Massachusetts Habitat Conservation Plan for Piping Plover

2016 Annual Report

MASSWILDLIFE

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Massachusetts Division of Fisheries & Wildlife

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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 could expose Piping Plovers (*Charadrius melodus)* to "take" that are authorized by the Incidental Take Permit (ITP). Incidental Take coverage can be extended by MassWildlife to approved landowners and beach managers through Certificates of Inclusion (COI's). Two COIs were issued during the 2016 season to the Town of Plymouth and the Town of Orleans authorizing a maximum exposure of 4 Piping Plover broods. The Town of Plymouth exposed one Piping Plover brood to a beach road and the Town of Orleans exposed two broods to oversand vehicle corridor traffic. Intensive impact avoidance and minimization measures were implemented by the COI holders, and required HCP compliance and effectiveness monitoring was carried out by both MassWildlife and the COI holders.

Eleven of 12 chicks exposed to covered activities fledged, suggesting that implementation of the covered activities, had little, if any effect on productivity. Participation in the HCP enabled the Town of Plymouth to open the Day Use parking area, Roadside Parking areas, and Fishing Access areas approximately 12-14 days earlier than would otherwise have been allowed; an additional section of beach was opened to recreational OSV use 6 days early. Participation in the HCP also reduced costs associated with management of essential vehicles. Participation by the Town of Orleans enabled the Town to open sections of beach to recreational OSV use approximately 20 days earlier than would otherwise be allowed. On and off-site mitigation was carried out in the form of selective predator management designed to increase productivity and more than offset any harm resulting from exposure to the covered activities. 24.3 breeding pairs of Piping Plover benefited from selective predator management, substantially more than the minimum benefit to 8 pairs required pursuant to the HCP. This report documents compliance with the HCP and provides information about other state-listed species exposed to potential take by the covered activities, Least Tern and Diamondback Terrapin.

II. Annual Report Requirements

This annual report summarizes HCP implementation activities during 2016, 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 the MassWildlife to demonstrate to the FWS 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 problem.
- 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 page 5-9 of the HCP. To facilitate review by USFWS and the public, the remainder of this report systematically addresses each item on the list. Supporting documentation and data is provided in the Appendices as referenced throughout the text.

II.1 Description of All Covered Activities Implemented During the Reporting Period by Activity Type and Location.

At Plymouth Long Beach, Plymouth, one Piping Plover brood of four chicks was exposed to the covered activity, *Use of Roads and Parking Lots in Vicinity of Unfledged Chicks*, for nine days at which time all four chicks fledged (sustained flight >15 m) (See Section II.22 for Least Tern information). At Nauset Beach, Orleans, two Piping Plover broods of four chicks were exposed to the covered activity, *Oversand Vehicle Use in Vicinity of Unfledged Chicks*, for six and twenty days, respectively, fledging a total of seven chicks (Table 1). No direct evidence of chick injury or mortality was observed. Additional information, including figures showing the specific locations of the covered activities at each site can be found in Appendices A and B.

Table 1. Covered Activities Implemented in 2016

Location	Covered Activity	Description of Covered Activity	# Allowable Take Exposures	# Take Exposures Used	Start of Implementation	End of Implementation	# Days Brood(s) Exposed to Covered Activity	Age of Chicks When First Exposed	% Broods Exposed
Plymouth Long Beach, Plymouth	Use of Roads and Parking lots in the vicinity of Unfledged Piping Plover Chicks	The area exposed consisted of the Day Use Parking Area and Ryder Way between the Day Use Parking Area and the OSV Crossover. Under the covered activity, the Town allowed unrestricted access for essential vehicles and access for recreation vehicles when recreational areas beyond the road were free of unfledged chicks subject to the IAMP. For additional information see **Appendix A** for Plymouth Long Beach Report.	2	1	7/11/2016	7/19/2016	9	21 days old	4.5%
Nauset Beach, Orleans	Oversand Vehicle (OSV) Use in the Vicinity of Unfledged Chicks and Reduced Symbolic fence buffer and/or nest moving:	The covered activities allowed the exposure of two broods OR 1 nest and 1 brood total across the site as a whole. The area for continued OSV use consists of the Pochet Wash on Nauset Beach South. Although not carried out in 2016, the area for reduced symbolic fencing or nest moving was located on Nauset Spit at the base of Callanan's Pass, a primary beach access point. This exposure would allow Callanan's pass to remain open if a piping plover nested close to the Pass. For additional information see **Appendix B** for Nauset Beach Report.	2	2	7/14/2016 7/14/2016	7/19/2016 8/2/2016	6 20	22 days old 9 days old	10%

II.2 Summary of annual take exposure.

The total allowable take exposure for a given year is based on a 3 year rolling average of the statewide Piping Plover breeding population (HCP, Table 3-1). The average breeding population size for 2013-2015 was 672 breeding pairs, based on Adjusted Total Count, resulting in an allowable exposure to covered activities of 7%, or a maximum of 47 broods, nests, and/or territories that could be exposed to covered activities, statewide (MassWildlife 2013, 2014, 2015, Table 2). During 2016, three broods were exposed to covered activities, and exposure at each site was <15% of the breeding population size at that site (Table 1; HCP, Section 3.2).

Based on information provided by USFWS, during 2016 Cape Cod National Seashore was authorized to expose up to three pairs of Piping Plover to flexible management that result in take exposure. Flexible management was not implemented, resulting in no additional Massachusetts take exposure. Although take exposure for recreational activities on federal properties is not associated with the 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. Statewide Piping Plover Breeding Population, 2013-2015, Actual and Allowable Take Exposure, 2016.

	YEAR		
	2013	**2014**	**2015**
MA Breeding Pairs (Adjusted Total Count)	666	663	687
Three-year average:		672	
Maximum Allowable 2016 Exposure to Covered Activities		47 broods/nests/territories	
Actual 2016 Exposure		3 broods/nests/territories	

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

During 2016, MassWildlife provided $10,000 in funding for selective predator management at Monomoy National Wildlife Refuge to be considered off-site mitigation for the HCP. Work was carried out in accordance with two work plans contracting USDA APHIS Wildlife Services and Brian Beals approved for the purpose of HCP mitigation by the New England Field Office of the USFWS for a total cost of $27,300 (August 15, 2016) (Appendix C). Monomoy selective predator management benefited 49 Piping Plover breeding pairs, with 17.9 pairs benefiting from HCP funding, based on a 36.6% HCP cost share (Table 3). Results of the predator management by both contractors are provided in Appendix C.

In addition, the Town of Plymouth implemented selective predator management at Plymouth Long Beach to mitigate for on-site impacts associated with the covered activities included in the Certificate of Inclusion (COI). Work was carried out in accordance with a work plan provided by USDA APHIS Wildlife Services approved for the purpose of HCP mitigation by the New England Field Office of the USFWS at a total cost of $11,000 (August 25, 2016)(Appendix D). The Town provided $3,200 with the remaining $7,800 funded through the Natural Resources Damages Assessment (NRDA) Bouchard Plover Restoration Projects grant awarded to the Town for 2016. Plymouth Long Beach selective predator

management benefited 22 Piping Plover breeding pairs, with 6.4 pairs benefiting from HCP funding, based on a 29.1% HCP cost share (Table 3). Results of the predator management are provided in Appendix D.

Although the HCP did not require mitigation to be completed in advance of covered activities during the first year of implementation, MassWildlife and the COI holders implemented more than enough selective predator management to meet 2016 mitigation requirements, and are carrying forward a mitigation credit (Table 3). At the mitigation ratios of 2.5:1 (OSV use) and 3:1 (Roads and Parking Lots), selective predator management benefiting 8 breeding pairs of Piping Plover was required to meet 2016 mitigation requirements. In fact, selective predator management benefiting 24.3 breeding pairs was carried out, resulting in a mitigation credit of 16.3 carrying over into 2017. Of these 16.3 credits, 3.4 are allocated to the Town of Plymouth and the remaining 12.9 credits are available statewide. See Table 3 for additional detail.

Because 2016 was the first year of HCP implementation there were no mitigation credits or deficits outstanding from previous years.

Table 3. Statewide Predator Management Mitigation Accounting.

DEBITS								
COI Site	No. authorized exposures	No. Actual Exposures	Predator Control Mitigation Required (#plover pairs benefiting)	Site Specific Credits		Credits expire	Notes	
Orleans	2	2	5	0				
Plymouth LB	2	1	3	3.4		2018	Implemented predator control benefiting 6.4 pairs; see below	
TOTAL	**4**	**3**	**8**					
	CREDITS							
Mitigation Site	Total Cost	HCP Cost	HCP cost share	Total Pairs Benefiting	Productivity	HCP Pairs Benefiting (Credits)	2016 Credits Used	2016 Credits Used at:
Plymouth LB	$11,000	$3,200	29.1%	22	2.64	6.4	3.0	Plymouth LB
Monomoy NWR	$27,300	$10,000	36.6%	49	1.29	17.9	5.0	Orleans
TOTAL	**$38,300**	**$13,200**		**71.0**		**24.3**		
	TOTAL NET CREDITS (breeding pairs):			**16.3**				
	CREDITS Accruing to individual sites:			3.4				
	TOTAL AVAILABLE CREDITS:			**12.9**				

II.4 Summary of exceptions to the restrictions on the number or territories/nests/broods affected (15% vs. 30%) and habitat impacts (2 acres/10% vs. 4 acres/20%) employed for the covered activities (as provided for in the Plan).

There were no exceptions to the restrictions of either number of territories/nests/broods affected or habitat impacts for the 2016 season.

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.

Covered activities in 2016 were confined to existing roads, parking lots, and Oversand Vehicle (OSV) corridors, and therefore did not result in any additional impacts to habitat. Consistent with management in accordance with state and federal guidelines that was in place prior to implementation of the HCP, the width of the Orleans OSV corridor was minimized (<5 yards wide), and located so as to minimize impacts to beach wrack and vegetation. The covered activities did, however, increase the risk of take by allowing the road and OSV corridor to be used when unfledged chicks were present, subject to the Impact Avoidance and Minimization protocols implemented by the COI holders (Appendices E and F).

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 demonstrating compliance with the authorized level of take on the ITP.

As described in Section II.2, only three broods were exposed to covered activities in 2016, or 6.4% of the statewide allowable exposure. As the permit was issued in July 2016, 2016 was the first year when exposure to covered activities was authorized.

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.

No experimental vegetation management actions were implemented in 2016.

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

No assessments of vegetation management actions were done in 2016.

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

See Table 1 on page 3.

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

Table 4. Accounting of Offsite Mitigation Funds

Statewide Mitigation Funds Balance		
Income		
$ 11,600.00	Orleans Escrow	
$ 10,000.00	Natural Heritage and Endangered Species Fund	
Expenses		**Date**
$ 2,500.00	Brian Beals, Monomoy Predator Management	5/12/2016
$ 7,500.00	USDA APHIS, Monomoy Predator Management	10/25/2016
Balance January 2017		
$ 11,600.00		

II.11 If appropriate, any updates to the mitigation fee as described under the adjustment process at Section 5.2.2.1 and an updated annual budget for DFW' plan implementation.

No adjustments to the mitigation fee or MassWildlife implementation budget are required at this time. Because the HCP was not implemented until mid-July 2016, MassWildlife will wait until after beach season 2017 to reassess the implementation budget, once better estimates of actual implementation costs are available.

II.12 If available at the time of the annual report, evidence that DFW'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 DFW's accounting system.

Funding for Massachusetts Fiscal Year 2017 (ending June 30, 2017) has been secured (Appendix G). Funding for Fiscal Year 18 has not yet been assured. As required by the HCP, MassWildlife will provide a funding assurance letter to USFWS in advance of any 2017 covered activities being implemented.

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 2016 ($13,200) is provided in Table 3. Additional information on the $10,000 in off-site mitigation is provided in Table 4. Proof of payment is provided in Appendices C and D.

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

Massachusetts Division of Fisheries and Wildlife (DFW) funded predator management through two contracts on Momonoy National Wildlife Refuge in 2016. The first contract of $2,500.00 funded Brian Beals Predator Control of Winchendon, MA and the second contract of $7,500.00 funded USDA APHIS Wildlife Services (Table 4; Appendix C).

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

The need for adaptive management was limited during this first year of the HCP. However, during a permit compliance site visit to Nauset Beach, we clarified the process of adjusting the start and end points of the OSV escort corridor based on observed patterns of chick movement. This was necessary because the substantial width of the Poche overwash. The approach involved determining the chick foraging and movement ranges and ensuring that escorting begins at least 200 feet before vehicles enter this zone, and extends at least 200 feet beyond it.

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.

Compliance and effectiveness monitoring and reporting was carried out in accordance with Table 4-7 and 4-8 in section 4.4.1.1 of the HCP. An annual limit on statewide exposure was determined through the calculation of the past 3 years of Piping Plover adjusted total counts (Section II.2). The Town of Plymouth and the Town of Orleans 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 24 hours in advance of implementing the covered activities. Monitoring information was provided to MassWildlife in HCP final reports (Appendices A and B), and through the PIPLODES online database. Weekly interim reports were also submitted. MassWildlife coordinated the collection of 2016 Piping Plover data by cooperators, performed quality control and finalized the 2016 adjusted total counts of breeding Piping Plovers. Compliance with the impact avoidance and minimization protocols was documented in logs and summarized in the COI holder final reports. MassWildlife conducted COI compliance site visits to each participating site, as required in the HCP. Mitigation implementation final reports and invoices document implementation of required mitigation (Appendices C and D). Effectiveness monitoring consisted of documenting chick behavior and crossing frequency, as well as fledging success at the covered activity implementation sites. Measures of reproductive success were also collected at the selective predator management implementation sites, along with the effectiveness of major predator removal (Appendices C and D).

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.

The compliance monitoring program was effective. Effectiveness monitoring was carried out in accordance with the HCP. However, 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. Nonetheless 11 of 12 chicks exposed to covered activities fledged, a very high fledge rate suggesting that the covered activities had little, if any negative effects on productivity. There are no recommended changes to the monitoring program at this time; however DFW will be developing 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 conducted in 2016

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 2016.

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

No unforeseen circumstances arose in 2016.

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 FWS has indicated that these activities will not be counted as mitigation to offset take associated with the ITP.

No changes, modifications, amendments made during the 2016 season. No additional mitigation measures other than selective predator management were implemented in 2016.

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

Covered activities had the potential to result in take of state-listed Least Terns at both Nauset and Plymouth Beach, and the Diamondback Terrapin at Nauset Beach. As a result the Towns of Plymouth and Orleans developed impact minimization and mitigation plans for these species and obtained Conservation and Management Permits, to ensure MESA compliance (Appendices E and F).

The Town of Plymouth installed a barrier to prevent unfledged Least Tern Chicks from entering the road, and carried out intensive monitoring as described in the IAMP and reported in the Final Report (Appendix A). Although it is challenging to monitor tern chicks, an estimated 40 chicks were exposed to the covered activity and no evidence of mortality or injury was detected. Mitigation consisted of implementation of selective predator management on-site to benefit an estimated 21.2 breeding Least Tern pairs, resulting in a mitigation deficit of 28.8 breeding pairs that will be addressed in 2017 (Appendix A).

The Town of Orleans also developed impact minimization and mitigation measures for Least Terns and Diamondback Terrapins (*Malaclemys terrapin*) expected to be impacted by the covered activity (Oversand Vehicle Use in the Vicinity of Unfledged Chicks) in their request for a COI. The Town of Orleans was issued a COI and a CMP allowing up to 20 unfledged Least Tern chicks to be exposed to OSV use. The CMP also covered limited exposure of Terrapins because Terrapins sometimes cross the OSV

corridor to nest. During implementation of the covered activity, zero (0) Least Tern chicks were exposed due to the absence of a colony in the exposed area and there were no observed mortality or negative impacts to adult or hatchling Terrapins. A total of five (5) Diamondback Terrapin nests were located and protected by trained turtle monitors and 39 hatchlings were released (Appendix B). The benefits of nest protection are expected to far outweigh any small risk of mortality associated with the OSV corridor for this species.