



THE BOREAL: A BIRDER'S WONDERLAND

By Chip Scialfa

“It’s been a long, uncomfortable early June day but well worth it. After leaving Calgary at 11 last night, we arrived in Cold Lake just before dawn. Within minutes, the forest

exploded in song and we struggled for the next two hours to get good looks at the Blackburnian, Chestnut-sided and Cape May warblers singing from the spruce tops. Then, the muggy heat became

uncomfortable, but far more irritating was the mosquitoes and black flies. Even wearing a net and DEET didn’t keep them at bay and by noon we were so sick of the infernal buzzing that we

gave up on the birds and retreated to an air-conditioned hotel room to get some much-needed (if not deserved) rest. Our count for the morning was a respectable 18 warblers. We missed Bay-breasted, but have another morning to find one before heading back home.”

If this painfully accurate description doesn't sound a bit odd to you, then you're probably a birder. There are many

reasons why birding is one of the fastest-growing interests in the world. It provides physical exercise and mental stimulation. It requires the development of patience, discipline and a profound respect for uncertainty (“What the heck WAS that little brown job?”). It can be enjoyed alone or in groups, need not be expensive and compels an appreciation for habitats – such as xeric short-grass prairies – that

would otherwise go unnoticed. For these and other reasons, it may not be surprising to learn in the U.S., 22 percent of the adult population lists birding as one of their activities. In 2001, the U.S. Fish and Wildlife Service reported that this interest generated (along with other wildlife watching), an economic impact estimated at \$32 billion! Not only is birding fun, it's big money!



Black-throated green warbler. This warbler is one of approximately two-dozen wood warblers that breed primarily in Alberta's boreal forest. PHOTO: B. ELDER

If you are a birder in Alberta (or most of Canada for that matter), then you know how frustrating, uncomfortable and utterly enjoyable it can be to spend time in the boreal forest in the hunt for breeding birds. Many of the most colourful and sought-after warblers breed predominantly in Canadian boreal forest areas such as Cold Lake and Sir Winston Churchill Provincial Parks. Additionally, several other remarkable species, such as the globally endangered whooping crane (*Grus Americana*) breed largely or entirely in this varied and rich mosaic of habitats. Over 80 percent of the world's Hudsonian godwits (*Limosa haemastica*) breed in the boreal region. Many of these species can be seen throughout the continent during the spring and fall migrations but, when you think North American breeding birds, think boreal forest.

Birds of the boreal occupy a variety of ecological niches. Some, such as the common loon (*Gavia immer*) require relatively large and undisturbed freshwater bodies. In contrast, the ovenbird (*Seiurus aurocapillus*) nests on the ground in areas of thick undergrowth, where it can find some protection against predators and parasitic species like the brown-headed cowbird (*Molothrus ater*). The Cape May warbler

Common Name	Latin Name	% of Population Breeding or % of Breeding Range in Canadian Boreal Forest *
Common loon	<i>Gavia immer</i>	74%
Red-necked grebe	<i>Podiceps grisegena</i>	93%
American wigeon	<i>Anas americana</i>	64%
Surfbird	<i>Aphriza virgata</i>	82%
Bonaparte's gull	<i>Larus Philadelphia</i>	95%
Great gray owl	<i>Strix nebulosa</i>	83%
Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>	87%
Northern shrike	<i>Lanius excubitor</i>	90%
Philadelphia vireo	<i>Vireo philadelphicus</i>	86%
Palm warbler	<i>Dendroica palmarum</i>	98%
Magnolia warbler	<i>Dendroica magnolia</i>	74%
Cape May warbler	<i>Dendroica tigrina</i>	83%
Bay-breasted warbler	<i>Dendroica castanea</i>	79%

Source: Boreal Songbird Initiative. <http://www.borealbirds.org/>



Great gray owl. This handsome denizen of Canada's boreal forest, unlike many owls, may be seen hunting in the daytime.

PHOTO: B. ELDER

(Dendroica tigrina) is a dietary specialist and the population fluctuates dramatically with the availability of spruce budworms. Thus, a key to conservation of the boreal forest avifauna is to protect sufficiently large areas of representative habitats.

The environmental challenges to the boreal forest are considerable. While much of the region is sparsely populated, it is the source of commercial timber and pulp for paper, minerals and metals such as uranium and, increasingly, oil and natural gas. For example, in Alberta, one forestry company (Alberta-Pacific Forest Industries Inc. or ALPAC) manages and harvests an area of 6.87 million hectares. This is approximately nine percent of the province and the boreal forest comprises most of its Forest Management Agreement (FMA) area. Currently, leases for open pit mining operations in the oil sands area take up approximately 276,000 hectares. Most future mining

will be in situ and, if allowed to develop fully, would encompass 13.8 million hectares, or 21 percent of the province. Again, much of this land is boreal forest. This industrialization requires roads, machinery, culverts and people, all of which make it harder for birds to thrive.

Consider, for example, the forest fragmentation that results from oil sands exploration and extraction. In the OPTI-Nexen Long Lake project, the lease area is 106 km². By the time of completion, Schneider and Dyer contend there will be 234 exploration wells, 288 production wells and 89 kilometres of access roads, creating a linear disturbance every kilometre on average. Peter Lee

and Stan Boutin have noted that this impact does not consider fragmentation due to other structures or seismic lines, which are more closely spaced for in situ exploration and may remain cleared of vegetation even after 30 years.

Forest fragmentation impacts boreal bird life in several ways. Obviously, whatever replaces the forest is lost habitat, at least for the intermediate term. Some species appear to require a substantial area (e.g., > 10 ha) of undisturbed forest to breed successfully. Better practices can decrease fragmentation and mitigate its effects. According to Erin Bayne of the Alberta Biodiversity Monitoring Institute, positive effects have resulted from reduced cutline widths. As well, recently developed guidelines for well-site reclamation, by emphasizing forest regeneration above erosion control, are more likely to be successful. Still, Bayne

pointed out that if human activity such as ATV use is allowed along cut-lines, regeneration will be unlikely to occur. Greater efforts to manage human access are required to allow boreal forests to regenerate.

Of course, given that we're talking about a huge forest, it comes as no surprise that forestry poses another challenge to avian conservation. Roads to cut blocks have the same impact whether they are for a well or for timber. Clear-cutting leads to immediate loss of habitat for old-growth specialists, soil erosion in some cases, and may compromise riparian habitats adjoining harvested tracts. While harvesting and replanting practices have improved greatly over the past several decades, it is still the case that replanted areas contain fewer tree species, reduced plant diversity, and less dead woody material needed for shelter and nesting. As well, in many areas, undergrowth does not regenerate to pre-harvest levels and this impacts many songbird species such as blue-winged warblers and ovenbirds that are ground nesters.

Improved industrial practices and the short history of exploitation in Alberta's boreal forest mean that the recorded impact on bird life has been relatively small. A recent report by the Alberta Biodiversity Monitoring Institute (2009) found that songbird populations were relatively intact in logged areas relative to reference forest. On average, their intactness measures showed less than a 10 percent loss in harvested stands in the ALPAC Forest Management Agreement Area. However, some species have suffered disproportionately. For example, white-throated sparrows were diminished by 13 percent and mourning warbler numbers had dropped by 28 percent. As industrial activity "ramps up" in the coming decades, these numbers are sure to change and likely not for the better.

One might make the argument that too much of a focus on the boreal forest neglects the migratory nature of many breeding birds and that larger threats come from habitat loss along migratory routes, as well as in Central and South American overwintering grounds. To be sure, the ecological crisis in these regions demands immediate and significant action (the BP oil crisis in the Gulf of Mexico may pose a real threat to this year's shorebird populations). However,



Hudsonian godwit. This shorebird, which migrates through the northeastern tip of Alberta, breeds in only a few places in the boreal forest. It may arguably be considered a vulnerable species. PHOTO: B. ELDER

because breeding success is critical to long-term population stability, it is clear that protection of Canada's boreal forest must take a high priority. By acting now, we may be able to prevent the "Silent Spring" Rachel Carson warned us about more than 50 years ago.

What can we do to help protect Alberta's boreal forest? Accurate, current

information is always important. Some excellent web sites covering the topic include those of the boreal Songbird Initiative (www.borealbirds.org), the Cornell Laboratory of Ornithology (www.birds.cornell.edu) and, closer to home, the Alberta Biodiversity Monitoring Institute (www.abmi.ca). At the socio-economic level, if you find yourself

birding in Alberta's boreal, make sure that the restaurants, hotels and gas stations you patronize know that you are a birder. By wearing your binoculars and talking up the "great warbler day you had", you can send a clear message that birding means dollars. Advocating for protected areas, an idea promoted by Dr. Bayne and ALPAC, is critical. Whenever possible, you can echo the view of the Canadian Boreal Forest Initiative (www.borealcanada.ca) that protecting 50% of our northern forest is not only realistic, but wise. 🍷

Charles (Chip) Scialfa is a professor at the University of Calgary where he investigates age-related changes in vision and human performance. His birding has taken him to five continents where he has recorded a modest 1,500-species life list. Still, Alberta is home and he spends as much time as possible in the diverse habitats with which our province is blessed.