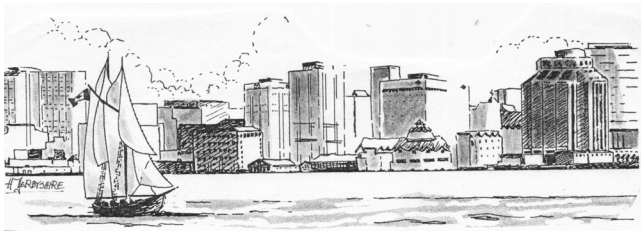
THE HALIFAX FIELD NATURALIST

No. 157
December, 2014 to February, 2015

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

HFN is incorporated under the Nova Scotia Societies Act and holds Registered Charity status with the Canada Revenue Agency. Tax-creditable receipts will be issued for individual and corporate gifts. **HFN** is an affiliate of Nature Canada and an organisational member of Nature Nova Scotia, the provincial umbrella association for naturalist groups. **Objectives** are to encourage a greater appreciation and understanding of Nova Scotia's natural history, both within the membership of HFN and in the public at large, and to represent the interests of naturalists by encouraging the conservation of Nova Scotia's natural resources. **Meetings** are held, except for July and August, on the first Thursday of every month at 7:30 p.m. in the auditorium of the Nova Scotia Museum of Natural History, 1747 Summer Street, Halifax; they are open to the public. **Field Trips** are held at least once a month; it is appreciated if those travelling in someone else's car share the cost of the gas. **Participants** in HFN activities are responsible for their own safety. Everyone, member or not, is welcome to take part in field trips. **Memberships** are open to anyone interested in the natural history of Nova Scotia. Forms are available at any meeting of the society, or by writing to: Membership Secretary, Halifax Field Naturalists, c/o N.S. Museum of Natural History. Members receive **The Halifax Field Naturalist**, along with its included **Programme**, quarterly. Our membership year is from January 1st to December 31st, and new memberships received from September 1st to December 31st of any year are valid until the end of the following membership year.



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FEES	**2015**
Student	$15.00 per year
Individual	$20.00 per year
Family	$25.00 per year
Supporting	$30.00 per year
NNS (opt.)	$5.00 per year

IN THIS ISSUE

GRAPHICS All uncredited illustrations are by H. Derbyshire or from copyright-free sources. **Front Cover** - Tillman Brook Falls, Richard Beazley; p. 20, Coyote, W. Dodge; **Back Cover** - Ice Column & Falling Water, Richard Beazley; **Tide Table** - Cdn. Hydrographic Service, Fisheries & Oceans Canada.

HFN NEWS AND ANNOUNCEMENTS

! JANUARY MEETING CHANGED !

The usual meeting time of the first Thursday of the month doesn't work this January, as it falls on January 1st – New Year's Day. **It has been rescheduled to Wednesday, January 7th**. **Please note this change on your calendars.**

HFN MEMBERS' ART EXHIBIT

The Halifax Field Naturalists and the Nova Scotia Museum of Natural History are planning a Members' Art Exhibit for June 2015. The Museum is HFN's public home and what better place to hold this exhibit? It will increase public awareness about HFN and its 40th Anniversary, and it will be a unique way to learn about some members' artistic pursuits.

Submissions of one piece of art related to nature or natural history are welcome in all forms, such as basket making, carving, felting, hooking, painting, quilting, sculpture, and needlework (i.e. crewel embroidery or needlepoint). Even a favourite photograph you've taken qualifies.

The 40th Anniversary Committee needs an indication of member interest to move forward with the exhibit. Therefore, please register your intention to participate in the exhibit by mid-January, 2015. Contact Grace Beazley, 902-429-6626, **rbeazley@dal.ca**.

BOOK RECOMMENDATION

– Grace Beazley

Journeys Through Eastern Old-Growth Forests: a narrative guide, Jamie Simpson, Nimbus Publishing.

This small, 156 page book by Jamie Simpson (a maritime-born Dalhousie law graduate with a background in biology and forestry) was hot off the press in May, 2014. It's a must-read for anyone interested in old-growth forests in the Maritimes. This quote from the back cover is comprehensive, insightful, and 'says it all' – the book... "begins with a collection of experiences about the region's rare forests, and ends with detailed profiles of seventeen sites: nine in Nova Scotia, four in New Brunswick, and four in Prince Edward Island. Each site description includes a map, directions, and notes on what you can expect to see. Over 75 colour photographs highlight the beauty and diversity of the Maritime's endangered old-growth forests."

ERRATA

Lesley Jane Butters' September, 2014 Nature Notes entry should have read "From her Medway River cottage Lesley Jane Butters said she saw the strangest looking beast floating in the water. At first glance, it looked like a dead animal, perhaps a beaver. It turned out to be **a Snapping Turtle** with its limbs all stretched out; she figured it must have been about three feet in length. The water around the turtle was bubbling. It floated towards the rapids, dove under water and was seen again up river repeating its floating performance, until it came close to the rapids and again repeated its performance.

Lesley Jane also saw **a Blanding's Turtle** in Kejimikujik National Park by the side of the road. She was laying eggs, soon to be under protection within a wire covered frame; she was wondering when the eggs might hatch."

NATURE NOTES

NOVEMBER

Janet Dalton noticed **many Blue Jays** recently around her home feeders. Clarence Stevens confirmed that now is their busy season for storing up food for the winter. He said their activity will tail off as the ground becomes frozen.

Leslie Jane Butters noted **a distinct lack of acorns and pine cones** near her cottage in Keji, and asked if the apparent shortage was just in Southwest Nova Scotia. Others pointed to normal levels of these food sources north of Halifax, and said **more Pine Siskins** (which feed on pine cones) than usual are evident.

Clarence Stevens told of **a Mink** under his back doorstep, and noted the presence of **a number of Black Bears and Coyotes** in his neighbourhood.

Richard Beazley reported **a dead Deer** near the intersection of Quinpool Road and Connaught Avenue a week or two ago. Others confirmed that the deer had fallen from the back of a pickup truck.

Clarence Stevens reported the presence of **more mushrooms than usual** of many descriptions, including **Honey and Inky Caps**. He also discussed the general safety of eating Inky Caps (although some people are genetically unable to handle them). He told us that the consumption of alcohol within 48 hours of eating them was very dangerous, and also that they were not edible if they had reached the stage of producing ink (black, liquid spots on the flesh).

Shirley MacIntyre saw **many seals** (probably Harbour Seals) on a number of her recent coastal hikes. She also noted that **the ocean water is very warm this year** – a week previous, three of her fellow hikers went swimming in the North Atlantic! *(In a recent weather report, the water temperature off Nova Scotia was 13ºC – against a land temperature of considerably less – ed.).*

Pat Leader, up until the first week of November and even beyond, has recorded **some 18 garden and wild flowers that are still blooming**. They do not include flowering shrubs; so Pat would like Mr. Harper to please take note – people in NS are extending their summers! *(Pat had had a car accident on the way to the November meeting,; she could not share this nature note in person, so emailed it in. – Ed.)* *(cont'd on p. 20)*

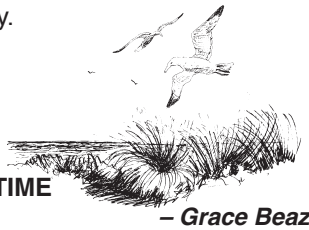
NEW & RETURNING

Michael Basford
Denyse Contrastyl
Nicole MacDonald
Elizabeth Mills
Cecil G. Publicover

SPECIAL REPORTS

HFN'S 40TH ANNIVERSARY

Following are submissions, in celebration of nature, for HFN's 40th Anniversary.



DREAM TRIP OF A LIFETIME

– Grace Beazley

On the 15th of August, 2003, a dream came true for me when I had a day-trip to Sable Island to celebrate my 60th birthday – with fellow adventurers husband Richard, youngest son, and four friends.

This trip to the approximately 42 km long, crescent-shaped island of sand off the coast of my beloved Nova Scotia happened on as perfect a sunny day as is possible after four morning flight cancellations due to foggy weather. For some perspective, Sable Island is about 290 km from Halifax and is about seven times the size of the familiar McNab's Island in Halifax Harbour. I felt very privileged to be granted permission to visit one of the few restricted places in Canada. I also felt very privileged that Zoe Lucas, one of Sable Island's biggest fans, offered to be our personal guide for the day.

What a unique, interesting, and incredible island to visit. It's so peaceful, so natural, and so wild – like 'another world'. Of course, there are the much-heard-about and protected Sable Island horses, but oh, there's much more – Harbour and Grey Seals, birds, Marram Grass, wildflowers, endless beaches and dunes, fresh water ponds, and the Sable Island Station (now called Main Station) with its beach airstrip. If you are lucky, you may see a relic from the past, once buried but now, with the ever-changing landscape, in partial or full view. Also, the views of the wind-swept island from the Britten-Norman Islander plane were magnificent, even magical.

Now I have another dream – another trip to Sable Island, which became 'Sable Island National Park Reserve' in June 2013!

VERY RARE SIGHTING

– Richard Beazley

Kejimkujik National Park and National Historic site is one of my favourite places in Nova Scotia. I've camped and travelled its front and back country for over 40 years in all seasons, and have been awed by the abundance of its flora and fauna; lakes and streams; mirror-smooth to violently rough waters; granite 'erratics', 'lappers', and 'lurkers'; day and night skies; ice and snow; and its night time sounds.

In all the kilometres which I have hiked, portaged, canoed, skied, and snowshoed with my wife and others, I had seen only one mature Black Bear, *Ursus americanus*, in the wilderness. It appeared momentarily on the bank of the West River "when I wore a younger man's clothes." Around the same time, I had also seen a few 'habituated' Bears in the Jeremy Bay campground and its nearby open garbage site. Needless to say, these particular Bears had to be deported or put down.

This drought came to an unexpected end on a sunny, warm, breezy afternoon in early September of this year. Grace and I were enjoying a leisurely paddle along the narrow Western Run of Kejimkujik Lake when she spotted a dark, log-like form in the water 30 metres ahead of us. Slowly, the 'log' metamorphosed into a Black Bear swimming to a small shrub-covered island in the middle of the Run. This Bear was not alone – swimming closely behind her were three cubs. They swam quickly and soon disappeared into the shrubs. We sat momentarily and the mother Bear reappeared, gave us a careful look, and then disappeared once more. Again we sat briefly, then paddled on. By the time we rounded the end of the island the four Bears were leaving the water on the far side of the Run; they then quickly disappeared from view.

What a sight! Keji gave us a very rare treat, and a treasured memory.

MY FAVOURITE FIELD TRIP

– Lesley Jane Butters

One of my fondest HFN field trips was to Smiley's Provincial Park alongside the Meander River in Hant's County. I believe the field trip was on a May day, in the early to mid-eighties, and we were going there to see if the Bloodroot and Trout Lillies were in bloom.

We left the Nova Scotia Museum parking lot in convoy style. I drove with Tim Randall in his little orange 'beetle bug', and Tim gave me a 'pre-lecture' on both species of plants and what to observe about them.

The habitat of Bloodroot, *Sanguinaria canadensis*, is in the rich intervals around thickets and open mixed woodlands near streams and rivers. It grows in colonies with a thick, prostrate rhizome which contains blood-coloured juice, and this juice stains! The flower is white, with eight elongated petals; its leaf is dark green with round-scalloped edges, and is deeply notched at the base on long, thick petioles.

The Trout Lily, *Erythronium americanum*, grows in similar habitat from a single corm, and like the Bloodroot, grows in colonies. Its flowers are yellow, lily-like, and with a curved upright shape in a nodding position. Its leaves are also scalloped, with a lance shape, and their colouring is mottled.

Near the river's edge, we HFNers were greeted and

rewarded by a flowing carpet of white. Absolutely everywhere we looked was white, interspersed with blotches of mingling yellow. Spectacular! We were in naturalists' heaven, for most of the group had never seen either wildflower – and never so prolific as this.

As I recall, the morning was rather overcast, and after spending the rest of our time in and around the floodplain along the Meander River, most of us left the field trip. Tim, camera slung around his neck, was keen for more adventuring. He asked if I would like to go with him to the gypsum quarries in behind the Windsor area to see if any Yellow Lady's Slippers were in bloom. He also mentioned that we might see the very rare Ram's Head Lady's Slipper. The idea of returning home to Halifax didn't seem at all interesting to me, and a few other naturalists thought exactly the same, so we tagged along behind Tim in search of even more natural adventures!

At the quarries, Tim spotted a few small clumps of the brilliant, golden Yellow Lady's Slipper, *Cypripedium calceolus*. What beauty! Our cameras were just as much an important part of this extended add-on to our field trip, and we were in awe as we snapped our pictures.

The afternoon turned sunny, brilliantly highlighting the whiteness of the gypsum outcrops; also, the brighter daylight aided Tim in finding our treasure of the day, the elusive Ram's Head Lady's Slipper, *Cypripedium arietinum*. It was so very tiny compared to the other wildflowers we had seen throughout the day. As I recall, we only saw the one. It was well-photographed by Mary Primrose, Tim, and others.

I believe this field outing was the forerunner of many more wonderful, 'extended' field trip adventures. In those days, there were more than a few naturalists who did not want to return home immediately after an HFN trip, and Tim was so very knowledgeable about many interesting natural nooks and crannies throughout Nova Scotia. He could always lead us to special places where we discovered extra, and fascinating, bits of Nova Scotia's natural history.

Those were special days!

WINTER BEECHES

– Jonathon Davies

It is easy to tell the young oaks and beeches apart in winter.

An old man tells me so, he who examines the entrails of trees

And augers their past,

The adolescents keep their leaves.

I find the frozen children,

With remnants of autumn coats, fluttering against the snow.

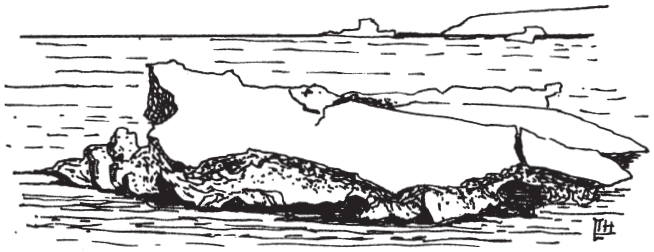
The oaks are pale blond, almost transparent,

The beeches have a cinnamon shade,

They rattle in the cold.

The American Beech, *Fagus grandifolia*, is commonly found on rich bottom lands and moist, well drained slopes and ridges from Cape Breton to Georgian Bay (Native Trees of Canada, Dominion Forest Service).

I wrote the above poem some years ago, after a winter walk in Shubie Park, Dartmouth.



UNFORGETTABLE CLOSE ENCOUNTER

– Brian Ferguson

In the midsummer of 1970, four of us headed for Newfoundland in a Land Rover with two canoes lashed on top. We took the ferry from North Sydney to Port aux Basques, then drove up the windswept eastern coast to St. Anthony; it is situated on top of the peninsula, near the Strait of Belle Isle, across from Labrador.

On approaching the village, we saw a beautiful, large iceberg in the harbour. It was sparkling in the bright sunlight with a blueish hue. Excited, we immediately drove down to the beach and launched our canoes. As we paddled closer, we saw within it a large tunnel. It seemed to run right through the berg's centre.

We entered.

It was like an ice cave inside, and there was an accompanying harsh odour. The iceberg was massive this close up; it was also very, very cold! After a few awe-filled minutes, we slowly paddled backwards out to the entrance. Before finally emerging from the tunnel however, we stopped beside an ice projection so that one of us could hack off a piece with a hatchet as a souvenir, to put in our cooler.

We paddled toward shore, and about two minutes out and away from the ice tunnel's entrance, there was an immense, thunderous roar just behind us. On turning around, we saw that the giant berg had capsized and split into two! Shakened, we turned our bows to face the oncoming four-foot waves which, luckily, we were able to paddle over without mishap.

I have many treasured 'before and after' photos of this event. What we learned was that icebergs are dangerously unstable entities, as they are always in the process of melting and changing position due to the constant shifting of their centres of gravity.

Motto: Stay well clear of icebergs; they may be dangerous to your health!

(However, the cubes from that iceberg made a fine addition to our cold drinks, and they went 'snap-crackle-pop' because of their trapped pockets of ancient air.)

NATURE MUSINGS ***– Judi Hayes***

Nature Musings #1

Tree tops glisten in the sunlight
While underneath the canopy lie
Bands of shade and cool.

A gentle breeze stirs the forest floor
And whispers through the young firs
As they reach toward the rays of sun.

Busy insects hum as they spend
Their workday hurrying to and fro.
This is God's cathedral – a sacred place.

Nature Musings #2

The snow falls
Gently
Plants nestle in the warmth
As people scurry to and fro
Animals know how to rest
And eat
And enjoy the solitude
We need to learn
To slow
To enjoy
To bask in winter's sun
The seasons flow
As droplets in a stream
The human race a mere dot
In God's great universe
Stop
Breathe
Enjoy this peaceful season

SPECIAL ARTICLES

TOURING WALES BY BICYCLE; FOLLOWING DYLAN THOMAS

– Brian Ferguson

The train pulled into Chester Station at about two p.m., after a five hour ride from Edinburgh. Chester is a fair-sized English town only a few miles from the Welsh border. It was originally settled by the Romans as a garrison town to keep the wild Welsh tribes at bay. There are still signs of Roman occupation, including the ruins of Roman baths which were elaborate affairs including massage and steam rooms, and facilities for both hot and cold bathing.

I mounted my bicycle and rode out of town, anxious to experience the Wales of my imagination and to visit the places that had inspired the poetry of Dylan Thomas. After ten miles or so the countryside seemed to change. The grass was greener, and the old, knarled oak trees now lining the road loomed large with tremendous, moss-hanging branches – they seemed ancient beyond memory.

The fields were divided by low walls made of rock and earth, overlain by moss. You could cross from one field to another by stiles or by wooden stairs located at intervals along their lengths. Also, there was at least one main gate into the fields to let in farm equipment or to herd the farm animals from one field to another. The fields, although green, were pitted and rocky and seemed only suited for sheep farming.

There was little traffic along the narrow paved lane. I was headed in a diagonal, southerly direction towards the west coast in order to come out at the seaside resort of Aberystwyth. Warm and sunny, It was approaching five o'clock when I came across a sign designating a youth hostel nearby. It pointed across the road along a narrow dirt lane leading up to a picturesque farm house and barn with a nearby brook and small waterfall. There were a canteen and shower facilities as well as bunk beds in the renovated barn, and I went to sleep that night to the rushing sound of falling water.

The next morning I was in for an exhilarating ride. Nearing the coast I came to the top of a rise for a magnificent view of the Welsh countryside. I could see for miles down this long incline, where the road skirted the narrow Lake Langford, a brilliant blue in colourful contrast to the intense greens of the surrounding countryside. I free-wheeled down for what must have been about five miles into a village where I stopped for lunch. It was so pleasant outside that I skipped the usual pub meal for a picnic outside instead. But I could hear as I ate, emanating from inside the pub, the typical sing-song lilt of the Welsh language which was still spoken in this northerly part of Wales.

I rode into Aberystwyth soon after, and stopped outside a good-sized hotel which overlooked the community. I decided to keep going further and so geared down for the long slog up the bluff overlooking the ocean. Just as I reached the top, my left pedal suddenly snapped off (it had been bent slightly out of kilter when I got sideswiped on the London Windsor road back in May about five weeks previously). But, at least I was uphill from the town so was able to freewheel back again. I stopped at a cottage and asked the woman who answered (after explaining the situation) if I could use her phone. She rather reluctantly let me in and I called the nearest bicycle shop (she cheered up a bit when I left some money for the use of the phone). Apparently, it cost money each time the phone was used, even in a private home.

I finally got the pedal replaced. It fitted perfectly although it did not match the appearance of the other. The shop keeper was friendly and charged me very little for it because of the mismatch, but at least it did its job and I repeated the long hard slog out of Aberystwyth.

The road I took overlooked the Irish Sea, and Ireland itself could be seen on this clear day, particularly at dusk as the sun set over the western islands (because of the delay with the pedal it was getting on to dusk as I stopped

at a rise on the road). A fishing village called Fishguard suddenly appeared. It had a deep, indented harbour protected from the open sea, and was also a ferry terminal to Northern Ireland.

Just at the top of another rise, on a bluff still overlooking the sea, was a youth hostel – a renovated cottage with room for at least twelve bunks and the usual facilities. There was a rough steep path that led down to the pebbled beach nearby, so that night I went to sleep to the rattling sound of the surf ebbing and flowing over the tumbling rocks.

Next day I rode into Caughaine, the quaint Welsh village used as a model for Dylan Thomas's radio play "Under Milk Wood". After securing a room at a bed-and-breakfast, I spent a couple of days exploring the village where Thomas had lived until his premature death in New York in 1953.

There was the pub where Dylan frequented, unchanged from the time he was here. Inside, in a corner, was a framed picture taken in the mid-1930's, of the newly wedded Dylan and Caitlin Thomas having a drink here. There was the famous boathouse overlooking the Estuary ("a house built upon shells high among palavers of birds") and the shed nearby where he wrote his later poems including "Poem on His Birthday" from which the above quotation was taken. The house was empty now and I spoke to the caretaker who let me in to have a look. I gazed out through a window which perfectly framed St. John hill, a wooded, green-swathed hillock also mentioned in his poetry. There also was the balcony overlooking the estuary where, one summer day in 1953, Dylan discussed, with his American agent Malcolm Brennan, the itinerary for what turned out to be his last and fatal visit to the United States. I thought briefly of staying the night inside the boathouse, but decided not to pursue the matter further with the caretaker.

I also visited the cemetery where Dylan Thomas lies buried beneath a simple, unadorned gravestone. The caretaker mentioned that Richard Burton, Elizabeth Taylor, and Peter O'Toole had visited there a few months previously, on a scouting expedition in preparation for making a film version of Under Milk Wood (which I saw in New Zealand a year later).

After a few more days I cycled the forty-five miles or so to Swansea, where Thomas was born in a row house on Cuomoden Drive, on a steep hill on the top of which is the Park where Thomas played as a boy. Swansea is a major industrial city and seaport, and it had a grimy look to it with its factories and workers' grim, monotonous row housing.

From here I was glad to take the train to Southhampton and the ferry to Sherbourg, France, and, on the boat across I met an acquaintance from my home town Halifax! Small world. From Sherbourg I bicycled the hilly road to Caen, then rode along the Normandy coast staying in picturesque villages along the Normandy beaches where the Allies landed in France on June 6th, 1944. There were few signs of the battle except for some overgrown German gun emplacements made of concrete and rusted metal. But the place that brought the war home to me was the Canadian cemetery just outside Biny-sur-Mer, on a bluff overlooking the beaches, with rows upon rows of simple white crosses going off into the distance. On them are the brief inscriptions of the people buried here – name, rank, age, and date of death – "Pte Harry Smith KIA June 7th, 1944, age 19". There were very few people over the age of 30 – they were all young men. I signed the guest book with a few lines from Dylan Thomas's poem "And Death shall have no Dominion".

Turning inland, I stopped at Rouen with its famous medieval clock tower. Normandy is famous for its apple orchards and its Calvados brandy, a fiery liquor made from apples. The countryside here is very fertile, dotted with many orchards and dairy farms. Occasionally I would pick up some bread, cheese, and wine and have an impromptu picnic in some verdant spot. I stopped at a small village called Peinde Pui and stayed at the youth hostel, a converted farm house, for ten days.

I was getting tired of cycling by now and my tires were showing signs of wear and beginning to shred. I had neglected to pick up extra tires and tubes in Southampton, and the French bike shops did not stock the sizes that would fit my English Dawes bicycle. The best that could be done was to stuff old bits of tire between the inner-tubes and the shredded part of the tire. This was a stop gap measure – the only real solution was to replace both wheels with the slightly smaller French versions.

One of the travellers stopping at the Piende Pui hostel was a young American Vietnam war vet touring round Europe on a motor scooter. He was on a disability pension, and I envied his mode of travel and seemingly unlimited funds.

Another young man, from eastern Europe, took a rather intense interest in me. I thought it a bit out of the way when he held hands with me as we were walking together; I thought may have been a custom in his country. However, while we were lying on the grass he leaned over me, his face close to mine. "Oh, oh", I thought ,and then asked him if he was gay. He said he was and I said I wasn't and quickly got up. Afterwards we remained friendly – but distant!

On the 70th day, my birthday, I packed up and cycled on in the direction of La Havre, knowing the bike could pack it in anytime. I decided against having the wheels replaced because of the expense. But, a few miles out of town the back tire blew. I walked the bike back to Piende Pui, unloaded my gear, and left the old Dawes leaning against a fence hoping that someone else would claim it and use it well.

I decided to hitchhike towards Paris but there were few cars coming my way. In fact there seemed to be a mass exodus away from Paris – the opposite lane was completely full of traffic – Volkswagons and Citreons packed with luggage, inside and out, with at least eight or nine people to a car.

I thought there must have been a good reason for this, so at the first break in the traffic, I crossed over and started hitching for a ride away from Paris as well. A Citreon finally stopped. The friendly couple squeezed me in amongst the luggage in the back. Through their limited English, and my poor high school French, I made out they were on holiday from Paris. In fact, Paris practically empties at the end of July, because everyone heads for the coast for the first two weeks of August, leaving the city alone for the tourists.

Once at the coast I headed north towards Belgium, meeting a fellow hitchhiker on the way, a young American

and a woman for a change. Rides were few and short, but inevitably, a friendly farmer would pick us up, drive two or three miles, and then drop us off before turning into his own driveway.

Karen and I tried separating so it didn't look like we were together, the idea being when a car stopped for her I would then come running. This ruse did not work too well. The driver, always a single male of course, would see Karen, stop, but upon seeing me running towards his car he would quickly drive away! It was very slow going at only ten to twenty miles a day.

Fortunately, there were hostels in every town. At one of them we had a bit of a scare when three or four local men tried to break into the women's dormitory after midnight. We chased them up to the roof where a couple of them drew knives on us! Fortunately, after we backed off, they then left. In contrast, at another hostel facing the town square, there was a sound and light show that evening illustrating the history of this area of Northern France (most of it lost on me as it was all in French).

Karen and I ended up taking short bus rides from town to town finally crossing into Belgium, where, after a tram ride into Brussels, we went our separate ways.

I then took a train to Amsterdam, registered at the International Hostel there, spending the next three days seeing the sights, including the Reich Museum Art Gallery, with Van Gogh's paintings and the famous "Night Watch" by Rembrandt; a boat tour of the canals; and of course, the Red Light district.

At that point, I also burned my bridges – by selling the return half of my charter Air Canada ticket to Halifax. I befriended another American traveller heading East – a University Professor in her early thirties; we got a ride into Munich, stayed overnight there in a local Bed and Breakfast, and I continued on from there.

HFN'S FOURTH DECADE

– Ursula Grigg and Stephanie Robertson

PART I; THE FIRST TWO YEARS

The Halifax Field Naturalists continued its fourth decade on its dual paths of enjoyable appreciation of local natural history, and its need to protect it from degradation by those who do not understand its value to society in a pristine state, but subject it to overdevelopment and over management.

The Board of Directors was as follows: President, Allan Robertson; Vice-President, Peter Webster; Treasurer, Janet Dalton; Secretary, Peter Payzant; Past President, Bob McDonald; and Brian Bartlett, Elizabeth Keizer, Burkhard Plache, Ingrid Plache, Stephanie Robertson, Christine-Anne Smith, and Jim Wolford.

SUMMER 2005 began with Environment Week on June 5th to 11th with proclamations of some conservation awards. Stephen Hawboldt received one for restoring the Annapolis River – Atlantic Salmon were spawning once again in its tributaries; while Dr. David Suzuki received a Citation of Lifetime Achievement Award. Also, Elizabeth May published her book At the Cutting Edge: the Crisis in Canada's Forests.

The club included waterfalls in its interests, introduced by Richard and Grace Beazley, who also led a field trip to a series of falls in the Baxter's Harbour District.

Conservation – Two conservation interventions involved Blue Mountain/Birch Cove Lakes, where Crown land had been progressively being removed from the area, and Shubie Park, threatened by highway development in Burnside. The former was met by a petition and a letter to a minister, pointing our that Blue Mountain/Birch Cove Lakes area should remain a publicly owned natural space. Pat Chalmers and Betty Hodgson began a natural inventory of Shubie Park; this had been proposed before but never embarked upon.

Talk Reports included a presentation by Christine-Anne Smith about the necessity of valuing and defending urban forests, and a lively one on sea serpents in the Maritimes by Andrew Hebda. Andrew felt that one of the candidates for these historical sightings was a deepwater Oarfish, *Regalecus glesne*. Peter and Linda Payzant spoke on "The Lives, Habits, and Humour of Butterflies". Their beautiful and informative presentation also included a detailed account of The Life of the Monarch Butterfly. Their checklists of the Butterflies of Nova Scotia and the Dragonflies of Nova Scotia were published and made available for purchase.

Fall 2005 – The five proposals for the restoration of Point Pleasant Park all contained major changes to the Park's environment, and HFN members who preferred it to remain undeveloped were asked to sign a petition to HRM to that effect. Efforts to protect the Nahanni as a wilderness area, and the Colorado River as a water source, were also being made. Elizabeth May of the Sierra Club gave one of the Killam Lectures, "Can Civilisation Survive Climate Change?", and Blake Maybank published his book Birding Sites in Nova Scotia.

The Federation of Nova Scotia Naturalists' 2005 AGM had for its theme the Acadian Forest, which is in bad shape, 98% having been degraded by continuous material extraction. Not only was regrowth being hampered, but areas of old growth forests were being cut apart, leaving islands of forest, thereby cutting off the corridors in use by wildlife. Good planning is needed for sustainable forestry, which should be based on Acadian Forest species. In that vein, there was a talk on "A Biodiversity Conservation Vision for the Acadian Forest; The Cobequids to Chignecto".

Talk Reports – On September 7th, Diane LaRue, with the N.S. Dept. of Transportation and Wildscape Restoration Nursery Services, talked about her trip to the Colorado River Delta to assist in the ecological restoration efforts there due to the deleterious effects of dams and water diversions; the efforts were being hampered by a very complicated political situation.

Field Trip Reports – Ten members of the N.S. Bird Society were stormbound on Bon Portage Island from May 20th to the 27th, Brian Bartlett reported in "Stormbound on Bon Portage…". On the sixth day – "…Clean clothes had become a distant memory, and we'd run out of bread, milk, and eggs. There was more than a half-serious talk about stealing gull eggs and finding supper washed up in lobster traps. Claire's duct-tape-repaired waterproof leggings had come apart a second time…". The Island was full of small

migrants, and those ubiquitous residents, Leaches Storm Petrels, were also present. The Halifax Public Gardens was a beautiful and historic site to visit as an example of a classic Victorian Garden. A Butterfly Walk in Uniacke Museum Estate Park and the Pockwock Road area produced fewer insects than Peter and Linda Payzant had hoped, but it was warm and delightful nonetheless.

There was an informative short piece on birch trees by Stephanie Robertson; (the word birch comes from the Sanskrit bhurga which means "a tree whose bark is written upon").

WINTER 2005 - 2006 – On December 7th, HRM Council approved a combined submission on designs for Point Pleasant Park renewal which would leave it relaxed and refreshing. The winners were NIP Paysage of Montreal and Ekistics Planning & Design of Dartmouth. Naturalist and former HFN board member David Lawley died in September, and was missed. He had written A Nature and Hiking Guide to Cape Breton's Cabot Trail, and also A Guide to Whale Watching in the Maritimes, both published by Nimbus. He also had helped to found the magazine Shunpiking. Karen McKendry wanted to start a Halifax Junior Naturalist Club for children with HFN's support.

In spite of rather cold weather, HRM's North American Bird Migration Count on May 14th showed no drop in numbers of birds recorded. In fact the numbers were up; with 12,785 individuals counted in 2005, compared with 11,420 individuals counted in 2003. Species increased from 112 to 131.

Talk Reports – Interesting talks included an informative one on stargazing, practical tips to carry it out successfully, and the various types of celestial objects which can be seen at different times of the year. However, the sky was too cloudy to allow for any viewing in the Museum's parking lot afterward that particular evening. Then, a presentation by Barbara O'Shea and Pat Leader on their trip to Antarctica informed us about the history of that continent, and gave us detailed information about its penguins. Native orchid specialist Bernard Forsythe gave an informative and fulsome talk on our 40 species of beautiful wild orchids (his list was published in the following Spring, #122 Issue of The Halifax Field Naturalist).

Field Trip Reports – The first report was on a trip to Susie's Lake, where we learned about different species of rock lichens estimated to be about 10,000 years old. Then a hike to Pennant Point, which started out at the unfamiliar west end of the beach and ended at Taylor Head with our annual cranberry pick. The dreaded Japanese Knotweed, which can take over completely any native vegetation was noted there at the time (I wonder if it has done so now, ten years later?). Blue Mountain/Birch Cove Lakes was also visited; its importance to mainland moose considered; and protection from a proposed highway cut advised.

SPRING 2006 – Our 30th Anniversary Issue! The Board of Directors remained the same except that Elizabeth Keizer and Christine-Anne Smith had stepped down, and Betty Hodgson was added. An Open House for public input was held for a Draft Regional Trails Plan. Karen McKendry's Halifax Young Naturalist Club was closer to fruition, with talks and field trips to start in September, 2006. The Annapolis Field Naturalists offered to host Nature Nova Scotia's 2006 AGM and Conference in Annapolis; its theme to be "Our Natural History – Changing Lands and Waters". EAC's Joanne Cook and Minga O'Brien's "Standing Tall Campaign" had some fresh ideas about better forestry practices as the softwood industry teetered on the brink of disaster all across Canada.

Year-end Reports – **Financially** we were in the black, with assets of $8,966.00. **Membership** was down from 149 in 1997 to 123 in 2005, but up from 119 in 2003. **Programme** – there had been nine talks and 14 field trips in the year. **Conservation** – HFN had contributed to the Nova Scotia Off-highway Act, the Nova Scotia Coastal Guardian Programme, the Halifax Regional Plan, the Point Pleasant Park Design Competition steering Committee, the McNab's and Lawlor's Islands Provincial Park Management Plan, the Long Lake Provincial Park Plan Committee, and the long range planning initiative for Crown Lands on the Chebucto Peninsula.

The **2006 Colin Stewart Conservation Award** was given to long-time avid and knowledgeable naturalist HFN member Jim Wolford of the Blomidon Naturalist Society. Amongst many other conservation efforts and successes, two noted contributions of Jim's were his work with the Annapolis Valley Bald Eagles and the Wolfville Chimney Swifts. **HFN's 30th Anniversary** – Bernice Moores had arranged to have former, and founding members (some living abroad!), to submit their reminiscences and biographies, and there were seven pages of these valuable, sometimes humourous, nostalgic offerings.

Talk Reports – "Scenic Nova Scotia" consisted of breathtaking and beautiful aerial shots by pilot/photographer Len Wagg. Then, the "Trans Canada Trail", by teacher Kathy Didkowsky, whose four-month trek with three family members (her son was the youngest person to ever have hiked right across Canada on the Trail) showed us all the necessary planning, pitfalls, and rewards of such an arduous trip! "Members' Slide Night" gave us our usual, inspiring panorama of nature images by HFN members.

Field Trip Reports – We had our fun "Annual Sewer Stroll", and an eye-opening "Behind the Scenes" trip to the Nova Scotia Museum of Natural History.

And – there was a fascinating article with photographs by St. Mary's biology student Joseph Poissant on preparing wax candles from wild Bayberrys.

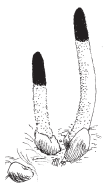
SUMMER 2006 – The budding Young Naturalists Club got off to a great early start with live, natural displays by HFN members at the Museum, followed by a field trip despite rainy weather. Restorative plans for Point Pleasant Park were struggling due to Halifax Council budget cuts. The NNS 2006 AGM had a full accounting of its wonderful conference in Annapolis. On the conservation front, details of attempts to implement improvements in Point Pleasant Park management were reported, and Joe Harvey had submitted his memoirs of HFN's early years.

Talk Reports – DNR Manager of Wildlife Resources-Tony Nette talked to us about the Nova Scotia history of "Wildlife Conflicts" with Moose, White-tailed Deer, Black Bear, Coyotes, Skunks, Beaver, Porcupine, Red Foxes, Brown Bats, Starlings populations, Crows, Pigeons, Canada Geese, Woodpeckers, Sharp-shinned Hawks, Snapping Turtles, and snakes! Post Doctoral Fellow Trecia

Schell of Dalhousie's Department of Earth Sciences talked of "Climate Change" and global climate warming, using her research travels to the Arctic. Cobequid Naturalists Club member Janet Roberts gave a very entertaining slide show of her six-and-a-half month journey hiking the Pacific Crest Trail from southern California to the Cascades in Canada. Our Members' Slide Night presentation was launched by Peter and Linda Payzant with stunning close-up slides of Nova Scotia moths, followed by Chris Miller with spectacular photos taken at Blue Mountain/Birch Cove lakes; Dave Patriqun with post-Juan Point Pleasant Park slides; Bob McDonald with some older HFN field trip slides of Etta Parker's; Ian McLaren showing Arctic birds; Jim Wolford with images from an Arctic trip to see Polar Bears; and finished with Pat Chalmers showing some of Mary Primrose's wonderful flower photos.

Field Trip Reports – Burkhard Plache took us to the beautiful Colpitt Lake area; Jack Pines, scrubby granite barrens flora, the ruins of an air defense structure(!), lichens, and past fire-scars were some of the highlights. Patricia Leader led us to the little known gem of the 90-acre Admiral's Cove Park on the northern edge of the Bedford Basin, with beautiful views, flora and fauna, opportunities for geo-caching, scaling almost vertical rocks, birding, and beach combing and cleaning. Our annual Cape Split Hike was warm and dry that year, but there was a dearth of spring flowers. The first formal trip to the Captain Arnell Lands property for starting a flora and fauna inventory of the area was affected by lots of previous rain. Lots of things were noted, but the formal inventory was postponed to a better day weather-wise. Naturalist and photographer extraordinaire Keith Vaughan took us on a Nature Photography trip to the frog Pond near the Dingle. Lots of practical tips were shared, so we could achieve better nature photos.

FALL 2006 – Plans were still being fine-tuned for Point Pleasant Park's renewal; the city formally declared Blue Mountain/Birch Cove Lakes a regional park; there was a bumper crop of Monarchs all over Nova Scotia; and Nature Nova Scotia's 'Big Tree' contest was underway. Ducks Unlimited launched its newest Greenwing Legacy Project at the provincial Wildlife Park in Shubenacadie, and five new provincial nature reserves were set aside due to the Special Places Protection Act in the Spring. The numbers for the HRM Bird Migration count were down from 12,785 in 2005 to 10,319 in 2006.



Talk Reports – Peter and Gillian Webster presented a detailed talk about their experiences over 15+ years hiking East Coast mountains, from Mount Washington in New Hampshire to up through Quebec and to Gros Morne and the Long Range mountains of Newfoundland.

Field Trip Reports – Bob and Wendy McDonald conducted a biota survey of the Captain Arnell Lands on their own, and were able to add to the list of species already recorded there. On the 8th of July, Laurel McIvor of the K.C. Irving Foundation conducted a tour of its greenhouse and six-acre Harriet Irving Botanical Gardens. The latter display nine Acadia Forest habitat types plus an experimental garden, medicinal and food garden, a large central lawn, and adjacent woodland trails. Our annual Butterfly Trip, as did last year's, again revealed a scarcity of butterflies, especially the larger ones. On August 9th, historian Iris Shea took us to the Dingle Park and then Deadman's Island, the burying ground for Melville Island prisoners. The Kingsport Mudflats were our September 10th destination, where Jim Wolford shared all his knowloedge about the many, many critters and plants there, and what a rich and necessary food source it is for waterbirds, both for residents and those just passing through.

WINTER 2006 - 2007 – The large trees along Beaufort avenue were threatened by HRM's proposed 'greenway' construction (locals called it the 'greyway' because of all the asphalt involved). On October 17th, Nature Canada met with several HFN board members and regular members to hear our group's priorities for nature conservation at the local, provincial, and national/international level, and how the newly conceived Canadian nature Network (CNN) could support our initiatives in wilderness community stewardship, habitat protection, and effective education/communication.

Talk Reports – On Ocotber 5th, geologist Howard Donahue gave us a presentation about geology and gold, specifically gold's history in Nova Scotia. (There were three gold rushes here; who knew?!) The next, on November 2nd, was about Marine Mammal Rescue by Tonya Wimmer of the Marine Animal Response Society. We learned that more successful hunting, chemical and noise polution, habitat degradation, and even whale watching itself have combined in recent times to take a much heavier toll on these wonderful animals. Deleterious forestry practices were the topic on December 7th, given by Joanna Cook of EAC's "Standing Tall: Forests for Life" campaign. The main culprits? Over-cutting, clear-cutting, mono-crops (softwood) and ignoring the potential for better and more sustainable uses of our forests.

Field Trip Reports – Anne Mills led us on a trip to learn about mosses (and liverworts) in Indian Path Common, Lunenburg County. Ancient, beautiful, and important plants, we spent a wonderful four hours absorbing all Anne to share about them. On October 15th, Howard Donahue continued his presentation about gold and geology – in Halifax, Lake Echo, Musquodobit Harbour, and Tangier. We saw evidence of the geological forces which produce gold, and visited now defunct gold mines with their derelict buildings and rejected rock cores. The next two trips were to some beautiful Colchester Waterfalls led by Richard and Grace Beazley; and then to the Herring Cove Backlands and MacIntosh Run, led by Burkhard and Ingrid Plache.

Pat leader revealed some eye-opening history about all the changes and developments in the Bedford Basin, in her sometimes humourous but very informative article "A Christmas Pantomime".

SPRING 2007 – It was noted that radar had fast become a necessity for birders wanting to know the flight altitudes of different species. The highest flyer? – the Bar-headed Goose at 29,000 feet over the Himalayas; next, swans at 27,000 feet; and then raptors at 22,000 feet. Special red blood cells ensure the take-up of enough oxygen, thus their ability to breathe where mammals never could.

Changes in the Board of Directors roster included a vacant Secretary position, the stepping down of Elizabeth Hodgson and Jim Wolford, and the addition of Lillian Risley. HFN's year ended with a balance of $8,653.00.

Membership had increased by six; 129 members from 123 in 2006. Under Conservation, we continued to work with the Long Lake Provincial Park Association, DNR, and many others on the preparation of a long range plan; also stewardship issues on Chebucto Peninsula's public lands; the Canadian Nature network; Nature Nova Scotia; and its 2007 AGM and Conference.

An erudite article about the 'exotic' Brown Spruce Longhorn Beetle (BSLB) by entomologist Christopher Majka filled us in on the idiocies of the forestry industry, the CFIA, forest management in general, and erroneous attitudes and claims about beetles. Chris's take? (now publicly acknowledged by Nova Scotia Forestry to be correct) – they are not as harmful as some of our own beetles, have not reached and will not reach infestation levels, and do not attack young trees, but only those older, already-stressed, and dying.

Talk Reports – Aptly, the first reported talk was a continuation of the Forestry Presentation by Joanne Cook on December 7th on EAC's "Standing Tall Campaign". Then, on January 4th, a 'sold-out' talk on a Galapagos trip by Peter and Linda Payzant. Fire regulations meant we had to turn people away, so a special second presentation was arranged later in the week. Chalk full of wildlife sightings, thoughtful observations, and wonderful photography, it necessitated four pages to do it justice. On February 1st, Cindy Staicer, Assistant Professor in Dalhousie's Biology Department, spoke about different Nova Scotian wood warblers and their songs, sharing recordings of the different types. An interesting tidbit – their are two types of warbler, wood warblers, and worm eater warblers.

Field Trips Reports – Our Annual Sewer Stroll on January 7th, led by Peter Payzant, was *bitterly* cold with a high wind chill index and lots of ice. Then, on February 18th we toured the Pockwock Water Plant at Pockwock Lake and learned about everything done to and added to our water before it comes out of our taps. Another Herring Cove Backlands trip on a cloudy, blustery March 10th, presented participants with snowy, slippery walking.

Patricia leader submitted another of her interesting articles, this one on "Spring" (or lack of it) – "...the first day of spring is one thing, and the first spring day is another. The difference between them is sometimes as great as a month".

SUMMER 2007 – We were invited to join a new project of the Nova Scotia Leatherback Turtle Working Group – a study of the relationship between populations of jellyfish, the turtle's main food, and the viability of the Leatherback population. A New Jersy company had been granted rights to extract millions of tons of basalt from Digby Neck by the Nova Scotia government, without any public consultation with the communities to be affected. Digby Neck juts out in to the ecologically sensitive Bay of Fundy. A "Stop the Quarry" fund-raising supper was held on July 14th. The Avon Peninsula, a large watershed for the area, was threatened by Fundy Gypsum, a division of US Gypsum, by proposing a mega-mining complex there. Another report on the BSLB by Stephanie Robertson (she first collected them in Point Pleasant Park in 1989) explained the niche which that undertaker beetle fills, and why it is no more of a threat than our local undertaker beetles.

Talk Reports – Members' Slide Night started with a trip to New Zealand by Ingrid and Burkhard Plache – wonderful pictures of a very different landscape than ours. Then Patricia Chalmers showed us older photos of the people and members on our field trips. We saw our much younger selves on trips of longer ago than we liked to remember! Jim Wolford had slides of many varied field trips, and Charles Cron shared beautiful flower images from Newfoundland. Bob McDonald's pictures were of Odonates; Joan Czapalay had slides of her many past teaching trips to beautiful Jamaica. Karen McKendry had shots from the first Young Naturalist Club field trips, and Peter Payzant's images were of Ecuadorean and Galapagian invertebrates. What a wonderfully wide range and variety of interests!

On April 5th, Dr. Marty Leonard shared with us the trials and tribulations of animals living in an increasingly noisy world. Increased noise hinders animals' communications about identity, mating, needs (young offspring), warning signals, detecting one another, and discrimination between individuals. The 3rd of May gave us Helene Van Donninck and South African Wildlife. Helene is a veterinarian and has been a wildlife rehabilitator for 22 years, some of her rescue and rehabilitation work being done in South Africa. We saw a wide variety of African animals, and heard many, many rescue tales.

Field Trip Reports – On April 14th we hiked the beautifuyl Bluff Trail with leader Richmond Campbell, a founding member of the Woodens's River Watershed Environmental Organisation (WRWEO). The Bluff Trail is the last large wilderness area on the Chebucto Peninsula. WRWEO was founded in 1995 to protect crown land from commercial exploitation and to preserve original wilderness for future generations. On May 1st, we were off to the Dalhousie Life Sciences Centre and its Greenhouse (all climate contRolled for the different types of plants there) where we were met by Stephen Fry, Chief Technologist in the Biology Department. We also toured the Thomas McCullough Museum and its bird collection. Our annual Cape Split trip took place on May 27th, and it was sunny! We were rewarded with Spring Beauty, Dutchman's Breeches, Meadow Rose in bud, and Toothwort. At lunch, the sea stack at the end of the Split boasted many nesting gulls and downy chicks; on the way back, a beach trip offered up many collectable rocks. On 16th June, we visited sustainably run Windhorse Farm, at Wentzell's Lake, Lunenburg County, in the heart of a mature, fully functioning Acadian Forest, one of six endangered forests of North America. This wood products and forestry operation was granted a certificate of excellence by the Forest Stewardship Council (FSC) and also by the stricter, regional certifier, Nagaya Forest Restoration.

FALL 2007 – George Archibald, who has devoted his life to preserving the world's living creatures and the environment, has worked tirelessly on behalf of all 15 species of cranes, successfully protecting and increasing their habitat and populations worldwide. This year, he earned the Douglas H. Pimlott Award. Pimlott was the founder of the modern environmental movement in Canada. The award was created over 30 years ago and is Nature Canada's pre-eminent award. It is given to an individual whose outstanding contributions to Canadian conservation serve as an example to us all. He was nominated by HFN

members Bernice Moores and Joan Czapalay.

Special Articles – We had a wonderful study submitted, by Marcel Cornect of the Environmental Engineering Technology and Water Resources at the Nova Scotia Community College, titled "Macroinvertebrates and Water Quality". Marcel had used several types of water insects collected from seven sites along a section of Paper Mill Run to assess the water quality. Four years of collecting data suggested that there may be small amounts of organic pollution in the area, probably due to runoff from residential and commercial properties.

Talk Reports – June 7th gave us the talk "Lichens" by ecologist Rob Cameron with the Protected Areas Branch, Nova Scotia Environment and Labour. We learned about the relationship between lichens and pollution and how these ancient plants can be excellent indicators of the severity of pollution levels. On September 6th, Laura Hussey from the Canadian Parks and Wilderness Society (CPAWS) gave a talk on the "Fundy Mussel Reefs" found in the Bay of Fundy. The reefs are formed by long-dead Horse Mussels, still held together by their byssus threads, with the living mussels on top. These reefs form a very important ecological role, providing habitat for an assemblage of other species, and contributing to seafloor productivity through nutrient recycling (which supports other creatures).

Field Trip Reports – On July 8th, "Butterflies", with Peter and Linda Payzant, and despite early fog, and clouds the rest of the day, a good round-up of butterflies was seen. A surprising find – a rare Common Roadside Skipper; in all their 30 years of butterflying, neither Linda nor Peter had seen this particluar butterfly! The next trip was to beautiful Gaff Point Nature Reserve, Hirtle Beach, on July 29th with Paul MacDonald, where we learned about both its geology and natural history. On September 8th – another oceanside trip, this time to Lawrencetown salt marsh with Nancy Neatt, co-founder of C.B. Wetlands & Environmental Specialists. We learned about, and saw, the type of marsh fish which prey upon insects and in turn are preyed upon by birds, such as Great Blue Heron. Birds, spiders' webs, flowers, salt marsh grasses, Goosefoot and Glasswort, bulrushes, and Arrowgrass were introduced to us by Nancy, who was very knowledgeable.

Nature Nation e-Newsletter – On June 15th, the US National Audubon Society released an alarming report; many of the most recognised birds were experiencing steep population declines, based on forty years of bird population data collected through their annual Breeding Bird Surveys and Christmas Bird Counts. Twenty species had lost more than half their populations since 1967.
(*to be cont'd in the next issue)*

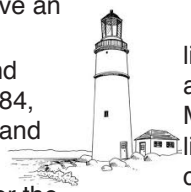
HFN TALKS

LIGHTHOUSES 2 OCT.

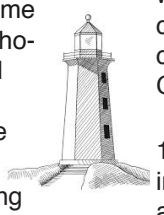
– S. Robertson

Christopher Mills, son of moss/lichen expert Anne Mills, who has given HFN several talks and field trips, built his first lighthouse when he was six and a half years old. From that point on, he never looked back, even though, when he was young, he was very afraid of the deep, mournful-sounding foghorns, (of which he gave an excellent imitation!).

Donald Wickerson Lent, keeper of Brier Island and Grand Passages Lighthouses from the 1960s to 1984, was the inspiration for Chris to become involved in and passionate about lighthouses.



From 1989 to 1997 Chris served as lightkeeper for the Canadian Coast Guard in three provinces, and he is one of four founding members of the Nova Scotia Lighthouse Preservation Society (NSLPS), which is celebrating its 20th anniversary this year. Chris associates his passion for lighthouses and lighthouse keeping with the fact that in utero, his mother visited Cape Hatteras Lighthouse! From childhood through to today, lighthouses have continued to have a profound impact on his life, and in some ways, he has never left them. He continues to visit, photograph, and research lighthouses in Nova Scotia and beyond, and in that vein, we were shown Chris's first picture – the beautiful red and white striped lighthouse on Brier Island – 'Western Light'.



Why are lighthouses important? Structures are being lost, lights lost, and also their keepers. His own, first-hand lightkeeping experiences as an assistant and acting principal keeper on 11 light stations in Nova Scotia, New Brunswick, and British Columbia led him to try and answer this question, and also to found the NSLPS in order to try and save some of them. His presentation explored the monotony of lighthouse work, along with the excitement, the storms, the close calls, the ghosts, and in one case, the social dynamic of keeping a light on a rock so small you could throw a pebble from one end to the other.

We saw many, many beautiful shots and images of lighthouses; two of them were Langara Point, B.C., and and Gannet Rock, about 12 kilometres south of Grand Manan in the Bay of Fundy, and the third oldest wooden lighthouse in Canada. Gannet Rock is also one of the country's only truly 'wave-swept' lights. It was first lit on Christmas Eve, 1831 to warn off mariners from the treacherous Murr Ledges there.

We also saw a very old plan of Louisbourg's lighthouse, the oldest lighthouse in Canada and now part of Parks Canada. Built of stone, it was completed in 1734, then rebuilt in 1842 as a square wooden lighthouse supported by a massive masonry base. In 1923, that wooden structure was also replaced with an octagonal concrete lighthouse, decorated with neoclassical architectural features. This present tower is a twin of the George's Island light in Halifax Harbour.

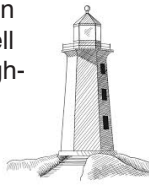
At Chebucto Head, the first light was established in 1872, and a second in 1928 – both no longer standing. The third structure, in 1940, was a combined light and keeper's quarters called a 'cupola lighthouse'; it was especially important for guiding WWII ship convoys into and out of Halifax Harbour, and a gun battery was also put in place there for harbour protection. In 1967

a fourth, 45 ft light replacement was built. Sadly, it was destroyed by fire in 2004.

Sambro Light is the oldest *operational* tower still extant in the Americas. It was started in 1758, finished in 1760, and added to in 1906. Sambro Ledge was very dangerous to ships coming over from Britain, thus the reason for building it so soon after the founding of Halifax. Cannons were installed there as well. Up until 1988, when it was de-staffed, Sambro had had a total of about 15 principal lightkeepers. Its walls are six ft thick granite, with large, solid steps going up to the top. It is sheathed in wood to protect the stone 'pointing', and is painted the ubiquitous red and white of many lighthouses. The former keeper's house is in a sorry state of decay, but Its original Fresnel lens is now in the Maritime Museum of the Atlantic.

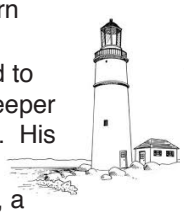
Chris told us of one very important and significant historical light improvement (for both keepers and ships) – the development of kerosene by Abraham Pineo Gesner, born in Cornwallis, N.S. Kerosene gave a much better, cleaner, and more intense light than whale oil, which was very smokey, dirty, and not very luminous.

Sometimes a lighthouse will have a succession of 'keeper' families; but occasionally, only one. An example of the latter is Seal Island Lighthouse. Seal Island lies off the southwest tip of Nova Scotia at the 'elbow' of the Bay of Fundy. For more than three centuries storms, fog, and powerful tides had conspired to wreck at least 160 ships, making the island one of Atlantic Canada's most dangerous areas for shipping. At the instigation of Mary (Crowell) Hichens, a light was erected 500 metres back from shore, near the southern tip of Seal Island. Its large, wooden structure was built of massive squared timbers, 47 feet long, framed and set in a rock and mortar foundation. The lantern floor was reinforced with heavy wood knees, and stout cross members braced the rest of the tower. With the installation of its light, It was finished in 1831. The Crowells and Hichens then moved in, and so began a Crowell family lightkeeping tradition that would last more than a century. Winnifred Crowell was a descendant of the Crowell family, and her daughter Mary was married to one of the last keepers. This station was destaffed in 1990.



We saw a shot of Betty June Smith, daughter of Evelyn Richardson (We Keep a Light, Ryerson Press, (*a book I highly recommend - ed.*). This book won Evelyn the Governor General's award in 1949; the Richardson family kept the light at Bon Portage, also called Outer Island.

We were shown an image of the first lighthouse which Chris had built. Looking very much like many young children's' science projects, it still works! We also saw him, his sister, and his Mum Anne in front of Western Light on Brier Island; it was kept by three families.



In the early 50s, Chris had started shifting around to different light stations. He requested to be a lightkeeper at Brier Island, and he was finally assigned in 1964. His three-week position turned into three years!

Cross Island Lighthouse was Chris's first posting, a three-week relief job which led to more work as a lightkeeper at other staions. Cross Island Light divides the approach to Lunenburg harbour, and it was destaffed in 1989. After Cross Island, Chris worked at stations as positions became available in the final years and months before the stations became fully destaffed. The first was Seal Island, then Gannet Rock, then Machias Seal Island. We saw Seal Island's original old beams, and he said that one can still smell the kerosene from the old light up in the tower. Chris spent one year at Seal Island until it was de-staffed in 1990.

The previously mentioned Gannet Rock Light, (its keeper was Peter Coletti), has a granite and concrete base, which was constructed in 1831, under its wooden structure. Being a 'wave-washed' light, it had to be able to withstand the full power of the Atlantic Ocean; unfortunately, this light is now condemned.

There was a close shot of the Green Island Light, in British Columbia, about 16 kilometres south of the Alaska Panhandle. In this area there are very miserable, constant Arctic outflow winds, often with sustained speeds of 80 knots! Chris and his wife were stationed there for several months.

Then they went to Robb Point Light on Ivory Island, about 20 kilometres from Bella Bella, a small First Nations community on British Columbia's remote Central Coast. They fished, kept a vegetable garden, and were kept very busy there. In one of their many hiking explorations, they found some old, weathered memorial totem poles.

They then moved to Langara Point Lighthouse, a manned light located atop a scenic bluff on the northwest corner of Langara Island in the Queen Charlotte Islands (now Haida Gwaii) which was built in 1913. The original light, still in use, has a first-order Fresnel lens manufactured by Chance Brothers of England. Each side of the lens is over 8 ft tall and 5 ft wide. At Langara Light they were kept very busy with all their lighthouse chores, the most important being 'calling in the weathers'.

Next, they were stationed at Camilla Island in the Hecate Strait, where we saw an image of Chris's wife painting the foghorn. There were some beautiful nature shots taken during all of his different postings; two of them were a stunning red starfish alongside giant barnacles, and another of a Blood Star.

Historically, the necessary chores lightkeepers had to do were all done by hand – absolutely everything. Dedication and loyal commitment were the most important requirement for a reliable lightkeeper. At Cape Sable the keepers always, without fail, lit and unlit the light exactly on time every day of the year, for years (at this juncture we heard an audio from Anne Wickens, Evelyn Richardson's daughter, sharing some of her experiences as a member of a lightkeeping family). We saw a graphic plan of the physics of the Cape Sable light, which was lit with pressured kerosene; Chris said these were a superior kind of light, and that the larger ones were floated in a bath of mercury. It was very important to keep the lights' lenses very clean, ensuring maximum brightness for the ships.

Lenses have changed, but they are still designed by the French – their famous Fresnel lights. A Fresnel lens

is a type of compact lens originally developed by French physicist Augustin-Jean Fresnel. The lens captures light from a central source, then directs and magnifies it into a powerful, narrow beam, thus allowing the light to be visible over greater distances. After kerosene was phased out, electric lights were used. Until a few years ago, a 1,000 watt bulb was used at Sambro Light and it could be seen for 24 miles!

"The mighty Diaphone" – There are all types of different horns, and the diaphone was a 1902 Canadian invention; it was operated with compressed air and was very labour intensive to run; we heard an audio clip of one. Maintaining the horns was another of the lightkeeper's duties, along with all the weather work, and general upkeep and maintenance of the all-important light. Throughout all the unremitting chores, there was great difficulty in carrying on any conversation while the horns were sounding.

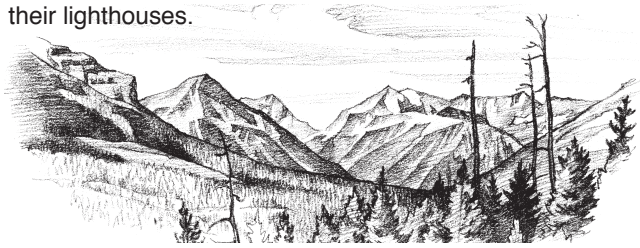
The main sources of heat for keepers' houses were the kitchens' stoves, and everyone made their own fun during any spare time, mostly in the evenings.

We saw the Parrsboro Lighthouse after a hurricane. In 1976 winds of 120 knots flooded everything at Gannet Rock, Lockeport, Shelburne County, where the stove and power went out and there was nowhere to escape.

The end of 'lightkeeping' began in the 1960s with battery operated lights. Mosher's Island Light was pulled down and set on fire, and the house at Sambro Light was burned by vandals. We also saw pictures of Pictou Bar Light being pulled down and burnt. Owned by Bill Mont, the Devil's Island lightkeeper's house finally succumbed to the elements a couple of years ago. All that remains is a pile of weathered boards.

There have been some successes. Gilberts' Cove Light, 20 km from Digby, has a 'seventh order' Fresnel lens; it has been saved and is now a community Centre. Cape Forchu, Yarmouth, was the last lighthouse to be de-staffed (in 1993); it is now thriving as a tourist attraction. In Newfoundland there are still lightkeepers at Cape Pine and Cape Race on the dangerous south coast of Newfoundland's Avalon Peninsula. Cape Race played a significant historical role in the Titanic disaster. It contains a hyper-radial lens which is approximately 14 ft tall, and there are very few of these left in the world. Also, on the northern part of the Avalon Peninsula, Ferryland Head Light, about 80 km from St. John's, is now a successful tourist destination and picnic house.

Thank you Chris, for a fascinating look into the history of the arduous and exciting life of lighthouse keepers – and their lighthouses.



GIVE ME MOUNTAINS 6 NOV.

– Burkhard Plache

At this October meeting, HFN member Peter Wells treated us to a picturesque and personal recollection of his trek in the eastern Himalayas in Nepal. This 22-day trip, which he took in the fall of 2013, has been one of the highlights of all his travels.

Before taking us to the other side of the globe, Peter stepped back and reflected on his enjoyment of mountains from an early age, of camping while growing up, and of exploring and continuing to explore mountains all throughout his life. For instance, the Canadian Rockies have offered him opportunities to explore his interests in geology and fossils (e.g., Burgess Shale, Yoho), flora and fauna, beautiful scenery, exercise, citizen science, and culture and history. His Nepal trip also touched on multiple aspects of history, culture, and nature.

The camping trek led through the foothills of the Himalayas, following paths taken by Hillary, Tensing, and Hunt on their expedition to Mt. Everest in 1953. After flying into Kathmandu, the adventure started with the eight-hour bus ride to the village of Jiri, where Peter and his friend Griff met up with their team of guide, cook, and porters. On the following day, they left roads and the comforts of civilization behind and entered the low hills. However, as Peter was quick to point out, low hills in Nepal attain heights of up to 3,600 m in this region, dwarfing most of North America's mountains.

The first five days of the trek led eastward from Jiri through numerous villages, over mountain passes, and down into stream gorges with well-constructed suspension bridges facilitating the crossings. This section of the trek led through country rarely travelled by tourists, providing a unique window into life in Nepal. The land was heavily used for agriculture – from sub-tropical crops like bananas or sugar cane in the lower elevations – to grains or potatoes at higher elevations. Unfortunately, the frequent rain somewhat spoiled this otherwise exceptional experience.

The following leg of the trek was northward, through the Dunh Koshi Nadi river gorge, with the town of Namche Bazar as the next major destination. The trails through this section proved more challenging and treacherous than the first. In the middle of it, some of the supporting porters turned back, and from here onward, five yaks carried much of the load. Then the trail became even more challenging, with multiple river crossings over long and very intimidating suspension bridges. Finally, they reached Namche Bazaar, the regional centre, located at an elevation of 3,440 m in a mountain cirque.

After a two day acclimatisation, they visited the village of Khomjung, well known in Nepal as the place where Hillary built the first of his 'school houses in the clouds'. They had now reached the subalpine region, and from here on, Mt. Everest was visible whenever the weather permitted. Sadly, though, the weather at that point stopped cooperating, so much so that the plan to hike up to the Everest Base Camp had to be abandoned. They had to be content to reach Dingboche (4,410 m), still a two-day trek from the base camp, before being forced back. In hindsight, that might have been a good thing, since snow and avalanches further up the trail would have made any attempt to get to the base camp outright dangerous.

In Tengboche, they managed to visit the famous Buddhist monastery which is closely connected to Rongbuk Monastery at the foot of Mt. Everest. Then, they returned in good weather via Namche Bazar downriver to Lukla.

Even though the general direction was now down rather than uphill, this last section of the trek was still challenging. The return flight from Lukla to Kathmandu was short, but offered some final views of the high peaks of the Himalayas.

Overall, Peter visibly enjoyed his presentation, remembering the land, culture, and people, and he emphasised that he would like to return for another such experience. The audience was equally impressed by Peter's account and photos of this fascinating place.

The presentation was followed by a lively question and answer period, and I would like to thank Peter for sharing his experiences with us.

HEALTHY ENVIRONMENTS 4 DEC.

– Clarence Stevens

"The Right to a Healthy Environment" was presented to us by Jamie Simpson.

Living in a modern civilised society, the right to a healthy environment might be something that most Canadians believe they already have. But, according to Executive Director Jamie Simpson of the East Coast Environmental Law Association, this is not the case.

In fact, there is no protective legislation. This means that in many communities in Canada it is no longer safe for local residents to eat berries or other wild edibles due to the high level of contaminants found in their associated ecosystems.

One of the worse locations is 'Chemical Alley' just outside Sarnia, Ontario. This polluted area is also known as 'Cancer Alley', because if you live there, you and your family are likely to experience cancer rates that are 34% higher than the provincial average. In addition, the incidence of lung cancer is 50% higher. While Chemical Alley is one of the worse sites in Canada, there are literally thousands of smaller, but just as heavily polluted, sites in our country. Many people might be surprised to hear that the Canadian Charter of Rights and Freedoms has no mention of our Environmental Rights.

In 1962 Rachel Carson wrote her book Silent Spring and had this to say about the American Bill of Rights, "If the Bill of Rights contains no guarantee that a citizen shall be secure against lethal poisons distributed either by private individuals or by public officials, it is surely only because our forefathers, despite their considerable wisdom and foresight, could conceive of no such problem."

Another applicable Rachel Carson quote and a favorite of mine is: "To the bird watcher, the suburbanite who derives joy from birds in his garden; the hunter; the fisherman; and the explorer of wild regions, anything which destroys wildlife in an area for even a single year has deprived him of pleasure to which he has a legitimate right. This is a valid point of view."

On a world wide basis, ninety percent of countries in the United Nations recognise that their citizens have environmental rights. Canada does not, placing us in the same category as China. (That is until April of this year when even China's parliament recognised the need to pass new legislation in order to address that country's widespread environmental problems.)

Simpson stated that we need legal environmental rights in Canada as well, as they will not only help provide protection, they will also allow for enforcement and accountability.

David Boyd, former Executive Director of the Sierra Legal Defence Fund and currently one of Canada's leading environmental lawyers, has done a study where he looked at nations around the world that have laws which address environmental rights. He found that as an added benefit in 78 of the 92 nations he looked at, such laws prevented 'roll-back'. Roll-back is the tendency of political parties to reverse or to reduce rights instituted by the previous government. Since that study was completed, citizens in over 100 nations now have environmental rights.

Canada is still not one of them.

Simpson explained that environmental rights include both Substantive Rights and Procedural Rights. Substantive Rights include such things as safe water, clean air, and healthy ecosystems. Procedural Rights cover items such as access to information, the right to participate in decision making, and the ability to appeal.

From a national perspective, Canada still has absoutely no national environmental rights. And from a provincial perspective, we in Nova Scotia also have no environmental rights. Only in Ontario, Quebec and our three territories, do Canadians have some partial environmental rights.

Cities also have the ability to provide environmental rights, just as the city of Vancouver has done. The amazing David Suzuki, through his David Suzuki Foundation's 'Blue Dot Tour', is traveling across Canada to encourage people to work for recognition of such a right – locally, regionally, and nationally.

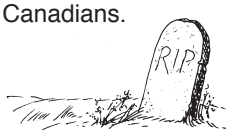
Jamie's website states "Richmond and Vancouver, B.C., The Pas, Manitoba, and the Montreal borough of Rosemont-La Petite-Patrie have all recently passed municipal declarations recognising this basic right".

Blue Dot campaign volunteer Christopholus Zim was on hand to collect signatures of support during the Christmas Social that followed Jamie Simpson's presentation.

Simpson did an excellent job of providing a fast-paced, informative talk on a topic that had the potential to be dry and boring.

Those wishing to learn more can also check out the East Coast Environmental Law Association website **www.ecelaw.ca**. If you would like to learn more about the Blue Dot campaign, contact the Ecology Action Center, 2705 Fern Lane, Halifax, N.S., B3K 4L3; 429-2202.

I hope I live long enough to enjoy a country where environmental rights are available to all Canadians.



HFN FIELD TRIPS

CABIN LAKE TRAIL WALK

– Brian Ferguson and Patricia Leader

Date: Saturday, September 27th
Place: Cabin Lake Trail, off Starboard Dr., Bedford
Weather: Warm and breezy
Leader: Patricia Leader
Participants: 11

The weather was warm and breezy when eleven of us started out on the Cabin Lake Trail; our guide Pat Leader lives in this area and is familiar with its history. It was thought that HFNer ecologist Colin Stewart may have originated the name Cabin Lake based on a cabin built by local children back in the 1980's. That structure is mostly long gone but it was thought that the name Cabin Lake should stay – in memory of Colin and all his hard work. The name was formally approved on July 16th, 2014, by the Nova Scotia Geographic Names programme. The name is now researchable online at **wwwns.placenames.ca**.

Attaching a name to a geographic place is no easy task, as Bob McDonald will attest. Apart from all the collecting of signatures (many signees were not even aware of its presence), Bob went through a great deal of communication with the people who could actually make the naming a possibility. HFN members were some of the signees.

At 0.065 hectares, Cabin Lake is a small body of water located at the northern edge of Hemlock Ravine Park in Bedford. The pond became part of the park only two to three years ago, when this property was donated to Halifax by the developer of the adjunct Royal Hemlock subdivision. However, the trail itself was planned starting around 1990 – about the time of the development of the Royal Hemlock Subdivision by Armco Co.

It is interesting to note that many of the trails under Halifax North West Trails Association (HNWTA) began in this way. Along Larry Uteck Drive, the condominiums on the eastern side will eventually be linked with a trail system which connects with that of the Old Coach Road Trail and, of course, Cabin Lake. Unfortunately, the association has not yet reached the point where developers initially connect with them unless they broach the issue at public meetings. Several years ago, Wendy McDonald drew up a list of criteria for trail building approval. But that list has not been used by Halifax before developers donate a trail. Consequently, HNWTA often inherits a trail which may later require resurfacing or protection against washouts, for example.

The history of this area goes back to the time of First Nations. Europeans came in large numbers with the founding of Halifax in 1749. Land, of course, was a real incentive to immigrants. Around that time, the first land grant was given to the Reverend Jean Baptiste Moreau. Moreau's parcel consisted of 340 acres and had good potential for quarrying, timber, and, because of access to the Basin, fishing. Moreau, originally from France, had left England with Cornwallis. Some records state that his family had the first baby born on Nova Scotian soil! Moreau had converted to the Protestant faith from Catholicism, so he administered to the first German and Swiss immigrants. He also learned the language of the Mi'kmaq and administered to them as well. When St. Paul's Church opened in 1750, he was appointed assistant priest there. Later on, along with his congregation, many of whom had died of diseases prevalent at that time, he moved to St. John's Anglican Church, Lunenburg. Land distribution in that area was decided by using playing cards, each one denoting a specific parcel. Moreau acquired land in Lunenburg as well. One can only imagine a game of cards played in a church in that period of time. Upon his death, he was buried below his Lunenburg church.

Moreau's Bedford land was never developed, and it was sold numerous times through generations of the Gray family before its most recent acquisition.

Perhaps the person most responsible for creating a positive environment in and around Hemlock Ravine Park, including Cabin Lake, was the late HFNer, ecologist Colin Stewart. He worked tirelessly, relentlessly, and successfully with all levels of government, along with the Friends of Hemlock Ravine, to restrain rampant development in this area. Colin had similar input into other lands – notably George's Island.

The Cabin Lake Trail itself skirts around the area's boundary – with the lake on one side and the Royal Hemlock Subdivision on the other. With the assistance of Colin and the co-operation of Armco Co., the trail was constructed over a number of years beginning around 2000. Today, it is easily accessible from the adjacent subdivision via several streets – and under the watchful eye of HNWTA. The path is covered with fine crusher dust for easy walking, has steep gradients in a few places, but has rest stops consisting of wooden benches at strategic locations. In the winter, one can see the Dartmouth power station.

Approximately 10,000 years ago this area was gouged out by glaciers during the last ice age. There are many streams running through the park, and many bodies of water. A lot of the ponds, sometimes known as kettle ponds, are too small to be named, and they are all part of the watershed which also includes Kearney and Susie's Lakes.

Because of the construction of and land disturbance for the adjacent Royal Hemlock development, many of the pre-existing watercourses have been adversely affected; now, in wet weather, floodplains are created. A walk on the trail can be extended by walking around two flood containment ponds. They were built to help alleviate the problem of flooding. In the last few years, the historically stable stream which runs down to the Bedford Highway and into the Basin by Fishermen's Wharf can now flood badly in heavy rainfall. Driving that section of the highway then becomes somewhat precarious and gets attention from politicians.

On our walk we saw about 12 dozen Black Ducks cavorting in the lake, and an Osprey flew by low overhead.

Splashes of colour in keeping with the early fall season were provided by hardwoods such as Red Maple, Yellow Birch, and Oak trees. Softwoods included various kinds of spruce and pine but there were few Hemlock trees to be seen along the trail. Unfortunately, those on the northern edge of the ravine were all cut down when the fallen trees were cleared away after Hurricane Juan.

Closer to the ground we saw a large variety of plants typical for this terrain. These included various types of Goldenrod, Blueberry and Raspberry bushes, the leaves of Lady's Slippers, Deadly Nightshade, Wild Lettuce, and Leatherleaf. There were late blooming plants as well such as Lambkill with its small pink flowers. One particular plant we noticed had small red petals but it remained unidentified. Other plants were past their prime, including Pussytoes with their pink, fluffy seedlings sprouting out. Other growths observed were pink Asters and Sweet Fern, which has a pleasant, spicy, aromatic odour.

It was a wonderfully informative outing thanks to Pat Leader, and the sponsorship of the HNWTA and the Halifax Field Naturalists.

(Shortly after the walk, Pat was greatly surprised that the cabin's builder, whom she had been seeking out for some ten years, had emailed Bob McDonald. He had learned about the area's present state from his brother who had had a chance meeting at the airport with a former friend. Dugald McLaren had designed and started the cabin on his 'No Name Lake' when he was 18 years old. A little of his cabin's base could be seen by Dugald when he revisited the area, and he found the original door with its wooden handle lying close by. The wharf he had built was underwater but still visible. Dugald briefly explored the woods, looking for old trails. His approach had usually been via Hwy 102 (usually when he had equipment to bring in), or from his home on Kent Road and then up and over the ravine. He also found the large rock from which he used to jump into the water, which he estimated to be about 10 ft deep. The cabin, measured by his shoe, was approximately 10x12 ft, built with an axe using nearby trees; it could sleep two and it even had a plastic insert for a skylight. Dugald remembers sleeping overnight in the cabin when it was -20C°, wearing some 17 pieces of clothing! During its three years of construction there were rarely any other people around. Pat remembers well, when Barry and Jean Sawyer took her on her first hike there, that there was a lot of bush-whacking from the highway – not one's usual Sunday stroll!

Wayne Ingalls, who had been Dugald's neighbour and also a past President of the Friends of Hemlock Ravine, met us for part of the above walk. Later he and Pat exchanged photographs. As well, Duguld sent her one of himself as a youthful lad standing on the cabin roof with his axe.

If HNWTA ever has to replace the Cabin Lake Trail interpretation board, it will certainly include Duguld's history.)

TREE PLANTATION VISIT

– Richard Beazley

Date: Saturday, October 18th
Place: Chelsea, near Bridgewater, Lunenburg Co.
Weather: Cloudy/Sunny, 18°C
Leader: Lowell DeMond
Participants: 12, of whom seven were HFN members

To begin with, the drive to and from Chelsea was colourful, and the visit to the fish ladder and tree farm was interestingly informative and relaxingly enjoyable.

Hosts Lowell and Marion DeMond, with helpful neighbour Charlie Robar, greeted us with friendly enthusiasm and an eagerness to show us around. Lowell could hardly wait for the appointed hour to get the walk-about started, and Marion provided lunchtime cookies and apples to fuel our afternoon activities.

Lowell grew up on a family farm in South Brookfield, Queen's County, and has fond memories of both working on, and leisurely exploring, the farm's large woodlot – so much so that in 1972 he took advantage of the opportunity to purchase a 32-hectare property in Chelsea which had once been owned and farmed by his grandfather's brother. When asked why he had done so, considering that the property had been entirely burned over 16 years earlier, Lowell commented that he wanted to see if he could help nature restore the forest on this relatively small and personally manageable property.

Two brooks flow across the property and form a larger brook just west of it, and this latter was once dammed for milling purposes. When that deteriorated the beavers took it upon themselves to restore both the dam and the reservoir. Brook Trout from Molega Lake, five kilometres away, spawn in the two small brooks on Lowell's property when they can reach them, so in 1995, he and a friend took it upon themselves to rebuild the dam and add a fish ladder. With approval and advice from the necessary government departments, they completed the project in two years. Above the dam and ladder, the reservoir, wetland, and brooks now are home to the Brook Trout, as well as a variety of coarse fish such as Small-mouth Bass, suckers, Yellow Perch, and American Eels. Animals in the pond include Beavers, Muskrats, Mink, and a variety of birds – namely ducks, Red-winged Blackbirds, and, occasionally, a Great Blue Heron. Even though the dam and fish ladder have been a success, it is now deteriorating and it needs very expensive repairs, and the beavers' continuous efforts to dam it need to be countered. So Lowell, who admits that the 'afternoon of life' is catching up with him, is thinking about opening the dam and removing the fish ladder, thus allowing the area to revert to its natural state, which, he admits, likely will be a good thing.

The farm property once had a house with a basement, a barn, cleared land for a garden and hayfield, a woodlot, and a well. The old buildings have been replaced with a small one-room cabin that houses a collection of Lowell's treasures, which he took great pleasure in showing us, and a steel container in which any necessary equipment and tools are stored. The well still exists but is not used. Much of the burned-over cleared land

and woodlot are covered with up-to-40-year-old trees, including Red, Scotch, and White Pine; Red, White, Colorado Blue, and Black Spruce; European Larch (Tamarack, Hackmatack); and Balsam Fir. Thousands of these trees have been planted by Lowell, with occasional help. The usual hardwood trees of an Acadian forest have reappeared naturally – White, Grey, and Yellow Birch; Red Oak; Sugar Maple; and Poplar. Both brooks have substantial canopies of alders; these canopies are very important for maintaining the cool water temperatures which ensure an abundance of natural aquatic life. Also, this growing forest is now home to White-tailed Deer (from which Lowell harvests one yearling annually), Black Bear, Porcupine, Eastern Coyote, Fox, Snowshoe Hare, and the usual assortment of small creatures such as Red Squirrel, Weasel, and Skunk.

Two small portions of the property are devoted to growing Christmas trees and boughs, an endeavour that the Lowells undertook to create a small cash flow. The Scotch Pine and Balsam Fir are highly cared for and groomed to near perfection, and, upon request, White and Scotch Pine can be spray-painted a dark green. Each tree requires a lot of work over ten or more years and yields a meager $12.00 return! Boughs, on the other hand, require far less work and yield a fair profit. The Christmas tree business is in steep decline due to the loss of American markets, the growing use of artificial trees, and the increasing number of people living in condo and apartment buildings that do not allow natural trees.

Over lunch and while strolling though the tree farm, Lowell talked about the ups and downs, the successes, and the failures of his labour of love. He answered our questions and expressed his opinions with candour. A natural and eager story teller, he regaled us with tales of property-related experiences, including being outwitted by busy beavers and having shotgun confrontations with tree-ravaging porcupines and trespassing ATV riders!

This was an informative and thought-provoking field trip in a quiet, peaceful, and beautiful forest setting.

Thank you Lowell, Marion, and Charlie for your stewardship of this special place, and for graciously hosting our visit.

PURCELL'S COVE QUARRY WALK

– Burkhard Plache

Date: Saturday, Nov. 14th
Place: Purcel's Cove Quarries
Weather: Sunny, but sub-0ºC, and a cold wind
Leader: Geologist Marcos Zentilli
Participants: 35

The walk to the granite and bluestone quarries around Purcell's Cove was led by geologist and local resident Marcos Zentilli, and attracted 35 participants eager to learn more about the local history of the quarries and their role in the building of Halifax. We met at the Purcell's Cove Social Club parking lot, where Marcos started with a brief introduction.

Geology can explain the properties of the two types of rocks (bluestone and granite) we were to see:

Bluestone is the older of the two types of rocks. It is a sedimentary rock that originated some 500 million years ago at the bottom of a deep ocean. The sediments deposited there were typically tiny particles, slowly drifting downward in the water column to form regular layers of material. This process of deposition was not always uniform; occasional submarine landslides far away would generate turbulent waters carrying more and larger particles which would settle down more quickly, suddenly interrupting the steady layering from before. After such a disturbance, the sedimentation would return to its slow and steady pace. These sediments were overlaid by more material, pushed deeper into the crust of the earth to be compressed, becoming rock in the process. Then, at around 400 million years ago, these sedimentary rocks experienced sideways pressure from plate tectonic movements, causing them to be heated and folded.

Granite is the younger of the two types of rocks. It is an igneous rock that originated some 380 million years ago when hot, liquid magma (at some 800ºC) pressed upward and cooled to crystallise into granite. During this event, it displaced and partially melted the bluestone rock already in place. Today, Purcell's Cove is located at the edge of this ancient magma upwelling, with granite on one side of the road, and bluestone on the other side. However, even the bluestone which was not displaced or outright melted was affected; the heat of the magma created the equivalent of a potter's kiln, fusing the material in the bluestone even more tightly, creating in the process a particularly hard rock. The amount of heating diminished with increasing distance from the granite. For example, the bluestone rocks seen near Purcell's Cove continue onto the Halifax Peninsula, with outcrops visible, among other places, at the Martello Tower in Point Pleasant Park, where the heat was less intense.

All the folding, heating, and subsequent cooling took place deep underground. Over time, the overlying rock layers eroded, and the final sculpturing of the land ended some 10,000 years ago, when the ice fields of the last ice age scoured the rocks. Occasional erratic boulders bear witness to the ice age origin of the landscape, while gouging marks on the rock surfaces show that the last movement of ice was from north to south.

With this solid background, we set out to first explore the granite quarry. Initial quarrying operations started in the late 18th century, and by the mid 19th century, it had developed into a major industrial operation. Only in 1957 did the quarry close.

Starting from the parking lot, we followed an old access road to the quarry which runs parallel to the so-called 'Trolley Track', the bed for the first steam engine in Nova Scotia, built in 1834. This predates the more well known Albion Mines' Pictou steam engine by five years. After reaching the top of the hill, we could see the first traces of quarrying – blocks of granite cut

in straight lines, with holes spaced along the margins. Marcos explained that individual building stones were cut from bedrock to specification, requiring knowledge of rock properties and skilled workers. Typically, rocks exhibit layers that separate easily, and in the rocks before us, the horizontal layer had been worked first. Then the north-south direction was cut, and finally, the east-west direction. For cutting at the desired line, holes were drilled along it a few inches apart. Then, two metal shims ('feathers' in the quarryman's language) were inserted into the holes, and wedges were slowly driven between them into all the holes until a uniform crack developed, splitting the rock into a building stone. Sometimes, a rock may have hidden inside cracks; then, when the stone is cut, it breaks into an irregular shape, making it useless for building. We saw many such rejects in the quarry grounds. Marcos also pointed out the foundation of a fairly large building, and small heaps of slag, showing that the quarrying was supported by a forge, for the making or repairing of tools.

In the granite, we could see the constituent quartz and potassium feldspar crystals, and occasionally there were xenoliths (foreign stones, from the Greek 'xenos', foreign; and 'lithos', stone) – remnants from some other rock that was partially melted when the magma was pushing upward. These xenoliths were up to a few inches in size, and generally dark gray in colour.

Marcos also mentioned another invisible ingredient of granite – trace amounts of uranium. As a consequence, it releases radioactive radon gas, which is a concern for local residents. The radon gas can accumulate in basements or in the water of a well drilled into the granite, causing exposure to ionizing radiation. Radon gas exposure is the second leading cause of lung cancer after smoking. However, testing for radon gas is fairly simple, and there are methods of mitigating the risk, like sealing or venting the basement, or collecting rain water into a cistern instead of using a well.

After visiting the granite quarry, we headed to Bluestone Road located on the eastern side of purcell's Cove Road. There we had a look at a former bluestone quarry, which left a depression which is now filled with water. Remnant bedrock is visible next to the road and as a major outcrop across the man-made pond. We stayed on the road, where the layering of the rocks was clearly visible in a number of places. Due to its sedimentary origin, bluestone separates best along its original layers. The stones quarried here were typically cut to a smaller size than the granite was. Many of the Dalhousie University buildings are clad with the dark gray stone obtained from these quarries. The outcrop across the pond also had a layered structure, but the top looked very irregular. That material was most likely deposited in a sudden massive event, disrupting the neat layering, and in our time disrupting the quarrying operation, since those deposits would only separate into irregular stones, unsuitable for building.

We returned to the social club via a small road along the shore of the cove. Here, the residents experience the impact of rising sea levels first hand. When the road was originally put in, probably more than 100 years ago, it was above the highest expected water level. These days, the road is regularly flooded, and it requires seaward maintenance, in the form of boulders, to break the action of the waves. One of those boulders was of the bluestone type, and it showed cracking from weathering. It was a sulphidic slate, and the weathering is due to its containing pyrite (FeS_2) or pyrrotite (FeS). Both pyrite and pyrrotite react with air to form sulphuric acid, which in nature kills water dwelling animals (fish, amphibians). If it gets into wells, the water will taste bad, cause corrosion to pipes, and stain armatures. Thus, any disturbance (road or building construction; mining) of rocks containing sulphidic slate is problematic, because the excavated rocks must be deposited where either no weathering occurs, or where the acidic runoff is controlled.

After this final point of interest, everybody was happy to return to the Social Club. Even though the sun was shining most of the time, sub-zero temperatures and a brisk wind had taken a toll on everybody's comfort. We were all thankful for the hospitality offered by the Social Club, and equally grateful for a wrap-up slide presentation by Marcos, summarising all we had seen, and putting it all into context.

For those who are interested to learn more about this area's history, the book Purcell's Cove: the little place that helped build Halifax by Elsie (Purcell) Millington is available at the Halifax Public Libraries.

On behalf of the Halifax Field Naturalists, I want to thank Marcos for bringing both these very old and fairly recent histories to our attention.

NATURE NOTES

– Allan Robertson

OCTOBER

Clarence Stevens saw **nine breeding pairs of Cardinals** near his home and his neighbours told him of **four more pairs**. He observed that Cardinals in Nova Scotia were first noted in Yarmouth, and they've moved up the valley from there.

Stephanie Robertson noted that while hiking in the Dingle recently one of her granddaughters saw **a Kingfisher**. She had watched as it left its tree, caught a fish, and then flew back to the tree. It seemed to have had a great deal of difficulty getting it down.

Near her cottage in Kings County, Judi Hayes saw, from a distance of about ten feet, **a Porcupine** that was roughly four feet long! It was sitting up in a tree.

Two weeks ago when returning from her cottage near Kejimkujik and passing through Berwick in the Valley, Lesley Jane Butters saw what she thought looked like a very weird crop in a field by the road. She stopped to examine it more closely, and found it to be **a field full of spider webs** – thousands of them! They were on aver-

age about two feet in height. It was a beautiful display over the entire field, with the sun shining through them and picking up the drops of dew hanging all along the lines of the webs. She also sighted **Loons** on Hubley Big Lake, in the Wooden's River Watershed area, a pair of adults and a yearling, plus **a lone Loon** on Cox Lake in Hammonds Plain.

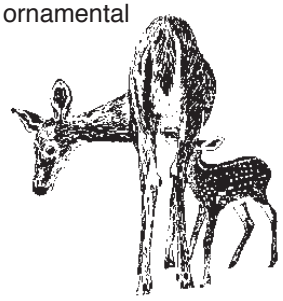
On the day before the meeting, while with her hiking group, Shirely McIntyre saw **a Kingfisher** in Bedford.

Near Oakwood (the old Stanfield estate, now part of Saint Mary's University) David Patriquin found a large, **15-pound 'Chicken of the Woods' fungus, *Laetiporus sulphureus***. They grow on large, older oaks. This specimen apparently fell roughly 15 feet from its growth spot on the tree. He had photographed and brought a picture of it for folks to see after the meeting. David had also seen **Loons** on Frederick and Cranberry Lakes.

As Mike Bradfield passed through the Grand Parade near City Hall one day last month, he observed either **a large Crow or a Raven** showing remarkable food-preservation tactics. New sod had been recently laid, and the bird used a foot to carefully lift up a corner of this new turf to eat some grubs. Then – just as carefully – he replaced the corner of the sod and packed it down with his foot (possibly so other birds couldn't share his new-found bounty?).

Dorothy Morris reported a **'mystery plant'** that she couldn't identify. It was pale green with very large leaves and yellow flowers. It was also quite tall – 41″ at last measurement. Members helped her to identify it as **a Common Mullein**.

Pat Leader reported seeing **three young Deer** in a ravine in Bedford. They were feeding on ornamental apples and rose hips.



DECEMBER

Elliot Hayes noted an upcoming CBC program on "Land and Sea" about birds at risk. Also, he reported seeing **a Bear** very close to Kearney Lake Road recently.

Stephanie Robertson reported seeing **a Pileated Woodpecker** in Point Pleasant Park a few weeks ago. It was large, and its call was very noisy and high pitched (anybody remember the Woody Woodpecker call from the world of cartoons?)

Leslie Jane Butters told of a dramatic storm the previous evening at her cottage in Albany New, near Kejimkujik Park. The winds were exceedingly high, and the lightning spectacular (most unusual for a mid-December storm). She also saw **a Flying Squirrel** in Blomidon the previous week. She said she inadvertently spooked it from a hollow in a tree, whereupon it 'flew' off.

Gareth Harding reported hearing a sound like a frog on the forest floor of Point Pleasant Park about three weeks previous. He recalled that someone had introduced **Green Frogs** into one of the park's ponds some time ago, and deduced that the frog he heard had decided to winter away from the usual mud in a pond. Gareth also reported seeing **two Loons** on Stewiacke River.

Pat Leader found, at about 4:30 that afternoon, some **Forsythia in bud** – a bit late in the season!

Judy Keating said, that while doing some yard work a few days ago, she found **a salamander with two young**. She also noticed an orange and black caterpillar – **a Woolly Bear**, both rather late in the season.

Richard Beazley reported seeing **a couple of pigeons (with young!)** in the rain gutters of Shirreff Hall on the Dalhousie campus. They were in an area where the gutters formed an inside corner. Another member opined that there may have been a heat leak from the building at that point.

Peter Webster referred to the effect of global warming on **Belchers Marsh**, north of Rockingham, which showed very high water levels. In October Gillian found a healthy **wild strawberry** plant there. Heading downhill, Peter and Gillian then saw **a two-year old Deer** – which didn't seem too bothered by the Webster's presence. He surmised that the area must have provided a safe refuge during hunting season.

Wendy McDonald saw **Mayflower buds** the day before the meeting. Bob McDonald noted that **the male Wood Duck** seen for the last three weeks on the Frog Pond in Jollimore is still there. He ventured that while the duck is not injured and is able to fly, it will likely stay there until the pond freezes over. The Wood Duck was in the company of **Mallards** – not unusual.

Mike Bradfield reported seeing **a surfeit of ladybugs** (200+!) on the Lions guarding the Dingle Tower.

Clarence Stevens noted a sighting reported on Face Book of **a Hoary Bat** in Dartmouth; they're very rare in Nova Scotia. He also saw **a rare Grey Flycatcher** in Greenwich in the Valley, and as well, **a baby Deer**. He also spotted **Woolly Bear caterpillars** under some leaves, where they will freeze solid over the winter before thawing and coming to life in the spring!

Pat Chalmers saw **a Baltimore Oriole** in her backyard recently. She felt it might have been passing through on its way south, although there is a possibility it will over-winter in Nova Scotia, as it may be too late now to migrate to Central America because it may no longer have its migratory urge.

Shirley McIntyre reported being startled by **a Coyote** while hiking on South Mountain in Annapolis County.

Pat Chalmers also reported that a friend had encountered **a persistent Coyote** on the Shearwater FlyerTrail.

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.

"When the long, corn-yellow days of Indian Summer had disappeared and the wet, glowering days of gray November had arrived, the people of the Island got ready for winter, the way a city in wartime might prepare for a long siege. Like an invading, alien force, the pitiless cold encroached. This was one enemy you couldn't keep out of your community, or even out of your house."

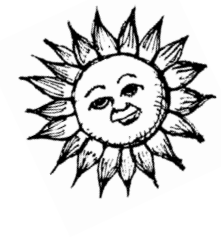
– **David Weale, from the essay "In bed with a brick" in Them Times (1992)**

NATURAL EVENTS

5 Dec. **14 Dec.** Earliest Sunset of the year at 16:34 AST.
6 Dec. Full Moon. Moonrise at 17:09 AST.
7 Dec. Daily average temperature goes below 0 C.
13 Dec. **14 Dec.** Geminid Meteor Shower.
14 Dec. **-5 Jan.** Audubon Christmas Bird Count Period.
21 Dec. Winter Solstice at 19:03 AST. Winter begins in the Northern Hemisphere: But though the temperature drops, the days begin to lengthen.
27 Dec. **-31 Dec.** Latest Sunrise of the Year at 07:51 AST.
1 Jan. **-10 Jan.** Mercury and Venus approach one another in the evening sky.
4 Jan. Full Moon. Moonrise at 16:46 AST.
31 Jan. **1 Feb.** Eagle Watch Weekend I in Sheffield Mills.
3 Feb. Full Moon. Moonrise at 17:30 AST.
7/8 Feb. Eagle Watch Weekend II in Sheffield Mills.
19 Feb. Tenth anniversary of 'White Juan', the huge blizzard.
20 Feb. Venus, Mars, and the crescent Moon appear together in the early night sky.
4 Mar. Uranus is close to and below Venus in the early night sky.
5 Mar. Full Moon. Moonrise at 18:17 AST.

– Sources: Atmospheric Environment Service, Climate Normals 1951-80 Halifax (Shearwater A) N.S.; Blomidon Naturalists Society 2014 Calendar; United States Naval Observatory Data Services.

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



6	**Dec.**	07:37	16:34	**3**	**Jan.**	07:51	16:46
13	**Dec.**	07:43	16:34	**10**	**Jan.**	07:50	16:54
20	**Dec.**	07:48	16:36	**17**	**Jan.**	07:47	17:02
27	**Dec.**	07:51	16:41	**24**	**Jan.**	07:42	17:12
7	**Feb.**	07:26	17:31	**6**	**Mar.**	06:42	18.10
14	**Feb.**	07:17	17:41	**13**	**Mar.**	06:29	18:19
21	**Feb.**	07:06	17:51	**20**	**Mar.**	06:16	18:28
28	**Feb.**	06:54	18:00	**27**	**Mar.**	06:03	18:37

ORGANISATIONAL EVENTS

Blomidon Naturalists Society: Indoor meetings are held on the 3rd Monday of the month, in Room BAC241 of the Beveridge Arts Centre, Acadia University, 7:30 p.m. Field trips usually depart from the Wolfville Waterfront, Front Street, Wolfville. For more information, go to **http://www.blomidonnaturalists.ca/**.

21 Dec. "Winter Solstice Family Frolic", with leaders Charlane Bishop (542-2217) and Harold Forsyth (542-5983).
17 Jan. "Winter on Snowshoes", with leader Soren Bondrup-Nielsen (902) 582-3971.
19 Jan. "Atlantic Bluefin Tuna: … a Changing Canadian Fishery" with speaker Michael Stokesbury, Acadia
16 Feb. "Annual Show and Tell Night".
8 Mar. "Valley Birding", with leader Patrick Kelly (902) 472-2322 E-mail: patrick.kelly@dal.ca
16 Mar. "Marine Tracking Studies at the Minas Passage Tidal Energy Test Site", with speaker Anna Redden, Acadia.
11 Apr. "Avon River Canoe Trip", with leader Patrick Kelly (902) 472-2322, patrick.kelly@dal.ca.
20 Apr. "Deep Woods Tales: Tall and True", with speaker Mike Parker.
25 Apr. "Amethyst Cove Rockhounding and Photography" with leaders, David and Chris Sheppard.

Burke-Gaffney Observatory: Public shows at the Burke-Gaffney Observatory at Saint Mary's University are held on the 2nd and 4th Friday of each month, except from June through September when they are held every Friday. 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/academics/departments/astronomy-physics-burke-gaffney-observatory.html#tours**.

Friends of McNab's Island Contact Faye Power, 443-1749, or go to **http://www.mcnabsisland.ca/**.

21 Feb. "25th Anniversary Dinner and Auction", 5:30 p.m. at Cable Wharf Restaurant. Tickets, $50.00, available at Ticket Atlantic, 451-1221; Metro Centre Scotia Bank; Atlantic Superstore. **Only 100 tickets available.**

Nova Scotia Bird Society: Indoor meetings usually take place on the 4th Thursday of the month, September to April, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information phone Kate Steele, 476-2883, or email fieldtripcoordinator@nsbirdsociety.ca,This email address is being protected from spambots. You need JavaScript enabled to view it. or email the trip leader, or **http://www.nsbirdsociety.ca/**.

3 Jan. "Sewer Stroll I", with leader Dennis Hippern 435-5363(h), or 476-8639(cell), **dhippern@hotmail.com**.

Nova Scotia Department of Natural Resources: Many outings which will take place in Provincial Parks are listed in the "Parks are for People" Programme, available at museums, parks, and tourist bureaus, and on the web at **http://www.novascotiaparks.ca/**.

Nova Scotia Museum of Natural History: For more information, 424-6099, 424-7353; **http://naturalhistory.novascotia.ca**.

30 Jan. -24 May. "Dinosaurs Unearthed".

Nova Scotia Wild Flora Society: Meets the fourth Monday of the month, September to May, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information, email **nswildflora@yahoo.ca**, or go to **http://www.nswildflora.ca**.

Nova Scotian Institute of Science: Meets the first Monday of the month, September to April, usually at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information go to **http://nsis.chebucto.org/**.

5 Jan. "Methane from Northern Permafrost – a Cause for Concern?", with Dr. Rachel Chang, Dalhousie.

2 Feb. "Water for Our Changing Planet – Lessons from the Past Century and the Face of our Future", with Dr. Shannon Sterling, Dalhousie University.

2 Mar. "The Future of Nuclear Science and Technology Research in Canada", with an Atomic Energy Canada scientist.

30 Mar. "Lessons Learned From the War on Science", with Dr. Thomas J. Duck, Dept. of Physics & Atmospheric Science, Dalhousie University.

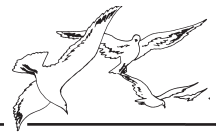
Royal Astronomical Society of Canada (Halifax Chapter): Meets the third Friday of each month, (except July and August) in Room AT101 of the Loyola Atrium Building at Saint Mary's University, 8:00 p.m. For more information, go to http://halifax.rasc.ca/.

Young Naturalists' Club: A fun, free nature club for children seven to 12 years. Meetings take place every 3rd Saturday of the month (excepting July and August), at the Museum of Natural History, 1747 Summer St., from 10:30 - 11:30 a.m. Field trips take place every fourth Sunday, at 1:00 p.m. For more information, Karen McKendry, 404-9902, **ynchalifax@yahoo.ca**; or, go to **http://nature1st.net/ync**.

24 Jan. 10:00 am - 12:00 pm, "Animal Tracks in The Snow", at the Museum of Natural History.

– compiled by Patricia L. Chalmers

HALIFAX TIDE TABLE



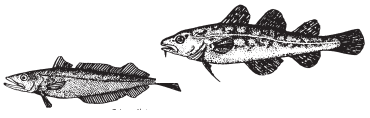
January-janvier

Day	Time	Metres	jour	heure	mètres
1	0428	1.7	**16**	0343	1.7
	1129	0.2		1036	0.4
TH	1715	1.6	FR	1635	1.5
JE	2346	0.4	VE	2239	0.6
2	0524	1.7	**17**	0441	1.7
	1222	0.2		1130	0.3
FR	1810	1.6	SA	1733	1.5
VE			SA	2336	0.5
3	0041	0.4	**18**	0535	1.8
	0615	1.8		1224	0.2
SA	1311	0.2	SU	1825	1.6
SA	1900	1.7	DI		
4	0130	0.5	**19**	0031	0.4
	0702	1.8		0627	1.9
SU	1356	0.2	MO	1315	0.1
DI	1946	1.7	LU	1914	1.7
5	0215	0.5	**20**	0126	0.3
	0747	1.8		0719	2.0
MO	1438	0.2	TU	1405	0.0
LU	2029	1.8	MA	2003	1.8
6	0255	0.5	**21**	0220	0.3
	0830	1.8		0810	2.0
TU	1515	0.3	WE	1455	–0.1
MA	2110	1.8	ME	2052	1.9
7	0332	0.6	**22**	0316	0.2
	0912	1.8		0901	2.0
WE	1549	0.3	TH	1545	–0.1
ME	2148	1.8	JE	2141	1.9
8	0407	0.6	**23**	0414	0.2
	0952	1.8		0951	2.0
TH	1621	0.4	FR	1638	0.0
JE	2226	1.8	VE	2229	2.0
9	0444	0.6	**24**	0514	0.2
	1031	1.7		1042	1.9
FR	1653	0.5	SA	1733	0.1
VE	2303	1.8	SA	2317	1.9
10	0525	0.7	**25**	0615	0.3
	1110	1.7		1133	1.8
SA	1728	0.5	SU	1832	0.2
SA	2341	1.7	DI		
11	0611	0.7	**26**	0005	1.8
	1150	1.6		0716	0.3
SU	1808	0.6	MO	1226	1.7
DI			LU	1932	0.3
12	0020	1.7	**27**	0057	1.8
	0701	0.7		0816	0.3
MO	1232	1.5	TU	1324	1.6
LU	1856	0.6	MA	2032	0.4
13	0103	1.7	**28**	0153	1.7
	0754	0.6		0915	0.3
TU	1321	1.5	WE	1430	1.5
MA	1949	0.6	ME	2132	0.4
14	0150	1.6	**29**	0257	1.6
	0847	0.6		1012	0.3
WE	1420	1.4	TH	1546	1.5
ME	2045	0.6	JE	2232	0.5
15	0245	1.6	**30**	0405	1.6
	0941	0.5		1109	0.3
TH	1528	1.4	FR	1658	1.5
JE	2142	0.6	VE	2330	0.5
			31	0508	1.7
				1202	0.3
			SA	1756	1.6
			SA		

February-février

Day	Time	Metres	jour	heure	mètres
1	0023	0.5	**16**	0508	1.8
	0601	1.7		1157	0.2
SU	1252	0.3	MO	1758	1.7
DI	1844	1.6	LU		
2	0111	0.5	**17**	0010	0.4
	0647	1.8		0606	1.9
MO	1336	0.3	TU	1250	0.1
LU	1927	1.7	MA	1850	1.8
3	0153	0.5	**18**	0108	0.3
	0730	1.8		0701	2.0
TU	1415	0.3	WE	1342	0.0
MA	2007	1.7	ME	1941	1.9
4	0229	0.5	**19**	0204	0.2
	0811	1.8		0753	2.0
WE	1449	0.3	TH	1432	–0.1
ME	2044	1.7	JE	2030	2.0
5	0301	0.5	**20**	0300	0.1
	0850	1.8		0845	2.0
TH	1519	0.3	FR	1523	–0.1
JE	2120	1.8	VE	2118	2.0
6	0332	0.5	**21**	0357	0.1
	0927	1.8		0935	2.0
FR	1546	0.4	SA	1616	0.0
VE	2154	1.8	SA	2206	2.0
7	0405	0.5	**22**	0454	0.1
	1004	1.7		1025	1.9
SA	1615	0.4	SU	1711	0.1
SA	2228	1.8	DI	2253	1.9
8	0442	0.5	**23**	0553	0.2
	1039	1.7		1115	1.8
SU	1647	0.5	MO	1810	0.2
DI	2303	1.7	LU	2340	1.9
9	0525	0.6	**24**	0653	0.2
	1116	1.6		1206	1.7
MO	1726	0.5	TU	1911	0.3
LU	2338	1.7	MA		
10	0614	0.6	**25**	0029	1.7
	1155	1.6		0752	0.3
TU	1815	0.6	WE	1259	1.5
MA			ME	2012	0.4
11	0017	1.7	**26**	0124	1.6
	0709	0.6		0850	0.3
WE	1239	1.5	TH	1403	1.5
ME	1911	0.6	JE	2113	0.5
12	0100	1.6	**27**	0227	1.6
	0805	0.6		0948	0.4
TH	1332	1.5	FR	1520	1.4
JE	2011	0.6	VE	2212	0.5
13	0153	1 6	**28**	0341	1.6
	0904	5		1044	0.4
FR	1437	5	SA	1638	1.5
VE	2111	6	SA	2309	0.5
14	0256	7			
	1002	4			
SA	1552	1.5			
SA	2212	0.6			
15	0404	1.7			
	1100	0.3			
SU	1701	1.6			
DI	2312	0.5			

ALL TIMES ARE AST



March-mars

Day	Time	Metres	jour	heure	mètres
1	0449	1.6	**16**	0333	1.7
	1138	0.4		1032	0.3
SU	1736	1.6	MO	1632	1.6
DI			LU	2253	0.5
2	0002	0.5	**17**	0445	1.8
	0543	1.6		1129	0.2
MO	1227	0.4	TU	1732	1.8
LU	1822	1.6	MA	2354	0.4
3	0048	0.5	**18**	0547	1.9
	0629	1.7		1224	0.1
TU	1310	0.3	WE	1826	1.9
MA	1902	1.7	ME		
4	0127	0.5	**19**	0052	0.2
	0710	1.7		0643	1.9
WE	1347	0.3	TH	1317	0.0
ME	1939	1.7	JE	1916	2.0
5	0201	0.5	**20**	0149	0.1
	0748	1.8		0736	2.0
TH	1418	0.3	FR	1409	0.0
JE	2014	1.7	VE	2005	2.1
6	0231	0.4	**21**	0243	0.0
	0825	1.8		0828	2.0
FR	1446	0.3	SA	1501	0.0
VE	2048	1.7	SA	2053	2.1
7	0301	0.4	**22**	0338	0.0
	0901	1.8		0918	1.9
SA	1513	0.4	SU	1553	0.1
SA	2120	1.8	DI	2140	2.0
8	0333	0.4	**23**	0433	0.1
	0937	1.7		1007	1.9
SU	1541	0.4	MO	1649	0.2
DI	2153	1.8	LU	2227	1.9
9	0409	0.4	**24**	0529	0.1
	1012	1.7		1056	1.8
MO	1614	0.4	TU	1748	0.3
LU	2226	1.7	MA	2313	1.8
10	0451	0.4	**25**	0626	0.2
	1047	1.6		1145	1.7
TU	1654	0.5	WE	1849	0.4
MA	2301	1.7	ME		
11	0539	0.5	**26**	0001	1.7
	1125	1.6		0724	0.3
WE	1744	0.6	TH	1237	1.6
ME	2339	1.7	JE	1950	0.5
12	0634	0.5	**27**	0054	1.6
	1208	1.6		0821	0.4
TH	1844	0.6	FR	1336	1.5
JE			VE	2050	0.6
13	0023	1.7	**28**	0156	1.5
	0733	0.5		0917	0.5
FR	1259	1.5	SA	1449	1.5
VE	1947	0.7	SA	2149	0.6
14	0115	1.7	**29**	0310	1.5
	0834	0.5		1011	0.5
SA	1401	1.5	SU	1607	1.5
SA	2050	0.7	DI	2244	0.6
15	0219	1.7	**30**	0422	1.5
	0933	0.4		1104	0.5
SU	1517	1.5	MO	1706	1.6
DI	2152	0.6	LU	2335	0.6
			31	0518	1.6
				1152	0.4
			TU	1752	1.6
			MA		

NEXT DEADLINE

21st of February for the March, 2015 Issue
Send submissions to 'Newsletter', c/o NS Museum of Natural History,
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