

June 24, 1998

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

Dear Ms. Marino:

The U.S. Fish and Wildlife Service has reviewed the Town of Stratford's application for a U.S. Coast Guard marine event permit to hold fireworks in Stratford, Connecticut on July 3, 1998 with a rain date of July 5, 1998. This document represents the Service's Biological Opinion on the effects of the action on the federally-threatened piping plover (*Charadrius melodus*) in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

This Biological Opinion is based on information provided in your May 7, 1998 letter describing the proposed project and requesting initiation of formal consultation. It is also based on discussions among your agency, my staff, and Ms. Patusky, Superintendent of Recreation for the Town of Stratford, as well as documentation provided by the Town of Stratford.

I. CONSULTATION HISTORY

- January 27, 1998 Meeting with the Connecticut Department of Environmental Protection, the Towns of West Haven, New Haven, Stratford and Bridgeport, Stewart B. McKinney National Wildlife Refuge, New England Field Office and the U.S. Coast Guard to discuss proposed 1998 fireworks events and consultation procedures.
- February 24, 1998 Letter from the Town of Stratford to the Service informing us of the proposed July 3, 1998 fireworks event to be held at Short Beach.

April 28, 1998	Site visit to Short Beach, Stratford, Connecticut to review piping plover habitat and fireworks location.
May 7, 1998	Letter from USCG to the Service requesting formal consultation.
May 21, 1998	Service letter to USCG acknowledging receipt of letter to initiate formal consultation and stating that the Biological Opinion for this project would be issued no later than June 27, 1998.
June 1, 1998	Telephone conversation between S. von Oettingen, New England Field Office, and Pat Patusky, Stratford Department of Recreation, regarding the proposed monitoring activities at Short Beach and presence of plovers.

II. BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Fireworks event

The proposed action is the discharge of fireworks at Short Beach Park in Stratford, Connecticut on July 3, 1998 or July 5, 1998 (rain date). Approximately 2,050 shells ranging from 3" to 8" will be detonated, similar to the display of 1997.

Spectator management

An estimated 8,000 to 10,000 spectators are expected to attend the fireworks at Short Beach Park, with additional spectators viewing from boats anchored in Long Island Sound.

The Town of Stratford (sponsor of the fireworks event) will undertake the following actions to prevent spectators observing the fireworks from disturbing piping plovers:

1. Monitors will be stationed at Short Beach and Milford Point. Monitors will be provided by the Town of Stratford for Short Beach; the Stewart B. McKinney NWR will provide monitoring and law enforcement personnel for Milford Point.
2. Should piping plovers be found to nest on Short Beach, the beach area near the nests will be closed during the fireworks and secured by the Stratford Recreation Department. Viewers will be restricted to the area south of Dorne Drive.
3. Pedestrian access is and will continue to be prohibited on Milford Point.

4. Parking lots south of the tennis courts at Short Beach Park will be closed.

5. Volunteers will be stationed at the limits of the restricted area on Short Beach to prevent spectators from entering areas fenced to protect any nesting plovers.
6. Trash will be removed at daylight.

RANGEWIDE STATUS OF THE SPECIES

Species description

The Atlantic Coast population of piping plovers breeds on coastal beaches from Newfoundland to North Carolina (and occasionally in South Carolina) and winters along the Atlantic Coast from North Carolina south, along the Gulf Coast, and in the Caribbean. Since being listed as threatened in 1986, the population has increased from approximately 800 pairs to 1,391 pairs in 1997 (Anne Hecht, USFWS, pers. comm. 1998). Since 1989, the New England sub-population has increased in comparison to the New York-New Jersey, the Southern (DE-MD-VA-NC) and Atlantic Canada sub-populations. Substantially higher productivity rates have also been observed in New England than elsewhere in the population's range. Recovery of the Atlantic Coast piping plover population is occurring in the context of an extremely intensive protection effort, since pressure on Atlantic Coast beach habitat from development and human disturbance is pervasive and unrelenting.

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, wrack lines, and shorelines of coastal ponds, lagoons or salt marshes (USFWS, 1996).

In Connecticut, 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, and eggs are usually incubated for 27-28 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 Connecticut 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 limiting piping plover reproductive success at many Atlantic Coast sites, and substantial evidence shows that human activities are affecting types, numbers, and activity patterns of predators, thereby exacerbating natural predation (USFWS, 1996).

The revised recovery plan for the Atlantic Coast piping plover (USFWS, 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, thereby allowing for the 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 four recovery units, and maintain that level for five 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.
- ! 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 England unit recovery target is a minimum of 625 pairs. As of 1996, there were 590 pairs of piping plovers in New England with an average productivity of 1.4 chicks per pair.

ENVIRONMENTAL BASELINE

Status of the piping plover at Short Beach Park and Milford Point

Short Beach Park is owned and managed by the Town of Stratford and is used as a

pedestrian recreational area. Piping plovers have been documented at this site since 1986 with 0 to 3 pairs using the beach annually. Productivity has been variable: 1997 - 1 pair fledged 1 chick; 1996 - 1 pair fledged 1 chick; 1995 - 1 pair fledged 4 chicks; 1994 - 1 pair fledged 0 chicks; 1993 - 1 pair fledged 0 chicks; 1992 - 2 pairs fledged 3 chicks; 1991 - 1 pair fledged 4 chicks; 1990 - 2 pairs fledged 7 chicks; 1989 - 3 pairs fledged 6 chicks. No piping plovers have been observed on Short Beach in 1998 (as of June 12, 1998) (William Kolodnicki, USFWS, pers. comm., 1998).

In the past, piping plovers at Short Beach Park have been monitored primarily by the Connecticut Department of Environmental Protection; however, during the 1997 season, plover monitoring was a collaborative effort between the Connecticut Audubon Coastal Center and the Stewart B. McKinney NWR. Piping plover management at Short Beach Park includes the symbolic fencing and sign posting of nesting areas on the north end of the park, the enclosure of established nests and the monitoring every two to five days of plover nests and broods. Pedestrians are allowed to pass in front of the posted area. Primary recreational activities at Short Beach Park include sunbathing, swimming, kite flying and picnicking. Pets are not allowed in the park at any time.

The Town of Stratford has held annual fireworks events at Short Beach Park for over 12 years. Prior to 1996, fireworks were detonated within 600 feet of plover broods or nests. Prior to 1997, there was no monitoring of piping plovers before, during or after the events.

Milford Point is under multiple ownership. Approximately 11 acres (Smith Point) are owned by the U.S. Fish and Wildlife Service and managed as a national wildlife refuge (Stewart B. McKinney NWR). The State of Connecticut owns approximately eight acres and leases this land to the Connecticut Audubon Coastal Center at Milford Point. The remaining \pm 8 acres of Milford Point are privately owned. Generally, two to five pairs of piping plovers nest on Milford Point with variable productivity: 1997 - 5 pairs fledged 3 chicks; 1996 - 2 pairs fledged 3 chicks; 1995 - 3 pairs fledged 2 chicks; 1994 - 4 pairs fledged 3 chicks; 1993 - 3 pairs fledged 2 chicks; 1992 - 5 pairs fledged 2 chicks; 1991 - 4 pairs fledged 2 chicks; 1990 - 8 pairs fledged 9 chicks; 1989 - 4 pairs fledged 8 chicks. As of June 9, 1998, there were three pairs of piping plovers at Milford Point; one pair had 4 eggs, one pair had 1 chick, and a third pair had not yet established a nest (William Kolodnicki, USFWS, pers. comm., 1998).

Management of piping plovers at Milford Point is a collaborative effort between the CT DEP, the Coastal Center and the Refuge. Nesting areas are symbolically fenced and posted, nests are enclosed, and plover nests and broods are monitored every two to five days. Pedestrian recreational activities such as swimming, sunbathing, and bird watching are restricted to portions of the beach privately owned or owned by the State. The sandbar situated west of the Point can be accessed by boat and is subject to use by pedestrians and

occasional dogs. Plovers nesting on this sandbar have been jointly managed by the CT DEP and Refuge staff.

Action Area

The action area, considered to be the area of direct and indirect impact, includes the entire length of Short Beach Park and Milford Point in Milford, Connecticut.

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 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 (which frequently nest adjacent to or near plovers) will often 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 may be directly affected by fireworks located less than 3/4 mile from the nearest plover nesting and/or foraging area (USFWS, 1997). The Town of Stratford fireworks event will be located a maximum of 3/5 mile from piping plovers at Milford Point and may be within 1,000 feet from plovers should they attempt to nest at Short Beach Park prior to the July 3, 1998 event. The most serious impacts, including debris fallout, are not anticipated at either Milford Point or Short Beach Park due to the relatively small size of the shells and the projected fallout distance. However, loud reports may disturb plovers especially during the final salute, preventing them from foraging or resting. The reports may even cause temporary or permanent abandonment of nests at Milford Point (if plover eggs have not hatched) or separate adults from their young.

Commercial fireworks displays often draw large crowds that may pose threats to plovers even if these crowds are situated at some distance from the actual launch site; for example, across an inlet. A large number of spectators at Short Beach Park and associated crowd control activities may indirectly affect piping plovers. These 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).

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 Biological 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.

Over the long term, increased pedestrian recreation can be expected to occur on Short Beach Park. Currently, use of the beach is primarily for sunbathing and swimming. Impacts from the activities have been somewhat minimized through symbolic fencing of a small portion of the beach and the use of exclosures. However, increased recreational use may result in increased disturbance to nesting plovers if not appropriately managed.

CONCLUSION

After reviewing the current status of the Atlantic Coast piping plover in the New England 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 July 3, 1998 fireworks event as proposed is not likely to jeopardize the continued existence of the Atlantic Coast piping plover population or the New England recovery unit. The Service has based this determination on the relatively few numbers of plovers (6 adults, 1 chick, 4 eggs) expected to be adversely affected by the fireworks with respect to the large number of pairs found in the Recovery Unit (an estimated 550 to 600 pairs for 1997) in conjunction with the very low possibility of mortality. There is a low possibility of mortality based on the distance of the chicks and adults at Milford Point from the fireworks and the absence of nesting plovers at Short Beach. Effects are primarily in the form of disturbance to natural feeding and breeding behavior and are not expected to have long-term impacts. No critical habitat has been designated for this species; therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the Endangered Species Act, 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 Section 7(4)(b) and Section 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 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 Coast Guard 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". We understand that the reasonable and prudent measures (and accompanying terms and conditions) described below will be incorporated into an amended application to the Coast Guard. 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 their 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

The Service anticipates that incidental take of the federally-threatened piping plover is likely to occur during the fireworks event primarily in the form of harassment. The distance between the fireworks event and breeding piping plovers at Milford Point is approximately 3/5 mile or less depending upon the plover brood movements. The event at Short Beach Park would be within 1,000 feet from a traditional plover nesting site (should plovers return to Short Beach prior to July 3, 1998). Plovers may exhibit more alarm behavior and have less opportunity to feed throughout the evening because of loud reports associated with the fireworks. If chicks are very young at the time of the event, chick growth rates and/or the number of days to fledging could be adversely affected as a result of the disturbance. If plovers are incubating eggs during the event, the explosions may cause adults to leave the nest for a short time. The risk of temporary or permanent nest abandonment or chick loss at Milford Point is low. The one chick at Milford Point may have fledged by July 3, 1998. The 4-egg nest at Milford Point is due to hatch around July 3, 1998; however, the young chicks will be approximately 3/5 mile from the fireworks event and are expected to be less disturbed by the reports than plovers at Short Beach would be. Nonetheless, the possibility of chick or egg mortality remains.

EFFECT OF THE TAKE

In the preceding Biological Opinion, the Service determined that the anticipated take,

either by harassment of adults and chicks or mortality of chicks and eggs, is not likely to result in jeopardy to the Atlantic Coast population or to the New England 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, or describe methods that replace the capability of the population or habitat to support preactivity 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 Endangered Species Act, the Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take:

1. Human activity in the vicinity of plovers at Short Beach Park (if found to be present prior to the event) and Milford Point must be minimized to reduce adverse effects.
2. Piping plovers must be monitored before, during and after the fireworks event at Milford Point to determine the degree of disturbance.
3. Short Beach must be surveyed for piping plovers a minimum of 4 days prior to the fireworks event. If plovers are found to have returned, they must be monitored before, during and after the fireworks event.

TERMS AND CONDITIONS

In order to be exempt from prohibitions of Section 9 of the Endangered Species Act, the Town of Stratford shall be made responsible for compliance with the following terms and conditions that implement the reasonable and prudent measures described above. These terms and conditions must be incorporated as binding conditions of any permit issued by the USCG.

Short Beach

1. Plover habitats in the vicinity of areas where spectators may congregate should be

intensively surveyed by qualified biologists¹ for at least four days prior to the event to adult plovers and/or post-fledged juveniles.

2. If plovers are determined to be present prior to the event:

¹ State wildlife agencies and private environmental groups often conduct plover monitoring activities and can be consulted for available information about plover breeding locations. However, intensity of surveys needed to avoid adverse effects from fireworks events will often exceed those routinely conducted by these wildlife agencies/organizations. Arrangements and commitments for added surveys for these events are the responsibility of the permitting agencies and/or event sponsors. It is recommended that these arrangements be made well in advance of the potential event, due to limited availability of qualified personnel.

- a. plover habitats should be symbolically fenced in accordance with the Service's *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act* (USFWS, 1994);
- b. parking lots and beach access points in the vicinity of piping plovers at Short Beach must be closed;
- c. to increase the visibility of the fenced area, symbolic fencing should be either reflectorized tape or temporary snowfencing (would be removed after the event);
- d. pets must be prohibited;
- e. adequate numbers (consistent with anticipated numbers of spectators) of monitors and law enforcement personnel in the vicinity of plover breeding area on Short Beach Park must be provided to patrol fenced areas from the time when spectators begin congregating on the beach until the crowd disperses after the event;
- f. trash or litter must be removed from the beach immediately following the event. However, any trash located within fenced areas should be left until daylight and then removed by or under the supervision of plover monitors;
- g. except when responding to an actual emergency situation, all law enforcement, fire department, public works, fireworks deployment, and other vehicles in the vicinity of breeding plovers should only be operated in conformance with the Service's *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act* (USFWS, 1994).

Milford Point

1. Plover habitats should be symbolically fenced in accordance with the Service's *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act* (USFWS, 1994).
2. Foraging territories of unfledged chicks must be fenced and posted, as delineated by a qualified biologist.
3. Adequate numbers of monitors and law enforcement personnel must be present at Milford Point to enforce Refuge closures. Monitors and enforcement personnel

must receive accurate current information about the locations of threatened birds so that they can minimize any disruptions from their own activities.

4. Pets must be prohibited from Milford Point.
5. Except when responding to an actual emergency situation, all law enforcement, fire department, public works, fireworks deployment, and other vehicles in the vicinity of breeding plovers should only be operated in conformance with the Service's *Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act* (USFWS, 1994).

REPORTING AND MONITORING REQUIREMENTS

The Town of Stratford must provide the Service with a report (based on forms to be forwarded under separate cover) of the piping plovers monitoring activities before, during and after the fireworks event. The contact for these reporting requirements is as follows:

Michael J. Bartlett, Supervisor
New England Field Office
U.S. Fish and Wildlife Service
22 Bridge St., Unit #1
Concord, NH 03301-4986
(603) 225-1411

In order to gauge the effectiveness of the terms and conditions, the following data should be collected in addition to completion of the above mentioned forms:

1. Location and status of all adult plovers, nests, and chicks within $\frac{1}{4}$ mile of spectator viewing areas should be determined by a qualified biologist on the day of the event and again on the following day.
2. Counts should be made of human and dog tracks that intersect the perimeter of symbolically-fenced areas before and after the event.
3. Counts should be made of any persons actually observed inside symbolically-fenced areas during the event.
4. Counts should be made of any instances of illegal pyrotechnics used on the beach during the event.