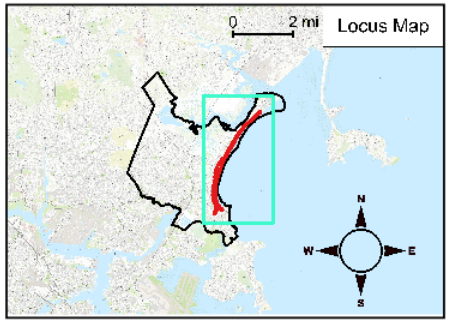
DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan



DCR Buildings

2021 Expected Fenced Area

Beach Access



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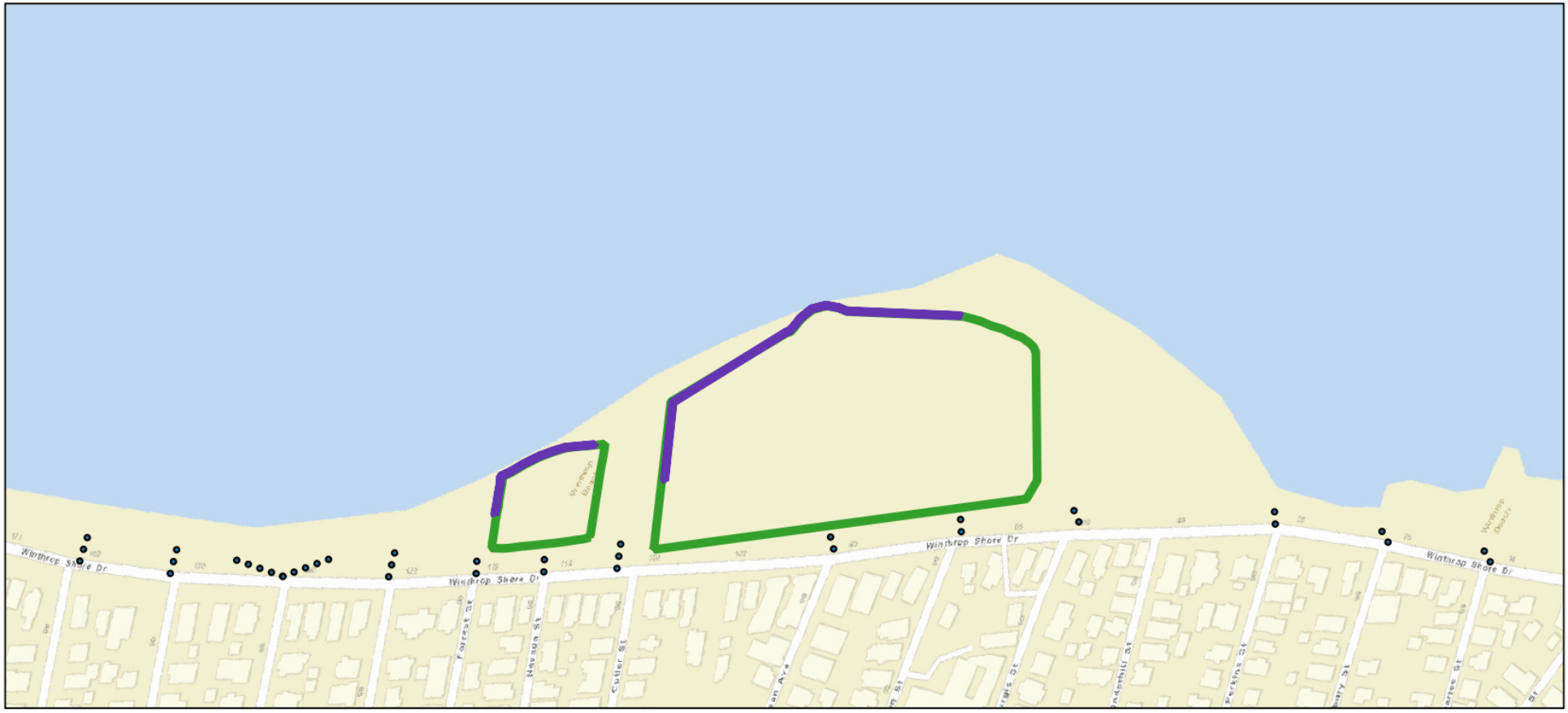
dcr Massachusetts

Figure 8

Massachusetts Department of Conservation and Recreation

Map 4 - Winthrop Shore Reservation

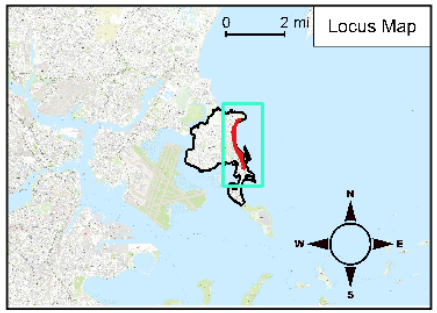
DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan



Beach Access

2020 PIPL Fencing

2020 PIPL/LETE Fencing



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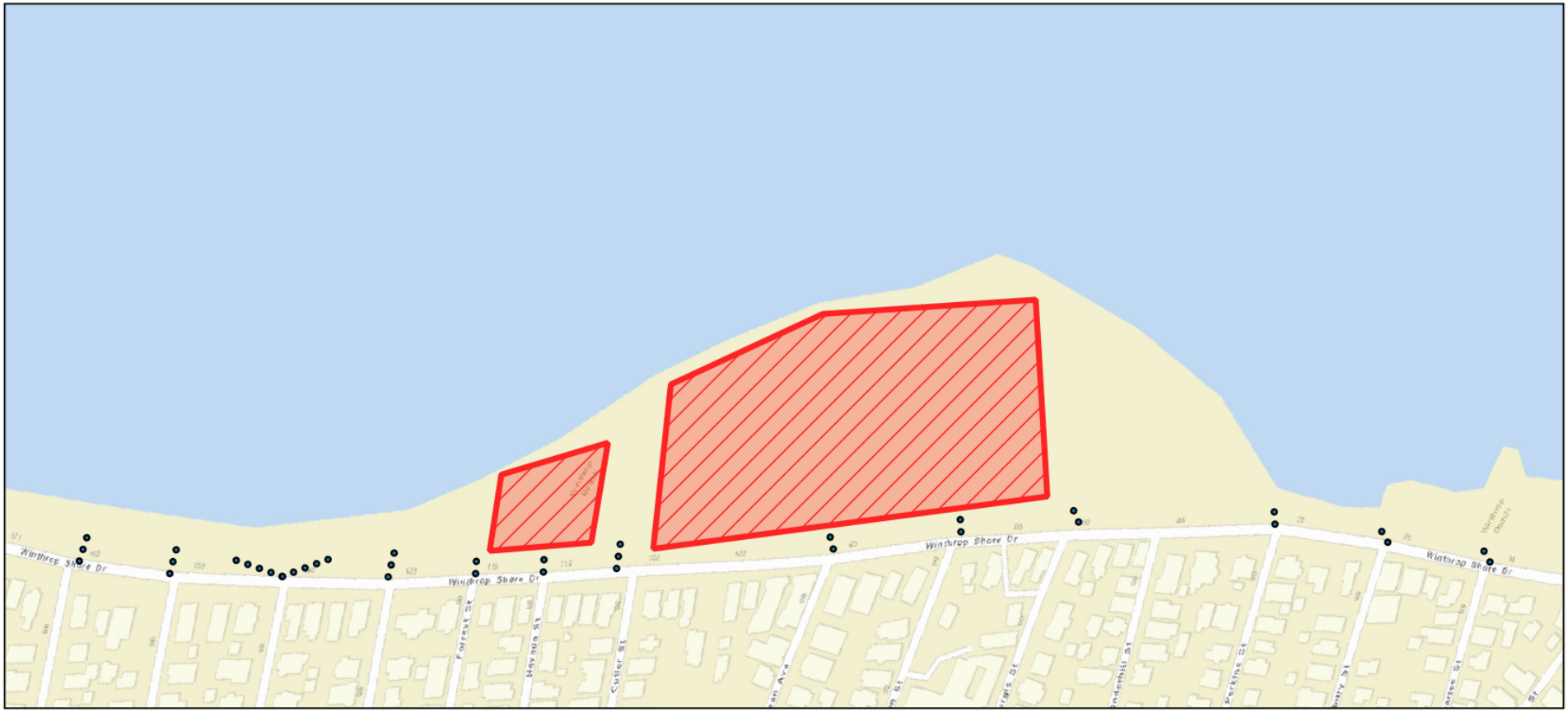
dcr Massachusetts

Figure 9

Massachusetts Department of Conservation and Recreation

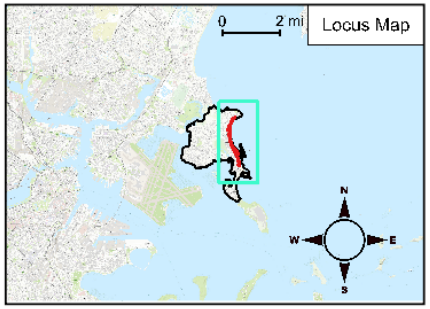
Winthrop Shore Reservation

DCR 2020 Application for Inclusion in the Massachusetts Piping Plover Habitat Conservation Plan



Beach Access

2021 Expected Fenced Area



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dcr Massachusetts

6. PREDATOR MANAGEMENT

Impacts to productivity on Winthrop Beach Reservation in 2020 were suspected to the presence of avian predators, predominantly gulls. DCR Conservation Biologists determined gulls to be the probable cause of nest losses within the main protective fencing for both piping plover and the least tern colony. Additionally, red-tailed hawks, ospreys, rats, domestic cat tracks, and eastern coyote tracks were observed by biologists. However, there was no probable cause observed to assume predation occurred by these species on the beach.

Impacts to productivity on Nahant Beach were suspected to be due to the presence of avian predators, predominantly gulls and crows. DCR Conservation Biologists were not able to conclusively verify which avian predator was most predominant within the protected fenced areas. Additionally, rat tracks were observed by biologists on the dunes. However, there were no mammalian predation events observed to warrant probable cause of loss due to these species.

Impacts to piping plover productivity on Revere Beach in 2020 were a consequence of resident American Crows. DCR staff identified nine depredated nests and suspected one nest abandonment caused by American Crow. This was determined by the presence of tracks and eggshells around the nest after the predation event, and by prior observations of crows within the area. Multiple American Crow sightings were documented along the Northern stretch of beach throughout the entire breeding season, sometimes with three individuals present on the beach at once. DCR Conservation Biologists monitored the area closely and had at least one staff member present at all times during working hours to document for further crow activity and potential predation.

7. ADDITIONAL CONSERVATION EFFORTS

a. Beach Nourishment Projects: DCR has implemented beach nourishment projects both at Revere Beach (1991) and most recently at Winthrop Beach (2014). These projects have restored and protected the shoreline and the limited sand resources that are utilized both by the public for recreational activities and the listed shorebirds for nesting.

b. Vegetation Management Plan (VMP): DCR is currently developing a new VMP for Winthrop Beach, and has conducted vegetation surveys in the fall of 2018 to initiate the analysis and evaluation process. If found, invasive plants are removed manually.

c. Least Tern Monitoring Program: DCR adheres to the state guidelines provided under Massachusetts Endangered Species Act (MESA), and currently protects and monitors a Least Tern colony at Winthrop Beach.

8. RESPONSIBLE STAFF

Compliance with this plan will be managed by DCR's Bureau of Resource Protection, specifically by the Coastal Ecologist (Appendix A). In addition, the Coastal Ecologist hires, trains and oversees daily operations of five (5) seasonal Conservation Biologists, who provide the biological monitoring, protection and stewardship for the nesting shorebirds. Qualifications and requirements for the Conservation Biologist can be found in the appendix section of this document (Appendix B). In addition, all Conservation Biologists receive additional training from the Mass Audubon Coastal Waterbird Program. Conservation Biologists are hired every year as Long Term Seasonal (LTS), from approximately March 15th through August 30th.

9. CURRENT BEACH MANAGEMENT

DCR management and protection protocols of listed shorebirds species, including piping plovers, complies and exceeds state and federal guidelines. DCR management includes proactively fencing historical territories by April 1st. In addition, other sections are fenced immediately once additional piping plover pairs demonstrate territoriality or scraping. DCR has been able to provide this kind of protection due to the intensive daily monitoring (7 days a week) that provides coverage from approximately 8-12 hours.

All maintenance operations conducted at the beach during the nesting season are strictly coordinated between DCR Park Ops staff and the Conservation Biologists. These activities include beach raking, trash collection and lifeguard ATV operations. Qualify monitors escort any vehicle that requires transiting on the beach near or around piping plover territories. Beach raking is performed 2-3 times a week on average, and the activity is conducted under the guidance of the Conservation Biologist staff.

Emergency circumstances related to public health and safety may arise as observed with the Covid-19 pandemic. Details related to the management and protection protocols may be subject to change with advanced written approval from the Division to mitigate these public health and safety concerns. However, in all cases, both state and federal guidelines for managing recreation uses of beaches will be adhered to and implemented.

The following is a list of general beach management activities currently conducted by DCR at the proposed sites of Revere, Winthrop, and Nahant Beach.

A. **Recreational Activities -** Multiple recreational activities are monitored by DCR staff at Nahant, Revere, and Winthrop Beaches, including but not limited to swimming, beach games, paddle boarding, kayaking, and kite boarding, among others. Most of these activities require DCR staff to be available to guide and direct the recreational use to areas away from protected species and in a way that reduces disturbances created. Other activities, such as kite-boarding, requires more coordination between recreational groups and DCR staff to anticipate the participation of the activity and to direct the recreational use away from protected areas of the beach, minimum of 200 yards from designated areas, to reduce potential disturbances.

B. **Biological Monitoring** – DCR staff currently follows the protocol framework outlined by the USFWS NWRS. This framework ensures for consistent, reliable, repeatable, and appropriate data collection to meet survey objectives. The framework prioritizes the monitoring and data collection of species abundance, distribution, reproductive success, limiting factors, and responses to habitat changes and management of nesting piping plovers and least terns at Nahant, Revere, and Winthrop Beaches. All data is recorded on daily logs that are later analyzed and reported to DFW via PIPLODES and TERNODES. This conservation effort is a daily activity that provides approximately 8- 12 hours of coverage per day. (Figures 10, 11, 12)

C. **Fencing and Signage** – DCR staff helps deploy, adjust, and maintain symbolic fencing to delineate critical shorebird nesting areas at Nahant, Revere, and Winthrop Beaches. Significant portions of the suitable nesting habitat that have supported nesting piping plovers and least terns regularly are proactively fenced by April 1st. The remainder of the beach is intensively monitored on a daily basis, and symbolic fencing is installed as soon as a territorial pair and or scraping are detected.

D. **Public Outreach and Education** – DCR holds formal and informal programming on the beach providing outreach, educational programs, and interpretive signage to educate beach

users and divert incompatible beach uses from critical nesting areas. These events mostly occur during popular high use times on the beach like weekends, or in community organized events like the annual Sand Castle Festival. These events and programs may be reduced or eliminated due to emergency public health and safety concerns as has been observed with the Covid-19 pandemic.

E. **Enforcement** – DCR has dedicated two seasonal Ranger positions to these sites to deter and enforce statutes pertaining to the protection of listed nesting shorebirds. One seasonal Ranger is assigned to cover Nahant daily and the other seasonal Ranger is assigned to cover Revere and Winthrop daily. The positions run from early-April to late-August. DCR seasonal Rangers coordinate all enforcement efforts with Massachusetts Environmental Police as well as local law enforcement to better manage recreational use of the beach and to effectively acquire compliance of the rules. Enforcement efforts are timed to coincide with high beach use periods including weekends and holidays. The Ranger schedule varies periodically to interact with as many different beach users as possible, and to provide maximum coverage. The scope of enforcement and scheduling of rangers may be subject to change due to emergency public health and safety concerns as has been observed with the Covid-19 pandemic.

F. **Operations & Maintenance Coordination** – DCR coordinates the type and timing of any beach maintenance operation (e.g. raking for trash collection) with the qualified monitors to ensure that shorebirds are not harassed, killed, or injured by these activities at Nahant, Revere, and Winthrop Beaches. Each site has an approved Operations and Maintenance Plan (OMP), approved under the Massachusetts Wetlands Protection Act (WPA), and also reviewed and approved pursuant to the Massachusetts Endangered Species Act. Raking will begin on a regular schedule, up to 5 to 7 days per week as needed in all three sites, starting after May 15th and throughout the remainder of the recreation season. Raking will not occur before dawn or during inclement weather when visibility is limited. This includes maintenance of buffers around incubating pairs where no mechanized raking occurs, and monitoring of adult piping plovers and least terns to ensure that raking activities do not result in harassment. The wrack line is also retained in the vicinity of nesting piping plovers and least terns. Once chicks hatch, refuge continues to be provided in symbolically fenced areas, and usually a supplemental buffer where no raking occurs adjacent to the fenced areas. Mechanized raking in the vicinity of chicks may only occur with a qualified shorebird monitor present, who has located foraging chicks prior to raking, and who has the ability to halt the rake, if necessary.

G. **Vegetation Management** – DCR's Coastal Ecologist ensures that any vegetation management plan implemented at Nahant, Revere, and Winthrop Beaches is compatible with piping plover and least tern habitat protection. Every September since 2012, DCR leads 2 major volunteer programs that include participation of over 150 people, to manually remove invasive species.

H. **Predator Control** - Proactive predator control programs consisting of trapping or removing avian or mammalian predators have not been initiated but they are under consideration at this time.

I. **Pets:** Pets are not allowed on Nahant, Revere, and Winthrop Beaches from April 1st through September 15th, and signage reflecting this regulation is posted in every access point in all three beaches. Public outreach is conducted to educate residents and visitors about the potential unintended impacts caused by domestic pets on shorebird nesting.

10. COVERED ACTIVITIES

In an effort to improve stewardship of piping plovers and other shorebirds, DCR implements protection of shorebirds under management protocols that includes impact minimization to nesting shorebirds, habitat enhancement, increased monitoring, coordinated enforcement, internal DCR training, and expanded public education. Partial beach closures, due to placement of protective fencing for shorebirds resulting in area restrictions, continue to be controversial for some of the residents and visitors. DCR is proposing to implement the covered activities:

- "**Use of Roads and Parking Lots in the Vicinity of Unfledged Piping Plover Chicks**", within the limits set by the HCP. In addition, intensive monitoring will be required when chicks are near roadways and parking lots. Signage alerting motorists and beach goers to watch for crossing birds and to obey speed limits must be strategically deployed. As Nahant is added to the COI this upcoming year, the healthy heart trail and the parking lot will be within 50 yards of a nest and unfledged chicks. The healthy heart trail is 1.2 miles long and 16 feet wide comprising an area of approximately 2.33 acres predominantly used by the public for bicycling, walking, and running and by DCR staff OSV use. As such, the dune system adjacent to the healthy heart trail will be fenced to allow for an adequate buffer for nesting piping plovers and as the season progresses, additional signage and coordination between Conservation Biologists' and DCR Park Ops staff may be utilized to mitigate disturbance and potential risks within the area surrounding the healthy heart trail. Once roaming chicks are present at the site and are determined to be entering into the healthy heart trail, traffic management will consist of intercepting bicyclists as far away from the broods as possible and requesting them to dismount and walk their bicycles through. Dismounting of a bicyclist effectively turns them into pedestrian traffic while crossing the vicinity of the brood. Interception distances will be determined based on the specific location of the occurrence on the healthy heart trail. Limiting factors to preemptive interception will be applicable such as visibility, beach access points, dunes and vegetation acting as barriers.
- "**Recreation and Beach Operations Associated with Reduced Symbolic Fencing around Nests**", in areas where beach operations or recreational activities are within 50 yards of the nest. A fence will be initially placed and then gradually reduced from 50 yards to no less than 10 yards. Fencing will be reduced to only the extent necessary to achieve specific recreational or beach operations objectives. If there is a path or major access point within 10 yards, DFW may allow less than 10 yards of fencing rather than authorize nest moving.
- "**Recreation and Beach Operations at Piping Plover Nests with Nest Moving**," within the limits set by the HCP. Nests will not be moved until at least 48 hours after the clutch is completed. Nests will not be moved during inclement weather, in extreme heat, or during evening hours. Nests will be moved gradually to reduce risk of abandonment. Nests will be moved using the cylinder/plate/platform method and visual landmarks are moved with the nest to serve as visual cues. If incubation is not resumed within 1.5 hours, the nest will be moved halfway back to the original nest location and monitored for signs of incubation.
- **"Recreation and Beach Operations Associated with Reduced Proactive Fencing of Habitat,"** under the maximum exemption's limits set by the HCP. The HCP allows exceptions whereby at up to five sites statewide annually may reduce proactive fencing of up to 20% of habitat or 4 acres, whichever is less (see HCP Section 5.2.2.3). This measure will minimize the risk of displacing a breeding pair from a given site or of significantly increasing competition from other pairs of piping plovers. In no event will the covered activity reduce symbolically fenced areas in all sites by more than 20% or four (4) acres,

whichever is less. The four-acre limit per site will also include any reductions to symbolic fencing associated with least terns. Additionally, the covered activity will be limited to a maximum of five piping plover territories or breeding pairs.

DCR will implement the covered activities in cases where the location or size of the symbolic fencing for piping plover nests compromises public safety or disrupts routine operations (e.g. inability to deploy lifeguard equipment), or where nesting location may negatively impact the local economy by cancelling organized traditional events (e.g. Sand Castle Festival on Revere), or if the available public recreational area within a portion of the site is deemed reduced to such an extent that it is significantly impairing recreational and associated economic activity. As authorized in the HCP, subject to appropriate impact minimization procedures, some areas of reduced fencing will be mechanically raked, an ongoing management practice at this site. As described in the HCP, in the event that a piping plover nests in an area without symbolic fencing, the nest will be immediately protected with symbolic fencing with a reduced buffer (see impact minimization, below).

DCR is also proposing reduced proactive symbolic fencing to impact up to 25 pairs of least terns or no more than 50% of the average colony size, whichever is less. This request enhances the scope and impact of covered activities on DCR Urban Coast sites for the recreational benefit and operational capacity of the site. Winthrop is the only Urban Coast site with least terns nesting consistently for the past five (5) years (Figure 8). As a practical matter, it may be difficult to accurately count the number of pairs impacted, therefore DCR will perform several counts over the nesting season.

11. IMPACT MINIMIZATION PROCEDURES

The implementation of the proposed minimization procedures is applicable for piping plovers and potentially for least terns at Nahant, Revere, and Winthrop unless otherwise noted.

Intensive Biological Monitoring for Piping Plovers: The entire site will be monitored intensively to ensure early detection of territorial and scraping activity, and symbolic fencing will be installed for all nests and territories as described in Section 8. For each instance where DCR identifies an area/territory to be subject to the covered activity, DFW will be notified at least 24 hours in advance of removing the fencing (see HCP, Table 4-7). The square footage of the area subject to reduced fencing will be recorded and reported to DFW. The Division has indicated that it reserves the right to "assess" a larger square footage impact in some cases based on considerations of changes in symbolic fencing requirements for a given territory over time resulting from changes in habitat use. Frequent monitoring of the entire site should preclude the possibility of a pair being first detected late in the nesting process (i.e. eggs laid). However, in the event that this circumstance occurs, that territory will not be a candidate for implementation of the covered activity and symbolic fencing will be installed. After removal of the fencing, the area will continue to be monitored intensively, at least twice daily for the first five days after fence removal, and at least 5-7 times per week thereafter; and information about the presence of piping plovers and their behavior will be recorded. This will include any observations of continued breeding or territoriality in the absence of fencing. In the event that courtship/territoriality is observed, twice daily monitoring will continue until such activity ceases. In the event that nesting occurs in the area of reduced fencing, fencing will immediately be installed (minimum 10-yard radius around the nest as per HCP section 3.2.2.1). Portions of beach subject to reduced fencing may be mechanically raked in accordance with the monitoring and impact minimization procedures described in Section 8.0.

In the event of hatched and roaming chicks throughout the site, Conservation Biologists will monitor the broods at least twice a day for the duration of their life or until fledging. Monitoring will consist of understanding the movements and preferred territories of the broods and the erection of additional fencing and signage if broods move into extensively recreated areas (e.g. healthy heart trail) and to inform the public of the presence of vulnerable chicks. NestStory will be used to log and track the exact position of roaming broods throughout the life of the brood. GPS points will be taken multiple times a day during monitoring and a seasonal brood movement map will be produced to highlight movements to and from areas important to brood development present at our monitoring sites. DCR Park Ops staff will work with Conservation Biologists to ensure that all OSV operations are conducted under the supervision of a qualified vehicle escort and any vehicle that is operated within 100 meters of an active brood will be monitored and escorted to ensure compliance with the Guidelines and to reduce potential disturbances.

Intensive Biological Monitoring for Least Terns: The entire site will be monitored intensively to ensure early detection of nesting activity. For each instance where DCR identifies an area/territory to be subject to a covered activity, DFW will be notified at least 24 hours in advance. Areas subject to covered activities will continue to be monitored intensively (at least twice daily for the first five days, and at least 5-7 times per week, thereafter), and information about the presence of least terns and their behavior will be recorded. In the event that nesting still occurs in an active covered activity area, fencing may be installed (minimum 5-yard radius around the nest). Portions of beach subject to reduced or non-installation of fencing may be raked in accordance with the procedures described in Section 8.0.

12. MONITORING/COMPLIANCE REQUIREMENT

NestStory will be used as DCR's primary data recording tool throughout the nesting season. This online data application allows DCR to standardize all monitoring protocols across sites as well as provides a means to record the staffing and monitoring effort at all sites. A monitor will log into NestStory to begin each monitoring day, record all required daily data including GPS locations of nests and broods, photo evidence of predation pressures, and behavioral observations of individuals and will then log out of NestStory to end their day. This framework allows DCR to determine the monitoring effort at each site as well as keep track of an individual monitors time at site. All data collected into NestStory will be downloaded, proofed for accuracy, and summarized to be submitted into PIPLODES and TERNODES.

DCR monitoring staff under the supervision of the Coastal Ecologist will expand their current scope of work to cover the permitted activities as required by the HCP. The scope includes necessary monitoring for shorebird presence, collection of environmental and weather data, protection and management practices, coordination with regulatory agencies, DCR project management staff and contractors, pre-season training for DCR staff and enforcement personnel, informal onsite public education and outreach to effectively communicate changes regarding visitor access restrictions.

The Urban Coast will have five (5) dedicated Conservation Biologists to monitor the sites of Nahant, Revere, and Winthrop for 8-12 hours a day for seven (7) days a week during the nesting season starting March 15th through August 30th, which provides flexibility to expand coverage for early nesting and/or late brooding. The two (2) seasonal DCR Rangers will be hired in early April and will have schedules to prioritize increased recreational hours to allow for the best opportunity for public interaction. The seasonal Rangers term will conclude in late August when recreation of the beach is reduced.

If implemented, any covered activities will be monitored daily for the following four (4)

weeks or for the duration of the season if necessary. All biological data collected and any other pertinent operations information will be included in the final report due by October 15th. When covered activities are in effect, DCR will report weekly to DFW. All documentation of seasonal activities will be recorded in the field on standardized datasheets and online data collection services (i.e. NestStory). Data collection will follow the standard protocol framework as described by the USFWS NWRS. This protocol prioritizes the streamlined collection of Site-level, Survey-level, and Nest-level attributes. These attributes include but are not limited to; Daily staffing and monitoring effort in hours, Number of adults present, Nest and brood locational data, estimated age of nest and brood, Nest and Brood Fates (Appendix B).

Emergency circumstances related to public health and safety may arise as observed with the Covid-19 pandemic. Details related to the monitoring and public outreach plan may be subject to change with advanced written approval from the Division to mitigate these public health and safety concerns. However, in all cases, both state and federal guidelines for managing recreation uses of beaches will be adhered to and implemented.

13. BUDGET

DCR will dedicate existing full-time professional staff to implement the covered activities. Based on the extensive monitoring provided in daily basis, the agency believes that additional staff salary allocation will not be required to implement this proposal. The funding provided for mitigation has been secured through the capital budget process and is available prior to the permitted activities. DCR will provide funding for a pest control program through a state license contractor to reduce the population of rats at the urban site of Nahant Beach. Additionally, as per the attached USDA Work Plan (Appendix C), DCR has allocated an annual maximum budget of $50,000 per year to invest on selective predator control programs statewide. The total estimated annual cost for selective predator control on preferred mitigation sites like Sandy Point State Reservation and West Island State Reservation is approximately $11,445 and $10,965 respectively. The total estimated cost of implementation of the HCP on DCR's urban beaches is approximately $37,653; including staff time and indirect cost (Table 4).

Table 4. Estimated Total Costs of HCP Implementation on DCR proposed mitigation sites

	Monitoring Implementation and Reporting Cost	Indirect, Fringe and Other Associated Cost	Total
Coastal Ecologist	$4,284.00	$2,276.00	$6,560.00
Conservation Biologists	$5,670.00	$3,013.00	$8,683.00
USDA-APHIS	$17,624.86	$4,785.14	$22,410.00
		Total Cost of Implementation	**$37,653.00**

14. MITIGATION PLAN

As set forth in the HCP, DCR is proposing mitigation be provided by funding a pest control program through a state license contractor to reduce the population of rats at the urban site of Nahant Beach. DCR will also fund a selective predator management program and implemented by USDA-APHIS at Sandy Point State Reservation and West Island State Reservation as a first option, or at other selected DCR sites as described in the attached USDA-APHIS work plan (Appendix C). The mentioned sites are ideal due the number of nesting pairs at West Island State Reservation with 12 pairs in 2020 (including 5 pairs from the Town of Falmouth), and Sandy Point State Reservation with 16 piping plover pairs in 2020, and a least tern colony of 100 pairs in 2020. Additionally, due to the geographic location of Sandy Point, DFW has agreed to provide DCR with mitigation credit for 25% of the nesting piping plover pairs at Parker River National Wildlife Refuge. The mitigation requirement for exposing thirteen (13) pairs of Piping Plover to the covered activities is 36.5 PIPL pairs to benefit from selective predator management. DCR will fund the cost of the pest control and selective predator management work plan, and to the extent possible any mitigation credits will be carried forward to subsequent years on a statewide DCR credit pool managed by DFW, and applicable to any HCP permits held by DCR.

15. APPENDIX SECTION

Appendix A

J O R G E J. AY UB

PROFFESIONAL OBJECTIVE

Advance the position of Coastal Ecologist for the Massachusetts Department of Conservation & Recreation, by utilizing my professional experience and extensive training on ecology, wildlife management, habitat restoration and natural resources protection

HIGHLIGHTS OF PROFESSIONAL SKILLS

- Advance knowledge and experience of wetlands and environmental permitting, biological monitoring, wildlife management, environmental interpretation and ecological habitat restoration
- Strong communication, interpersonal, management and leadership skills
- Detail-oriented and committed to quality
- Ability to learn quickly to improve and achieve goals
- Creative and capable of working in a fast-paced environment
- Environmental Justice Liaison
- Advance bilingual skills, English/Spanish

AREAS OF KNOWLEDGE

Ecology	Biology	Ornithology	Sustainability
Wetlands Science	Botany	Vegetation Sampling	Environmental Science
Earth Science	Soil Science	Plant taxonomy	Natural Resource Mgmt.
Monitoring	Ecological Restoration	Habitat Management	Environmental Justice
Land Use & Zoning	Habitat Assessment	Environmental Impacts	Public Outreach

EDUCATION

University of Massachusetts - UMass — Boston, Massachusetts
Graduate Degree Certificate Candidate — Pending Graduation
Sustainability & Clean Energy — GPA: 3.5/4.0

Johnson & Wales University - JWU — Providence, RI
M.B.A. Global Leadership — Degree, 05/2012
Professional Internship: Maritime Environmental Impacts — GPA: 3.8/4.0

National State University - UNED — San Jose, Costa Rica
B.Sc. Management of Natural Resources — Degree, 12/2004
Emphasis: Ecology — Cum Laude, GPA 8.5/10

OTHER EDUCATION

Latin-American University of Science and Technology - ULACIT — San Jose, Costa Rica
General Science & Biology Program — GPA 9.2/10

Columbus State University - CSU — Columbus, Georgia.
Core Courses & ESL Program — GPA: 3.5/4.0

WORK EXPERIENCE

April, 2012-Current: **Coastal Ecologist, Department of Conservation & Recreation, Massachusetts**

- Coordinates rare species protection and habitat restoration at state coastal properties
- Statewide Project Manager for coastal and wetland ecological restoration projects
- Prepares and review scientific reports, studies and analytical data on environmental impacts and processes including those associated with resource protection and baseline operations
- Review and summarize environmental data pertaining to biological research, habitat protection and wetland mitigation measures
- Actively representing DCR in ecological partnerships and task forces, related to protection of key habitats including wetlands, salt marshes, barrier beaches, and other ecological communities
- Writing grant proposals and applications associated with wildlife and resource protection
- Maintain ongoing liaison with staff from other state, federal, or non-governmental organizations
- Conducts ecological assessments including GIS data gathering, baseline inventories and monitoring
- Conducts ecological assessments for potential new land acquisition
- Assists in the preparation of scientific data for agency public hearings
- Assists in development and maintenance of tracking programs for environmental data
- Inspects and supervises contractors' filed work

Jan, 2012 – March, 2012: **Maritime Environmental Analyst, Executive Advisor, Professional Internship Moran Maritime Industries, Providence-RI**

- Prepared environmental impacts assessments on maritime ballast water systems (BWS)
- Analyzed project feasibility for joint ventures, strategies and future investments
- Developed communication strategies for collaborations with government agencies

2004 – 2008: **International Program Coordinator, Environmental Consultant Walking Connection, Phoenix, AZ**

- Coordinated international environmental programs for non-profit organizations
- Developed environmental interpretation programs at the Grand Canyon National Park
- Partnered with the Grand Canyon Institute on habitat assessments
- Trained & supervised 20+seasonal staff on biological interpretation
- Supervised, develop and implemented operational strategies
- Interacted with 8,000+ participants
- Helped raise over 10 million dollars

2002 – 2010: **Environmental Education & Conservation Professional Consultant/ Tour Director, EF –Cambridge, MA**

- Led environmental interpretation and conservation field programs for educational groups
- Created college graded workshops and classroom content for natural resources management courses
- Performed environmental presentations for New England schools with graded content

OTHER WORK EXPERIENCE

1999-2008 Naturalist Guide, C.R. Expeditions – Costa Rica
1997-1999 Research & Coordinator, Rain Forest Aerial Tram – Costa Rica

MEMBERSHIPS & COMMUNITY SERVICE

- Member of National Association of Environmental Professionals (NAEP)
- Member of Massachusetts Association of Conservation Commissions (MACC)
- Soccer coach for U10, U12 and U14 with Challenger Sports, Providence, RI
- Certified Wilderness First Aid and CPR, National Safety Council , USA

REFERENCES AVAILABLE UPON REQUEST

Appendix B

Last name, first name:

POSITION DESCRIPTION, DPA-Form 30-State
Commonwealth of Massachusetts

POSITION TITLE CODE

1. POSITION TITLE
Conservation Biologist I – Shorebird Monitor

AGENCY

2. APPROPRIATION/AGENCY CODE	POSITION NO.	REQUISITION NO.	SALARY	DATE PREPARED

3. GENERAL STATEMENT OF DUTIES AND RESPONSIBILITIES

Incumbents of positions in this series collect, analyze, and review biological data through field, and literature work on endangered and threatened species and other features of biological diversity; provide technical assistance and information to public and/or private groups; help the agency in maintaining liaison with various public and private agencies; and perform related work as required.

The basic purpose of this work is to provide professional scientific services regarding the biological monitoring and the protection and management of the state's endangered and threatened species of shorebirds and their habitats.

4. SUPERVISION RECEIVED (Name and title of person from whom incumbent receives direction)
Jorge J. Ayub, Coastal Ecologist

5A. DIRECT REPORTING STAFF	5B. THEIR STAFF

6. DETAILED STATEMENT OF DUTIES AND RESPONSIBILITIES

1. Analyzes data from a variety of sources on endangered and threatened species to assess population trends or to make management recommendations regarding courses of action for the protection and management of these species.
2. Collects and reviews biological data through field work to obtain information relative to population trends and environmental impacts in order to make appropriate recommendations.
3. Provides biological technical assistance and information on such matters as endangered and threatened species conservation, management and research to the agency, for distribution to various local, state and federal agencies and the scientific community.
4. Supports the agency in maintaining liaison with various private, local, state and federal agencies in order to exchange information or to resolve issues related to the biological protection of the state's endangered and threatened species of shorebirds and their habitats.
5. Performs related duties such as preparing general and technical reports and maintaining data and other scientific records.

Incumbents of positions at the Conservation Biologist I level or higher also:
1. Design and implement field research studies relative to endangered and threatened species, including the selection of sampling design, frequency of sampling, and scientific equipment to be used, among others to accomplish research objectives.
2. Review field studies and research projects for compliance with procedures and scientific standards.

7. QUALIFICATIONS REQUIRED AT HIRE (List knowledge, skills, abilities)

1. Knowledge of the principles of ecology and population biology.
2. Knowledge of a specific area of biology (i.e. ornithology) or other conservation science related to assigned responsibilities.
3. Knowledge of research methods and techniques followed in conservation biology.
4. Knowledge of the characteristics and habits of endangered and threatened species.
5. Knowledge of the principles and techniques of endangered and threatened species habitat management.
6. Knowledge of the types and uses of equipment used in conservation biology research and management.
7. Knowledge of the methods used in the preparation of charts, graphs and tables.
8. Ability to read, interpret, apply and explain the policies, procedures, guidelines, laws, rules and regulations governing agency operations and assigned unit activities.
9. Ability to gather information by examining records and documents.
10. Ability to assemble items of information according to established procedures.
11. Ability to determine the proper format and procedure for assembling items of information.
12. Ability to analyze and determine the applicability of conservation biology data, to draw conclusions and make appropriate recommendations.
13. Ability to follow oral and written instructions.

14. Ability to perform arithmetic and statistical computations (addition, subtraction, multiplication and division; and calculate mean, mode, median and standard deviation).
15. Ability to communicate effectively in oral and written expression.
16. Ability to prioritize work assignments.
17. Ability to prepare general and technical reports.
18. Ability to prepare and use charts, graphs and tables.
19. Ability to maintain accurate records.
20. Ability to deal tactfully with others.
21. Ability to establish and maintain professional and harmonious working relationships with others.
22. Ability to exercise sound judgment.
23. Ability to work independently.
24. Ability to operate a motor vehicle.

8. QUALIFICATIONS ACQUIRED ON JOB (List knowledge, skills, abilities)

1. Knowledge of the laws, rules, regulations, policies, and procedures governing assigned activities.
2. Knowledge of the types and uses of state or agency forms.
3. Knowledge of electronic data processing techniques used in solving environmental science problems.
4. Knowledge of the methods and techniques followed in the inspection of environmental, monitoring equipment and projects.

Additional qualifications acquired on job in Conservation Biologist I positions:
1. Ability to coordinate the efforts of others in accomplishing assigned work activities.

Based on assignment, the following additional qualification may be acquired on job in Conservation Biologist I positions:
1. Knowledge of the principles, practices and techniques of supervision.

Additional qualifications acquired on job in Conservation Biologist I and higher positions:
1. Ability to accomplish work objectives when few precedents or guidelines are available.

9. MINIMUM ENTRANCE REQUIRMENTS

Conservation Biologist I**:**
Applicants must have at least (A) one year of full- time, or equivalent part-time or seasonal, professional or technical experience in work involving the protection, conservation and/or management of endangered and protected species, or (B) any equivalent combination of the required experience and/or the substitution below.
Substitutions:

I. Bachelors or higher degree with a major in biology, ecology, zoology, ornithology and conservation science, or a related field, may be substituted for the required experience.*Education toward such a degree will be prorated on the basis of the proportion of the requirements actually completed.

10. LICENSE AND/OR CERTIFICATION REQUIRMENTS
Based on assignment, possession of a current and valid Massachusetts Class 3 Motor Vehicle Operator's License.

REMARKS:

SIGNATURE OF APPOINTING AUTHORITY

TITLE

AGENCY

PREPARED BY

SIGNATURE OF INCUMBENT

DATE

SIGNATURE OF SUPERVISOR

DATE

USFWS NWRS Data Collection Framework Protocol

Table SOP 2.1. List of site-level attributes to be entered into PIPLweb at the beginning of the season.

Attribute Name	Description	Required
Site Name	Name of site	Y
Site Code	3-7 letter code for each site Note that NWR sites use three-letter LIT code, with 2-4 letters added to each site if there is more than one site per Refuge	Y
Site Boundary	Shapefile or digitized map of site	Y (required for NWRS only)
Predator Management	Yes or No	N

Table SOP 2.3. List of survey-level attributes collected during each survey event.

Attribute Name	Description	Required
Site Name	Name of site	Y
Date	Date of survey	Y
Start time	Time monitor starts the survey	Y
End time	Time monitor ends the survey	Y
Number of monitors	Number of monitors conducting the survey	Y
Number adults	Total number of adults observed at the site during the survey	N
Number of territorial pairs	Number of pairs displaying territorial behavior plus number of pairs with current nests	N
Banded birds	Band combinations for each bird, if applicable. Note band information is only stored in PIPLweb for birds associated with established nests (Table SOP 2.4).	N
Comments	Can include comments on ORV use, dog presence, and human disturbance here or any other important observations from the survey	N

Table SOP 2.4. List of nest-level attributes collected during each survey event. Attributes in bold are only entered once on the data sheet at the top of Nest/Brood Survey Form (SM2).

Attribute Name	Description	Required
Site Name	**Name of site**	**Y**
Nest ID	**Identifier for nest; Pair # coupled with letter; A=first nest, B=second nest, etc. Ex. 01A**	**Y**
GPS coordinates	**x- and y-coordinates for nest location (or brood if nest never found). Can be taken in decimal degrees or UTM.**	**Y**
Coordinate system	**Name or EPSG code of the coordinate reference system used when recording GPS coordinates.**	**Y**
Estimated hatch date	**Estimated date nest hatched (observed or unobserved)**	**N**
Actual hatch date	**Enter Yes if nest hatch observed.**	**N**
Estimated age	**Estimated age of chicks if nest was never found**	**Y**
Brood fate	**Fledged, Lost, Unknown**	**Y**
Band combinations for adult(s) 1 and 2	**Band combinations for pair if applicable (see *Reporting Banded Birds*)**	**N**
Exclosure type	**Standard (defined as circular structure with a 10' diameter and netting top) or Non-standard**	**N**
Exclosure description	**Exclosure description if not standard**	**N**
Date	Date of nest check	Y
Observer	Observer initials	Y
Nest status	Active, Hatched, Abandoned, Depredated, Flooded/ Buried, Unknown Fate, Unknown Cause of Failure, Other Cause of Failure	Y
Number adults	Number of adults near or at the nest	Y
Number of eggs	Number of eggs (if observed; do not need to check every time)	Y
Number of chicks	Number of chicks observed; NA if unhatched	Y
Incubating adult observed	Yes or No	Y
Exclosure	Yes or No	Y
Comments	Comments especially on predator activity and evidence of nest/ brood loss	N

Nest Attempt Form DCR 2020 (RBN/RBS/WB/NHT)

Site:_____ **Town:**_____ **Pair Number**_____

Nest Attempt: 1st__ 2nd ___ 3rd ___ 4th ___ (known/suspected/unknown) Lat/Long: _____

Observer Name: _____

Dates

Nest 1st Located: _____ (known___ suspected___ unknown___)

1st Egg Laid: _____ (known___ suspected___ unknown___)

Clutch Completed: _____ (known___ suspected___ unknown___)

Estimated Hatch Date: _____

Banded Adults?

Adult 1: Bands? Y N if yes, enter band info _____

Adult 2: Bands? Y N if yes, enter band info _____

# of Eggs When Nest Found ____ Total # of Eggs ____

Nest Location Information

Nest Location: Oceanside ____ Interdune ____ Bayside ____ Marsh ____

Habitat Type: Open Beach ____ Toe of Dune ___ Dune Slope ____ Overwash ____ Other _____

Substrate Type: Sand ____ Gravel/Sand ____ Gravel ____ Shell/Sand ____ Other _____

Vegetation cover within 1.5m of nest: 0 1-8 9-20 21-72 Over 73 Other _____

Nest Measurements (in meters)

Monthly High Tide _____ Toe of Dune _____ Nearest Vegetation and Type

_____

Actual Hatch Date: _____ # of Eggs Hatched ____ # Unhatched____ # Lost Before Hatch ____

Chick Fledge and Loss

Example Loss Causes: missing/abandonment/depredated/human/vehicle/exposure

	Chick 1	Chick 2	Chick 3	Chick 4
Date of Fledge 25 days or flew 15m				
Date of Loss				
Cause of Loss				
Other comments about chicks				

Estimated Fledge Date _____ Total # of Fledged Chicks ____

Did a Least Tern Colony Form within 15m of Nest? Yes ____ No ____

Predator Occurrence within 10m of Nest (Tally):
Coyote: ____ Fox: ____ Raccoon: ____ Skunk: ____ Crow: ____ Gull: ____ Raptor: ____ Crab: ____ Cat: ____

Unleashed Dogs <50m of Nest? None ____ Light (<5/week) ____ Moderate (5-10/week) ____ Heavy (>10/week) ____

Active Use (Walk\Jogging) <50m of Nest? None ____ Light (<10/day) ____ Moderate (11-50/day) ____ Heavy (>50/day) ____

Passive Use (Sunbathing) <50m of Nest? None ____ Light (<10/day) ____ Moderate (11-50/day) ____ Heavy (>50/day) ____

OSV Use <50m of Nest? None ____ Light(<5 week) ____ Moderate (5-10/week) ____ Heavy (>10/week) ____

Nest Failed Form DCR 2020 (RBN/RBS/WB/NHT)

Site:_____ **Town:**_____ **Pair Number**_____

Nest Attempt: 1st____ 2nd____ 3rd____ 4th____

Discovered by: _____

Date Failed (give range if needed): ____/____/____ - ____/____/____ (known___ estimated___ unknown___)

Time Failed (give range if needed): ____:____ - ____:____ (known___ estimated___ unknown___)

Nest Loss:

Predation-likely
Predation-suspected
Abandonment
Abandonment-suspected
Unknown
Multiple causes
Mortality of both adults
Other:_____

Sanded over
Overwash/flood
Fail to hatch
Vandalism
Trampling
Run over
Substrate collapse

Number of Eggs Found: Abandoned____ Depredated____ Washed____ Buried____ Unhatched____ Missing____

Weather at Site When Nest Loss Found: Temperature_____ Cloud Cover %_____ Precip_____ Wind_____

Weather Over Past 24 Hours: Temperature_____ Cloud Cover %_____ Precip_____ Wind_____

Date/Time Eggs Last Physically Seen: ____/____/____ Time: ____:____

Name of Observer: _____
# of Eggs Seen: ____
Adults Present: _____

Seen with naked eye? Y N

If not, what was used? _____

Nest Logistics:

How long has bird been incubating full time? _____ days

Was double fencing used? Y N
Was triple lining used? Y N
Were predator tracks observed near nest at any point? Y N If yes, when? _____
Predator observed near nest? Y N

If yes, can you identify predator and activity? _____

Tracking Conditions (1= poor, 5=best) 1 2 3 4 5
Has there been a high tide/heavy rain event since nest last observed? Y N
Can vehicles drive near this nest? Y N

Other (please describe any pertinent information):

_____
_____
_____
_____

DCR Interaction Log

Date	Site	Initials	Number of People of Interaction	Positive/Negative/ Neutral	Dog (Y/N)	Enforcement	Duration	Notes

DCR Vehicle Escort Log

Date	Site	Initials of Escort	Driver	Destination	Start Time	End Time	Any Disturbances Caused	Notes

Appendix C

WS WID #s: **25067, 25068, 25069, 25072, 25092, 25093 25094, 25095, 25109, 25110, 25111**

WS Agreement #: 21-7225-5509-RA
WS Accounting Code: AP.RA.RX25.72.0274

COOPERATIVE SERVICE AGREEMENT BETWEEN MASSACHUSETTS DEPARTMENT OF CONSERVATION RECREATION (MA DCR) AND UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS) WILDLIFE SERVICES (WS)

ARTICLE 1 – PURPOSE

The purpose of this Cooperative Service Agreement is to conduct a wildlife damage management project that provides professional services to alleviate avian and mammal predation to nesting piping plovers and least and common terns on MA DCR's parks and reservations with nesting beaches in Massachusetts. This predator reduction will enable the MA DCR and adjacent nesting beaches to receive necessary operational support to efficiently and effectively reduce wildlife damage adversely impacting federally and state threatened and endangered bird species and their nesting activities on the property. Sites may include, but not be limited to Demarest Lloyd State Park, Horseneck Beach State Reservation, Sandy Point State Reservation, South Cape Beach State Park, Waquoit Bay National Estuarine Research Reserve: Washburn Island, West Island State Reservation, Revere Beach Reservation, Boston Harbor Islands: Lovell's Island, Salisbury State Reservation, Nahant State Beach, and Winthrop Shores State Reservation.

ARTICLE 2 – AUTHORITY

APHIS-WS has statutory authority under the Acts of March 2, 1931, 46 Stat. 1468-69, 7 U.S.C. §§ 8351-8352, as amended, and December 22, 1987, Public Law No. 100-202, § 101(k), 101 Stat. 1329-331, 7 U.S.C. § 8353, to cooperate with States, local jurisdictions, individuals, public and private agencies, organizations, and institutions while conducting a program of wildlife services involving mammal and bird species that are reservoirs for zoonotic diseases, or animal species that are injurious and/or a nuisance to, among other things, agriculture, horticulture, forestry, animal husbandry, wildlife, and human health and safety.

ARTICLE 3 - MUTUAL RESPONSIBILITIES

The cooperating parties mutually understand and agree that:

1. APHIS-WS shall perform services set forth in the Work Plan, which is attached hereto and made a part hereof. The parties may mutually agree in writing, at any time during the term of this agreement, to amend, modify, add or delete services from the Work Plan.

2. MA DCR certifies that APHIS-WS has advised MA DCR there may be private sector service providers available to provide wildlife damage management (WDM) services that the Cooperator is seeking from APHIS-WS.

3. There will be no equipment with a procurement price of $5,000 or more per unit purchased directly with funds from the cooperator for use on this project. All other equipment purchased for the program is and will remain the property of APHIS-WS.

4. The cooperating parties agree to coordinate with each other before responding to media requests on work associated with this project.

ARTICLE 4 - COOPERATOR RESPONSIBILITIES

MA DCR agree:

1. To designate the authorized representative who shall be responsible for collaboratively administering the activities conducted in this agreement.

   MA DCR: Jorge J. Ayub
   Coastal Ecologist
   251 Causeway Street, Suite 700
   Boston, MA 02114-2119

2. To authorize APHIS-WS to conduct direct control activities as defined in the Work Plan. APHIS-WS will be considered an invitee on the lands controlled by MA DCR. MA DCR will be required to exercise reasonable care to warn APHIS-WS as to dangerous conditions or activities in the project areas.

3. To reimburse APHIS-WS for costs, not to exceed the annually approved amount specified in the Financial Plan. If costs are projected to exceed the amount reflected in the Financial Plan, the agreement with amended Work Plan and Financial Plan shall be formally revised and signed by both parties before services resulting in additional costs are performed. MA DCR agree to pay all costs of services submitted via an invoice from APHIS-WS within 30 days of the date of the submitted invoice(s). Late payments are subject to interest, penalties, and administrative charges and costs as set forth under the Debt Collection Improvement Act of 1996.

4. To provide a Tax Identification Number or Social Security Number in compliance with the Debt Collection Improvement Act of 1996.

5. As a condition of this agreement, MA DCR ensure and certifies that it is not currently debarred or suspended and is free of delinquent Federal debt.

6. To notify APHIS-WS verbally or in writing as far in advance as practical of the date and time of any proposed meeting related to the program.

7. MA DCR acknowledge that APHIS-WS shall be responsible for administration of APHIS-WS activities and supervision of APHIS-WS personnel.

8. To obtain the appropriate permits for removal activities for species listed in the Work Plan and list USDA, APHIS, Wildlife Services as subpermittees.

9. MA DCR will not be connected to the USDA APHIS computer network.

ARTICLE 5 – APHIS-WS RESPONSIBILITIES

APHIS WS Agrees:

1. To designate the following as the APHIS-WS authorized representative who shall be responsible for collaboratively administering the activities conducted in this agreement.

   APHIS WS: Donald J. Wilda, Acting State Director
   USDA, APHIS, WS
   463 West Street
   Amherst, MA 01002
   Cell: (413) 345-8091
   Email: Donald.J.Wilda@usda.gov

2. To conduct activities at sites designated by Cooperator as described in the Work and Financial Plans. APHIS-WS will provide qualified personnel and other resources necessary to implement the approved WDM activities delineated in the Work Plan and Financial Plan of this agreement.

3. That the performance of wildlife damage management actions by APHIS-WS under this agreement is contingent upon a determination by APHIS-WS that such actions are in compliance with the National Environmental Policy Act, Endangered Species Act, and any other applicable federal statutes. APHIS-WS will not make a final decision to conduct requested wildlife damage management actions until it has made the determination of such compliance.

4. In accordance with the Work Plan sets forth the objectives, activities, and budget of this project, APHIS-WS will provide MA DCR with an Annual Summary Report by no later than September 30th of each year of the agreement.

5. MA DCR will choose preferred option for payment by checking the appropriate box:

[X] For APHIS-WS to invoice MA DCR **QUARTERLY** for actual costs incurred by APHIS-WS during the performance of services agreed upon and specified in the Work Plan. Authorized auditing representatives of MA DCR shall be accorded reasonable opportunity to inspect the accounts and records of APHIS-WS pertaining to such claims for reimbursement to the extent permitted by Federal law and regulations.

Or

[ ] To deposit $147,720.00 **UPFRONT** as specified in the Financial Plan upon execution of this Cooperative Service Agreement for services agreed upon and specified in the Work Plan. Authorized auditing representatives of MA DCR shall be accorded reasonable opportunity to inspect the accounts and records of APHIS-WS pertaining to such claims for reimbursement to the extent permitted by Federal law and regulations.

ARTICLE 6 – CONTINGENCY STATEMENT

This agreement is contingent upon the passage by Congress of an appropriation from which expenditures may be legally met and shall not obligate APHIS-WS upon failure of Congress to so appropriate. This agreement may also be reduced or terminated if Congress only provides APHIS-WS funds for a finite period under a Continuing Resolution.

ARTICLE 7 – NON-EXCLUSIVE SERVICE CLAUSE

Nothing in this agreement shall prevent APHIS-WS from entering into separate agreements with any other organization or individual for the purpose of providing wildlife damage management services exclusive of those provided for under this agreement.

ARTICLE 8 – CONGRESSIONAL RESTRICTIONS

Pursuant to Section 22, Title 41, United States Code, no member of or delegate to Congress shall be admitted to any share or part of this agreement or to any benefit to arise therefrom.

ARTICLE 9 – LAWS AND REGULATIONS

This agreement is not a procurement contract (31 U.S.C. 6303), nor is it considered a grant (31 U.S.C. 6304). In this agreement, APHIS-WS provides goods or services on a cost recovery basis to nonfederal recipients, in accordance with all applicable laws, regulations and policies.

ARTICLE 10 – LIABILITY

APHIS-WS assumes no liability for any actions or activities conducted under this agreement except to the extent that recourse or remedies are provided by Congress under the Federal Tort Claims Act (28 U.S.C. 1346(b), 2401(b), and 2671-2680).

ARTICLE 11 – NON-DISCRIMINATION CLAUSE

The United States Department of Agriculture prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. Not all prohibited bases apply to all programs.

ARTICLE 12 - DURATION, REVISIONS, EXTENSIONS, AND TERMINATIONS

This agreement shall become effective on March 20, 2021 and shall continue through September 30, 2023, not to exceed five years. This Cooperative Service Agreement may be amended by mutual agreement of the parties in writing. MA DCR must submit a written request to extend the end date at least 10 days prior to expiration of the agreement. Also, this agreement may be terminated at any time by mutual agreement of the parties in writing, or by one party provided that party notifies the other in writing at least 60 days prior to effecting such action. Further, in the event the Cooperator does not provide necessary funds, APHIS-WS is relieved of the obligation to provide services under this agreement.

In accordance with the Debt Collection Improvement Act of 1996, the Department of Treasury requires a **Taxpayer Identification Number** for individuals or businesses conducting business with the agency.

MA DCR' Tax ID No.: 04-6002287 APHIS-WS's Tax ID: 41-0696271

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION

Priscilla Geigis
Deputy Commissioner for Conservation and
Resource Stewardship
MA Department of Conservation and Recreation
251 Causeway Street, Suite 700
Boston, MA 02114-2119

3-16-21
Date

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
WILDLIFE SERVICES

DONALD WILDA
Digitally signed by DONALD WILDA
DN: c=US, o=U.S. Government, ou=Department of Agriculture, cn=DONALD WILDA, 0.9.2342.19200300.100.1.1=12001000204753
Date: 2021.03.17 15:48:08 -04'00'

Donald J. Wilda, Acting State Director MA,CT, RI
USDA, APHIS, Wildlife Services
463 West Street
Amherst, MA 01002

3-17-2021
Date

WILLIE HARRIS
Digitally signed by WILLIE HARRIS
Date: 2021.03.17 17:58:07 -04'00'

Willie Harris, Director, Eastern Region
USDA, APHIS, Wildlife Services
920 Main Campus Drive; Suite 200
Raleigh, NC 27606

3-17-2021
Date

ATTACHMENT A
WORK PLAN

Introduction

In accordance with the Cooperative Service Agreement between MA DCR and the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS), this Work Plan sets forth the objectives, activities and budget of this project during the period of this agreement March 20, 2021 to September 30, 2023.

Program Objective

To conduct a wildlife damage management projects that provide professional services to alleviate avian and mammalian predation to nesting piping plovers, least terns and other nesting sea and shorebirds on MA DCR parks and reservations. Locations of primary concern are Demarest Lloyd State Park, Horseneck Beach State Reservation, Sandy Point State Reservation, South Cape Beach State Park, Waquoit Bay National Estuarine Research Reserve: Washburn Island, and West Island State Reservation. Sites of secondary concern include, but are not limited to Revere Beach Reservation, Boston Harbor Islands: Lovell's Island, Salisbury State Reservation, Nahant State Beach, and Winthrop Shores State Reservation. This predator reduction will enable MA DCR and adjacent nesting beaches to receive necessary operational support to efficiently and effectively reduce wildlife damage adversely impacting federally threatened and state endangered bird species and their nesting activities on the designated nesting areas. WS will focus on, but not limit activities to, American crow, fish crow, common raven, great-horned owl, Eastern coyote, red fox, gray fox, striped skunk, raccoon, and Virginia opossum.

Plan of Action

WS program will provide wildlife damage management assistance to alleviate problems caused by avian and mammalian predators on MA DCR properties. The benefits expected from the WS program include WS expertise through evaluation and enhancement of existing damage management strategies; organizational support; and provision of additional predation management activities and equipment through operational assistance to the cooperator experiencing wildlife damage problems.

Conflict resolutions will be sought using an integrated approach. The determination of methods to alleviate damage will depend on considerations of selectivity, humaneness, human safety, effectiveness, practicability, and cost.

Damage Management Strategies: Operational work in authorized areas will be conducted using integrated nonlethal and lethal strategies as directed by and in close cooperation with MA DCR staff. WS program personnel will direct operational work toward specific depredating individual animals or local populations by selecting the time, location, technique and specific application of management methods or tools.

Damage Management Methods and Techniques: The basic operational methods incorporated under this project for managing avian and mammal predation will include and be limited to: (1) shooting with suppressed weapons and night-vision/infrared equipment, (2) shooting with shotguns and non-toxic shot, (3) placement and monitoring of live traps or lethal snap traps (4) using the avicide DRC-1339 COR in and around areas where depredation has

occurred by avian predators, and (5) using the rodenticide Diphacinone-50 in and around areas where depredation has occurred by rats or mice.

WS will assist MA DCR in applying for and maintaining any required state or federal permits for take of predators and WS will be listed as subpermittees. Any animals taken under this agreement will be disposed of at WS discretion based on requirements of applicable permits.

Depending on the circumstances at any given time, the use of a particular method may have advantages and disadvantages. Therefore, these methods will be used in various combinations and degrees of intensity depending on local conditions and history of specific damage situations or other circumstances.

The WS State Director or immediate next line supervisor located in Amherst, Massachusetts will provide WS project direction. One primary WS personnel will be assigned the responsibility for conducting the wildlife damage management work at each MA DCR facility where MA DCR has requested assistance with predator management. WS will deploy 1 to 2 Wildlife Technicians/Biologist for 1 to 2-day intervals to be determined collaboratively between MA DCR and WS prior to and during the nesting season (February to August) at sites determined to require predator management by MA DCR.

As previously stated, primary concern will be the 6 parks and reservations listed in the Program Objective above which have annual budgets outlined in the Financial Plan below. The organization and scheduling of assistance at a site of secondary concern or at a MA DCR site not discussed in this agreement will only occur at the request of MA DCR. Planning of activities at these sites will be conducted cooperatively between WS and MA DCR. Since no funding for additional sites is outlined in this agreement, funds will come from funding intended for the 6 primary sites and may result in a reduction of control activity at these sites.

On a not-to-exceed basis, the 3-year budget for this agreement is $149,295.00. This is $49,765.00 annually for an estimated 7 to 14 visits at Demarest Lloyd State Park, Horseneck Beach State Reservation, Sandy Point State Reservation, West Island State Reservation, and South Cape Beach State Park, Waquoit Bay National Estuarine Research Reserve: Washburn Island. However, more or fewer visits may be conducted based on the needs to manage predators and available funding.

The actual number of visits will be determined by which sites MA DCR requests WS work at, as well as the species being targeted, the kind of control methods requested, the number of staff required, and number of visits requested. MA DCR agrees to reimburse the WS Massachusetts program the total cost of this project. If the actual cost will exceed $49,765.00 annually and/or $149,295.00 over 3 years, then a signed modified agreement may be required by both parties.

Effective Dates

The cooperative agreement shall become effective on March 20, 2021 and shall expire on September 30, 2023.

FINANCIAL PLANS

Annual Financial Plan Demarest Lloyd State Park and Horseneck Beach State Reservation

Cost Element		Full Cost
Personnel Compensation		$6,220.41
Vehicles		$1,345.34
Other Services		$107.28
Supplies and Materials		$574.92
Equipment		$336.40
Subtotal (Direct Charges)		$8,584.35
Pooled Job Costs [for non-Over-the Counter projects]	11.00%	$944.28
Indirect Costs	16.15%	$1,386.37
Annual Project Total		$10,915.00

Annual Financial Plan Sandy Point State Reservation

Cost Element		Full Cost
Personnel Compensation		$6,594.79
Vehicles		$1,406.16
Other Services		$107.28
Supplies and Materials		$556.55
Equipment		$336.40
Subtotal (Direct Charges)		$9,001.18
Pooled Job Costs [for non-Over-the Counter projects]	11.00%	$990.13
Indirect Costs	16.15%	$1,453.69
Annual Project Total		$11,445.00

Annual Financial Plan South Cape Beach State Park and Waquoit Bay National Estuarine Research Reserve: Washburn Island

Cost Element		Full Cost
Personnel Compensation		$9,953.17
Vehicles		$1,910.41
Other Services		$125.16
Supplies and Materials		$580.29
Equipment		$360.58
Subtotal (Direct Charges)		$12,929.61
Pooled Job Costs [for non-Over-the Counter projects]	11.00%	$1,422.26
Indirect Costs	16.15%	$2,088.13
Annual Project Total		$16,440.00

Annual Financial Plan West Island State Reservation

Cost Element		Full Cost
Personnel Compensation		$6,527.68
Vehicles		$1,005.48
Other Services		$107.28
Supplies and Materials		$621.24
Equipment		$362.00
Subtotal (Direct Charges)		$8,623.68
Pooled Job Costs	11.00%	$948.60
Indirect Costs	16.15%	$1,392.72
Annual Project Total		$10,965.00

Annual Financial Plan MA DCR T&E Predator Management

Cost Element		Full Cost
Personnel Compensation		$29,296.05
Vehicles		$5,667.39
Other Services		$447.00
Supplies and Materials		$2,333.00
Equipment		$1,395.38
Subtotal (Direct Charges)		$39,138.82
Pooled Job Costs	11.00%	$4,305.27
Indirect Costs	16.15%	$6,320.91
Aviation Flat Rate Collection		$0.00
Annual Agreement Total		$49,765.00
The annual distribution of the budget from this Financial Plan may vary as necessary to accomplish the purpose of this agreement, but may not exceed: **$49,765.00**		

3-Year Financial Plan MA DCR T&E Predator Management

Cost Element		Full Cost
Personnel Compensation		$87,888.15
Vehicles		$17,002.17
Other Services		$1,341.00
Supplies and Materials		$6,999.00
Equipment		$4,186.14
Subtotal (Direct Charges)		$117,416.46
Pooled Job Costs	11.00%	$12,915.81
Indirect Costs	16.15%	$18,962.73
Aviation Flat Rate Collection		$0.00
Agreement Total		$149,295.00
The total distribution of the budget from this Financial Plan may vary as necessary to accomplish the purpose of this agreement but may not exceed: **$149,295.00**		

Financial Point of Contact

MA DCR:

Jorge J. Ayub, Coastal Ecologist
Department of Conservation and Recreation
Phone: (617) 626-1434
Cell: (857) 214-0207
Email: jorge.ayub@state.ma.us

APHIS, WS:

Dawn Wanczyk, Budget Analyst
USDA, APHIS, Wildlife Services
463 West Street
Amherst, MA 01002
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