

THE
BRODIE
CLUB



ROYAL ONTARIO
MUSEUM OF ZOOLOGY

THE 1,038th MEETING OF THE BRODIE CLUB

The 1,038th meeting of the Brodie Club was held at 7:30 pm on April 20, 2010 in Room 432 of the Ramsay Wright Laboratories of the University of Toronto.

Chair: Bill Rapley
Secretary: Kevin Seymour

The meeting was attended by 26 members and 11 guests, the largest attendance to date this year.

Roll Call, Present: E. Addison, R. Addison, Aird, Bertin, Bodsworth, Boswell, Bryant, Crins, H. Currie, Dunn, Eadie, D. Hussell, J. Hussell, Iron, Larsen, Lumsden, Machin, McAndrews, Pittaway, Rapley, Reading, J. Rising, T. Rising, Seymour, Tasker, Tomlinson.

Regrets: Abraham, Bousefield, A. Falls, B. Falls, Huff, A. Juhola, H. Juhola.

Guests: Dennis Bockus and Alan and Judy Hirsh, guests of the Risings, Nancy and Rick Hanna, guests of Fred Bodsworth, Louise Herzberg and Susan Smith, guests of the Addisons, Sharon Hick, guest of Jock McAndrews, Linda Pim and Rosemary Speirs, guests of Paul Aird, Don Sutherland, guest of Bill Crins.

Announcements:

- Bill Rapley encouraged suggestions for the June field trip to be sent by email to roseaddison@gmail.com and/or brought to the May meeting.
- Ed Addison reported that the membership committee had received a brief bio from Ron Thorpe and nominated Ron for membership.

Ron Thorpe, M.Sc., B.Ed.

I spent 30 years in public education as a science teacher, science department head, curriculum specialist and science coordinator for the East York (now Toronto) School Board. My area of teaching was primarily science, biology and horticulture. I developed an extensive outdoor education program for students at the Sheldon Centre for Outdoor Education and have taken students on nature outings as far as Mexico. In the 70s I was on the TFNC Board and became President from 1976-1978. While in East York I developed a national space education centre primarily to educate teachers on space science. It all started with a meeting with Lynn Margulis at Boston U. where she got me interested in the evolution of early life and exobiology.

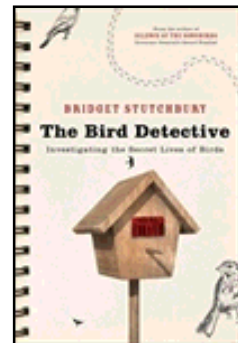
My experience is in science education including working with Tuzo Wilson at the Ontario Science, Lynn Bondurant at NASA and many at the Canadian Space Agency. However, my interests include spending time cultivating fruit trees, exploring the natural world, canoeing in wilderness areas including the arctic and working with wood of both domestic and exotic species. My wife Bev is Source Water Protection Manager for three Conservation Authorities and shares her interests in environmental issues and the outdoors with me. We have two children that have university backgrounds in science, geology and environmental law.

- Rosemary Addison introduced Louise Herzberg and advised members that the club now has acquired an additional copy of her book *A Pocketful of Galls*, the biography of Dr. William Brodie, for the archives.
- Ed Addison updated us on the revised date for the May meeting. It will be held on May 11, the second rather than the third Tuesday of the month, to accommodate the avid birders in the club. The speaker will be Dan Paleczny, of the Ontario Ministry of Natural Resources. The title of his talk is “Planning, development and eco-tourism considerations for the Valley of the Whales World Heritage Site in Wadi el Rayan, Egypt.”

SPEAKER:



The speaker, Bridget Stutchbury, was introduced by Jim Rising. Bridget is originally from Montreal. She completed her M.Sc. at Queen’s and her Ph.D. at Yale and was a fellow and research associate at the Smithsonian Institute. She joined the tenure stream at York University and is now a Distinguished Research Professor, a remarkable honour for someone so young. Bridget holds a Canada Research Chair in Ecology and Conservation Biology. Her first book *The Silence of the Songbirds* was short listed for the Governor General’s Award for Nonfiction. *The Bird Detective; Investigating the Secret Lives of Birds*, written to appeal to the lay audience as well as the scientific community, was published earlier this month.



“The Bird Detective; Reflections on Bird Behaviour”

Using her “detective tool kit”; binoculars, mist nets, leg bands, tracking devices and blood samples, Bridget and her students have been studying various songbird species in the hopes of answering some basic questions of bird behaviour. Most of the questions they have asked can be grouped into the theories surrounding one or more of: sexual selection, life history, parental care or animal communication. Increasingly, conservation and ecological restoration issues have driven some of the research questions of bird behaviour. She gave

several examples of how research helped clarify the behaviour of certain species detailed below: Scarlet Tanagers, Blue-headed Vireos, Hooded Warblers, Purple Martins and Wood Thrushes.

Scarlet Tanagers: Hidden Sexual Conflict

The male feeds the female while she is sitting on the nest. The female begs for food using a “piu” call. This behaviour benefits the female, as the foraging time spent by the female is much shorter if she is fed by the male. But the pairs that engaged in this behaviour did not produce more young, so how does this behaviour benefit the male? Does this sound like cooperation by the male and female in raising young, or perhaps female coercion of the male?

Blue-Headed Vireos: Pre-meditated Divorce

Males incubate the nest about 50% of the time. For pairs that raise young, it was noticed that the female abandons the male once the young have fledged. Radio-tagging revealed that the female looks for the next mate (usually about 600m away) as soon as the young fledge. She lays the second brood by the second male only five days after the “divorce” from the first. This arrangement allows the female to raise two broods each summer.

Hooded Warblers: Adultery due to song

Between 30 – 40% of the nestlings of a pair of Hooded Warblers are not sired by the female’s social mate. DNA studies reveal that a neighbouring male is the actual parent. Females make off-territory forays to neighbouring territories, two to three per day, while fertile. The foray rate of the female depends on her mate’s rate of song, and the rate of song of the neighbouring males. The plumage of the neighbouring male (size of black hood, brightness of the yellow) is not a significant attractant, but the number of times a male sings per minute is a significant attractant for the female, particularly if the neighbouring male sings more frequently than her social mate. Apparently the female uses the song rate to judge male quality. The only way to judge if the female is correct, though, is if the young produced by these extra partner forays end up being “higher quality”, and this has not yet been established.

Purple Martins: Adultery due to age

As colonial nesters, the whole colony can be sampled, as well as neighbouring colonies, and so large data sets can be collected, in contrast to the situation with forest dwelling songbirds. Female Purple Martins prefer to mate with older males. Older males pair with older females as these arrive back from migration first. Although first year females pair with first year males, 60% of their offspring have actually been sired by older males and not the first year mates. These young sired by extra pair copulations actually have a higher survival rate. It is possible that the older males have “better” genes, because they have survived several cycles of perilous migration, and they may have a lower parasite load (to be determined).

Wood Thrushes: Geolocator mapping

This new technology requires the geolocator to be attached to the bird and then retrieved from the same bird the next spring, and the data downloaded. These data show that Wood

Thrush from Northern Pennsylvania overwinter in Honduras and Nicaragua. In general, the fall migration is more leisurely. Birds leave in mid-October and arrive on the wintering grounds in early December, taking about a month and a half for the trip. The fall migration takes them to the east coast, through Florida across the Caribbean and over to the Yucatan and finally to Honduras and Nicaragua. In contrast, in the spring they make the trip in about two weeks, leaving in mid-April and arriving in the north at the end of April. For this trip they cross the Caribbean landing in Louisiana, and subsequently follow the Mississippi River flyway to return to Pennsylvania. This is called a loop migration. Today they have much habitat loss, urban obstacles and light pollution to deal with, compared to 500 years ago.

The speaker had her newly published book, *The Bird Detective, Investigating the Secret Lives of Birds*. Harper Collins, 2010, for sale.

QUESTIONS:

Q.: If song frequency is the key to successful mating in Hooded Warblers, why don't the males just sing more?

A.: Their rate of singing probably is a measure of their fitness; healthier males are able to sing more frequently. Or it may reflect their genetic history or the environment in which they grew up.

Q.: How does the geolocator work?

A.: It measures light constantly and with the timer on the geolocator, sunrise and sunset time can be determined. A software program then converts this to a location – there is only one place in the world where the sun will rise and set at any particular time. Glitches: rain and heavy forest cover can result in inaccurate readings, and around the equinox you cannot tell the latitude of the readings since the day is of equal length everywhere.

Q.: How do you retrieve the geolocators?

A.: You must see and catch the bird and then remove the geolocator from it. Success rate is about 50% on males as they tend to return to the territory in which they were raised, but success rate for females is only about 10% as they disperse more widely upon returning on migration.

Q.: When female Hooded Warblers go on an extra pair foray, do the males obediently stay at home?

A.: No. The females make extra pair forays only when fertile, but the males make extra pair forays all summer long. Neither seems to be aware of their partner's forays.

Q.: Some birds and mammals go quiet once they have a brood. What would be the benefit of the Blue-headed Vireos continually vocalizing? Wouldn't that attract predators?

A.: You would think. We are not sure of the benefit, as the behaviour, e.g. males flying into nest with food 10-15 times/hour and colour of the birds (in the case of the tanagers) should make them obvious to predators. Part of the answer may be that a lot of their

predators are nocturnal; raccoons, skunks and black rat snake. On the other hand, grassland birds are quite “sneaky”.

Q.: Are the genes of older Purple Martin males “better” in some way?

A.: Yes. Because of repeated successful migrations, natural selection means that these individuals might have more disease resistance or better migration coping strategies.

Q.: Is climate change affecting migration?

A.: Yes. The birds are arriving sooner, laying eggs sooner, and ranging further north than usual. This may not always be a benefit, as sometimes the young are now being hatched before a food resource is available. This has been shown in seabirds.

Q.: In crowded colonial nesters, like murre, is there any evidence for extra pair mating?

A.: Not much. DNA studies show that there is a low level of extra pair mating in dense colonial nesters. Bridget noted that EPM in songbirds varies by location; in North America there is evidence of 30-40% of extra pair mating in songbirds, while in European species it is 10% and in tropical songbirds it is almost 0%.

Q.: Are there any results yet of the geolocators that have been put on the Ontario Loggerhead Shrikes?

A.: Not yet. There seems to have been a surprisingly high success rate of young leaving the home territory, about 75% of young fledged to migrate. Fifty juveniles had geolocators attached; this spring will see how many return.

The speaker was thanked by Ricky Dunn, who commented that there are bird researchers who excel at research and there are speakers who relate to and inform a lay audience and that Bridget is one of those who expertly combine these talents.

NOTES & OBSERVATIONS

David Hussell found Cardinal nest with three eggs on 12 April. On 20 April there were three young, guesstimate of two days of age, which would put first egg on or about 4 April. In George Peck’s book, earliest first egg date for Cardinal is 15 April.

Ed Addison noted that several hundred Snow Geese were feeding on the Delisle River just east of Alexandria. A few birds had been seen there in recent years but the numbers this year were far above previous sightings.

Ed also noted a White-breasted Nuthatch begging for food and being fed on 18 April.

Jock McAndrews recounted an outing undertaken after reading Louise Herzberg’s *A Pocketful of Galls*. Last October a small group from U of T retraced a walk along Winchester St. looking for a place Dr. Brodie had collected leaf fossils. They found the area. Jock examined pollen found in the matrix of a leaf collection previously collected and dated it to the last interglacial period when temperatures were 3-5 degrees warmer than present.

Harry Lumsden commented on the “unusually early” spring. Date of first goose eggs this spring was 26 March – 1 week earlier than any other year in over forty years!

David Tomlinson reported on a nest box project he started in Aurora. Starting with wood donated by a local hardware, seniors and children made 50 nest boxes. With time 250 boxes have been made and are being monitored. Birds nesting are mainly house sparrows. Two schools in Aurora are participating in monitoring, each school looking after six boxes. Now an Aurora plastic company, Midpoint International Inc. is on board and is making



boxes out of plastic and printing posters depicting the species of birds likely to nest in the boxes and illustrating the differences between the nests, eggs and adults of each species.

The program is going to go ‘Canada wide’. In participating schools, students will check the boxes every two weeks and put their results on-line in a Bird Studies Canada national nest watch program, Project NestWatch. Partners in the project are Birds Canada and the ROM. David is hopeful that this could be a way to get young people interested in some science and natural history. He also has the first box going to the USA ... to the Pentagon!

Bill Rapley was at Beamer near Grimsby on the 10-11 April- lots of raptors, Sharpies and first Broadwings for the year. Bill and Phil Waggett visited their old Red-tailed Hawk nest study area and found lots of Red-Tailed Hawk nests. A last year RTH nest had a Great Horned Owl sitting on nest and within 200 yd., a Coopers Hawk was building a nest. Bill also heard a Ruffed Grouse drumming on a trail right in Uxbridge along the South Balsam trail. They did not appear to be there last year so this is a good sign.

Ellen Larsen learned of a Heron rookery on the Carden Plain. Last year there was a single nest and this year there are about half a dozen. The rookery is on the east side of Shrike Rd, south of the McNamee Rd.

The meeting was adjourned ~ 9:15 pm. and members and guests visited over refreshments.

NEXT MEETING

The next meeting will be held on Tuesday, May 11, 2010 at 7:30 pm in Room 432 as usual.

CORRESPONDENCE

Rose Addison: In ten years of recording first bloom, RA notes the first flowering of Blood root on April 3 this spring. This is ten days earlier than the previous earliest date of April 13, 2006.

Yorke Edwards sent in these observations by e-mail:

Red-winged Blackbird: We twice found a nest in our garden that is beside our ocean shore.

Sandhill Crane: Early one spring I saw one sleeping at the edge of a small island.

Glaucous-winged Gull: They fly by our house. Once on an island I found they had 51 nests. Daily we see them, sleeping or eating grass on the golf course shore.

Glaucous Gull: One morning I saw one once going by from its northern Arctic shores.

Common Murre: Once I saw a few fly by our shore, going southward as they went by.

Meadowlark: We have seen just a few. Once I found a nest on a small grassy island.

Black Oystercatchers: In August, one day I saw young ones with their cries while swimming by.

California Quails: Twice we had a nest in our garden. Once in May we saw 6 baby ones.

Killdeer: We found one nesting on a small island not very far beyond our shore.

Tufted Puffin: Some years we see young ones on the sea, going by with their adults.

Sooty Shearwaters: Crowds of them fly by in late summer, going to go near Australia.

Song Sparrow: Its songs are heard most of the year, but we seldom find their nests.

White-throated Sparrow: Through many summers they sing loud and clear near our house.

Bald Eagle: Daily on a post by the sea, but in fall it goes up rivers to eat dead fish.

Thayer's Gulls: Dozens from the Arctic go onto our small islands in winter by the sea.

Dunlin: In winter there is often a line of them on the edge of a distant island.

Canada Geese: On many days we see them eating grass on a golf course by the sea..

Mew Gull: At fall they come down for a while, then go on to Mexico in winter.

Northwest Crow: Beside some food stores at noon, crows and kids eat lunch together.

Double-crested Cormorant: We see them on the small and rocky islands that are near our shore.

Starling: Years ago some were sent to New York. Now we see them everywhere.