THE HALIFAX FIELD NATURALIST

No. 141
December, 2010 to February, 2011

Return address: **HFN, c/o NS Museum of Natural History, 1747 Summer Street, Halifax, NS, B3H 3A6**

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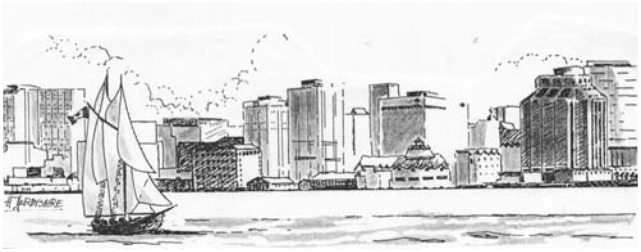

IN THIS ISSUE

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HFN NEWS AND ANNOUNCEMENTS

FROM THE EDITOR

*– **Stephanie Robertson***

Are we being affected by global warming? With moths and inchworms at our door in late November, and reports of some flowers found still blooming, it at least seems like it. What I've mainly noticed over my lifetime in N.S. is that the seasons seem to be moving further ahead; the depth of winter coming later and staying later, with a very late and sometimes seemingly non-existent spring.

This past year there was a very long hot spell with no rain during August; the pond and marshes in Point Pleasant Park went almost dry, never before seen. Then finally the rains came, and with them storm surges that pushed back the shorelines (the average temperature increase of the world's oceans is said to be causing more numerous and more intense storms). The tremendous waves flooded over and beyond the shore roads, leaving behind tidal debris, many large rocks, thousands of shells, and immense, wooden parts of wharves and weirs.

As for the special December 21st eclipse of the moon which coincided with the past winter solstice – our variable Atlantic weather prevented its viewing. For a short item about what was missed, see page 6.

KEEN NATURALISTS WANTED

We're about to begin filling vacancies in a few HFN committees, and we're looking for keen, pro-active naturalists who want to have fun while doing something they like – varied field trips around Nova Scotia, natural history presentations, and conservation support.

This year there are openings in the following areas:

Walks – ideas for and help with arranging walks, and perhaps leading some.

Talks – ideas for and help with arranging our monthly presentations.

Notes – keen notetalkers who'd like to write up field trip notes and observations; also our monthly presentations and 'Nature Notes' for publication (only once a year with ten volunteers).

Display – help with mounting and 'manning' our HFN display board at various nature-oriented functions throughout the year.

Website – providing photos, stories, news items, etc. – there's an opening for as Assistant Webmaster.

AV Facilitator – being the 'resident expert' for the Museum's audio-visual equipment (ensuring that presenters get their computers hooked up properly).

Vice President – we've not had a Vice President for the last year, but we really should have one to take up the slack if the President is away or otherwise not available.

ENVIRONMENT LECTURES

The timely and interesting series of Environment, Sustainability, and Society lectures continue to take place Thursday evenings in Dal's Ondaatje Hall, Marion McCain Arts and Social Sciences Building, 6135 University Ave. (unless otherwise noted). All lectures begin at 7:00 p.m. Two coming up are: **Feb. 3rd** – a talk, "Deconstructing Dinner", with John Steinman; and **Feb. 17th**, a film and discussion, "The Day After Tomorrow", (2004). For further lectures and more details, go to **http://sustainability.dal.ca/College_of_Sustainab.php**.

COYOTES IN NOVA SCOTIA

Contrary to popular rumour, coyotes were not 'introduced' to Nova Scotia. In the late 1800s, with land clearing and railroad right-of-ways, etc., the Prairie Coyote began a range expansion that reached our province in 1976.

Coyotes breed only once per year in February or March, and five to seven pups are born in April or May. Territory size varies, but 15-20 square miles (40-50 km²) is an average size. Pups stay with the adults into the fall or winter. Snowshoe Hare and White-tailed Deer make up the bulk of their diet, along with small birds and mammals, berries, carrion, and domestic sheep, which can become their favorite prey.

For more information, and N.S. Natural Resources's "When Coyotes Become a Nuisance", go to **http://www.gov.ns.ca/natr/wildlife/nuisance/coyotes.asp**.

FORESTRY IN NOVA SCOTIA

On December 2nd it was announced that the practice of clearcutting would be reduced by 50 percent over the next five years, and there would be a ban on the harvesting of whole trees, Christmas trees excepted. Commercial harvests will have to be registered, annual progress reports will be required, and contractors must learn how to identify which stands of trees may be eligible for clearcutting and which not. The province will also ensure no public money is used for herbicide spraying.

Steve Talbot of the Forest Products Association of Nova Scotia said he will continue to urge government to extend the clearcutting reduction past the recommended five years.

Environmentalist Chris Miller of the Canadian Parks and Wilderness Society said that more than half a million hectares of woodland had been clearcut since the 1990s, so the forests were breathing a little easier now.

NEW AND RETURNING MEMBERS

Iain Allen
Michael Basford
Carol Cunningham
Bobbie Wilson & Karla Henderson
Joel Maxwell
Heidi Verheul

SPECIAL REPORTS

BEDFORD WATERFRONT: STAGE III

– Patricia Leader

September, 2010, – Patricia Leader

At the time of this writing, November 5th – Guy Fawkes day, I knew it was going to be a strange day. CBC had announced it was to be "wild, wet, and windy". The broadcast then went on to describe how an elderly Caucasian man, emerging from the washroom of a flight to Vancouver, was now transformed into a young Asian man – shades of Michael Jackson! Outside, at 7:00 a.m., the temperature was heading towards the 20°C mark. No wonder I had previously counted some 25 different flowers still blooming in my garden. Later, travelling along Dunbrack St., I saw through the mist a giant, coiled, yellow python. Well, one is sure to make these connections when the weather is balmy – and barmy. If exotic birds can be blown onto our shores, why not other creatures?. However, upon closer inspection, it was seen to be merely a waiting coil of yellow gas-pipeline destined for any neighbourhood except mine.

Enough on all these climate changes; I want to write about something I can actually grapple with – the continuing story of the Bedford Waterfront begun in the December, 2006 Halifax Field Naturalist, Issue #124. Back then, my main interest had been in recording the variety of wildflowers on the Bedford waterfront in-fill area.

Last year the Bedford waterfront actually got a new walkway, an edging of turf and a hydro-seeded area. There were several groupings of perhaps 4-5 ft. coniferous, heavily mulched beds with other shrubs. The area spanned the north to south pier and was a continuation of a delightful walk extending along Shore Drive. Since then benches have been added, so in early summer it was looking quite respectable. I often saw Mallards, Cormorants, Osprey, and occasionally seals, Blue Herons, and eagles. Bob McDonald had even been alerted to a nearby nesting Spotted Sandpiper which I also saw the next day.

On each of my visits to the waterfront, I observed the vegetation, noting that everything had survived its first winter. The dogs were still fascinated by the deeply mulched beds and left calling cards. They also fastidiously watered the new lamp posts, a practice they had started while only the initial wiring had been put in. The grass was growing nicely, and on every succeeding visit I noted that the grass was still growing nicely and reaching heights unknown. Eventually somebody came and cut the edging of turf but the hydro-seeded portion went on growing. The short trees were having a desperate struggle to keep their heads clear. From the Bedford Highway this section of the waterfront was looking definitely unkempt. Walkers commented on the lack of mowing, and I toyed briefly with the idea of trundling my lawn mower to the site to help out the perhaps cash-strapped HRM.

The mulched beds were by now growing the most stalwart groups of dandelions and other tenacious weeds. But by this time I was more interested in the sea-edge of the walkway, because despite a further year of digging and movement of stones, there was again a beautiful collection of colourful wildflowers and even some new young birches. (Readers of past articles will remember that over the last few years despite constant infilling and the presence of heavy construction vehicles, wildflowers continued to bloom.) Compared to the uncut, hydro-seeded area, I preferred to look seaward and at the flowers which nature had left.

It was in late September, 2010 that all was revealed. A notice board appeared at the beginning of the walkway which said:

"*Welcome to a Naturalised Open Space Landscape. The intent of the Waterfront Development Corporation in creating this natural meadow is to ensure that native species of grasses and wildflowers would quickly establish a strong root structure. This will help prevent erosion and protect the shoreline, then continue to thrive and mature into an ecologically diverse landscape.*

This area seeded in the spring of 2010, will evolve over several seasons into an established habitat for birds, butterflies, and wildflowers. Maintenance of this open space includes mowing along the trail edge, weeding and caring for the shrub beds, trees, and grasslands.

This ecologically sustainable design follows the principles of the Halifax Regional Municipality's 'Naturally Green' Program. The design is consistent with the environmental objectives of the Bedford Community Vision Statement and conforms to an overall sustainable approach proposed for future Bedford Waterfront development."

Fall 2010, Theodore in pre-storm anchorage – Patricia Leader

While I like the novel idea of introducing such a habitat I wish there had been several changes.

First, the board explaining the apparent lack of 'care' could have been put up in the late spring.

Second, the mixture of wildflowers in the hydro-seeding could have had more colour and taken its cue from the past few years when the area produced its own wildflower collection, without cost, e.g., Yellow Tansy, Red Clover, and Queen Anne's Lace. The only blue in the collection came from the vigorously growing vetch, which of course had spread to the mulched beds.

Third, native bushes and trees such as virburnums, elderberries, dogwoods, and Mountain Ash would have provided both berries *and* colour.

Fourth, more attention should have been given to the immediate area around the trees and in keeping the shrubs and bushes clear of grasses. This of course requires not a machine, but hand weeding. As of mid-November, this still hadn't been done.

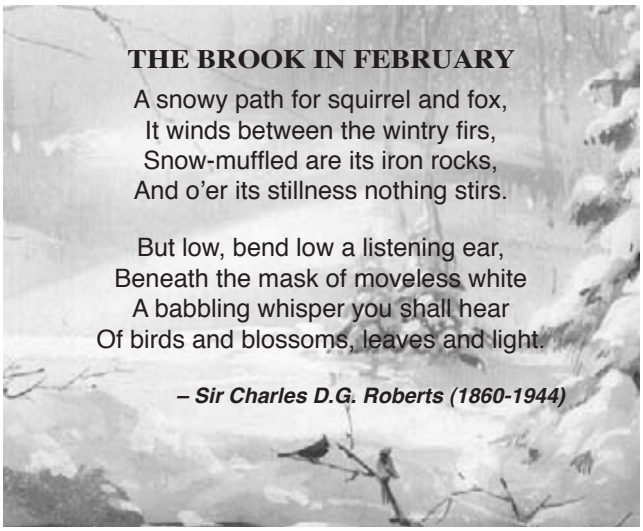
For solace I looked up HRM's 'Naturally Green' programme on-line. It listed the Harbour Solution; garbage and recycling; plus stormwater and waste management. "HRM continues to move towards a sustainable future", (the title of the 'Naturally Green' programme flyer) is also delivered to our doorstep during the year, along with the dates of garbage pick-up. Yes, you remember that flyer! I read further. Apparently, following a corporate sustainability analysis, twelve high-level recommendations were made. Of these, three priorities were identified: green building; green procurement; and green corporate culture. Yes folks, the Bedford waterfront had indeed been greened; well, at least this section.

At the end of October, I discovered another notice which had been installed at the entrance to the south pier. This outlined the waterfront committee's long history. Some of this was reflected in November's issue of the Bedford Magazine. Two pages were devoted to the "Mill Cove Comprehensive Planning Program", complete with sketches of waterfront buildings in excess of six or seven storeys. It also speaks of the in-filling of the Basin which details that, to date, 60% of the study area has been completed. This area constitutes Phase II, and it extends from the disused boatyard at the southern end of Shore Drive to the Sobeys and Crombie Lands and the area now occupied by the Esquire and Travelers motels.

I have attended various public meetings which presented three designs to the public. In all these meetings, the public asked that views of the sea be kept – to my mind a very natural request. But, the planners of course have to be able to please the developers, and we were told that their developments will "offset the costs of extensive public amenities such as parks, boardwalks, open green spaces, and infrastructure such as roads, bridges, water and the transit facilities required to support extensive public access". The article talks of the public's desire to access the waterfront, which in some way contradicts the 2010 design study providing "public view corridors" and "opening up the water views between proposed buildings..". Hey folks, a view corridor means a peep of the sea between high buildings, not the vista that we have at the present time.

I have been privileged to visit modernised waterfronts in many countries of the world and they have one thing in common – the water view is predominant and totally accessible. As an example, in October, I was in the old cities of Zadar and Split in Croatia. Both have successfully combined ancient sites, commercial areas, and working waterfronts with delightful areas of gardens and sea walks. Readers can probably think of many more coastal cities, in Canada and abroad, where view planes and corridors were given short change.

Less I digress any more, let's indeed 'green our cities' and join those of other cultures who truly value a green corporate culture. And meanwhile, let's look forward to next summer when we can meet in the grasses of the Bedford version of Botswana's Ocavango Delta. There we can hope that no yellow pythons, nor crocs, nor rhinos, will hinder our enjoyment of the butterflies and bees.



THE DEC. 21ST LUNAR ECLIPSE

– Stephanie Robertson

In 2010, the December total lunar eclipse was supposed to have been particularly beautiful; it was aligned with the stars of the Milky Way, which gave an unusually brilliant backdrop to the event. And, according to NASA, it was the first full lunar eclipse to occur on the winter solstice in more than 300 years; the last time it did so was in 1638!

This coincidence won't happen again until 2094.

On December 21st, clear skies in Winnipeg, Calgary, and Ottawa meant residents there had a good view, skies in Ontario were patchy, while snow and rain on both the west and our east coast denied people this beautiful and rare sight.

Because of the coincidence with the winter solstice, the moon appeared very high to North Americans, who, if they had clear skies, would have been able to view it all from start to finish (the total phase lasted about three and a half hours).

At full eclipse, (totality began at 3:41 and ended at 4:53 AST), the moon would have been a beautiful shade of orange to brick-red due to atmospheric refraction, because despite the fact that direct sunlight would have been blocked by the earth's shadow, a thin sliver of it, filtered and bent by earth's atmosphere, would have given the moon a reddish glow.

Observers along South America's east coast missed the late stages of the eclipse because they occured after moonset. Likewise, much of Europe and Africa experienced moonset while the eclipse was in progress. Only northern Scandinavians caught the entire event from Europe. None of the eclipse was visible from south and east Africa, the Middle East, or South Asia.

HFN TALKS

HERPETOFAUNA & AMPHIBIANS

7 OCT.

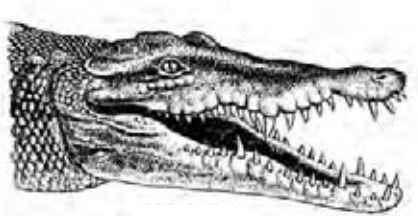
— Jenny & James Medill

St. Mary's University associate professor Dr. Ron Russell presented some of his research into the effects of urbanisation on reptiles and amphibians at sites in Ontario and Nova Scotia. His studies focus on direct mortality from vehicles, effects of noise pollution on reproduction, habitat fragmentation, and the effects of de-icing chemicals on amphibian distribution and community structure.

There is both a biodiversity crisis and a threat of mass extinction to reptiles and amphibians due to one simple fact — too many people. Why does this impact reptiles and amphibians in particular? Reptiles and amphibians have complex life cycles and are tied to aquatic and terrestrial habitats. This site fidelity makes them good indicators of environmental change; also, they are located at the base of the food chain. Thirty-two percent of all amphibians are threatened, and the causes of decline are attributed to habitat loss, pollution, global climate change, UVB radiation, epidemics, introduction of exotic species, harvesting, and commercial exploitation.

Nova Scotia is the eastern periphery for most terrestrial North American species, and Dr. Russell believes that it may be their last outpost when North American species disappear. (Some others believe that N.S. species would disappear first.)

Once a species is listed as threatened it is usually very rare to have it de-listed. An exception – success has occurred with American alligators (once hunted almost to extinction for commercial exploitation), whose skins are used for consumer products such as boots, belts, and bags. This species is now 'grown' on farms. The same thing has happened with the crocodiles in Australia. It is now a protected species there, but their existence is entirely dependant on the worth of their skins.



Habitat loss can happen almost overnight when an ecosystem can be quickly paved over and turned into a parking lot, but it takes decades to reverse the process. An estimated 150,000 to 210,000 km^2 of the earth's tropical rain forest is lost every year. When B.C.'s forests were clear cut, 70% of its species were lost.

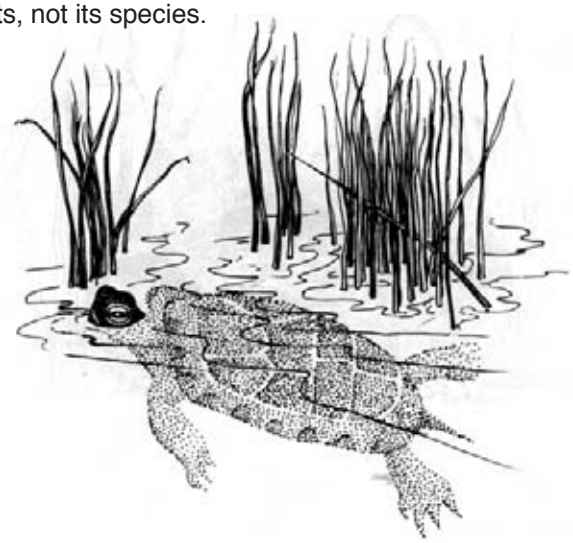
Pollution caused the population collapses in Point Pelée National Park. There was widespread spraying of DDT from 1947-68, and out of 13 species, eight disappeared after the use of DDT. Bullfrogs went from a healthy population of 88 to 0 in 1990. Why? DDT was the most likely culprit as it is a neurotoxin. Ron's work on Green Frogs and snakes at Point Pelée studied the effects of DDT and its conversion to DDE by different species.

Nova Scotia's problems mostly relate to habitat conversion. The greatest number of species is found in semi-permanent ponds. Permanent ponds have too many predatory fish such as Small-mouth Bass and Pickerel (both introduced species to N.S.)

Roads affect our reptile and amphibian populations with direct mortality, deleterious effects of road chemicals, and the addition of more and more roads to the province. With Spotted Salamanders, mass migration leads to 3% per year death rate. Traffic disturbance seem to affect Wood Frogs more than Green Frogs or Spring Peepers.

De-icing chemicals degrade wetlands, soils, and groundwater, and salt run-off spreads far beyond road edges into surrounding habitat for at least 60 metres and sometimes much more. Spotted Salamanders and Wood Frogs seem to be especially sensitive to chloride, whereas the American Toad seems to be much more tolerant. High concentrations of salt will effect the development of amphibians differently. Also, on top of all the human-caused stresses, viral and fungal infections take their toll on amphibian populations.

In conclusion Ron noted the critical need to maintain small wetlands, as well as a predator-free habitat. He thinks Nova Scotia primarily needs to manage its habitats, not its species.



BIKINGTHE MAGDALENS 2 DEC.

– Allan Robertson

John and Anita Carpenter presented a wonderful slide show to tell us about a bicycle tour of the Iles de la Madeleine that they took last August. Both John and Anita are from Colorado; they moved to Nova Scotia in 2007. John is a retired software engineer; Anita is a rocket scientist who continues to consult for the industry. Both appreciate nature and were very active naturalists in Colorado, serving as docents (mentors/teachers) on the state's Mount Evans. They enjoy hiking, kayaking, and biking, and have fond memories of their biking trip to Iles de la Madeleine.

The Magdalen Islands (the English name for them) are located about 100 km north of Prince Edward Island in the southern part of the Gulf of Saint Lawrence. They were originally owned by Newfoundland, but were annexed to form part of Québec in 1744. Until the late 1800s they were privately owned by Québec residents.

John and Anita belong to the Nova Scotia Ramblers Bicycle Club, a group of roughly 175 bikers. Typically, the club organises two to three rides per week. A usual ride might be 30 to 50 km long, frequently ending at places which provide very good desserts!

Visiting the Magdalen Islands usually first entails a trip to Prince Edward Island. So, this tour began with a bike ride to Caribou (near Pictou), where everybody embarked on the ferry to Wood Island, P.E.I. Upon arrival they toured the Harvey Moore wildlife management area south of Montague. They then set out for Souris ferry terminal, where they overnighted nearby at Saint Peter's Bay before beginning their five-day bicycle tour with another very pleasant ferry ride to Cap-Aux-Meules, the largest of the six Magdalen Islands.

The Magdalens were first used by the Mi'Kmaqs to fish and to hunt for seal and sea cows (walrus). Jacques Cartier provided the first written report in June, 1534. He wrote, "These islands have sandbanks and good passages around them, six or seven fathoms. This island is the best land we have seen, better even than Terres Neuve (Newfoundland). We found a land with great trees, fine meadows, fields of wild wheat and flowering peas, as many species as I ever saw in Brittany, and it seemed as if all had been planted by man's hand".

In 1663, the islands were reportedly named after Madeleine Fontaine, wife of the islands' concessionaire. Under this French regime, they were passed from hand to hand without colonisation or exploitation.

Their current population is a bit over 13,000, including five percent Anglophones, largely of Scottish descent.

The six islands that make up the archipelago are the visible summits of a submarine ridge emerging from the sea. Sand dunes link the summits, but each individual island is a rocky, mountainous outcrop characterised by high, rounded, bare-looking hills that are known locally as buttes. Most of the houses and farms are built on the gently sloping areas which connect the buttes with the low valleys and the beaches.

When the Carpenters and their fellow cyclists arrived, they had a choice of staying in a campground/ hostel or a hotel. The campground/hostel facilities were quite crowded, so they decided upon the relatively civilised option of the hotel accommodation. Their cycling tour on the first day was a 45 km round trip where they stopped at a beautiful old church built in 1876 – Church de la St. Pierre de la Vernier. It is the second largest wooden church in North America, and each time it's rebuilt (this appears to happen from time to time) it's always with suitably blessed shipwreck wood. This first tour was on a trail with the beach on one side and a large lagoon created by sea dunes on the other. In typical Rambler Club fashion, one of the major stops was at a brew pub called the Microbrewery Abri de la Tempete. They also visited the Café de la Brave, a place which serves fine desserts.

The next day a 25 km route was chosen, going a short distance north to where the island's Airport is situated. The tour included a visit to one of the lagoons where they observed many cormorants, terns, and seals, and they were provided with a delicious offering by the local aquaculture industry, mainly scallops and lobsters! On the far eastern shore they could view Cap Alright, a volcanic peak some 300 m high. The tour's destination was a smokehouse/ cheese facility. (Can you see a bit of a pattern developing here?)

Geologically, the Magdalens were formed from a salt layer some five km thick, with sandstone and igneous intrusions. The salt has formed a dome which lifted and helped create the islands, and there is, of course, an active salt mine on one of them.

The red sandstone cliffs provided spectacular views of columns, swags, towers, and sinkholes. It is largely sedimentary rock – mostly quartz covered with a thin layer of iron oxide – and it is this which gives the stone its reddish color. The rock suffers greatly from erosion by wind and waves, particularly in the fall when the winds are strong and the tides high; spring thaw also breaks down the stone on the cliffs.

Most of the sand on the beaches begins as sandstone eroded from the red sandstone cliffs. Once in the salt water, it loses its thin film of iron oxide and is carried around the islands by alongshore currents before being deposited on spits. Once dry, the sand appears white, and it accumulates on the beaches and helps create the dunes. The sand is in constant motion, and the width of any beach in the archipelago is directly related to the volume of material available and the strength of the waves and currents which carry it. The beaches are easy to reach and they offer good swimming and the opportunity for a good tan. Building sand castles is popular.

Storm waves and currents constantly carry new material onto the beaches. The sand, rocks, seaweed, and marine animals thrown onto the shore enrich the soil and make it possible for pioneer plants like sea rocket and sea chickweed to establish themselves on the backshore. Once established, they help block the wind and promote formation of what are effectively mobile dunes. Decomposition of the pioneer plants helps other plants such as beach grass to survive, and beach grass is critical to the ecological balance of the archipelago; its underground roots anchor the sand on the dunes. Once the sand is firmly settled among the roots of the beach grass, the dunes are colonised by a wider range of plants such as Beach Pea, Balsam Fir, Crowberry, and Bayberry. These latter complete a dune's stabilisation, and turn it from a mobile to a fixed one.

Day Three saw many of the bikers off on a long, 110 km roundtrip to the north end of the islands. Only the venturesome took this tour, with others opting for shorter, self guided tours closer to home. In the evening there was a kayaking tour around Gros Cap, an area with spectacular sandstone arches. They noted that evening kayaking in this area is a wonderful way to appreciate island sunsets.

Day Four presented a 30 km roundtrip on a walking/bike path. The group had a wonderful barbecue lunch at a cottage in Fatima along the way, and afterwards a trip to the beach. They inspected a lighthouse at Cap-du-Phare, a 'sliding-roof' haystack, and a number of intriguing island-style wood piles, which were shaped like tall tepees. After a final delicious dinner at the lobster factory, they headed home on the ferry. A special treat – as they headed for P.E.I and home, they passed the tall ship Picton Castle out of Lunenburg.

FIELD TRIPS

THE BLUFF TRAIL HIKE

– David Patriquin

Date: Saturday, August 21st
Place: The Bluff Wilderness Hiking Trail
Weather: Sunny, slight breeze, 23˚C
Interpreters: Richmond Campbell, David Patriquin
Participants: 18

Completed in 2005, The Bluff Wilderness Hiking Trail (its full title), was developed by the Wooden's River Watershed Environmental Organization (WRWEO) as a way to introduce local residents and visitors to a significant wilderness area close to Halifax, thereby promoting conservation of such areas. As expressed in one of the WRWEO documents, it was conceived because "once people have experienced this wildness, most will understand its importance to their lives and the lives of their children and will not let it be destroyed".

The 32 km trail extends deep into an area of approximately 10,000 ha of crown land – the Five Bridge Lakes Wilderness Area (FBLWA) which lies only 20 km west of Halifax as the crow flies. The FBLWA is a varied landscape of barrens, forest, wetlands, and portions of four watersheds, including 26 lakes. The historically important coach road, the Old St. Margaret's Bay Road, runs through the middle of the area, roughly dividing it between 'mostly barrens' to the north (where The Bluff Trail is located), and 'mostly forest' to the south. However, both areas are mosaics of different habitats and vegetation, as was well illustrated.

The hike was held as a 2010 Nova Scotia Park Event. These variously sponsored events take place in provincial parks, wilderness areas, nature reserves, and on Crown Land, and are listed in the annual N.S. Park Events Guide. The participants included three to four members from each of the organisations co-sponsoring the hike (WRWEO, HFN, and the N.S. Wild Flora Society), a visiting field naturalist from Australia, an ecologically-oriented forester, some newcomers to the trail, and some experienced Bluff Trail hikers. It was sunny and warm, making up for 2009 when torrential rains on successive weekends washed out both the scheduled date and the rain date. We stopped at a half dozen sites to talk about the trail and its natural history, eat lunch, or just enjoy the view. Richmond talked about the history and management of The Bluff Trail, and I talked about its natural history, with input from several of the participants.

The trailhead is located close to the north end of Cranberry Lake, which can be seen to the right (south) of Highway 103, just after you pass by Exit 4 heading towards Halifax. This trail is narrow, designed only for walking, and is brush-cut in the fall

only as needed. Problematical wet areas are addressed using 'stone-tread' wherever possible, rather than wooden structures. The stone-tread technique was introduced to Nova Scotia only recently by wilderness enthusiast Garnet McLaughlin, and has quickly become the method of choice. The treated areas are excavated to solid base subsoil or rock and then filled with rocks, pebbles, and sandy soil obtained in the vicinity, making sure not to impede water movement or drainage. Stone-tread is more durable and has a more natural appearance than wooden structures.

As we walked south from the trailhead, sounds of moving vehicles became weaker, disappearing about two hours in. Our hike would take us around the Pot Lake Loop, the first of four successive loops that make up The Bluff Trail, and the most readily accessible and most visited. It provides a wonderful introduction to the habitats and vegetation of the larger area, going through, or by, wetlands, barrens, oak woodlands, and some mixed old growth forest, as well as offering some spectacular landscape views. We stopped at four sites to examine them in some detail and to discuss the area's natural history.

The first stop was on a boardwalk that traverses a wetland beside Cranberry Lake. This wetland supports some beautiful Tamaracks and other vegetation that is typical of relatively nutrient-poor, wet, acidic habitats, e.g., Sphagnum Moss, Labrador Tea, Canada and False Hollies, Leatherleaf, and Rhodora.

In the region of the 'whaleback' (my name for a linear set of high granite outcrops that overlook Cranberry Lake) we stopped on a small one to look at the barrens vegetation. Four species were prominent: the low, spreading Broom Crowberry with needle-like leaves, often mixed with Reindeer Lichen; the diminutive Lowbush Blueberry; and the Black Huckleberry, about 40 cm in height. There were some mats of the moss *Hedwigia Ciliata* on rock that was otherwise bare except for encrusting lichens. At other barrens sites, Three-toothed Cinquefoil and Teaberry were also common, the former on the more exposed sites.

Broom Crowberry is abundant at all barrens sites in the Five Bridge Lakes Wilderness Area. These populations are significant because it is an Atlantic Coastal Plain species that is vulnerable or imperiled throughout its range except in Nova Scotia. However, even here, we are losing its habitat (coastal barrens and inland sand barrens) to development and intensive recreational use.

The mosaic of habitats and vegetative characteristic landscapes on granitic bedrock was well illustrated at the whaleback area. We were overlooking Cranberry Lake, a roughly linear shape on a NNW-SSE axis carved out by advancing glaciers. (Drumlins in the area are similarly oriented.) This lake is bordered by low wetlands in some areas and by solid granite outcrops in others. Within 20 metres of the barrens site where we stood there were large White Pine, Black Spruce, Red Maple, Large-toothed Aspen, Grey or White Birch, and American Mountain Ash.

The explanation for such variability lies in the granite bedrock and recent glacial action which gouged and/or planed it, depositing till and erratics on a variable scale. Granite is very hard and impermeable, with few fissures. On sloping and elevated areas this results in the shallow rooting of vegetation, quick surface drainage and tendency to drought, with water tending to be retained in depressions. Thus one may see drought-tolerant plant species such as Broom Crowberry and Black Huckleberry side by side with pockets of boggy vegetation such as Sphagnum moss, Pitcher Plant, and Labrador Tea. Larger shrubs and trees occur where there is some thickness of glacial till, and forests are found where there is some expanse of the glacial till deposits. The forest types (deciduous, coniferous, mixed) and dominant species depend on the local moisture regime and disturbance history (mainly fire). Black Spruce/Balsam Fir coniferous forest, Red Oak-dominated deciduous forest, Red Maple-dominated deciduous forest, Red Spruce/Yellow Birch mixed forest, and White Pine/Red Maple/Birch forests or stands are all found on the Bluff Trail.

The mosaic of habitats and vegetation as well as the lack of roads on The Bluff Trail and the larger FBLWA are features that make it near ideal habitat for a group of 25-30 endangered mainland moose which reside on the Chebucto Peninsula. Moose may be spooked by hikers, perceiving them as potential predators. WRWEO has discussed the possibility of seasonal restrictions on access to the more remote loops if scientific study suggests that it would help to protect them. Amongst the other wildlife on The Bluff Trail is the Eastern Coyote. Because of concerns about Coyote encounters, hikers are advised to carry a stick and to act threateningly if approached by them. Black Bears also reside in the area, but they are pretty elusive. WRWEO promotes Leave-No-Trace practices, which help to keep unfriendly encounters to a minimum.

When we reached the junction for the Pot Lake loop, we stopped briefly on the shore of Cranberry Lake to discuss its brown water. It is associated with humic acids leached from wetlands and damp forests, and is dependent on the continued integrity of the landscape at large. Amongst its other properties, the brown water protects Speckled Brook Trout from aluminum toxicity at low pH. This is particularly important because the granitic bedrock makes the area highly susceptible to increased acidification from acid rain.

We then headed upwards to traverse Pot Lake loop clockwise, going first through Black Spruce and Fir forest in the damp area by the lake, then mixed forest, then coming out onto high barrens with occasional White Pines and Birch and expanses of oak-dominated deciduous forest on the dryish slope toward the lake.

We stopped to examine and discuss the oak forest, which is perhaps better described as a woodland, as it is quasi-open with a well-developed shrub layer or layers. Common trees include Red Oak, Red Maple, White Birch, and Amelanchier, with some firs in the understory and some Big-toothed Aspen towards the edges by the barrens. There were no large trees; evidently the area had been completely burned over by fire, most likely in 1957 when a large fire occurred there. Many of the Red Oak and Red Maple boles (trunks) occur in clusters of three to seven or more, which would have originated as sprouts from the root-crowns of trees whose tops were destroyed by fire. The largest Red Oak boles were about 6-7 inches dbh (diameter at breast height) or 9 inches where they occurred singly. Wych Hazel is a common tall understory shrub, while Black Huckleberry, Lambkill, and Bracken Fern form a low shrub layer. Witherod (Wild Raisin) grows to eye level or higher in the more open areas. Leaf litter covers the floor except where there are rock outcrops or fallen tree trunks which are covered with mosses and lichens. Common forest floor herbs include Wild Sasparilla, Bluebead Lilly, Bunchberry, Starflower, and Pink Lady's Slipper.

We continued south on the trail, going through more oak woodlands and some low bushlands with abundant Rhodora, False Holly, and Witherod. As we approached the area above Pot Lake, we moved into mixed forest again and stopped to have lunch below some well-buttressed, towering Red Spruce. Several trees I measured later were 17, 20, and 27 inches dbh and were likely well over 100 years of age. Ralph Johnson, in Forests of Nova Scotia (1986) writes, "Red Spruce is a medium-size tree at maturity, reaching 16 to 30 inches dbh and 70 to 90 feet in Nova Scotia at from 150 to 280 years of age." Other trees at this site included Yellow Birch, White Birch, Red Maple, American Mountain Ash, and Balsam Fir. Not far away were the occasional large Red Oak and White Pine, with a few large snags and fallen dead

trees. The forest floor, rocks, and older fallen dead trees were covered by a felt-like mat of mosses and liverworts, with the leafy, moisture-loving liverwort *Bazzania Trilobata* predominant amongst them. Evidently this site escaped the fire of 1957, and probably other earlier fires, because of its moisture. It clearly has features of Old Growth forest today.

After lunch, we moved fairly quickly to complete the trail, stopping briefly at a high point on the Pot Lake Loop in order to enjoy a spectacular 360˚ panoramic view. On the trail back we passed through another grove of towering Red Spruce, this one on the west side of Pot Lake. We were especially impressed by one tall specimen that had grown right on top of an erratic (a large boulder deposited by a retreating glacier). Its large, buttressed roots enclosed the big rock, looking much like the arms of a giant octopus.

We were back at the trailhead five hours after we started; some who sped ahead made it in four hours. Faster hikers do it comfortably in two hours, and speed hikers in an hour or less; that's clearly not enough time for naturalists!

A young woman who had recently immigrated to Canada expressed appreciation for what she had just experienced. She said that in Korea, she often went to the countryside, but never had she been in an area so wild, it was truly wonderful for her.

We are hopeful that many more can have this experience. In 2009, the FBLWA was declared a Candidate Wilderness Area and formal protection is expected in 2011. However, maintenance of The Bluff Wilderness Hiking Trail and related natural history activities, such as the hike we enjoyed on August 21st, will still be the purview of WRWEO and other volunteer organisations such as HFN and the N.S. Wild Flora Society.

For more about The Bluff Wilderness Hiking Trail and the Five Bridge Lakes Wilderness Area, go to **wrweo.ca**.

For information related to the anticipated designation of the FBLWA as a Protected Area under the provinces Wilderness Protection Act, go to this Nova Scotia Environment site – **www.gov.ns.ca/nse/protectedareas/wa_fivebridgelakes.asp**.

BLUFF TRAIL SPECIES

Reindeer Lichen	*Cladonia rangiferina*
Three-toothed Liverwort	*Bazzania trilobata*
Sphagnum	*Sphagnum* spp.
Broom Moss	*Dicranium scoparium*
Ciliate Hedwigia Moss	*Hedwigia ciliata*
Stair-step Moss	*Hylocomium splendens*
Hypnum Moss	*Hypnum imponens*
Red-stem Moss	*Pleurozium schreberi*
Cinnamon Fern	*Osmunda cinnamomea*
Bracken Fern	*Pteridium aquilinum*
Balsam Fir	*Abies balsamea*
Red Spruce	*Picea rubens*
Black Spruce	*Picea mariana*
Tamarack	*Larix laricina*
White Pine	*Pinus strobus*
Wych Hazel	*Hamamelis virginiana*
Red Oak	*Quercus rubra*
Yellow Birch	*Betula alleghaniensis*
Wire Birch	*B. populifolia*
White Birch	*B. papyrifera*
Pitcher Plant	*Sarracenia purpurea*
Largetooth Aspen	*Populus grandidentata*
Broom Crowberry	*Corema conradii*
Labrador Tea	*Ledum groenlandicum*
Teaberry	*Gaultheria procumbens*
Creeping Snowberry	*Gaultheria hispidula*
Rhodora	*Rhododendron canadense*
Lambkill	*Kalmia angustifolia*
Leatherleaf	*Chamaedaphne calyculata*
Lowbush Blueberry	*Vaccinium angustifolium*
Huckleberry	*Gaylussacia baccata*
Loosestrife	*Lysimachia terrestris*
Starflower	*Trientalis borealis*
Serviceberry	*Amelanchier* sp.
Chokeberry	*Aronia* sp.
Three-toothed Cinquefoil	*Potentilla tridentata*
Mountain-ash	*Sorbus americana*
Bunchberry	*Cornus canadensis*
Canada Holly	*Ilex verticillata*
False Holly	*Nemopanthus mucronata*
Red Maple	*Acer rubrum*
Wild Sarsaparilla	*Aralia nudicaulis*
Partridge-berry	*Mitchella repens*
Witherod	*Viburnum nudum*
Wood Aster	*Aster acuminatus*
Cottongrass	*Eriophorum* sp.
Clintonia-lily	*Clintonia borealis*
Painted Trillium	*Trillium undulatum*
Wild Lily-of-the-valley	*Maianthemum canadense*
Pink Lady's-slipper	*Cypripedium acaule*

HERRING COVE AREA HIKE

According to leader Burkhard Plache, this hike through the wild and rugged trails of the Purcell's Cove/Herring Cove wilderness areas was completely and utterly rained out, on both the intended day, Saturday, November 6th, and its rain date, Sunday, November 7th! Perhaps the weather will be kinder next time.

NATURE NOTES

OCTOBER ***– Joan Czapalay***

Dr. David LaVigne spoke briefly about the proposed **cull of 220,000 Grey Seals** on Sable Island, emphasising that there is no scientific evidence to date to support a cull or to show that it would improve cod stocks. A scientific assessment should be required before any action is taken. Joan Czapalay mentioned the beauty of the barren lands and the salt marshes as the colours are changing to shades of red and orange.

Shirley MacIntyre reported for Pat Leader a **female Ruby-throated Hummingbird** seen at Farmer Clem's on Hammond's Plains Road on October 4th. Lesley Butters also had a **female hummingbird** at Walnut Street on Oct. 2nd., and had seen a **brown Mink** eating **crabs** at the Waegwoltic Club in late September.

Karen McKendry reported **a wave of bird migration** on Friday, October 1st, at her home on the N.W. Arm; there were high numbers of **Grackles** and a **single Pine Warbler**. Stephanie Roberson rescued a stunned **Yellow-rumped Warbler** in the summer. She put it to rest in a box, checking it after an hour. When it seemed recovered, Stephanie had the joy of taking it to a bush and releasing it back into the wild. A magic moment to share.

Jim Wolford mentioned the exceptionally high tides and the BNS trip to observe the tidal bore with Sherman Williams. Joan Czapalay noted the Mushroom Foray organised by the NS Mycology Society last weekend at White Point. Many excellent and interesting **fungi** were found. For pictures from 2008 and 2009, go to **http://www.nsmushrooms.org/**. A number of **butterflies** were reported; one was a **Monarch**. John Klynko reminded us of the request for pictures for the Butterfly Atlas. Email **jklymko@mta.ca**.

NOVEMBER ***– Lillian Risley***

Archie Thibault saw a **Coyote** on his front lawn in Fleming Heights. Kate Graves saw a **Pheasant**, which stayed for a while near Chebucto Road and Robert Hunt Drive.

During the last week of October, in Indian Harbour, Judy Keating had a flock of **40 – 50 Robins** on her lawn for about 15 minutes. Laura Fenton's cat brought home (Poplar St.) a **Flying Squirrel**. They were able to take the squirrel back outside and it seemed all right.

Pat Chalmers had seen **strawberry blossoms** in **October**—but no berries. Jeremy Gushe had seen a **Lynx**.

Michael Downing had several sightings to report. On October 9th he saw a **Snow Goose** in the marsh behind the high school in Sackville, and also a **Northern Pintail**. In Toronto this summer he heard **woodpeckers** drumming in the parkways. They seemed quite tame. In Gaburus, near the lighthouse, he saw a **Fox**. He moved his car to allow the sun on it; it seemed unconcerned and remained near him for about five minutes.

Stephanie Robertson told us that a **Barred Owl** had been frequenting Point Pleasant Park. In the early morning and at dusk one could go to the sounds of protesting crows and the owl would be found in a nearby tree. She also reported a lingering **mosquito** in her house! Leslie Jane Butters watched an **Otter** in the Northwest Arm as it caught three **catfish**. She also had been seeing little **Brown Bats** in late October.

Regine Maass had seen **Bunch Berries** in bloom near Earltown. She also had **Robins** and a **Cardinal** coming to her magnolia for berries. Another attendee reported seeing **three Cardinals (2 males and 1 female)** in the vicinity of Stonehaven in Armdale.

DECEMBER ***– Allan Robertson***

Stephanie Robertson reported numerous **fruit flies** and **moths** in and around her house during November. Regine Maas noticed a **Bald Eagle** over the Purcell's Cove Road when driving near the Armdale Rotary. Leslie Jane butters reported **many winter moths** in the area of the Waegwoltic Club.

Someone reported seeing **Red-bellied Woodpeckers**, although he feels they are misnamed because they are really red-headed rather than red-bellied. Shirley MacIntyre related how she cut down **a 16-year old Bayberry bush** in her backyard last year which had never produced berries, but there is now a new one near where the old one used to be and it's loaded with berries. What is going on?

Judy Keating reported a **buck** in her backyard near Fish Cove at Indian Point. She also saw **Mergansers** in the cove. Elliott Hayes described **two fawns** that visited his front yard one morning. They appeared to be in no rush to go anywhere. He stood quite close to them for five minutes or more before they meandered off, and they seemed to be very healthy.

Bob McDonald, on a trip with other bird watchers, reported seeing a **Tundra Swan** on First Lake. They normally breed further north and west of here, and it may have been 'storm-stayed'. Bob said storms frequently fouled up their internal directional system.

Pat chambers reported seeing **New York Astors** and yellow **Dandelions** near the Frog Pond on the 30th of November. Also, there was ice on the pond which was slowly melting in the morning sun. Jean Hartlen reported seeing a **Yellow-breasted Warbler**.

Stan Van Dyke said he missed a usually-resident flock of **Canada Geese** near his house. They stayed all last winter behind Martins' Beach, but they are absent this year. Janet Dalton reported that there was so much water in Macintosh Run after the recent rains that it was almost like springtime.

ALMANAC

This almanac is for the dates of events which are not found in our HFN programme: for field trips or lectures which members might like to attend, or natural happenings to watch for, such as eclipses, comets, average migration dates, expected blooming seasons, etc. Please suggest other suitable items.

"There was a small boy of Quebec
Who was buried in snow to the neck:
When they said 'Are you friz?'
He replied 'Yes, I is –
But we don't call this cold in Quebec!"

– Rudyard Kipling

NATURAL EVENTS

5-14 Dec. Earliest sunset of the year at 16:34 AST.
7 Dec. Daily average temperature goes below 0˚C.
13/14 Dec. Geminid Meteor Shower.
14 Dec. -5 Jan. Audubon Christmas Bird Count Period.
21 Dec. Full Moon rises at 17:05 AST.
21 Dec. Lunar Eclipse begins at 02:33 AST; totality begins at 3:41 and ends at 4:53 AST.
21 Dec. Winter Solstice at 19:38 AST: Winter begins in the Northern Hemisphere. But though the temperature drops, the days begin to lengthen.
27 Dec. - 9 Jan. Latest sunrise of the year at 7:51 AST.
7 Jan. Daily maximum temperature at Shearwater goes below 0˚C.
13-24 Jan. 'January Thaw' (the temperature stops falling, and the average actually rises 0.2˚C.
29/30 Jan - 5/6 Feb. "Eagle Days" in Sheffield Mills, King's County – two weekends of organised events.
19 Jan. Full Moon rises at 17:09 AST.
6-8 Feb. Coldest days of winter (average daily minimum -9.4˚C).
9 Feb. Average temperatures start increasing.
18 Feb. Full Moon rises at 18:37 AST.
19 Feb. Seventh anniversary of 'White Juan', the record-breaking snowfall.
28 Feb. Daily maximum temperature rises above 0˚C.
13 Mar. Daylight Saving Time begins at 2:00 AST: turn clocks ahead one hour.
19 Mar. Full Moon rises at 18:46 ADT.
20 Mar. Vernal Equinox at 19:21 ADT: Spring begins in the Northern hemisphere.

– Sources: Atmospheric Environment Service, Climate Normals 1951-80 Halifax (Shearwater A) N.S.; Blomidon Naturalists Society's 2010 Calendar; United States Naval Observatory Data Services.

SUNRISE AND SUNSET ON WINTER AND EARLY SPRING SATURDAYS FOR HALIFAX: 44 39 N, 063 36 W

4	**Dec.**	7:34	16:35	**1**	**Jan.**	7:51	16:45
11	**Dec.**	7:41	16:34	**8**	**Jan.**	7:51	16:52
18	**Dec.**	7:47	16:36	**15**	**Jan.**	7:48	17:00
25	**Dec.**	7:50	16:39	**22**	**Jan.**	7:43	17:09
				29	**Jan.**	7:37	17:19
5	**Feb.**	7:29	17:28	**5**	**Mar.**	6:45	18:07
12	**Feb.**	7:19	16:38	**12**	**Mar.**	6:33	18:16
19	**Feb.**	7:09	16:48	**19**	**Mar.**	7:20	19:25
26	**Feb.**	6:58	16:58	**26**	**Mar.**	7:07	19:34

ORGANISATIONAL EVENTS

Blomidon Naturalists Society: Indoor meetings are on the 3rd Monday of the month, in the auditorium of The K.C. Irving Environmental Science Centre, University Avenue, Wolfville, 7:30 p.m. Field trips usually depart from the Wolfville Waterfront, Front Street, Wolfville. **http://www.blomidonnaturalists.ca/**.

17 Jan. "Bad Blows and Big Floods: Severe Weather and Community Response in the Annapolis Valley" with speaker Prof. David Duke, Acadia.
29-30 Jan. "Eagle Watch Weekend, I" at Sheffield Mills. The Community Hall will host its annual pancake and sausage breakfast with naturalist displays, and information about where to see the Bald Eagles.
5 Feb. "Winter on Snowshoes" with leader Soren Bondrup-Nielsen, 582-3971.
5-6 Feb. "Eagle Watch Weekend, II" at Sheffield Mills. The Community Hall will host the same activities.
21 Feb. "Annual Show and Tell Night" Slides, pictures, specimens, collections, fossils, videos, computer stuff, favourite books – anything that might interest fellow naturalists.
21 Mar. "Conservation in the Amazon and a Visit to Sable Island and the Gully Marine Reserve – Two Conservation Tours in 2011" by Catalina Gomez and Jennifer Modigliani.

Burke-Gaffney Observatory: Public shows at the Burke-Gaffney Observatory at Saint Mary's University are held on the 1st and 3rd Saturday of each month, except from June through September when they are held every Saturday. Tours begin at 7:00 p.m. between November 1st and March 30th, and at either 9:00 p.m. or 10:00 p.m. (depending on when it gets dark) between April 1st and October 31st. For more information, 496-8257; or go to **http://www.smu.ca/academic/science/ap/**.

Maritime Museum of the Atlantic: For more information, 424-7491(7490); or go to **http://museum.gov.ns.ca/mma/index.html**.

1 Feb. "Experiencing Sable Island" with speaker Bernadette Morris, photographer.

Nova Scotia Bird Society: Indoor meetings take place on the 4th Thursday of the month, September to May, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information phone Chris Pepper, 829-3478; **cpepper@ymail.com**, or email the trip leader, or, go to **http://nsbs.chebucto.org/**.

8 Jan. "New Birders' Walk in Point Pleasant Park" with leader Bonnie Carmichael; **bonniecarmichael@hotmail.com**.

9 Jan. "Sewer Stroll I – Halifax/Dartmouth Area", with leaders Bob McDonald, 443-5051; **bobathome@hfx.eastlink.ca,** and Suzanne Borkowski, 445-2922; **suzanneborkowski@yahoo.ca**.

16 Jan. "Beginning Birders Trip - Lunenburg", with leader James Hirtle, 764-2182; **jrhbirder@hotmail.com**.

27 Jan. "Members' Photo Night".

12 Feb. "Halifax Harbour Hop", with leaders Suzanne Borkowski, 445-2922; **suzanneborkowski@yahoo.ca**, and Bob McDonald, 443-5051; **bobathome@hfx.eastlink.ca**.

26 Feb. "Valley Birding", with leaders Patrick Kelly, 472-2322; **patrick.kelly@dal.ca**, and Suzanne Borkowski, 445-2922; **suzanneborkowski@yahoo.ca**.

20 Mar. "Along the Fundy Shore", with leader Wayne Neily, 765-2455; **neilyornis@hotmail.com**.

10 Apr. "Wolfville Area", with leader Jim Wolford, 542-9204; **jimwolford@eastlink.ca**.

Nova Scotia Museum of Natural History: For more information, phone 424-7353; or go to **http://museum.gov.ns.ca/mnh/**.

1 Oct. -Jan. "Canada's Waterscapes – Yours to Enjoy, Explore and Protect", a travelling exhibition from the Canadian Museum of Nature and its partners; an exhibit about our amazing Canadian aquatic ecosystems and their flora and fauna.

15 Jan. -8 May "A T. Rex named Sue", from the Field Museum in Chicago.

Nova Scotia Wild Flora Society: Meets on the 4th Monday of the month, September to May, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information, phone Heather Drope, 423-7032, or go to **http://www.nswildflora.ca/**.

Nova Scotian Institute of Science: Meets 1st Monday of the month, September to April, usually at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information, got to **http://www.chebucto.ns.ca/Science/NSIS/index.html**.

10 Jan. "How Reliable is Science Anyway", with panellists Dr. Lisa Gannett, SMU; Dr. Bill Freedman, Dalhousie; and Dr. Tony Charles, SMU.

4 Apr. "Citizen Science: How the Public Can Engage in Scientific Enquiry", with speaker Dr. Cathy Conrad, Department of Geography, SMU.

Royal Astronomical Society of Canada (Halifax Chapter): Meets 3rd Friday of each month in Room L176 of the Loyola Academic Building at Saint Mary's University, 8:00 p.m. For more information, go to **http://halifax.rasc.ca/**.

Young Naturalists' Club: A fun, free nature club for children eight and older. Meetings take place every 3rd Saturday of the month at the NSMNH at 10:00 a.m.. Field trips are every 4th Sunday, 1:00 p.m. For more information, Laura Lambie, 431-0207; or go to **ync.nature1st.net**.

15 Jan. "Caring For Injured Wildlife", with veterinarian Dr. Helene van Doninck.

23 Jan. "Bird Walk", with the Nova Scotia Bird Society's Patrick Kelly at Sullivan's Pond, Dartmouth.

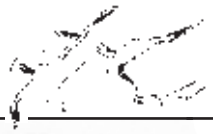
5 Feb. "Sketching Natural Obects", with artist Lillian Perry, and naturalist Joan Czapalay.

27 Feb. "Sketching Outdoors", with artist Lillian Perry, and naturalist Joan Czapalay.

10 Mar. "Sharks in Danger", with Christine Ward-Paige, Global Shark Assessment Project.

– compiled by Patricia L. Chalmers

HALIFAX TIDE TABLE



January-janvier

Day	Time	Feet	Metres	jour	heure	pieds	mètres
1	0455	**5.6**	1.7	**16**	0428	**5.2**	1.6
	1158	**0.7**	0.2		1119	**1.3**	0.4
SA	1749	**5.2**	1.6	SU	1730	**4.9**	1.5
SA				DI	2324	**2.0**	0.6
2	0015	**1.6**	0.5	**17**	0523	**5.6**	1.7
	0552	**5.9**	1.8		1212	**1.0**	0.3
SU	1251	**0.7**	0.2	MO	1820	**4.9**	1.5
DI	1843	**5.2**	1.6	LU			
3	0110	**1.6**	0.5	**18**	0017	**1.6**	0.5
	0644	**5.9**	1.8		0614	**5.9**	1.8
MO	1340	**0.7**	0.2	TU	1303	**0.7**	0.2
LU	1933	**5.6**	1.7	MA	1907	**5.2**	1.6
4	0159	**1.6**	0.5	**19**	0109	**1.6**	0.5
	0733	**5.9**	1.8		0704	**6.2**	1.9
TU	1426	**0.7**	0.2	WE	1350	**0.3**	0.1
MA	2019	**5.6**	1.7	ME	1953	**5.6**	1.7
5	0244	**1.6**	0.5	**20**	0200	**1.3**	0.4
	0819	**5.9**	1.8		0753	**6.6**	2.0
WE	1508	**0.7**	0.2	TH	1437	**0.0**	0.0
ME	2101	**5.9**	1.8	JE	2039	**5.9**	1.8
6	0326	**2.0**	0.6	**21**	0253	**1.0**	0.3
	0903	**5.9**	1.8		0842	**6.6**	2.0
TH	1546	**1.0**	0.3	FR	1523	**0.0**	0.0
JE	2142	**5.9**	1.8	VE	2124	**6.2**	1.9
7	0406	**2.0**	0.6	**22**	0348	**1.0**	0.3
	0946	**5.9**	1.8		0931	**6.2**	1.9
FR	1620	**1.3**	0.4	SA	1611	**0.0**	0.0
VE	2220	**5.9**	1.8	SA	2210	**6.2**	1.9
8	0446	**2.0**	0.6	**23**	0446	**1.0**	0.3
	1027	**5.9**	1.8		1020	**6.2**	1.9
SA	1653	**1.3**	0.4	SU	1702	**0.3**	0.1
SA	2258	**5.9**	1.8	DI	2255	**6.2**	1.9
9	0528	**2.0**	0.6	**24**	0545	**1.0**	0.3
	1107	**5.6**	1.7		1109	**5.9**	1.8
SU	1725	**1.6**	0.5	MO	1758	**0.7**	0.2
DI	2335	**5.9**	1.8	LU	2341	**6.2**	1.9
10	0613	**2.3**	0.7	**25**	0645	**1.0**	0.3
	1147	**5.2**	1.6		1200	**5.6**	1.7
MO	1801	**2.0**	0.6	TU	1857	**1.0**	0.3
LU				MA			
11	0014	**5.6**	1.7	**26**	0028	**5.9**	1.8
	0701	**2.3**	0.7		0745	**1.0**	0.3
TU	1229	**4.9**	1.5	WE	1255	**5.2**	1.6
MA	1845	**2.0**	0.6	ME	1958	**1.3**	0.4
12	0056	**5.6**	1.7	**27**	0121	**5.6**	1.7
	0750	**2.3**	0.7		0845	**1.0**	0.3
WE	1317	**4.6**	1.4	TH	1357	**4.9**	1.5
ME	1936	**2.3**	0.7	JE	2101	**1.6**	0.5
13	0141	**5.2**	1.6	**28**	0221	**5.6**	1.7
	0840	**2.0**	0.6		0945	**1.0**	0.3
TH	1415	**4.6**	1.4	FR	1511	**4.6**	1.4
JE	2032	**2.3**	0.7	VE	2203	**1.6**	0.5
14	0232	**5.2**	1.6	**29**	0330	**5.2**	1.6
	0932	**1.6**	0.5		1044	**1.0**	0.3
FR	1523	**4.6**	1.4	SA	1632	**4.9**	1.5
VE	2130	**2.3**	0.7	SA	2304	**1.6**	0.5
15	0329	**5.2**	1.6	**30**	0441	**5.2**	1.6
	1026	**1.6**	0.5		1141	**1.0**	0.3
SA	1632	**4.6**	1.4	SU	1739	**4.9**	1.5
SA	2228	**2.3**	0.7	DI			
				31	0002	**1.6**	0.5
					0542	**5.6**	1.7
				MO	1235	**1.0**	0.3
				LU	1832	**5.2**	1.6

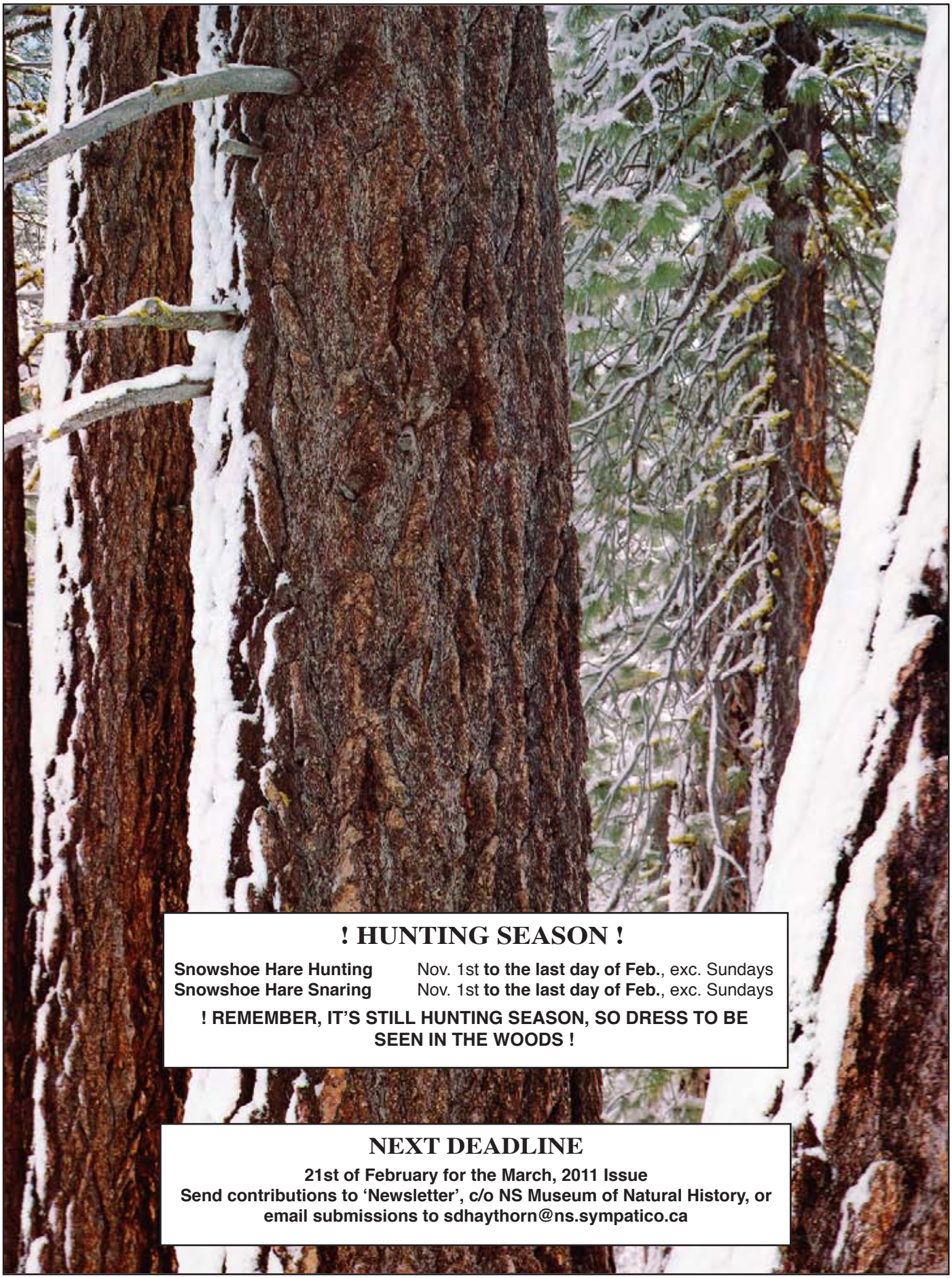
February-février

Day	Time	Feet	Metres	jour	heure	pieds	mètres
1	0055	**1.6**	0.5	**16**	0550	**5.9**	1.8
	0633	**5.6**	1.7		1233	**0.7**	0.2
TU	1323	**0.7**	0.2	WE	1840	**5.6**	1.7
MA	1918	**5.6**	1.7	ME			
2	0141	**1.6**	0.5	**17**	0047	**1.3**	0.4
	0719	**5.9**	1.8		0643	**6.2**	1.9
WE	1406	**0.7**	0.2	TH	1323	**0.0**	0.0
ME	1959	**5.6**	1.7	JE	1927	**5.9**	1.8
3	0222	**1.6**	0.5	**18**	0142	**1.0**	0.3
	0802	**5.9**	1.8		0734	**6.6**	2.0
TH	1444	**1.0**	0.3	FR	1410	**0.0**	0.0
JE	2037	**5.9**	1.8	VE	2013	**6.6**	2.0
4	0258	**1.6**	0.5	**19**	0237	**0.7**	0.2
	0842	**5.9**	1.8		0824	**6.6**	2.0
FR	1516	**1.0**	0.3	SA	1458	**–0.3**	–0.1
VE	2113	**5.9**	1.8	SA	2059	**6.6**	2.0
5	0331	**1.6**	0.5	**20**	0331	**0.3**	0.1
	0921	**5.9**	1.8		0914	**6.2**	1.9
SA	1545	**1.3**	0.4	SU	1547	**0.0**	0.0
SA	2148	**5.9**	1.8	DI	2145	**6.6**	2.0
6	0404	**1.6**	0.5	**21**	0427	**0.3**	0.1
	0959	**5.6**	1.7		1003	**6.2**	1.9
SU	1610	**1.3**	0.4	MO	1640	**0.3**	0.1
DI	2222	**5.9**	1.8	LU	2230	**6.6**	2.0
7	0439	**1.6**	0.5	**22**	0525	**0.3**	0.1
	1035	**5.6**	1.7		1053	**5.9**	1.8
MO	1638	**1.6**	0.5	TU	1737	**0.7**	0.2
LU	2256	**5.9**	1.8	MA	2316	**6.2**	1.9
8	0519	**2.0**	0.6	**23**	0624	**0.7**	0.2
	1112	**5.2**	1.6		1142	**5.6**	1.7
TU	1712	**2.0**	0.6	WE	1839	**1.0**	0.3
MA	2330	**5.6**	1.7	ME			
9	0605	**2.0**	0.6	**24**	0003	**5.9**	1.8
	1150	**4.9**	1.5		0724	**0.7**	0.2
WE	1755	**2.0**	0.6	TH	1235	**4.9**	1.5
ME				JE	1943	**1.3**	0.4
10	0006	**5.6**	1.7	**25**	0055	**5.6**	1.7
	0655	**2.0**	0.6		0825	**1.0**	0.3
TH	1232	**4.9**	1.5	FR	1335	**4.9**	1.5
JE	1851	**2.3**	0.7	VE	2047	**1.6**	0.5
11	0047	**5.2**	1.6	**26**	0156	**5.2**	1.6
	0751	**2.0**	0.6		0925	**1.3**	0.4
FR	1321	**4.6**	1.4	SA	1450	**4.6**	1.4
VE	1953	**2.3**	0.7	SA	2149	**2.0**	0.6
12	0136	**5.2**	1.6	**27**	0311	**4.9**	1.5
	0848	**2.0**	0.6		1024	**1.3**	0.4
SA	1425	**4.6**	1.4	SU	1620	**4.6**	1.4
SA	2055	**2.3**	0.7	DI	2249	**2.0**	0.6
13	0236	**5.2**	1.6	**28**	0429	**5.2**	1.6
	0947	**1.6**	0.5		1121	**1.3**	0.4
SU	1543	**4.6**	1.4	MO	1726	**4.9**	1.5
DI	2155	**2.3**	0.7	LU	2345	**1.6**	0.5
14	0346	**5.2**	1.6				
	1045	**1.3**	0.4				
MO	1655	**4.9**	1.5				
LU	2254	**2.0**	0.6				
15	0452	**5.6**	1.7				
	1141	**1.0**	0.3				
TU	1751	**5.2**	1.6				
MA	2351	**1.6**	0.5				

March-mars

Day	Time	Feet	Metres	jour	heure	pieds	mètres
1	0530	**5.2**	1.6	**16**	0423	**5.6**	1.7
	1213	**1.0**	0.3		1108	**1.0**	0.3
TU	1814	**5.2**	1.6	WE	1719	**5.6**	1.7
MA				ME	2331	**1.6**	0.5
2	0036	**1.6**	0.5	**17**	0527	**5.9**	1.8
	0618	**5.6**	1.7		1201	**0.7**	0.2
WE	1300	**1.0**	0.3	TH	1810	**5.9**	1.8
ME	1855	**5.6**	1.7	JE			
3	0119	**1.6**	0.5	**18**	0029	**1.0**	0.3
	0701	**5.9**	1.8		0623	**6.2**	1.9
TH	1341	**1.0**	0.3	FR	1253	**0.3**	0.1
JE	1932	**5.6**	1.7	VE	1857	**6.6**	2.0
4	0156	**1.6**	0.5	**19**	0125	**0.3**	0.1
	0740	**5.9**	1.8		0715	**6.2**	1.9
FR	1415	**1.0**	0.3	SA	1343	**0.0**	0.0
VE	2007	**5.6**	1.7	SA	1944	**6.9**	2.1
5	0229	**1.3**	0.4	**20**	0220	**0.0**	0.0
	0819	**5.9**	1.8		0806	**6.2**	1.9
SA	1444	**1.0**	0.3	SU	1433	**0.0**	0.0
SA	2040	**5.9**	1.8	DI	2031	**6.9**	2.1
6	0259	**1.3**	0.4	**21**	0313	**0.0**	0.0
	0856	**5.9**	1.8		0857	**6.2**	1.9
SU	1509	**1.3**	0.4	MO	1524	**0.3**	0.1
DI	2112	**5.9**	1.8	LU	2118	**6.9**	2.1
7	0329	**1.3**	0.4	**22**	0407	**0.0**	0.0
	0931	**5.6**	1.7		0946	**5.9**	1.8
MO	1533	**1.6**	0.5	TU	1619	**0.7**	0.2
LU	2144	**5.9**	1.8	MA	2205	**6.6**	2.0
8	0402	**1.3**	0.4	**23**	0503	**0.3**	0.1
	1006	**5.6**	1.7		1035	**5.9**	1.8
TU	1601	**1.6**	0.5	WE	1719	**1.0**	0.3
MA	2216	**5.6**	1.7	ME	2251	**6.2**	1.9
9	0438	**1.6**	0.5	**24**	0601	**0.7**	0.2
	1041	**5.2**	1.6		1125	**5.6**	1.7
WE	1635	**2.0**	0.6	TH	1823	**1.3**	0.4
ME	2250	**5.6**	1.7	JE	2340	**5.9**	1.8
10	0522	**1.6**	0.5	**25**	0701	**1.0**	0.3
	1117	**5.2**	1.6		1217	**5.2**	1.6
TH	1720	**2.0**	0.6	FR	1927	**1.6**	0.5
JE	2325	**5.6**	1.7	VE			
11	0614	**1.6**	0.5	**26**	0032	**5.2**	1.6
	1157	**4.9**	1.5		0801	**1.0**	0.3
FR	1818	**2.3**	0.7	SA	1315	**4.9**	1.5
VE				SA	2030	**2.0**	0.6
12	0006	**5.2**	1.6	**27**	0132	**5.2**	1.6
	0713	**2.0**	0.6		0859	**1.3**	0.4
SA	1244	**4.9**	1.5	SU	1429	**4.6**	1.4
SA	1924	**2.6**	0.8	DI	2131	**2.0**	0.6
13	0054	**5.2**	1.6	**28**	0248	**4.9**	1.5
	0814	**1.6**	0.5		0957	**1.3**	0.4
SU	1343	**4.6**	1.4	MO	1555	**4.9**	1.5
DI	2028	**2.3**	0.7	LU	2229	**2.0**	0.6
14	0155	**5.2**	1.6	**29**	0408	**4.9**	1.5
	0914	**1.6**	0.5		1052	**1.3**	0.4
MO	1500	**4.6**	1.4	TU	1658	**5.2**	1.6
LU	2130	**2.3**	0.7	MA	2324	**2.0**	0.6
15	0309	**5.6**	1.7	**30**	0508	**5.2**	1.6
	1012	**1.3**	0.4		1143	**1.3**	0.4
TU	1619	**4.9**	1.5	WE	1745	**5.2**	1.6
MA	2231	**2.0**	0.6	ME			
				31	0012	**1.6**	0.5
					0555	**5.2**	1.6
				TH	1229	**1.3**	0.4
				JE	1824	**5.6**	1.7

ALL TIMES ARE AST



! HUNTING SEASON !

Snowshoe Hare Hunting	Nov. 1st **to the last day of Feb.**, exc. Sundays
Snowshoe Hare Snaring	Nov. 1st **to the last day of Feb.**, exc. Sundays

! REMEMBER, IT'S STILL HUNTING SEASON, SO DRESS TO BE SEEN IN THE WOODS !

NEXT DEADLINE

21st of February for the March, 2011 Issue
Send contributions to 'Newsletter', c/o NS Museum of Natural History, or email submissions to sdhaythorn@ns.sympatico.ca