



United States Department of the Interior



FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, NY 13045

June 25, 2014

Ms. Rachel Marino
Environmental Branch Chief
United States Coast Guard
Civil Engineering Unit Providence
300 Metro Center Boulevard
Warwick, RI 02886

Dear Ms. Marino:

The U.S. Fish and Wildlife Service (Service) received the U.S. Coast Guard's (USCG) June 12, 2014, electronic correspondence regarding the proposed marine fireworks event in Point Lookout, New York (NY) (June 28, 2014; rain date June 29, 2014) by the applicant, the Town of Hempstead (Town). The USCG has determined that the proposed project would be likely to adversely affect the federally-listed piping plover (*Charadrius melodus*; threatened) and has requested formal consultation with the Service pursuant to Section 7 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). The Town's "*Town of Hempstead Fireworks, June 28, 2014 (rain date 6/29/14) Plan for Crowd Control and the Control of Secondary Effects on Piping Plover (Charadrius melodus)*" (Protection Plan) was included in your submission (Appendix 1 enclosed).

The USCG's June 12, 2014, correspondence also included a determination that the proposed event would not be likely to adversely affect the federally-listed seabeach amaranth (*Amaranthus pumilus*; threatened).

Seabeach amaranth is known to occur on the ocean beach in the western portion of the area of this event. This species is not expected to be an issue for this event because it germinates later in the summer after the event and in areas that are already protected for piping plovers. However, the Town has agreed to survey for this species prior to the event and to add the appropriate protection (i.e. symbolic fencing) should it be found at this time.

With incorporation of the above measures regarding seabeach amaranth into the permit and/or project description and with implementation of those protection measures, the Service concurs with your determination that the proposed project would not be likely to adversely affect seabeach amaranth. Should these measures not be incorporated and implemented throughout the life of the project, a biological assessment or further consultation pursuant to Section 7 of the

ESA will be required regarding the effects of the action on seabeach amaranth. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

The following represents the Service's Biological Opinion (Opinion) on the effects of the action on the federally-listed threatened piping plover in accordance with Section 7 of the ESA. This Opinion is based on information provided in your June 12, 2014, electronic correspondence, which described the proposed project, as well as information contained in the Town's Protection Plan. It is also based on information provided by the Town concerning the status of piping plovers in the area, information from the New York State Department of Environmental Conservation (NYSDEC), discussions with your agency, and other sources of information.

I. CONSULTATION HISTORY

June 12, 2014 The Service received a request for formal consultation under Section 7 of the ESA, including the Town's Protection Plan, via electronic correspondence from the USCG.

II. BIOLOGICAL OPINION

Description of the Proposed Action

Fireworks Event

The proposed action is the discharge of fireworks in the vicinity of the Loop Parkway Bridge, Point Lookout, NY, on June 28, 2014 (rain date June 29, 2014). This is an annual event. The fireworks will be discharged from the Loop Parkway Bridge.

Spectator Management

In the past, this event has drawn approximately 25,000 spectators and about 200 boats in Reynolds Channel. Spectators attending the fireworks display will be in the Point Lookout Town Park along Lido Boulevard. Recreational boaters will be at designated anchorages in Reynolds Channel.

The Town will undertake specific measures to prevent spectators from adversely affecting piping plovers as described in its Protection Plan. These measures have been incorporated by the sponsors into their application to the USCG for a Marine Event Permit and include the following:

1. Spectators will be concentrated away from the ocean beach front and toward the northern boundary of the Point Lookout Town Park property adjacent to, and on Lido Boulevard and do not need to cross through nesting or foraging habitat to reach or leave any viewing locations.

2. Existing fencing in the plover areas will be augmented with additional temporary fencing located at least 300 feet (ft) from plover nests and/or chicks to deter public access to those areas of the beach. Portions of the beach in the vicinity of the plovers will be closed starting at 8:30 p.m. and patrolled throughout the event. The Town has developed several contingency plans to adjust the fencing and closures to allow for any changes in plover activity.
3. Bay Constables will be assigned to the beach in the plover areas to enforce fireworks laws and wildlife laws, such as violation of symbolic fencing. There will also be Public Safety personnel and Town lifeguards to maintain spectator and traffic control and to contact the nearest Bay Constable, if needed. All personnel involved in these plover protection activities, including enforcement personnel using quads for mobility, have been trained in plover identification and instructed on the necessary precautions in the locations of the plover areas.
4. Biologists and trained plover stewards will be assigned to specific areas to: a) monitor the locations and behavior of the plovers, b) collect data based on forms provided by the Service, c) conduct public education activities, d) aid in fence placement, and e) contact Bay Constables, if needed, for action on any illegal activities.
5. The Town has included measures to avoid potential impacts at the west end of Jones Beach State Park should any spectators be attracted there. Jones Beach has promised to close the western end of Jones Beach State Park to prevent viewing of the event from piping plover locations there.

Range-wide Status of the Species

Species Description/Life History and Population Dynamics

The piping plover was listed as endangered and threatened pursuant to the ESA on January 10, 1986. Protection of the species under the ESA reflects the species' precarious status range-wide. Three separate breeding populations, each with its own recovery plan and recovery criteria, were affirmed in the 2009 5-Year Review (U.S. Fish and Wildlife Service 2009a). Piping plovers that breed on the Atlantic Coast of the United States (U.S.) and Canada are classified as threatened under the ESA. Piping plovers that breed in the Great Lakes watershed are listed as endangered, while the population breeding on Northern Great Plains of the U.S. and Canada is listed as threatened (U.S. Fish and Wildlife Service 1985, 2009a). All piping plovers are classified as threatened on their shared migration and wintering range, which extends along the U.S. Atlantic and Gulf Coasts from North Carolina to Texas and into Mexico, the Bahamas, and West Indies (Elliott-Smith and Haig 2004, Elliott-Smith et al. 2009).

The Atlantic Coast piping plover that is the focus of this Opinion breeds on sandy, coastal beaches from Newfoundland to North Carolina. No Critical Habitat has been designated or proposed in the Atlantic Coast breeding area. However, the needs of all three breeding populations were considered in the 2001 critical habitat designation for wintering piping plovers

(U.S. Fish and Wildlife Service 2001) and in subsequent re-designations (U.S. Fish and Wildlife Service 2008, 2009b).

Piping plovers are small, sand-colored shorebirds, approximately 7 inches long with a wingspread of about 15 inches (Palmer 1967). Named for their plaintive bell-like whistle, piping plovers are often heard before they are seen.

Piping plovers nest above the high tide line on coastal beaches, sandflats at the ends of sandspits and barrier islands, gently sloping foredunes, blowout areas behind primary dunes, sparsely vegetated dunes, and washover areas cut into or between dunes. Feeding areas include intertidal portions of ocean beaches, washover areas, mudflats, sandflats, wracklines, and shorelines of coastal ponds, lagoons, or saltmarshes (U.S. Fish and Wildlife Service 1996).

In New York, piping plovers return to nesting beaches from mid-March through May and nesting may occur from mid-April through late July. Clutch size is usually four eggs that are usually incubated for 27 to 28 days before hatching. Piping plovers generally fledge only a single brood per season, but may renest several times if previous nests are lost.

Piping plover chicks are precocial and may move hundreds of yards from the nest site during their first week of life. Chicks remain together with one or both parents until they fledge at 25 to 35 days of age. Depending on the date of hatching, unfledged chicks may be present on New York beaches from late May through mid-August, although most have fledged by late July or early August.

Loss and degradation of habitat due to development and shoreline stabilization have been major contributors to the species' decline. Disturbance by humans and pets often reduces the functional suitability of habitat and causes direct and indirect mortality of eggs and chicks. Predation has also been identified as a major factor that limits piping plover reproductive success for many Atlantic Coast sites. Substantial evidence shows that human activities are affecting types, numbers, and activity patterns of predators, thereby exacerbating natural predation (U.S. Fish and Wildlife Service 1996).

Abundance of Atlantic Coast piping plovers is reported as numbers of breeding pairs (i.e. adult pairs that exhibited sustained (≥ 2 weeks) territorial or courtship behavior at a site or were observed with nests or unfledged chicks) (U.S. Fish and Wildlife Service 1996). Annual estimates of breeding pairs of Atlantic Coast piping plovers are based on multiple surveys of almost all breeding habitat, including many currently unoccupied sites. Sites that cannot be monitored repeatedly in May and June (primarily sites with few pairs or inconsistent occupancy) are surveyed at least once during a standard nine-day count period (Hecht and Melvin 2009). Appendices 2 and 3 summarize nesting pair counts for the Atlantic Coast piping plover population since listing in 1986 through 2013. Numbers in parentheses are preliminary estimates, but it is not anticipated that final estimates will deviate substantially.

The preliminary 2013 Atlantic Coast piping plover population estimate was 1,797 pairs, more than double the 1986 estimate of 790 pairs (Appendix 2 enclosed). Discounting apparent increases in New York, New Jersey, and North Carolina between 1986 and 1989, which likely

were due in part to increased census effort (U.S. Fish and Wildlife Service 1996), the population increased 98% between 1989 and 2012 (preliminary estimate), then declined 5% between 2012 and 2013 for a net 1989-2013 increase of 88%.

Overall population growth is tempered by geographic and temporal variability. By far, the largest net population increase between 1989 and 2013 occurred in New England (317%) where the preliminary population estimate was 858 pairs in 2013. Net growth in the Southern recovery unit population was 80% between 1989 and 2013. Most of the Southern recovery unit breeding population increase occurred in 2003-2005 and 2011-2012. Abundance in the New York-New Jersey recovery unit experienced a net increase of 24% between 1989 and 2013, but the population declined sharply from a peak of 586 pairs in 2007 to 397 pairs in 2013 (-32%). During this period, several storms occurred as did beach stabilization and nourishment efforts, and human development increased (see Historic Post-Storm Responses to Breach and Overwash Formation below). In Eastern Canada, where increases have often been quickly eroded in subsequent years, the population posted a 21% net decline between 1989 and 2013; between 2007 and 2013, it decreased 31%.

Within the New York-New Jersey recovery unit, the New Jersey piping plover population has fluctuated at low numbers (1989-2013 range = 93 to 144 pairs; mean = 120 pairs), standing at 108 pairs in 2013. In 2012, more than 70% of the State's nesting pairs were concentrated along less than 20 miles (less than 16%) of the New Jersey shoreline that remain unstabilized (see below). Changes in the Long Island population account for most of the absolute growth in the recovery unit population through 2007 and most of the decrease that has occurred in the last six years. On Long Island, the south shore has been the greatest contributor to population changes (both positive and negative), supporting about 50% of the entire recovery unit population. Low abundance in New Jersey and recent steep decreases in abundance on Long Island (especially on the south shore) contribute to the recovery unit's demographic vulnerability.

In addition to the ongoing declines in the New York-New Jersey and Eastern Canada recovery units, other periodic regional declines illustrate the continuing risk of rapid and precipitous reversals in abundance trends. Examples include decreases of 21% in the Eastern Canada population in just three years (2002-2005) and 68% in the southern half of the Southern recovery unit during the seven years (1995-2001). The 64% decline in the Maine population between 2002 and 2008, from 66 pairs to 24 pairs, followed only a few years of decreased productivity. Although intensified protection efforts between 2008 and 2012 contributed to high productivity in Maine (range = 1.52-2.12 chicks per pair), the breeding population has only rebounded to 44 pairs as of 2013.

Atlantic Coast piping plover productivity is reported as number of chicks fledged per breeding pair. For purposes of measuring productivity, chicks are counted as fledged if they survived to 25 days of age or were seen flying, whichever occurred first. We calculate productivity by dividing the number of fledged chicks by the number of pairs that were monitored and for which number of fledglings could be determined. This includes both successful pairs and pairs that fledged no chicks because they failed to nest or because no eggs hatched or no chicks survived to fledging. Accurate assessment of productivity is facilitated by repeated visits to nesting beaches to monitor individual nests and broods during May, June, July, and, if necessary, August.

Annual productivity estimates for 1987-2013 are summarized by recovery unit and state in Appendix 3 (enclosed); numbers in parentheses are preliminary estimates, but final estimates are unlikely to differ substantially.

Hecht and Melvin (2009) evaluated latitudinal trends in Atlantic Coast piping plover productivity and relationships between productivity and population growth. Overall productivity for the Atlantic Coast population 1989-2006 was 1.35 chicks fledged per pair (annual range = 1.16-1.54), and overall productivity within recovery units decreased with decreasing latitude: Eastern Canada = 1.61, New England = 1.44, New York-New Jersey = 1.18, and Southern = 1.19 (Hecht and Melvin 2009). Within recovery units, annual productivity was variable and showed no sustained trends. There were significant, positive relationships between productivity and population growth in the subsequent year for each of the three U.S. recovery units, but not for Eastern Canada. Regression analysis indicated a latitudinal trend in predictions of annual productivity needed to support stationary populations within recovery units, increasing from 0.93 chicks fledged per pair in the Southern unit to 1.44 in Eastern Canada. Relatively small coefficients of determination ($r^2 = 0.09-0.59$) for the relationships between annual productivity and population increases in the subsequent year indicate that other factors, most likely annual survival rates of both adults and fledged chicks, also had important influences on population growth rates.

The estimate of productivity needed to maintain a stationary population within New England, 1.21 chicks fledged per pair, based on regression analysis (Hecht and Melvin 2009), is similar to the value of 1.24 that was estimated through population modeling based on survival estimates derived from 1985-1988 banding studies in Massachusetts (Melvin and Gibbs 1996). Regression analysis estimated productivity of 1.44 chicks fledged per pair needed to maintain a stationary population in Eastern Canada (Hecht and Melvin 2009), while Calvert *et al.* (2006) estimated 1.63 chicks per pair for Eastern Canada exclusive of southern Nova Scotia, based on estimates of survival derived from 1998-2004 banding studies.

The preliminary 2012 and 2013 U.S. Atlantic Coast productivity estimates of 0.82 and 0.91 chicks per pair were the lowest since the species' 1986 listing. The 2012 estimate was 37% below the 1989-2006 average, and 20% below the third worst year, 2009. Productivity in 2012 was lowest for the New York-New Jersey recovery unit (0.72 chicks per pair). The preliminary estimate for New England was 0.84 chicks per pair, while the Southern Recovery Unit had slightly better productivity at 0.89 chicks per pair. In Eastern Canada, productivity in 2012 was higher than in 2011, but below both the 1989-2006 average and the rate needed to maintain a stationary population. Nest loss due to flooding that occurred during an early June 2012 coastal storm and continuing threats from predation and human disturbance were major factors contributing to the record-low productivity. Productivity estimates in 2013 increased modestly in the New England and Southern recovery units (0.94 and 1.07 chicks per pair, respectively), and the 2013 estimate for the latter recovery unit exceeded the rate needed to maintain a stationary population in that part of the range (Hecht and Melvin 2009). Productivity of piping plovers in the New York-New Jersey recovery unit increased marginally to 0.74 chicks per pair in 2013. New York-New Jersey productivity has been below 1.0 chicks per pair in four out of the last five years, a circumstance that only occurred in two of the previous 20 years. Even in

2010, when productivity in the rest of the U.S. Atlantic Coast range averaged 1.45 chicks per pair, average productivity in New York was 0.79 chicks per pair.

The revised recovery plan for the Atlantic Coast piping plover found at U.S. Fish and Wildlife Service (1996) identifies a recovery objective and five criteria for meeting the objective. The objective is to ensure the long-term viability of the Atlantic Coast plover population in the wild and thus, allow for delisting of this species. Delisting of the Atlantic Coast piping plover population may be considered when the following criteria have been met:

- Increase the population to 2,000 breeding pairs, distributed among 4 recovery units, and maintain that level for 5 years;
- Verify the adequacy of a 2,000-pair population of piping plovers to maintain heterozygosity and allelic diversity over the long-term;
- Achieve a 5-year average productivity of 1.5 fledged chicks per pair in each of the recovery units;
- Institute long-term agreements to assure protection and management sufficient to maintain the population targets and average productivity in each recovery unit; and
- Ensure long-term maintenance of wintering habitat, sufficient in quantity, quality, and distribution to maintain survival rates for a 2,000-pair population.

In order to facilitate an even distribution of plovers throughout the Atlantic Coast range, the population was divided into four recovery units: Atlantic Canada, New England, New York-New Jersey, and Southern. Each unit was assigned a portion of the population target. The New York-New Jersey unit recovery target is a minimum of 575 pairs.

Environmental Baseline

Status of the Piping Plover at Long Beach Island Lido Beach

The Long Beach Island Lido Beach colonial waterbird survey area is monitored by the Town's Department of Conservation and Waterways and the NYSDEC. There have been between 1 and 19 pairs of piping plovers along this stretch of beach since 1988: 1988 - 5 pairs; 1989 - 7 pairs; 1990 - 5 pairs; 1991 - 5 pairs; 1992 - 1 pair; 1993 - 8 adults (not reported as pairs); 1994 - 8 pairs; 1995 - 9 pairs; 1996 - 9 pairs; 1997 - 10 pairs; 1998 - 9 pairs; 1999 - 8 pairs; 2000 - 8 pairs; 2001 - 10 pairs; 2002 - 11 pairs; 2003 - 9 pairs; 2004 - 15 pairs; 2005 - 17 pairs; 2006 - 19 pairs; 2007 - 16 pairs; 2008 - 16 pairs; 2009 - 14 pairs; 2010 - 14 pairs; 2011 - 12 pairs; 2012 - 15 pairs; 2013 - 15 pairs, and 2014 - 12 pairs.

Nesting areas are currently being monitored and have been posted and fenced by the Town. The Town reported via electronic correspondence dated June 20, 2014, that there were 12 pairs of plovers within their survey area, with three of those pairs breeding (incubating eggs or rearing unfledged chicks) within 0.75 mile of the launch site at the time of the event.

Action Area

The action area, considered to be the area of direct and indirect impact, includes the entire length of Point Lookout Town Park, approximately half of Nassau Beach County Park in Point Lookout (see enclosure), and the West End of Jones Beach State Park.

Effects of the Action

In evaluating the effects of the federal action under consideration in this consultation, 50 CFR 402.2 and 402.14(g)(3) requires the Service to evaluate the direct and indirect effects of the action on the species.

Direct Effects

As noted above, there are three breeding pairs (identified as pairs 5A, 9A, and 11A in electronic correspondence dated June 18, 2014) within 0.75 mile or closer to the launch site; therefore, this discussion of direct effects addresses the potential impacts to these two pairs and their eggs and chicks. Pair 5A has two chicks that reach fledge date on July 7. Nests from Pairs 9A and 11A are scheduled to hatch June 29 and 24, respectively.

Direct adverse effects from fireworks result from the associated noise, lights, and, rarely, accidental wildfires. Fireworks early in the breeding season may cause plovers conducting courtship activities to abandon their territories. Direct injury can be caused by the explosions or debris fallout. Moreover, piping plovers and terns may abandon their nests and broods during fireworks displays, exposing eggs and chicks to weather and predators. If a flightless chick were to become permanently separated from its parents during the confusion, mortality would be almost certain. The Service has concluded that plovers that are 0.75 mile or closer to the launch site may be directly affected by fireworks (U.S. Fish and Wildlife Service 1996).

The possibility of mortality from direct effects of the fireworks is considered to be extremely low due to their distance from the launch site and the physical separation of the launch site (Reynolds Channel) and the plover breeding area (Point Lookout ocean beach). This represents a distance of more than 2,500 feet and includes significant Town infrastructure, parklands, and a six-lane highway (Lido Boulevard).

Due to the mobility of other plover broods, some broods may enter into the $\frac{3}{4}$ -mile buffer zone, and, therefore, could experience potential direct effects. However, it is more likely that those plovers and their chicks that are located greater than 0.75 mile from the launch site would remain in their established territories.

Overall, the most serious potential direct impacts, including debris fallout, are not anticipated due to the projected fallout distance and prevailing wind direction. However, the lights and loud reports from the fireworks may disturb plovers, especially during the final salute, potentially preventing them from foraging or loafing/resting and disrupting nesting activities.

Given the status of the piping plovers and their habitat in the action area, the Service does not anticipate that more than three pairs of adults, up to eight eggs, and possibly up to ten chicks would be expected to be present within the ¼-mile radius at the time of the event and, therefore, potentially be subject to these effects. We believe that if the direct effects described above were to occur, they would not be expected to result in long-term impacts to the species due to the short duration of the fireworks event.

In an effort to gain additional information and data concerning the potential direct impacts of fireworks events on piping plovers, the Town will provide qualified biologists and plover stewards to monitor plover activity and to gather data on the actual effects of the fireworks launch, including monitoring the area before, during, and after the event. Direct adverse effects to plovers that are nesting at Jones Beach State Park are not anticipated as the major breeding area at this site is greater than 0.75 mile from the launch site.

Indirect Effects

Commercial fireworks displays often draw large crowds that may pose threats to nearby plovers. These crowds may be situated at some distance from the actual launch site, for example, across an inlet. Indirect effects may result from spectators walking through and/or throwing objects (including illegal pyrotechnics) into plover nesting and brood-rearing areas and/or from the accumulation of additional trash, which attracts predators. Other potential indirect effects may result from additional off-road vehicle patrols by public safety personnel, increased boat landings by spectators on relatively remote stretches of beach, low flying aircraft, including helicopter patrols, and personal spectator aircraft (U.S. Fish and Wildlife Service 1996).

The Town has incorporated a number of measures to be implemented as part of the event to prevent indirect impacts associated with spectators being in the vicinity of the piping plover nesting and foraging areas. For the Town's fireworks display, the spectators will be concentrated away from the ocean beachfront and toward the northern boundary of Point Lookout Town Park adjacent to Lido Boulevard. Recreational boaters will view the display from designated anchorages along the Reynolds Channel at Point Lookout. Plover areas are fenced and posted, and additional fencing will be added for spectator control. Portions of the beach will be closed to the public. In addition, the Town's Department of Environmental Conservation and Waterways will provide qualified biologists and plover stewards, Bay Constables, a Public Safety Officer, and Town lifeguards to ensure that no one intrudes into the nesting and foraging areas adjacent to the event, to monitor plover activities, and to collect data.

The plover nesting area on the bay side of the Sunset Beach area of Jones Beach State Park on the east side of Jones Inlet has eroded away. There are plover nesting locations on the ocean side of Jones Beach State Park; the New York State Office of Parks, Recreation and Historic Preservation will close this beach to the public to prevent viewing of the event from this location. Consequently, the Service does not anticipate that the Town's fireworks event will result in any adverse indirect impacts on piping plovers.

Cumulative Effects

Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this Opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA.

Continued pedestrian recreation can be expected to occur on the beaches at Point Lookout Town Park and vicinity. Impacts from these activities have been reduced as a result of the Town's ongoing program to monitor, post, and fence piping plover nesting areas each year. It is anticipated that the Town will continue to implement piping plover protection measures in the future. Other activities that may affect piping plovers in the action area include beach and dune stabilization projects such as snow fencing and beachgrass planting, as well as beach cleaning and grooming activities.

Conclusion

After reviewing the current status of the Atlantic Coast piping plover on Long Island, in the New York-New Jersey Recovery Unit, as well as throughout the rest of its range, the environmental baseline for the action area, the effects of the proposed fireworks event, and the cumulative effects, it is the Service's Biological Opinion that the Town's fireworks event, as proposed, is not likely to jeopardize the continued existence of the Atlantic Coast piping plover population or the New York-New Jersey Recovery Unit.

The Service has based this determination on several factors, including the status of breeding plovers and their chicks within 0.75 mile of the launch site. For plovers present within ¾ mile of the launch site, we considered that adverse effects are primarily in the form of disturbance to normal nesting, feeding, and brood-rearing behavior, none of which are expected to result in long-term impacts. Our determination is also based on the Town's incorporation and implementation of measures to avoid any adverse indirect impacts on piping plovers, including impacts from spectators, and documentation that past events have not resulted in long-term impacts to the species. No critical habitat has been designated for the Atlantic Coast population of this species, and, therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA, as amended, prohibit the taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Under the terms of Sections 7(b)(4) and 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered a

prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Pursuant to 50 CFR 402.14(g)(7), the Service is to formulate a statement concerning the incidental take of a listed species. This statement must include the level of take that is anticipated to occur due to the federal action. The Service is to develop, and the federal agency is to implement, reasonable and prudent measures that will minimize the impacts of the action on the species. In addition, the Service must set the terms and conditions with which the federal agency must comply. If the level of incidental take is exceeded, formal consultation under Section 7 must be reinitiated.

The USCG Marine Event Permit is issued based upon the information about the proposed activity provided by the sponsor in its "Application for Approval of Marine Event" and additional information that has been incorporated into the project description. The Service understands that the reasonable and prudent measures (and the accompanying terms and conditions) described below will be incorporated into the project description or an amended application to the USCG. It is anticipated that implementation of these measures during the proposed activity will result in avoidance of significant environmental impacts. Once approval is granted, the applicant is required to conduct the event in the manner described in the application. If the applicant fails to conduct the activity as described in its approved application, including compliance with the terms and conditions of the incidental take statement issued by the Service, the Marine Event Permit may be revoked and the protective coverage of Section 7(o)(2) may lapse.

Amount and Extent of Take

As a result of the status of plovers in the proposed event area, incidental take of three pairs of plovers, possibly up to 10 unfledged chicks, or 8 eggs from two nests, is likely to occur during the fireworks event, primarily in the form of harassment.

Normal behavior, including incubation, feeding, resting, and incubation may be disrupted. Plovers may exhibit more alarm behavior because of the loud reports associated with the fireworks, impacting their time spent feeding, and incubating eggs. If unfledged chicks are present within or closer than 0.75 mile of the launch site, chick growth rates and/or the number of days to fledging could be adversely affected as a result of this type of disturbance. Further, adults may spend less time protecting their chicks from potential predators or less time incubating their eggs, resulting in delayed hatch times. However, because of the distance of the plover breeding areas to the launch site, and the protection measures that will be employed by the Town, the probability of mortality of adults, chicks, or eggs would be considered to be very low.

As noted above, measures have been incorporated into the event to avoid indirect impacts from spectators at all active breeding areas. Therefore, no incidental take of plovers which are either less than or more than 0.75 mile distance from the fireworks launch site, including Jones Beach State Park, is anticipated due to indirect effects.

Effect of the Take

In the preceding Opinion, the Service determined that the anticipated take, either by harassment of adults and chicks or mortality of chicks, is not likely to result in jeopardy to the Atlantic Coast population or to the New York-New Jersey Recovery Unit.

Reasonable and Prudent Measures to Minimize Take

The incidental take statement provides measures that are necessary or appropriate to minimize take of listed species. Such measures should decrease the level of take to the maximum extent possible. Moreover, these measures describe methods that replace the capability of the population or habitat to support pre-activity levels. These measures are to be reasonable and prudent, which means that the nature of the corrective action required is commensurate with the impact on the species/habitat. Such measures are to be within the authority or capability of the agency or applicant to perform and should not alter the basic purpose, location, scope, or duration of the federally-funded or -permitted action.

Pursuant to Section 7(b)(4) of the ESA, the Service believes that following reasonable and prudent measures are necessary and appropriate to minimize take:

1. The USCG will ensure that piping plovers will be monitored before, during, and after the fireworks event to determine the degree of disturbance. Observational data will be used to review management for future fireworks near Point Lookout.
2. The USCG/Town must monitor its activities associated with the proposed project to determine if the Terms and Conditions of this Opinion are being implemented adequately in order to ensure that take is minimized and provide an annual report of those activities to the Service.

Terms and Conditions

In order to be exempt from prohibitions of Section 9 of the ESA, the USCG/Town must comply with the following terms and conditions that implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. The USCG shall incorporate the following as binding conditions of any permit issued associated with the project requiring the Town to:
 - a. implement the Protection Plan;
 - b. ensure that qualified biologists and plover stewards will locate and monitor the piping plover nest areas before, during, and after the event to observe and to record plover activity and the actual effects of the fireworks launch. Data collected will include site information, as well as observations of piping plover activity and behavior before, during,

and after the event, based on the forms provided by the Service to the Town and the NYSDEC.

- c. provide the Service with information on the actual date, time, and length of the fireworks display and information on the pyrotechnics launched, including numbers, sizes, and types of shells (report shells and others); and
- d. provide the Service with a report by January 31, 2015, of the piping plover monitoring activities before, during, and after the fireworks event and information on the pyrotechnics used during the event. The contact for these reporting requirements is as follows:

Steven T. Papa
Long Island Field Office
U.S. Fish and Wildlife Service
340 Smith Road
Shirley, NY 11797
(631) 286-0485

2. The USCG/Town shall immediately inform the Service's Long Island Field Office (contact information above) and Law Enforcement at (516) 825-3950 of any dead or injured plovers found at the site.

Conservation Recommendations

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. The primary objective of the recovery program for the Atlantic Coast piping plover is to remove the population from the List of Endangered and Threatened Wildlife and Plants. This goal will be achieved through a well-distributed increase in numbers and productivity of breeding pairs and through long-term protection of breeding and wintering plovers and their habitat.

In order to assist in the implementation of the recovery program, the Service recommends that plovers and their habitats under the management of the Town be managed consistent with Service guidelines for managing piping plovers on recreational beaches (U.S. Fish and Wildlife Service 1996).

2. In order to assist in evaluating the direct effects of fireworks noise levels on piping plovers, the Service recommends that the Town collect continuous sound-level data, such as decibel levels and ranges, associated with the fireworks detonations be collected during the ½ hour prior to, during and ½ hour after the fireworks launch using a portable sound meter.

Reinitiation of Formal Consultation

This concludes formal consultation on the federal action outlined in the June 12, 2014, formal consultation request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this Opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the extent of incidental take is exceeded, all activities that are causing such take must cease until such time as any necessary consultation is completed in order to avoid violation of Section 9 of the ESA.

The Service appreciates the opportunity to work with the USCG, the NYSDEC, and the Town in fulfilling our mutual responsibilities under the ESA.

Please contact Steve Papa of the Long Island Field Office at (631) 286-0485 extension 2120, if you have any questions or require additional information.

Sincerely,



David A. Stilwell
Field Supervisor

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Enclosures

cc: Town of Hempstead, Point Lookout, NY (T. Schneider/J. Browne)
NYSDEC, Stony Brook, NY (M. Gibbons/C. Hamilton)

U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
Civil Engineering Unit Providence

475 Kilvert Road, Ste 100
Warwick, RI 02886
Staff Symbol: Env
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Fax: (401) 736-1703
Email: Rachel.marino@uscg.mil

5090

June 12, 2014

VIA EMAIL

Mr. Steve Papa
U.S. Fish and Wildlife Service
Long Island Field Office
340 Smith Road
Shirley, NY 11967

Re: Town of Hempstead Fireworks Display – June 28, 2014 (Rain Date June 29, 2014)

Dear Mr. Papa,

The Commander of U.S. Coast Guard Sector Long Island Sound received an "Application For Approval of Marine Event" from the Town of Hempstead, New York for a marine related fireworks event scheduled for June 28, 2014 (rain date June 29, 2014). This application was forwarded for our review and comments regarding environmental impacts of the proposed action. The event sponsor's application describes the fireworks launch site as the Loop Parkway Bridge near the Town of Point Lookout, New York. The Coast Guard has designated the Town of Hempstead as the non-federal representative for the consultation with your office and has requested that the sponsor provide the necessary data and piping plover protection plan as components of their biological assessment (BA), enclosure (1).

Pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended, 16 USC 1531 etc. Seq., the U.S. Coast Guard has previously conducted consultation with the U.S. Fish and Wildlife Service (FWS) regarding the potential impacts of this fireworks display. The purpose of this consultation was to determine whether this activity, to be permitted by the Coast Guard, may affect piping plover (*Charadrius melodus*) or other federally listed or endangered species, or result in destruction or adverse modification of critical habitat.

Based on previous formal consultation with the FWS, the proposed action may result in direct and indirect effects on the piping plover and/or seabeach amaranth. Seabeach amaranth is a federally listed plant species and may occur on the ocean beach in the vicinity of this event. However, this species is not an issue for this event because it germinates later in the summer after the event, and usually in areas that are already protected for piping plovers. The Coast Guard has determined that adverse effects on this threatened plant are not likely to result from this marine related fireworks event.

However, it has been determined that the proposed action could result in direct and indirect effects on the piping plover. Therefore, we request the initiation of formal consultation between the FWS and the U.S. Coast Guard concerning the Town of Hempstead's marine related fireworks display potential to impact piping plovers.

Information has been provided by the Town of Hempstead that indicates the presence of 15 successful pairs of piping plovers on the beach areas to the south west of the launch site. There is one active pair on the western portion of Point Lookout Town Beach, nearest the event but most nests are outside of the ¾ mile distance launch site. The 2014 piping plover season is described in the “Town of Hempstead Fireworks Plan for Crowd Control and the Control of Secondary Effects on Piping Plover”, enclosure (1).

Impacts to piping plovers are possible from beachgoers and spectators observing the fireworks event because the affected beach areas are typically open for public use during the summer. Destruction or adverse modification of critical piping plover habitat is not an issue for this event. The Town will be closing off portions of the beach along with other beach areas using temporary snow fencing as described in the attached plan. Several pairs have not nested and one pair may be inside the ¾ mi radius on Point Lookout Town Beach. The Town of Hempstead is prepared to respond as needed as described in their “Plan for Crowd Control and the Control of Secondary Effects on Piping Plovers.”

The following information is offered in support of your biological opinion (BO) and incidental take statement relative to the proposed activity. As in past years, the Town of Hempstead prepares a piping plover protection plan intended to avoid indirect adverse affects from spectators and beachgoers during the fireworks display. This plan addresses the area where the plovers are located and the measures that will be taken to avoid adverse impacts on the species. These measures were developed in accordance with the FWS "Guidelines for Managing Fireworks in the Vicinity of Piping Plovers and Seabeach Amaranth on the U.S. Atlantic Coast".

The fireworks launch site is located on the more distant Loop Parkway Bridge with the intent of drawing spectators away from the primary beach plover habitat area and still provide for fire and safety needs and reasonable public viewing. The beach will not be a prime viewing site for the fireworks display. As in previous years, spectators are expected to view the fireworks from Lido Boulevard and the beach parking areas at Point Lookout.

Based on their spectator management and fireworks plan, the Town is prepared to act quickly should plover activity change by using general rules and contingencies that have been successful in the past.

The plover protection measures described in the Town of Hempstead's plan have been incorporated by the sponsor into their application to the Coast Guard for a marine event permit. In order for the Coast Guard to issue a Marine Event Permit for the proposed activity which has potential to impact piping plovers, it is necessary for us to complete the consultation required under Section 7 of the ESA. Further, the outcome of the consultation must be either a finding of no likely adverse effect (through informal consultation) or a written biological opinion with an incidental take statement as a result of formal consultation.

We believe that sufficient information has been provided with this letter in conjunction with additional details forwarded by others, for you to initiate the formal consultation process.

Please contact me at the telephone number or address shown above if you have any questions or need additional information. Your assistance on this project is very much appreciated.

Sincerely,

A handwritten signature in cursive script that reads "Rachel Marino".

RACHEL MARINO
Environmental Branch Chief
By direction of the Commanding Officer

Enclosure: (1) Town of Hempstead Fireworks 2014 – Plan for Crowd Control and the Control of Secondary Effects on Piping Plovers (*Charadrius melodus*)

Copy: CG Sector LIS
Town of Hempstead Department of Conservation and Waterways (Mr. Jim Browne)
NYS DEC (Mr. Frederick Hamilton)

Town of Hempstead
Fireworks, June 28, 2014 (rain date 6/29/14)
Plan for Crowd Control and
the Control of Secondary Effects on
Piping Plover (*Charadrius melodus*)

Potential effects on Piping Plover from fireworks are typically grouped into two categories. First are the primary effects due to falling debris, sound, flash, and trampling close to the launch point or primary viewing areas. Farther from the official display, the secondary effects predominate. Increased pedestrian traffic, private fireworks use, and general holiday partying in plover habitat pose far more significant threats.

For over a decade, the Town of Hempstead's means of reducing the effects of our fireworks display is to locate the launch point to the north side of the island. Primary effects, such as debris fall or the disturbances from setting up the mortar tubes, are confined to our property on the north side of Lido Boulevard. Likewise, the zone of loudest sounds and brightest flash are well to the North. As the viewing areas are Lido Boulevard and the lawns immediately adjacent, there is no potential for the viewing public to trample Piping Plover habitat.

Although the prime Piping Plover nesting habitat is over a mile away, the easternmost territories straddle the 3/4 mile radius and plovers frequently nest or shelter their chicks inside of it. This has, in the past, lead to the proposal of locating the launch point further to the north. We conclude that it is not possible to move it sufficiently to keep all potential Piping Plover habitat farther than 3/4 mile away. The main channel would move the launch less than 500 feet at most. The side channel is deemed too narrow to allow a barge that is large enough to pass safety standards for fireworks. These options would also require the closing of both channels to navigation instead of one. If the launch point was moved to the ocean, that would be counterproductive for Piping Plover safety. All potential viewing areas that are safe for public viewing (no rock revetments) are also prime plover habitat. An ocean launch would only draw the crowds toward the very nest locations we are attempting to keep disturbances away from. The same launch point as 1995 - 2010 is seen as the best overall alternative.

In addressing the potential secondary problems relative to the Town of Hempstead June 28, 2014 (rain date June 29, 2014) Salute To Veterans fireworks display and concert, we again have several factors working in our favor. Most significant, any possession and use of fireworks by private individuals is prohibited by law. Because the private use of fireworks is illegal in New York State, simply enforcing existing laws near plover habitat has proved sufficient for the past several years.

Crowd control issues are similarly minimal. By locating the center of attraction away from plover habitat, we insure that the beach itself is not the focus of activity. Primary viewing locations and parking are all located between the breeding grounds and the evenings events. Lido Boulevard is closed to traffic and the main viewing area is the northern law of Point Lookout Park. None of the spectators have any need to cross through nesting or foraging habitat to reach or leave any of the viewing locations. The beach is normally closed and deserted at night. However, it is recognized that many individuals will wander to the beach to continue the party or to avoid fighting the traffic. These people are less likely to understand plover fencing in the dark. **Map I** provides an overall view of the Lido - Point Lookout area. This includes viewing areas of Lido Blvd. and the lawn at the north edge of Point Lookout Park, the parking lots, and the ¾ mile radius to the launch point. Piping Plover nests active in late April to early June 2014 are plotted as red crosses, along with those from 1997 through 2013 that are plotted as small stars. We have reached a productivity of 1.86 on this stretch of beach in 2004, 1.94 in 2005, and 1.63 in 2006, and are implementing the same procedures that we had successfully used then. What is most important for this plan, is that no takes occurred while using earlier versions of this plan, despite the subsequent decline in productivity.

The 2014 Piping Plover Season

The plover activity for year 2014 consists of 12 pairs. Although more are possible, it is considered unlikely. The pairs active on the beach are not expected to present very different problems from the past. At this date we have found 12 successful first attempt Piping Plover nests (Nests 3A, through 12A) and two renests (1B and 2B). Most are well outside of the ¾ mile distance from the launch point, but 12A is 170 ft and 10A 60 ft inside. The 2014 has been a very late season, and pair 3, nest A, is the only nest that has hatched to date. Pair 1 is now ready to lay its C nest. Pairs 2 and 4-11 are expected to hatch prior to the event and fledge after the event, with pair 11 estimated to fledge on July 26. At this time, no additional pairs are known to be in the area. As in prior years, we are prepared to respond appropriately if the situation changes, according to the contingency plans outlined in the contingency plans section, below. We now have at least twelve nesting pairs, which is a bit below the last few years, and an unusual event is that two of the A nests have only 3 eggs. The long hard winter seems to have affected the plover. We have successfully exclosed all nests that we have discovered so far. With luck, we could have up to 40 chicks still active by the time of the event.

Description of General Fireworks Event Procedures

As in past fireworks plans, we are including some general rules and contingencies that are aimed at outlining our intentions to react quickly and appropriately to any changes in plover activity after the issuance of a fireworks permit.

1) **Protective zone.** Existing fencing is being augmented with temporary crowd control snow fencing. This temporary fencing is to be located at least 300 feet from Piping Plover nests and chicks. The additional distance that doubles the guideline recommendations is intended to provide an additional buffer from stray illegal fireworks. An additional use is to provide room for the movement of plover stewards and law enforcement. Some temporary fencing will close access routes to the beach. When used to close a section of beachface, the snow fence extends from existing fencing or the dune system, south down to the water's edge.

2) **Closings.** The beach near Piping Plover nests or chicks will be closed early that evening, starting at 8:30. This applies both to the closed locations discussed above and to Nassau Beach to the West.

3) **Enforcement.** Bay Constables are assigned to the beach for the evening. They are armed peace officers and will enforce fireworks laws, as well as wildlife laws such as violation of symbolic fencing. They are assigned quads for mobility and over the course of the evening they will be repositioned as needed.

4) **Public Safety.** Personnel from the Town of Hempstead Department of Public Safety are unarmed peace officers assigned to appropriate locations on Town of Hempstead Facilities.

5) **Lifeguards.** Personnel from our life guards are stationed by the fence to aid in traffic control.

6) **Stewards.** Biologists and Plover Stewards are assigned to locations where they can monitor the location and behavior of the plover and collect required data. As required, they will also contribute their skills in public education, aid in fence placement, as well as spot and report illegal activities for action by the Bay Constables.

7) **Notifications.** We will provide additional updates on the local Piping Plover status every week, along with appropriate modifications to the plan if needed. A final update will be provided around midday on the Friday immediately preceding the event.

Specifics of 2014 Piping Plover Protection

In light of these factors, the following specific steps are planned for addressing the dual problems of enforcing fireworks laws and keeping wandering spectators out of active plover habitats during the 2014 event.

1) Protective beach zone.

This year the eastern boundary of the main protected zone is expected to be located at the boarder between Malibu and Nassau Beaches. This will provide a 300 foot buffer around of nesting Piping Plover pairs 8A and

11A that are inside the ¾ mile buffer zone, On the western side, a second barrier of snow fence is located on the western part of Lido Town Beach about 300 feet west of Piping Plover nest 3A, that may have chicks 5 days short of fledging. Nest 12A is very far to the west, and on the private land of Lido Towers Condominium, so no additional snow fence is currently planned. However, if some additional fencing is needed the additions will be installed. This eventuality will be addressed in the contingency plans described below. Snow fence is installed across all access ways within the exclusion zones that are shown on maps 1 and 2. Few if any pedestrians will come from the west, as all of the activities and parking is to the north and east. Therefore the fencing on the northern and eastern boundaries of the habitat are receiving the most attention and security forces.

Maps 1 & 2 illustrate our plans based on May 30, 2014 viable Piping Plover nest locations and likely territorial behavior by known pairs. It is possible that chicks will be on the beach on Malibu, even into Point Lookout Park, this line of closure will then be moved to the east of that Piping Plover activity. The public will be moved outside the temporary fencing, that buffers the string fencing, and the extra snow fencing is then closed and patrolled. In the eventuality that we find an active nest or chicks in new locations, we will make appropriate adjustments. In that case, we will insure that there there is enough room to leave at least a 300 foot buffer between people and the closest nest, and the presence of other endangered, threatened, or species of special concern will be cause for closing appropriate sections of beach. In 2012 we had the closest pair ever on Hempstead Town Beach, yet they fledged 4 chicks. In 2011, there were 2 families on Malibu Beach, and another 2 on Point Lookout Town Beach that resulted in the most extensive closure to date, the entire beach from east-central Point Lookout Beach to Lido Beach. In 1999 our measures also resulted in the closure of the entire Malibu Beach where two Piping Plover families had chicks and a third pair was frequently seen. In 2000, only one of two pairs had survived a heavy bout of crow predation and occupied its C nest on the southern boarder between Malibu and Nassau County Beach Park. In 2010 nests were also found on Nassau Beach. No plover were lost during any of these events, and no sign of disturbance was detected. No nests were located on or near Malibu in 2001. One pair successfully used Malibu in each of 2002 and 2003, and in 2004 one pair used Malibu and two were close by on Nassau Beach. Finally in both 2005 and 2006, There were five pairs near the edge of the ¾ mile zone, including 2005 pair 14 nest B and 2006 nests 5A and 1C that were at the base of the western Malibu dune and about 200 feet inside the ¾ mile zone. The 2010 event two pair were successfully protected over 800 feet inside the ¾ mile zone. These nests were carefully observed during the fireworks with a Starttr on night vision scope and no human activity or other signs of disturbance were discerned.

2) Protective Beach closings.

The protective zone will start closing after 8:30 PM and be clear of visitors at least 20 We have had past occurrences of nests on Malibu Beach and Hempstead Town Beach. In minutes before the fireworks event. Planned beach closings for the 2014 event will likely include all of of Malibu, all of Nickerson Beach, the

Towne House Beach, The Sands Town Park, most of Lido Town Park,, parts of Point Lookout Civic, and parts of Point Lookout Town Beach. There are currently twelve nests; two Point Lookout Town Park, none on Malibu, two on eastern Nickerson Beach, three on western Nnickerson Beach with a 4th expected, one at the Towne House, one on The Sands, one further west on Lido Town Park, and one very far west on the Lido Towers property.

Nassau County Beach has again agreed to close access to their beach at 8:30 PM the evening of the fireworks event. We are requesting that occupants of The Towne House and Lido Condominiums minimize or curtail the use their beach for the evening of the event. As in previous years, the Towne House are informing their tenants that fireworks are illegal and that these laws are being enforced. This is a new experience for Lido Towers, but they are also very far away from the event. Snow fence barriers will close access from the Nassau East and West Terrace Cabana areas as well as the Nassau County Trailer Camp Ground.

3) Law Enforcement.

Two Bay Constables are available to respond to the beach for the evening. They are peace officers and will enforce fireworks laws, as well as wildlife laws such as violation of symbolic fencing. They are assigned radios and quads for mobility and over the course of the evening they will be repositioned as needed. The initial positioning will include two constables along the eastern side of the closed area to prevent incursions and illegal fireworks. The Constables can also respond to Point Lookout Town Park if needed. The third officer is assigned to western Nassau Beach where they can respond to violations near the Nassau Beach Cabanas, the Towne House, The Sands and Lido Park to the west. After repeated years of enforcement, we have noticed a reduction in illegal fireworks each year. In the past, Bay Constables patrolled the Sun Set Beach section of Jones Beach by boat in order to prevent boat landings. Unfortunately, severe erosion has destroyed the nesting grounds at Sunset Beach and Jones beach reports no Piping Plover activity in that location. Therefore, that patrol is no longer needed.

3) TOH Public Safety Officers.

An officer from the Town of Hempstead Department of Public Safety is assigned to the cabana area of Malibu and Point Lookout Town Park for the evening. He will patrol for illegal fireworks there and be capable of calling on the Constables for backup as needed. This area is for cabana patrons only, so he will also prevent members of the general public from trying to bypass closed beach restrictions by cutting through the cabana areas.

4) Life Guards.

At least two lifeguards are assigned to maintain traffic control on the eastern boundary with the capability to contact the nearest Bay Constable when needed. A third lifeguard is being requested for the western fence. In the unlikely event that plover activity is so widely spaced that a cabana patron zone is re-opened, at least two additional lifeguards will be assigned there. These steps have proved sufficient in past years.

5) Stewards.

Six or more Biologists and trained Piping Plover Stewards will be assigned to the protective zone for the event. Their primary duties include is the collection of data about Piping Plover Reactions to the event. At least two will be located by Malibu, two by the nests at Nassau beach, the Sands and the Towne House, and one or two by Point Lookout near nest 11A. These starting locations closest to the event are shown on Map 2.

6) Updates

We will provide updates on the local Piping Plover status every Tuesday, including any changes in the plan that become necessary. The accompanying **Map 2** shows the intended initial position of personnel as well as potential locations for snow fence barriers. The ultimate positions will depend on the status of the plover at the time of the event as well as the required responses to activity by the public.

7) Other cooperation

Jones Beach has promised to close the western end of the New York State Park to prevent viewing of our event from Piping Plover breeding locations there.

Contingent Plans

In the event that new Piping Plover nests our found outside of the restricted zone specified above, we intend to extend the restricted zone in accordance to the general procedures that the public will be excluded from nesting areas using temporary snow fencing such that it leaves a buffer of 300 feet or more. This general rule is illustrated in the hypothetical examples shown on **Maps 3, 4 and 5.**



Town of Hempstead
Department of
Conservation & Waterways

KATE MURRAY
Supervisor

RON MASTERS
Commissioner

Town of Hempstead Event: 2014 June 28

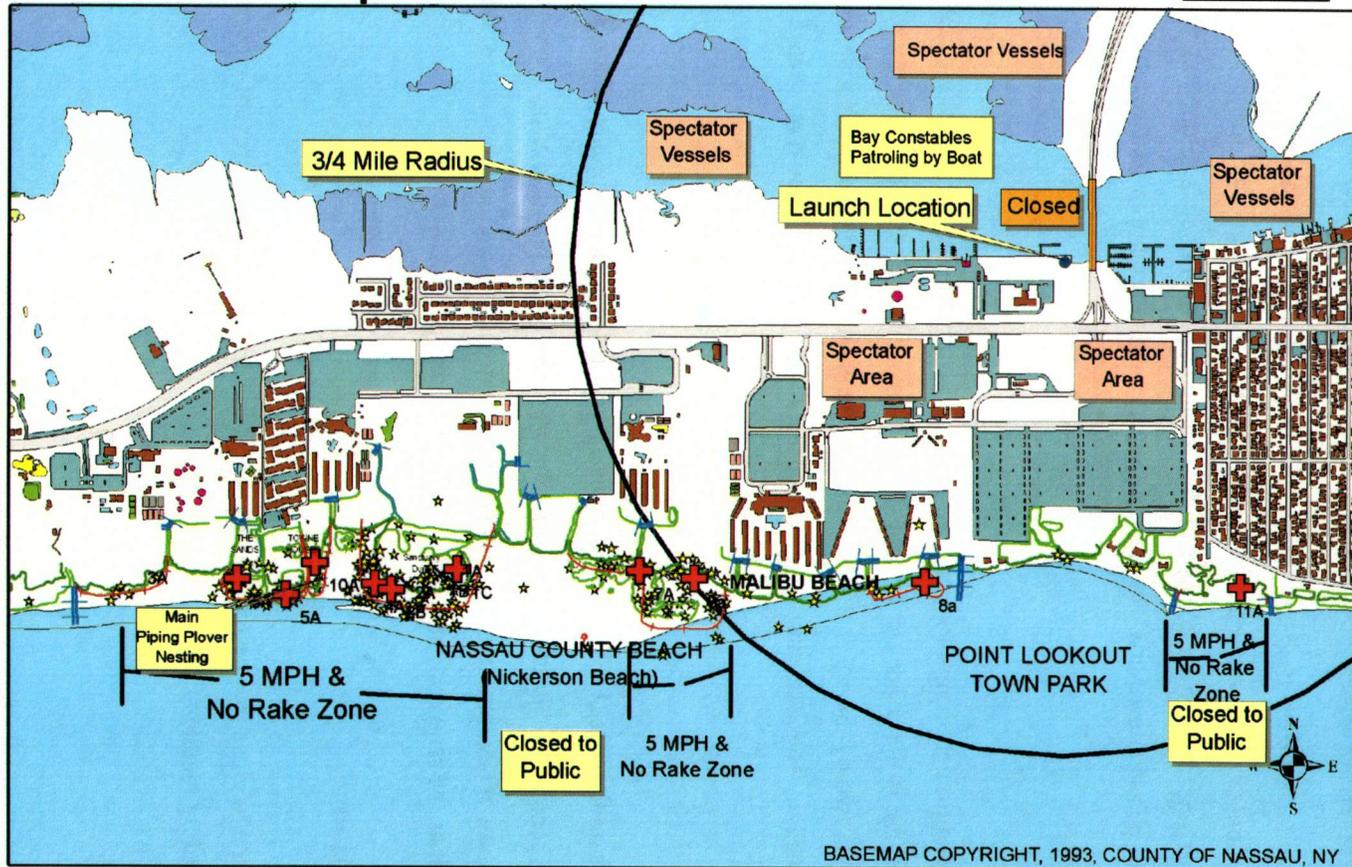
MAP 1
Overview

Legend

PIPL053014

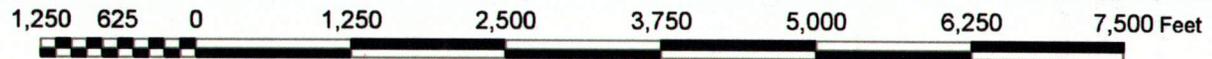
Status

- × ABND
- ⊕ INCUB
- String Fence 2014
- String Fence
- String Fence
- Snow Fence 2014
- Dune_edg
- ☆ Nests 96-2013
- 3/4 Mile Radius
- Launchpoint



BASEMAP COPYRIGHT, 1993, COUNTY OF NASSAU, NY

The beach that is enclosed within the snowfence is closed to public starting before the fireworks and lasting until the next day.



1 inch = 1,251 feet



Town of Hempstead
Department of
Conservation & Waterways

KATE MURRAY
Supervisor

RON MASTERS
Commissioner

Legend

PIPL053014

Status

- × ABND
- ✚ INCUB
- ☆ PIPLNests052313
- String Fence 2014
- Snow Fence 2014
- Sand_Edg
- Dune_edg
- ☆ Nests 96-2011
- PIPLTerritory050813
- 3/4 Mile Radius

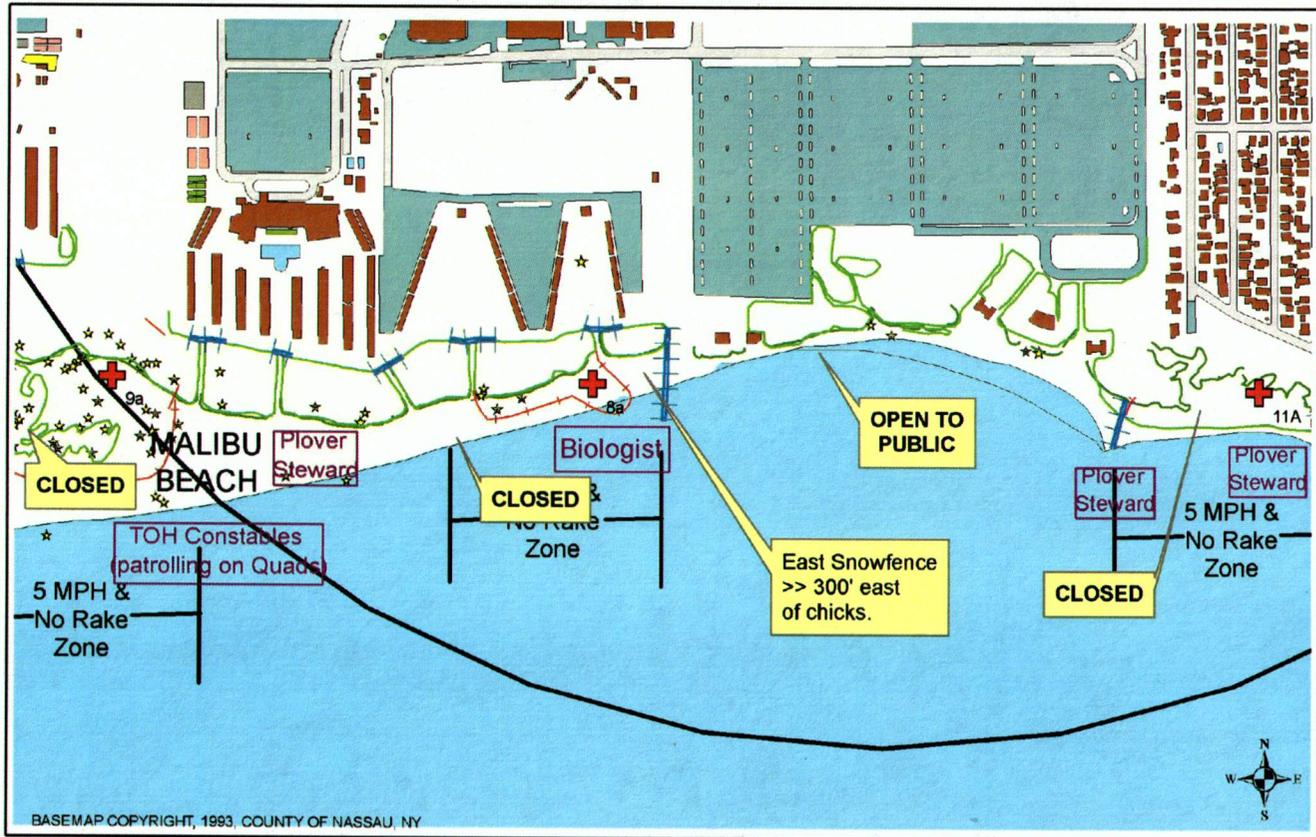
Scale
1:7200
1" = 600'

Town of Hempstead Event: 2014, June 28

1 inch = 600 feet

Nest conditions as of May 30, 2014

MAP 2
Piping Plover
Plan Update



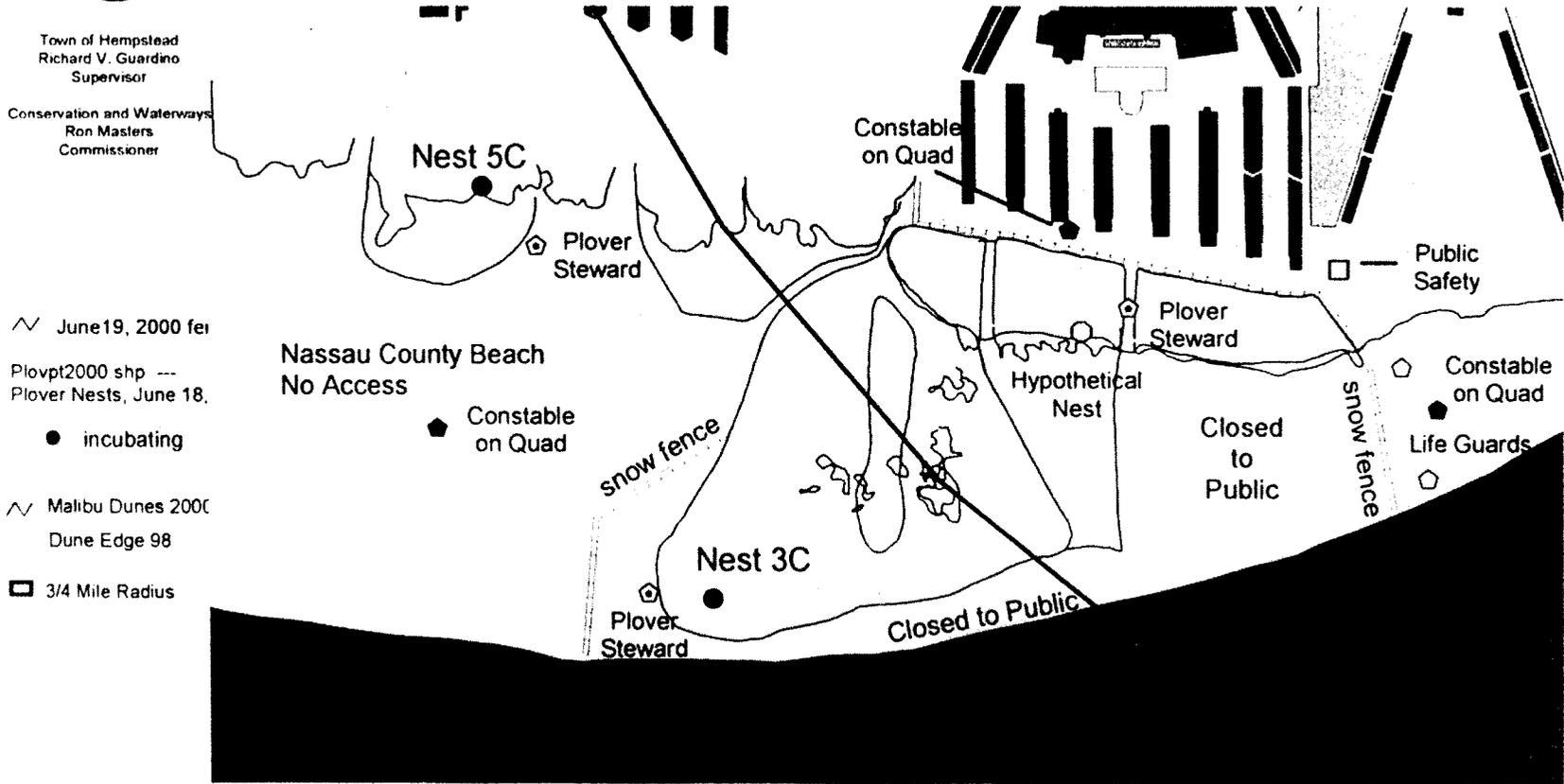


Town of Hempstead
Richard V. Guardino
Supervisor

Conservation and Waterways
Ron Masters
Commissioner

Town of Hempstead event Potential scenario 1, historical nesting

Map 3,
Hypothetical nest
in Historic Area



- ∨ June 19, 2000 fer
- Plovpt2000 shp --- Plover Nests, June 18.
- incubating
- ∨ Malibu Dunes 2000 Dune Edge 98
- 3/4 Mile Radius

200 0 200 400 600 800 1000 1200 1400 1600 Feet

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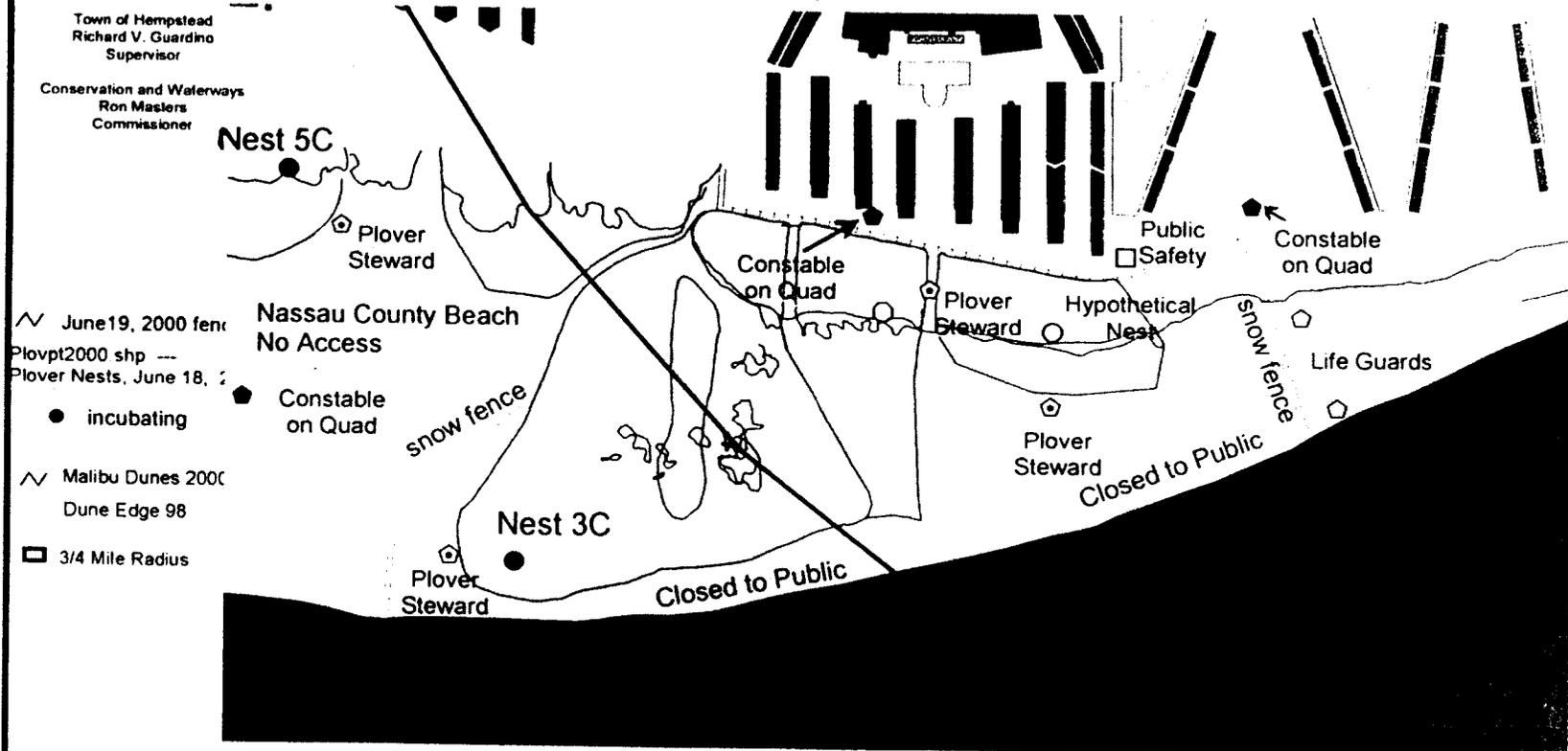


Town of Hempstead
Richard V. Guardino
Supervisor

Conservation and Waterways
Ron Masters
Commissioner

Town of Hempstead event, Potential Scenario 2, nests to east

Map 4,
Hypothetical nests
East of Historical Nesting



- ∧ June 19, 2000 fence
- Plovt2000 shp ---
- Plover Nests, June 18, 2000
- incubating
- Constable on Quad
- ∧ Malibu Dunes 2000
- Dune Edge 98
- 3/4 Mile Radius



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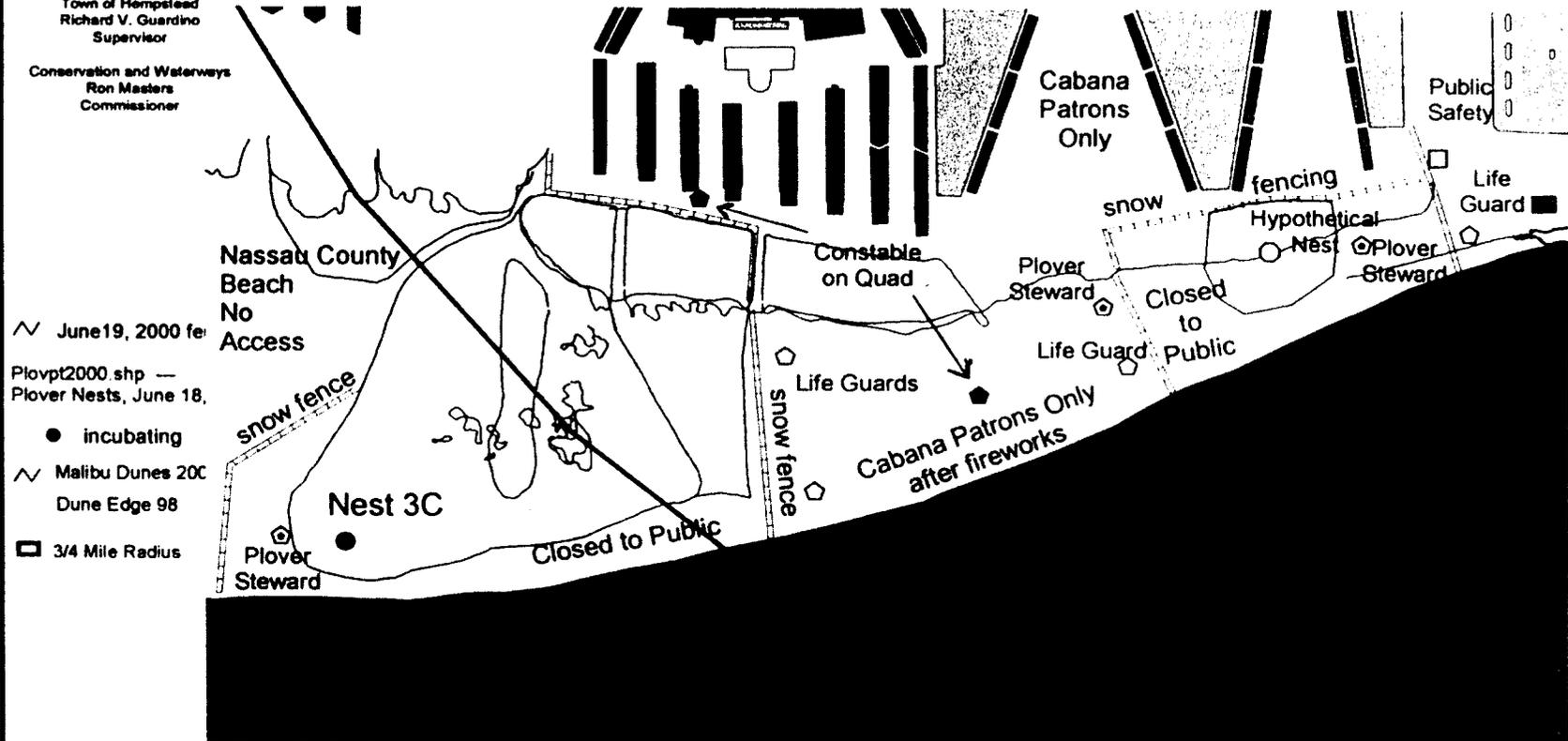


Town of Hempstead
Richard V. Guardino
Supervisor

Conservation and Waterways
Ron Masters
Commissioner

Town of Hempstead event, Potential Scenario 3, isolated nest to east

Map 5,
Hypothetical Nest
Far to East



- ~ June 19, 2000 fe
- Plovpt2000.shp — Plover Nests, June 18,
- incubating
- ~ Malibu Dunes 20C Dune Edge 98
- ☐ 3/4 Mile Radius

200 0 200 400 600 800 1000 1200 1400 1600 1800 Feet

BASEMAP COPYRIGHT, 1993, COUNTY OF NASSAU, NY

Appendix 2

Table 1. Estimated abundance of Atlantic Coast piping plovers, 1986 – 2011 and preliminary 2012 and 2013 estimates.

State/RECOVERY UNIT	Pairs																											
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012*	2013*
Maine	15	12	20	16	17	18	24	32	35	40	60	47	60	56	50	55	66	61	55	49	40	35	24	27	30	33	42	44
New Hampshire												5	5	6	6	7	7	7	4	3	3	3	3	5	4	4	6	7
Massachusetts	139	126	134	137	140	160	213	289	352	441	454	483	495	501	496	495	538	511	488	467	482	558	566	593	591	656	(690)	(670)
Rhode Island	10	17	19	19	28	26	20	31	32	40	50	51	46	39	49	52	58	71	70	69	72	73	77	84	85	86	90	92
Connecticut	20	24	27	34	43	36	40	24	30	31	26	26	21	22	22	32	31	37	40	34	37	36	41	44	43	52	51	45
NEW ENGLAND	184	179	200	206	228	240	297	376	449	552	590	612	627	624	623	641	700	687	657	622	634	705	711	753	753	831	(879)	(858)
New York	106	135	172	191	197	191	187	193	209	249	256	256	245	243	289	309	369	386	384	374	422	457	443	437	390	318	342	(289)
New Jersey	102	93	105	128	126	126	134	127	124	132	127	115	93	107	112	122	138	144	135	111	116	129	111	105	108	111	121	108
NY-NJ	208	228	277	319	323	317	321	320	333	381	383	371	338	350	401	431	507	530	519	485	538	586	554	542	498	429	463	(397)
Delaware	8	7	3	3	6	5	2	2	4	5	6	4	6	4	3	6	6	6	7	8	9	9	10	10	9	8	7	6
Maryland	17	23	25	20	14	17	24	19	32	44	61	60	56	58	60	60	60	59	66	63	64	64	49	45	44	36	41	45
Virginia	100	100	103	121	125	131	97	106	96	118	87	88	95	89	96	119	120	114	152	192	202	199	208	193	192	188	259	251
North Carolina	30	30	40	55	55	40	49	53	54	50	35	52	46	31	24	23	23	24	20	37	46	61	64	54	61	62	70	56
South Carolina	3		0		1	1		1			0					0						0						
SOUTHERN	158	160	171	199	201	194	172	181	186	217	189	204	203	182	183	208	209	203	245	300	321	333	331	302	306	294	377	358
U.S. TOTAL	550	567	648	724	752	751	790	877	968	1150	1162	1187	1168	1156	1207	1280	1416	1420	1421	1407	1493	1624	1596	1597	1557	1554	(1719)	1613
EASTERN CANADA**	240	223	238	233	230	252	223	223	194	200	202	199	211	236	230	250	274	256	237	217	256	266	253	252	225	209	179	184
ATLANTIC COAST TOTAL	790	790	886	957	982	1003	1013	1100	1162	1350	1364	1386	1379	1392	1437	1530	1690	1676	1658	1624	1749	1890	1849	1849	1782	1763	(1898)	(1797)

* Figures in parentheses are preliminary estimates, subject to revision

** Includes 1-5 pairs on the French Islands of St. Pierre and Miquelon, reported by Canadian Wildlife Service

Appendix 3

Table 2. Estimated productivity of Atlantic Coast piping plovers, 1987 – 2011 and preliminary 2012 and 2013 estimates.

State/RECOVERY UNIT	Chicks fledged/pair																										
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012*	2013*
Maine	1.75	0.75	2.38	1.53	2.50	2.00	2.38	2.00	2.38	1.63	1.98	1.47	1.63	1.60	1.98	1.39	1.28	1.45	0.55	1.35	1.06	1.75	1.70	1.63	2.12	1.52	1.93
New Hampshire											0.60	2.40	2.67	2.33	2.14	0.14	1.00	1.00	0.00	0.67	0.33	2.00	0.40	1.50	2.00	0.67	1.71
Massachusetts	1.10	1.29	1.59	1.38	1.72	2.03	1.92	1.81	1.62	1.35	1.33	1.50	1.60	1.09	1.49	1.14	1.26	1.38	1.14	1.33	1.25	1.41	0.91	1.50	1.18	(0.75)	(0.80)
Rhode Island	1.12	1.58	1.47	0.88	0.77	1.55	1.80	2.00	1.68	1.56	1.34	1.13	1.79	1.20	1.50	1.95	1.03	1.50	1.43	1.03	1.48	1.68	1.46	1.76	1.49	1.06	0.98
Connecticut	1.29	1.70	1.79	1.63	1.39	1.45	0.38	1.47	1.35	1.31	1.69	1.05	1.45	1.86	1.22	1.87	1.30	1.35	1.62	2.14	1.92	2.49	1.68	1.91	1.37	1.18	1.82
NEW ENGLAND	1.19	1.32	1.68	1.38	1.62	1.91	1.85	1.81	1.67	1.40	1.39	1.46	1.62	1.18	1.53	1.26	1.24	1.40	1.15	1.34	1.30	1.51	1.04	1.56	1.27	(0.84)	(0.94)
New York	0.90	1.24	1.02	0.80	1.09	0.98	1.24	1.34	0.97	1.14	1.36	1.09	1.35	1.11	1.27	1.62	1.15	1.46	1.44	1.55	1.15	1.21	0.93	0.79	1.07	0.72	(0.71)
New Jersey	0.85	0.94	1.12	0.93	0.98	1.07	0.93	1.16	0.98	1.00	0.39	1.09	1.34	1.40	1.29	1.17	0.92	0.61	0.77	0.84	0.67	0.64	1.05	1.39	1.18	0.72	0.85
NY-NJ	0.86	1.03	1.08	0.88	1.04	1.02	1.08	1.25	0.97	1.07	1.02	1.09	1.35	1.19	1.28	1.49	1.07	1.23	1.28	1.36	1.03	1.10	0.96	0.92	1.09	0.72	(0.74)
Delaware		0.00	2.33	2.00	1.60	1.00	0.50	2.50	2.00	0.50	1.00	0.83	1.50	1.67	1.50	1.17	2.33	1.14	1.50	1.44	1.33	0.30	1.30	1.56	1.00	1.00	1.17
Maryland	1.17	0.52	0.90	0.79	0.41	1.00	1.79	2.41	1.73	1.49	1.02	1.30	1.09	0.80	0.92	1.85	1.56	1.86	1.25	1.06	0.78	0.41	1.42	1.09	1.25	1.02	0.76
Virginia		1.02	1.16	0.65	0.88	0.59	1.45	1.66	1.00	1.54	0.71	1.01	1.21	1.42	1.52	1.19	1.90	2.23	1.52	1.19	1.16	0.87	1.19	1.35	1.36	0.95	1.15
North Carolina			0.59	0.43	0.07	0.41	0.74	0.36	0.45	0.86	0.23	0.61	0.48	0.54	0.50	0.17	0.46	0.65	0.92	0.87	0.26	0.30	0.70	0.77	0.77	0.59	0.96
SOUTHERN	1.17	0.85	0.88	0.72	0.68	0.62	1.18	1.37	1.05	1.34	0.68	0.99	1.04	1.09	1.22	1.27	1.63	1.95	1.38	1.12	0.92	0.67	1.14	1.20	1.21	0.89	1.07
U.S. average	1.04	1.11	1.28	1.06	1.22	1.35	1.47	1.56	1.35	1.30	1.16	1.27	1.45	1.17	1.40	1.34	1.24	1.43	1.24	1.30	1.13	1.19	1.03	1.27	1.21	(0.82)	(0.91)
EASTERN CANADA**		1.65	1.58	1.62	1.07	1.55	0.69	1.25	1.69	1.72	2.10	1.84	1.74	1.47	1.77	1.18	1.62	1.93	1.82	1.82	1.14	1.47	1.22	1.59	1.19	1.38	1.36

* Figures in parentheses are preliminary estimates, subject to revision

** Includes St. Pierre and Miquelon, reported by Canadian Wildlife Service