THE BRODIE CLUB

ROYAL ONTARIO MUSEUM OF ZOOLOGY

THE 1,018TH MEETING OF THE BRODIE CLUB

The 1,018th Meeting of the Brodie Club was held at 7:30 pm on February 19, 2008 in the Ramsay Wright Laboratories of the University of Toronto.

Chairman: Kevin Seymour
Secretary: Oliver Bertin

There were 24 members and 10 guests, who included:

- Ricky Dunn, guest of Jeremy Hussell
- Anne Bell, Dan Kozlovic, Ross Harris, Steven Rowe, guests of Jim Rising
- Grace and John Kinghorn, Kristine Bitterman, Chris Risley, guests of Ron Pittaway and Jean Iron
- Andrew Stewart, guest of Jock McAndrews

The minutes of the previous meeting were approved with two minor changes.

NEW BUSINESS:

- Kevin Seymour published a paper on early bats in Nature on Feb. 14. At last count, the story was picked up by 159 newspapers, television and radio stations, with a total audience of perhaps 100 million people. The publications included The Globe & Mail, the Toronto Star, The London Daily Telegraph, the Guardian, BBC, CBC (radio, television and internet), The Discovery Channel and, of course, Nature.
- Steve Varga is looking for birding information – what birds were seen, when – on an area north of Beaverton that is under some dispute. The area is on Lake Simcoe at the mouth of the Talbot River, about 5 km. north of Beaverton and just south of the Trent Canal. A marina operator would like to develop the land and the Ontario Ministry of Natural Resources is investigating.
- Paul Aird said the Tom Thomson Art Gallery in Owen Sound is sponsoring an exhibition of Thoreau MacDonald prints and ink drawings until May 18. The showing is titled *Stark Warmth.* MacDonald was the son of Group of Seven member J.E.H. Macdonald. He was an illustrator for *Canadian Forum* magazine and is best known for his graphic black and white scenes of everyday life around Ontario.
- Kevin Seymour offered a copy of the newly published *Atlas of the Breeding Birds of Ontario* for members to inspect. The book is very impressive and, at $92.50, very good value. It can be ordered through www.birdsontario.org.
- The speaker at the next meeting will be member Jim Bendell, who is guaranteed to give an entertaining and insightful talk on his research in the Ottawa Valley. The meeting will be held at 7:30 pm on March 18 in Room 432 of the Ramsay Wright Zoological Laboratories at the University of Toronto.

SPEAKER:

A keen birder since he was four years old, Jerry DeMarco first met Jim Rising on a bird-watching expedition near Lake St. Clair when he was still a high school student. That day, May 16, 1982, they saw a Curlew Sandpiper – a rare Siberian wader that winters in Africa, far from the marshes of southwestern Ontario. Many years and many degrees later – after DeMarco had earned his undergraduate degree from the University of Windsor, his law degree from UofT, his Master's in environmental studies from York University and his Master's in management from McGill – he teamed up with Jim Rising once again to do a Master's in zoology at UofT. He drew on his environmental and legal experience as Managing Lawyer with the Sierra Legal Defence Fund for several years prior to being appointed as Vice-Chair of the Ontario Environmental Review Tribunal. As a member of the Minister of Natural Resources' ESA Review Advisory Panel, he helped develop Ontario's new Endangered Species Act.

ENDANGERED SPECIES PROTECTION IN ONTARIO

To introduce his talk, Jerry DeMarco gave a brief rundown of the legislation that currently exists to protect the world's native species. Unfortunately, the legislation isn't always as impressive as the titles would indicate. At the international level, there is the *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)* and the *Convention on Biological Diversity (CBD)*. At home, the province of Ontario has been working on a new approach, based on stewardship, incentives and collaboration; policies and programs; and legislation, which culminated in the new *Endangered Species Act, 2007* – the bill that DeMarco helped develop.

CITES is a United Nations Environment Programme convention, which came into effect in 1975 as a result of growing awareness that international trade was endangering an increasing number of wild species everywhere on the planet. It uses a permit system to control the international trade and movement of animal and plant species that have been, or may be, threatened by excessive commercial exploitation.

In Canada, CITES is implemented through the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA).* WAPPRIITA is designed to protect Canadian and foreign species that risk being exploited through illegal trade and to protect Canadian ecosystems from the introduction of harmful species. Under WAPPRIITA, it is illegal to transport illegally obtained wildlife between the provinces or between Canada and other countries.

The *Convention on Biological Diversity (CBD)* was developed at the Rio de Janeiro Earth Summit in 1992. It has three goals: conserve biological diversity; use earth's components in a sustainable manner and share genetic resources in a fair and equitable manner.

The CBD has a specific provision that encouraged Canada to finally pass endangered species legislation. "Each contracting party," the convention reads, "shall, as far as

possible and as appropriate... develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations."

Under the *National Accord* of 1996, the federal and provincial governments of Canada agreed to legislation that would offer effective protection of species at risk throughout the country. They agreed to the following provisions, among others:

a) address all native wild species;
b) provide an independent process to assess the status of species at risk;
c) legally designate species as threatened or endangered;
d) provide immediate legislative protection for threatened or endangered species;
e) protect the habitat of these threatened or endangered species;
f) implement the recovery plans in a timely fashion.

One product of the accord was the federal *Species at Risk Act (SARA),* which was proclaimed in June 2003. This Act was designed to protect species that are at risk within the federal government's jurisdiction; to prevent the extirpation or extinction of Canadian indigenous species, subspecies or distinct populations; to provide for the recovery of endangered or threatened species and to protect other species from becoming at risk.

SARA has laudable objectives. It provides a legislated basis for COSEWIC*,* the *Committee on the Status of Endangered Wildlife in Canada,* an independent body of experts that is responsible for identifying and assessing species at risk. It requires the development of recovery plans; it protects listed, threatened and endangered species and their habitats; it recognizes the need for compensation; it creates a registry for pertinent documents, and it is consistent with Aboriginal and treaty rights, and the authority of the federal and provincial governments.

But DeMarco said SARA has some key faults. "Politicians, not scientists, have the final say over whether a species is listed as at risk under the Act," he said. Also, the key provisions are discretionary, rather than mandatory, and it primarily applies to federal land – about five per cent of Canada south of the territories – leaving many species vulnerable under less-stringent provincial rules.

SARA has a hierarchy of risk. Species can be:

- Extirpated – no longer exists in the wild in Canada, but still exists elsewhere;
- Endangered – faces imminent extirpation or extinction;
- Threatened – likely to become endangered unless measures are taken;
- Special Concern – at risk because of biological characteristics or threats to its existence.

The list of Canadian species at risk is updated annually by COSEWIC. The current list includes 556 Canadian species (most have been listed under SARA). In Ontario, there are approximately 190 species at risk, of which only 42 were protected under the Ontario's outgoing *Endangered Species Act (ESA)*, which dates back to 1971.

Species at Risk			
Extinct	13	6	Passenger Pigeon; Sea Mink; Great Auk; Deepwater Cisco
Extirpated	22	10	Black-footed Ferret; Timber Rattlesnake; Karner Blue
Endangered	225	80	Vancouver Island Marmot; Whooping Crane
Threatened	141	48	Woodland Caribou (Boreal); Humpback Whale
Of Special Concern	155	46	Polar Bear; Monarch
	556 *	190 #	* Across Canada; # Across Ontario

Ontario's old ESA is a flawed document that will be replaced in June this year. DeMarco said it was so short and so simple it would fit onto one page; the listings were purely discretionary; it did not address stewardship or incentives; it lacked a process for identifying habitats, a recovery process or funding; it did not take Aboriginal issues into account; it did not address special concern or threatened species and it used the old-fashioned "willful" standard, familiar to students of the Criminal Code – "No person shall willfully kill, injure…" and so on.

Ontario's new approach to species at risk takes a very different approach that is based on three pillars: stewardship, incentives and collaboration; policies and programs, and legislation – the *Endangered Species Act, 2007* – the bill that DeMarco helped develop.

It is also proactive. It includes tax and financial incentives for landowners, and a *Species at Risk Stewardship Fund* that will provide $18 million over four years in new money for species recovery, surveys, outreach and education.

Unlike the old Ontario ESA, the new ESA covers all categories of species at risk; it includes mandatory protection for species and habitats; it requires recovery planning; it is flexible and it uses a scientific listing process. It is the first endangered species legislation in Canada to contain both scientific listing and mandatory habitat protection, a key provision because habitat loss is the dominant cause of endangerment in Canada.

QUESTIONS:

- The "willful clause" in the outgoing Ontario ESA was considered a major flaw because it was difficult to prove and therefore difficult to get a conviction. As a result, there have been only about five prosecutions under the old Act.
- Species that are at the edge of their ranges can be problematic. They may be at risk in Canada, while being as abundant as ever in the portion of their range just across the border. They may not be threatened in a global sense, but only at the provincial level. One solution, DeMarco said, was to be flexible and prioritize the list of species at risk such that those that are at risk in several jurisdictions are dealt with first.
- The edge-of-range species can be difficult to categorize because they are affected by climate change and by changes in habitat. The polar bear is just one species that is affected by the warming of the Arctic. Also, the Chimney Swift and many other insectivores are experiencing significant population losses. Dealing with threats such as climate change and the not-yet-fully understood causes of declines for insectivores will be a difficult challenge.
- In some cases, there are clear and abundant reasons why a species is dwindling. The Peregrine Falcon is one species that recovered because the cause of its demise was easy to isolate. But in many cases, the reasons are complex or difficult to isolate. That makes it difficult to protect the species or commence recovery operations.
- It is important for the federal and provincial governments to work together on recovery plans. "There should not be two solitudes," DeMarco said. The Loggerhead Shrike is one species that may benefit from a harmonization of federal and provincial recovery efforts.

- Committee members try to be fair when listing endangered or threatened species, but it is hard to avoid a bias towards charismatic macrofauna – passenger pigeons, polar bears, etc. – and away from enigmatic microfauna – lichens, molluscs, moths and similar obscure species. However, progress is now being made in assessing less well-known taxa as compared to the earlier days when birds and mammals received the most attention.
- The provincial government is setting up committees to implement the legislation, and is inviting non-government people to come forward. Some of the committee members will be conservationists or people well-versed in science; others will be developers, miners, farmers or other so-called stakeholders.
- There are many bird species already on the endangered or threatened list. There are fewer examples from more obscure families or orders, partly because we know less about them.
- Brodie Club members are invited to suggest species to include on the endangered list.
- One aspect of the legislation will deal with the protection of habitat. This work will be addressed in the upcoming regulations under the Act and by regional and local offices of the Ontario Ministry of Natural Resources.
- DeMarco said the new legislation includes sticks and carrots, but also educational tools. The sticks include strong penalties; the carrots include the $18 million fund, and tax and financial benefits for landowners. A further tool that has been suggested is to allow for conservation severances that could allow property owners to sever off non-productive land that many endangered species prefer. Often, a farmer has no use for the land that the conservationist treasures. For example, conservation severances may help a farmer to sever off the natural habitat that sits next to his corn fields. Existing tools such as conservation easements and Conservation Land Tax Incentive Program already provide significant tools for private land conservation efforts.

  The speaker was thanked by John Riley.

NOTES AND OBSERVATIONS:

- Jock McAndrews offered a review of *First Floridians and Last Mastodons*. The full review is attached below.
- John Riley said he has been keeping an eye on a flock of 24 Wild Turkeys near his home near Orangeville. The flock was struck three times by a Golden Eagle, attempts that were fruitless from the eagle's viewpoint but very exciting for the observer.
- John Speakman has seen a Golden Eagle on the Beaverton bird count.
- Fred Bodsworth said there was a sizeable invasion of Pine Grosbeaks into Southern Ontario this winter and, as usual, grey females or young males have strongly outnumbered pink males. He said his son in Sioux Lookout, north of Lake Superior, has numerous Pine Grosbeaks every winter at his feeder and they invariably consist of many more red males than grey females. He asked if any members had seen suggestions that there was a sexual difference in migratory behaviour of Pine Grosbeaks with males tending to remain farther north in winter.

- Ron Pittaway attributed the variation to sexual differences in migration, with males wintering farther north than females, a trend that is known from the literature.
- Bruce Falls noted that female White-throated Sparrows migrate further south than the males of the species, while David Hussell added that Snow Buntings and some other species show the same migratory behaviour. He catches more male Snow Buntings in Ottawa than females, which apparently go further south.
- Falls mentioned that on a recent birding trip to Belize they had seen about 250 species of which the rarest was Orange-breasted Falcon. This species had benefited from release of birds raised in captivity.
- Bodsworth was also intrigued to see a small moth at his window during the January thaw just one or two days after a long period of bitterly cold weather. At Helen Juhola's suggestion, he investigated and determined it was a Winter Moth, a European species now established in Canada and the United States. Adapted to Europe's milder climate, it emerges from late November to January. It is surviving well here; indeed, it is a defoliating pest in places.
- Bertin had just returned from the Adriatic where he was pleased to find that Round Gobies and eels appear to be thriving in commercial quantities. It was a different story in southern England, however. Several fishermen along the Sussex coast said the eel catch has been declining for several years due, they believe, to "a strange disease they pick up in the Sargasso Sea." I checked with member John Casselman and he suspects the fishermen may be on to the story. Casselman has long suspected that viral hemorrhagic septicemia (VHS) is slowly wiping out the world eel population and may have caused a massive die-off of eels in Lake Ontario and the St. Lawrence River in 1986-1987. "A working hypothesis was that it came from the Sargasso," he said. "I think it's reasonable that the virus can be transferred from European to North American eels (in the Sargasso breeding grounds), and vice versa. The VHS strain that is killing muskellunge and other species here, starting in 1995, is a very close strain to the European VHS. And VHS is common in European eels." As so often happens, local fishermen appear to have an uncanny and thorough knowledge of the species they catch!

NEXT MEETING:

The next meeting will be held at 7:30 pm on March 18 in Room 432 of the Ramsay Wright Zoological Laboratories at the University of Toronto. Member Jim Bendell will, we are sure, entertain and educate us with his account of his research in the Ottawa Valley.

BOOK REVIEW:

First Floridians and Last Mastodons:
The Page-Ladson Site in the Aucilla River

Webb, S.D. (editor). 2006.
Springer, Dordrecht.
588 pages. $150.

By Jock McAndrews

The Page-Ladson Site is a former sinkhole now part of the Aucilla River. It was formed during the last glaciation by solution of limestone bedrock when sea level was 125 m lower than today. As sea level rose during deglaciation, freshwater rose in the sinkhole and it became a source of water for both aquatic and terrestrial animals, particularly during dry winters; their bones were preserved in the accumulating sinkhole sediment together with plant fossils and human artifacts. The site, discovered by recreational scuba divers, was excavated for 20 years by the Florida State Museum and the State of Florida.

The sediment record spans the last 30,000 years with the major fossil units centering at 14,500 for Paleo-Indian, mastodon and other extinct animals and at 12,000 years ago modern fauna and Archaic people. As might be expected, the aquatic fauna is a long list of fish, amphibians, reptiles and birds. The terrestrial fauna was dominated by extinct browsers such as mastodon, giant tortoise, giant armadillo, ground sloth, small lama, deer, peccary, tapir, beaver, capybara, porcupine and other rodents. Less common were grazers such as mammoth, horse, bison and large lama. Carnivores include dire wolf, black bear, raccoon, otter, three species of cats and domestic dog. Prominent among the several upland birds was condor. Mastodon digesta indicate a generalized browser diet including much bald cypress. Isotope analysis of mastodon bone showed the sinkhole was summer range and that mastodon spent their winters northward in the uplands of Georgia. No human bones were found but artifacts include fluted points and worked bone and ivory. Cut marks were recorded on bones but there was no convincing evidence that the sinkhole was a kill site.

The Hiscock Site near Buffalo, New York, was also a late Pleistocene spring-fed pond that served as a waterhole and salt lick for mastodon and neoboreal browsers such as giant beaver, stagmoose, peccary and caribou; there were no grazers. Mastodon digesta featured spruce together with shrubs and herbs. Carnivore bones are missing although there were bite marks on bones, perhaps made by grizzly bear. Condor was present. Fluted points all showed use-wear, probably from butchering. Ivory and bone tools have been described. The site was occupied by these Paleo-Indians a full millennium after similar occupation of the Page-Ladson Site. Perhaps this is a case where the descendants of the First Floridians became the First New Yorkers.

People With Red Cedar Trees

By Yorke Edwards
Our Western Correspondent

Where I once worked (so called) in Victoria's museum downtown, there is a small area beside the museum that is named Thunderbird Park. In it are a few benchs under big oak trees and beside them, there is a wooden building made for the First People. Sometimes there is a show inside with old dancing ways or other features on its stage. Also in that small park, there are seven tall wooden poles, all made from red cedar trees that are carved from the faces of both people and animals. Each pole is tall and carved into many shapes, some like a man's face, but more of small beasts. Those poles of wood are light in weight yet have good strength. Some First People in British Columbia are still living in forests beside the sea, where they build large houses of red cedar and often have tall cedar totem poles that face the sea, while they paddle cedar canoes along the sandy shores, mostly made of red cedar wood, as they have done for thousands of years.

Red cedar wood was used for many things, their houses, canoes, paddles, boxes, dishes and much more. Wood from red cedar trees was used to make big houses facing the sea. Out front were long canoes, each made from a big, long piece of pole painted in different colours. Their boats were used to catch fish and other water animals, to pull logs along to the village and sometimes to wage a small war with another people living by the sea. Their foods were from both forest and sea, the sea having many kinds of both seaweed and fish. In the forest too, there were many kinds of plants and animals to catch and eat.

Some of those People lived by the sea, and are still there at the edge of a vast and wet forest of big trees. The forest provided food for thousands of years. The peoples' foods were sometimes a deer or some of the 27 different kinds of plants and animals in the forest. But their main foods came from the sea – geese and ducks and other birds. Sometimes they caught fish. One way on a sandy beach was to make a ditch from the sea to a pool of water in the sand. Fish swam up the ditch and into the pool. Later, the sea left the ditch dry and the fish easily caught in the pool.

The First People that live between forest and sea have many stories. A short one is that three young women were fishing on a beach, making a river to a pool in the sand to get salmon. They got one. Then came a raven – the First People like ravens – and he kept asking if they were afraid of bears or wolves. The women kept saying "No" to everything until he asked if they were afraid of owls. To that they said: "Oh, don't ever talk about owls to us. We are afraid of owls." The Raven flew away and hid in a tree, then called like a bear, saying that bears like to eat fish. The women dropped their fish and ran away, and Raven had the fish. -30-