PRELIMINARY
LOW-EFFECT HCP DETERMINATION SCREENING FORM AND ENVIRONMENTAL ACTION STATEMENT (EAS)

I. Project Information

A. Project Name: Town of Orleans Over-Sand Vehicle Access Habitat Conservation Plan, Orleans, Barnstable County, Massachusetts

B. Affected Species: Piping plover (*Charadrius melodus*)

C. Project size: The proposed permit area encompasses Nauset Beach in Orleans, Massachusetts in its entirety as it includes the self-escort corridor and all portions of the beach where on-site mitigation may occur. The proposed self-escort corridor is an over-sand vehicle (OSV) travel corridor of approximately 4,224 feet (0.8 mile) in length located within the Pochet Wash-over area on Nauset Beach South. The specific length of the OSV trail in which the self-escorting program is implemented will be based on the number of broods present, the distance over which the chicks within each brood are spread, and the broods' locations in relation to each other.

D. Brief project description including minimization and mitigation plans:

Purpose: The Over-Sand Vehicle Access Habitat Conservation Plan (HCP) is intended to provide the basis for issuance of a section 10(a)(1)(B) incidental take permit (ITP) to the Town of Orleans (Town). The Town proposes to deviate from current State and Federal beach management guidelines by allowing late season OSV use, beginning on or after July 15, in the presence of no more than two broods of piping plover chicks within a designated vehicle escort area. This will allow recreational use of 5 miles of beach that is unavailable without OSV access.

Need: The Town manages pedestrian and vehicular recreational use on Nauset Beach (which incorporates Nauset Beach South and Nauset Spit) in compliance with the Orleans Conservation Commission's 2014 Order of Conditions (OOC) and State (Massachusetts Division of Fisheries and Wildlife 1993) and Federal (U.S. Fish and Wildlife Service [USFWS] 1994) guidelines to avoid take of piping plovers on recreational beaches. A designated OSV trail traverses piping plover breeding habitat on Nauset Beach; only permitted and essential vehicles are allowed to utilize the OSV trail. Permits are sold by the Town, and revenue derived from the sale of permits is used to manage and maintain the beach's natural resources, recreational facilities, and pedestrian and OSV recreational access to Nauset Beach. To avoid take of piping plover chicks, OSV travel is precluded when unfledged chicks are located adjacent to or in the travel corridor. Recently, the presence of piping plover chicks near the OSV trail on a narrow section of Nauset Beach South, known as the Pochet Wash-over (Pochet), has prevented OSV access to 5 miles of otherwise legally accessible beach. The closures have lasted a few days to almost 14 weeks. Due to the increasingly lengthy OSV trail closures at Nauset Beach South, average annual revenue from the sale of OSV permits declined by approximately $175,000, a 40-percent reduction from average annual revenue collected prior to the extensive OSV closures. The Town

seeks incidental take coverage to allow limited recreational access to Nauset Beach South during the latter part of the piping plover breeding season (after July 15). Doing so will have an incidental benefit increasing revenue to further manage and protect the beach's natural resources.

Proposed Project: The Town manages Nauset Beach South for pedestrian and vehicular use in compliance with local, State, and Federal regulations and State and Federal beach management guidelines. In complying with the regulations and guidelines, vehicular access for recreational activities on portions of Nauset Beach South is precluded when unfledged piping plover chicks (chicks that are unable to fly) of late-nesting piping plovers are present. In the last 5 years, vehicular access of up to 5 miles of beach unoccupied by breeding piping plovers has been prohibited during the latter part of summer because of one to three pairs of nesting piping plovers occupying the Pochet where there is no opportunity to safely route vehicles around unfledged plover chicks. To regain vehicular access to otherwise open portions of Nauset Beach South, the Town proposes to implement a self-escorting program for up to 180 vehicles that may pass by no more than 2 broods of piping plover chicks beginning on or after July 15.

The self-escorting program will be limited to 2 hours in the morning for vehicles accessing Nauset Beach South and 2 hours in the afternoon for vehicle egress (a total of 4 hours per day). Qualified piping plover monitors will be assigned to the broods to locate and observe chicks during the self-escorting program. Additional monitors will observe the self-escorted vehicles to ensure that the escorting protocols are being correctly implemented. Vehicular and pedestrian management elsewhere on Nauset Beach South will continue to follow State and Federal guidelines for managing piping plovers on recreational beaches.

The HCP provides the basis for issuance of an ITP that would authorize incidental take of up to two broods of piping plover chicks. The HCP estimates that later broods (those hatching mid- to late-June) are anticipated to average 3 chicks per brood and concludes that up to 6 chicks (3 chicks in each of 2 broods) per year could be exposed to take in the form of direct killing or wounding, harming, or harassing. Over the 3-year life of the permit a total of 18 chicks may be lost.

On average a plover lays four eggs per clutch; ideally all eggs hatch resulting in a four-chick brood. A review of Nauset Beach South piping plover census forms from 1998 through 2013 (appendices 5 and 11 through 25 of the HCP) indicates that four chicks per brood occur for later nesting plovers at the Pochet, although not as frequently as three chicks per brood. Therefore, to be conservative, the USFWS will consider the potential for 4 chicks per brood or up to 8 chicks (4 chicks in each of 2 broods) per year for a total of 24 chicks over the life of the permit. This differs somewhat from the amount of take considered in the HCP, but in either case the amount of incidental take is very low, and the difference in estimated incidental take does not change what needs to be implemented for the minimization and mitigation program.

The HCP includes a number of minimization measures to reduce the likelihood of take, and mitigation measures to compensate for the impact of any take that occurs. The on- and offsite measures are focused on predator management, which is aimed at increasing plover productivity.

Project Duration: The requested permit duration is 3 years.

Covered Lands: The entire permit area is the geographic area known as Nauset Beach that includes Nauset Beach South and Nauset Spit. Within the permit area, the area in which the proposed escort program will be implemented is limited to a 0.8-mile travel corridor of the OSV trail on Nauset Beach South. Specifically, the self-escort corridor is located at the Pochet (see HCP for map). Site-specific boundaries are not possible to define because of the dynamic nature of the coastal ecosystem since sand deposition or beach erosion may cause the boundaries to shift. An addendum to the HCP (electronically transmitted from Mr. N. Sears, Town of Orleans to Ms. D. Lynch, USFWS, October 30, 2014) clarifies the beginning and end points of the self-escorting program and explains that self-escorting will be initiated 300 feet north of the northernmost plover chick (nearest the parking lot). The self-escort corridor will end 300 feet south of the southernmost chick in the brood (farthest from the sand trail access point). The total distance for the self-escorting program may vary and is dependent upon the number of broods present at one time, the location of each brood, and the area over which chicks are spread for each brood.

The HCP includes Nauset Spit within the covered lands because (1) it is managed under a similar Conservation Commission OOC by the Town of Orleans; (2) it is contiguous to Nauset Beach South, although the OSV access points for each beach are separated by the lifeguarded beach; (3) weather and predation pressure are anticipated to be similar; and (4) mitigation measures implemented by the Town at this location, for example, education materials related to OSV permits, will be the same as at Nauset Beach South.

Species Occupation and Baseline: Federally listed threatened piping plovers nest on the sandy, sparsely vegetated dunes and overwash areas of Nauset Beach, including Nauset Beach South and Nauset Spit. Adult plovers and their young forage on wrack washed up onto the beach and intertidal flats adjacent to the bay and oceanside shoreline. The Town of Orleans has been managing breeding piping plovers under an Orleans Conservation Commission OOC since 1991, having adopted one of the earliest beach management plans for plovers in the State of Massachusetts. The management plan addressed recreational use of Nauset Beach and identified measures to avoid take of piping plovers by managing OSV access in the presence of plover nests and broods.

Annual surveys of Nauset Beach South and Nauset Spit for piping plover pairs and productivity have been conducted since 1991. The population of breeding piping plovers at Nauset Beach overall has ranged from a minimum of 12 pairs (1991) to a high of 32 pairs (2010 and 2011). Nauset Beach South, on average, has fewer pairs of breeding plovers than Nauset Spit, with the exception of 2013 when Nauset Beach South had 16 pairs of plovers, while Nauset Spit had 13 pairs of plovers. Although habitat is highly suitable and recreational management has been consistent with State and Federal guidelines, productivity at both of these beach sections varies widely and is dependent on weather (storms causing loss of nests and chicks) and predation impacts.

Biological goals and objectives for covered species: According to the proposed HCP, its overarching goal is to increase and maintain piping plover productivity levels along Nauset Beach South at or above (on average) the level needed to maintain a stable or modestly growing

piping plover population in Massachusetts, thereby contributing to the continued recovery of the Atlantic Coast population of piping plovers.

Minimization and Mitigation Measures:

Minimization measures:

The OSV self-escorting program will allow vehicular passage along a section of a 0.8-mile-long travel corridor past no more than two broods of piping plovers on or after July 15. The program is designed to minimize the likelihood of take to the maximum extent practicable. Minimization measures focus on reducing vehicle speed, limiting the time of plovers' exposure to vehicles, tracking chicks and preventing mortality, and strictly enforcing self-escorting protocols.

Minimization measures were developed to limit the exposure of unfledged plover chicks to passing vehicles. The OSV self-escorting program will be implemented only during daylight hours for 2 hours in the morning and 2 hours in the afternoon, significantly reducing the daily exposure of vehicle passes in the vicinity of broods. Without the presence of unfledged piping plover chicks, vehicles may utilize the sand trail between 6 a.m. and 11 p.m. (total of 17 hours).

The majority of plover pairs in the Pochet after July 15 have been with chicks generally older than 2 days (table 1 of the HCP). Restricting OSV travel to July 15 or after increases the likelihood that chicks will be older and more easily visible. Moreover, precluding travel past broods within the first 24 hours of hatching increases the likelihood of chicks being more visible to escorts and monitors as well.

Each vehicle will be preceded by a walker at least 10 feet (for safety) in front of that vehicle and at least 15 feet behind the preceding vehicle. Vehicle speeds will be limited to the speed of the walking escort. It is anticipated that speeds will average approximately 3.1 miles per hour, the average speed of a walking person under most weather and landscape conditions (*http://www.princeton.edu/~achaney/tmve/wiki100k/docs/Walking.html*, accessed December 2014). The escort will search for chicks and stop the vehicle if a chick is observed in the travel corridor. A vehicle monitor will observe the self-escorted vehicles to ensure compliance with the self-escort program protocols.

The likelihood of mortality will be further reduced by daily intensive monitoring of the broods prior to, during, and after the self-escort period, and by a self-escort requirement whereby the pedestrian searches for chicks to prevent vehicles from running over them. Prior to vehicles accessing the sand trail, monitors assigned to each brood will document the location of the broods**.** Self-escorting will begin at a clearly marked point 300 feet from the northernmost unfledged chick in the brood and will end at a clearly marked point 300 feet south of the southernmost chick in the brood. The total length of the self-escorting corridor will vary depending upon the number and location of the broods and the area over which the chicks are spread for each brood. Monitors will continue to track the broods during the 2 hours of vehicles accessing the sand trail and will halt traffic if chicks are located less than 100 feet from the sand trail. Patterns of behavior (e.g., if broods are consistently documented using an area for foraging

or travel) documented during the intensive monitoring may assist in locating and protecting mobile broods prior to and after OSV travel.

Tire ruts are known to impede small chicks from moving freely along the beach because the ruts may trap chicks, forcing them to move laterally along the ruts and preventing their egress from the sand trail. This may direct chicks away from adults, foraging habitat, or shelter. Chicks may also use tire ruts as shelter during windy weather making them less visible and more likely to be run over by vehicles. Tire ruts will be raked smooth daily at the end of the OSV travel period to promote easy passage by plover broods to foraging or sheltering habitat. Mechanical raking may be used and will require a qualified monitor to walk in front of the rake to ensure chicks are not run over by the raking vehicle.

Mitigation:

To meet the biological goal of increasing and maintaining piping plover productivity at Nauset Beach, mitigation measures will focus on reducing predation on eggs and chicks when possible at Nauset Beach, and on outreach and education regarding piping plover recovery and threats to breeding piping plovers in Massachusetts. The HCP mitigation plan incorporates a strategy to ramp up onsite efforts to address predation effects at Nauset Beach over the permit period. Due to some uncertainty in how much success can be achieved during the ramping up period, the Town has also committed to an offsite predator management plan that will be implemented at the same time as the onsite plans. Together, the onsite and offsite mitigation plans will assure that adequate mitigation is being provided each year to offset the authorized incidental take. Offsite predator management will not directly affect piping plover productivity at Nauset Beach, but will be applied to other beaches in the same recovery unit thus benefitting the same general population.

Piping plover productivity is measured by the number of chicks fledged (able to fly) per brood. To increase productivity, the number of fledged chicks (fledglings) per brood must be increased. Although the covered activity will result in the take of unfledged plover chicks, the number of fledglings calculated to be lost as a result of the take will be the metric used for mitigation. If unfledged chicks are lost during late season OSV use in the travel corridor, the true impact will be manifested by a reduction in successful plover fledglings. Therefore, the impact for the purposes of the mitigation is quantified in terms of nest productivity, assessed through fledging success.

The HCP estimated an average productivity of 1.37 chicks per brood for nests that hatch successfully on Nauset Beach South in the absence of the proposed covered activity (based on productivity rates from 2010 to 2012), resulting in a total of 8.22 fledged chicks lost over the 3-year life of the permit (1.37 chicks/brood * 2 broods/year * 3 years). Based on an independent analysis of productivity data provided in HCP table 1 for Nauset Beach South for broods occurring on or after July 15th and for the years 1998 to 2013, the USFWS estimated an average productivity of 1.46 chicks fledged per brood, resulting in a total of 8.76 fledged chicks lost over the life of the permit (1.46 chicks/brood * 2 broods/year * 3 years). The USFWS used this calculation because it may more accurately reflect the potential productivity at Nauset Beach South for piping plover broods that are present on or after July 15th. The difference between the

HPC and the USFWS calculations is approximately 0.5 chicks. Mitigation should therefore compensate for the loss of nine chicks over the life of the permit or produce approximately three fledglings per year to offset the incidental take related to the late season OSV use in the travel corridor.

The Town will develop an annual mitigation work plan in consultation with the Massachusetts Division of Fisheries and Wildlife (MADFW) and the USFWS. The mitigation plan will identify measures that may be taken onsite to increase nest hatching success (e.g., judicious use of nest exclosures), may identify and implement experimental, nonlethal predator management actions that may later be incorporated as mitigation if resulting in an increase in nest and/or fledgling success, and will outline an outreach plan to inform the public about the impact of predation on piping plover recovery and measures needed to ameliorate the impact. Lethal, targeted predator removal has been successfully used on other beaches in New England to increase the number of fledged chicks per pair (productivity). However, it is not proposed for Nauset Beach at this time due to a lack of support by the local community. As such, the Town's plan will focus on education and outreach for the first year and a feasibility study of nonlethal predator management options the second year, followed by implementation of feasible nonlethal predator management during the third year.

At the same time the onsite mitigation plan is being implemented at Nauset Beach, the Town will provide $10,000 to MADFW for offsite predator management that will be conducted during permit years 1, 2, and possibly 3 (if mitigation measures are not achieving the required onsite productivity thresholds at Nauset Beach). The HCP further states that if the average productivity of years 1 and 2 is equal to or greater than 1.3 chicks per pair, then no onsite or offsite predator management will be proposed. The offsite predator management is also required as conditioned of the MESCA permit (HCP appendix 2) and will address the biological goal of "contributing to a stable piping plover population in Massachusetts and… supporting off-site conservation measures to increase piping plover productivity" (HCP section VIII). The MESCA permit requires a long-term net benefit to the conservation of the piping plover and recognizes the net benefits to the plovers of providing offsite predator management.

Monitoring and Reporting: Nauset Beach, including Nauset Beach South and Nauset Spit, is managed according to State and Federal guidelines for managing piping plovers on recreational beaches and in compliance with the Conservation Commission OOC. Piping plovers are monitored according to the guidelines; data are collected on the number of nests, hatching success, and fledging success, and possible reasons are documented for egg and/or chick loss. The Natural Resource Manager submits annual reports documenting the number of piping plovers nesting at Nauset Beach and their productivity to the MADFW.

The OSV program will require additional monitoring staff. Qualified monitors will be assigned to each brood that is present in the vehicle corridor. Depending on brood locations along the sand trail, one or more sand trail monitors will be present to ensure compliance with the self-escorting protocols.

Prior to commencing OSV escorting, brood monitors will collect data on chick numbers, chick locations, and travel corridor locations and provide the information to the Natural Resource

Manager. A map showing chick locations and the designated corridor will be posted at the Nauset Beach administration building and updated daily. Violations, incidents, or accidents associated with the vehicle escort program, including take of a chick, will be immediately reported to MADFW and USFWS staff. The Natural Resource Manager and/or Beach Director will work with the USFWS and the MADFW to develop a template summary report to be submitted at least weekly to the USFWS and the MADFW. Daily reports will be made available to the USFWS and the MADFW upon their request.

By December 31 of each calendar year, the Town will submit an escort monitoring report to the MADFW and the USFWS that will include, at a minimum, the estimated age of chicks in each brood when self-escorting was initiated, the fledging success, the escorting dates, the number of broods, the number of chicks present during self-escorting on each date, the number of vehicle passages, and the number of any documented "take" of chicks resulting from the vehicle escorting program. The report will also contain recommendations for improving the efficiency and/or effectiveness of the escorting program in the future.

II. Does the HCP fit the following low-effect criteria?

A. Are the effects of the HCP minor or negligible on federally listed, proposed, or candidate species and their habitats covered under the HCP? Yes. The only federally listed species covered by the proposed HCP is the piping plover, and the effects of the HCP on this species and its habitat are minor. The amount (in terms of both size and scope) of incidental take relative to the State, regional, and rangewide population is of small magnitude and short duration, and breeding habitat is only temporarily impacted. Minimization measures will be implemented that are anticipated to either avoid or significantly decrease the potential for even the small amount of incidental take that is presented in the proposed HCP. Moreover, the HCP's estimated take is occurring in a geographic recovery unit (the New England Recovery Unit) that in 2013 (preliminary data) was at 137 percent of the recovery goal. Additionally, over the last 10 years, the New England Recovery Unit recovery goal of 625 pairs of piping plovers has been exceeded annually, with the exception of 2005. It should also be noted that the conclusion that there are minor effects to piping plovers does not consider the replacement of fledglings through offsite mitigation that will further reduce the impact of the HCP on the New England Recovery Unit, statewide population, and the species.

The requested permit duration is 3 years; therefore, impacts to the population from the loss of fledglings will occur during a short timeframe. Daily implementation of the self-escorting program is restricted seasonally to the latter end of the breeding season in mid-to-late summer. Unfledged chicks will have limited exposure to take by OSVs because OSV traffic past chicks is restricted to a 4-hour period during daylight hours. An additional hour of escorted raking (to smooth the tire ruts) might expose chicks to harm or harassment; however, mortality is not anticipated to occur because a qualified monitor will precede the raking vehicle in accordance with the USFWS recreational beach management guidelines.

No reduction in habitat for courtship or nest establishment[1] on Nauset Beach is anticipated because the habitat will be managed according to State and Federal guidelines until chicks are present, at which point implementation of the HCP will be limited to a 0.8-mile corridor of an approximately 7-mile-long beach on Nauset Beach South. Temporary impacts to the habitat during brood rearing will be of a short duration. During the 4 hours of self-escorted vehicle travel, the functional suitability of the habitat may be affected, as chicks may not be able to cross the sand trail to reach shelter or forage on the other side. Ruts created by morning vehicle traffic may impede or slow chick travel during the 6 hours between vehicle access time periods (i.e., between 10 a.m. and 4 p.m.); however, the ruts will be raked daily following the afternoon vehicle access period to provide unimpeded access for the remainder of the day, night, and early morning (approximately 12 to 13 hours). Therefore, habitat effects within the vicinity of the plover chicks are of short duration and the same as occur before and after brood rearing under the State and Federal guidelines.

Should unfledged plover chicks be present south of the Pochet, State and Federal guidelines for managing piping plovers will continue to be implemented to avoid take. Vehicles will be directed away from the brood or be required to stop at the distance outlined in the State and Federal guidelines to avoid take. Therefore, no occupied piping plover habitat south of the Pochet will be affected by vehicles accessing the OSV travel corridor in accordance with the HCP protocols (HCP page 14).

Take is measured as the number of chicks hatched per brood that will be exposed to direct killing, wounding, harming, or harassing as a result of the covered activity (OSV passage in the vicinity of the broods). For the purpose of assessing the level of take for the HCP, we assume the worst case scenario that two broods are present in the permit area and will be exposed to passing vehicles. As previously discussed, the USFWS anticipates that a maximum of 4 chicks per brood will be taken for a total of 24 chicks over the life of the permit, based on the maximum number of chicks that generally hatch from a standard 4-egg clutch. The number of chicks fledged per pair is the metric used to assess the impact of the take on the piping plover population. Maintaining a 5-year average productivity of 1.5 chicks fledged/brood is one of the criteria needed to achieve piping plover recovery.

As discussed in the previous section addressing minimization and mitigation measures, the HCP estimated that, based on the average productivity of 1.37 chicks per brood, implementation of the covered activity would result in the take of 2.74 fledged chicks per year (1.37 fledged chicks/brood * 2 broods = 2.74) for a total of 8.22 fledged chicks over the 3-year life of the permit. The USFWS estimated an average productivity of 1.46 chicks fledged per brood, resulting in a take of approximately 3 fledged chicks per year (1.46 chicks fledged/brood * 2 broods = 2.92 fledged chicks) or 8.76 fledged chicks over the life of the permit. Therefore, the impact of the loss of a maximum of nine fledged chicks (worst case scenario for the range of eight to nine fledged chicks) over the life of

[1] Available habitat for courtship and nesting is the fundamental determinant of carrying capacity for breeding pairs of piping plovers.

the permit will be analyzed with respect to impacts on the local, statewide, and rangewide population.

The average number of fledglings produced in Massachusetts over the 10-year period[2] when the New England Recovery Unit exceeded the recovery goal for most years (2004 to 2013[3]) is approximately 654 fledged chicks per year. The State's and the USFWS's calculations of the loss of approximately 3 fledged chicks (2.72 to 2.94) per year equates to approximately 0.46 percent of the annual average number of chicks produced in Massachusetts. The average number of fledglings produced in the New England Recovery Unit from 2004 to 2013 is approximately 897 chicks per year. The loss of approximately three chicks annually equates to approximately 0.33 percent of the annual average number of chicks produced in the New England Recovery Unit. Given that the New England Recovery Unit has exceeded the recovery goal in 9 of the past 10 years, and in 2013 (based on preliminary data) is at 137 percent of the recovery goal, the loss of 0.3 percent of fledglings per year will have a minor effect on the average annual productivity and hence the New England Recovery Unit piping plover population as a whole.

The average number of fledglings produced in the U.S. Atlantic Coast range of the piping plover from 2004 to 2013 is approximately 2,040 fledglings per year. The loss of approximately three fledglings at Nauset Beach South as a result of the HCP equates to approximately 0.15 percent of the average annual number of fledglings produced in the U.S. portion of the piping plover range, and will have only a minor effect on the overall annual productivity for the species. Moreover, the fidelity and dispersal patterns of piping plovers mean that piping plover productivity foregone in Orleans has an infinitesimal probability of even the lowest possible effect on abundance of piping plovers in portions of the range, such as Eastern Canada and New York-New Jersey, where populations have experienced recent declines.

Additionally, the minimization measures are anticipated to greatly reduce the likelihood of mortality of piping plover chicks exposed to self-escorted vehicles passing in their vicinity. Qualified monitors will be in place to observe the broods during implementation of the self-escorting program. Monitors will halt traffic if chicks are observed within 100 feet of the travel corridor to minimize the likelihood of mortality. Drivers and individuals walking in front of the vehicles will receive literature outlining the requirements for self-escorting prior to accessing the beach (a requirement for obtaining a vehicle permit). A monitor will observe the self-escorted vehicles to ensure compliance with the protocols. At this time it is not possible to assess the estimated reduction in take that the minimization measures will achieve; nevertheless, the USFWS anticipates there will be a reduction in direct mortality of unfledged plover chicks.

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[2] The last 10 years provides an estimate of reproductive output that is most likely to be predictive of conditions anticipated during the life of the proposed permit. It reflects a reasonable range of good and bad productivity for recent abundance of the breeding population.

[3] Preliminary estimates are used for 2012 and 2013 (A. Hecht, USFWS pers. comm. 2014).

Although the ITP will address the worst case scenario of take of four chicks per brood by the covered activity, equating to the loss of approximately three fledged chicks per year, we anticipate that this level of take will not be reached. Data indicate that, on average, less than four unfledged chicks per brood are present on or after July 15 (see table 1 of the HCP), and minimization measures will further reduce the likelihood of reaching the worst-case scenario.

In summary, based on the minor, short-term impacts to the piping plover breeding habitat and the loss of up to three fledglings per year in a recovery unit that is consistently over 100 percent of the recovery objective, and the HCP's minimization measures that will reduce the likelihood of mortality, we anticipate the effects of the HCP will be minor to the covered species and its habitat.

B. Are the effects of the HCP minor or negligible on other environmental values or resources (e.g., air quality, geology and soils, water quality and quantity, socioeconomic, cultural resources, recreation, visual resources) prior to implementation of the minimization and mitigation measures? Yes. The effects on other environmental values from OSV travel on the designated sand trail are minor or negligible because OSV travel is allowed in the presence of courting and nesting piping plovers (no unfledged chicks present) and in the absence of piping plovers when no ITP is required. Over-sand vehicle travel on Nauset Beach is an ongoing activity that is regulated under the MEPA.

The Orleans Conservation Commission OOC reviewed environmental impacts for the management of OSVs at Nauset Spit, including the installation of temporary symbolic fencing, delineator posts, signage, temporary closings, and management of the sand trail, including crossover, pullout, and parking areas. The Conservation Commission evaluated the effects of OSV operation on the designated sand trail and determined that the existing OSV trail would not promote wind tunneling or erosion or wave washover; nor was any increase from storm or flood damage anticipated. Moreover, the design and placement of the OSV trail would not cause a change in vegetation; nor would there be any interference with the landward movement of coastal dunes (pages 2 and 3 of the findings for the Off Road Vehicle [ORV] and Beach Management Plan for Nauset Beach South approved on June 24, 2014, by the Orleans Conservation Commission [appendix 3 of the HCP]). The OOC identified a number of mandatory special conditions designed to protect coastal resource areas and wetland interests to further reduce environmental impacts such as limiting the maximum number of vehicles permitted on the beach at any time to 375 vehicles, posting of temporary closures due to tide conditions, prohibiting vehicle access to the Bay (west) side Nauset Beach South along the shoreline outside of existing ORV trails, designated parking corridors, speed limit of 5 mph near posted bird nesting areas and the implementation of any other conditions responsive to significant environmental changes and/or any conditions necessary to protect the Nauset Beach South Barrier Beach System (pages 4 and 5 of the 2014 Orleans Conservation Commission OOC, appendix 3 of the HCP).

In summary, the only change in the state-authorized OSV management plan at Nauset Beach South is to allow vehicles to pass in the presence of up to two broods of unfledged piping plover chicks. No environmental impacts are anticipated beyond those incurred during regular vehicular access authorized under the Conservation Commission OOC. Vehicles that access portions of the Beach beyond the permit area will continue to be managed according to the OOC; therefore, additional impacts are not anticipated.

The proposed onsite and offsite predator management for mitigation is also anticipated to result in only minor or negligible effects to environmental values or resources. Predation is a serious threat to breeding piping plovers, resulting in the loss of eggs, chicks, and adults throughout the range (USFWS 1996; Clark and Niles 2000; USFWS 2009). In Massachusetts, predation is the most serious factor limiting reproductive success of piping plovers; nearly 30 percent of nests are unsuccessful in some years due to predation (USFWS et al. 2012). Principal nest predators in Massachusetts are crows, foxes, skunks, coyotes, and gulls.

A suite of predation management techniques similar to those utilized by the USFWS in Maine (Vashon 2008), the National Park Service (NPS) in New Jersey (NPS 2007a), and the U.S. Department of Agriculture (USDA) in Virginia (USDA 2005) and Massachusetts (USDA 2011a; USDA 2011b) may be utilized. Based on discussions with MADFW staff (J. Regosin, MADFW pers. comm. 2014), the management is anticipated to be adaptive in nature, allowing for the selection of predator control methods that are most suited to reducing narrowly targeted and most problematic predator species and/or individuals.

Approved lethal techniques for predator management (USDA 2003; USDA 2004; USDA 2011b) may be implemented to selectively target predators for offsite mitigation as required by the MESCA permit and outlined in the HCP mitigation section (HCP section X.). Massachusetts law (MGL c.131 Section 80A: Regulations 321 CMR 2.08) requires that trapping of mammalian predators (e.g., raccoons, opossums, and skunks) be limited to cage- or box-type traps and should meet the existing best management practices for trapping (Association of Fish and Wildlife Agencies 2006). Avian predators may also be removed via trapping, toxicants, or shooting.

Predator removal programs have been implemented at a number of sites in the Northeast, including New York (Cohen et al. 2009), Virginia, New Jersey (NPS 2007a), Maryland (NPS 2007b), Massachusetts (USFWS 2008; USDA 2011a), Rhode Island (Hartlaub et al. 2007; Hartlaub et al. 2008; Wiitala et al. 2009), and Maine (Vashon 2008) and have demonstrated that selective predator management will increase piping plover productivity. Generally, predator management is conducted on species whose population densities are high (hence the increase in predation impacts to nesting plovers). Removal of individual predators to protect piping plovers will result in short-term, localized reductions in numbers of these predators. Long-term impacts to the predator populations are not anticipated given the generally extensive predator population and high mobility and reproductive rates of these mammalian and avian predators.

The USDA completed an environmental assessment (EA) for predator management activities conducted on recreation areas in Massachusetts (USDA 2011b). Most of the wildlife species considered for selective predator management are harvestable in Massachusetts with designated annual hunting and/or trapping seasons. The USDA concluded that removal of a limited number of targeted individuals will not reduce the local populations to the extent that hunting and/or trapping of these species in these areas would be affected. Moreover, the USDA finding of no significant impact (USDA 2011c) for management of predators on threatened and endangered species in Massachusetts determined that the effect of the lethal removal of predators to benefit nesting threatened and endangered species would be considered to be of low magnitude when compared to current population trend data, population estimates, and/or harvest data.

Predator management described as the preferred alternative in the Bouchard Barge Oil Spill final restoration plan and environmental assessment (B120 FRP and EA) (USFWS et al. 2012) for piping plover impacted by the Bouchard Barge 120 oil spill in Buzzards Bay in Rhode Island and Massachusetts is similar to the offsite predator management proposed in the HCP. Some of the Massachusetts locations that have been selectively managed for predators under the B120 FRP and EA may be chosen as offsite mitigation locations if additional predator management is needed and the take offset requirements can be met (e.g., anticipated increase in productivity will offset the take by the covered activity).

Current targeted predator management as implemented in the past by the USDA in Massachusetts and under the B120 RFP and EA in Massachusetts and Rhode Island has not required closures for recreational use during predator removal efforts, or been documented to place public safety at risk (M. Sperduto, USFWS, pers. comm. 2014). Consequently, we do not anticipate effects to the public's ability to recreate on beaches or the potential for public safety issues where predator management is implemented as part of the HCP.

Therefore, we anticipate that the effects of the HCP will be minor or negligible to environmental values or resources (e.g., air quality, geology and soils, water quality and quantity, socioeconomic, cultural resources, recreation, visual resources) before and after implementation of HCP minimization and mitigation measures.

C. Would the impacts of this HCP, considered together with the impacts of other past, present, and reasonably foreseeable similarly situated projects not result, over time, in cumulative effects to environmental values or resources that would be considered significant? Yes. There have been no similar HCPs developed for piping plovers prior to this one: hence no impacts from past similarly situated projects. There are no similar HCP proposals being pursued at this time: hence no present projects. The term of this HCP is 3 years; hence, all effects will cease at the end of the 2017 breeding season. The State of Massachusetts is in the initial stages of pursuing a statewide HCP for take of piping plovers on recreational beaches. In addition to streamlining participation for individual beaches, the statewide HCP is anticipated to provide a framework to manage overall impacts to approximately 75 percent of the New England

piping plover population and more than a third of the entire Atlantic Coast and provide mitigation to offset any losses from covered activities.

Predator management is currently being implemented at a number of beaches in Massachusetts, Rhode Island, and Maine (USFWS et al. 2012; USFWS 2014). Targeted predator removal is localized and temporary, and, as indicated in section II B above, the effects are considered to be minor or negligible. Therefore, impacts of predator management should not result over time in cumulative effects to the environmental values or resources.

III. Do any of the exceptions to categorical exclusions apply to this HCP? (form 516 DM 2.3, Appendix 2)

Would implementation of the HCP:

A. Have significant adverse effects on public health or safety? No. The proposed implementation of self-escorting vehicles in the presence of piping plovers has been implemented for essential vehicles elsewhere in New England, with no adverse effects on public health or safety. The USFWS guidelines for managing piping plovers on recreational beaches outline recommendations for essential vehicles passing through areas where unfledged piping plover chicks are present. The HCP implements some of the recommendations from the USFWS guidelines, including speed of vehicles less than 5 miles per hour and vehicles guided by a person through the area (generally a qualified monitor). The use of OSVs on Nauset Beach is a Town-permitted activity requiring adherence to rules and regulations that address public safety and environmental concerns. Noncompliance with the OSV permit regulations results in loss of the permit (see *http://www.town.orleans.ma.us/parks-and-beaches/pages/orv-off-road-vehicles*) (accessed November 2014).

Targeted predator management has been implemented on Massachusetts beaches under private, State, and Federal ownership for a number of years. The USDA's 2011 EA assesses the environmental and social impacts of selective predator management in Massachusetts (USDA 2011b) and determined that no significant adverse effects are anticipated to occur. Predator management described by the B120 FRP and EA and conducted at select Massachusetts and Rhode Island beaches has not resulted in any reported adverse effects on public health or safety in the 2 years of implementation (M. Sperduto, USFWS. pers. comm. 2014). Therefore, no significant adverse effects on public health or safety are anticipated.

B. Have adverse effects on such unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; sole or principal drinking water aquifers; prime farmlands; wetlands; floodplains; or ecologically significant or critical areas, including those listed on the Department's National Register of Natural Landmarks? No. The purpose of the HCP is to allow limited recreational access to occur on Nauset Beach South when piping plover chicks are present. This recreational use would otherwise

occur in the absence of plovers; therefore, no adverse effects are anticipated on recreational lands, since the beach is protectively managed according to State and Federal guidelines for managing recreational beaches. The habitat is a barrier beach; therefore, there are no prime farmlands, floodplains, or drinking water aquifers. Based on a review by both the Orleans Historical Commission and the State Historic Preservation Officer, there are no known historic or archeological sites. There are no known National Register areas or Natural Landmarks on the property.

Targeted predator management has been implemented on Massachusetts beaches under private, State, and Federal ownership for a number of years. Multiple land use activities on potential mitigation beaches including OSV use, pedestrian use, fishing, and beach nourishment will co-occur with the proposed mitigation. To date, we are unaware of any ecologically significant or critical areas, including those listed on the Department of the Interior's National Register of Natural Landmarks that could be adversely affected by the proposed offsite mitigation. The offsite mitigation will affect a minimal land area (area encompassed by a trap or baited nest) with minimal human impact (one or two people traversing the beach).

The USDA 2011 EA reviewed potential effects to properties of cultural or historical importance and concluded that damage (predator) management "does not cause major ground disturbance, does not cause any physical destruction or damage to property, does not cause any alterations of property, wildlife habitat, or landscapes, and does not involve the sale, lease, or transfer of ownership of any property. In general, such methods also do not have the potential to introduce visual, atmospheric, or audible elements to areas in which they are used that could result in effects on the character or use of historic properties" (USDA 2011b page 18).

Based on past implementation of predator management in Massachusetts and information provided in the USDA EA for management of predation losses to threatened and endangered species populations in Massachusetts, it is unlikely that offsite mitigation (predator management) will have adverse effects on historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; sole or principal drinking water aquifers; prime farmlands; wetlands; floodplains; or ecologically significant or critical areas.

C. Have highly controversial environmental effects? No. Since early 2014, the Orleans Board of Selectmen has been discussing the development of the HCP at its monthly meetings. The majority of comments addressed to the Board of Selectmen have been focused on the need to return OSV travel on the sand trail to a similar level as in years prior to the extended closures. Information about the HCP has been released to the public through numerous avenues, including a public meeting in Orleans in February 2014, regarding increasing flexibility for recreational management on plover beaches, articles in the local press, and the posting of an early version of a draft HCP on the Town of Orleans Nauset Beach Web site. The USFWS is unaware of any controversy elicited by these public outreach efforts.

Targeted predator management was one of the strategies chosen for restoration of piping plovers affected by the Bouchard Barge 120 oil spill in Buzzards Bay and has been implemented at a number of beaches in Massachusetts and Rhode Island since 2013. Beach managers have either contracted out or themselves undertaken predator management to increase populations of nesting threatened and endangered species using private and/or state funds. In two cases, public information was broadcast about the intended management actions, including a public meeting for the B120 draft restoration plan. Little public controversy was documented. Based on the lack of public comments provided during meetings in Orleans and on the B120 draft restoration plan, highly controversial environmental effects of offsite mitigation are not anticipated.

D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks? No. OSV travel on the designated sand trail occurs in the absence of piping plover chicks. The environmental effects of OSV travel at Nauset Beach South have been addressed under the Massachusetts Wetlands Protection Act. As a result, Nauset Beach, including Nauset Beach South and Nauset Spit, is managed under nondiscretionary conditions to avoid and reduce impacts to the environment. Moreover, current management also follows the USFWS's guidelines for managing piping plovers on recreational beaches. No uncertain or significant environmental effects are anticipated, based on the very small area of beach that will be affected, and the established management techniques that will be implemented to further reduce environmental risks to the plover or other species and their habitats.

The offsite mitigation strategy of selective predator management has been implemented in Massachusetts and elsewhere in New England with no known significant environmental effects. Offsite mitigation may occur on beaches that have been managed for predators in the past; therefore, no uncertain or significant environmental effects are anticipated.

E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects? No. The project, as described, will not result in significant environmental effects and therefore is not setting a precedent for future actions or consultations with potentially significant environmental effects. In section II. C., we explained that the State of Massachusetts is in the initial stages of pursuing a statewide HCP for take of piping plovers on recreational beaches. In addition to streamlining participation for individual beaches, the statewide HCP is anticipated to provide a framework to manage overall impacts to approximately 75 percent of the New England piping plover population and more than a third of the entire Atlantic Coast and provide mitigation to offset any losses from covered activities. The statewide HCP will be different in scope, magnitude, and implementation process, though may address similar issues. At this early stage, we do not anticipate that the statewide HCP will result in significant effects given the limited nature of the authorized actions and the minimal environmental impacts, even at a larger scale.

F. Be directly related to other actions with individually insignificant but cumulatively significant environmental effects? No. The proposal is limited to Nauset Beach South and is not connected to other beach management activities that might affect piping plovers or the coastal environment. Implementation of the HCP will occur only if one or more broods of piping plovers are present at the Pochet washover on or after July 15. Should plovers be absent, OSV travel along the sand trail and access to the remainder of Nauset Beach South will be allowed and managed according to the USFWS's guidelines for managing recreational use on plover beaches.

G. Have adverse effects on properties listed or eligible for listing on the National Register of Historic Places? No. The proposed OSV access plan has been cleared by the Massachusetts Historical Commission and the Town of Orleans Historical Commission. A review of the list of properties on the National Register of Historic Places for Barnstable, Bristol, Duke, Essex, Nantucket, and Nantucket Counties indicates that other than the Revere Beach State Reservation, no beaches are listed as historic places (*http://www.nps.gov/nr/research/* accessed December 2014; *http://en.wikipedia.org/wiki/National_Register_of_Historic_Places_listings_in_Barnstable_County,_Massachusetts* accessed December 2014). There are some buildings associated with beaches where offsite mitigation might be implemented. However, the potential methods used to remove targeted predators are not anticipated to occur near these buildings. Should offsite mitigation be proposed for Revere Beach State Reservation, coordination with the Massachusetts Historic Preservation Office will be required. Therefore, no adverse effects are anticipated to occur on properties on the National Register of Historic Places.

H. Have adverse effects on listed or proposed species, or have adverse effects on designated Critical Habitat for these species? No. The only other federally listed or proposed species that occurs in the proposed permit area is the recently federally listed threatened red knot. Red knots may be present during spring and fall migration on Nauset Beach and elsewhere in Massachusetts. Red knots, however, are not included as a covered species in the HCP since they have not been documented in the travel corridor at the Pochet. Therefore, no effects are anticipated to red knots from the proposed covered activities. Moreover, the level of anthropogenic disturbance that could lead to take, such as vehicles passing by staging or roosting red knots, has not been determined. Should it later be determined that OSVs passing by staging or roosting red knots could cause sufficient disturbance so that it rises to the level of take, a separate HCP will be required to address the overall management of Nauset Beach, not merely the proposed covered activity.

The proposed offsite mitigation will avoid adverse effects to listed species. Red knots are generally present when other listed species are present (piping plovers, roseate terns). Since it has been determined that there will be no adverse effects to listed species from offsite mitigation, adverse effects to red knots are also not anticipated. There are no other listed or proposed species or designated critical habitat in the HCP

area. There is no critical habitat designated for the breeding range of the Atlantic Coast piping plover population.

I. **Have adverse effects on wetlands or floodplains or be considered a water development project thus requiring compliance with either Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act?** No. The OSV plan does not affect wetlands or floodplains and does not fall within the U.S. Army Corps of Engineers jurisdiction.

J. **Threaten to violate a Federal, State, local, or Tribal law or requirement imposed for the protection of the environment?** No. We are unaware of any potential violations of environmental laws.

ENVIRONMENTAL ACTION STATEMENT:

Based on the analysis above, we preliminarily determine that the Town of Orleans OSV access plan qualifies as a low-effect plan and is therefore eligible for a categorical exclusion under the National Environmental Policy Act as provided by the Department of the Interior Manual (516 DM 2 Appendix 1 and 516 DM 8). The USFWS does not find that this HCP will pose potential significant environmental effects or involve unique or unknown environmental threats. We have not found any extraordinary circumstances that would require the preparation of an environmental assessment or environmental impact statement. Therefore, this action is categorically excluded from further National Environmental Policy Act documentation as provided by 516 DM 2, Appendix 1 and 516 DM 6, Appendix 1.

Concurrence:

_____ _____

Field Supervisor Date

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