

Bird Conservation Planning and Implementation in Canada's Intermountain Region¹

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Introduction

Bird conservation planning in British Columbia and Yukon has been carried out by each of the major bird initiatives. The purpose of this paper is to provide a status report of planning activities and to discuss how integration of the initiatives is being accomplished for efficient and effective implementation of bird conservation actions.

Partners in Flight Landbird Conservation Planning

British Columbia and Yukon hold important habitats for migrating, breeding and wintering birds on the Pacific Flyway. Conservation planning in the region is achieved within an international framework that is the foundation for directing and prioritizing conservation efforts within ecologically defined Bird Conservation Regions. The Partners in Flight-British Columbia and Yukon (PIF BC/Yukon) planning strategy encompasses regional participation based on science. Bird Conservation Regions (BCRs) are the planning units within which practical management for landscape-oriented actions is developed.

Five BCRs lie within British Columbia: Northern Pacific Rainforest, Great Basin, Northern Rockies, Northern Interior Forest, and Boreal and Taiga Plains (U. S. NABCI Committee 2000). These regions correspond well with the ecoprovince units of British Columbia. Four of the BCRs cross international borders and one extends eastward to portions of four provinces and two territories.

Landbird species are prioritized within each BCR based on seven criteria recommended by Partners in Flight (Panjabi et al. 2001). After the initial pool of priority species is created through the PIF assessment process (Carter et al 2000), regional experts review and adjust the list.

Partners in Flight BC/Yukon uses the focal species approach (Lambeck 1997) to set measurable biological

objectives and link priority species with specific conservation recommendations. It is a multi-species approach: the ecological requirements of a suite of focal species within each habitat type are used to define an "ideal landscape" to maintain the different processes and habitat attributes required by landbirds and many other taxa. Focal species are generally a subset of priority species, but not always. Each focal species is identified as being most vulnerable to or most limited by a specific habitat component, ecological process or landscape condition (e.g., snags, fire, or patch connectivity). The needs of focal species are used to develop an explicit set of population and habitat objectives regarding the composition, structure, quantity and distribution of habitat patches and other management regimes necessary to ensure healthy populations. They also are used to set subsequent guidelines.

The first priority region for Partners in Flight BC/Yukon was the Great Basin BCR, where a collaborative effort by many agencies, conservation groups and individuals helped Partners in Flight BC/Yukon to develop Canada's Great Basin Bird Conservation Plan. Initially a group of priority species was selected by using a common database for the entire BCR, following the criteria explained above. Then, in a workshop attended by local experts, priority species for the Great Basin were selected and local threats were identified and scored. Under the "focal species" approach, it was possible to develop a matrix of habitat features and conditions for landbirds on a landscape scale.

The Bird Conservation Plan presents a list of priority species, a set of focal species that were used to define population and habitat objectives for each habitat, and outlines strategies to achieve those objectives. The main purpose is to guide research, monitoring, habitat acquisition, stewardship, education and communication activities within the BCR.

Waterfowl Conservation Planning

The Pacific and Yukon region of the Canadian Wildlife Service has produced a waterfowl management plan that provides an overview of conservation issues, preliminary population assessments, and recommendations for each of the five BCRs in the province. The Canadian Intermountain Region of British Columbia (Great Basin and Northern Rockies BCRs) is of critical importance to waterfowl

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and supports most of the breeding waterfowl habitat in the province (over 130,000 wetlands or 60 percent of the provincial total) and most of the breeding waterfowl populations (~750,000 pairs or 68 percent of the provincial total). The region is also used by large numbers of molting waterfowl.

The plan identifies priority species based on population status, importance relative to continental populations, management concerns, importance of harvest and knowledge of population size, habitat needs and trends. Priority species for the Intermountain Region are Mallard (*Anas platyrhynchos*), American Wigeon (*A. americana*), Green-winged Teal (*A. crecca*), Ruddy Duck (*Oxyura jamaicensis*), Ring-necked Duck (*Aythya collaris*), Trumpeter Swan (*Cygnus buccinator*), and Canada Goose (*Branta canadensis*). Priority seaduck species include Harlequin Duck (*Histrionicus histrionicus*), White-winged Scoter (*Melanitta fusca*), Barrow's Goldeneye (*Bucephala islandica*), Bufflehead (*B. albeolus*), Hooded Merganser (*Lophodytes cucullatus*), and Common Merganser (*Mergus merganser*).

Waterfowl conservation issues in the Canadian Intermountain Region center on the activities associated with forestry, ranching, crop-based agriculture and urbanization. Forests make up about 80 percent of the region and the wetlands located in forested areas are affected by timber harvest and management practices. Approximately 80 percent of all the rangeland in British Columbia is found in this region (80 percent of the provincial total). Rangeland is important for nesting waterfowl and grazing is often associated with depletion of vegetation in/around wetlands that reduce nesting and brood rearing cover. Agricultural lands are also important (37 percent of the provincial total) and they provide additional sources of food to breeding or migrating waterfowl. Adverse impacts from these activities include changes in hydrology, increased erosion, wetland destruction, nutrient loading changes and destruction of wildlife trees for cavity-nesting waterfowl.

Habitat objectives and priorities will be determined by tracking the relative value of different habitats types within each BCR in the province for each waterfowl species. The development of this habitat-species matrix will permit GIS queries and lead to the development of models quantifying the habitat needs of individual or groups of species. Plan success will be measured by monitoring population response to habitat programs and by tracking overall changes in habitat availability throughout the landscape. The feasibility of expanded seaduck surveys in the area will be assessed by the Sea Duck Joint Venture. The land management strategies to sustain the number of waterfowl observed in the 1970s are to be developed by the Canadian Intermountain Joint Venture described below.

Shorebird Conservation Planning

The Pacific and Yukon Regional Shorebird Conservation Plan is one of several shorebird conservation plans being developed nationally and internationally in an effort to better manage shorebird populations. The Canadian Shorebird Conservation Plan provides a strategy for national conservation action. Moreover, continental declines of several species are a concern yet the reasons for the declines are not well understood.

In Pacific and Yukon Region, there is no systematic survey for all shorebirds. However, surveys of the Western Sandpiper have shown that declines have occurred over the past 9 years. The region is of particular importance to shorebirds nationally, with 39 species occurring on an annual basis and 18 species occurring during the winter. Of these, Black Oystercatcher (*Haematopus bachmani*), Black Turnstone (*Arenaria melanocephala*), Surfbird (*Aphriza virgata*), Wandering Tattler (*Heteroscelus incanus*), and Western Sandpiper (*Calidris mauri*) are endemic to northwestern North America and dependent on availability of high quality breeding and wintering habitats. To successfully manage shorebird populations in the region, four major actions are proposed: a) secure habitats; b) implement stewardship programs; c) expand monitoring and research programs; and d) increase public awareness.

Implementation of All-Bird Conservation in the Canadian Intermountain and Across Borders

The Canadian Intermountain Joint Venture (CIJV) was established under the North American Bird Conservation Initiative (NABCI). The CIJV will be an important delivery mechanism for the bird plans described above, as well as providing regional-level implementation of the North American Waterfowl Management Plan, The Canadian Shorebird Plan, Partners in Flight: Framework for Landbird Conservation in Canada, and Wings Over Water: Canada's Conservation Program for Seabirds and Waterbirds. The CIJV is distinct from many other North American joint ventures in that it has focused on all-bird conservation from its inception.

The partnership of the CIJV includes federal and provincial government agencies, First Nations, non-governmental organizations, universities, as well as hydro, mining, ranching and forestry industry representatives. Through the CIJV, partner groups and agencies will seek to create and implement programs aimed at maintaining, enhancing and protecting habitat for all birds and other wildlife in the Canadian Intermountain. The boundaries of this area follow the Great Basin and Northern Rockies BCRs in Canada, from the crest of the Coast Mountains to the west, the eastern

crest of the Rocky Mountains, the southern extent of the boreal forest to the north, and the Canada-U.S. border to the south. However, every effort will be made to create linkages across the international border in order to conserve shared bird populations.

The CIJV takes a habitat-based approach to integrating bird conservation. Suites of focal species were used to define critical attributes and structure (e.g., type of snags, composition of shrub layer or emergent vegetation) within each habitat type. Focal species were defined as organisms that are most vulnerable or have the most stringent ecological needs in a given habitat, and may therefore collectively represent the needs of other species. Where sufficient data exists, quantitative population objectives were determined for focal species. In future, quantitative habitat objectives will also be developed to define overall habitat required (e.g., number of hectares of wetlands) to sustain populations. In addition, we will strive to quantify the fine scale critical features identified through focal species (e.g., number of snags required/hectare, density of shrub layer, density of emergent vegetation).

Best management practices for each habitat type will then be derived and offered to land managers. On a broader level, these objectives will be applied to form a mosaic of habitats and habitat conditions to support entire communities of birds and sustain ecosystem biodiversity across the working landscape of the Canadian Intermountain.

Program delivery will address the scarcity of water in the southern areas of the province and impacts from logging, farming, ranching, hydro-electrical operations, urbanization and industrial development on priority habitat availability and quality (including hydrology and water quality, maintenance of critical habitat structures, connectivity and so forth).

The following strategies will be used to meet the objectives:

- Stewardship and extension within and among resource sectors
- Securement of high priority habitat areas through purchase, lease, donation, easement/covenant, land transfer, or legislation
- Site-specific restoration, enhancement and management of habitats to improve carrying capacity for birds

- Influencing legislation, policy, habitat protection and planning
- Education and outreach

Evaluation of program activities is critical for assessment of success and for adaptive management of birds and their habitats. Population surveys coupled with monitoring changes in habitat, will take place at the site level to evaluate individual projects, at the joint venture level to evaluate program success and at the transboundary BCR level to evaluate the health of bird populations at an ecosystem scale.

Several mechanisms and programs exist to facilitate cross-boundary conservation, sharing of science and ideas, and collaboration on research and monitoring. Examples include: further development of biological objectives for waterfowl through collaboration with U.S. and Canadian governments, Ducks Unlimited Canada and the Pacific Flyway Technical Committee; conservation, research and monitoring of shorebirds through the Pacific Flyway Council, the Western Hemisphere Shorebird Reserve Network and the Program for Regional Integrated Shorebird Monitoring; collaboration with the Intermountain West Joint Venture; Northern Rockies and Great Basin BCR coordinators; and the international bird committees representing waterfowl, shorebirds, waterbirds and landbirds under the North American Bird Conservation Initiative.

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