

Final Natural Resources Restoration Plan
and
NEPA Environmental Assessment
for the
Anitra Oil Spill of May 1996

October 2004

Prepared by the *Anitra* Oil Spill Natural Resource Trustees:
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FINAL NATURAL RESOURCES RESTORATION PLAN: ANITRA OIL SPILL OF MAY 1996

I. INTRODUCTION AND AUTHORITY

This Final Natural Resources Restoration Plan and Environmental Assessment (RP/EA) is made by the State of New Jersey Department of Environmental Protection (NJDEP), the United States Fish and Wildlife Service (Service), and the National Oceanic and Atmospheric Administration (NOAA) (collectively the "Natural Resource Trustees" or "Trustees"). This document, presenting the Final RP/EA, describes the nature and extent of injuries to natural resources resulting from an oil spill that occurred in the Delaware Bay in May 1996, and identifies alternatives for restoring injured resources and the services these resources provide. This Final RP/EA is intended to inform the public of proposed restoration actions previously proposed in the Draft RP/EA.

The Oil Pollution Act of 1990 (OPA) (33 U.S.C. Section 2701 *et seq.*) together with Executive Order 12777 designated federal and State trustees for natural resources, which designations are set forth in greater detail in Subpart G of the National Contingency Plan, 40 CFR Section 300.600. The Secretary of Interior is a designated federal trustee for natural resources including migratory birds, certain marine mammals, anadromous fish, endangered species and their respective habitats, and federal lands managed by the Department of the Interior (Department). The Northeast Regional Director of the Service has been designated as Authorized Official to act on behalf of the Secretary as trustee for this case. The Secretary of Commerce, acting through the NOAA, is a designated federal trustee for natural resources including certain marine mammals and anadromous fish. The States are designated trustees for all natural resources within their jurisdiction. Under the OPA, natural resource trustees are authorized to assess and recover compensation for injury to or loss of natural resources resulting from a discharge or substantial threat of discharge of oil, and use recovered funds to achieve appropriate restoration.

II. PUBLIC NOTIFICATION AND REVIEW

The Trustees are to receive \$1,262,199.05 in compensation from the Responsible Party to restore resources injured as a result of the oil spill and \$237,800.95 to compensate the trustees for past assessment costs. Prior to expending funds for restoration, the OPA requires the Trustees to develop and implement a plan for the restoration of the natural resources under their trusteeship. The OPA Natural Resource Damage Assessment Regulations at 15 CRF Part 990 require that the Trustees develop a publicly reviewed restoration plan, which identifies and evaluates a reasonable number of restoration alternatives developed to address the specific injuries resulting from the oil spill.

Under both the CERCLA and the NEPA, the Trustees must notify the public and any federal, state, or local agencies with special interests or expertise relating to the Draft RP/EA. To satisfy this requirement, the Trustees published notice of the availability of the Draft RP/EA in the Federal Register and The Press of Atlantic City. The document was available for review at the Cape May County Public Library, and copies of the Draft RP/EA were obtainable from the Service. The Trustees received no comments during the 30 day public review and comment period which began on May 11, 2004.

A copy of the Final RP/EA will be available at the Cape May County Public Library and from the Service at the following addresses:

Cape May County Public Library
30 West Mechanic Street
Cape May Courthouse, New Jersey, 08210
Mail: DN2030 4 Moore Road
Telephone: 609-463-6350, Fax 609-465-3895
<http://www.cape-may.county.lib.nj.us/>

Hours:

- **Winter** (October - April): Monday - Friday 8:30 AM - 9 PM, Saturday 9 AM - 4:30 PM, Sunday 1 - 5 PM
- **Summer** (May - September): Monday - Thursday 8:30 AM - 9 PM, Friday 8:30 AM - 4:30 PM, Saturday 9 AM - 4:30 PM, closed Sunday

U.S. Fish and Wildlife Service
927 N. Main Street
Pleasantville, New Jersey 08232
(609) 646-9310
<http://njfieldoffice.fws.gov>
Hours: Monday-Friday 8:00 AM – 4:30 PM

III. BACKGROUND

On May 10, 1996, the U.S. Coast Guard (USCG) reported that the Bahamian-flagged *T/V Anitra* spilled approximately 10,000 gallons of Nigerian light crude oil while the vessel was in the process of lightering more than 40 million gallons of oil. On May 19, 1996, the USCG reported that as much as 42,000 gallons of oil were released into Big Stone Anchorage, Delaware Bay, where the vessel was anchored. Cold and stormy weather during the spill caused the oil to mix into the water column, forming tarballs. The *T/V Anitra* was secured and boomed following the release. The USCG reported 12,000 gallons of oil were recovered in the vicinity of the vessel within the first 72 hours following the spill.

Over 50 miles of beaches were oiled over a 2-week period, including at least some oiling of several State wildlife management areas, two State parks, and the Edwin B. Forsythe National Wildlife Refuge. An estimated 3 miles of beach (Higbee and Sunset) were impacted with tarballs from May 12-16, 1996. On May 17, varying densities of tarballs washed up on 8 miles of Atlantic Ocean shoreline in Stone Harbor, Avalon, Sea Isle City, and Ocean City. The Governor of New Jersey declared a Limited State of Emergency in Cape May County, and limited public access to beaches. On May 18, the tarballs continued to drift northward and washed up on beaches in Longport, Margate, Ventnor, and Atlantic City. On May 19, tarballs came ashore in Brigantine and later as far north as Holgate.

A. PIPING PLOVER

For the most part, impacts from the *Anitra* spill occurred on bayshore and coastal barrier beaches. The beaches oiled by the 1996 *Anitra* oil spill in Cape May and Atlantic Counties provide foraging and nesting habitats to piping plovers (*Charadrius melodus*), a shorebird listed as threatened under the federal Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA) and as endangered under New Jersey's Endangered and Nongame Species Conservation Act of 1973 (N.J.S.A. 23:24 *et seq.*, as amended). The spill occurred during a period when most piping plovers were involved in nesting activity. Piping plovers nest on the upper beach on the foredune, berm, dune blowouts, overwashes and tidal flats (U.S. Fish and Wildlife Service, 1996). In the area affected by the spill, piping plovers primarily feed on the intertidal beach along the oceanfront, inlets, the wrack line, and in the dunes. Here they feed on a variety of aquatic and terrestrial invertebrates (U.S. Fish and Wildlife Service, 1996). Oil exposure of these birds occurred as they foraged among stranded tarballs in the upper intertidal zone of the bayshore and coastal beaches.

The *Anitra* oil spill resulted in the oiling of at least 51 adult piping plovers and two chicks during the 1996 nesting season. The oiling directly or indirectly contributed to reduced nesting success and ultimately lowered productivity on affected beaches. The Trustees calculate a lost productivity of 5.6 fledglings by comparing oiled beaches in 1996 with the nesting success from the same set of beaches during the 5 years preceding the spill. The 5.6 lost fledglings equates to 2.7 adults that would have returned to breed in 1997 based on normal juvenile survival.

Oiling of adult birds may also directly or indirectly decrease their survival during the 1-year period following the spill. The Trustees calculated the diminished survival and the resulting loss of adult plovers by comparing survival rates over the season of eight color-banded oiled birds that were cleaned and released with average or “normal” survival rates. The differential was then applied to all 51 oiled adults. Based on this approach, oiling of adult piping plovers resulted in a loss of 13.5 adults. Combining the loss of 2.7 adults derived from the lost fledglings with this figure, a total of 16.2 adult plovers were removed from the current population.

The above figures represent the initial affect of the *Anitra* oil spill to piping plovers resident on southern New Jersey beaches during the spill. Restoration planning must recognize that the impact of the spill included not only the immediate loss of adults and reduced productivity, but also the intergenerational impacts of initial population reduction. Restoration initiatives that run for a significant number of years, and which will continue to replace birds lost to the spill by increasing nesting productivity on New Jersey’s beaches, will have the greatest ability to ameliorate intergenerational losses. Such programs should also boost the productivity of birds recruited to New Jersey’s nesting piping plover population while restoration efforts are ongoing.

B. SANDERLINGS AND OTHER MIGRATORY SHOREBIRDS

In surveys conducted on oiled beaches from May 22 to May 31, 1996 observers counted a number of bird species, including migratory shorebirds, most notably sanderlings (*Calidris alba*). Other species included migrant semipalmated plover (*Charadrius semipalmatus*), semipalmated sandpiper (*Calidris pusilla*), ruddy turnstone (*Arenaria interpres*), and short-billed dowitcher (*Limnodromus griseus*), and breeding residents - willet (*Catoptrophorus semipalmatus*), American oystercatcher (*Haematopus palliatus*), common tern (*Sterna hirundo*), and laughing, herring, and great black-backed gulls (*Larus atricilla*, *L. argentatus*, and *L. marinus*, respectively).

Data collected after the *Anitra* spill identified over 4,000 shorebirds as lightly to moderately oiled, with a much smaller number deemed heavily oiled. At least 3,324 sanderlings were oiled to some detectable degree. Such oiling has been found to result in reduced weight gain during the period the birds spend in the Delaware Bay region, when they, in fact, need to feed heavily to be able to reach the Arctic and nest successfully (Myers, 1986). Sanderlings are particularly vulnerable to the effects of reduced weight gain caused by oiling (Burger and Tshipoura 1998). The additional stress of migration increases the chances of mortality and reproductive failure (Burger, 1997).

Another 1,019 oiled migrating birds were assumed to be under the same stresses as the sanderlings (*i.e.*, they were in the midst of a long-distance migration and needed to feed heavily while on the New Jersey shore in order to continue their flight to nesting grounds). The resident, breeding birds, however, are under different stresses of laying eggs and maintaining nesting territories, similar to piping plovers and least terns. Birds oiled by the *Anitra* spill, other than piping plovers, likely suffered significant oil-related mortality.

IV. PROPOSED RESTORATION

The Trustee's goal is to restore, rehabilitate, replace or acquire the equivalent of injured natural resources. The concept of restoration in this context may include returning a resource to its prior condition, rehabilitating or replacing a resource, protecting or improving habitat of significance to an injured resource, and acquiring other resources (including overwintering grounds) to compensate for those that are lost. Restoration must be focused on the resources and resource services injured by the spill itself.

The Trustees considered a reasonable number of possible restoration alternatives (15 CFR Section 990.53). In our initial review, the Trustees identified the following as desirable characteristics for potential projects: where possible, (1) the project(s) should be in the same area as the impacts; (2) the restored habitat should be similar in type and provide similar services to the injured before it was impacted; and, (3) most importantly, the project(s) should provide long-term or perpetual benefits to the injured natural resources. Other factors that were considered include: (1) cost; (2) extent to which each alternative will prevent future injury to the resources of concern; (3) extent to which each alternative benefits more than one species; and, (4) effects on public health and safety. Based on these characteristics, and on the National Environmental Policy Act (83 Stat. 852, 42 U.S.C. 4321 *et seq.*) guidance, we identified the following specific potential projects:

A. PIPING PLOVERS

1. Restoration Alternatives Considered

The goal of the piping plover restoration plan is to undertake activities or projects that will result in an increase in piping plover numbers to offset those lost as a result of the oil spill. In the absence of a precise ability to quantify the future outcomes of restoration activities, the Trustees strove to consider restoration alternatives that would increase the likelihood that injured natural resources will, in fact, be fully restored and to maximize the restoration benefits achievable with recovered restoration funds. Several alternatives were considered: (a) no action; (b) habitat acquisition; (c) habitat restoration and enhancement; and, (d) increased protective management. The basic components of each alternative are provided below.

a. No action alternative

Federal regulations require the consideration of this option. Under the no-action alternative, no actions involving restoration, rehabilitation, replacement, or acquisition would occur to compensate for resources injured due to the oil spill. Affected resources must recover naturally from the injuries sustained.

b. Habitat acquisition

Purchase high quality beach habitat to guard against future competing uses of nesting habitat, such as development that could diminish habitat suitability or diminish nesting success.

c. Habitat restoration and enhancement

(1) Increase feeding habitat through projects that create man-made tidal pools and mudflats near nesting habitat.

(2) Develop access to alternative feeding habitat by removing vegetation and other obstacles that prevent unflighted chicks from reaching alternative feeding habitats, such as tidal pools and mudflats.

(3) Create or enhance nesting habitat by controlling and managing vegetation or by directing dredged material disposal on appropriate beaches or bay islands.

d. Increased protective management

(1) Monitor populations and reproductive success.

(2) Protect known nesting areas with symbolic or barrier fencing and signs to avoid direct human destruction of nests and reduce human disturbance.

(3) Use patrolling and on-site outreach by paid staff, interns, and volunteers to increase compliance, cooperation and understanding of the public using beaches near nesting areas.

(4) Construct predator exclosures (including enhancement such as electric fence) to reduce losses of individual nests to mammalian and avian predators.

(5) Employ predator control where needed to reduce losses of nests and chicks to predation.

(6) Increase support and understanding among community officials and the general public through educational outreach.

(7) Implement community-based management plans that decrease harmful beach management practices and increase participation of communities in management activities.

(8) Enforce compliance with State and federal endangered species regulations.

2. Evaluation of Alternatives

a. No action alternative

The habitats degraded and migratory birds injured by the oil release would not be compensated under this alternative. For these reasons, the Trustees considered this alternative to be inappropriate.

b. Habitat acquisition

Little suitable undeveloped coastal beach habitat is available in the area that is not already protected. Most parcels are small and isolated and would be very costly to purchase. In addition, purchase alone would not necessarily result in a net benefit to piping plovers, as management measures would still need to be implemented to reduce the effects of human disturbance and predation. Habitat acquisition, therefore, combines high cost with minimal restoration benefits. For those reasons, the Trustees did not consider this alternative to be feasible.

c. Habitat restoration and enhancement

Intense residential and commercial development of New Jersey's coastal beaches has reduced opportunities for piping plover habitat enhancement projects. In general, piping plovers with access to both ocean and bayside beach feeding areas or tidal pools have higher productivity than plovers feeding on ocean beaches alone. Habitat enhancement projects that would create access to bayside feeding habitat would have the greatest potential to improve piping plover breeding habitat and increase plover productivity. However, in most areas of New Jersey, such habitat enhancement is not possible because development, including homes, businesses, and related infrastructure (*e.g.*, roads and utilities), occur along even the narrowest sections of barrier islands, precluding plovers from accessing bayside feeding habitats. Projects that would enhance piping plover habitat by promoting overwash of barrier islands may be incompatible with flood control or storm protection and might conflict with New Jersey coastal protection regulations.

Some coastal areas of New Jersey that are undeveloped and thus have potential for piping plover habitat restoration or enhancement are encumbered by existing regulations that prevent such projects. Two undeveloped barrier beach areas, Holgate and Little Beach Island, are federally designated Wilderness Areas where federal regulations prohibit man-made habitat alteration.

Projects that enhance habitat by removing excessive vegetation or creating breaches in dunes could benefit plover habitat at such locations as the U.S. Coast Guard Electronics Engineering Center (USCG EEC), Barnegat Light, and the south end of Brigantine Island. However, coastal regulations or local opposition may present significant obstacles to this alternative. Beach nourishment projects could also provide increased or improved nesting habitat. However, unless coupled with other ongoing large beach restoration projects, beach nourishment is cost prohibitive due to the high cost of equipment mobilization and sand purchase. In addition, habitat created by beach nourishment could be ephemeral as would be the benefits to piping plovers. Given the uncertainty of costs and regulatory or political obstacles, restoration and

enhancement of piping plover habitat was not considered by the Trustees to be the optimal approach.

d. Increased protective management - Selected Alternative

The protective management approach described below, which is the Trustees' preferred and selected restoration alternative for piping plovers, has been the focus of piping plover restoration programs throughout their range (Hecht, 1999; Melvin *et al.*, 1991; U.S. Fish and Wildlife Service, 1996; Hecht, pers. com., 2001). The protective management selected here has a record of success, as seen by the increase in piping plover populations achieved in the Northeast since listing in 1986 (U.S. Fish and Wildlife Service, 2002). While similar programs have been implemented in New Jersey for several years, the Trustees will increase the intensity of ongoing protective efforts. Further, funding provided through a natural resource damage settlement from a previous oil spill financed a portion of protective management in the State over 6 years. Funding from that settlement was exhausted at the end of the 2000 nesting season. In the absence of the support that would be provided under the current proposal, there would be a significant diminution in protective management compared with this previous 6 years.

The number of nests and project duration necessary to restore 16.2 adult piping plovers (and subsequent offspring) lost due to the spill are difficult to precisely determine. Therefore, the Trustees will implement the protective management program described below for 5 years. The Trustees currently estimate that the scale and duration of this project is sufficient to make it the most appropriate alternative to achieve the goal of restoring at least 16.2 adults to the population.

(1) Introduction: The New Jersey Endangered and Nongame Species Program (ENSP) is directly responsible for managing piping plovers on 25-30 nesting areas located in 13 different municipalities within the State, four separately administered State parks or natural areas, two separately administered USCG bases and one State wildlife management area. Nesting areas directly managed by ENSP account for approximately 60 percent of all nesting sites and roughly 50 percent of the State's total piping plover population (Table 1). In addition, the ENSP serves an oversight role with respect to monitoring and management on all other State nesting sites, including Gateway National Recreation Area, Edwin B. Forsythe National Wildlife Refuge and The Nature Conservancy's South Cape May Meadows Migratory Bird Refuge. The ENSP is also responsible for coordinating and compiling statewide monitoring information for reporting to the Service.

The Service's Division of Refuges (Refuge or Refuges) is directly responsible for managing piping plovers on three nesting areas administered by the National Wildlife Refuge System and assists in managing a plover nesting area administered by the USCG EEC in Lower Township, Cape May County. While Refuges directly manages only about 10 percent of the Statewide nesting sites, these sites support over 25 percent of the nesting pairs found in New Jersey. The

Table 1. Summary of proposed site monitoring and management activities for Piping Plover nesting sites in restoration area.

Site	# of nesting pairs in 2000	Steward	Monitor	Signs	"Symbolic" (String & post)	Partial snow fence	Encl. wire fence	Feeding Corridor	Wardening		Predator Exlosures*	Notes
									Weekend	Weekday		
Mantoloking	0	ENSP-1	X								0	
Brick Twp.	0	ENSP-1	X									
Island Beach	0	ENSP-1	X	X	X							
Barnegat Light	3	ENSP-1	X	X	P,X		P	X	V,S	S	0	1
Loveladies	0	ENSP-1	X									
Holgate	13	USFWS-1	X	X					V,S	S	14	2
Little Beach	19	USFWS-2	X	X					S		3	3
N. Brigantine	17	ENSP-1	X	X	P,X	P			S	V,S	6,E	4
S. Brigantine Beach	0	ENSP-1	X									
South Brigantine Inlet	0	ENSP-1	X									
Ocean City - north	2	ENSP-2	X	X	X				I,S	S	0	
Ocean City - center	8	ENSP-2	X	X	X	X		X	I,S	S	0	
Corson's Inlet St. Pk.	2	ENSP-2	X	X	P,X			X	I,S	S	1,E	5
Strathmere Upper Twp.	1	ENSP-2	X	X	X	X			S	S		
Whale Beach	0	ENSP-2	X								0	
Sea Isle City	0	ENSP-2	X									
Townsend's Inlet	1	ENSP-2	X	X	P,X				S	S		
Avalon - North	0	ENSP-3	X								0	
Avalon - Dunes	8	ENSP-3	X	X	P,X	X		X	I,S	S	1	6
Stone Harbor Point	6	ENSP-3	X	X	P				I,S	S	1	
Hereford Inlet	3	ENSP-3	X	X	P				S	S		
North Wildwood	0	ENSP-3	X									
Wildwood Crest	0	ENSP-3	X								0	
Coast Guard - EECEN	2	USFWS-3	X	X	P				S	S		7
Coast Guard - TRACEN	4	ENSP-3	X	X	P				V,S	S	5	8
Cape May City	0	ENSP-3	X								0	
Cape May Point	1	ENSP-3	X	X	X	X	X	V,S	S			

P=Large areas fenced prior to nesting season. X = activity conducted. I = intern. V=volunteer. S = steward (paid). * Number represents number of nests excluded in 2003. E=Electric fence used with exlosures. Beaches in italics would be managed by the Service-New Jersey Refuges NOTES: 1) Large area fenced prior to nesting season using wire pasture fence. 2) Beach closed to public. 3) Beach only accessible by boat, closed to public. 4) Beach access closed to off-road-vehicle traffic during period of chick rearing. 5) Division of Parks and Forestry personnel patrol beach. 6) No raking of beach between 52nd and 58th Streets -- part of a Wetlands Institute study. 7) Base personnel patrol beach. 8) Beach closed to public, patrolled by base personnel.

remaining 30 percent of nesting sites and 25 percent of nesting pairs occur on the Gateway National Recreational Area, Sandy Hook Unit.

The Service's Ecological Services - New Jersey Field Office (NJFO) is responsible for ensuring that all piping plover nesting areas throughout the State in private, municipal, State, or federal ownership are monitored and managed in accordance with the ESA and 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*" (Guidelines). In addition, the NJFO is responsible for ensuring that all projects that are federally funded, federally authorized, or carried out by a federal agency (*i.e.*, beach nourishment projects, fireworks displays, marine events, activities on federal lands) do not jeopardize the continued existence of the piping plover or other federally listed species.

A synopsis of the proposed piping plover monitoring and management activities that would be carried out by ENSP and the Service as part of the Final RP/EA is set forth below. In general, ENSP will be responsible for carrying out these activities on municipal and State-owned lands. The Service will conduct similar activities on Refuge lands and assist the USCG at the Electronics Engineering Center in Cape May County, New Jersey. In addition, ENSP and the Service will develop outreach programs and work with local municipalities to develop and implement site-specific piping plover management programs for each of the 13 municipalities with nesting piping plovers. If, as a result of beach nourishment projects or natural accretion of sand, new areas are occupied by nesting piping plovers, the ENSP and Service will work with additional municipalities and local landowners or managers to protect the species and its habitat through outreach and development of site-specific management plans.

(2) Monitoring: All previously active nesting sites will be checked several times during the nesting season to determine if any nesting activity is ongoing. At each site, monitors will search for piping plovers or tracks or other signs of plover activity. During the early nesting season, weekly nest search visits will be conducted on all sites that show signs of occupation by piping plovers. All sites with nests or territorial or courting plovers will be visited no less than three times per week to locate any new nests and/or to monitor nesting progress and outcome of any nests or nesting pairs previously discovered. For each active nesting beach, the total number of nesting pairs present, the number of successful nests, and the total number of chicks fledged from each nesting pair will be determined. Monitoring will also include assessing the causes of nest failure and noting other potential inimical factors such as predators, human disturbance and use of off-road vehicles, occurring on the site. Monitoring will be conducted by seasonal stewards and full-time equivalent staff (FTE) and will be coordinated by biologists working for ENSP and the Service - Refuges. Dead adults, chicks, and eggs would be salvaged as they become available and archived for possible contaminants analysis and gross necropsy. See Table 1 for individual site assignments.

(3) Site management: (see Table 1 for a summary of management activities by site and assignments by agency).

(a) Fencing and Signs: The ENSP will fence three to six major nesting areas prior to the nesting season (Monmouth Beach, Barnegat Light, Ocean City, Strathmere, Avalon, Stone Harbor). The Service's Refuge staff will construct a fence at the northern end of Holgate to close the entire area during the plover nesting season. At all other locations, piping plover nests will be fenced as nests are discovered. Fencing will consist of PVC pipe or steel posts and string, sometimes augmented with additional rows of polypropylene rope. Snow fence and/or wire pasture fence may be used to fence areas such as pedestrian corridors. Wire "pasture fence" will be used to fence a large nesting area at Barnegat Light. All areas will be posted with plastic "Area Closed" or other appropriate signs.

(b) Patrolling: All municipal and state park nesting sites will be patrolled on weekends by ENSP staff (FTEs and seasonal stewards). Many sites will also receive weekday patrols. Refuge lands will be patrolled daily (FTEs and seasonal stewards).

(c) Predator Control: Predator exclosures are the primary technique employed to reduce the impact of predators on nesting success. The ENSP staff (seasonal stewards and full-time staff) will erect predator exclosures on all beaches where ENSP biologists have determined this to be an appropriate management technique. Over the past 5 years, ENSP staff has installed predator exclosures at 15 to 35 nests each year. Service staff will erect predator exclosures to protect piping plover nests on refuge lands where appropriate.

In the last 5 years, this management technique was used to protect from 14 to 27 nesting attempts on Refuge lands. Electric fencing has been used around some exclosures to combat problem areas where predators have learned to target exclosures. Electric fencing has proven to be a very effective means of increasing the success of exclosures. Use of electric fences will be increased in problem areas, including on Refuge lands. In addition to the use of predator exclosures, a predator removal program will be implemented on Refuge and USCG lands, targeting both mammalian and avian predators.

(4) Outreach and municipal cooperation: Recreational beach use and municipal beach management activities create some of the most significant threats to successful piping plover nesting. Consequently, major portions of ENSP's management efforts are dedicated to educational outreach to beach users and local officials and to developing cooperative relationships with municipal managers.

In this case, ENSP will conduct onsite educational outreach aimed at beach users, including one-on-one contact with the monitors/wardens, organized tours conducted by the monitors/wardens, interpretive signs, and distribution of brochures. More generalized outreach activities would be conducted by ENSP and the Service, including staffing interpretive displays at festivals and events, giving slide talks, and producing press releases.

The ENSP and Service staff will meet frequently with local officials, including public works directors and supervisors, police, lifeguards, and others. During the nesting season, local officials will be kept apprised of nesting and management activities through weekly updates

faxed to all appropriate departments and staff. Near the beginning of each nesting season, slide talks will be given to beach patrol and public works staff who work on the beach.

Over the next 5 years, ENSP and Service biologists will work with municipal managers and local environmental commissions to develop municipal management plans. The management plans will be adopted through Memoranda of Agreement signed by all parties, and will clarify responsibilities and provide detailed guidance to the municipalities regarding the management and protection of threatened and endangered beach nesting birds nesting on municipal beaches and ensure compliance with the ESA, State regulations, and Service Guidelines. The goal of this effort will be to effect a progressive shift of specific responsibilities for managing beach nesting birds to the municipalities, particularly for those aspects of management that protect birds from activities permitted, encouraged, sponsored, or performed by the municipalities.

Efforts to develop and implement site-specific management plans will be undertaken with each municipality or land manager in New Jersey with nesting piping plovers. Priority will be given to development of management plans for the City of Cape May, Stone Harbor Borough, Upper Township and the U.S. Coast Guard in Cape May County; City of Brigantine, Atlantic County; and Barnegat Light Borough, Ocean County. These areas were selected because they were the most impacted by the *Anitra* Oil Spill and contained the most oiled birds.

(5) Threat abatement: The Service will increase efforts to identify and abate threats to piping plover at sites throughout the State, such as non-compliance with pet leash laws, trespass into closed areas, and recreational or municipal activities that are not in compliance with the Service Guidelines. The Service will supplement ENSP site management activities through direct coordination with the site land manager/land owner and will recommend actions to eliminate site-specific threats. Where necessary, law enforcement action will be initiated to ensure that unauthorized take of piping plovers does not occur.

B. MIGRATORY SHOREBIRDS

1. Restoration Alternatives Considered

The goal of the migratory shorebird restoration plan is to undertake activities or projects that will result in an increase in migratory shorebird numbers to offset those lost as a result of the oil spill. In the absence of a precise ability to quantify the future outcomes of restoration activities, the Trustees strove to consider restoration alternatives that would increase the likelihood that injured natural resources will, in fact, be fully restored and to maximize the restoration benefits achievable with recovered restoration funds. Several alternatives were considered: (a) no action; (b) habitat acquisition; (c) protective management; and (d) habitat restoration and enhancement. The basic components of each alternative are provided below.

a. No Action Alternative

Federal regulations require the consideration of this option. Under the no-action alternative, no

restoration, rehabilitation, replacement, or acquisition actions would occur to compensate for resources injured due to the oil spill. Affected resources must recover naturally from the injuries sustained.

b. Habitat acquisition

Purchase high quality beach habitat to guard against future detrimental activity in foraging areas that could diminish feeding opportunity and breeding success.

c. Protective management

(1) Protect known foraging areas with symbolic or barrier fencing and signs to reduce human disturbance.

(2) Use patrolling and on-site outreach by paid staff, interns, and volunteers to seek compliance with restrictions, cooperation and understanding of public using beaches near foraging areas.

(3) Monitor populations and reproductive success.

(4) Increase support and understanding among community officials and the general public through educational outreach.

(5) Implement community-based management plans that decrease harmful beach management practices and increase participation of communities in management activities.

d. Habitat restoration and enhancement

Creation or enhancement of feeding habitat through projects that clear debris from beaches where horseshoe crabs lay eggs and birds forage.

e. Wintering grounds protections

Migratory shorebirds travel on a yearly basis from their northern breeding grounds to South American wintering grounds, and back again. The threats to migratory shorebirds addressed in the above alternatives also apply to their wintering grounds, and, in fact, are exacerbated by the lack of local government resources to protect natural resources.

2. Evaluation of Alternatives

a. No action alternative

The habitat and migratory birds injured by the oil release would not be compensated for under this alternative. For these reasons, the Trustees considered this alternative to be inappropriate.

b. Habitat acquisition

Land prices of bayfront property are high and there is little suitable habitat available in the area for purchase. Additionally, it is unclear if a change in ownership of such property would result in any restoration benefit to migratory shorebirds. For those reasons, the Trustees did not consider this alternative to be feasible.

c. Protective management, New Jersey beaches

Wardening and educational outreach measures are already in place at most of the critical forage areas used by migratory shorebirds. Also, since the shorebirds are all adults capable of flight and do not nest on New Jersey beaches, protective management may offer minimal benefit. The Trustees did not consider this alternative to be feasible.

d. New Jersey habitat restoration and enhancement - Portion of Selected Alternative

Given the large number of sanderlings exposed to oil (at least 3,324) and numerous deleterious effects of oil exposure identified above, the potential for long-term impact at the population level is great, as the Atlantic coast migratory population is estimated to be approximately 10,000 birds. Considering exposure and potential impact to other shorebirds (at least 1,019 birds were estimated to have some degree of oiling), the Trustees postulate that the project, as described below, is of appropriate scale to restore for injuries to shorebirds from the *Anitra* spill. As such, it - along with alternative e. below (Protective Management, Wintering Grounds) - is part of the preferred and selected restoration alternative for migratory shorebirds. For many years, the shorelines of East Point, Thompson Beach, and Moores Beach, in Cape May County, have been the areas most heavily utilized by horseshoe crabs and migrating shorebirds. Thousands of crabs came ashore each spring to lay their eggs on these beaches. The eggs, in turn, were fed upon by tens of thousands of shorebirds migrating to their Arctic nesting grounds.

During the past 70 years, these three areas have been gradually developed with small houses, trailers, jetties, and piers. These areas also experience heavy erosion, and storms have damaged homes and deposited debris on the beach. In an effort to maintain the waterfront and protect the remaining homes, rubble (*e.g.*, cinder blocks, concrete) has been placed on the beach. This rubble, coupled with wreckage from damaged homes, has drastically reduced the amount of beach available for horseshoe crabs to lay eggs and shorebirds to feed. The rubble has also accelerated beach erosion, further reducing suitability for crab and bird use. During the past year, Maurice River Township, with the assistance of the State has condemned, purchased, and removed all of the homes and most of the beach rubble from Moores Beach. This has resulted in a significant increase in horseshoe crab use and improved foraging habitat for migrating shorebirds on the beach.

Since the completion of the Moores Beach project, the Township has purchased all the homes on

Thompson Beach and is presently in the process of removing them. However, removal of the 23,000 cubic yards of beach debris scattered over 5,000 feet of upper intertidal beach is not within the scope of the municipality budget.

Clearing this beach of debris would make this area available to horseshoe crabs and reestablish historically important foraging habitat for migrating shorebirds. If this debris is not removed within 15 to 20 years, the beach front will move behind the debris, making the debris difficult to remove and leaving it to trap crabs at low tide. Clearing debris now would aid in the immediate rehabilitation of the beach to provide shorebird foraging habitat and eliminate a potential future trap for horseshoe crabs.

The most efficient method of debris removal will entail piling and crushing the material to a maximum size of 1.5-inch diameter. This material will then be used to improve the access road to the beach and facilitate removal of remaining material from the beach. Any material not used to improve the access road to the beach will be stored at the New Jersey Fish and Wildlife facility in Millville for future use. Storage of the crushed material at the New Jersey Fish and Wildlife facility, rather than landfilling, will result in substantial project cost reduction. Based on preliminary discussions, the Township is agreeable to placing its land along the beach under a deeded conservation restriction to prevent future land use for anything other than open space. Restoration of this beach will provide more egg laying habitat for horseshoe crabs and thus increase and improve critical forage areas for migrating shorebirds.

e. Protective Management, Wintering Grounds - Portion of Selected Alternative

The following describes an additional portion of the Trustees' preferred and selected alternative for migratory shorebirds. Sanderlings, and other migratory shorebirds congregate in very large numbers at certain South American locations. For example, census figures for Bigi Pan in Suriname note upwards of 1,350,000 *Calidris spp.*, 1,030,000 *Calidris spp.* at Coppername River mouth in Suriname, an estimated 40,000 red knots (approximately 25 percent of the flyway population) at San Antonio Oeste in Argentina, and over 6,000 sanderlings at Lagoa do Peixe in Brazil. There is the potential for enormous resource conservation benefits from development and implementation of management plans that integrate local and community involvement with activities, which the local host nations' support but have limited financial resources to undertake.

C. FUNDING

The Trustees will allocate the portion of the restoration funds limited (as noted below) to support the selected alternatives described above, with the intention that such funds will be leveraged through matching grants and directed at programmatic initiatives, which are likely to be self-sustaining.

The proposed allocation of funds to implement the selected alternatives is broken down as follows:

Piping plover restoration

U.S. Fish and Wildlife Service	\$300,000
New Jersey Department of Environmental Protection	\$400,000

Migratory shorebird protection

New Jersey Department of Environmental Protection	\$500,000
U.S. Fish and Wildlife Service	\$ 50,000

If the Trustees obtain new information indicating that any of these projects should not be implemented, that the allocation of funds among these projects and/or among the trustee agencies should be significantly adjusted, or that another project or projects should be substituted for any of the projects discussed herein, the Trustees may select alternative projects for implementation or significantly modified fund allocations, and will provide further public notice to the extent required by the OPA and the NEPA.

V. COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

The *Final Revised Procedures* for the Service for implementing NEPA, published in the *Federal Register* on January 16, 1997, provide a categorical exclusion for natural resource damage assessment restoration plans prepared when only minor or negligible change in the use of the affected area(s) is planned. Categorical exclusions are classes of actions that do not individually or cumulatively have a significant impact on the human environment.

The proposed project will result in little or no change in the use of the affected areas. Accordingly, the project as set forth above is a categorical exclusion under NEPA.

VI. REFERENCES

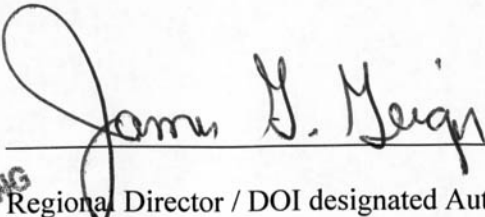
A. LITERATURE CITED

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- Burger, J., and N. Tsipoura. 1998. Experimental oiling of Sanderlings (*Calidris alba*): Behavior and weight changes. Environ. Tox. Chem. 17:1154-1158.
- Hecht, A. 1999. Recovery efforts for Piping Plovers on the U.S. Atlantic Coast in Higgins, K.F., M.R. Brashier and C.D. Kruse, eds., Proceedings, Piping Plovers and least terns of the Great Plains and nearby. South Dakota State University, Brookings, SD. 132pp.
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- Myers, J. P. 1986. Sex and gluttony on Delaware Bay. Natural History, May 1986.
- U.S. Fish and Wildlife Service. 1996. Piping Plover (*Charadrius melodus*), Atlantic Coast Population, Revised Recovery Plan. Hadley, MA. 258 pp.
- U.S. Fish and Wildlife Service. 2002. 2000-2001 Status Update: U.S. Atlantic Coast Piping Plover Population. Sudbury, MA. 258 pp.

B. PERSONAL COMMUNICATION

- Hecht, A. 2001. Endangered Species Biologist. U.S. Fish and Wildlife, Hadley, Massachusetts.

VII. SIGNATORY



Regional Director / DOI designated Authorized Official

12/14/04

Date

UNITED STATES FISH & WILDLIFE SERVICE
ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA), and other statutes, orders, and polices that protect fish and wildlife resources, we have established the following administrative record and determined that the action of Preferred Alternatives, as set forth and to be set forth as described in the Draft and Final Restoration Plans for the *Anitra Oil Spill of May 1996*

Check one:

- XX** is a categorical exclusion as provided by 516 DM 2, Appendix 1 and 516 DM 6 , Appendix 1. No further NEPA documentation will therefore be made.
- is found not to have significant environmental effects as determined by the attached environmental assessment and findings of no significant impact.
- is found to have significant effects and, therefore, further consideration of this action will require a notice of intent to be published in the Federal Register announcing a decision to prepare an Environmental Impact Statement (EIS).
- is not approved because of unacceptable environmental damage, or violation of U. S. Fish & Wildlife mandates, policies, regulations, or procedures.
- is an emergency action within the context of 40 CFR 1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents:

Final Natural Resources Restoration Plan and NEPA Environmental Action Statement for the *Anitra Oil Spill of May 1996*, dated October 2004.

Signature Approval:

Cristof G. O'Quinn

Supervisor, New Jersey Field Office

10-20-04

Date

John P. Hinkel

Region 5 NRDAR Coordinator

10/29/04

Date

My C. Suter

Region 5 NEPA Coordinator

11/5/04

Date

[Signature]

Assistant Regional Director - Ecological Services

12/14/04

Date

James H. Bergin

Regional Director / DOI designated Authorized Official

12/14/04

Date

ACTING