

# Bio Link

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## The Official Newsletter of the Atlantic Society of Fish and Wildlife Biologists



**A piping plover colour-banded in the Bahamas in the 2010 winter was spotted in NL during the breeding season and photographed by Paul Evans in August on Martinique Beach, NS as the bird was heading south.**

**For more on Colour-banded Plovers see page 5**

### White-Nose Syndrome Found in NB

Abbreviated and adapted from NB Museum Press Release, March 29<sup>th</sup>, 2011

New Brunswick Museum Researchers (NBM) Dr. Donald McAlpine and Karen Vanderwolf have discovered White-nose Syndrome (WNS) in New Brunswick's most important known bat hibernacula, located in Albert County. The majority of bats there are little brown myotis, with lesser numbers of northern long-eared bats and very few eastern pipistrelle. At least 25% of the bats in the cave (all little brown myotis) have died as a result of this fungus, which grows on bats as they hibernate. Since it was first discovered in New York State in 2006, the disease has spread to 13 other states and to Quebec and Ontario, killing over one

million insect-eating bats. In some populations, the mortality rate has approached 100%. This is the first identification of WNS in NB, and the impact appears significant.

"We estimate that about approximately 6000 bats were present in the cave when we visited it on March 15, 2011" said Karen Vanderwolf, a University of New Brunswick (UNB) graduate student working out of the NBM. "Of those, 25% were dead on the floor as well as on the snow outside, and an unknown, though substantial number, were dead or dying on the walls."

"Although we expected this disease to appear in New Brunswick in the next few years, we were surprised by what we found in the cave", said Dr. McAlpine, NBM Research Curator in Zoology. "And we did not expect the disease to hit so hard when it first

appeared." Although recorded in Ontario and Quebec last year, there have been no major die-offs of bats observed there yet. Why more NB bats are dying is still unknown.

The disease identity was confirmed by Ms. Vanderwolf and NBM mycologist Dr. David Malloch based on microscopic features of the fungal reproductive structures. Samples sent to the Canadian Cooperative Wildlife Health Centre at Atlantic Veterinary College (UPEI), University of Guelph and Agriculture Canada, Ottawa, have produced similar conclusions. Genetic sequence data collected from fungus on bat wings show that it is the same strain first described from bats in the United States.

During the past eighteen months, Vanderwolf, and McAlpine have collected fungus growing on the fur and skin of cave-hibernating bats in NB to identify if and when WNS would arrive there. In fact, Vanderwolf has assembled the most comprehensive North American baseline dataset on the pre-WNS fungal communities of hibernating bats. This collection will provide researchers with important details on the impact of the disease as it unfolds in the region.

This winter, NBM surveyed all known caves used as bat hibernacula in NB, but only one has been found to have WNS. There appears to be an incubation period of several months

### ASFWB Spring Seminar April 18, 2011

Human/Wildlife Interaction and Conflict

Crabtree Auditorium  
Mount Allison University,  
Sackville, NB

<http://www.chebucto.ns.ca/Environment/ASFWB/springseminar.html>



**Dead bats found outside an Albert County cave, NB are bad news for bats in Atlantic Canada. (DF McAlpine photo)**

### White-nose Syndrome (con't)

before WNS becomes noticeable, and since the bats will leave the caves from April to mid-May for their summer homes, it is not expected WNS will be found elsewhere this spring. The principals will continue to study the fungus, preserving specimens for the NBM and other researchers. They plan to survey the caves again next winter.



Inside the Cave (K Vanderwolf photo)

A recent study published in the journal, *Science* predicts the northeast population of little brown myotis (the most common bat in New Brunswick) will become regionally extinct within two decades due to WNS. As primary predators of night flying insects, bats decrease the use of pesticides by eating agricultural pests that damage crops, and they eat insects that pose risks to human health. WNS fungus only grows at cool temperatures, considerably lower than those of the human body, so its risk to humans is low.

But humans may pose a risk to bats. To prevent carrying the fungus from one cave to another, DNR is asking the general public and recreational cavers to refrain from entering caves and abandoned mines. "We ask for the cooperation of New Brunswickers in limiting opportunities for cross-contamination to help reduce the impact of this fungus" said biologist Pascal Giasson of NB Fish and Wildlife Branch.

The work has been supported in-part by NB Department of Natural Resources (DNR), the NB Wildlife Trust Fund, and the Canadian Wildlife Federation. Dr. Graham Forbes of UNB is a Project co-supervisor. For online updates, find NB Museum, then go to "Outside the walls/Field Work/White-nose Syndrome"

### Lead Poisoning in a Nova Scotia Eagle

By Heather Fenton

On November 5, 2010, a mature male bald eagle (*Haliaeetus leucocephalus*) was found weak and unable to fly in Black River, Pictou County, Nova Scotia. Local Nova Scotia Department of Natural Resources staff submitted the eagle to the Cobequid Wildlife Rehabilitation Centre. Radiographs did not show any evidence that the bird had been shot but the eagle died shortly after being admitted. It was subsequently submitted to the Canadian Cooperative Wildlife Health Centre (CCWHC) at the Atlantic Veterinary College in Charlottetown, Prince Edward Island for necropsy. Examination revealed that the bird was in good body condition with no suggestion of traumatic injury, although it had not been feeding for some time. A kidney sample was submitted for toxicology and results revealed a lead concentration of 17.9 ppm (wet weight basis), twice the level indicative of lead poisoning (>6 ppm, Wobeser, 1997).



Lead in high concentrations can cause serious damage to many tissues, including the brain, which can result in abnormal behaviour, which includes not feeding. The most common cause of lead poisoning in wild raptors is the ingestion of lead shot or sinkers and fishing jigs (Scheuhammer and Norris 1996), which in 85% of cases have passed through the digestive tract by the time the animals are picked up (Redig 1984). This explains the lack of metal in the radiograph or in the stomach of this bird. It is illegal to use lead shot for hunting waterfowl in Canada, but it is still used for skeet shooting, hunting big game and upland game, and in angling. In the past two and a half years, 76 Maritime bald eagles were examined by CCWHC and six (8%) were confirmed cases of lead poisoning. Some of these eagles presented with additional lesions such as fractures or internal bleeding, but their ultimate cause of death was lead poisoning. Evidently, lead remains a cause of disease and death in wild raptors in Canada and should be considered as cause of death in any bird of prey. Therefore, please continue to submit carcasses for post-mortem examination to the CCWHC.

*Special thanks to all involved with the care of this animal.*



## Lead Poisoning Eagle (con't)

### Sources:

Redig, P. T. 1984. An investigation into the effects of lead poisoning in bald eagles and other raptors: Final Report. St. Paul Minnesota: University of Minnesota Endangered Species Program Study 100A-100B.

Scheuhammer, A. M. and S. L. Norris. 1996. The ecotoxicology of lead shot and lead fishing weights. *Ecotoxicology* 5: 279-295.

Wobeser, G. 1997. *Diseases of Wild Waterfowl*. 2nd Ed. Plenum Press, New York, N.Y. USA



## New Brunswick Wetlands Take A Hit

By Rosemary Curley

Guess what happened when the New Brunswick Department of Environment (DOE) launched an on-line map in January to aid in wetland identification? Unfortunately the map provoked extraordinary controversy, as it seemed to indicate that the percentage of NB that is wetland had gone from 4 to 18 %. Based on "depth to water table", it was developed to give a "heads up" to landowners and developers. According to Adam Campbell, of Ducks Unlimited Canada in Fredericton, the Province's wetland

policy didn't actually change, but a new tool was introduced to help identify where wetlands might be. "This actually has a lot of benefits for developers and landowners in helping them to avoid costly surprises," he said.

The map accounted for the St John River floodplain so that many Frederictonians were alarmed to see their lands included on the map. Municipalities called up Premier Alward. Normal use of such map information would have stimulated a DOE staff ground check and a potential wetland delineation requirement to determine wetland presence. Instead it stimulated the new Environment Minister, Margaret-Ann Blaney, to embark on a consultation tour, and, rather than admit that it was a miscalculation to post the map without proper context and guidelines, the Minister took the opportunity to greatly weaken the New Brunswick Wetlands Conservation Policy. It is ironic that this tour took place during Canada Water Week, which was announced with appropriate fanfare by the Minister while she was simultaneously devising reduced protection for the watery wetlands. At the public meetings, staff were vilified rather than given the opportunity to explain what the map was really about, and no clarity was provided to the questioning onlookers.

On March 6th, wetland conservation groups tried to stave off a catastrophe. As some municipalities and developers were lobbying to weaken wetland protection in New Brunswick, conservation and environmental groups called on government to defend these habitats. Conservation Council of NB Freshwater Protection Coordinator Stephanie Merrill reminded the Minister and the public of the many wetland values and encouraged people to attend the Minister's 9-day listening tour. "We don't need a new Wetland Conservation Policy, we need New Brunswickers to show support for wetland protection", said Merrill. The Policy had guided wetland protection since 2002, and

the rules had not changed.

Over 2000 attended the Minister's meetings. As reported in the Times Transcript, it seemed that that the new rules would do nothing more than "force landowners into jumping through a series of needless hoops and stymieing future development which is critical to the future of the province". Gerald Richard, chairman of the board for the New Brunswick Cranberry Growers Agency, eschewed the cumbersome process that cranberry farmers must follow in an Environmental Impact Assessment.

On March 18<sup>th</sup>, Blaney told an applauding audience of landowners and developers in Saint John that the government would scrap the map.

Reaction from conservationists was less enthusiastic "The wetlands lost today," said Stephanie Merrill of CCNB. Now the Province uses a Department of Natural Resources map that designates six per cent of land in the province as wetlands. The loss of a predictive map with inaccuracies is a palatable decision, but using an incomplete wetland inventory to enforce regulation is devastating. All wetland specialists tend to agree that the province is likely covered by a minimum of 12% wetlands. At least half of these wetlands are now without regulation, even if greater than 2 ha in size, and developing larger unmapped wetlands won't require an Environmental Impact Assessment. Further, the department will no longer require functional assessments or delineations. They will rather regulate only those wetlands that are mapped and use the imperfect aerial interpretive boundaries to dictate wetland dimension. Permits will continue to be required for alterations in "mapped wetlands" or within their 30-metre buffer. However, since the minister's decision, developers can develop within large previously delineated wetlands without consequence. (This practice seems to be in violation of the current *Watercourse and Wetland Alteration Regulation* (REG 90-80) of the *Clean Water Act* and the *Environmental Impact Assessment Regulation* (REG 87-83) of the *Clean Environment Act*).

**NB Wetlands (con't)**

The government also significantly weakened wetland protection by reducing wetland compensation requirements for lost wetland habitat from the 3:1 ratio used previously (and in other provinces) to 2:1. This will make it more feasible for developers to destroy wetlands. Current land uses in provincially significant wetlands will be allowed to continue and limited development will be allowed in wetlands next year.

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"I believe it is possible to find a balance between promoting the environment and fostering the economic development our province needs, especially during this time of financial crisis," Blaney said. "This is a difficult task but it is necessary to ensure our province remains in a place where people can live, work and raise a healthy family."

As part of the province's long-term strategy on wetlands, Blaney said the government will launch a wetland stakeholder engagement initiative on the future of wetland management, bringing together key stakeholders to prepare recommendations by the end of the year on the best way to protect wetlands in the province. "New Brunswickers understand the importance of protecting and promoting wetlands," she said. Even if this stakeholder group can influence more wetland protection, what wetland losses will NB see in a year? Many developers have been given "the go-ahead" and they are only waiting for road weight limits to be lifted before they work to remove "unmapped" wetlands from the landscape.

**Sources :**

- NB Media Co-op March 6, 2011
- NB Press Release March 14, 2011
- Kris McDavid in Times Transcript March 17, 2011
- CBC News Posted: Mar 18, 2011
- NB Press Release, March 18, 2011

**SOCIETY NEWS**

STEADY BROOK NL. An unnamed crew from PEI won the Iceberg package at the silent auction during the ASFWB AGM and Banquet at Humber Valley Resort, NL on October 6th, 2010. Thanks to VP-Program Casidhe Dyke and members of the NL Wildlife Division who showed some old-

fashioned NL hospitality as they "screched in" the visitors at the banquet. The Wildlife Division also contributed a number of presentations including the story of sick moose in the northern peninsula and why watercourses are being mapped by provincial staff. There were 38 registrants.

**Fall Conference Announced for Antigonish**

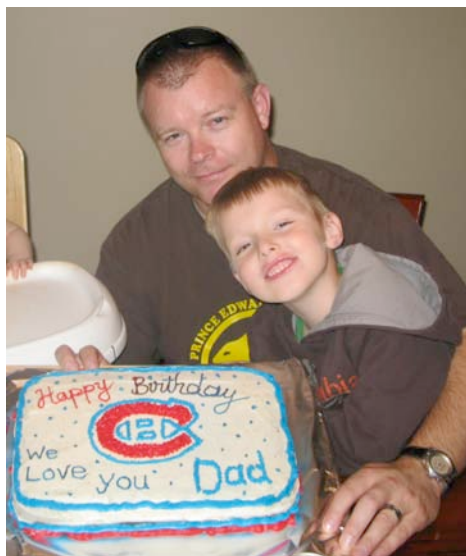
Vice-President Program Mark Pulsifer has announced that the ASFWB 2011 fall conference and AGM will be held at St. Francis Xavier University, in Antigonish, Nova Scotia beginning with a reception and registration on the evening of October 25<sup>th</sup>, with meetings on October 26<sup>th</sup> and 27<sup>th</sup>. Over the next few months a program and agenda will be developed. Please visit the ASFWB web site for further details on a call for papers, accommodations, and directions to campus. We are looking forward to an exciting program and good attendance.

**Kirby Tulk New ASFWB President**

The Atlantic Society of Fish and Wildlife Biologists (ASFWB) welcomes Kirby Tulk as our new President. Kirby graduated from the University of New Brunswick (UNB) in 1997 with a BSc. in Forestry and a minor in Wildlife Management. He gained experience in forestry in Manitoba and New Brunswick, and with federal and municipal governments in Newfoundland. In 2004, Kirby graduated with a MSc. in Forestry from UNB with research focussed on introduced species and the implications on forest renewal in and around Terra Nova National Park of Canada (TNNP). While employed with Parks Canada (currently as Park Ecologist), Kirby has been involved in research on white pine recruitment, prescribed burning, boreal



## New President (con't)



**Kirby Tulk, with son Kaleb.**

seedfall/seedbeds/recruitment, St. Lawrence Aster genetics and recolonization, and piping plover predation.

Kirby is a long-standing member of the ASFWB and an active member of the Registered Professional Foresters of Newfoundland and Labrador and the Canadian Institute of Forestry. He was a park warden in Prince Edward Island (PEINP) and Terra Nova National Parks of Canada during 2004-2005, and park ecologist for PEINP from 2005-2008. In 2008, Kirby returned home to his current position. He is currently managing a five-year integrated project "Restoring Forest Health in TNNP" which focuses on reducing the effects of moose on forest regeneration, active forest restoration, species at risk, further development of the prescribed burning program, and integrating visitor experience into all aspects of the forest health initiative. Kirby currently lives in Glovertown with his wife Robin, and preschoolers Kaleb and Kacey.

### Biolink Editor's Job Available at Fall AGM

The position of Newsletter Editor will be up for renewal at the ASFWB AGM October 26 and 27<sup>th</sup>. The current editor plans on vacating the job and can supply information to prospective new editors. If interested, feel free to contact [rcurley@eastlink.ca](mailto:rcurley@eastlink.ca).

### Cartwright Scholarship Update

Julia Brienne Carpenter of Cummings Cove NB is the 2010/11 David J Cartwright Memorial Scholarship recipient at UNB. She is a 4<sup>th</sup> year student in environmental and natural resources program. She was the 2009/10 President of the Environmental and Natural Resource Society as well as member of the Wildlife Society. The Cartwright Scholarship Fund has rebounded nicely from the recession. According to a report issued in November of 2010, the fund stood at \$19,795.00 on May 1<sup>st</sup> 2009 and improved to \$23,625 by April 30, 2010.

### Donation to the Donald G. Dodds Scholarship Fund



Ian Murray of Acadia University, Alumni Affairs (left) is pleased to observe as Past-President Jason LeBlanc of ASFWB hands a cheque on behalf of the Society to Dr. Tom Herman, Vice-President, Academic for deposit to the ASFWB Donald G Dodds Scholarship Fund. As of March 2011, the balance of the endowment is \$16,720.23, two-thirds of the way to a self-sustaining \$25,000.00 fund.

## REQUESTS FOR ASSISTANCE

### Watch for Banded Piping Plovers

By Jen Rock

Only recently the Bahamas has been identified as a key wintering ground for Piping Plover populations (Prairie, Great Lakes and Atlantic Coast breeding birds) and because of a banding study led by Dr. Cheri Gratto-Trevor of Environment Canada, we know that Atlantic Canada's breeding birds are among those that migrate to the Bahamas. In winter 2010, 57 Piping Plovers were captured in the Bahamas and uniquely marked with colour leg-band combinations. Four of these Bahamas birds were spotted in Atlantic Canada last summer and of these, three were re-sighted back in the Bahamas in November 2010. So far, we have only a snapshot of where these birds go and future re-sights will help us better understand their seasonal and annual movements.

Researchers at Virginia Tech. have also recently initiated a Piping Plover banding study. Their aim is to examine the short and long-term effects of the Deepwater Horizon oil spill in the Gulf of Mexico. To measure these potential effects, birds were banded within and outside the spill area. Atlantic Canada might expect to see some of these birds this spring.

You can help with Piping Plover conservation efforts by reporting banded birds. Birds may carry a series of colour bands on both upper and lower legs so be sure to carefully record band information. Report sightings to the Canadian Wildlife Service:

NL — Krista Baker: 709-772-3739  
 NS — Karen Potter: 902-426-2578  
 NB & PEI — Jen Rock: 506-364-5078



### Guardian Programs Seek Help

Biologists who run the Piping Plover Guardian Programs in Atlantic Canada are always looking for on-the-ground help.

Contact information is supplied:

NB-Acadian Peninsula: Lewnanny Richardson, Nature NB-Species at Risk Program 506-395-3500; [pluvier@nb.aibn.com](mailto:pluvier@nb.aibn.com)

NB-Southeast Coast: Michelle Maillet, Irving Ecocentre/ La dune de Bouctouche 506-743-2600; [ladune@nbnet.nb.ca](mailto:ladune@nbnet.nb.ca)

PEI: Tracy MacDonald, Island Nature Trust 902-892-7513; [plovers@islandnaturetrust.ca](mailto:plovers@islandnaturetrust.ca)

NS: Sue Abbott, Bird Studies Canada 902-222-2880; [nsplovers@gmail.com](mailto:nsplovers@gmail.com)

NL: Patricia Cousins, Codroy Valley Development Assoc. 709-955-2109; [patricia.pipingplover@gmail.com](mailto:patricia.pipingplover@gmail.com)

### Bird Survey and Monitoring on Nova Scotia Nature Trust Properties

By Dennis Garratt

The Nova Scotia Nature Trust has a gap in its files where there should be information about birds! We are looking for keen birders to help us fill these gaps and contribute to the protection of land in Nova Scotia.

When the Nature Trust is carrying out initial research into a prospective property, we check all available ecological data to help us in decision-

making. It is important to know what species or communities of wildlife are present, and whether they are rare or threatened in any way. Birders can help us in decision-making by gathering bird data during the early stages of our discussions with landowners. Likewise with properties already protected, we would like to improve our information about the birds present, whether breeding, on migration or overwintering. This is an opportunity for birders to concentrate effort on a private property close to their home, or perhaps elsewhere on a holiday weekend.

If interested in helping, please contact Dennis Garratt phone 425-5263.

### Conservation Volunteers — Lend a helping hand to NCC

By Laurel Bernard

Into its fourth year, Nature Conservancy of Canada's (NCC) Conservation Volunteer (CV) program is once again encouraging people to get out on the land and lend a helping hand. CV is a national NCC program that engages the public in biodiversity conservation while providing a hands-on and educational experience in our ecologically significant natural areas. Volunteers help NCC complete on-the-ground land management, meet like-minded people and visit extraordinary natural areas.

Events are generally a day in length and may involve both experts and novices. In the Atlantic Region, 12 events are being planned in 2011 from April through November. "Plover



### Removing Invasive Plants at Shampers' Bluff

Preparation" in April in partnership with Bird Studies Canada involves a beach clean-up at the NCC Johnston's Pond nature preserve in NS, before the nesting Piping Plovers arrive. The May event takes place in the Codroy Valley of Newfoundland where expert birders take part in the Birding Bonanza — a 24-hour bird count to see how many species can be found in the area.

Other events involve restoration work including tree planting and invasive species removal, inventories and monitoring of forest birds, waterfowl, and shorebirds, and threat abatement through garbage removal and trail maintenance. The CV program seeks to build partnerships with any individual, organisation or government body that shares a passion for land conservation. To view the full roster of events, check out [www.conservationvolunteers.ca](http://www.conservationvolunteers.ca), or call Laurel Bernard at 1-877-231-4400.

## Save-a-Striper Become a Striped Ambassador



Join the Striped Bass Angling Association of Nova Scotia  
For your free log book to record catch data and contribute to conserving these magnificent fish, contact:  
[stripedbass@acadiu.ca](mailto:stripedbass@acadiu.ca)  
[www.stripedbass.ca](http://www.stripedbass.ca)



## Atlantic Salmon Listings from Fall COSEWIC Meeting

Abbreviated from COSEWIC website

The Atlantic Salmon was reviewed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in November, 2010. Sixteen designatable units and listings were made. Atlantic Salmon is Extinct in Lake Ontario. Now for some better news. Four populations, described as Southwest Newfoundland, Northeast Newfoundland, Northwest Newfoundland, and Labrador, are Not at Risk. Their numbers appear to be increasing, some substantially. The rest of the listings are either Data Deficient (ie Nunavik) or at some stage of risk. The following Quebec populations are listed as Special Concern: Inner St. Lawrence, Quebec Eastern North Shore and Quebec Western North Shore. Further information is not shown for them due to space limitations.

### Gaspé-Southern Gulf of St. Lawrence population - Special Concern

This population breeds in the Miramichi and the Margaree, from the Ouelle River (excluded) in the western Gaspé Peninsula southward and eastward to the northern tip of Cape Breton. Small (one-sea-winter) and large (multi-sea-winter) fish have both declined over the last 3 generations, approximately 34% and 19%, respectively, for a net decline of all mature individuals of about 28%. This recent 3-generation decline represents a continuation of a decline extending back at least to the 1980's. The number of mature individuals remains over 100,000; however, the majority spawn in a single major river system, the Miramichi, in New Brunswick. Freshwater habitat quality is a concern in some areas, particularly in Prince Edward Island where some remaining populations are maintained by hatchery supplementation. Invasive and illegally introduced species, such

as smallmouth bass, are a poorly understood threat in some freshwater habitats. Poor marine survival is also cause for concern.

The remaining populations are Threatened or Endangered and are described in more detail below. For most, information was prefaced by a statement that Atlantic Salmon requires good quality rivers or streams for reproduction and early rearing, but undertake lengthy feeding migrations in the North Atlantic Ocean as older juveniles and adults. For most, it was also noted that poor marine survival related to substantial but incompletely understood changes in marine ecosystems is a concern. For most, there is no likelihood of rescue, as neighbouring regions harbour genetically dissimilar populations. This repetitive material is removed from the blurbs below.

### South Newfoundland population - Threatened

This population breeds in rivers from the southeast tip of the Avalon Peninsula, Mistaken Point, westward along the south coast of Newfoundland to Cape Ray. The numbers of small (one-sea-winter) and large (multi-sea-winter) salmon have both declined over the last 3 generations, about 37% and 26%, respectively, for a net decline of all mature individuals of about 36%. This decline has occurred despite the fact that mortality from commercial fisheries in coastal areas has greatly declined since 1992. Illegal fishing is a threat in some rivers. The presence of salmon aquaculture in a small section of this area brings some risk of negative effects from interbreeding or adverse ecological interactions with escaped domestic salmon. Genetic heterogeneity among the many small rivers in this area is unusually pronounced, suggesting that rescue among river breeding populations may be somewhat less likely than in other areas.

### Inner Bay of Fundy population - Endangered.

This population once bred in 32 rivers tributary to the inner Bay of Fundy, from just east of the Saint John River, to the Gaspereau River in Nova Scotia; however, spawning no longer occurs in most rivers. The population, thought to have consisted of about 40,000 individuals earlier in the 20th century, is believed to have fewer than 200 individuals in 2008. Marine survival is extremely poor, and the continued existence of this population depends on a captive rearing program. Negative effects are recognized from interbreeding or ecological interactions with escaped domestic salmon from fish farms. The rivers used by this population are close to the largest concentration of salmon farms in Atlantic Canada. It was first designated Endangered in May 2001 and the status has not changed.

### Anticosti Island population - Endangered

Small (one-sea-winter) and large (multi-sea-winter) fish have both declined over 3 generations, approximately 32% and 49%, respectively, for a net decline of all mature individuals of about 40%. The population size is small, about 2,400 individuals in 2008.



NS Fisheries Biologist John MacMillan with Atlantic Salmon (Peter Hill photo)

**RECENT LITERATURE**

- Ashley, P., K. A. Hobson, S. L. VanWilgenburg, N. North, and S. Allan Petrie. 2010. Linking Canadian harvested juvenile American black ducks to their natal areas using stable isotope ( $\delta$ ,  $^{13}\text{C}$ , and  $^{15}\text{N}$ ) methods. *Avian Conservation and Ecology* 5(2): 7. [online] URL: <http://www.ace-eco.org/vol5/iss2/art7/>
- Baker John A., Jenna E. Dewey, and Susan A. Foster. 2010. Variation in Reproductive Traits of Female Fourspine Stickleback (*Apeltes quadracus*) in Nova Scotia, Canada. *Copeia* 2010(3): 437–442
- Balsdon, Jennifer L., Tyler W. Smith, and Jeremy T. Lundholm. 2011. Phenotypic and genotypic differentiation of *Vaccinium vitis-idaea* between coastal barrens and forests in Nova Scotia, Canada *Botany* 89 (3) :147-155.
- Barber, C., A. Nowak, K. Tulk, and L. Thomas 2010. Predator exclosures enhance reproductive success but increase adult mortality of piping plovers (*Charadrius melodus*) . *Avian Conservation and Ecology* 5(2): 6. [online] URL: <http://www.ace-eco.org/vol5/iss2/art6/>
- Bonifait, Sylvain and Marc-André Villard. 2010. Efficiency of buffer zones around ponds to conserve odonates and songbirds in mined peat bogs. *Ecography* 33 (5):913–920
- Bond, Alexander L. and Antony W. Diamond 2010. Nutrient allocation for egg production in six Atlantic seabirds. *Can. J. Zool.* 88(11): 1095–1102.
- Cameron, Robert P. and David Williams. 2011. Completing an Ecosystem Classification System for Nova Scotia Natural Areas *Journal* 31 (1): 92-96
- Cameron, Robert. 2009. Red Maple, *Acer rubrum*, wetland composition and structure in Nova Scotia, Canada, *Canadian Field-Nat.* 123(3): 221-229.
- Cameron, Robert. 2009. Are non-native gastropods a threat to endangered lichens?. *Can Field-Naturalist* 123 (2):169-171.
- Catling, Paul M. 2009. Dragonflies(Odonata) emerging from brackish pools in saltmarshes of Gaspé, Quebec. *Can Field-Naturalist* 123 (2):176-177
- Catling, Paul M., Zoe Lucas and Bill Freedman. 2009. Plants and insects new to Sable Island Canada. *Can Field-Naturalist* 123 (2):141-145.
- Clarke, Travis C. R., Antony W. Diamond and John W. Chardine .2010. Origin of Canadian Razorbills (*Alca torda*) Wintering in the Outer Bay of Fundy Confirmed by Radio-Tracking. *Waterbirds* 33 (4): 541-545
- Clough, M, C Kendall and HG Broders. 2010. The spatial variation of extreme tooth breakage in an herbivore and potential age structure effects. *Annales Zoologici Fennici* 47: 261-271
- Dale, C. A. and M. L. Leonard 2011. Reproductive consequences of migration decisions by Ipswich Sparrows (*Passerculus sandwichensis princeps*). *Can. J. Zool.* 89(2): 100–108.
- Descamps, Séébastien, Mark R. Forbes, H. Grant Gilchrist, Oliver P. Love, and Joëél Bêty. 2011 Avian cholera, post-hatching survival and selection on hatch characteristics in a long-lived bird, the common eider, *Somateria mollissima*. *J Avian Biology* 42(1):39–48.
- Dunn, A.M., G. Julien, W.R. Ernst, A. Cook, K.G. Doe, P.M. Jackman 2011 Evaluation of buffer zone effectiveness in mitigating the risks associated with agricultural runoff in Prince Edward Island. *Science of the Total Environment* 409 (5): 868-882.
- Farmer, R.G. and M. L. Leonard. 2011. Long-term feeding ecology of Great Black-backed Gulls (*Larus marinus*) in the northwest Atlantic: 110 years of feather isotope data. *Can. J. Zool.* 89(2): 123-133.
- Farrow, Lesley J. and Hugh G. Broders. 2011, Loss of forest cover impacts the distribution of the forest-dwelling tri-colored bat (*Perimyotis subflavus*). *Mammalian Biology* 76( 2 ):172-179
- Francl, Karen E., Dale W. Sparks, Virgil Brack, Jr., and John Timpone 2011 White-nose syndrome and wing damage index scores among summer bats in the Northeastern United States. *J Wildl Dis* 47: 41- 48.
- Fraser, Dylan J., C  oil  n Minto, Anna M. Calvert, James D. Eddington, and Jeffrey A. Hutchings. 2010. Potential for domesticated–wild interbreeding to induce maladaptive phenology across multiple populations of wild Atlantic salmon (*Salmo salar*). *Can J of Fish and Aquatic Sci.* 67 (11): 1768-1775
- Hedd A, DA Fifield, CM Burke, WA Montevicchi, L McFarlane Tranquilla, PM Regular, AD Buren and GJ Robertson 2010. Seasonal shift in the foraging niche of Atlantic puffins *Fratercula arctica* revealed by stable isotope ( $\delta^{15}\text{N}$  and  $\delta^{13}\text{C}$ ) analyses. *Aquatic Biology* 9: 13–22.
- Huynh, Howard M., Geoffrey R. Williams, Donald F. McAlpine and Richard W. Thorington Jr. 2010. Establishment of the Eastern Gray Squirrel (*Sciurus carolinensis*) in Nova Scotia, Canada. *Northeastern Naturalist* 17 (4): 673-677.



- Huynh, Howard M. 2009. Another record of foliage roosting in the Little Brown Bat, *Myotis lucifugus*, in Canada. Canadian Field-Nat. 123(3):265
- Iqbal, Javed and David A. MacLean 2010. Prediction of balsam fir sawfly defoliation using a Bayesian network model. Can J Forest Res. 40 (12): 2322—2332.
- Iqbal, Javed, David A. MacLean and John A. Kershaw Jr. 2011. Impacts of hemlock looper defoliation on growth and survival of balsam fir, black spruce and white birch in Newfoundland, Canada. Forest Ecology and Management. 261(6): 1106-1114
- Linnansaari, Tommi and Richard A. Cunjak 2010. Patterns in apparent survival of Atlantic salmon (*Salmo salar*) parr in relation to variable ice conditions throughout winter. Can. J.Fish. and Aquatic Sci. 67 (11):1744-1754.
- Lonard, Robert., Frank W. Judd and Richard Stalter. The Biological Flora of Coastal Dunes and Wetlands: *Spartina patens* (W. Aiton) G.H. Muhlenberg. Journal of Coastal Research 2010 ( ) 935-946.
- MacDonald, Hannah C., Colin P. Laroque, David E.B. Fleming, and Mihai R. Gherase. 2011. Dendroanalysis of metal pollution from the Sydney Steel Plant in Sydney, Nova Scotia. Dendrochronologia 29 (1): 9-15
- McAlpine, D.F., and I.M. Smith( Editors) 2010. Assessment of Species Diversity in the Atlantic Maritime Ecozone.. NRC Research Press. Ottawa, Canada. 785 pages.
- Mitchell, Greg W., Philip D. Taylor and Ian G Warkentin 2010. Assessing the Function of Broad-Scale Movements Made by Juvenile Songbirds Prior to Migration. Condor 112 (4):644-654.
- Moroni, M. T., C. H. Shaw, and P. Otahal. 2010. Forest carbon stocks in Newfoundland boreal forests of harvest and natural disturbance origin I: field study. Can J For. Res. 40 (11): 2135-2145
- Moroni, M. T., C. H. Shaw, W. A. Kurz, and G. J. Rampley. 2010. Forest carbon stocks in Newfoundland boreal forests of harvest and natural disturbance origin II: model evaluation. Can J For. Res. 40 (11): 2146-2163
- Nebel, Silke, Alex Mills, Jon D. McCracken, and Philip D. Taylor. 2010 Declines of Aerial Insectivores in North America Follow a Geographic Gradient. Avian Conservation and Ecology 5(2).1 Open Online URL: <http://www.ace-eco.org/vol5/iss2/art1/>
- Nishimura, Peter H. and Colin P. Laroque 2011. Observed continentality in radial growth–climate relationships in a twelve site network in western Labrador, Canada. Dendrochronologia 29(1):17-23.
- Olson, Matthew G. and Robert G. Wagner. 2010. Long-term compositional dynamics of Acadian mixedwood stands under different silvicultural regimes. Can. J. For. Res. 40(10): 1993–2002
- Patriquin, KJ, ML Leonard, HG Broders and CJ Garroway. 2010. The social networks of female northern long-eared bats, *Myotis septentrionalis*, vary with reproductive season and age. Behavioral Ecology and Sociobiology 64: 899-913
- Pickard, Felicia, Andréé Robichaud and Colin P. Laroque. 2011. Using dendrochronology to date the Val Comeau canoe, New Brunswick and developing an eastern white pine chronology in the Canadian Maritimes. Dendrochronologia 29(1):3-8
- Poissant JA and HG Broders. 2010. Differentiation of two *Myotis* species (Chiroptera: Vespertilionidae) at Hayes Cave, Nova Scotia, based on echolocation call characteristics. Nova Scotia Institute of Science 45: 55-63.
- Poissant, Joseph A., Hugh G. Broders and Greg M. Quinn 2010. Use of Lichen as a Roosting Substrate by *Perimyotis subflavus*, the Tricolored Bat, in Nova Scotia. Ecoscience 17(4): 372–378.
- Rioux, Sebastien, Diane L. Amirault-Langlais, and Francois Shaffer. 2011. Piping Plovers make decisions regarding dispersal based on personal and public information in a variable coastal ecosystem. J. Field Ornithol. 82(1):32–43
- Robinson, C., P.N. Duinker, and K.F. Beazley 2010. A conceptual framework for understanding, assessing, and mitigating ecological effects of forest roads. Environ. Rev. 18: 61–86
- Roche, Erin A, Jonathan B. Cohen, Daniel H. Catlin, Diane L. Amirault-Langlais, Francesca J. Cuthbert, Cheri L. Gratto-Trevor, Joy Felio and James D. Fraser. 2010. Range-Wide Piping Plover Survival: Correlated Patterns and Temporal Declines. J Wildlife Management 74 (8): 1784-1791
- Sands, Joseph P. and Michael D. Pope 2010 A survey of galliform monitoring programs and methods in the United States and Canada. Wildlife Biology 16 (4):342–356
- Strongman. D. B. 2010. Trichomyces from Newfoundland, including Gros Morne National Park. Botany 88 (12):1011-1022
- Wilkins, B. C. and N. P. Snyder. 2011. Geomorphic comparison of two Atlantic coastal rivers: Toward an understanding of physical controls on Atlantic salmon habitat. River Research and Applications 27(2):135-156.
- Venier L.A., and S.B. Holmes 2010. A review of the interaction between forest birds and eastern spruce budworm. Environ. Rev. 18: 191-207

### Atlantic Salmon Listings (con't)

#### Eastern Cape Breton population- Endangered

This population breeds in Cape Breton Island Rivers draining into the Atlantic Ocean and Bras d'Or Lakes. The numbers of adults returning to spawn has declined by about 29% over the last 3 generations; moreover, these declines represent continuations of previous declines. The total number of mature individuals in the 5 major river habitats was only about 1150 in 2008.

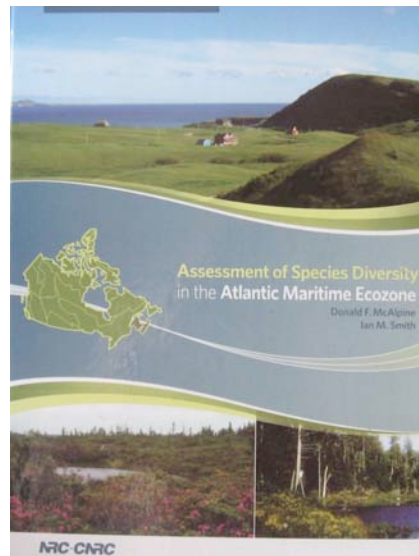
#### Nova Scotia Southern Upland population Endangered

This population breeds in rivers from northeastern mainland Nova Scotia, along the Atlantic coast and into the Bay of Fundy as far as Cape Split. Small (one-sea-winter) and large (multi-sea-winter) fish have both declined over the last 3 generations by approximately 59% and 74%, respectively, for a net decline of all mature individuals of about 61%. Moreover, these declines represent continuations of greater declines extending far into the past. During the past century, spawning occurred in 63 rivers, but a recent (2008) survey detected juveniles in only 20 of 51 rivers examined. The population has historically suffered from dams that have impeded spawning migrations and flooded spawning and rearing habitats, and other human influences, such as pollution and logging, that have reduced or degraded freshwater habitats. Acidification of freshwater habitats brought about by acidic precipitation is a major, ongoing threat. There are a few salmon farms in this area that could lead to negative effects of interbreeding or ecological interactions with escaped domestic salmon.

#### Outer Bay of Fundy population- Endangered

This population breeds in rivers tributary to the New Brunswick side of the Bay of Fundy, from the U.S. border to the Saint John River. Small (one-sea-winter) and large (multi-sea-winter) fish have both declined over the last 3 generations, approximately 57% and 82%, respectively, for a net

decline of all mature individuals of about 64%; moreover, these declines represent continuations of greater declines extending far into the past. The population has historically suffered from dams that have impeded spawning migrations and flooded spawning and rearing habitats, and other human influences, such as pollution and logging, that have reduced or degraded freshwater habitats. Current threats include poor marine survival and negative effects of interbreeding or ecological interactions with escaped domestic salmon from fish farms. The rivers used by this population are close to the largest concentration of salmon farms in Atlantic Canada.



### BOOK REVIEW

McAlpine, D.F., and I.M. Smith. 2010. *Assessment of Species Diversity in the Atlantic Maritime Ecozone*. Edited by DF McAlpine and IM Smith. NRC Research Press. Ottawa, Canada. 785 pages.

The purpose of this book is rightly described in the title. It covers the time span of 11 ka until present, but concentrates on the period after European settlement. The 31 chapters address everything from riverine microscopic fungi and shredder organisms, to freshwater fish and mammals, with analyses of changing abundance and current conservation concerns. Many taxa are overlooked

because of knowledge deficits.

This was definitely a good time to assemble existing information. A comprehensive evaluation had not been done before for the Atlantic Maritime Ecozone (AME) and there is considerable newer information to digest. As well, with the recent modelling by Stea, Shaw, and others demonstrating that the whole region was once covered with ice (save for a few cliff faces and nooks and crannies) it was time to re-evaluate theories of species invasions and look for reasons other than glacial refugia to explain species distributions. Explaining the occurrences of coastal plain flora is especially challenging. The theme of glaciation and reinvasion runs through the chapters, but not every old explanation is discarded. Smaller species are more likely to have survived in an ice-free area, and Larson regards endemism of insects such as *Neurocordulia michaeli* (discovered and named by Paul Brunelle and illustrated by him in his chapter on the Odonata) and species of Orthoptera on the Magdalen Islands and the Gaspé as evidence of some glacial refugia. Likewise, René Belland continues to favour glacial refugia as explaining moss distribution in the AME.

This work is commissioned by Agriculture and Agrifood Canada, Environment Canada and the Centre for Biodiversity Research at the New Brunswick Museum, two of which employ the editors. The five introductory chapters explore habitats and history, including glaciation models, but the main focus is the 26 chapters for species. With the participation of the first agency, there are extensive chapters by entomologists. Some insect orders are demystified while other chapters admit extensive gaps in knowledge. After immersing myself in several chapters on the six-leggers, I took a break and skipped ahead to peruse Dwayne Sabine's lengthy presentation on birds and its well researched historical references. (He read well over a thousand papers and reports to tease out records that might not be reflected in local compilations.) One difficulty



which plagues the chapters is the inability to find research specific to the Gaspé and Eastern Townships portion of the AME rather than to the whole of Quebec.

For the well known orders such as the mammals, there is less to surprise, but be prepared for new taxonomies and sidecasting of old names. When you swat the salt marsh mosquito, you'll be dispatching *Ochlerotatus sollicitans*.

The book is large and awkward to handle, but I found it rested well on a pillow on my lap. Full lists of species are provided, including 35 pages of names for the Macrolepidoptera, and this cuts down on the length of time the book must be held. Many of the insect lists will quickly be replaced by more up-to-date lists online if the authors' analyses succeed in stimulating new researchers and research.

Where lists are short, as with the earthworms (only one of the species is native) and the freshwater mussels, it was decided to illustrate them to aid in identification. Throughout, illustrations are sparing but to good purpose. Generally the writing style is quite similar, though none match Scudder for his concise delivery. Some chapters are beautifully written and all are written by experts, with less length devoted to the well known. An extensive and useful bibliography usually accompanies each chapter.

Internet lore reveals one should not review works of people known to you, and many of the authors are known to both you and me. Also, a standard book review should contain some criticisms. I reserve mine for the chapter on protected areas where the difficult work to establish these on PEI, with less than 10 percent Crown land, is hardly acknowledged. (This happens to be my job, so perhaps I am overly sensitive). Author Roberta Vanderkam is really Robert. Still, errors are hard to spot. Professional biologists and knowledgeable amateurs will quickly make this a standard reference for the AME and its taxa. Price: \$89.95

- Rosemary Curley

### CANADIAN BIODIVERSITY "Canadian Biodiversity: Ecosystem Status and Trends 2010"

is a collaborative project of the Canadian federal, provincial and territorial governments and is published by the Canadian Council of Resource Ministers. The assessment forms part of Canada's commitment to the United Nations Convention on Biological Diversity. The report and other related information are available at:

<http://www.biodivcanada.ca/default.asp?lang=En&n=83A35E06-1>

### Tricolored bats Are "Lichen" Life in Southern NS

By Joe Poissant

The tricolored bat (*Perimyotis subflavus*), or eastern pipistrelle as it was known when my project began, is an insect-eating bat distributed broadly from Central America to southern Ontario. A small number also call southwestern Nova Scotia home, and mostly based on echolocation data, have been found scattered across that part of the province. Interestingly, to my knowledge, they have only been caught during the summer within Kejimikujik National Park in the area around the Eel Weir, deep in the park. In this area there is a concentration of breeding females from May to August, sharing the air with the more plentiful little brown bat

over Loon, Georges and Kejimikujik Lakes.



Roosting Female Tricolored Bat

In 2003 and 2004 Greg Quinn and Hugh Broders laid the groundwork for the project that would identify pertinent roost resources for this species. Through radio telemetry and banding, Greg tracked individuals over two summers and identified six distinct roosting areas. Although efforts were made to trap these bats elsewhere in the park, they have only been netted south of Georges Lake on 30 m of the Eel Weir Bridge. In 2007 and 2008 I continued Greg's work and identified three new roost areas.



Chris Ayer, left, and Howie Hunyh trapping bats on the Eel Weir Bridge

A little background about most Canadian bats - when they form maternity colonies they almost always roost in cavities or buildings. This is not the case for the tricolored bat; they form small maternity colonies of up to 20 females and in Nova Scotia roost in clumps of *Usnea* lichen (old man's beard (*Usnea trichodea*), specifically) 100 % of the time. This can potentially severely limit their distribution as this lichen tends to grow in areas of high humidity and on dead or dying trees. True to form, in Kejimikujik these bats were almost always found in low-lying areas rich with dead black spruce and an abundance of *Usnea* on the boughs. It seems that these females have an affinity to their roost areas, and no bats were recorded moving from one roosting area to another over the four summers of data collection.

Perhaps most importantly, this population appears to be disjunct from other North American populations. There are few records from New Brunswick and Maine, and the species is non-migratory. They likely spend their summers in the park and then move a short distance to a cave or other suitable location to hibernate through the winter. Although there are a few specimens in the Nova Scotia Museum, it is not surprising that it was previously unknown to be reproducing in Nova Scotia. Bats are often difficult to find, and in many cases may only be identified by their echolocation calls, unless the bat is in hand. It is almost impossible to discriminate



*Usnea* Lichen

visually between cryptic species in flight. As the species appears to be limited in both distribution and population in Nova Scotia with few apparent routes of gene flow from nearby populations, it is important to identify areas outside of the park that may provide suitable roost sites for the species. It may not be by chance that we are only finding breeding females in the park and not elsewhere – it has been protected since the 1960s while the area around it has been extensively harvested for timber, most likely removing potential roost sites and limiting dispersal in the process.

From a conservation perspective, it is of the utmost importance to determine if this population is genetically distinct from other populations and if so, to provide adequate protection for it as we have done for other disjunct species in southwestern Nova Scotia like the Blandings turtle and eastern ribbonsnake.

### NL South Coast Caribou Herds Surveyed

As part of the ongoing research and management efforts for woodland caribou on the island portion of Newfoundland and Labrador, a mark-resight population census was conducted in March on the south coast caribou herds. The survey took place west of the Bay d'Espoir Highway and south of the Trans Canada Highway, and involves the Pot Hill, Gaff Topsails, Grey River, Buchans and La Poile caribou herds.

"Caribou are an important resource to the people of this province from a recreational, social and economic point of view," said the Honourable Ross Wiseman, Minister of Environment and Conservation. "We are committed to prudent and science-based sustainable management of our caribou herds, and population data is a very critical component of this management."

As part of a mark-resight census, there was a requirement for a number of caribou to be marked using a highly visible red paint. Once a number of animals in the herd were marked, they were counted, and the relative ratio of marked animals versus unmarked animals established the total population estimate for each herd. Neither the marking of the caribou, nor the paint itself, poses any harm to the animal. As the marked caribou lose their winter coat in the spring, the red marking also disappears from the animals.

"The management of all of the wildlife species we have in our province relies on the valuable research that is conducted which, in turn, helps guide the strategic decisions we must make as a government to ensure their viability," said Minister Wiseman. "It is integral that we have information on all aspects of our valuable wildlife resources, and census work provides an important piece of that information."

The public were also advised that low-level flying aircraft would be used in the area to conduct the census work. The census was completed by the end of March.

Source: NL Environment and Conservation Press Release, March 3, 2011

### ACWERN No longer Operational

The Atlantic Cooperative Wildlife Ecology Research Network, or ACWERN is no longer operational but it was good while it lasted! Established in 1994, ACWERN brought together Environment Canada's Canadian Wildlife Service with three universities in Atlantic Canada to provide the critical mass needed to work on applied research questions in wildlife conservation. The partnership included research chairs at University of New Brunswick (Dr. Tony Diamond), Memorial University of Newfoundland, and Acadia University (Dr. Phil Taylor).



ACWERN addressed research questions in a range of areas of wildlife ecology, with a focus on migratory birds and species at risk. Example research projects included quantifying impacts of marine oil pollution on seabirds of Atlantic Canada; modelling causes of population declines of endangered Piping Plover; assessing and mitigating risks presented by wind turbines to migrating landbirds; understanding impacts of forest harvesting on songbirds in New Brunswick and western Newfoundland; assessing impacts of changing climate and ocean temperatures on seabird populations in Labrador and the Bay of Fundy; minimizing impacts of tour boat disturbance on colonial seabirds; identifying essential foraging habitats for migrating shorebirds in the Bay of Fundy, and quantifying impacts of low-flying jets on threatened Harlequin Ducks.

Source:

<http://landscape.acadiau.ca/acwern/index.html>

### **NSNT Does Species-at-Risk Education and Habitat Conservation**

By Cristi Frittaion

The Nova Scotia Nature Trust has been working in species at risk habitat conservation for 17 years, and education and outreach are an integral part of what we do. Working with private landowners is paramount. Some landowners come to us already knowing the importance of protection for ecologically significant properties, and for the health of rare and at-risk species. Many have been lovers of nature their whole lives, are outdoors enthusiasts, bird watchers, or simply like to observe the plants are growing on their shorelines. For others, education can spark interest or passion – marvelling that they have seen the Eastern Ribbonsnake (*Thamnophis sauritus*), which is nationally and provincially listed as threatened, or that those pink flowers they admire along their lakeshores are endangered Pink Coreopsis (*Coreopsis rosea*).



Pink Coreopsis

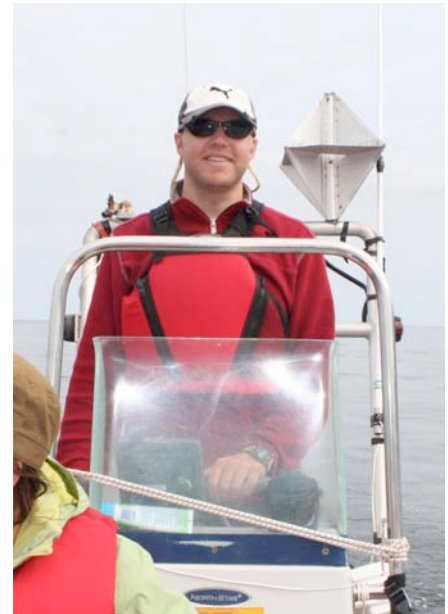
Taking it a step further, the Nature Trust has developed a rare plant monitoring program wherein we train volunteers to identify Atlantic Coastal Plain Flora (ACPF), a community of plants in southwest Nova Scotia which includes endangered or threatened species. Interested individuals attend field training sessions, learn to identify the relevant species and their habitats, and with permission of landowners, annually collect data from properties. These data can help identify where to focus conservation efforts and are provided to the Nature Trust and the ACPF Recovery Team.

The Nature Trust also runs a “Property Guardian” program, training local residents and conservation enthusiasts to monitor Nature Trust properties throughout Nova Scotia. Property Guardians watch for threats to the species and habitats on the properties, and perform stewardship activities to deal with threats. Volunteers can choose to work independently or with other community members as a Guardian Team.

These programs engage Nature Trust volunteers and create connections and relationships with landowners and other conservation organizations. For more information, or to become involved, please visit our website at [www.nsnt.ca](http://www.nsnt.ca) or contact us by email: [nature@nsnt.ca](mailto:nature@nsnt.ca) or telephone:(902) 425-5263. We have also joined Facebook, attracting nearly 550 fans so far.

### **Forensic Sciences at SMU, Genetics Anyone?**

By Lynne Burns



Dr. Tim Frasier

In September of 2009, Saint Mary’s University (SMU) in Halifax, NS, welcomed Dr. Timothy Frasier to the Biology Department to bring his knowledge of molecular ecology and forensic DNA typing to the department and its Forensic Sciences program. Tim received his Ph.D. from McMaster University in the Genetics and Evolution program in 2005. His research focussed on using molecular methods to assess parentage and the factors influencing reproductive success in the North Atlantic right whale. He then joined the Natural Resources DNA Profiling and Forensics Centre at Trent University as a post-doctoral fellow, giving him a broad background in molecular ecology techniques through varied wildlife population genetic and forensic investigations.

It is this molecular ecology experience that Tim brings to his new lab at SMU, known as the Frasier Lab of Molecular Ecology & Evolution. Broadly speaking, the goal of the Lab is to apply genetic analyses to the study of wildlife populations to better understand their biology and ecology. Through grants from the Canadian

### Forensic Science (con't)

Foundation for Innovation and the Nova Scotia Research and Innovation Trust, the lab was stocked with state of the art equipment in the fall of 2010, and now is up and running. At the heart of the lab is an Applied Biosystems capillary electrophoresis and analysis system which can run both DNA fragment analyses (e.g. microsatellite and Single Nucleotide Polymorphism (SNP) genotyping), as well as DNA sequencing. These capabilities give researchers a great degree of flexibility in the types of molecular data they can collect to answer a wide variety of biological questions.

Although Tim's own work focuses on marine mammals, the new multi-user lab is capable of handling almost any wildlife species a researcher could dream to work on. This is demonstrated in the diversity of projects currently being conducted in the lab. SMU Biology Honours students are doing projects on whales and horses, and several graduate students from SMU and Dalhousie University are studying the taxonomy of ectoparasites, relatedness in pilot whales and population genetic structure in little brown and northern long-eared bats. Dr. Brenna McLeod, a research associate with the Nova Scotia Museum of Natural History and part-time lecturer at SMU, recently started a project on walrus based out of the Lab.

The Frasier Lab at Saint Mary's is additional to other molecular ecology labs in the city, including the Marine Gene Probe Laboratory at Dalhousie University where DNA-based techniques are applied to research questions in marine biology, and occasionally to terrestrial species. As part of the Aquatic Biotechnology and Genomics program activity at Department of Fisheries and Oceans (DFO), the Bedford Institute of Oceanography has two labs whose primary focus is molecular ecology. The Fish Genetics Lab works to characterize the population genetic structure of wild fish stocks, and to conduct genetic modeling for stock recovery. Most previous work has

dealt with Atlantic salmon, cod and haddock. The Aquatic Biotechnology lab is a core facility providing molecular biology (primarily molecular ecology) expertise to all DFO scientists, and works on research questions in a range of species from microorganisms to marine mammals. The Frasier Lab is expected to greatly increase the profile of Halifax as a key player in genetic research on wildlife and fisheries in Atlantic Canada.



### Roloson on Rainbows

The rainbow trout has successfully established on over 20 watercourses on PEI and this has provoked questions about the negative influences they may have on native Atlantic salmon and brook trout. The Atlantic Salmon Federation and the Canadian Rivers Institute at UPEI are combining efforts to study the implications of the rainbow trout invasion. Genetic studies have found anadromous "steelhead" from PEI well up St. Lawrence River in Quebec. A new study by student Scott Roloson will implement sonic tracking of rainbow trout to reveal some of the mysteries surrounding their marine migration. The fish will be tracked with sonic receivers in the coastal waters of PEI, and with other arrays maintained by the Ocean Tracking Network throughout the Gulf of St.

Lawrence. In addition, Scott hopes to address questions around habitat of juvenile rainbow trout and whether these trout are a competitive threat to native salmonids during early life stages. This study will be the first to investigate the rainbow trout on PEI. It will provide important baseline information for fisheries managers on PEI and across the region.

### Marty Leonard New Chair

Dr. Marty Leonard of Dalhousie University was recently appointed as Chair of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) by the Federal Minister of Environment. Marty previously served as the Co-Chair of the Birds Specialist Sub-Committee of COSEWIC where she led the review of the Bobolink, and Bicknell's Thrush, among other species.

She has a long term interest in how begging in nestlings has arisen and is examining how the acoustics of the nest, competition from nest mates and environmental noise together affect the types of signals given by young birds. Her scientific research also includes the conservation of endangered birds and together with her many graduate students she has, or is currently studying aspects of the biology of Roseate Terns, Piping Plovers, Bicknell's Thrush and Ipswich Sparrows. Many of Marty's student are working in the region so we know she is an effective teacher; she has also won a teaching award. She is widely published on birds and occasionally on other taxa, most recently on Northern Long-eared Bats.

### Forbes Appointed as Co-Chair

Dr. Graham Forbes, Director of the New Brunswick Cooperative Fish and Wildlife Research Unit, University of New Brunswick was recently appointed as Co-chair of the Terrestrial Mammals Specialist Sub-Committee of Committee on the Status of Endangered Wildlife in Canada COSEWIC by the Federal Minister of the Environment. He had previously served 3 years as one of 10 members on the committee. The



### Forbes Appointment (con't)

current committee is composed of academics from across the country, with Graham and Jeff Bowman, who did his Doctorate on small mammals in NB providing some east coast expertise. The committee's task is to review status reports of COSEWIC-listed species, and decide if other species need to be assessed.



Dr. Graham Forbes

Species presently being reviewed include Grizzly Bear, Prairie Dog, Mountain Beaver, Collared Pika and Caribou. The last is of great interest to Graham because of the Gaspé and Newfoundland populations, and in general is requiring considerable effort because of uncertainty over the taxonomy of a species that exists over a wide range and is managed in units of both sub-species and herds, with both migratory or sedentary behavioural types. COSEWIC meets in Charlottetown, PEI in May.

**Whitney Kelly-Clark**, a student of the Canadian Cooperative Wildlife Health Centre (CCWHC) at the Atlantic Veterinary College, UPEI was awarded a \$100 prize for best student presentation at the Atlantic Society of Fish and Wildlife Biologists AGM in October, 2010. Her paper,



titled "Trich or Tweet: Why is a new parasitic disease causing mortality in Maritime wild finch populations?" dealt with trichomoniasis, an emerging disease of finches in the Maritimes. This fall, Whitney plans to visit a research lab at the University of East Anglia in Norwich, England to determine if disease strains are similar or divergent on either side of the Atlantic.

**Regina Wells, Wildlife Technician**  
**Canadian Wildlife Service**  
**Atlantic Region**



Regina Wells has been the new Wildlife Technician of the Goose Bay, Northern Conservation Section since August 30, 2010. She is located in Goose Bay, and is responsible for assisting in the delivery of Canadian Wildlife Service programs in Labrador. Regina Wells is a true Newfoundlander and Labradorean, born in Carbonear, Newfoundland and

raised in Goose Bay, Labrador. Regina received a B Sc in Biology from Carleton University in Ottawa and a Graduate Certificate in Ecological Restoration from Niagara College.

Since graduation she has completed her own slow migration back to the Big Land, where her family still resides. After leaving Niagara College Regina worked in the environmental stewardship and restoration fields for two years in Prince Edward Island. When presented with the opportunity to oversee the Ducks Unlimited Canada Eider Initiative research sites in southern Labrador and the Northern Peninsula, she did some island hopping, exchanging PEI for St. John's, NL. This was followed by a short stint completing offshore seabird surveys with the Canadian Wildlife Service Eastern Canada Seabirds At Sea program. Regina then returned to the Labrador region in 2009 to work with Provincial environmental enforcement.

**Joshua Mailhot, Environmental Assessment Coordinator**  
**Canadian Wildlife Service Atlantic Region**



Joshua Mailhot was appointed as the new Environmental Assessment Coordinator in the Mount Pearl office of the Northern Conservation Section of Canadian Wildlife Service, effective September 27, 2010.

Joshua has considerable experience working on projects, programs and initiatives related to the conservation and management of wildlife and their habitats. Following the completion of

### Joshua Mailhiot (con't)

both a BSc, and MSc. at the University of Prince Edward Island, Josh worked on Prince Edward Island as a biologist with the National Agri-Environmental Standards Initiative to develop agriculture and forestry guidelines. This was followed by work with Ducks Unlimited Canada as a Policy Specialist, examining legislation and policy at the municipal and provincial level in Southern Ontario, and then as an Ecologist for migratory and breeding waterfowl with Ducks Unlimited in Quebec. Most recently Joshua worked at the Department of Fisheries and Oceans (Atlantic) as an intern dealing with eel ecology and then with DFO-Pacific as an aquatic science biologist working on quantitative methods to generate habitat suitability and population viability analyses.

### IN MEMORIAM

#### Merritt Gibson 1930-2010

Merritt taught biology at the University of New Hampshire and McGill University before returning to Wolfville to teach at Acadia University from 1968 until his retirement in 1995. He was for many years Head of the Department of Biology at Acadia and Charles F. Myers Chair in Biology and Zoology; after retirement was appointed Professor Emeritus. A much loved teacher and mentor, he will be remembered fondly by generations of students, inspiring many to go on to make their own contributions to science. He was well known and appreciated for his quick wit and dry sense of humour. He served on the Science Council of Canada and the Natural Sciences and Engineering Research Council of Canada, was past president and honorary life member of the Canadian Society of Zoologists, and recipient of the Confederation Medal of Canada. He believed strong communities were the result of committed individuals, and he participated in or led many community organizations.

He was a founding member of the Blomidon Naturalists Society. He started bird watching at an early age and natural history was a lifelong passion leading to the publication of 11 books and hundreds of natural history articles. Merritt is much loved and will be greatly missed by his wife Wilma (Farrar), daughter Elizabeth, son Jamie (Tracy Horsman) and daughter Glenys (Ian Paterson). "Exploring nature is largely a matter of becoming receptive to what lies all around you." Rachel Carson, 1956



#### Dr. Sam P. Vander Kloet 1937-2011

We lost a real gem when Sam suddenly passed away on January 21<sup>st</sup>, 2011 in Wolfville while out for his evening walk. Anyone who has ever been in the field "botanizing" with Sam will know what is meant by the term "Vander Kloeting". With his long legs, high energy and keen eye, he could cover a lot of ground and had the greatest knack for spotting a rare or

even new species of plant, no matter how tiny.

After Dr. Vander Kloet received his PhD in Botany from Queens University, he arrived at Acadia University in 1972 as the freshly minted Assistant Professor for Botany and Director of the E. C. Smith Herbarium. He had a stellar career as a researcher who was a world expert on the *Vaccinium* genus, and published his work extensively including authoring the section on *Vaccinium* in the recent edition of the Flora of North America. He travelled widely to collect specimens, either whole plants or their seeds. As a result he discovered a new species in Viet Nam, which has been named *Vaccinium hiepii* Kloet. His students and friends fondly referred to him as "Sam the Blueberry Man".

After 29 years, he retired as a professor, having made his mark as a teacher through his many students who benefited in their careers from having studied with him. He loved his role in helping to set up the K.C. Irving Environmental Science Centre and the Harriet Irving Botanical Gardens on the Acadia campus.

Along with his widow, Carol, and son, Peter, and daughter, Julie, all of us who knew him will miss him. A fund has been set up in his honour at Acadia University, Wolfville, NS and contributions are welcome to the Sam Vander Kloet Memorial Fund.

(Shared by his former student, Diane Griffin)

An obituary for **Richard G. B. (Dick) Brown** (1935-2010), former CWS seabird biologist may be accessed at <http://onlinelibrary.wiley.com/doi/10.1111/j.1474-919X.2010.01080.x/pdf>

It is written by his friend Tony Gaston



**UPCOMING EVENTS**

- 18 April, 2011. ASFWB **Spring Seminar** --- Human/ Wildlife Interaction and Conflict. Crabtree Auditorium, Mount Allison University, Sackville, NB. <http://www.chebucto.ns.ca/Environment/ASFWB/springseminar.html>
- 3-4 May, 2011. Land Reclamation - Advances in Ecological Restoration. Hosted by Canadian Land Reclamation Association, Atlantic Chapter\_ and CFB Gagetown.  
[http://www.atlanticclra.ca/documents/CLRA\\_AdvanceinEcologicalRestoration.pdf](http://www.atlanticclra.ca/documents/CLRA_AdvanceinEcologicalRestoration.pdf)
- 12-15 May, Spring 2011 ACCESS, Atlantic Coastal and Estuarine Science Society, Antigonish, Nova Scotia, Coady International Institute, St. Francis Xavier University. See <http://www.cerf-access.ca>
- 26-29 June 2011: People in Places: Engaging Together in Integrated Resource Management, St Mary's University, Halifax NS email: [coastalcura@smu.ca](mailto:coastalcura@smu.ca)
- 27-30 June 2011, "64th National Conference of the Canadian Water Resources Association", St. John's, Newfoundland – [contactus@cwra2011nl.ca](mailto:contactus@cwra2011nl.ca)
- 24-29 July 2011, "10<sup>th</sup> International Conference on Mercury as a Global Pollutant", Halifax, Nova Scotia - <http://www.mercury2011.org>
- 25-27 October, 2011. **48<sup>th</sup> AGM, Atlantic Society of Fish and Wildlife Biologists**, Antigonish NS Contact Mark Pulsifer – [pulsifmd@gov.ns.ca](mailto:pulsifmd@gov.ns.ca), <http://www.chebucto.ns.ca/Environment/ASFWB>
- 6 - 9 November, 2011. Joint Annual Meeting of the Entomological Society of Canada and the Acadian Entomological Society, Westin Nova Scotian Hotel, Halifax, Nova Scotia. <http://www.acadianes.ca/2011jam/>
- 5 -7 January, 2012. Joint Meeting of Canadian Conference for Fisheries Research, Society of Canadian Limnologists, and Society of Wetland Scientists. Moncton, New Brunswick Contact : Mark Hanson – [Mark.Hanson@dfo-mpo.gc.ca](mailto:Mark.Hanson@dfo-mpo.gc.ca)

**ASFWB MEMBERSHIP APPLICATION / RENEWAL FORM**

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