

# Priorities for Implementation of the Northern Pacific Coast Regional Shorebird Management Plan<sup>1</sup>

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## Abstract

Marine and upland habitats in western Washington and Oregon provide essential conditions for many wintering and migratory shorebird species along the Pacific Flyway. Known or potential threats to shorebirds include loss or degradation of habitat, invasion of exotic vegetation and invertebrates, environmental pollution, and human disturbance. Initial priority activities should focus on protecting, restoring, and enhancing shorebird habitats. Monitoring will be required to evaluate shorebird responses to management efforts. Implementation of the Northern Pacific Coast shorebird plan's key elements likely will require parsimonious incorporation of shorebirds into other multi-species, habitat-based or ecosystem-level conservation efforts; the Pacific Coast Joint venture likely will play a crucial role in this regard. Success of the planning effort will be determined by evaluating population responses at local (short-term) or flyway (long-term) scales, by reducing and/or eliminating threats, and by purchase or protection of important shorebird areas, including degraded or abandoned roost sites. The overall effort will require a highly coordinated monitoring and management network within and among regions and flyways. Because some of the most important habitats used by shorebirds are of great economic value to humans, outreach activities must effectively convey a meaningful conservation message to the public.

*Key words:* conservation implementation, north Pacific coast, Oregon, priority activities, shorebirds, Washington.

## Introduction

The need for conservation activities focused on shorebirds has become clear in recent years. A national plan (Brown et al. 2000) and multiple regional plans were completed in 2000. At about this same time, conservation plans had been completed or were under development for most other groups of birds in North America and elsewhere in

the western hemisphere. At a special session of the international Partners in Flight conference, in Asilomar, California, participants in some of the bird conservation planning processes were asked by session facilitators to address three questions such that the breadth of issues and solutions might be identified (see Elliot et al., this volume). The questions posed were as follows:

- 1) If a reasonable amount of funding were assumed to be available, what would be the highest priority conservation activities that should be initiated now?
- 2) What would be the best tool or mechanism for implementing conservation priorities?
- 3) What would be the best tool or mechanism for measuring success of conservation actions?

This paper briefly summarizes responses to these questions. The response to the first question is very specific in that it identifies only the top three priority activities in the region. Responses to questions two and three refer to the top several priority activities in the region. For the purposes of this overview, the Northern Pacific Coast plan area is defined as those portions of Washington and Oregon west of the Cascade Mountain crest including the nearshore and offshore waters (Drut and Buchanan 2000).

## Threats to Shorebirds and Their Habitats

There are several real or potential threats to shorebirds in the Northern Pacific Coast plan area (Drut and Buchanan 2000). The greatest of these threats include the loss or degradation of habitats. The priority activities described below relate to issues involving the loss or degradation of habitats.

## Priority Activities

The priority activities in the Northern Pacific Coast plan area are to (1) effectively eliminate and otherwise control exotic species in essential shorebird habitats, (2) improve oil-spill-prevention strategies and spill-

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response efficiency, and (3) restore degraded habitats. Other priority activities, including monitoring, are described elsewhere (Buchanan 2000, Drut and Buchanan 2000).

### **Invasive Species**

Extensive areas of the non-native cordgrass, *Spartina alterniflora*, have now very nearly covered certain tide flat areas in Willapa Bay that supported high numbers of wintering and migrant shorebirds (Buchanan and Evenson 1997, Buchanan 2003). Invasion by *Spartina* results in elevation increases in salt marsh and a reduction in the total area of mudflats available for foraging by shorebirds. *Spartina* has spread beyond Willapa Bay to other estuaries (see Daehler and Strong 1996). It may within a few years become so widespread—in Willapa Bay or other estuaries—that reasonable management options become much more costly or are no longer feasible. Therefore, the highest priority should be to restore tide flat areas invaded by *Spartina* and then control the spread of *Spartina* in those areas.

Other exotic species also have become established in the plan area. The Asian clam (*Potamocorbula amurensis*), European green crab (*Carcinus maenas*), and other marine invertebrates have been introduced into the plan area through unintentional transport via packing materials and in ballast of marine vessels. These invertebrates are capable of dramatically altering invertebrate communities in estuaries, therefore potentially influencing shorebird prey populations (Grosholz et al. 2000, Grosholz and Ruiz 1995). Dense growths of purple loosestrife (*Lythrum salicaria*) and reed canary grass (*Phalaris arundinacea*) have invaded the shorelines of some freshwater wetland habitats and made them unsuitable for most shorebirds (see Buchanan 2000). Similarly, the establishment of European beach grass (*Ammophila arenaria*) has altered beach dune systems along much of the Washington and Oregon coast (Wiedemann and Pickart 1996), making some of these areas less suitable for the Snowy Plover (*Charadrius alexandrinus*). Methods should be developed to control or eliminate exotic vegetation and populations of harmful invertebrates that become established in estuaries or freshwater habitats.

### **Reduce Risk of Oil Spills**

The second priority is to improve oil spill prevention strategies and to enhance spill response efficiency, particularly in areas of essential shorebird habitat. A huge volume of oil is transported throughout much of the Northern Pacific Coast plan area, including the outer coast, several of the larger bays, the lower Columbia River, and Puget Sound. In 1999, for example, 12,308 commercial vessels, including 1,748

oil tankers or tank barges, passed through the Strait of Juan de Fuca. Moreover, an estimated 15.1 billion gallons (57.15 billion liters) of oil transited Washington's Puget Sound in 2000 (Washington Department of Ecology 2000). The coastal and inland beaches and tidal flats that would potentially be polluted from oil spills collectively support the vast majority of wintering and migrant shorebirds in the region. Some of the sites that could be impacted are either regionally or internationally important sites (Drut and Buchanan 2000) according to the Western Hemisphere Shorebird Reserve Network criteria (Harrington and Perry 1995). Perhaps the most important activity to reduce the risk of oil spills would be to provide funding for more commissioned tugboats to escort (or be available to) tankers that use near shore waters.

### **Restore Degraded Habitats**

The third priority activity is to conduct habitat management to restore suitable conditions at historical shorebird stopover and wintering sites. Many important shorebird sites have been degraded over the years such that shorebirds rarely, if ever, use the degraded areas. Some examples of needed restoration activities include reconstruction of roost sites (e.g., at Tillamook Bay, Oregon), removal of dikes to allow resumption of natural tidal actions (e.g., at Nisqually National Wildlife Refuge, Washington), and removal of tiling to allow for a more natural occurrence of flooded fields in agricultural landscapes (e.g., in the Willamette Valley, Oregon).

### **Implementing Conservation Priorities**

Implementation of priority conservation activities will be a great challenge. Although discussion within the various bird conservation initiatives acknowledges the need for an opportunistic approach to implementing certain elements of the plan, it also is widely believed that a healthy partnership with existing Joint Ventures and a new focus on landscape- or ecosystem-level forms of "all bird" conservation planning will be the most effective delivery mechanism. This approach may be most successful for priority activities such as control of exotic species and restoration of degraded habitats. Pollution control/response and other activities will involve other partnerships.

In all of the priority activities described above, a significant level of coordination will be essential. This coordination should span the various bird conservation planning initiatives (landbirds, waterbirds, waterfowl, raptors, etc.) and should involve other efforts that focus on reserve planning (e.g., National Wildlife Refuges), ecosystem planning (e.g., The Nature Conservancy's eco-regional planning), and other resource

management programs (e.g., those that strive to maintain water quality). In many instances, planning must include multiple states and provinces, agencies and organizations, within and among flyways. Such comprehensive coordination and facilitation of implementation will require more active participation by the resource management agencies. Agencies will need to fund internal positions designed to assist with coordination, or provide funding for unaffiliated regional coordinators. Because some of the most important habitats used by shorebirds are of great economic value to humans, outreach activities must effectively convey a meaningful conservation message to the public.

### Measuring Success

The procedures used to measure success of program implementation must obviously be designed to best evaluate the particular activities under consideration. Measuring the effectiveness of some of the activities described above can be accomplished by examining the response of shorebirds to the restoration or enhancement measures taken. This will require that funding is made available for monitoring. Response monitoring may involve documentation of numerical responses and also should use other procedures, where appropriate, such as nesting success and rates of lipid deposition (Williams et al. 1999), to evaluate the functional value of restored habitats. The success of other activities will be measured by determining whether threat factors have been reduced or eliminated and by the purchase or protection of important shorebird areas.

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