

Massachusetts Habitat Conservation Plan for Piping Plover

2021 Annual Report



Bill Byrne/MassWildlife



MASSWILDLIFE

February 15, 2022

Massachusetts Habitat Conservation Plan for Piping Plover

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Table of Contents

I. Executive Summary.....1

II. Annual Report Requirements.....2

Appendices

- A. MassWildlife FY 2022 and FY 2023 Director's and CFO's Funding Letter
- B. Administrative amendment

I. Executive Summary

On July 8, 2016, the United States Fish and Wildlife Service (USFWS) issued a 25-year Incidental Take Permit (ITP) to the Massachusetts Division of Fisheries and Wildlife (MassWildlife) in accordance with Section 10(a) (1) (B) of the Endangered Species Act of 1973 (ESA), as amended, 16 U.S.C. 1539 (a) (1) (B). Pursuant to the ITP, MassWildlife is responsible for administering the Massachusetts Statewide Habitat Conservation Plan (HCP). The HCP identifies covered activities that are authorized by the ITP that could expose Piping Plovers (*Charadrius melodus*) to “take.” Incidental Take coverage can be extended by MassWildlife to approved landowners and beach managers through Certificates of Inclusion (COIs).

During the 2021 beach season, eight beach operators held valid COIs encompassing 10 permit-sites. Covered activities were carried out at five beaches: Duxbury Beach Reservation, Duxbury; East/Leland Beach, Edgartown; Plymouth Long Beach, Plymouth; Nahant Beach State Reservation, Nahant; and Sandy Neck Beach Park, Barnstable. Statewide, 14 pairs of Piping Plovers were exposed to covered activities: 10 broods to the operation of a road or parking lot, two broods to recreational oversand vehicle (OSV) use or unescorted essential vehicle use, and two pairs to reduced proactive symbolic fencing. No pairs were exposed to multiple activities. Intensive impact avoidance and minimization measures were implemented by COI-holders. Required HCP compliance and effectiveness monitoring were carried out by both MassWildlife and COI-holders.

The 14 pairs exposed to covered activities had excellent productivity, fledging 28 chicks (2.0 chicks per pair). Of the 10 broods exposed to use of roads and parking lots, all fledged at least one chick for a total of 23 fledglings. Only one chick fledged of the eight chicks from two broods that were exposed to OSV use. The two pairs subject to reduced proactive symbolic fencing each fledged two chicks (four total).

Participation in the HCP expanded recreational opportunities at all five beaches where covered activities were implemented.

- **Plymouth Long Beach, Plymouth.** The Town of Plymouth allowed recreational vehicle access to a road and parking areas for 56 days when it might otherwise have been limited by the presence of unfledged plover chicks (41 days) or tern chicks (34 days, 19 of which overlapped with plover implementation).

Massachusetts Habitat Conservation Plan for Piping Plover

- **Duxbury Beach, Duxbury.** The Duxbury Beach Reservation operated roads and parking lots contributing to 39 days of recreational activity on Duxbury Beach.
- **Nahant Beach, Nahant.** The Department of Conservation and Recreation (DCR) allowed full access to non-motorized recreational vehicles along a paved trail for the entire season.
- **East/Leland Beach, Edgartown.** The Trustees of Reservations conducted 38 vehicle-based tours on the beach during a period spanning 17 days when access would have otherwise been restricted.
- **Sandy Neck Beach Park, Barnstable.** The OSV beach remained open for 42 days when there likely would have been a full beach closure absent implementation.

On-site mitigation consisted of selective predator management designed to increase productivity and more than offset any harm resulting from exposure to the covered activities. No off-site mitigation occurred in 2021. In all, 116.5 breeding pairs of Piping Plovers benefited from selective predator management under the HCP, substantially more than the minimum benefit of 40 pairs required pursuant to the HCP. This report documents compliance with the HCP and provides information about other state-listed species, Least Terns and Diamond-backed Terrapins, exposed to potential take by the covered activities

II. Annual Report Requirements

This annual report summarizes HCP implementation activities during 2020 and has been prepared by MassWildlife in accordance with the requirements of the HCP.

The goals of the annual report are as follows:

- To provide the information and data necessary for MassWildlife to demonstrate to the USFWS and the public that the HCP is being implemented properly.
- To disclose any problems with HCP implementation and the corrective measures planned or implemented to address the problems.
- To identify administrative or minor changes to HCP components required to increase the success of conservation actions.
- To identify the results and/or need for adaptive management and changed circumstances, and whether any HCP or ITP changes may be subsequently proposed as a result pursuant to Chapter 3.3.3. of the HCP.

A bulleted list of the required contents of the annual report is provided on pages 5-9 of the HCP. To facilitate review by the USFWS and the public, the remainder of this report systematically addresses each item on the list. Supporting documentation and data are included in the Appendices, which are available upon request.

II.1 Description of all covered activities implemented during the reporting period by activity type and location.

Fourteen pairs of Piping Plovers were exposed to three activities covered under the HCP. **Tables 1a, 1b, and 1c** provide details of permits and implementation at each site, including duration of covered activities and productivity of exposed pairs.

1. *Use of Roads and Parking Lots in Vicinity of Unfledged Chicks.* Ten broods were exposed.
 - a. **Duxbury Beach, Duxbury.** Six broods crossed between the beachfront and bayside and were exposed to recreational traffic on Gurnet Rd. (Additional broods crossed but were exposed to essential vehicle traffic only.) One of these broods was herded and another was exposed to barriers. Thirteen chicks were exposed to recreational traffic; 12 of those fledged, and one was depredated by a gull.
 - b. **Plymouth Long Beach, Plymouth.** Three broods crossed or were in the vicinity of Ryder Way and parking lots. Two of these broods were exposed to barriers. Eight of 11 exposed chicks fledged.
 - c. **Nahant Beach, Nahant.** One brood hatched and was exposed to non-motorized recreational vehicles (primarily bicycles) on the Healthy Heart Trail, which bisects nesting habitat. Two chicks hatched and were exposed; both fledged.
2. *Oversand Vehicle Use in Vicinity of Unfledged Chicks.* Two broods were exposed.

Massachusetts Habitat Conservation Plan for Piping Plover

- a. **East/Leland Beach, Edgartown.** Two broods (eight chicks) were exposed to tour vehicles; only one chick fledged. Plausible reasons for chick loss included poor weather and predation.
3. *Recreation and Beach Operations.* Two pairs/broods were exposed.
 - a. *Reduced Proactive Fencing of Habitat.* Two pairs/broods were exposed.
 - i. **Sandy Neck Beach Park, Barnstable.** In all, 1.55 ac of nesting habitat were impacted. Fencing was initially moved toward the base of dune over 0.86 miles in the Recreation Zone (RZ), but in early April, a portion of it (0.46 miles) was expanded back to the dimensions recommended in the Guidelines because the number of pairs in the area exceeded allowable take exposures. Beach raking (36 times) and 416 linear ft (1,664 ft²) of coverboards were used to deter two pairs from a portion of the RZ.
 - b. *Reduced Fencing Around the Nest.* Not implemented.
 - c. *Nest Moving.* Not implemented.

Table 1a. Covered activities permitted and implemented (gray shading) in 2021.

Location	Covered Activities			Specific Permissions					
	Roads & Parking Lots	Rec. & Bch. Ops.	Oversand Vehicle Use	Reduced Proactive Symbolic Fencing	Reduced Symbolic Fencing Around Nests	Nest Moving	Barriers	Chick herding	Deterrents (incl. raking)
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	X	X		X	X	X	X	X	X
Plymouth Long Beach, Plymouth	X		X				X		
Horseneck Beach State Reservation, Westport (DCR)	X	X		X	X		X		X
Revere Beach State Reservation, Revere; Winthrop Shore Reservation, Winthrop; Nahant Beach State Reservation, Nahant (DCR)	X	X		X	X	X	X		X
Sandy Neck Beach Park, Barnstable		X	X	X					X
North (Nauset) Beach, Chatham		X	X	X	X				
West Dennis Beach, Dennis	X								
Cape Poge Wildlife Refuge, Leland Beach, Wasque Point, & Norton Point, Edgartown (TTOR)		X	X	X	X				
Coskata-Coatue, Nantucket (TTOR)		X	X	X	X				
Nauset Beach, Orleans		X	X		X	X			

Massachusetts Habitat Conservation Plan for Piping Plover

Table 1b. Take exposures permitted and implemented, productivity, and habitat affected in 2021.

Location	Description of Covered Activity Implementation	# Permitted Take Exposures	# Take Exposures Used	% of Total Pairs Exposed	Productivity of Exposed Pairs (fledglings/pair)	Productivity of Unexposed Pairs (fledglings/pair)	Overall Site Productivity (fledglings/pair)	Nesting Habitat Affected (acres)
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	Temporarily stopped traffic along roadway to facilitate crossing events for broods; occasional use of herding and barriers. Six broods exposed.	12	6	19.4	2.17	1.32	1.48	0.1
Plymouth Long Beach, Plymouth	Ryder Way and parking areas open to non-essential vehicle travel and unescorted essential vehicle travel during daylight hours. Three broods exposed.	5	3	7.89	2.67	1.4	1.5	1.84
Horseneck Beach State Reservation, Westport (DCR)	None (Least Tern only)	4	0	0	n/a	n/a	0.79	0
Revere Beach State Reservation, Revere; Winthrop Shore Reservation, Winthrop; Nahant Beach State Reservation, Nahant (DCR)	Unrestricted passage of recreational bicycles on the 1.2 mi.-long multi-use beach path located along entire beach at Nahant Res. One brood exposed.	13	1	3.4	2	0.75	0.5	0.22
Sandy Neck Beach Park, Barnstable	To deter nesting in the OSV Recreation Zone, proactive symbolic fencing was reduced, beach raking was conducted and coverboards were used. Two pairs exposed.	2	2	5.2	2	1.9	1.9	1.55
North (Nauset) Beach, Chatham	None	2	0	0	n/a	n/a	0.56	0
West Dennis Beach, Dennis	None	2	0	0	n/a	n/a	2.12	0
Cape Poge Wildlife Refuge, Leland Beach, Wasque Point, & Norton Point, Edgartown (TTOR)	Passage of tour vehicles (38 tours) occurred after chick hatching. Two broods exposed.	2	2	8	0.5	0.22	0.24	0
Coskata-Coatue, Nantucket (TTOR)	None	1	0	0	n/a	n/a	0.8	0
Nauset Beach, Orleans	None	2	0	0	n/a	n/a	1.37	0

Massachusetts Habitat Conservation Plan for Piping Plover

Table 1c. Details of take exposures in 2021.

Location	Description of Covered Activity Implementation	Pair Identifier	# Chicks Exposed	# Fledged from Exposed Pairs	Start of Implementation	End of Implementation	# Days Pair/Brood Exposed to Covered Activity	Age of Chicks When First Exposed (days)
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	"Roads & parking lots" with barriers	04A	4	1	6/5/2021	7/3/2021	29	3
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	"Roads & parking lots" with herding	06B	1	3	8/6/2021	8/9/2021	4	37
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	"Roads & parking lots"	07A	4	3	6/5/2021	6/11/2021	6	2
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	"Roads & parking lots" with herding	11A	2	2	6/14/2021	7/8/2021	25	5
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	"Roads & parking lots"	12B	1	3	8/7/2021	8/9/2021	3	30
Duxbury Beach, Duxbury (Duxbury Beach Reservation)	"Roads & parking lots"	19B	1	1	8/3/2021	8/4/2021	2	28
Plymouth Long Beach, Plymouth	"Roads & parking lots"	15A	4	3	6/1/2021	7/2/2021	32	0
Plymouth Long Beach, Plymouth	"Roads & parking lots"	7A	4	2	6/3/2021	7/3/2021	31	0
Plymouth Long Beach, Plymouth	"Roads & parking lots"	8A	3	3	6/8/2021	7/11/2021	34	0
Revere Beach State Reservation, Revere; Winthrop Shore Reservation, Winthrop; Nahant Beach State Reservation, Nahant (DCR)	"Roads & parking lots"	1A	2	2	6/1/2021	7/5/2021	35	0
Sandy Neck Beach Park, Barnstable	"Recreation & beach ops" - reduced proactive symbolic fencing, beach raking, coverboards	20	0	2	4/1/2021	5/17/2021	42	N/A
Sandy Neck Beach Park, Barnstable	"Recreation & beach ops" - reduced proactive symbolic fencing, beach raking, coverboards	25	0	2	4/1/2021	5/17/2021	46	N/A
Cape Poge Wildlife Refuge, Leland Beach, Wasque Point, & Norton Point, Edgartown (TTOR)	"OSV use"	2A	4	1	6/5/2021	6/24/2021	17	0
Cape Poge Wildlife Refuge, Leland Beach, Wasque Point, & Norton Point, Edgartown (TTOR)	"OSV use"	13A	4	0	6/23/2021	6/24/2021	1	0

II.2 Summary of annual take exposure.

The total allowable take exposure for a given year is based on a three-year rolling average of the statewide Piping Plover breeding population (**HCP Table 3-1**). The average breeding population size for 2018-2020 was 741.8 breeding pairs, based on Adjusted Total Count, resulting in an allowable exposure to covered activities of 7%, or a maximum of 51 territories, pairs, nests, and/or broods that could be exposed to covered activities statewide (**Table 2**). During 2021, 14 territories/pairs/nests/broods were exposed to covered activities, and exposure at each site was <15% of the breeding population size at that site, with the exception of Duxbury Beach (**Table 1**).

Under a formal Section 7 consultation in 2010 with the Cape Cod National Seashore (CACO), the USFWS issued an incidental take statement for the exposure to take of up to three pairs of Piping Plovers to flexible management. Flexible management was not implemented in 2021, resulting in no additional

Massachusetts Habitat Conservation Plan for Piping Plover

Massachusetts take exposures (S. von Oettingen, personal communication, 2022). The USFWS completed a second formal consultation with the CACO in 2021 for additional flexible management actions and locations at which the management could be implemented. Annually, up to five Piping Plover pairs may be exposed to take beginning in 2022. Although take exposure for recreational activities on federal properties is not associated with the Massachusetts Piping Plover HCP, MassWildlife is required to subtract these authorizations from the total allowable statewide take exposure available to HCP participants in a given year.

Table 2. Massachusetts Piping Plover Breeding Population, 2018-2020, and Actual and Allowable Take Exposure for 2021 under the Massachusetts Piping Plover HCP.

	YEAR		
	2018	2019	2020
MA Breeding Pairs (Adjusted Total Count)	688	743	794.5
Three-year average (2018 – 2020):	741.8		
Maximum Allowable 2021 Exposure (7%):	51 territories/pairs/nests/broods		
Actual 2021 Exposure:	14 territories/pairs/nests/broods		

II.3 Summary of the annual mitigation implemented, and any mitigation credits or deficits outstanding from previous years.

Offsite mitigation. MassWildlife did not fund any offsite mitigation projects during the 2021 season. The former practice of using mitigation funding from a current year to fund offsite mitigation in the same year proved challenging to implement in a timely fashion. 2021 was a “year off” to reset the schedule. Beginning in 2022, MassWildlife will use mitigation funding from previous years to fund the current year, which will allow for more timely implementation.

Onsite/internal mitigation. Three COI-holders used their own resources to offset take exposures at five sites. In all cases, USDA APHIS Wildlife Services carried out selective predator management in accordance with plans approved by the New England Field Office of the USFWS for the purpose of HCP mitigation. This work was not cost-shared with MassWildlife.

1. **Department of Conservation and Recreation.** Work onsite at Horseneck Beach, Demarest Lloyd, Dartmouth, and Sandy Point, Ipswich (with effects extending to Parker River NWR) benefitted 47.5 pairs of plovers.
2. **Duxbury Beach Reservation.** Work onsite at Duxbury Beach benefitted 31 pairs of plovers.
3. **Town of Plymouth.** Work onsite at Plymouth Long Beach benefitted 38 pairs of plovers.

The COI-holders implemented more than enough selective predator management to meet 2021 mitigation requirements. Therefore, there is a mitigation credit that carries forward (**Table 3**). At the mitigation ratios of 2.5:1 (OSV Use and Reduced Fencing) and 3:1 (Roads and Parking Lots), selective predator management was required to benefit 40 pairs in order to mitigate for exposures that occurred during 2021. In fact, selective predator management benefitted 116.5 pairs (all by COI-holders

Massachusetts Habitat Conservation Plan for Piping Plover

implementing on-site/internal mitigation). Including unexpired credits carried forward from previous years (2018 – 2020), at the end of 2021 there were 98 credits statewide and an additional 152.5 credits allocated to individual sites (*i.e.*, because the COI-holder directly funded mitigation activities). However, statewide credits from 2018 expired after 2021, reducing the number of statewide credits that will carry into 2022 to 81. Some individual site credits expired after 2021, reducing the number carrying into 2022 to 141.5.

Tables 3 a-c provide additional detail on mitigation requirements, deficits, and credits.

Table 3a. Predator management mitigation requirements and credits for COI-holders under the Massachusetts Piping Plover HCP in 2021.

2021 COI Site	No. Authorized Exposures	No. Actual Exposures in 2021	Selective Predator Management Mitigation Required	Site Credits Gained in 2021 ^a	2021 Annual Site Credit Balance ^{ab}	Total Site Credit Balance at End of 2021 ^{ac}	Non-expired Credits Carrying Forward to 2022 ^a	Year Credits Will Expire ^d
Barnstable	2	2	5	5	0	0	0	2023
Chatham	2	0	0	0	0	5	5	2023
Dennis	2	0	0	0	0	6	6	2023
Duxbury	12	6	18	31	13	3	3	2024
Edgartown	2	2	5	0	-5	10	10	2023
Nantucket	1	0	0	Same as Edgartown	Same as Edgartown	Same as Edgartown	Same as Edgartown	2023
Horseneck	4	0	0	47.5	44.5	69.5	57	2024
Revere/ Winthrop/ Nahant	13	1	3	Same as Horseneck	Same as Horseneck	Same as Horseneck	Same as Horseneck	2023
Orleans	2	0	0	5	5	5	5	2022
Plymouth	5	3	9	38	29	54	54	2023
TOTAL	45	14	40	126.5	86.5	152.5	140	

^a From selective predator management or escrow/mitigation fund only

^b Annual site credit balance includes site credits and take exposures from the current season only; it does not include credits or deficits from previous years

^c Total site credit balance includes site credits or deficits from previous years in addition to the current season

^d Credits from a previous permit term expire in the first year of a subsequent, consecutive term.

Massachusetts Habitat Conservation Plan for Piping Plover

Table 3b. Predator management mitigation programs and credits under the Massachusetts Piping Plover HCP in 2021.

2021 Mitigation site	Total cost	HCP cost (applicant)	HCP cost (DFW)	HCP cost share (applicant)	Actual pairs benefiting	Site credits gained (selective pred. mgmt. only)	Site credits gained (escrow)	State credits gained (selective pred. mgmt. only)	Site credits used	Location(s) of credit use
Plymouth	\$ 12,625.00	\$ 12,625.00	\$0	100%	38	38	n/a	0	9	Plymouth
Duxbury	\$ 13,183.80	\$ 13,183.80	\$0	100%	31	31	n/a	0	18	Duxbury
Horseneck	\$ 20,268.44	\$ 20,268.44	\$0	100%	47.5	47.5	n/a	0	3	Revere, Winthrop, Nahant
<i>Subtotal, mitigation sites</i>	\$ 46,077.24	\$ 46,077.24	<i>n/a</i>		116.5	116.5	0	0	30	-
<i>Subtotal, DFW & escrow sites</i>	<i>n/a</i>	<i>n/a</i>	\$0		0	0	10	-10	5	Barnstable
TOTAL	\$ 46,077.24	\$ 46,077.24	\$0		116.5	116.5	10	-10	35	

Table 3c. Statewide predator management net mitigation credits under the Massachusetts Piping Plover HCP in 2021.

2021 Credit Type	Credits at End of 2020	Credits Gained 2021	Credits Used 2021	Net Credits at End of 2021	Credits Expiring 2021	Credits Carrying Forward to 2022
Credits Allocated to Individual Sites (includes escrow credits)	66 ^a	126.5	40	152.5	12.5	140
Credits Available Statewide	108.327	-10	0	98.327	16.873	81.454
TOTAL NET CREDITS	174.327	116.5	40	250.827	29.373	221.454

^a updates error in 2020 report

II.4 Summary of exceptions to the restrictions on the number or territories/nests/broods affected (15% vs. 75%) and habitat impacts (2 acres/10% vs. 4 acres/20%) employed for the covered activities (as provided for in the Plan).

- *Restriction on the number of territories/pairs/nests/broods affected (15% vs. 75%)*
 - **Number of exceptions.** One.
 - **Site:** Duxbury Beach.
 - **Covered activity.** Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks.

Massachusetts Habitat Conservation Plan for Piping Plover

- **Description.** The COI allowed for exposure of up to 12 broods, although ultimately only six broods crossed the road in areas subject to recreational traffic. Percent of broods affected – 19% (6 of 31).
- *Restriction on habitat impacts (2 ac/10% vs. 4 ac/20%) – None.*

II.5 Year-to-date cumulative summary (*i.e.*, from the start of the permit term) of temporary impacts to Piping Plover habitat resulting from covered activities.

- **2016.** Covered activities were confined to existing roads, parking lots, and OSV corridors, and, therefore, did not result in any additional impacts to habitat.
- **2017.** Covered activities included reduced proactive fencing and beach raking at two sites, resulting in temporary impacts to 0.6 acres of Piping Plover habitat at **Winthrop Shore** and 1.2 acres at **Sandy Neck Beach Park**.
- **2018.** Covered activities impacted potential habitat at **Sandy Neck Beach Park** (1.2 acres), **Revere Beach** (0.96 acres), **Winthrop Shore** (0.44 acres affecting Least Terns but not plovers), and **Horseneck Beach** (9.5 acres).
- **2019.** At **Sandy Neck Beach Park**, 1.2 acres of habitat were subject to reduced proactive symbolic fencing, including use of beach raking and coverboards, in order to maintain a groomed “Recreation Zone” for OSV use. Approximately 0.6 acres of habitat at **Revere Beach** were subject to reduced proactive symbolic fencing and beach raking in front of the Shirley Ave bathhouse, where one pair of Piping Plovers attempted to nest. At **Horseneck Beach**, one pair of plovers was deterred by raking a 0.3-acre area near a major access point. Additional raking on the main beach affected 5.7 acres of least tern habitat.
- **2020.** At **Sandy Neck Beach Park**, 3.12 acres of habitat were subject to reduced proactive symbolic fencing, including use of beach raking and coverboards, in an attempt to deter two pairs of plovers and maintain a groomed “Recreation Zone” for OSV use. At **Horseneck Beach**, one pair of plovers was deterred by hand-raking a 0.3-acre area near a major access point. At **Duxbury Beach**, 1.5 acres in a gravel parking lot were subject to reduced proactive symbolic fencing, including use of tarps, hand raking, and erecting posts with flagging, in an attempt to deter one pair of plovers.
- **2021.** At **Sandy Neck Beach Park**, 1.55 acres of habitat were subject to beach raking and coverboards to deter two pairs of plovers and maintain a “Recreation Zone” for OSV use.

II.6 Year-to-date and cumulative (i.e., from the start of the permit term) quantification of exposure to incidental take of Piping Plover individuals for the purpose of demonstrating compliance with the authorized level of take on the ITP.

Table 4. Cumulative Quantification of Piping Plover Take Exposure under the Massachusetts Piping Plover HCP, 2016 – 2021.

Year	# Of Broods/Nests/Territories Exposed	Total Statewide Allowable Take Exposures	% Of Statewide Allowable Exposure
2016	3	47	6.4%
2017	5	46	10.9%
2018	19	46	38.8%
2019	19	46	38.8%
2020	22	48	45.8%
2021	14	51	27.5%

II.7 Description of all experimental vegetation management actions implemented during the reporting period including a year-to-date and cumulative summary of the extent and location of land cover types enhanced through vegetation management.

To date, two experimental habitat management projects have been implemented, both in 2017.

1. **Duxbury Beach.** Vegetation in five experimental plots was scraped or buried, creating and maintaining five areas of potential nesting habitat totaling approximately 0.77 acres. Two pairs nested in the replicated habitats in both 2017 and 2018. Duxbury Beach maintained these sites by burying vegetation in February 2019, and three pairs subsequently nested within the experimental plots. In 2020, two pairs nested and each fledged three chicks. In 2021, one pair nested and fledged one chick.
2. **Winthrop Shore Reservation.** Cobble was removed from the southern portion of the shorebird nesting area, where two pairs of Piping Plovers and 20-25 pairs of Least Terns nested in 2017. Plovers and terns continued to nest in this area in 2018, 2019, 2020, and 2021.

II.8 Assessment of the efficacy of vegetation management actions in achieving performance objectives and recommended changes to improve the efficacy of the methods.

Piping Plovers continued to nest in the experimental habitat areas at both Duxbury Beach and Winthrop Shore in 2021.

II.9 List of all plan participants and activities authorized for take coverage.

See **Table 1.**

II.10 Accounting of all mitigation funds collected from plan participants during the previous year, and any unspent funds from previous years.

See **Table 5**.

Table 5. Accounting of Offsite Mitigation Funds

Statewide Mitigation Funds Balance (end of 2021)	
<i>Balance from Previous Years</i>	
\$42,627.00	Unspent, end of 2020
<i>Income</i>	
\$11,600.00	Barnstable Escrow
\$11,600.00	Orleans Escrow
\$1,904.89	Interest earned
<i>Expenses</i>	
None	
<i>Unspent Funds, end of 2021</i>	
\$67,731.89	

II.11 If appropriate, any updates to the mitigation fee as described under the adjustment process in Section 5.2.2.1 and an updated annual budget for MassWildlife’s plan implementation.

No adjustments to the mitigation fee or MassWildlife implementation budget are required at this time.

II.12 If available at the time of the annual report, evidence that MassWildlife’s needed funding has been assured for the coming year by the State legislature, and the funds have been earmarked or segregated for their intended purpose within MassWildlife’s accounting system.

Funding for Massachusetts Fiscal Year 2021 (ending June 30, 2022) has been secured and funding for Fiscal Year 2023 (beginning July 1, 2023) has been requested (**Appendix A**).

II.13 Accounting of the cost of all mitigation measures implemented in the previous fiscal year and the expected cost of mitigation measures in the upcoming fiscal year.

An accounting for the costs of all mitigation measures implemented in 2021 (\$46,077.24) is provided in **Table 3b**. Additional information on off-site mitigation is provided in **Table 5**. The cost of onsite/internal mitigation is expected to be similar in 2022. MassWildlife has already established contracts totaling \$32,388 for offsite mitigation activities in 2022, including selective predator management and education and outreach.

II.14 Record of any grants and Plan implementation contracts awarded to plan participants, other landowners, or implementation partners.

None. See “II.3 Offsite mitigation.”

II.15 Description of the adaptive management process used during the reporting period, if applicable.

No adaptive management took place during the 2021 reporting period.

II.16 Summary for the reporting period of the monitoring program objectives, techniques, and protocols, including monitoring locations, variables measured, sampling frequency, timing and duration, and analysis methods.

The monitoring program documented implementation of covered activities, compliance with the Guidelines, and mitigation programs. COI-holders kept required logs of initiation dates of covered activities; number of broods and chicks exposed; locations of exposed broods and any impacts to the broods associated with the covered activity; and monitoring frequency. MassWildlife was notified at least 24 hours in advance of implementing the covered activities and subsequently conducted COI compliance site visits at each site with a COI. Compliance with the impact avoidance and minimization protocols was documented in logs and summarized in the COI-holder final reports. Final reports and invoices also document implementation of required mitigation, which was also reported by USDA APHIS.

The monitoring program also aimed to assess the impacts of covered activities and effectiveness of impact minimization measures and mitigation programs. Effectiveness monitoring consisted of documenting pair behavior, chick behavior, crossing frequency, and nesting and fledging success at the covered activity implementation sites. Measures of reproductive success were also collected at the selective predator management implementation sites. Monitoring information was provided to MassWildlife in HCP annual site reports and through the PIPODES online database. MassWildlife coordinated the synthesis of 2021 Piping Plover data by cooperators, performed quality control, and finalized the 2021 index count, adjusted total count, and productivity of breeding Piping Plovers.

II.17 Assessment of the efficacy of the monitoring and research program and recommended changes to the program based on interpretation of monitoring results and research findings, if applicable.

Compliance monitoring occurred at each of the sites that implemented covered activities in 2021, and all sites appeared to be in compliance with the Guidelines at the COI sites. However, as previously reported, making inferences about the effectiveness of mitigation measures and impacts of covered activities on productivity is methodologically challenging and will require larger sample sizes and possibly other methods, such as establishment of predator management control sites. There are no recommended changes to the monitoring program at this time; however, MassWildlife will continue to develop formal methods for assessing efficacy of predator management as required in the HCP.

II.18 Description of all Plan-directed studies undertaken during the reporting period; a summary of study results; and a description of integration with monitoring, assessment, and compliance elements.

No Plan-directed studies were undertaken in 2021.

II.19 Description of any actions taken or expected regarding adaptive management and/or changed circumstances, including remedial actions resulting from any Plan or permit amendments granted in the prior years, if applicable.

No actions were taken or expected regarding adaptive management and/or changed circumstances in 2021.

II.20 Description of any unforeseen circumstances that arose and responses taken, if applicable.

None.

II.21 Summary of any administrative changes, minor modifications, or major amendments proposed or approved during the reporting year (see Section 5.3.3, *Modifications to the Plan*). Any information about mitigation measures other than selective predator management, the associated funding, and monitoring is being provided for informational purposes only, as the USFWS has indicated that these activities do not count as mitigation to offset take associated with the ITP.

On February 23, 2021, the USFWS approved a minor administrative amendment to reduce the mitigation ratio for Use of Roads and Parking Lots from 3:1 to 2.5:1 specifically in cases where motorized and non-motorized wheeled vehicles are excluded (**Appendix B**).

II.22 Other state or federally listed species affected by HCP implementation

Least Tern (*Sternula antillarum*)

- **Sites with coverage for take of Least Terns.** COI-holders for these sites developed impact minimization and mitigation plans for Least Terns and obtained Conservation and Management Permits to ensure Massachusetts Endangered Species Act (MESA) compliance: Nauset Beach, Orleans; Plymouth Long Beach, Plymouth; Sandy Neck Beach Park, Barnstable; Nauset Beach (North Beach), Chatham; Winthrop Shore, Winthrop; Horseneck Beach, Westport; Duxbury Beach, Duxbury; Leland/East Beach, Edgartown; and Coskata-Coatue Wildlife Refuge, Nantucket.
- **Sites with no take exposure.** Nauset Beach, Orleans; Sandy Neck Beach Park, Barnstable; Nauset Beach (North Beach), Chatham; Winthrop Shore, Winthrop; Duxbury Beach, Duxbury; Leland/East Beach, Edgartown; and Coskata-Coatue Wildlife Refuge, Nantucket.
- **Sites with take exposure.** There were two sites where take exposure occurred. The COI-holders conducted on-site mitigation.
 - **Horseneck Beach.** *Recreation and beach operations – Reduced fencing around the nest.* On May 27, fencing was reduced around two Least Tern nests to ensure public access to and from the administration building and the beach front. This impacted 0.9 ac of habitat over a period of 39 days. Each pair fledged two chicks. On-site mitigation in the form of selective predator management benefitted 66 pairs, which fledged about 60 chicks. DCR entered 2021 with a credit balance of 33, six of which were used for implementation in 2021, leaving a balance of 27 credits that expire after 2021. A balance of 66 credits will carry forward into 2022.
 - **Plymouth Long Beach.** *Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks.* A silt fence barrier was installed at the edge of the road along the length of a Least Tern colony during June 1 to June 5 to prevent chicks from accessing the road. Twenty-one unfledged chicks from 12 pairs were exposed to vehicle traffic during June 23 to July 11 and August 6 to August 20. Intensive monitoring occurred as described in the IAMP. No evidence of road-related mortality or injury was detected in the exposed subcolony, but there was no productivity due to storm overwash and predation. On-site predator management benefitted 37 pairs of Least Terns. Going into 2021, Plymouth had a credit

balance of -5; with the addition of 13 credits (37 credits – 24 debits), a balance of 8 credits will carry into 2022.

Diamondback Terrapin (*Malaclemys terrapin*)

- **Sites with coverage for take of Diamondback Terrapins.** COI-holders for these sites developed impact minimization and mitigation plans, including nest protection, for Diamondback Terrapin and obtained CMPs to ensure MESA compliance: Sandy Neck Beach Park, Barnstable; Nauset Beach, Orleans. The Nauset Beach CMP covered limited exposure of terrapins, which sometimes cross the OSV corridor to nest. The Sandy Neck CMP also covered limited exposure of terrapins, which are sometimes found crossing or nesting within the Marsh Trail used by essential vehicles and campers.
- **Sites with no take exposure.** Sandy Neck Beach Park and Nauset Beach, Orleans.
- **Sites with take exposure.** None.



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

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January 18, 2022

Audrey Mayer

Supervisor – New England Field Office

U.S. Fish and Wildlife Service

Northeast Region – Ecological Services

70 Commercial St., Suite 300

Concord, NH 03301

RE: Statewide Piping Plover Habitat Conservation Plan

Massachusetts Division of Fisheries and Wildlife Budget Assurances, FY2022 and FY2023

Dear Ms. Mayer:

We are writing to confirm that the Massachusetts Division of Fisheries and Wildlife (MassWildlife) has secured adequate funding to fulfill its Statewide Piping Plover Habitat Conservation Plan (HCP) obligations for Fiscal Year 2022 in accordance with the budget presented in the Final HCP.

Additionally, MassWildlife has requested from the legislature adequate funding to fulfill its HCP obligations for Fiscal Year 2023, in accordance with the budget presented in the Final HCP.

Sincerely,

A handwritten signature in black ink that reads "Mark S. Tisa".

Mark S. Tisa, Ph.D., M.B.A.

Director

A handwritten signature in black ink that reads "Kristin D. McCarthy".

Kristin D. McCarthy

Associate Director, Chief Fiscal Officer

cc: Everose Schlüter, Assistant Director, NHESP

Carolyn Mostello, MassWildlife Coastal Waterbird Biologist, NHESP

Karen Dolan, MassWildlife Finance and Projects Administrator, NHESP

Susi von Oettingen, USFWS

MASSWILDLIFE



United States Department of the Interior



FISH AND WILDLIFE SERVICE

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Concord, NH 03301-5087
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February 23, 2021

Everose Schlüter
Massachusetts Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

Re: Request for Administrative Amendment to the Massachusetts Piping Plover Habitat Conservation Plan
Permit Number: TE01281C-0 (2016), TE01281C-1 (2019 amended HCP)

Dear Ms. Schlüter:

This letter acknowledges the U.S. Fish and Wildlife Service's (Service) February 5, 2021, receipt of your letter, dated February 4, 2021, requesting the Service accept an administrative clarification to the Massachusetts Piping Plover Habitat Conservation Plan (HCP) for the covered activity *Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks*. We also received a followup letter, dated February 11, 2021, providing specific language that will be incorporated into the HCP upon approval of the clarification, and adding a missing word in text. We reviewed the HCP, Chapter 17 of the Habitat Conservation Planning Handbook, and the section 10(a)(1)(B) incidental take permit TE01281C-0 (ITP) issued to the Massachusetts Division of Fisheries and Wildlife (MADFW) in determining whether the proposed change meets the standard of an administrative clarification.

The MADFW proposes to clarify the mitigation ratio required under specific circumstances that were not anticipated during the development of the HCP for the covered activity *Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks (Use of Roads and Parking Lots)*. As the piping plover population expanded in Massachusetts to new locations subsequent to the issuance of the ITP for the 2016 HCP, an additional category for the *Use of Roads and Parking Lots* was identified, that being improved roads, paths, or parking lots that bisect piping plover habitat and where motorized and nonmotorized vehicles are prohibited in the presence of unfledged piping plover chicks. Nonmotorized wheeled vehicles include bikes, scooters, skateboards, and similar recreational equipment. The predator management mitigation requirement for exposing piping plovers to the *Use of Roads and Parking Lots* covered activity describes three pairs of plovers mitigated for every pair, brood, nest, or territory exposed (3 to 1). The proposed clarification would align the 3 to 1 predator management mitigation requirement to the 2.5 to 1 mitigation requirement for covered activities that do not expose adult plovers to potential injury or mortality.

The rationale for 3 to 1 mitigation for the *Use of Roads and Parking Lots* described on pages 4-6 and 4-7 of the HCP is based on the assumption that there is a higher risk to adult mortality from vehicular use of improved roads and parking lots than for the other covered activities. The requested clarification describes mitigation standards for *Use of Roads and Parking Lots* in the absence of motorized and nonmotorized vehicles, based on the following rationale:

- improved roads, paths, and parking lots are transit areas for piping plovers accessing suitable habitat on both sides of a road, path, or parking lot, and do not provide suitable feeding, nesting, or sheltering habitat;
- adult plovers and unfledged chicks are exposed to mortality risk when crossing roads and parking lots if vehicles are present; however, mortality risk to adults is avoided when vehicles are prohibited from using the improved road, path, or parking lot;¹
- the specific activity requiring a 2.5 to 1 mitigation ratio is limited to pedestrian use of a nonhabitat area that is bordered on two or more sides by plover habitat and may pose risks to unfledged chicks (disturbance or mortality) from pedestrians;
- the proposed 2.5 to 1 mitigation ratio for this specific situation is consistent with the ratio assigned to the other two, lower-risk covered activities that are expected to have similar impacts (*Recreation and Beach Operation* and *Oversand Vehicle (OSV) Use in Vicinity of Unfledged Chicks*); and
- there will be no changes to the requirement for avoidance and minimization measures for the covered activity as outlined in HCP section 3.2.1 (pages 3-4 to 3-6) when a closure to motorized and nonmotorized wheeled vehicles is implemented for a road, path, or parking lot when chicks are present. These measures include: barriers, signage, staff training, traffic management, and monitoring.

The following changes (language in red) to the HCP will be made to incorporate the administrative clarification of 2.5 to 1 mitigation for the *Use of Roads and Parking Lots* when motorized and nonmotorized vehicles are prohibited on a road, path, or parking lot and one word change:

- Table 4-1, page 4-3, Footnote 4
⁴ Additional predator management to benefit 0.5 breeding pairs will be implemented for each instance of the covered activity Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks, **with the exception that where motorized and nonmotorized wheeled vehicles are excluded, predator management can be designed to benefit 2.5 breeding pairs for every brood, nest, or territory exposed.**
- Section. 4.3.2.1, page 4-7
Predator management will be designed to benefit 2.5 breeding pairs for every brood, nest, or territory exposed to take from covered activities. Selective predator management to benefit an additional 0.5 breeding pairs will be implemented for each instance of the Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks covered activity, **with the exception that where motorized and nonmotorized wheeled vehicles are excluded, predator**

¹ Flightless chicks may be vulnerable to being stepped on by pedestrians especially when they are very young. Therefore, there continues to be a risk of mortality to chicks irrespective of the absence of motorized or nonmotorized vehicles.

management can be designed to benefit 2.5 breeding pairs for every brood, nest, or territory exposed.

- Section 4.3.3, page 4-11, Footnote 25

²⁵Selective predator management to benefit an additional 0.5 breeding pairs will be implemented for each instance of the Use of Roads and Parking Lots in the Vicinity of Unfledged Chicks covered activity, with the exception that where motorized and nonmotorized wheeled vehicles are excluded, predator management can be designed to benefit 2.5 breeding pairs for every brood, nest, or territory exposed.

- Section 4.3.3, page 4-13

To offset this take, the Plan proposes selective predator management to benefit an additional 0.5 pairs of breeding piping plovers for every brood exposed (i.e., mitigation at 3:1 instead of 2.5:1), with the exception that where motorized and nonmotorized wheeled vehicles are excluded, predator management can be designed to benefit 2.5 breeding pairs for every brood, nest, or territory exposed.

- Section 5.4.1.2, page 5-30

To offset the annual authorized take exposures DFW and plan participants will carry out selective predator management at a ratio of 2.5:1 (or 3:1 for participants also implementing the road and parking lot covered activity where motorized and nonmotorized wheeled vehicles are not excluded).

The proposed administrative clarification does not change the level of incidental take authorized under the ITP, nor does it change the impacts to piping plovers or their habitat analyzed during our National Environmental Policy Act review of the HCP and the amended HCP. Therefore, we agree that the proposed changes to the mitigation requirement for specific conditions of the covered activity *Use of Roads and Parking Lots* is an administrative clarification and the revised language should be incorporated into the amended HCP. Please include the documentation proposing the change, the rationale for the clarification, the language to be inserted and/or changed in the HCP, and our correspondence as an appendix in the 2021 annual report.

Thank you for your cooperation. If you have any questions or concerns regarding this letter, please contact Susi von Oettingen of this office at susi_vonoettingen@fws.gov.

Sincerely,

David Simmons
Acting Field Supervisor
New England Field Office

cc: Reading file
Carolyn Mostello/MADFW, carolyn.mostello@state.ma.us
Andrew Vitz/MADFW, andrew.vitz@state.ma.us
ES: SvonOettingen;jd:2-23-21:603-227-6418