

## NABCI IN CANADA

# **Bird Conservation Region 6: Partners in a High-tech Quest for Knowledge**

**By J. Alexander (Sandy) Burnett**

At an altitude of 40 metres, the view from the cockpit of the Cessna185 floatplane is intimate, to say the least. The pontoons seem to barely clear the tops of tall spruces. At this range, the flocks of waterfowl and other birds clustered on beaver ponds and lakes below are not merely visible but clearly identifiable to the trained eye.

Bird identification is the primary purpose of this flight. On board, in addition to the pilot, are two Ducks Unlimited Canada biologists. Their task is to note the number and species of all the birds they see on the waters below. The pilot uses a computer-based moving map display to adhere to a precisely defined flight path. A Geographic Positioning System (GPS) locator link lets the computer record real-time progress along each transect with amazing accuracy. Meanwhile, the two watchers store their observations on hand-held cassette recorders. Time-stamped intervals on the tapes will integrate each sighting with the time and location data from the flight-following software. At the end of the flight, a powerful Geographic Information System (GIS) program will enable them to summarize and map the distribution of all the birds they saw.

This is the high-tech face of ornithological field research in the 21<sup>st</sup> century. It's permitting scientists to gather and analyze enormous quantities of detailed information about vast areas of northern Canada that were virtually beyond reach until the advent of satellite imaging, remote sensing, and GPS and GIS technologies.

The present flight is one of many to be conducted over a three-year period from 2000 to 2002, to help determine what use waterfowl and other waterbirds make of a 3.2 million hectare (8 million acre) rectangle of wilderness centred on Utikuma Lake, about 275 kilometres northwest of Edmonton. This area is one of a dozen survey blocks, all of comparable size, that lie scattered across the Western Boreal Forest ecoregion, from central Manitoba to the Yukon Territory. The Utikuma Lake site is situated in the middle of the Boreal Taiga Plain, an area that the North American Bird Conservation Initiative (NABCI) has designated as Bird Conservation Region (BCR) 6.

NABCI is a tri-national initiative of Canada, the United States and Mexico to develop and implement plans for the long-term health of all bird species in all habitat regions of North America. Its rationale is simple. Birds are numerous, highly visible, economically significant and ecologically essential components of the biodiversity of all three countries. If all the continent's bird populations are in good health, abundant, and distributed throughout their known ranges, relative to historical norms, it can be inferred that the environmental health of North America is good. If not, then like the celebrated

canary in the coal mine, those species in trouble will serve as indicators of an urgent need to take remedial action not only for the sake of the birds, but for the people who live in that ecosystem as well.

To facilitate the initiative, the natural habitats of the continent have been mapped into 67 ecological units called Bird Conservation Regions (BCRs). The resulting spatial framework has been in use by NABCI since late in 1999. Its units have nothing to do with political boundaries. Rather, each comprises a set of related and contiguous ecosystems. Thus, BCR 6, the Boreal Taiga Plain, stretches from Lake Winnipeg in Manitoba to the Mackenzie Delta in the Northwest Territories.

Black spruce and mixedwood forests predominate in this region. Up to 50% of its total area is covered by wetlands and permanent bodies of water. These vast expanses of forest and wetland provide nesting habitat for millions of waterfowl, waterbirds and neotropical songbirds. Additional millions of birds pass through on migration. Notable among resident and transient species are the Whooping Crane, Trumpeter Swan, Western Grebe, Black-throated Green Warbler, Swainson's Thrush, and Ovenbird.

Apart from the rapidly developing southern perimeter, roads are rare in this immense tract of land. It is only very recently that conservation organizations have had either the capability or the motivation to explore its flora and fauna in depth. Satellites and microchips have provided the capability. The motivation stems from two factors that may or may not be directly linked. One is a precipitous decline in the abundance of some of the region's principal species of diving ducks. Between 1980 and 1998, for example, the continental populations of Greater and Lesser Scaup appear to have fallen drastically, perhaps by as much as 50%. Scoter numbers seem to have dropped by nearly two-thirds in the same period.

The second factor is the scale of industrial and infrastructure development in some parts of BCR 6 since 1990. Large-scale forestry operations and oil and gas exploration have been the most noticeable influences in the Utikuma Lake area. Each has a profound impact on thousands of hectares of land every year. Agriculture and hydroelectric development are also powerful agents for environmental change.

When many, powerful interests are involved, and a sensitive ecological region is at stake, distinct advantages can be gained if the proponents of conservation succeed in establishing a cooperative alliance of stakeholders. Partnership is central to the NABCI concept and the Utikuma Lake project is a prime example of a proactive, constructive partnership at work.

Ducks Unlimited Canada has been a leader in conservation planning across the western boreal region and in developing and coordinating effective partnerships. The private conservation group launched its own initiative in 1997 to address a broad spectrum of questions about the relationship between habitat and industrial development, and about opportunities for proactive conservation across the Western Boreal Forest ecoregion.

Having identified key areas in which to gather baseline data it sought appropriate collaborators with whom to work in each location

In the Utikuma Lake area, DU's list of active partners includes two forestry giants, Alberta Pacific and Weyerhaeuser, and Syncrude Canada, an important player in the energy sector. Government support has been forthcoming from the Province of Alberta and the USDA Forest Service Office of International Programs. The University of Alberta, the University of Western Ontario, and NSERC (the Natural Sciences and Engineering Research Council of Canada) have provided research funding and resources. Financial support from NAWCA (North American Wetland Conservation Act) is funding a Canadian Wildlife Service study of riparian songbirds in the area. In addition, consultation is being initiated with First Nations communities in the area to enhance the project with traditional aboriginal knowledge.

Of particular interest in this model is the important role of private sector stakeholders. Most NABCI-linked programs in Canada have grown out of the activities of pre-existing Joint Ventures. Federal and provincial government agencies have tended to play leadership roles. In contrast to this pattern, the Utikuma Lake project has afforded an excellent opportunity for participating corporations to demonstrate their public commitment to ecologically sustainable resources. They have responded very positively.

The involvement of Alberta Pacific, or AlPac, is a good example. The company's forest management agreement with the Province of Alberta covers approximately 58,800 square kilometres, much of which lies within the Utikuma Lake research area. It is worth noting that approximately 30% of this enormous license consists of wetlands and stream banks that are unsuitable for harvesting. Bodies of water cover another considerable portion. Only about 36% is prime commercial forest. To integrate its harvesting practices with its long-term ecological management responsibilities, the company employs six full-time staff biologists and another six to eight on contract. Their participation greatly expands the effectiveness of the Utikuma Lake project team.

In contrast to many other NABCI projects, habitat restoration is not a current priority in the Utikuma Lake district. The reason is simple. Too little is known about the area to permit the partners to define a comprehensive conservation strategy. That some duck populations have decline is known. The reason for the decline is not. The objective of the current three-year initiative is to gather sound baseline data as a foundation for future planning and action. This is important to both corporate and not-for-profit partners.

"Our goal is to move towards watershed based planning," says senior AlPac biologist Elston Dusz. "If we want to make our methods as similar as possible to the natural regime of the boreal forest, we need to understand and assess the environmental risks posed by our operations in each ecosystem."

Gary Stewart, conservation programs manager, Western Boreal Forest Region, for Ducks Unlimited Canada takes a similar position. Pointing out the need to determine a range of

variables from vegetative cover, invertebrates, and hydrology to habitat use by numerous bird species he states, “We need to capture a tremendous amount of knowledge, from the bedrock up. Once we can speak with confidence about the natural processes controlling productivity and the importance of this area to the reproduction of all the birds that live here, then we can begin to influence decisions about its future. Our scientific data gathering is designed to help support all-bird conservation planning by sharing all information with all NABCI partners.

“For example, we now know that Utikuma Lake itself is a tremendously significant location. Last summer we discovered that more than 5% of the continental population of Western Grebes — some 4500 individual birds — were present on the lake during one survey. Once we’ve got the scientific foundation established, we’ll be in a position to seek protection for the areas that need it, and to cooperate in developing management action plans for the areas that are appropriate for sustainable economic development. But you’ve got to be cautious. You can’t rush science.”

That means, for now, that there will be more years of bird surveys, invertebrate sampling, and water chemistry analyses. There will be more years of sending out ground crews to verify Landsat images of vegetative cover. And there will be many more years of study of the ecology and biodiversity of this immense and little-known region in order to find and maintain a viable balance between rigorous habitat protection, intensive economic development, and long-term sustainable use of resources.

*J. Alexander (Sandy) Burnett, naturalist and environmental writer, wrote this article as one in a series on Canadian Bird Conservation Regions, commissioned by NABCI Canada.*