

WATERBIRD CONSERVATION for the **AMERICAS**

North American Waterbird Conservation Plan

Version 1



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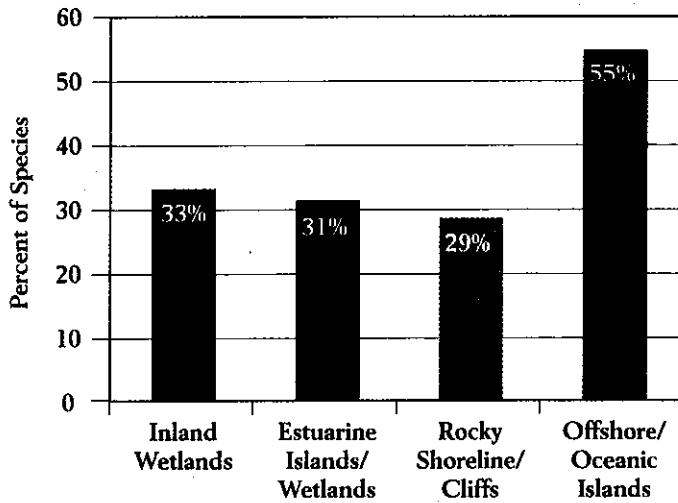
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Genera of greatest concern include *Phoebastria* (albatrosses), *Oceanodroma* (storm-petrels), *Puffinus* (shearwaters), and *Pterodroma* (petrels). Also of concern are *Sula* (boobies), *Brachyramphus* and *Synthliboramphus* (murrelets), *Phaethon* (tropicbirds), *Phalacrocorax* (cormorants), *Egretta* (egrets), and *Sterna* (terns). Genera with most species of low or no current concern include *Larus* (gulls), *Plegadis* (ibises), *Fratercula* (puffins), *Ardea* (herons) and *Stercorarius* (jaegers).

FIGURE 5: Nesting Location of Colonial Waterbirds



Habitat Needs

The habitat needs of waterbirds include places to nest, feed, roost, or loaf (rest). By definition, these species depend on aquatic habitats for some portion of their lives.

Nesting habitat is critical. Colonial species gather together to nest, while the nests of solitary breeders are dispersed across suitable habitat. The placement of nests and nesting location varies with species, as does flexibility in the placement of nests. Normally, the location of nests provides relative isolation from predators, such as on islands, cliffs, swamps or summits (see Figure 5). More than half of colonial waterbirds require islands for colony-sites. Nearly three-quarters of seabirds and other colonial species are nest-site specialists with relatively inflexible habitat requirements. Nest-sites used by colonial waterbird species include trees/shrubs, open ground (e.g., grass, sand, tundra), marshes, burrows, crevices, and ledges (see Figure 6). Nesting activity may affect the qualities of a site over time. For example, the presence of a nesting colony may cause changes in a site's vegetation. Likewise, changes in vegetation may affect site suitability for nesting. Sand-nesting terns, for example, prefer nesting sites regularly reconfigured or swept free of vegetation by storms.

Waterbirds feed in nearly any and all aquatic habitats. The foraging habitat needs of each particular species,

FIGURE 6: Nest Placement of Colonial Waterbirds

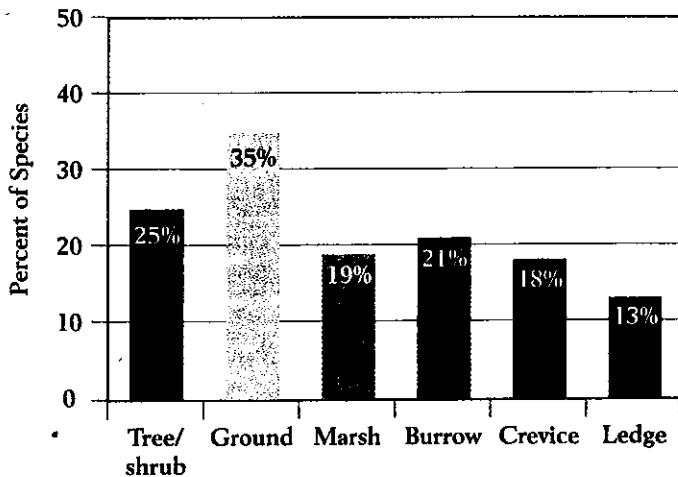
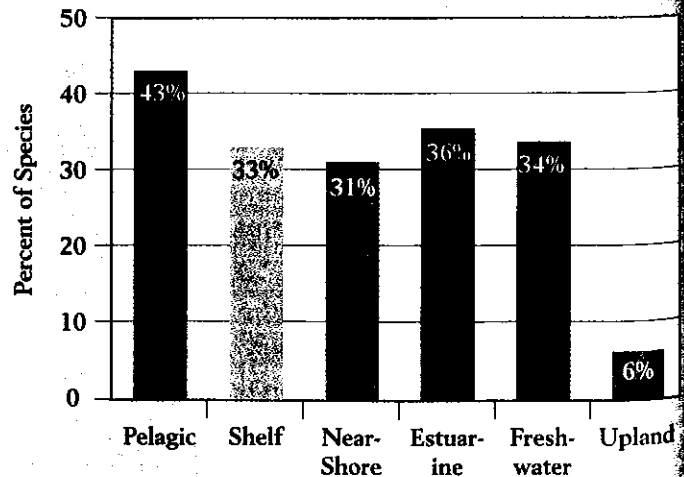
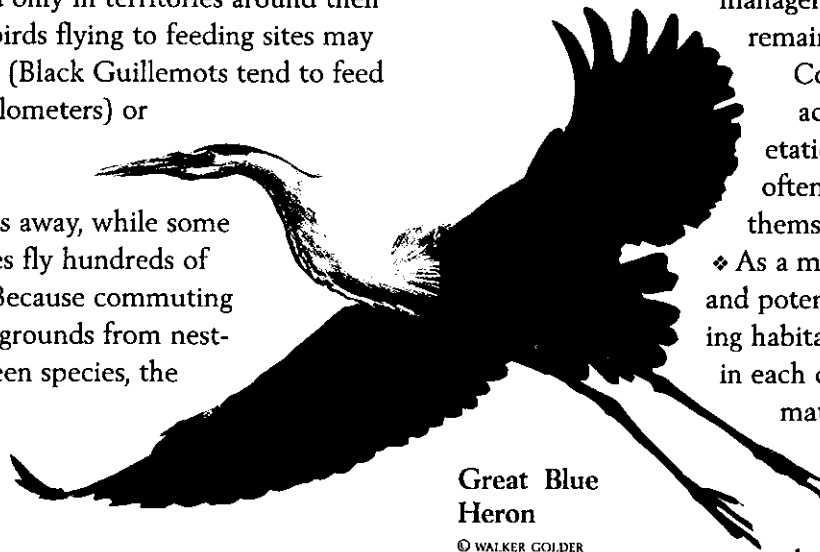


FIGURE 7: Foraging Habitats of Colonial Waterbirds



Tufted Puffin → Snail Kite → Least Grebe → Pied-billed Grebe → Red-necked Grebe → ... → ...

However, can be quite specific. Foraging habitats for colonial species are shown in Figure 7. Nearly half forage in offshore marine habitats including shelf waters or open ocean. Over 100 species utilize freshwater and estuarine wetlands. Sixty percent use more than one aquatic habitat. Waterbirds nest within commuting distance of feeding sites. Some species, including some marshbirds, may feed only in territories around their nest. Colonial waterbirds flying to feeding sites may travel short distances (Black Guillemots tend to feed within one to four kilometers) or undertake long commutes (herons may feed 20-30 kilometers away, while some petrels and albatrosses fly hundreds of kilometers to feed). Because commuting distances to foraging grounds from nesting areas differ between species, the amount and quality of habitat required throughout the nesting season vary.



Great Blue Heron

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range of activities, including but not limited to drainage, forestry practices, agriculture, aquaculture, pollution, disturbance, and development for residential or industrial purposes. In the case of colonial nesters, a surprising number of breeding sites are on artificial habitat, such as spoil islands, dikes, bridges and causeways, fill, even rooftops, and these sites often require management or maintenance to remain useful to waterbirds.

Colonies may change character over time due to vegetation death or succession, often caused by the birds themselves.

❖ As a management tool, active and potential colony sites and nesting habitats should be inventoried in each country and region. A matrix of used and potentially used breeding sites should be maintained across each regional landscape and used for site

and regional planning to assure sufficient breeding habitat availability.

- ❖ Public and private agency managers responsible for waterbird conservation should maintain or enhance the quality of important or selected breeding sites using manipulations, as needed and appropriate, such as vegetation or substrate alterations or predator control, including the control of other waterbirds on a case-by-case basis. The results of management actions at breeding sites should be monitored, and actions revised as appropriate.
- ❖ The need for alternative breeding sites should be determined on a regional basis, and where appropriate, habitat or sites should be established or re-established. The importance of human-made nesting sites to waterbirds within a region should not be underestimated. In most areas such sites need to be protected and managed.

Commercial interests can adversely affect waterbirds' breeding sites. Guano mining at islands in Mexico and in Latin America, for example, can adversely affect seabirds.

- ❖ The effects on colonial waterbirds of guano mining and other industries need to be understood in each

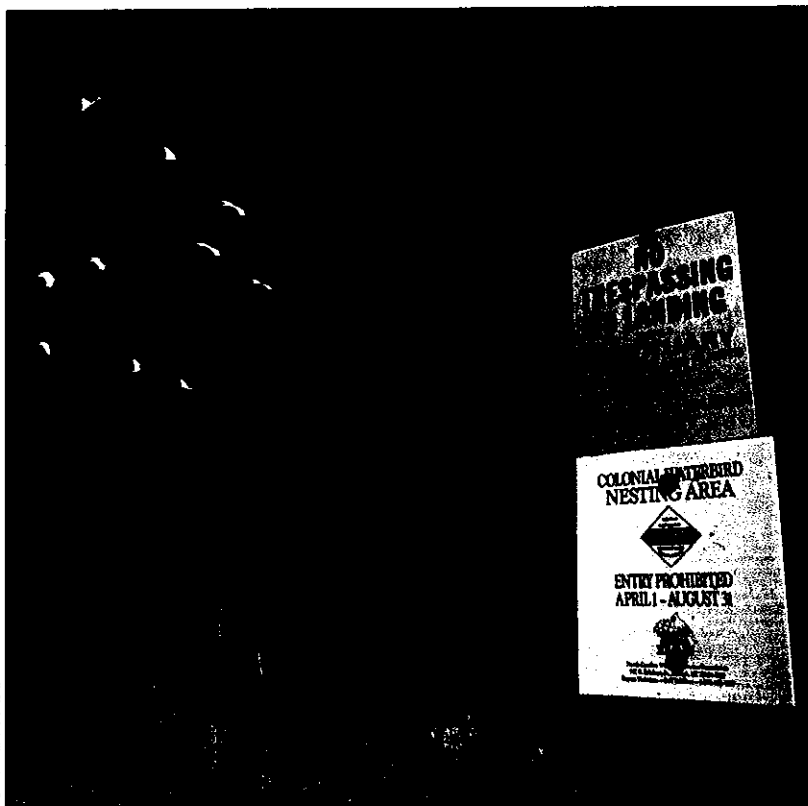
Assessing habitat use and requirements is a necessary preliminary step to establishing habitat goals that can translate into actual habitat acreage on the ground. However, goal setting at the continental scale is not possible at this stage. Habitat goals must first be established at regional and local scales, and then extrapolated to the continental scale. Habitat goals will be established on a regional basis as part of regional waterbird planning efforts.

Habitat Conservation Issues and Threats

It is because of the diversity of habitat needs among waterbirds that conservation action should emphasize protection and management of all available aquatic habitats. Those sites and areas found to be of particular importance to waterbirds, already subject and conducive to active management, or containing vulnerable species should be the highest priorities.

Nesting Habitat Concerns

Where the availability of nesting habitat is a limiting factor to populations, protection and usually management of this habitat are essential to sustaining healthy populations. Nesting habitat can be destroyed by a



White Ibises in flight over Battery Island Sanctuary

case and the activity should be wisely managed for sustainability of waterbird populations.

Availability of foraging habitats is also vital to the reproductive efforts of waterbirds.

- ❖ Conservation planning for nesting habitat must also include associated foraging habitat.
- ❖ Feeding sites and the distances traveled to reach them must be understood for each species, and a network of feeding situations secured and managed.

Non-Nesting Habitat Concerns

Seabirds and other colonial waterbirds often congregate throughout the year. In non-nesting seasons, they gather at roosts and loafing areas. These sites require both protection and management to maintain their value to waterbirds.

- ❖ Roost and loafing sites should be inventoried and monitored on a regional basis, and those that are used over a number of years may merit consideration for acquisition.
- ❖ Disturbance to roost and loafing sites should be minimized using all available management tools.

Wintering, migrating, and other non-nesting habitats are critical to the long-term conservation of waterbirds. Presently, there is little information on habitat needs outside of the breeding season for many species, particularly during migration.

- ❖ Waterbird conservation strategies should establish monitoring programs during the non-breeding season, targeting habitat use away from the nesting sites. Information from these programs will assist in identifying, preserving, and managing habitats that provide suitable sites for migrating, foraging, roosting, as well as breeding waterbirds.
- ❖ Because habitat used by migrating waterbirds is poorly understood, surveys and inventories of migration habitat use should be undertaken.

Reduction in Habitat Quality

Aquatic habitats, wetlands especially, are subject to significant physical and chemical modifications from water management, dredging, ditching, siltation, runoff, and introduction of

invasive plant species—modifications that destroy or degrade habitat for waterbirds. Remaining natural wetlands need to be preserved, protected, and actively managed to retain their ecological functions. The needs of waterbirds should be integrated into strategies for all wetland management and mitigation programs.

- ❖ Since waterbird use of wetlands is variable by nature, regulators permitting wetland changes should evaluate waterbird use on a case-by-case basis on time scales spanning both annual and multi-year hydrologic cycles.
- ❖ In the U.S., Canada, and Mexico, wetland conservation projects funded under the North American Wetland Conservation Act should include consideration of waterbirds, and rules for wetland projects should be further refined to support waterbird conservation.
- ❖ Farm programs, such as the U.S. Wetland Reserve Program, should be used to benefit waterbirds.

Throughout the Americas, one of the most common issues relating to wetland alteration is water management. Management of natural and artificial wetlands for purposes of water supply, flood control, vegetation management, fish production or even management of

Other aquatic birds can affect suitability for waterbirds. Waterbird conservation should be an explicit goal of water managers, whatever their other principal goals. For example, allocation of water supplies should include conservation allocation that is of benefit to waterbirds.

Human-created aquatic habitats, such as islands, reservoirs, dammed rivers, artificial wetlands, rice fields, and aquaculture facilities provide important habitat for waterbirds. At some sites, such as man-made islands and peninsulas adjacent to Canadian cities on the Great Lakes, aquaculture facilities in Louisiana, and reservoirs in the western and southeastern U.S., waterbird populations have become dependent on artificial habitats. On the other hand, artificial wetlands—now created widely for mitigation—have seldom proven to be as productive as natural wetlands.

- ◆ The role of artificial habitats in the sustainability of waterbirds should be understood in different landscapes.
- ◆ The success of wetland mitigation programs should be assessed and reported to assure meeting of management goals for waterbirds.
- ◆ Where they support waterbirds, artificial habitats should be managed appropriately. Where needed, subsidies should be provided to continue management practices that benefit waterbirds.

Coastal zone policies and practices associated with land-use and development, coastal protection, water quality, dredging, resource extraction including sport and commercial fisheries, and disturbance can significantly affect the ability of coasts and intertidal waters to sustain waterbirds.

- ◆ Coastal zone management policies should include sustainability of waterbird populations as a goal, including conservation of feeding, nesting, and roosting sites for resident, migratory and wintering waterbirds. This requires that the effects of policies be understood and that a commitment to sustainable waterbird populations underlie all actions taken by government, industry and citizens.

Open, sandy beach habitats are particularly subject to disturbance. Nesting, foraging, and loafing waterbirds may be adversely impacted by bathers, runners and walkers, off-road vehicles, and anglers on beaches.

- ◆ Beach sites used by waterbirds need to be identified and managed by responsible authorities. Management might include site protection, appropriate sand and vegetation manipulations, closures and enforcement, predator control, and monitoring.

Dredging along the coasts, such as for ship and boat channels, can be used to create and enhance nesting and roosting sites for waterbirds. Beach restoration projects can similarly benefit nesting birds, or can adversely impact their habitat, including from contaminated sediment.

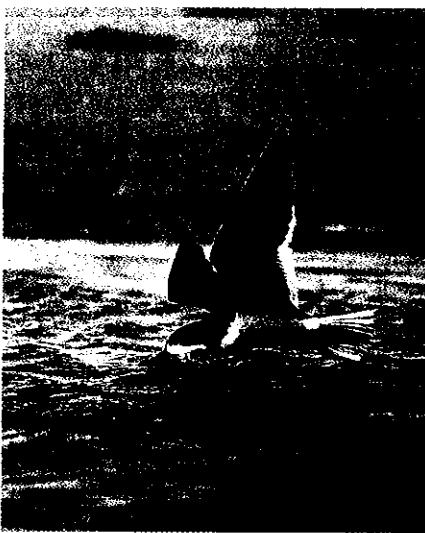
- ◆ Maintenance, establishment, and enhancement of waterbird habitat using dredged materials need to be explicitly treated as a priority by all agencies conducting dredging projects in order to enhance benefits to waterbirds while avoiding conflicts with other users.
- ◆ Planning for beach replenishment and dredge disposal operations should be coordinated at a regional level and be consistent with wetland protection and enhancement efforts nationally and regionally.
- ◆ Created sites require continued management, and this should be the primary responsibility of the organization creating the habitat.

The location and design of potentially attractive facilities such as airports, landfills, municipal wastewater wetlands, can be critical to future bird-human interactions, including health and safety issues.

- ◆ Plans for such facilities should be designed to minimize or eliminate human conflicts and impacts to regional waterbird populations.

Climate Change

Sea level is rising along mainland and island coastal areas. Climate change also affects rainfall patterns and resulting wetland hydrology in interior areas. These changes affect habitat availability and ultimately the seasonal timing of nesting and migration.



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Black Skimmer

Booby & *Anhinga* & *Brandt's Cormorant* & *Neotropic Cormorant*

- ❖ Conservation planning needs to take into consideration the long-term inevitability of climate change in establishing reserves, and securing nesting and feeding sites that will function under future conditions.
- ❖ The effects of climate change on normal ocean cycles and sea ice formation need to be determined or better understood.

Key Sites for Waterbirds

Waterbird populations may come to depend on specific areas and sites for their stability. Coloniality or congregatory behavior—gathering in colonies, roosts and feeding areas—result in discrete sites supporting sizable portions of local or wider populations at some time during the year. Waterbirds are also localized by specialized habitat requirements for nesting and/or for feeding, resulting in these habitats and sites being critically important for population health and sustainability.

A variety of site classification systems already exist throughout the Plan area, some of which already confer protection to birds, for example, Migratory Birds Sanctuaries and National Wildlife Areas in Canada, National Wildlife Refuges or Marine Protected Areas in the U.S. or lands in the National System of Protected Areas (Sistema Nacional de Áreas Protegidas) in Mexico. Other systems identify sites in order to engender management attention or serve as candidates for protected areas. These sites and areas need to be recognized for all species and at all scales, and such sites need to be managed in a way to protect their value for waterbirds.

The Important Bird Areas (IBAs) initiative is a good example of a program that recognizes and supports sites of importance for all birds. Waterbird conservation

planners should focus on ensuring that IBA programs are well developed in the Plan area and assist in the protection and management of sites that are identified as important to waterbirds. The IBA program is detailed below.

Important Bird Areas Program

Program Structure

Sites are identified as IBAs through the application of criteria based on numbers and types of birds. The IBA identification process provides a data-driven means for cataloging the most important sites for birds, prioritizing projects, and allocating limited resources. The IBA program engages a variety of partners, such as citizens, landowners, and public and private organizations,

throughout the process. In addition to identification, the process might include monitoring, habitat restoration, site stewardship, advocacy, and fundraising. The identification of an IBA is therefore a starting point for site-based conservation efforts.

The IBA program was initiated by BirdLife International in Europe in the 1980s, and is supported by partners around the world. BirdLife International has partners for much of the Plan area. In Canada, BirdLife's partners include Bird Studies Canada and the Canadian Nature Federation. BirdLife International's partner in the U.S. is the National Audubon Society. American Bird Conservancy has also developed a list of IBAs, some of which are important for waterbirds. In Mexico,

CIPAMEX is the BirdLife International partner. [In Mexico and other Spanish-speaking countries, IBAs are known as Áreas de Importancia para la Conservación de las Aves (AICAs).] In the Caribbean and Central America, BirdLife International partners are active in a



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Pied-billed Grebe

number of nations and projects to identify IBAs are underway.

Criteria

Based on the criteria developed by BirdLife International, an IBA must maintain and support one or more of the following: species of concern (e.g., threatened and endangered species); restricted-range species (vulnerable because they are not widely distributed); species that are vulnerable because their populations are concentrated in one general habitat type or biome; or individual species or groups of similar species that are vulnerable because they occur at high densities due to their congregative behavior. While all criteria apply to waterbirds, some are particularly important for species that inherently congregate in specific habitats and sites.

To further establish priorities for conservation efforts, sites identified as IBAs are classified with regard to their overall significance in a hierarchical fashion—global, continental, national, and state/provincial. Global significance is determined by internationally consistent criteria set forth by BirdLife International. Sub-global criteria are structured by the partner organiza-

Criteria for IBAs of Global Significance

- ❖ The site regularly holds significant numbers of a species that is a globally threatened species or a species of global conservation concern.
- ❖ The site supports significant populations of an endemic or restricted-range species.
- ❖ The site is known or thought to hold a significant assemblage of the species whose distributions are largely or wholly confined to one biome.
- ❖ The site supports >1% of a biogeographic population of a waterbird species, or > 1% of the global population of a seabird or the site supports, on a regular basis, >20,000 waterbirds or >10,000 pairs of seabirds of one or more species.



Horned Puffins

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tion to be most appropriate for the particular planning region.

IBAs and the Plan

The IBA programs existing within the Plan area will be used to inform the Plan and as a vehicle for implementing site-based conservation. These programs are at different stages of development. The IBA program in Canada has essentially concluded much of its identification activities at the global and national level, and is

focusing on site management and protection. In the U.S., the National Audubon Society has agreed to support the Plan by identifying waterbird IBAs. Mexico has indicated that their primary National Bird Conservation Strategy in Mexico focuses on the AICA program. BirdLife International and its national partners are identifying and facilitating conservation at IBAs in Central America and the Caribbean.

Other Key Sites

The IBA Program, as described in the previous section, utilizes a strict set of criteria to identify sites. Waterbird conservation at the regional or local level requires identification and management of sites that, while not qualifying as IBAs, are critical to local populations. These sites might be recognized based on factors such as social or educational value, intrinsic aesthetic value, economic value (ecotourism), or simply professional judgment. If desirable, conservation planners and managers are encouraged to target such sites for conservation activities. In some instances, a state or provincial program might also identify these sites as IBAs through the application of their own criteria.

Links to IBA Programs:

Canada: www.bsc-eoc.org, www.cnf.ca

U.S.: www.audubon.org/bird/iba

Mexico: www.iztacala.unam.mx/cipamex

In the Americas: www.birdlife.net

Western Reef-Heron ➤ Little Blue Heron ➤ Little Egret ➤ Western Reef-Heron ➤ Snowy Egret ➤ Chinese Egret ➤

Pacific coast. On the Atlantic slope, the remaining mangrove-fringed lagoon complexes provide nesting areas and migratory bird wintering areas, and the low-lying area from southern Veracruz to the boundary with Belize offers extensive freshwater marshes and lagoons, hosting large colonies of wading waterbirds. The lagoons stretch to the north coast of the Yucatan, while the Yucatan's southern coasts are sparsely occupied by coastal species in winter. Important waterbird habitats in the region's interior include interior river drainages, the Salton Sea, lakes on the Mexican Plateau, and Central Volcanic Belt marshes, all providing refuge in an otherwise arid landscape.

The Mexico region's waterbirds and their habitats face numerous threats directly and indirectly resulting from human activity. In Mexico, conservationists are particularly challenged by a lack of information and resources, yet can draw on an emerging environmental awareness. Moreover, the network of Mexican AICAs provides a strong foundation from which to launch waterbird conservation in concert with conservation action for other aquatic species. As discussed previously, it is envisioned that the NABCI Mexico Council will oversee waterbird conservation planning and implementation in Mexico, working with planners in the U.S. portions of the region.

Intermountain West

The Intermountain West Region, as its name implies, is bounded by the Sierra Nevada and Cascade mountains on the west, and the Rocky Mountains on the east. It includes the extensive Great Basin, Columbia Basin, Colorado Plateau, and the Wyoming Basin. Characterized by diverse basin and range topography, the region provides a variety of habitats for waterbirds including high mountain lakes, rivers and streams, both fresh and brackish basin wetlands, and large alkaline lakes. Due to the arid climate—a result of the rainshadow cast by the mountains to the west—the wetlands of the Inter-

mountain West serve as life-giving, yet transient, oases for aquatic birds. The region's dispersed lakes, marshes and riparian zones host about 40 waterbird species, including many or most of world's Eared Grebes, American White Pelicans, White-faced Ibises, and California Gulls. The competing demands for human uses of water, such as agriculture, development, and recreation pose the greatest threat to waterbird populations. The presence of contaminants (e.g., mercury, DDT and its breakdown products) is also a significant regional threat. Because of the West's feast-or-famine water regime, the Intermountain West regional plan will stress the necessity of conserving a network of high-quality wetland habitats with secure water sources in order to provide options for waterbirds during drought and flood cycles.

Boreal

This immense region arches across the length of Canada. It includes the tundra of the low arctic and the forests of the subarctic, as well as the boreal forest. Dominant features include, from west to east, the Mackenzie River and its tributaries, the softwood forests of the boreal transition zone, the Hudson Plains (the largest extensive area of wetlands in the world), and eastern seacoasts. Glacially carved, low lying wetlands cover a large percentage of the region and widespread permafrost results in lowlands being waterlogged or wet for prolonged periods of time. Several major river deltas occur in the central portion of the region, including the Saskatchewan River delta, Peace-Athabasca River delta, and Slave River delta, all of which are critically important to migrating and breed-

ing waterbirds. Coastal marshes and extensive tidal flats are present at Hudson Bay and on the Atlantic shorelines. This region provides extensive breeding habitats for large populations of waterbirds. Other breeding marshbirds include four species of grebes, American Bittern, Sora, Yellow Rail, as well as the American White Pelican and a variety of gulls and terns. An abun-



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Virginia Rail

Black-vented Shearwater ➤ *Audubon's Shearwater* ➤ *Little Shearwater* ➤ *Wandering Tattler* ➤