

THE
BRODIE
CLUB



ROYAL ONTARIO
MUSEUM OF ZOOLOGY

THE 1,029th MEETING OF THE BRODIE CLUB

The 1,029th meeting of the Brodie Club was held at 7:30 pm on April 21, 2009 in Room 432 of the Ramsay Wright Laboratories of the University of Toronto.

Chairman: John Casselman
Secretary: Oliver Bertin

The meeting was attended by 29 members and seven guests:

- Satu Pernanen, Dan Kozlovic and Karen Ing, guests of Trudy Rising;
- Paul Harpley, guest of Bill Rapley;
- Brenda Gibson, guest of Ann and Bruce Falls
- Sharon Hick, guest of Jock McAndrews
- Terry Marescaux, guest of Oliver Bertin
- Several members sent regrets including Ken Abraham and Bill Crins, who were despatched to an MNR meeting in Sudbury; Rosemary Addison, who was recovering from knee surgery; Sandra Eadie, who was in Kentucky; Norman and Norma Martin, who had a conflicting meeting in Belleville; as well as the Bendells and John Riley.

The minutes were approved as written.

NEW BUSINESS:

- There was no new business arising from the minutes.
- Bruce Falls announced that Chris Darling will speak on *Charles Darwin as Naturalist* at the May meeting, which will be held on **May 5, two weeks earlier than usual** to accommodate migrating birds.
- Glenn Coady invited members to his house near the Thicksen Woods for the annual field trip. The date was tentatively set for Saturday June 13, to be confirmed at the May meeting. Maps will be distributed at that meeting, by email and by post.
- Bertin reported on problems sending out emails. Rogers.com is “throttling” UTORMail emails as part of its spam protection system. These emails are often delayed by four hours and are sometimes killed due to a so-called “fatal error.” UofT is working with Rogers to resolve the problem. Also, emails sometimes bounce back from sympatico.ca and yahoo addresses as “undeliverable”, while some servers block hotmail addresses – often without notification to either party – as part of their security protection system. DBRS, my former employer, was an offender here. If you suspect you are missing emails, please contact Bertin and we’ll run a test. In the meantime, I am sending out some emails twice to make sure they arrive at least once.

- We are sorry to announce the passing of Joyce Burton-Bousfield, wife of Edward Bousfield. Joyce was an “outdoor girl” who, in life, loved strolling the Swan Lake walkway and, in death, would value the Brodie Club notification.

JOYCE BURTON-BOUSFIELD

(From The Globe & Mail April 29, 2009)

Peacefully at Markham Stouffville Hospital on Tuesday, April 28, 2009 in her 82nd year. Joyce was the beloved wife of Dr. Edward L. Bousfield and the late Rakph E. Burton. Loving mother of Mark Edward and his wife Tracey and stepmother of Thomas. Dear grandmother of Samantha, Matthew and Taylor. In lieu of flowers, donations to the Canadian Cancer Society would be appreciated.

- Bill Rapley regretted the passing of former Toronto Zoo keeper Jim Fairchild who collapsed at age of 62 while hiking north of the zoo. He was a great birder.

SPEAKER:

The speaker was Dr. Martyn Obbard, a student friend of Ed Addison. He grew up in Elliot Lake, Ont., before heading to the University of Western Ontario and the University of Guelph, where he did his MSc and PhD on wildlife ecology under Ron Brooks, a former student of Bruce Falls. He studied Southern Bog Lemmings before getting interested in the snapping turtles that nested on the dam at the Wildlife Research Station in Algonquin Park. He is also a professional apiarist and he co-edited the book *Fur Bearers of North America*. He is now a research scientist with the Ontario Ministry of Natural Resources in Peterborough, where he is responsible for field-oriented research programs on black and polar bears.

Current Status of the Southern Hudson Bay Polar Bear Population

The polar bear is found around the Arctic world and as far south as Manitoba and James Bay, where Ontario has management responsibility for the southernmost populations. There are about 19 populations totaling 20,000 to 25,000 in the circumpolar regions, with about 15,000 in Canada. Many of the populations have been depleted by trophy hunting and over-harvesting, leading to serious concern by international bodies. In 1973, five countries drew up an International Agreement to help manage the polar bear population, while the IUCN Polar Bear Specialist Group meets regularly.

There are four polar bear regions in North America.

- Seasonal Ice Ecoregion, where ice melts completely in the summer. Bears will probably be extirpated by 2045.
- Polar Bear Divergent Ecoregion (Alaska-Russia), where the ice floats away from land. Polar bears will probably last until about 2045.
- Archipelagic Ecoregion, including the Gulf of St. Lawrence, which is characterized by drift ice. Bears will last until about 2100.
- Polar Bear Convergent Ecoregion, where bears will go to about 2075.

In May 2008, the United States ruled that the polar bear was threatened because of the decline in sea ice. They said that two-thirds of the world population will disappear by 2050, an estimate that was considered conservative given the rapid change in ice conditions. The ruling meant that hunters can continue to shoot polar bears, but trophies cannot be exported to the United States.

In Manitoba, the bear was declared threatened in May 2008, while in Ontario, the bear's status is under review. Environment Canada expects to discuss the issue in 2010.

COSEWIC gave it a "special concern" rating after looking at the status of the various populations. It found that three populations were increasing, four were stable, four decreasing and the status of two populations was unknown. These estimates are considered optimistic by some.

The Ontario population winters on the sea ice of Hudson Bay and James Bay from December to May, living on local ringed seals in the ice leads. When the ice melts, the bears move onto the shores of the two bays where they fast until the ice re-appears six months later. Most of the bears stay within a short distance of the coast, although a few move 40 to 50 km inland looking for a suitable maternity den.

Global warming has caused a significant drop in the amount of time polar bears can spend on the ice. Freeze up comes later every year, while the break-up is advancing by about five days per decade in Hudson Bay and 10 days per decade in James Bay, a full month over the 30-year MNR study period. That has had a serious impact on a species that derives most of its annual food budget from hunting seals on the winter ice. The bears have less time on the winter ice to accumulate food and more time on land where they are obliged to fast.

As a result, there has been a significant decline in the abundance of polar bears in the Western Hudson Bay region, from 1,194 in 1987 to 935 in 2004, with fewer pregnant females. In the Southern Hudson Bay region, the average weight declined between 1984-1986 and the latest study in 2000-2005. There has been no significant drop in the population size, but there has been a significant decline in body condition, particularly for pregnant females.

"The population is at the tipping point," Obbard said.

Climate change is also affecting permafrost. Obbard forecasts a 50 per cent decline in the depth of permafrost by 2100. This is important because it affects the maternity dens that female bears dig into the side of frozen peat banks. These banks take an estimated 1,500 years to grow to the required height of at least two meters and if the permafrost dwindles, the maternity dens collapse, leaving nursing bears homeless.

Obbard's team has been tracking polar bears with GPS collars. These collars show that bears move hundreds of miles a year across Hudson and James Bay and the adjacent shorelines. They tend to move in an east-west direction, rather than north-south. This movement is being restricted by the declining ice cover and that will inevitably affect genetic dispersal.

The bulk of the polar bear diet comes from ringed seals, caught on the ice. The average bear eats about 43 seals a year. Bears are unlikely to find a good alternative food source. They may be able to switch to harbour seals, which give birth much later, in June, on land. They could also switch to bearded seals, which are born in May, but are hard to catch.

There is some evidence that polar bears raid the nests of Snow or Canada Geese, or catch flightless geese. Goose eggs may comprise about five per cent of the bear's diet. Bears may also catch beluga or caribou that are trapped in deep snow, but these sources of food are unlikely to form a significant part of the bear's diet.

Bears may be able to adapt to climate change, but the outlook is poor because bears are so dependent on one source of food, seals that are caught on the ice. They

cannot switch their diet and still maintain their energy budget. He noted that the Arctic has been ice-bound for more than one million years, long before polar bears appeared.

“We have never had polar bears without ice,” Obbard said. “If the ice goes, so do polar bears. Bears will be gone in Hudson Bay by the end of the century. And James Bay will be affected sooner.”

Obbard said the future for polar bears is bleak because the current management practices give a limited ability to provide a direct response. We have co-management agreements to reduce the harvest and slow population decline, but this has implications for local sport and food hunters. To complicate matters, polar bears are becoming highly politicized. Conservation is becoming confused with aboriginal rights even though there is no evidence that aboriginals use polar bear meat.

As for climate change, the current view is that it will take 200, or perhaps 1,000, years to reverse the climate trends even if we stop CO2 emissions now. We have to reduce greenhouse emissions even if that takes societal change.

QUESTIONS:

- Polar bears typically have two cubs, but sometimes three. The cubs have a 50% survival rate.
- Southern polar bears could move north as the ice melts, but northern areas are already at their maximum carrying capacity. Their reproductive success would decline.
- Polar bears are related to grizzly/brown bears, which can live on salmonids. There is some historical evidence that polar bears have eaten char, but this does not appear to be a good long-term food source. Polar bears have been seen trying to catch arctic cod, with little success. They have been seen fishing in Labrador, but not in Ontario. They are opportunistic feeders, which will eat dead fish and raid fish nets.
- Polar bears are in trouble in Russia, Alaska and the Yukon, but will likely last longest in the Canadian High Arctic, from the Boothia Peninsula north.
- Polar bears tend to “hang out” on land in the summer. There is little food available and little to do except wait for the ice to reappear.
- Polar bears are shorter than they used to be, perhaps 1.5 cm. in 30 years. This may be a response to declines in food availability.
- Many species are dependent on sea ice, including Arctic foxes, seals, Thick-billed Murres and the Ivory Gull. There have been huge changes in bird populations due to the decline in the ice season.
- There have been more human-bear interactions in Nunavut and north of Churchill, Man., possibly due to a combination of more humans, more bears or hungrier bears.
- Freedom of Information legislation could possibly be used by hunters to locate radio-collared bears on the sea ice, but Obbard said the information would be of limited use for a variety of reasons. Moreover, hunters tend to search on land, not on ice.
- Large male bears do sometimes cannibalize the young, but Obbard has never seen it happen.
- Mother bears will sometimes adopt or switch cubs, for an unknown reason. From 10 to 15 per cent of cubs are not with their genetic mother.
- Black bear mothers will also adopt cubs in some months. She will kill strange cubs in June.

- Human-bear interactions are likely to increase because there are more humans in the North and bears are more hungry and therefore more likely to visit towns looking for food.

- The bear hunting quota is set by the Dept. of the Environment in Nunavut after consultation with the science community and with local communities. Traditional values are now taken into consideration, raising conflicts with scientists. Nunavut recently raised the hunting quota by a substantial amount after using population numbers that appear to have been false. In one case, Nunavut claimed a population of 19,000 bears, a number that appears far beyond reality. Many Nunavut residents are objecting to population studies saying they are disrespectful to the bear. Scientists are trying to negotiate lower quotas since population studies are becoming politicized and they are looking for other ways to study populations.

- MNR used to conduct aerial surveys in the Hudson Bay Lowlands but they became too expensive and were discontinued.

- The federal government is responsible for the sea ice habitat, while Ontario looks after the land population.

- Ed Bousfield commented after the meeting: I had earlier planned to comment on the Dr. Martyn Obbard's talk on The Bears of Hudson Bay. In chatting with him after the meeting, I had mentioned the interesting correlation that in view of his undergraduate training in biology, and the school colours at the University of Western Ontario, it may be the first time in Brodie Club history that members (especially the birders) had been addressed by a "purple martyn"!

Unlike most of the listeners, however, I found Dr. Obbard's talk rather lacking in population-predictive "balance," since it dwelt mainly with current polar bear populations on the southern fringe of its range in Canada. Much more emphasis might have been placed on the positive effects of climate change and "global warming" in the probable opening up of the icebound central and extreme northern Canadian Arctic archipelago to expansion of both polar bear and seal populations and probable increase in the entire regional marine food pyramid of which the polar bear (in absence of orcas?) is apparently the ultimate "apex predator." After all, the polar bear somehow managed to survive the effects of vastly greater temperature changes (both hotter and colder) during more extensive climate changes of the Pleistocene and post-Pleistocene (e.g. "hypsithermal") periods of the past million years, which were "independent of human input".

Small wonder that the Prime Minister and his scientific advisors do not pay much attention to the musings of the likes of Messrs. Al Gore and David Suzuki on this subject. The P. M. may "have the last laugh" when the polar bear not only maintains present population sizes, but indeed flourishes, under the relatively miniscule temperature changes of the present global warming cycle.

The speaker was thanked by Jean Iron.

NOTES & OBSERVATIONS:

- Ron Tasker mentioned a documentary on the Ivory-billed Woodpecker to be shown this week in downtown Toronto, including May 8 at the Royal Ontario Museum. The movie is considered very good. It also suggests that sightings of the woodpecker in Arkansas are incorrect.

- Bruce Falls found a dead black squirrel near his home in Don Mills that had been skinned and turned inside out, with embryos near by. Glenn Coady suggested the predator might have been a Red-tailed Hawk, which are known to line their nests with squirrel tails. However, the tail was still there and the question is unresolved.

- Harry Lumsden saw a nesting pair of wild Trumpeter Swans with two eggs on the day of the meeting. The birds are a rare colour phase with yellow eggs and cygnets that are yellow at birth with a white beak. The beaks turn black after two years. The colour phase is a sex-linked recessive gene that occurs in 25 per cent of the population.

- Trudy Rising attended the annual meeting of the Wilson Ornithological Society, in Pittsburgh, PA, April 9-12. The LSU Professor Emeritus gave a plenary address on his work over the years, focusing on improvements in techniques to record migrating species, both birds and insects. Currently weather radar stations throughout the United States are co-operating in providing him with data showing bird migration. Apparently it takes setting the radar stations at a somewhat higher level to obtain the data on flocks of birds (and other animals), so the Canadian Wildlife Service is trying to secure these data in Canada, as well, by encouraging our weather stations to cooperate. She also went on a field trip to the Powdermill banding station where a young researcher has developed techniques to identify specific species of warbler flight calls in migration, and has now identified many different species' calls. Apparently flycatchers and vireos do not make these flight calls as warblers do.

- John Speakman saw a pair of Merlins nesting in a pine tree at his cottage in Beaverton, very far south for this species. They spent several days preparing their nest and then disappeared. Merlins have also been seen near Orillia, Cambridge, Whitby and Aurora.

- Bertin saw a polar bear in the Buenos Aires zoo last February, looking thoroughly miserable in 40C heat. It was cowering behind a small rock in the only shade it had available. The zoo, however, had a very impressive condor that dwarfed our local hawks!

- Kevin Seymour said the new ROM Life Sciences Gallery would open on May 5.

- After the past meeting, Jim Bendell reported on a controversy that is raging through the Blue Grouse world. "We and everyone we read says: Blue Grouse split into one species that runs up the Coast mountains from California to Alaska and another species that runs parallel, in the Interior mountains. The coast species has yellow neck patches and wide tail bands, while the interior species has red patches and reduced tail bands." He said the tidy split between the Coast and Interior species worked until it was discovered that the Alaska bird actually has a red neck patch and a wide tail band. "Boom goes the neat Coast-Interior split," Bendell said.

- Meanwhile, Bendell said there has been much new and great info on the Chinese fossil Dinosaur Birds. The first feathers most likely provided insulation and features of display rather than flight.

- Bendell also said local birders and those from far afield were thrilled to see a Varied Thrush near Almonte, in the Ottawa Valley. This is a West coast species and its haunting call note takes me to stands of red alder, sword fern and skunk cabbage. Meanwhile, he said three species of frogs are calling and our resident gang of birds is pulling in.

The meeting adjourned at 9:30 pm.

NEXT MEETING:

The next meeting of The Brodie Club will be held on May 5, 2009 at 7:30 pm in Room 432 of the Ramsay Wright Zoological Laboratories. Chris Darling will speak on *Charles Darwin as Naturalist* at the meeting, which will be held on **May 5, two weeks earlier than usual** to accommodate migrating birds.

BIRDS SEEN ALMOST DAILY

By Yorke Edwards

Our Western Correspondent

Glaucous-winged Gulls – Every day there are some flying by while others are standing at the edges of small islands not far beyond our view.

Harlequin Ducks – We see some slowly passing beside our shore almost every day, except in summer, when they go into the U.S. mountains to nest.

Great Blue Heron – One is seen every day beside the sea, usually standing there all day. It seems to eat very early every morning.

Great Cormorants – A few are seen on the edges of the small rocky islands near our shore, almost always standing alone.

Bald Eagles – One goes to an island near us early in the morning to hunt for breakfast and just stands on a post by the sea through most days.

House Finches – They live in groups around our houses and sing their poor songs early every morning except in rain or in the midwinter cold.

Northwestern Crows – Crows live beside the sea and are seen in cities as well as farmers' fields. These are a bit smaller than the crows of Eastern Canada.

Red-winged Blackbirds – Some live near the sea and have built nests in our garden several times, while eating in nearby bird feeders.

House Sparrows – They live near our road, feeding from nearby feeders. Most days, they go into many shrubs all together, chattering loudly, out of sight.

American Robins – They live around our house through December, and some stay through the winter. Every morning, I walk under them as they sit on the wires above.

Oystercatchers – They are often seen beside the sea, big and black – with their long, red bills. There is usually just one or two, but sometimes I see a bigger group.

Cooper's Hawk – Sometimes one flies beside our windows, going back and forth across the street, and into the trees of the nearby golf course.

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