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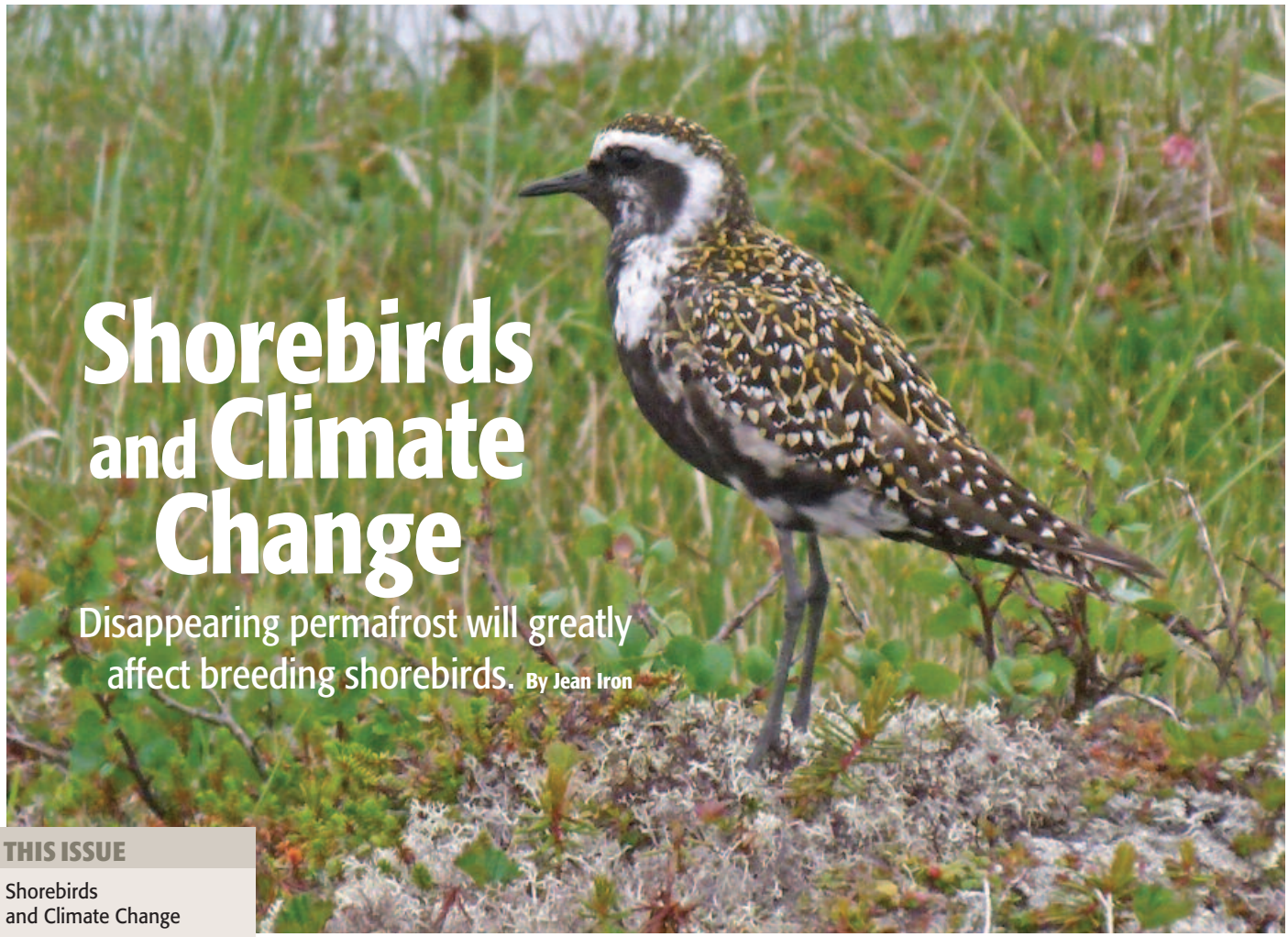

Shorebirds and Climate Change

Disappearing permafrost will greatly affect breeding shorebirds. By Jean Iron

Female American Golden-Plover near its chicks on tundra ridge near Burntpoint Camp. 12 July 2012. *Photo: Jean Iron*

LAST SUMMER, from 22 June to 18 July 2012, I volunteered to take part in a new shorebird and wetlands project for the Ontario Ministry of Natural Resources (OMNR) at Burntpoint Creek Research Camp on Hudson Bay. With advancing climate change and concerns about the loss of permafrost, the Ministry is undertaking a long-term study of Ontario's tundra ecosystem along Hudson Bay, the most southerly tundra in the world. In the study's first year we collected data about breeding shorebirds and other birds dependent on this narrow coastal tundra zone, which is underlain by continuous permafrost. There is concern that this southern zone of permafrost may disappear, which will greatly affect breeding shorebirds. Under the direction of Ken Abraham, Research Scientist, OMNR is a partner in the Arctic Shorebird Demographics Network. This program, coordinated by Manomet Center for Conservation Sciences in the United States, connects breeding shorebird research sites across the Arctic to determine why many shorebird species are declining.

Aboard an OMNR de Havilland Twin Otter aircraft, we took off from Moosonee early in the morning of 22 June and flew out over the vast Hudson Bay Lowlands. No roads lead to Burntpoint Creek Camp. It is in the wilderness of Polar Bear Provincial Park, the largest provincial park in Ontario,

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There was nothing but us, the wind, wildflowers, birds and other wildlife

Semipalmated Plovers nested on dry gravel ridges close to the coast. 2 July 2012. *Left top:* **Aerial view of Burntpoint Camp on 22 June 2012.** *Centre:* **Hudsonian Godwits perch in trees on the breeding grounds. 10 July 2012.** *Left below:* **Whimbrel on watch on 28 June 2012.** *Photos: Jean Iron*

established to protect the denning area of Polar Bears. As we approached, our plane circled the camp situated on a long ridge covered with lichens and arctic wildflowers, 3.5 km from Hudson Bay, which was still covered with pack ice at the end of June. The camp, surrounded by a solar-powered electric fence to keep out Polar Bears, overlooks a small lake to the west and wide-open tundra wetlands to the east, both perfect breeding habitats for shorebirds and other northern birds. After unloading supplies for one month and bidding farewell to the departing crew that had been there since 5 June, we watched the plane take off south, leaving our small crew of four alone for the next four weeks. There was nothing but us, the wind, wildflowers, birds and other wildlife. As things settled, the air was filled with the songs of territorial Whimbrels, Hudsonian Godwits, and Dunlins. Red-throated Loons nesting on nearby lakes called overhead as they flew towards Hudson Bay looking for open water to catch fish. This was the beginning of our quest to document more about shorebirds and the breeding birds of Ontario's Hudson Bay coast. Years of future data will document the changing climate, allowing comparisons to base line information. It is expected that changes in abundance, breeding range, dates of occurrence, habitat use, and more will occur.

Julie Belliveau was our crew leader in charge of the camp during this period. She was studying at Trent University and her thesis fit one of the project's objectives: to discover what shorebirds and other birds are eating in the tundra ponds and wetlands. Matt Birarda assisted Julie with her invertebrate research. For biodiversity studies, he also maintained other invertebrate traps and small mammal live traps. He regularly measured the depth from the surface to the permafrost.. Jim Sauer of Ottawa was a birder, volunteer and retired RCMP officer. He and I teamed up to complete three survey routes each about 12 to 15 km long over difficult marshy terrain and easier-walking tundra ridges. In one day we usually completed one of the routes, or at least much of it, the next day another route, and so on. Our job was to extend the work of the first crew by looking for nesting shorebirds and other nests they had found. We determined whether a nest was successful or had been depredated, found new breeding birds, and documented all the birds using the 50 or so tundra ponds on the three routes. Recording the temperature and pH levels of the study ponds will be used for comparison in future years.

eBird Update

By Mike Burrell

THE USE OF eBIRD IN ONTARIO continues to be phenomenal. Ontario is now regularly one of the top three contributing states/provinces of data, usually only behind California and New York. Ontario eBirders should be proud of the comprehensive dataset of bird observations they are contributing to this worldwide archive. The data are already being used for research projects and publications and by many different organizations for a myriad of purposes.

Not only is the amount of data coming in impressive, the growth continues to be staggering. 2012 was by far the biggest year yet for Ontario (averaging several hundred checklists submitted each day). A very impressive 10 eBirders reported 300 or more species in 2012, while nine eBirders cracked the 1000 checklist mark. With the volume of real-time data now coming in we can watch fine-detailed avian events unfold live. Last summer's Dickcissel invasion and the fall 2012 finch irruption were both marvellously documented with eBird, as has been the irruption of Barred Owls south of their normal winter range. But don't take my word for it — check it out yourself. If you want to know what's happening with birds in Ontario you can almost certainly find the answer with eBird.

2013 is already on a pace for another great year of birding and eBirding. At the end of January 173 species have been reported, up from last year's 167 at the same time. Also impressive is a whopping 12 eBirders already over the 100-species mark and an even more impressive 100 birders with over 50 species. Not to be outdone, 12 eBirders are over 100 checklists for the year and 40 have submitted over 50 checklists — well done by everyone.

There have been a couple new eBird features since the last update in *OFO News*. Most notably, you can now embed photos, video, and audio links within your checklists. This is great for documenting rare species or just linking up your photos from a trip to your bird checklist. Be sure to check it out. Another big addition is "Did you Know?" Records submitted to eBird are permanently archived for the future and are already helping scientists and conservationists better manage the world's birds. **www.ebird.ca**

Male Willow Ptarmigan were conspicuous around camp and on survey routes. 26 June 2012.

We were treated to close views of specialty birds found in Ontario only along the Hudson Bay coast

Open tundra wetland is breeding habitat of Hudsonian Godwits, Whimbrel, Dunlin, Wilson's Snipe and Least Sandpipers. Distant Hudsonian Godwit on a hummock. *Photo: Jean Iron*

In addition to three survey routes, we continued to inventory and track all nesting birds in two intensive study plots 400 m by 400 m square established near camp by the first crew. In July we also monitored southbound shorebird migration along the Hudson Bay coast. Already large flocks of post-breeding Sanderlings from the High Arctic were migrating along the coast, and Short-billed Dowitchers (subspecies *hendersoni*) from the Hudson Bay Lowlands gathered in flocks on coastal ponds.

We observed the behaviour of nest predators. Last summer (2012) the small mammal population was low, so predators such as Parasitic Jaegers, Herring Gulls, and Red Foxes most likely turned to ground-nesting birds for food, more so than they would in a normal year when there were small mammals to eat. Another sign of a low small mammal year was the absence of Short-eared Owls, but we had a few Northern Harriers which were probably taking birds.

It was a thrill to see shorebirds in full breeding plumage on their nesting grounds and to appreciate the camouflage their cryptic plumages create. For example, the black, gold and white upper parts of an American Golden-Plover match the colours and patterns of the lichens, mosses and vegetation on a tundra ridge where they nest. We monitored several territories of Hudsonian Godwits without finding a nest of this secretive species. We always knew where they were because they perched noisily in the few scattered trees, on the lookout for intruders. Whimbrel had breeding territories throughout the study area. Seeing these large shorebirds on their breeding grounds was especially fascinating because of my involvement in the Whimbrel Migration Project in Toronto.

Other nesting shorebirds were Semipalmated Plover on dry gravel ridges close to the coast, Killdeer, which on Hudson Bay is close to the northern extent of its breeding range, Least Sandpiper, Wilson's Snipe, and Short-billed Dowitcher.

We were treated to close views of specialty birds found in Ontario only along the Hudson Bay coast. Willow Ptarmigan were the most engaging birds as they showed no fear and came to camp several times a day to dust bathe in the exposed gravel. Up to five males and eight females at the same time performed this ritual, which is believed to help keep their feathers in good condition by controlling mites and other parasites.

A big attraction was a pair of Pacific Loons that nested on a small tundra pond. These are some of the most easterly and southerly breeding Pacifics in the world. They were less common than Red-throated Loons.

White-crowned Sparrows have two subspecies that intergrade on the southern Hudson Bay coast: the western *gambelli* and eastern nominate *leucophrys*, so it was fun

Setting insect traps *left to right*: Jim Sauer, Julie Belliveau and Matt Birarda

Male Smith's Longspur on territory. 28 June 2012. Smith's Longspurs are a great rarity in southern Ontario, but were common breeders between camp and the coast. This longspur is at its most easterly distribution along Ontario's Hudson Bay coast. *Photos: Jean Iron*

looking for birds that resembled *gambelli*, and many did. In southern Ontario we see mostly *leucophrys*.

The mammals were very exciting. For several days thousands of Woodland Caribou of the migratory Forest Tundra ecotype moved past the camp, feeding on lichens and fresh vegetation. The herds comprised mostly females with calves, but there were some males with big growing racks of antlers covered with velvet. We saw several Gray Wolves that were following the Caribou. A pair of Red Foxes visited camp regularly and cleverly ducked the electric fence without getting a shock. They were either caching food or digging up previously stored food. Finally, two days before our departure, a Polar Bear coming from the coast wandered close to camp. It likely had just swum in from Hudson Bay to spend the summer on land, waiting for the ice to form again in late fall.

The camp was comfortable and the food was excellent, but one had to be ready to give up conveniences of home such as warm showers, indoor plumbing and internet. With no service for iPhones and Androids, expensive satellite phone calls were the only way to contact the outside world. Daily chores such as cooking, washing dishes and cleaning up were shared. One quickly learned about the quirks of heating stoves and was thankful to have a sleeping bag good to -10°C in case the stove in the sleeping cabin went out at night. The wilderness comfort station was within the compound but away from the living quarters, so it was a breezy walk on a cold night with the north wind clipping in off Hudson Bay. We heard about the heat wave in southern Ontario and across the USA, while we experienced cool, but mostly comfortable temperatures. Biting insects weren't usually a problem. They were manageable with the right protective clothing and spray during the day plus the strong northwest wind, and a mosquito net over sleeping bags at night.

Then there was the isolation to deal with. If you love the wilderness and the calls of Whimbrel, Wolves and Caribou, this is the place for you, but if you are prone to homesickness and missing your family, a month is a long time. Good health and physical fitness are important as we were a long way from the nearest doctor and medical support. Physical conditioning improved with daily walking. We were trained in Polar Bear safety and were comfortable in the field, but constantly alert and watching for them. Outside the camp enclosure, one member of the team always carried a firearm for safety.

Having a disciplined approach to covering the scientific protocols is a basic requirement. Even though each day was packed with required activities, it was possible to enjoy the fresh air and reflect on how fortunate we are in Ontario to have such biodiversity. Many times the only sounds were those of nature and our hearts beating. We felt satisfied knowing these studies will contribute to understanding the effects of climate change and help preserve this fragile wilderness.

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