

# THE HALIFAX FIELD NATURALIST



No. 142  
March to May, 2011



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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 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 in Nova Scotia. **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 quarterly **HFN Newsletter** and **HFN Programme**, and new memberships received from September 1st to December 31st of any year are valid until the end of the following membership year. The regular membership year is from January 1st to December 31st.



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### HFN ADDRESS

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### EXECUTIVE

<b>2010/2011</b>	
<b>President</b>	David Patriquin.....423-5716
<b>Vice-President</b>	Vacant .....
<b>Treasurer</b>	Janet Dalton .....
<b>Secretary</b>	Richard Beazley.....429-6626
<b>Past President</b>	Allan Robertson.....422-6326
<b>Directors</b>	Grace Beazley, Elliott Hayes, Bob McDonald, Burkhard Plache, Ingrid Plache, Lillian Risley, Stephanie Robertson.

### COMMITTEES

<b>2010/2011</b>	
<b>Membership Programme</b>	Lillian Risley .....
<b>Talks/Trips</b>	Bob McDonald.....443-5051
	James Medill.....405-7446
	Stephanie Robertson .....
<b>Design Newsletter</b>	
<b>Editor</b>	Stephanie Robertson .....
<b>Design</b>	Stephanie Robertson .....
<b>Almanac</b>	Patricia Chalmers .....
<b>Taxonomy</b>	Ursula Grigg.....681-1264
<b>Distribution</b>	Bernice Moores.....422-5292
<b>Labels</b>	Doug Linzey .....
<b>Tea Break</b>	Regine Maass
<b>Conservation</b>	Bob McDonald.....443-5051
<b>NNS Rep.</b>	Vacant .....
<b>YNC Rep.</b>	David Patriquin.....423-5716
<b>PSAs</b>	Jim Medill .....
<b>Web Design</b>	David Patriquin.....423-5716

### FEES 2010/2011

<b>Student</b> .....	\$15.00 per year
<b>Individual</b> .....	\$20.00 per year
<b>Family</b> .....	\$25.00 per year
<b>Supporting</b> .....	\$30.00 per year
<b>NNS (opt.)</b> .....	\$5.00 per year

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### GRAPHICS

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# HFN NEWS AND ANNOUNCEMENTS

## FROM THE EDITOR

– **Stephanie Robertson**

On March 19th, the full moon coincided with its closest perigee for 2011 (at only 356,575 km away) – an ‘extreme supermoon’ which was visible in Halifax in a very clear, crisp night sky. Moreover, at the same time, the Sun and Moon were lined up with the Earth’s equator, since it was almost Vernal Equinox. This was the first extreme supermoon to occur in nearly 19 years; closest full moons recur in cycles of 14 lunar months. A perigee full moon appears a bit bigger and it brings somewhat larger tides, especially if these high tides are accompanied by strong onshore winds; luckily, Halifax had none of these on this evening.

“One of the most spectacular phenomena in naked-eye astronomy escapes notice by the vast majority of people simply because the eye and brain can’t compare the size and brightness of objects observed on separate occasions.” At [www.fourmilab.ch/earthview/moon\\_ap\\_per.html](http://www.fourmilab.ch/earthview/moon_ap_per.html), go to ‘A Different Point of View’ (quite far down on the page). There you will see two photographs of full moons (at perigee and apogee) alternating back and forth. Besides the difference in size, you’ll be surprised to discover that the moon does *not* always show exactly the same face towards Earth! The small bright crater to the lower left changes position noticeably, and the dark Mare Crisium to the upper right seems to be the fulcrum of the movement.

– Sources, [www.fourmilab.ch/earthview/moon\\_ap\\_per.html](http://www.fourmilab.ch/earthview/moon_ap_per.html) and [www.dailynews.lk/2011/03/17/news11.asp](http://www.dailynews.lk/2011/03/17/news11.asp)

## BIOSOLIDS CONFERENCE

– **Lil MacPherson**

This important conference took place at Pier 21, Sunday, March 13th. Over 200 people showed up, and 80% stayed the entire day to learn about the dreadful health implications of the use of biosolids as fertiliser for our crops.

Our soils, air, and water are intimately interconnected, and one of them (e.g. soil) really can’t be addressed alone when talking about biosolid use. Participants learned the broader implications of how this toxic brew will affect our food and our health in the future.

Hearing experts share their knowledge, research, and experience was spellbinding, and all ages were captivated with one of the keynote speakers, Dr. David Lewis, Retired EPA Microbiologist, who received a standing ovation for bringing real science to this issue. His bio was truly impressive and he was not afraid of speaking the truth about the huge risks to human health. It was a rare opportunity to be given a look into our future and what it will be like if we continue biosolid use in Nova Scotia. With great clarity, he explained why, over a relatively short period of time, biosolid classes A and B become one and the same thing. There were also several other highly credible speakers and panelists.

Ellen Page funded this conference and talked with great passion for a cleaner world and of her love for Nova Scotia. Lucinda Pigdon, of the Halifax Seaport Market, and I (The Wooden Monkey Restaurant owner/manager) organised it.

Out of this conference we’ve founded a new society – ‘The Dirt Gang Society of N.S.’. Its aim – to protect our

soils, trees, water and air, with the emphasis on *soil*. For more information and events, go to ‘The Dirt Gang’ on Facebook.

## NNS 2011 AGM & CONFERENCE

Nature Nova Scotia will join the Bras d’Or Stewardship Society on Friday, June 3rd through to Sunday the 5th, at the Gaelic College in St. Ann’s, Cape Breton. Friday evening will start with wine, cheese and a bit of local Celtic music; later, we’ll tour the night sky and listen for owls. Mornings will feature nature walks for early risers.

Saturday morning – Cape Breton natural history experts Don Anderson on dragonflies; Fenton Isenor on geology; James Bridgland on forests; and Bruce Hatcher on the Bras d’Or Lakes.

Saturday afternoon’s field trips – Catherine Sneddon (Uisge Ban Falls); Dave McCorquodale; Minga O’Brien (old-growth forest); and Bev Brett. After the Saturday evening banquet, Bob Bancroft will talk about coyotes, and there’ll be more outdoor nighttime delights.

Sunday morning – the Nature Nova Scotia AGM. After lunch – a boat trip to Bird Island with Dave McCorquodale and Dave Harris, and John Gillis will lead a walk in the Wycocomagh woods.

Registration costs will be minimal, and the Gaelic College’s weekend package (wine & cheese, two nights accommodation, two breakfasts, two lunches, and the banquet) will be \$180 per person. For more information on registration and updates, go to [naturens.ca](http://naturens.ca).

## PACIFIC TSUNAMI SURVIVOR

A 60-year old Laysan Albatross named ‘Wisdom’ has survived the Pacific tsunami. She and her recently hatched chick were spotted alive about a week after Midway Atoll National Wildlife Refuge was struck by a five-foot tidal wave from the March 11th earthquake off Japan. About 2,000 adult albatrosses and 110,000 chicks were killed, approximately 20% of this year’s hatchlings.

Wisdom holds the record as the oldest wild specimen documented during the 90-year history of the U.S. and Canadian bird-banding research programme. She has worn out five bird bands since her first in 1956 at the age of five, and has likely raised at least 30 to 35 chicks during her breeding life, though that number may well be higher. Adult albatross mate for life, with both parents raising the young, so one wonders if Wisdom has had the same partner all these years or not.

For more on the story, go to <http://www.usgs.gov/newsroom/article.asp?>

## NEW AND RETURNING MEMBERS

David Cone  
Gisèle d’Entremont  
Kate Porter



# SPECIAL REPORTS

## YEAR-END REPORTS

### FROM THE PRESIDENT

In 2010/11, HFN carried out a full programme of walks and talks, and issued four newsletters. The finances are in good shape and meetings were well attended, at times almost to room-capacity. A highlight of the year, amongst others, was the talk on May 12, 2010 – “Silence of the Songbirds” by Bridget Stutchbury, jointly sponsored by HFN, EAC, Nova Scotia Nature Trust, Nature Nova Scotia, the Nova Scotia Bird Society, and the Dalhousie Biology Dept. It was followed on the next day by a bird-listening walk in Point Pleasant Park.

I thank the directors, officers, and volunteers for their substantive work over the past year in putting the newsletter together and delivering it; organising refreshments after our monthly talks; managing membership and finances; planning and executing talks and walks; and representing HFN in various ways and much more.

Over the past two years we have tried some new initiatives to attract more people to HFN events, and hopefully more volunteers. Judging from meeting attendance, it appears we have succeeded to some extent in regard to the former, but that has not translated yet into more volunteers. Since I became President two years ago, we have lost three board members and four volunteers, with no new people coming forward. The losses are mainly people who have served for a long time and whom we could not expect would serve indefinitely. The same applies to most of the current board members and other volunteers. Recently, two long-standing volunteers indicated they would have to reduce their activities in HFN's Programme Committee; at the moment, we don't know how we will be able to continue the programme beyond July, 2011. Our next board meeting, in April or early May, will be devoted to this issue.

We recognised a year ago that we could be on shaky ground if we lost one or two volunteers and we spent a lot of time over the last year doing some soul searching, some of which I discussed in the November 2010 newsletter (“Message from the President: Looking Ahead”). We conducted a modified SWOT analysis to look at our strengths, weaknesses, and how we might reduce demands on volunteers/attract more volunteers; identified and listed ‘opportunities’ for volunteers; and produced a ‘Procedures Document’ which provides the most pertinent and essential details of what's involved in running HFN activities and in maintaining the organisation. These documents are all available in the Members' section of the website (a user/password has been or will be sent soon to membership). We invite members to look at these documents and make suggestions on how we might move forward, and to consider volunteering in some way large or small. It all helps!

– David Patriquin  
President



## THE COLIN STEWART CONSERVATION AWARD

– David Patriquin

& the Colin Stewart Conservation Award Committee

In 2011, the Halifax Field Naturalists are giving the Colin Stewart Conservation Award to Doug Linzey in recognition of significant and extensive contributions of his time and writing skills to the natural history community in Nova Scotia.

Doug was a regular contributor to Halifax Field Naturalists activities while a resident in Halifax and has continued long since as an active volunteer – among other things, maintaining our membership database. He moved to the Annapolis Valley in 2000, where he joined the Blomidon Naturalists Society. Since 2000, he has produced the BNS newsletter, which since 2008 has been published in collaboration with Andrew Steeves and Gary Dunfield in the elegant style of Nova Scotia's Gaspereau Press.

Doug has been active with Nature Nova Scotia (the Federation of Nova Scotia Naturalists) since the early 1990s. He has served as the secretary of that organisation since 2001.

Doug has promoted natural history interests in Nova Scotia at large in many ways, including serving as the Nature Nova Scotia representative on the N.S. Trails Federation and the Nova Forest Alliance; maintaining the popular province-wide NatureNS list server; organising several of the Nature Nova Scotia annual meetings; and organising the programme for the 2007 Nature Canada Conference, which included some fabulous field trips and speakers. He also wrote cautionary position papers on such things as the introduction of alien species to Nova Scotia and the creation of the Highway 113 right-of-way.

One of the nomination submissions for Doug noted in particular the retreat he organised for Nature Nova Scotia in 2005 at which education was selected as a focus; that in turn facilitated Nature Nova Scotia's support of the Young Naturalists Club when it was formed in 2006.

The nature of Doug Linzey's contributions is well characterised by this comment: “Doug has stayed in the background on many of the conservation projects, but without his support they would not have been realised.” Colin Stewart operated in much the same way.

### Doug Linzey's Acceptance

“When I first came to Nova Scotia, I was a conservation neophyte. We had lived for three years in the wilderness at the end of a fiord in Northern BC. We could get there only by boat or plane from Prince Rupert. The salmon fishing was fantastic. There were mountain sheep within a two-hour hike and bears everywhere. I worked for a mining company. We thought nothing of dumping mill tailings into an otherwise pristine Lime Creek, which plummeted four miles downhill into the ocean, where it created a considerable plume stretching for miles down Alice Arm.

Rachel Carson's Silent Spring had not yet reached Kitsault, B.C.

We next lived for ten years in Whitehorse, again surrounded by huge expanses of wilderness. And again I was in the mining industry. The Yukon Conservation Society was the enemy. They just didn't understand that we were really the good guys.

I always recognised the value of forests and clean water and keeping our footprint to a reasonable size, and as a mine manager I acted accordingly. But it never occurred to me to learn the different species of duck on the lakes or the birds, other than Ravens and Whiskeyjacks and those damn Cliff Swallows that persisted in building their mud nests under the overhang of our mine office. I did learn a bit about the Trumpeter Swans, but only because they caused such a bloody awful racket every spring when the ice went out of the Yukon River near our cabin on Marsh Lake. As far as trees were concerned I really only knew which ones made the best Christmas tree and that the charred pine from the big Takhini burn made good firewood.

I don't think I could have defined biodiversity.

Then we lived in Ottawa for nearly four years, on a green belt that stretched for miles beyond our back door. I think that's when I started to gain some appreciation for the potential of human development to wreck nature. For the first time since a summer job surveying with the B.C. Forest Service, I finally started to learn something about what was going on around me. I took a birdwatching course at Algonquin College."

## MEMBERSHIP

In 2010 we experienced a small decrease in membership, declining from 121 to 119. The 2010 roll of 119 memberships was made up of 67 individual, 34 family, 16 supporting, and two student memberships. In addition, we had four dues-paying institutional members (all libraries). Fifty-nine of our members also chose to join Nature Nova Scotia when joining or rejoining the HFN.

This year the number of members who have provided us with their email addresses rose to 98 and we have been able to use this communication option to provide them with information on special events and with opportunities to participate in public consultations. We have had some helpful feedback and welcome your comments at any time.

Once again thanks to Doug Linzey for maintaining the membership database and newsletter labels.

### Total Memberships By Year

2006	2007	2008	2009	2010
129	129	127	121	119

– Lillian Risley

*Membership Secretary*

## NEWSLETTER

Issues #138, March 2010 to #141, February 2011 were comprised of 68 pages in total, including ten HFN talk and ten HFN field trip write-ups. A sincere thank you to all who submitted these.

We reported on a few weighty (and some lighter) events which occurred during the year. Sable Island was finally designated a National Park (#139), and HFN and EAC co-sponsored Bridget Stutchberry's marvelous presentation "Silence of the Songbirds" (#138, and #139, p.4).

Issue #140 reported a new coordinator, Laura Lambie, for YNC; Doug Linzey was honoured by the Blomidon Naturalists society "...for his significant and extensive contributions to the Blomidon Naturalist Society and to the natural history community as a whole. ..."; Bob and Wendy McDonald reported on the status of the very important "Halifax Urban Forest", the Urban Forest Master Plan adopted in 2006; and we gave our first 'heads up' to an ongoing series of interesting and timely environmental lectures at Dalhousie University. This was also the issue that included David Patriquin's and Richard Beazley's wonderful, illustrated talk about the process of the forest fire regeneration in and around Purcell's Cove, p.6.

Issue #141 advertised the need for keen naturalists to augment HFN's committee rosters; noted the increased coyote populations and sightings in urban and suburban areas; and reported the ongoing saga of changing practices in N.S. Forestry. Another saga in this issue, with a more humorous slant – Pat Leader's "Bedford Waterfront: Stage III" – brought us up to date on what has been happening (or not happening!) along the Bedford shoreline.

This year, thankfully once again, there have been no major production problems. A significant and important change though – the HFN Board decided we should switch to Forestry Stewardship Council certified paper for both the newsletter and the programme (but since DalPrint as an entity has not applied for certification from FSCC, we cannot use its logo). But the paper switch meant there could be no different colours to indicate each programme's season. However, at Wendy McDonald's very recent suggestion, we *will* be going back to the seasonal colours (not FSC certified), as it makes it easier when searching for information through back programmes. Another change – the Board also voted to reduce expenses by eliminating the colour covers (with maybe one a year when it can be managed), so once more our finances are in the black.

Our seasonal Tide Table, Nature Notes, and Pat Chalmers' very useful and informative Almanac continued to round out another year of The Halifax Field Naturalist for you, the HFN membership. Please make any suggestions for any changes you would like to see, or submit your articles, reports, or tidbits on anything you yourself think is important to the natural history of Nova Scotia and/or to the Halifax Field Naturalists. After all, this is your newsletter.

– Stephanie Robertson  
*Newsletter Editor*

## NOMINATIONS

At the March 3rd Annual General Meeting of the Halifax Field Naturalists, the following members were elected to the HFN Board for the 2011/2012 year: President, David Patriquin; Vice President, vacant; Secretary, Richard Beazley; Treasurer, Janet Dalton; Directors Lillian Risley (Membership), Stephanie Robertson (Newsletter), Grace Beazley, Bob MacDonald, Burkhard Plache, Ingrid Plache, Elliott Hayes, and Allan Robertson (Past President).

– Allan Robertson  
*Nominations Committee*



**Halifax Field Naturalists**  
**Financial Statement (Balance Sheet)**  
**As At December 31, 2010**

	2010	2010	2009	2009	2008	2008
<b>Assets</b>						
Cash Bank of Montreal		\$872		\$6,556		\$1,106
Accounts Receivable and Accrued Income		\$1,033		\$914		\$765
Inventories and Prepaids		\$719		\$724		\$724
Investments		\$12,544		\$6,544		\$12,480
Fixed Assets						
		<u>\$15,168</u>		<u>\$14,737</u>		<u>\$15,074</u>
<b>Liabilities and Surplus</b>						
Accounts Payable - General						
- NSN		\$390		\$430		\$270
Surplus						
Restricted		\$6,544		\$6,544		\$6,480
Unrestricted		\$8,234		\$7,763		\$8,324
	\$14,778	<u>\$15,168</u>	\$14,307	<u>\$14,737</u>	14,804	<u>\$15,074</u>

**Statement of Income and Surplus**

	2010 Actual	2009 Actual	2008 Actual
<b>Revenues</b>			
Membership	\$2,510	\$2,005	\$2,519
Product Sales	\$0	\$0	\$0
GIC	\$0	\$0	\$0
Interest	\$0	\$24	\$157
Donations	\$0	\$0	\$60
DF List	\$0	\$0	\$5
	<u>\$2,510</u>	<u>\$2,029</u>	<u>\$2,741</u>
<b>Expenses</b>			
Field Trips	\$19	\$0	\$0
Special Projects	\$65	\$147	\$31
Socials	\$0	\$0	\$16
Grants/Donations	\$200	\$25	\$370
Insurance	\$200	\$200	\$200
Meetings	\$343	\$343	\$45
Memberships	\$398	\$280	\$464
Miscellaneous	\$0	\$0	\$0
Newsletters			
Postage	\$305	\$330	\$436
Production	\$510	\$1,265	\$1,279
Office Supplies & Expenses	\$0	\$0	\$0
	<u>\$2,039</u>	<u>\$2,590</u>	<u>\$2,840</u>
Net Income	\$471	-\$561	-\$99
Surplus, beginning of year	\$7,763	\$8,324	\$8,423
Surplus, end of year	<u>\$8,234</u>	<u>\$7,763</u>	<u>\$8,324</u>

- Janet Dalton, Treasurer

# HFN TALKS

## A COASTAL STRATEGY 6 JAN. — Stephanie Robertson

Sean Weseloh McKeane of the Provincial Oceans' Network Secretariat, N.S. Fisheries & Aquaculture, gave us his presentation "**Towards a Coastal Strategy**". Sean has his Masters in marine conservation, and as a boy used to accompany his naturalist parents to many seabird talks and on many seabird trips, stimulating his interest in all things coastal.

This was less a natural history presentation, but more about the important work done so far done in hammering out guidelines and laws that will ensure the preservation of Nova Scotia's beautiful coastal areas.

In June, 2008 a Coastal Management Framework was set up which defined seven priority coastal issues. We then sent out calls for the development of a Nova Scotia Coastal Strategy.

In December, 2009, the "State of Nova Scotia's Coast" report came out. It defined the main priority coastal issues – Coastal Development; Working Waterfronts; Coastal Access; Sea-level Rise/Storm Events; Coastal Water Quality; and Sensitive Coastal Ecosystems and Habitats.

From May to July, 2010, a Public Consultation was called to hear feedback on the report, to hear any new priorities and ideas for it, and to garner information on the current status of our coasts. There were eight regional public open houses, with opportunities for both online and written feedback; a phone survey; and a multi-stakeholder event. On the municipal level there were three facilitated municipal sessions and a directed municipal survey.

Over six hundred residents completed the phone survey (6,624 calls were made). More women responded than men; over 50% of respondents were over 56 years old; and the respondents had a higher level of education than the Nova Scotia average. Few people had been aware of the "State of Nova Scotia's Coast" report, but 82.7% of respondents were concerned about coastal development, and thought that protecting the natural environment was a top priority for managing it properly. An overview of the feedback was released on November 22nd – the "What We Heard" report:

**Working Waterfronts** – 74.4% were concerned about them. Respondents who lived in a community with a working waterfront generally felt it positively impacted the community. There was a high level of concern, but little knowledge of how to go about ensuring that their waterfronts remained healthy.

**Public Coastal Access** – 76.3% were concerned about this. 50% felt that private property hindered their access to the coast; 75.7% used the coast for leisure opportunities; and respondents wanted more walking paths along the coast and more public beaches.

**Sea Level Rise and Storm Events** – 68.6% were concerned about sea level rise; 76.2% were concerned about storm events; and most Nova Scotians believed it

was necessary to be able to adapt to them.

**Coastal Water Quality** – 84.7% of respondents were concerned about it; 64.8% felt that sewage was deteriorating it; 75.5% stated that water quality impacted their ability to use the coast for leisure, and they thought that coastal water quality could be improved with better sewage treatment.

**Sensitive Coastal Ecosystems and Habitats** – 86.9% were concerned about coastal ecosystems and habitats, 62.8% stating that the province's ecosystems and habitats were at risk; 22.7% thought that sewage was placing Nova Scotia's ecosystems at risk, and the majority of respondents wanted the government to intervene in order to protect coastal ecosystems.

Through the Provincial Oceans Network, the development of coastal strategies got underway, and senior-level review and direction was sought in the areas of good coastal water quality; no discharge of sewage or industrial waste; land-use planning – recognising the need for better regulation of development, which would heavily involve municipalities; jurisdictional collaboration – recognising the need for all levels of government to share resources and coordinate roles and responsibilities; and data and information – recognising that there are still many gaps in knowledge about the priority issues.

A key step forward will involve addressing these gaps with **understanding** – recognising that outreach, education, and awareness campaigns will have to be an important part of addressing the priority issues; dealing effectively with **private land ownership** – recognising the amount of coastal land that is currently privately owned, and that it will be essential to work in partnership with landowners; and initiating **targeted and adaptive** approaches – recognising that the proposed Coastal Strategy will need to design actions that address a diversity of ecosystems and uses while setting clear targets and indicators, and that good coastal governance requires us all to be immersed in addressing the issues.

The elements of the Coastal Strategy will have a ten-year time frame and will be focused on effective outcomes for the priority coastal issues – with good governance; coordination and integration; research and mapping; public education campaigns; access to information; stewardship; targeted research; improved information management and sharing; amended legislation and policy; and strengthened integrated coastal and ocean planning initiatives. These will all be needed to protect one of our most beautiful and valuable Nova Scotian resources.

For more information, go to [www.gov.ns.ca/coast](http://www.gov.ns.ca/coast).





## SEABIRDS



**3 FEB.**  
– *Lillian Risley*

Carina Gjerdrum is a seabird biologist with Environment Canada's Canadian Wildlife Service. She joined us to talk about **"Seabirds in Atlantic Canada"**, describing their characteristics and habits, the challenges they face, and some of the possibilities for supporting their viability.

We humans are terrestrial beings and we often have difficulty understanding that many seabirds actually live entirely 'on' the sea. Large flocks will congregate in feeding areas, with gatherings of millions in some parts of the Pacific. Seabirds are different from shore and land birds. They are long-lived, often 20 years or more, while many land birds have a life span of only three to five years. They often have delayed breeding, and, when they do breed, produce fewer young—just one or two offspring or breeding only every other season.

Seabirds exhibit a number of marine adaptations. They may have long wings for soaring (the wandering Albatross has a wing span of three to five metres) or they may have shorter wings for diving and swimming under water. They often have a very well-developed sense of smell which is used to locate prey. Some have salt glands which can concentrate excess salt and excrete it. Their webbed feet propel them through the water and they have waterproof plumage, densely packed for thermal regulation (contamination by oil spills can disrupt that protection). They pursue a wide variety of prey, many of which can be plucked from the surface. Herring, squid, and krill are common food sources.

There are many seabird breeding colonies in Atlantic Canada, with 12 million seabirds breeding yearly! These are mainly found on coastal islands, with smaller populations in on-shore locations. Carina provided descriptions of three species.

The Leach's Storm Petrel is found in both the Atlantic and Pacific oceans. They are temperate breeders, laying one egg in a burrow, or sometimes in a forest area under moss and trees. They range in the East from southern Labrador to Cape Cod and in the Pacific from the Aleutians to Baja. The largest colony in the Atlantic is on Baccalieu Island, N.L., where about four million of these petrels breed. The chick is cared for by both parents, who feed on plankton, often far offshore, returning at night when there is less risk of predators spotting them or their burrow. It sometimes may necessitate leaving the nestling for several days, and they concentrate the accumulated food in their stomachs, regurgitating it upon their return.

The Northern Gannet is an Atlantic seabird; there are six North American colonies, three in Newfoundland and three in Quebec. Gannets are surface nesters, making their nests on the ground. They also lay only a single egg and it takes about 19 weeks to raise the chick. They are 'plunge divers', catching their fish just under the surface of the water. Gannets winter in the Gulf of Mexico, which raises the question of the impact of the oil spill off Louisiana. Gannets were tagged this summer in an effort to measure possible impacts of the changed conditions in their wintering territory.



The Atlantic Puffin breeds along the North American coast, with about one-half million in Atlantic Canada. Greenland also has a significant population. They lay their single egg in a burrow and spend about 11 weeks raising the chick. They winter offshore and are an example of the 'wing-propelled divers' (short-winged). Puffins can dive to depths of 30 metres.

Other North Atlantic seabirds include the Northern Fulmar, Manx Shearwater (which has moved west from Europe), various gulls and terns, Black-legged Kittiwakes, Common Murres, and Guillemots.

Carina described some of the activities she was involved in while working on the Gannet Islands off the south shore of Newfoundland. Some of the monitoring activities that were carried out there measured the state of health of the birds upon their arrival; timing of breeding; feeding and prey; chick growth; and breeding success. Adult survival and recruitment can be measured from banding studies. The bands are attached to the bird's leg and the number can be read at a distance with binoculars or a spotting scope. Because the birds tend to return to the same location each year, it is possible to determine adult survival and recruitment of young, returning birds. These annual studies make it possible to measure the longer term success of the bird populations.

In addition to the breeding colonies, there are tens of millions of migrants that visit our rich waters each year. There are southward migrations from Greenland and other northern locations to winter on the Grand Banks and the Scotia Shelf. European breeders move west to winter in our waters. And southern breeders such as shearwaters and Wilson's Storm Petrels move north to feed.

Another research activity was carried out from the Grand Manan Research Station by Rob Ronconi, and it pointed out just how remarkable these migrants are. Ronconi tagged Great Shearwaters in the Bay of Fundy, with tags that included a satellite antennae to allow monitoring of their movement as they migrated to breeding areas in the South Atlantic. These birds crossed to the west coast of Africa, then travelled west and south to the Patagonia shelf, where they fed on local fish before moving east to their breeding area in the middle of the South Atlantic. After breeding, the route was retraced to return to Grand Manan.

Another project was carried out by a researcher in Greenland who tagged Arctic Terns there with devices that recorded the route and stops of the birds during their migration. When these tags were recovered in Greenland, it showed that they had gone south to the mid-Atlantic ridge and stayed there for a month, indicating that this location provides a unique feeding opportunity. The Arctic Terns then flew south along Africa, criss-crossing the South Atlantic several times before returning north. They spent 90 days going to the southern waters, and only 40 days on the return trip. The average distance travelled by the tagged birds was 70,000 km and, given an average tern lifespan of 30 years, a life travel total could be 2.4 million km. (equal to three return journeys to the moon)!



From 1964-84 there had been very good coverage of bird presence in Atlantic Canada territorial waters. The next two decades saw little done, but in 2005 it was recognised that offshore development was growing quickly and information on what was out there was needed again. A new programme for the east coast, called 'Sea-birds at Sea', was established in 2006, with renewed observations to update information on our seabirds; to monitor trends; to identify Important Bird Areas; and to identify also species at risk.

The Canadian Wildlife Service is currently focusing on covering a larger offshore area by 'hitchhiking' surveys, which involve arranging for researchers to travel on board Coast Guard vessels, industry supply ships, container ships, and ferries to make their observations. A standard surveying protocol has been arranged by Canada, the U.S., and Europe to make sharing of observations more valuable. The information collected includes bird identity, ship's position, environmental conditions, and bird behaviour.

Since 2006, there have been 108 survey trips, with 1,202 days at sea, 75,430 km surveyed, and 144,310 bird sightings. The new programme is focused on conservation concerns for seabirds (both on and off their breeding colonies), environmental assessments, and monitoring programmes which are being used to track how the birds are doing and how best to address any concerns that may arise.



## MEMBERS' SLIDE NIGHT 3 MAR

Four members presented images for this night's meeting. Unfortunately, the museum's digital projector was not in sync with the presentors' computers (the lead for the colour red was not working). The images had a bit of colour, but many looked like they had been taken in black and white.

**Richard Beazley** was up first – 21 slides with a 'Beauty of Nova Scotia in Winter' theme. It launched off with the Cape Breton Highlands sloping to the Gulf of St. Lawrence viewed from Cape Smoky, and then one looking across Ingonish North Bay to Ingonish Island with drift ice beyond. Brookville provided the next seven images – a scenic trail, snow-covered tree limbs; a lovely close-up of a Blue Jay in an old apple tree; a Red Squirrel on mound of snow; a White-Tailed doe and yearling eating the branches of old apple tree; and a close-up of a lone, deranged Pussy Willow blooming amongst the snowdrifts. A particularly beautiful and artistic slide taken near Blomidon showed another snowdrift with an abstractly-shaped shadow, and we saw an immature Bald Eagle which Richard had snapped at Wallbrook, on the shore of Gaspereau River. Many more beautiful winter scenes followed, including one of Old Man's Beard on a dead tree limb at Keji, and another of a tall, stunning, frozen waterfall with water rushing down its centre. Richard ended his presentation with the shimmering ocean and shoreline at Chebucto Head.



**Gillian Webster** was next, with slides from a trip to the Belize/Guatemala area. White, unidentified wild orchids were first up, then a giant, smooth-barked tree with many large limbs sporting epiphytes, orchids, and hanging potted plants in the garden of the eco-lodge (previously a schoolhouse) at which they stayed in Belize. There was a beautiful close-up of a Hibiscus, and an eco-pond with pollution-clearing plants which Gillian said was increasingly attracting more birds. We saw Peter on a very precarious-looking suspension bridge, and Gillian holding a large tarantula. The magnificent, overgrown ruins of Tikal in Guatemala were next, then a green parrot on a 'cojones' tree (called a 'horse-testicle' tree because of its fruit's resemblance to the same!). A caving expedition provided a wonderful shot of stalagmites and stalactites, and also one of ancient pottery shards. They had managed to see a manatee, and there was a mangrove swamp and houses on stilts. Frigate birds and pelicans rounded out Gillian's images.

**David Patriquin's** presentation was about oaks. He started off with our native Red Oak, *Quercus rubra*, then shared others which were unusual and interesting. On an autumn trip to Crete he'd photographed the ubiquitous (it was *everywhere*) *Q. coccifera*, the Kermes Oak, often grazed by goats down to a low and thorny bush!; also there – the Holm Oak, *Q. ilex*, with leaves like the Inkberry, a holly. Then we saw *Erica manipuflora*, a fall-flowering heather with bright green leaves four to eight millimetres long growing on whorls of three or four. It can be either erect (up to one metre tall) or spreading in habit, with pale pink flowers in clusters where the leaves are attached. David's favourite oak was the Valonia Oak, *Q. macriolepsis*, with its magnificent acorns; it is becoming rare in Greece. In Turkey he photographed Downy Oak, *Q. pubescens*, with its leaves' downy undersides. Nearby he saw a spectacular autumn-flowering lily, *Colchicum macrophyllum*, sporting a lily-like flower. David finished off with Sea Daffodils, *Pancratium* sp., and some beautiful ancient Greek ruins.

**Peter Webster** and Gillian had a 2008 winter holiday in the northern Grand Canyon lands of the southwest U.S – Colorado, Utah, Arizona, and New Mexico. The first slide was from Bryce Canyon, which resembled so many ancient, tall, pink clay kings with crowns at a very crowded conference. We saw a group of tourists on a trail mule ride; Peter said that it was a firm rule that walkers must give way! Each canyon they saw was different from the others.

The Red Rocks Canyon in Phoenix, Arizona boasted lots of cactus, e.g. the famous Prickly Pear. Zion was much more jagged, wooded, and had more fauna, such as wild turkeys, ground squirrels, a beautiful yellow tarantula(!), and a lovely lizard.

The last slide, from the Mesa Verde Canyon in northern Mexico, showed us the famous old sandstone haciendas of the Anasazzi peoples, cut into and under an immense canyon ledge.



# FIELD TRIPS

## NEW FARMERS' MARKET

– Matt Salisbury

**Date:** Saturday, January 15th

**Place:** Halifax Seaport Market

**Interpreter:** Gordon Michael and Ewan Wallace

**Participants:** 28



On January 15th, about 30 HFN members toured the new Seaport Farmer's Market, with Ewan Wallace from the market's management team describing the engineering features which have earned the Market a platinum environmental award, and Gordon Michael describing its marketing strategy.

At every stage in its design, construction, and operation, efforts were made to minimise the Market's environmental impact. The building is heated in winter by solar tubes on the roof and seventeen 650-foot deep geothermal wells drilled in the front of the building. It's cooled passively in the summer by the roof garden and natural air circulation, eliminating the need for air conditioning. The building's electrical needs are largely met by four 2-kilowatt turbines on the roof, so the facility draws very little power from the commercial electrical grid. Lighting is natural during daylight hours, supplemented by high-efficiency, LED lights controlled by ambient light and motion sensors in offices, storage and mechanical rooms, and washrooms. All of the Market's water requirements (three million gallons per year) for the washrooms, for 'hosing down', and for the beautiful 'living wall' are met by the roof garden, which also serves as a dramatic public space with a fine view of the harbour.

Local sedums and fescue grasses on the roof will add colour and interest while they work their magic. Traditional, indoor tropical plants used in the wall create a green mosaic or 'painting'.

The facility thus supplies nearly all its own water and 70% of its energy requirements. It even has a worm room to supply compost generated on-site from market waste for the roof garden. Even during construction, care was taken to minimise environmental impacts; the roof and steel skeleton of Pier 20 were incorporated in the new building, old concrete from the site was crushed and used as gravel, and salvaged wood from Hurricane Juan was used in the woodwork.

The marketing strategy for the new Farmer's Market is also guided by environmental considerations, with local farmers receiving prime floor space and preferential treatment. There are even plans to use the Market as a wholesale venue for the sale of local farm products to city restaurants and institutional kitchens, in an effort to rebuild the farming industry in the province. Finally, the Market deliberately provides a low cost (~\$50/table/day) venue for start-ups to test market conditions. With many vendors experiencing a 20-40% increase in sales since moving, and plans afoot to open the Market for more days each week and to host more kinds of events, the new Farmers' Market appears to be fulfilling the city's hope that it will become an economic and social catalyst for the city and the Province.

For additional information about tMarket hours and vendors, go to <http://halifaxfarmersmarket.com/>.



## ANNUAL SEWER STROLL

– Suzanne Borkowski

**Date:** Saturday, February 12th

**Place:** In and around Halifax Harbour

**Weather:** Clear, but chilly!

**Interpreters:** Suzanne Borkowski & Bob McDonald

**Participants:** ± 20



Approximately 20 people met at McCormack's Beach to look for birds on our annual HFN/NSBS field trip.

Before moving on to Hartlen Point, Bob McDonald and I pointed out five species of Gulls – Herring, Great Black-backed, Ring-billed, Iceland, and Black-headed, and also Common Eiders, Red-breasted Mergansers, White-winged Scoters, and a large flock of Canada Geese. We picked up Black Scoters at the look-off on Shore Drive, and at the pond further down the road we saw the Northern Pintail, American Wigeon, and some Horned Larks.

At Hartlen Point we added Northern Harrier and the Rough-legged Hawk (thanks to the sharp eyes of Billy and Shirley Hughes!). Also at this stop we had Common Eider and Common Goldeneye.

We next went to Tim Horton's on Main Street (the stretch of road between Pleasant St. and Shore Drive in Dartmouth). Bob was the only one to check out the birds across the street; everyone else was too busy warming up in Tim's! He was rewarded with seeing a huge flock of Iceland Gulls but there were no alcids.

At Dartmouth Cove we saw the Barrows/Common Goldeneye hybrid, Black Guillemots, and both Greater and Lesser Scaup. At Sullivan's Pond we finally saw some land birds – Bohemian Waxwing (one!), Blue Jays, Northern Flickers, Song Sparrows, Chickadees, and the usual Starlings, Pigeons, and Crows. We also saw the American Coots, but no European; American Wigeons, but no Gadwall. We subsequently located one European Wigeon at the canal off Prince Street.

We had lunch at another Tim's on Wyse Road, then visited Tuft's Cove, the Sackville Outflow in Bedford, Arthur Lismer Court, Waterfront Drive, and Moirs Pond, where our last two participants called it a day. By then it was almost 5:00 o'clock, and although we had planned to go to Point Pleasant Park to see the Purple Sandpipers that Rob Woods and his father reported to us at lunchtime, Bob and I decided that only the two of us a field trip did not quite make! So – we headed home with a quick stop at Jean Hartley's feeder to see her Pine Siskins, which were uncooperative enough not to be there.

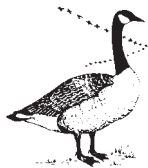
Nothing particularly rare or unusual was seen on this trip, but we did pick up some Bufflehead and Great Cormorants at Tufts Cove, a full-blooded Barrow's Goldeneye in Bedford, some Common Mergansers, and a Common Loon, bringing our tally for the day to 41 species. A nice group of participants from experts to beginners, and a nice clear day with cold (but not freezing cold) temperatures made this a thoroughly enjoyable outing.



## SEWER STROLL SPECIES

(six species seen were not mentioned in the field trip report)

Canada Goose	<i>Branta canadensis</i>
Eurasian Wigeon	<i>Anas penelope</i>
American Wigeon	<i>A. americana</i>
American Black Duck	<i>A. rubripes</i>
Mallard	<i>A. platyrhynchos</i>
Northern Pintail	<i>A. acuta</i>
Green-winged Teal	<i>A. crecca</i>
Greater Scaup	<i>Aythya marila</i>
Lesser Scaup	<i>A. affinis</i>
Common Eider	<i>Somateria mollissima</i>
White-winged Scoter	<i>Melanitta fusca</i>
Black Scoter	<i>M. niger</i>
Long-tailed Duck	<i>Clangula hyemalis</i>
Bufflehead	<i>Bucephala albeola</i>
Common Goldeneye	<i>B. clangula</i>
Barrow's Goldeneye	<i>B. islandica</i>
Common Merganser	<i>Mergus merganser</i>
Red-breasted Merganser	<i>M. serrator</i>
Common Loon	<i>Gavia immer</i>
Great Cormorant	<i>Phalacrocorax carbo</i>
Northern Harrier	<i>Circus cyaneus</i>
Rough-legged Hawk	<i>Buteo lagopus</i>
American Coot	<i>Fulica americana</i>
Black-headed Gull	<i>Chroicocephalus ridibundus</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Herring Gull	<i>L. argentatus</i>
Iceland Gull	<i>L. glaucoideus</i>
Great Black-backed Gull	<i>L. marinus</i>
Black Guillemot	<i>Cephus grille</i>
Rock Pigeon	<i>Columbia livia</i>
Mourning Dove	<i>Zenaida macroura</i>
Northern Flicker	<i>Colaptes auratus</i>
Blue Jay	<i>Cyanocitta cristata</i>
American Crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>
Horned Lark	<i>Eremophila alpestris</i>
Black-capped Chickadee	<i>Poecile atricapillus</i>
European Starling	<i>Sturnus vulgaris</i>
Bohemian Waxwing	<i>Bombicilla garrulus</i>
Song Sparrow	<i>Melospiza melodia</i>
House Sparrow	<i>Passer domesticus</i>



## WASTEWATER FACILITY

– Stephanie Robertson

**Date:** Saturday, March 12th

**Place:** Dartmouth Wastewater Facility, Dartmouth

**Weather:** Cold and windy

**Interpreter:** Andrew McNab, Supervisor

**Participants:** 15

This was a very interesting trip – to see the inner workings of one of the wastewater treatment facilities which have negated the dumping of untreated sewage and storm water into our harbour. A drawback – it was difficult to take notes. The plant was extremely noisy, with its many large pumps, screening rooms, ventilation motors and fans, and numerous super tanks and wells

of moving water (30,000 m<sup>3</sup> H<sub>2</sub>O flows through daily!). This seriously compromised hearing, and many repeats of explanations were asked for!

Open from Monday to Saturday, 7:00 a.m. to 7:00 p.m., staff at the facility work 7-day shifts, with three staff and one labourer. Their catchment area includes Burnside to the Imperial Oil refinery and all the way to Eastern Passage, taking water from a total of 12 pumping stations. It receives a high volume of industrial, high pH wastewater from Burnside. This is a problem, but it is difficult to pinpoint the sources. Salt and grit run-off from the roads is an issue as well.

We started (and finished) in the control room, which was comparatively quiet. There we were shown a beaker of the water that was entering the facility at that moment, at 7,000 m<sup>3</sup> per hour (top capability is 9,200 m<sup>3</sup> per hour). There had been much rain in the last few days, therefore the water had only a slightly yellow cast with some feathery looking 'floatables' meandering about at the bottom. Andrew said that during dry spells, the water is much thicker and darker, with much more sediment and floatables.

Beginning our tour through the different rooms, unpleasant smells added to the great noise. Andrew explained that if there are any problems whatsoever, large or small, detectors stop all processing automatically, the inlet gate closes immediately, and all inflowing water is diverted to the harbour.

This is how the water is treated. The intruding fluid and sewage first goes through a 25 mm mechanical screen which filters out things like rocks and sticks. If the flow is too high and too full of debris, everything stops, and manual scraping of the sieves is performed. As much as possible is removed at this first step. Interestingly, plastic debris is no problem, but little things like Q-tips are; they attract other bits until finally the whole screen becomes overloaded and the water has to be stopped until it is cleared.

The pumping room has five 220 hp submersible pumps – one back-up, two stationary speed and two variable speed. It was very noisy in here from all the water running through the system and all the ventilation motors and fans (the air in the facility is completely changed 12x/hour). There is one colossal receiving well; the top of this well is 12 ft underground. In another immense and noisy room, the water goes through finer, 10 mm screens. Then, first aluminum sulfate, and next a polymer (to increase the consolidation even more) are added to gather the solids into a 'flock'. We saw this flock being formed – a moving grey scum in many large, open well-like areas below floor level. Three to four % solids is passable, but everything shuts down if the solids reach 28 to 30%, when more polymer must be added. The whole system is designed to take out 80% percent of unwanted material. Further on in the process, the flock is dried, stored in very large bins, and then taken by trucks to the landfill. The bins can hold only two days worth of this dried material.

Everything in the facility is run by electricity except for the heating in winter; it is run by natural gas. In the summer it can get very hot, and the whole system switches



off automatically at 40°C. To properly deal with the grit run-off from streets, the velocity of all the water being processed is slowed down in two big holding tanks; here the grit is able to settle out. There are banks of computerised meters that measure turbidity, acidity, and conductivity and the water must meet stringently-set levels before it is deemed good enough to be sent for the final treatment – UV radiation to kill any bacteria from fecal matter. A reading of 200-300 bacteria/100ml is considered good; a bad reading is 4,000 bacteria/100ml and over. The pH of the cleaned H<sub>2</sub>O must measure 6.5-7.5.

In a comparatively quiet, very small laboratory they make their own distilled water, do their own lab tests, and carry out incubation to test for the growth of any latent bacteria in the final water. The Compliance Department of the N.S. Dept. of the Environment come in to do tests as well.

Back in the control room we viewed the seven monitors and the computers that manage automatically the entire system of valves, pumps, compressors, ventilation, the alarm system, and the entire grid. Spare parts for maintenance and repair come mostly from the U.S., but they do try to repair some things themselves. A new facility may be coming soon; it will be carrying out secondary treatment and will be somewhat different, perhaps using rotating discs, aeration, and/or a digestive process which will produce methane. This can be burned to sell as power.



## NATURE NOTES

### JANUARY

Regina Maass reported **Wych Hazel blooming** in her backyard on the 24th of December; this is interesting because typically, this wild flower blooms only from September to November.

Bob McDonald reported having seen the following birds in late December/early January: **Rough-legged Hawk, Kestrel, Lark Sparrow, Peregrine Falcon, and Yellow-breasted Chat.**

Jim Medill reported having **15 Ring-necked Pheasants** in his yard, **nine hens and six cocks**, who at this time of year want nothing to do with each other!

Joan Czapalay reported seeing a **White-breasted Nuthatch**, and **Dandelions and Ragweed in bloom!**

Patricia Chalmers reported that **129 species of birds were identified on the 19th of December**, including **41 Killdeer**, which illustrates that Halifax is home to lots of birds during the winter.

Judy Keating reported watching an **Otter** breakfast on fish at high tide near her home.

Dennis Hippert reported seeing a **Baltimore Oriole.**



### FEBRUARY

– Allan Robertson

Bob McDonald saw two **Common Redpolls** at their backyard feeder in early February, the first Redpolls of the year for them, and Rosemary Callendar saw **five Killdeer** and a **Northern Mockingbird** at Evangeline Beach.

Carol Klar saw **12 Snowbuntings** near Sheffield Mills while Jim Medill saw **20 of them** in their backyard. They ate all of the corn put out for the pheasants!



One of the audience saw **two dozen Redpolls** at their feeder in Dartmouth, and Judy Keating saw an **Otter** at the rear of her property, plus four **White-tailed Deer** at Indian Point which stayed for a while by the side of the road. She also saw a **Bald Eagle** in her backyard.

Arthur Morris referred to seeing **turtles**, and asked how many species were in Nova Scotia. Members thought about four or five (there are seven – four land turtles and three marine – ed.).



Shirley MacIntyre saw a **Coyote** at Voyageur Sub-division. Pat Leader saw **four White-tailed Deer** and about **40 Cedar waxwings** in her backyard the evening of February's meeting. She also saw a **diving duck** she didn't recognise – russet throat, white chest, white on wings, dark brown body, but couldn't see the beak; members suggested it could have been **either a merganser or a Common Goldeneye** (Bob McDonald later surmised that it was most likely the latter). Ingrid Plache saw a **Bald Eagle** at Williams Lake.

Dorothy Morris asked about the habits of **ladybugs**. One was resident outside her kitchen window for some time. Jim Medill explained that they typically hibernate (under a hosta, for example). Dorothy also remarked on her **crow-feeding travails** when a snowstorm arrives after food has been left out for them. The crows must work very hard to retrieve the food from under a foot of snow, but they usually do manage.

During the week previous to February's meeting, Leslie Butters saw a **stranded seal pup** on the Northwest Arm ice. She saw a **Blue Heron** about an hour before the meeting, as well as **five Dovekies**, and she heard the call of a **Loon**.

Michael Downing saw a **Killdeer** in Point Pleasant Park on New Year's Day. They're not very common here at this time of year, and he called it 'the year of the Killdeer'. He surmised that it might have been blown in on the latest storm. Killdeer have also been seen in Ontario after heavy snows, again probably being blown in on a storm.

Pat Chalmers, by telephone, said that she had seen her first **two Robins** of the year and a **Grackle** on Monday, March 22nd (ed.).

A cold spring:  
the violet was flawed on the lawn.  
For two weeks or more the trees hesitated;  
the little leaves waited,  
carefully indicating their characteristics...

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

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

- 19 Apr. "Experiencing Sable Island" with speaker Bernadette Morris, photographer.
- 3 May "Our Evolving Coastline" with speaker Dr. Scott Cunningham of Coastal Adventures.
- 3 Jun. "World Oceans Day Celebration"



**Nature Nova Scotia** (formerly the Federation of Nova Scotia Naturalists). For more info, go to <http://www.naturens.ca>.

- 3 Jun. -5 Jun. "Nature Nova Scotia AGM" at the Gaelic College in St. Ann's, Cape Breton. Visit the NatureNS web site for complete programme details.

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

- 24 Mar. "Book Auction in Support of the Sanctuary Trust".
- 26 Mar. Storm Date 27 Mar. "Baccaro & Blanche Peninsula, Shelburne Co.", with leader James Hirtle, 764-2182, [jrhbirder@hotmail.com](mailto:jrhbirder@hotmail.com).
- 2 Apr. "New Birders' Walk, HRM", with leader Bonnie Carmichael, [bonniecarmichael@hotmail.com](mailto:bonniecarmichael@hotmail.com).
- 9 Apr. "Martinique Beach, HRM", with leader Ian McLaren, 429-7024, [iamclar@dal.ca](mailto:iamclar@dal.ca).
- 28 Apr. "Birding the Raj: Adventures on a Nature and Cultural Tour of Northwest India", with speaker Blake Maybank.
- 28 May "Annual Out-of-Area Meeting, New Glasgow, Pictou Co.", with speakers Becky Stewart, Karen Potter, and Ken McKenna.

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

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

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

- 25 Apr. AGM & "A Botanical Expedition to Lockhart Brook (almost) in the Cape Breton Highlands", with speaker Ruth Newell, Curator of the E.C. Smith Herbarium at Acadia University

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

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

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

**Young Naturalists' Club:** A fun, free nature club for children eight and older. Meetings take place usually every 3rd Saturday of the month at the **Maritime Museum of the Atlantic**, 1675 Lower Water St., at 10:00 a.m.. Field trips are every 4th Sunday, 1:00 p.m. For more information, Laura Lambie, 431-0207; or go to [ync.nature1st.net](http://ync.nature1st.net).

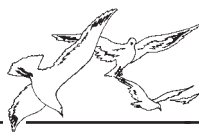
- 19 Mar. "All About Algae", with Brian MacDonald, Mt. Allison Biology Lab Instructor; 10:00 a.m. - 11:30 a.m.
- 27 Mar. "Intertidal Zone Field Trip at St. Margaret's Bay", with Brian MacDonald; 9:00am - 12:00 p.m.
- 16 Apr. "Geology Talk", with Dr. Anne Marie Ryan, Dalhousie Earth Sciences Professor; 10:00 a.m. - 11:30a.m.
- 1 May "Geology Field Trip", with Dr. Anne Marie Ryan; 1:00 p.m. - 4:00 p.m.
- 14 May 'Old Growth Forests', with forester Danny Myers. Old growth forests are rare in Nova Scotia - less than 1% of our forests is over 100 years of age; 10:00 a.m. - 11:30 a.m.
- 29 May "Old Growth Field Trip", with Danny Myers at the Waverley/Salmon River/Long Lake Wilderness Area, which is a rugged wilderness of lakes and pockets of old-growth pine and hemlock; 1:00 p.m. - 4:00 p.m.



– compiled by Patricia L. Chalmers



# HALIFAX TIDE TABLE



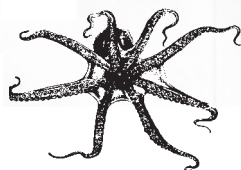
## April-avril

## May-mai

## June-juin

Day	Time	Feet	Metres	jour	heure	pieds	mètres	Day	Time	Feet	Metres	jour	heure	pieds	mètres	Day	Time	Feet	Metres	jour	heure	pieds	mètres
<b>1</b>	0053 0637 FR 1309 VE 1859	<b>1.6</b> <b>5.6</b> <b>1.3</b> <b>5.6</b>	<b>0.5</b> <b>1.7</b> <b>0.4</b> <b>1.7</b>	<b>16</b>	0012 0603 SA 1225 SA 1827	<b>0.7</b> <b>5.9</b> <b>0.7</b> <b>6.6</b>	<b>0.2</b> <b>1.8</b> <b>0.2</b> <b>2.0</b>	<b>1</b>	0058 0650 SU 1304 DI 1854	<b>1.3</b> <b>5.2</b> <b>1.6</b> <b>5.6</b>	<b>0.4</b> <b>1.6</b> <b>0.5</b> <b>1.7</b>	<b>16</b>	0052 0640 MO 1302 LU 1851	<b>0.0</b> <b>5.9</b> <b>1.0</b> <b>6.6</b>	<b>0.0</b> <b>1.8</b> <b>0.3</b> <b>2.0</b>	<b>1</b>	0138 0744 WE 1343 ME 1934	<b>0.7</b> <b>5.2</b> <b>2.0</b> <b>5.9</b>	<b>0.2</b> <b>1.6</b> <b>0.6</b> <b>1.8</b>	<b>16</b>	0221 0812 TH 1440 JE 2015	<b>0.3</b> <b>5.9</b> <b>1.3</b> <b>6.2</b>	<b>0.1</b> <b>1.8</b> <b>0.4</b> <b>1.9</b>
<b>2</b>	0129 0716 SA 1342 SA 1932	<b>1.3</b> <b>5.6</b> <b>1.3</b> <b>5.6</b>	<b>0.4</b> <b>1.7</b> <b>0.4</b> <b>1.7</b>	<b>17</b>	0108 0657 SU 1319 DI 1916	<b>0.3</b> <b>5.9</b> <b>0.3</b> <b>6.9</b>	<b>0.1</b> <b>1.8</b> <b>0.2</b> <b>2.1</b>	<b>2</b>	0131 0729 MO 1336 LU 1928	<b>1.0</b> <b>5.2</b> <b>1.6</b> <b>5.6</b>	<b>0.3</b> <b>1.6</b> <b>0.5</b> <b>1.7</b>	<b>17</b>	0146 0733 TU 1358 MA 1941	<b>0.0</b> <b>5.9</b> <b>1.0</b> <b>6.6</b>	<b>0.0</b> <b>1.8</b> <b>0.3</b> <b>2.0</b>	<b>2</b>	0217 0823 TH 1422 JE 2014	<b>0.7</b> <b>5.2</b> <b>1.6</b> <b>5.9</b>	<b>0.2</b> <b>1.6</b> <b>0.5</b> <b>1.8</b>	<b>17</b>	0309 0901 FR 1531 VE 2103	<b>0.3</b> <b>5.9</b> <b>1.6</b> <b>6.2</b>	<b>0.1</b> <b>1.8</b> <b>0.5</b> <b>1.9</b>
<b>3</b>	0200 0754 SU 1410 DI 2004	<b>1.3</b> <b>5.6</b> <b>1.3</b> <b>5.6</b>	<b>0.4</b> <b>1.7</b> <b>0.4</b> <b>1.7</b>	<b>18</b>	0202 0749 MO 1412 LU 2004	<b>0.0</b> <b>6.2</b> <b>0.3</b> <b>6.9</b>	<b>0.0</b> <b>1.9</b> <b>0.1</b> <b>2.1</b>	<b>3</b>	0203 0807 TU 1408 MA 2002	<b>0.7</b> <b>5.2</b> <b>1.6</b> <b>5.6</b>	<b>0.2</b> <b>1.6</b> <b>0.5</b> <b>1.7</b>	<b>18</b>	0238 0825 WE 1453 ME 2031	<b>0.0</b> <b>5.9</b> <b>1.0</b> <b>6.6</b>	<b>0.0</b> <b>1.8</b> <b>0.3</b> <b>2.0</b>	<b>3</b>	0258 0902 FR 1504 VE 2055	<b>0.7</b> <b>5.2</b> <b>1.6</b> <b>5.9</b>	<b>0.2</b> <b>1.6</b> <b>0.5</b> <b>1.8</b>	<b>18</b>	0356 0947 SA 1621 SA 2150	<b>0.7</b> <b>5.9</b> <b>1.6</b> <b>5.9</b>	<b>0.2</b> <b>1.8</b> <b>0.5</b> <b>1.8</b>
<b>4</b>	0230 0831 MO 1436 LU 2035	<b>1.0</b> <b>5.6</b> <b>1.6</b> <b>5.6</b>	<b>0.3</b> <b>1.7</b> <b>0.5</b> <b>1.7</b>	<b>19</b>	0255 0840 TU 1506 MA 2053	<b>0.0</b> <b>5.9</b> <b>0.7</b> <b>6.6</b>	<b>0.0</b> <b>1.8</b> <b>0.2</b> <b>2.0</b>	<b>4</b>	0238 0844 WE 1441 ME 2037	<b>0.7</b> <b>5.2</b> <b>1.6</b> <b>5.6</b>	<b>0.2</b> <b>1.6</b> <b>0.5</b> <b>1.7</b>	<b>19</b>	0328 0916 TH 1548 JE 2121	<b>0.0</b> <b>5.9</b> <b>1.3</b> <b>6.2</b>	<b>0.0</b> <b>1.8</b> <b>0.4</b> <b>1.9</b>	<b>4</b>	0341 0942 SA 1550 SA 2137	<b>0.7</b> <b>5.6</b> <b>2.0</b> <b>5.9</b>	<b>0.2</b> <b>1.7</b> <b>0.6</b> <b>1.8</b>	<b>19</b>	0440 1030 SU 1712 DI 2236	<b>1.0</b> <b>5.9</b> <b>2.0</b> <b>5.9</b>	<b>0.3</b> <b>1.8</b> <b>0.6</b> <b>1.8</b>
<b>5</b>	0301 0906 TU 1503 MA 2108	<b>1.0</b> <b>5.6</b> <b>1.6</b> <b>5.6</b>	<b>0.3</b> <b>1.7</b> <b>0.5</b> <b>1.7</b>	<b>20</b>	0348 0930 WE 1603 ME 2141	<b>0.0</b> <b>5.9</b> <b>1.0</b> <b>6.2</b>	<b>0.0</b> <b>1.8</b> <b>0.3</b> <b>1.9</b>	<b>5</b>	0315 0920 TH 1518 JE 2114	<b>0.7</b> <b>5.2</b> <b>2.0</b> <b>5.6</b>	<b>0.2</b> <b>1.6</b> <b>0.6</b> <b>1.7</b>	<b>20</b>	0419 1004 FR 1644 VE 2209	<b>0.3</b> <b>5.9</b> <b>1.6</b> <b>5.9</b>	<b>0.1</b> <b>1.8</b> <b>0.5</b> <b>1.8</b>	<b>5</b>	0426 1023 SU 1642 DI 2221	<b>0.7</b> <b>5.6</b> <b>2.0</b> <b>5.9</b>	<b>0.2</b> <b>1.7</b> <b>0.6</b> <b>1.8</b>	<b>20</b>	0524 1113 MO 1803 LU 2321	<b>1.3</b> <b>5.9</b> <b>2.0</b> <b>5.6</b>	<b>0.4</b> <b>1.8</b> <b>0.6</b> <b>1.7</b>
<b>6</b>	0334 0941 WE 1535 ME 2141	<b>1.0</b> <b>5.2</b> <b>1.6</b> <b>5.6</b>	<b>0.3</b> <b>1.6</b> <b>0.5</b> <b>1.7</b>	<b>21</b>	0441 1020 TH 1702 JE 2229	<b>0.3</b> <b>5.9</b> <b>1.3</b> <b>5.9</b>	<b>0.1</b> <b>1.8</b> <b>0.4</b> <b>1.8</b>	<b>6</b>	0356 0958 FR 1600 VE 2153	<b>1.0</b> <b>5.2</b> <b>2.0</b> <b>5.6</b>	<b>0.3</b> <b>1.6</b> <b>0.6</b> <b>1.7</b>	<b>21</b>	0510 1052 SA 1742 SA 2257	<b>0.7</b> <b>5.6</b> <b>2.0</b> <b>5.9</b>	<b>0.2</b> <b>1.7</b> <b>0.6</b> <b>1.8</b>	<b>6</b>	0514 1106 MO 1741 LU 2307	<b>0.7</b> <b>5.6</b> <b>2.0</b> <b>5.9</b>	<b>0.2</b> <b>1.7</b> <b>0.6</b> <b>1.8</b>	<b>21</b>	0606 1156 TU 1855 MA	<b>1.6</b> <b>5.9</b> <b>2.3</b> <b>0.7</b>	<b>0.5</b> <b>1.8</b> <b>0.7</b> <b>0.7</b>
<b>7</b>	0412 1016 TH 1612 JE 2217	<b>1.3</b> <b>5.2</b> <b>2.0</b> <b>5.6</b>	<b>0.4</b> <b>1.6</b> <b>0.6</b> <b>1.7</b>	<b>22</b>	0537 1109 FR 1805 VE 2318	<b>0.7</b> <b>5.6</b> <b>1.6</b> <b>5.6</b>	<b>0.2</b> <b>1.7</b> <b>0.5</b> <b>1.7</b>	<b>7</b>	0441 1037 SA 1651 SA 2234	<b>1.0</b> <b>5.2</b> <b>2.3</b> <b>5.6</b>	<b>0.3</b> <b>1.6</b> <b>0.7</b> <b>1.7</b>	<b>22</b>	0601 1139 SU 1841 DI 2347	<b>1.0</b> <b>5.6</b> <b>2.0</b> <b>5.6</b>	<b>0.3</b> <b>1.7</b> <b>0.6</b> <b>1.7</b>	<b>7</b>	0605 1152 TU 1842 MA 2357	<b>1.0</b> <b>5.6</b> <b>2.0</b> <b>5.6</b>	<b>0.3</b> <b>1.7</b> <b>0.6</b> <b>1.7</b>	<b>22</b>	0007 0649 WE 1241 ME 1946	<b>5.2</b> <b>1.6</b> <b>5.6</b> <b>2.3</b>	<b>1.6</b> <b>0.5</b> <b>1.7</b> <b>0.7</b>
<b>8</b>	0456 1053 FR 1659 VE 2255	<b>1.3</b> <b>5.2</b> <b>2.3</b> <b>5.6</b>	<b>0.4</b> <b>1.6</b> <b>0.7</b> <b>1.7</b>	<b>23</b>	0634 1159 SA 1908 SA	<b>1.0</b> <b>5.2</b> <b>2.0</b> <b>0.6</b>	<b>0.3</b> <b>1.6</b> <b>0.6</b> <b>0.6</b>	<b>8</b>	0532 1119 SU 1751 DI 2319	<b>1.3</b> <b>5.2</b> <b>2.3</b> <b>5.6</b>	<b>0.4</b> <b>1.6</b> <b>0.7</b> <b>1.7</b>	<b>23</b>	0652 1228 MO 1938 LU	<b>1.3</b> <b>5.6</b> <b>2.3</b> <b>0.7</b>	<b>0.4</b> <b>1.7</b> <b>0.7</b> <b>0.7</b>	<b>8</b>	0659 1241 WE 1943 ME	<b>1.0</b> <b>5.6</b> <b>1.6</b> <b>0.5</b>	<b>0.3</b> <b>1.7</b> <b>0.7</b> <b>0.5</b>	<b>23</b>	0056 0733 TH 1329 JE 2036	<b>4.9</b> <b>2.0</b> <b>5.6</b> <b>2.0</b>	<b>1.5</b> <b>0.6</b> <b>1.7</b> <b>0.6</b>
<b>9</b>	0548 1133 SA 1800 SA 2337	<b>1.6</b> <b>5.2</b> <b>2.3</b> <b>5.6</b>	<b>0.5</b> <b>1.6</b> <b>0.7</b> <b>1.7</b>	<b>24</b>	0010 0730 SU 1255 DI 2009	<b>5.2</b> <b>1.3</b> <b>5.2</b> <b>2.0</b>	<b>1.6</b> <b>0.4</b> <b>0.6</b> <b>0.6</b>	<b>9</b>	0626 1206 MO 1854 LU	<b>1.3</b> <b>5.2</b> <b>2.3</b> <b>0.7</b>	<b>0.4</b> <b>1.6</b> <b>0.7</b> <b>0.7</b>	<b>24</b>	0039 0742 TU 1322 MA 2033	<b>5.2</b> <b>1.6</b> <b>5.2</b> <b>2.3</b>	<b>1.6</b> <b>0.5</b> <b>1.6</b> <b>0.7</b>	<b>9</b>	0054 0754 TH 1336 JE 2043	<b>5.6</b> <b>1.3</b> <b>5.6</b> <b>1.3</b>	<b>1.7</b> <b>0.4</b> <b>1.7</b> <b>0.4</b>	<b>24</b>	0151 0820 FR 1422 VE 2124	<b>4.6</b> <b>2.0</b> <b>5.2</b> <b>2.0</b>	<b>1.4</b> <b>0.6</b> <b>0.6</b> <b>0.6</b>
<b>10</b>	0647 1221 SU 1906 DI	<b>1.6</b> <b>4.9</b> <b>2.6</b> <b>0.8</b>	<b>0.5</b> <b>1.5</b> <b>0.8</b> <b>0.8</b>	<b>25</b>	0108 0826 MO 1359 LU 2107	<b>5.2</b> <b>1.6</b> <b>4.9</b> <b>2.0</b>	<b>1.6</b> <b>0.5</b> <b>1.5</b> <b>0.6</b>	<b>10</b>	0009 0722 TU 1300 MA 1957	<b>5.6</b> <b>1.3</b> <b>5.2</b> <b>2.3</b>	<b>1.7</b> <b>0.4</b> <b>1.6</b> <b>0.7</b>	<b>25</b>	0138 0831 WE 1421 ME 2126	<b>4.9</b> <b>2.0</b> <b>5.2</b> <b>2.0</b>	<b>1.5</b> <b>0.6</b> <b>1.6</b> <b>0.6</b>	<b>10</b>	0159 0850 FR 1436 VE 2142	<b>5.2</b> <b>1.3</b> <b>5.9</b> <b>1.0</b>	<b>1.6</b> <b>0.4</b> <b>1.8</b> <b>0.3</b>	<b>25</b>	0254 0911 SA 1517 SA 2211	<b>4.6</b> <b>2.3</b> <b>5.2</b> <b>2.0</b>	<b>1.4</b> <b>0.7</b> <b>1.6</b> <b>0.6</b>
<b>11</b>	0027 0746 MO 1318 LU 2010	<b>5.6</b> <b>1.6</b> <b>4.9</b> <b>2.3</b>	<b>1.7</b> <b>0.5</b> <b>1.5</b> <b>0.7</b>	<b>26</b>	0216 0920 TU 1512 MA 2203	<b>4.9</b> <b>1.6</b> <b>5.2</b> <b>2.0</b>	<b>1.5</b> <b>0.5</b> <b>1.6</b> <b>0.6</b>	<b>11</b>	0108 0817 WE 1402 ME 2058	<b>5.6</b> <b>1.3</b> <b>5.6</b> <b>2.0</b>	<b>1.7</b> <b>0.4</b> <b>1.7</b> <b>0.6</b>	<b>26</b>	0243 0920 TH 1521 JE 2215	<b>4.6</b> <b>2.0</b> <b>5.2</b> <b>2.0</b>	<b>1.4</b> <b>0.6</b> <b>1.6</b> <b>0.6</b>	<b>11</b>	0311 0949 SA 1538 SA 2242	<b>5.2</b> <b>1.3</b> <b>5.9</b> <b>0.7</b>	<b>1.6</b> <b>0.4</b> <b>1.8</b> <b>0.2</b>	<b>26</b>	0401 1004 SU 1609 DI 2256	<b>4.6</b> <b>2.3</b> <b>5.2</b> <b>1.6</b>	<b>1.4</b> <b>0.7</b> <b>1.6</b> <b>0.5</b>
<b>12</b>	0126 0844 TU 1429 MA 2112	<b>5.2</b> <b>1.3</b> <b>4.9</b> <b>2.3</b>	<b>1.6</b> <b>0.4</b> <b>1.5</b> <b>0.7</b>	<b>27</b>	0331 1012 WE 1616 ME 2255	<b>4.9</b> <b>1.6</b> <b>5.2</b> <b>2.0</b>	<b>1.5</b> <b>0.5</b> <b>1.6</b> <b>0.6</b>	<b>12</b>	0217 0912 TH 1508 JE 2158	<b>5.2</b> <b>1.3</b> <b>5.6</b> <b>1.3</b>	<b>1.6</b> <b>0.4</b> <b>1.7</b> <b>0.4</b>	<b>27</b>	0349 1009 FR 1614 VE 2301	<b>4.6</b> <b>2.0</b> <b>5.2</b> <b>1.6</b>	<b>1.4</b> <b>0.6</b> <b>1.6</b> <b>0.5</b>	<b>12</b>	0424 1050 SU 1640 DI 2340	<b>5.2</b> <b>1.3</b> <b>6.2</b> <b>0.7</b>	<b>1.6</b> <b>0.4</b> <b>1.9</b> <b>0.2</b>	<b>27</b>	0501 1057 MO 1658 LU 2342	<b>4.6</b> <b>2.3</b> <b>5.2</b> <b>1.3</b>	<b>1.4</b> <b>0.7</b> <b>1.6</b> <b>0.4</b>
<b>13</b>	0239 0940 WE 1543 ME 2213	<b>5.6</b> <b>1.3</b> <b>5.2</b> <b>1.6</b>	<b>1.7</b> <b>0.4</b> <b>1.6</b> <b>0.5</b>	<b>28</b>	0434 1102 TH 1704 JE 2341	<b>4.9</b> <b>1.6</b> <b>5.2</b> <b>1.6</b>	<b>1.5</b> <b>0.5</b> <b>1.6</b> <b>0.5</b>	<b>13</b>	0334 1008 FR 1610 VE 2258	<b>5.2</b> <b>1.3</b> <b>5.9</b> <b>1.0</b>	<b>1.6</b> <b>0.4</b> <b>1.8</b> <b>0.3</b>	<b>28</b>	0448 1057 SA 1659 SA 2343	<b>4.9</b> <b>2.0</b> <b>5.2</b> <b>1.3</b>	<b>1.5</b> <b>0.6</b> <b>1.6</b> <b>0.4</b>	<b>13</b>	0529 1152 MO 1737 LU	<b>5.2</b> <b>1.3</b> <b>6.2</b> <b>1.9</b>	<b>1.6</b> <b>0.4</b> <b>1.9</b> <b>0.4</b>	<b>28</b>	0552 1146 TU 1743 MA	<b>4.9</b> <b>2.0</b> <b>5.6</b> <b>1.7</b>	<b>1.5</b> <b>0.6</b> <b>1.7</b> <b>0.7</b>
<b>14</b>	0357 1036 TH 1645 JE 2314	<b>5.6</b> <b>1.0</b> <b>5.9</b> <b>1.3</b>	<b>1.7</b> <b>0.3</b> <b>1.8</b> <b>0.4</b>	<b>29</b>	0525 1148 FR 1745 VE	<b>4.9</b> <b>1.6</b> <b>5.6</b> <b>1.7</b>	<b>1.5</b> <b>0.5</b> <b>1.7</b> <b>0.4</b>	<b>14</b>	0444 1106 SA 1707 SA 2356	<b>5.6</b> <b>1.0</b> <b>6.2</b> <b>0.3</b>	<b>1.7</b> <b>0.3</b> <b>1.9</b> <b>0.1</b>	<b>29</b>	0538 1143 SU 1740 DI	<b>4.9</b> <b>2.0</b> <b>5.6</b> <b>1.7</b>	<b>1.5</b> <b>0.6</b> <b>1.7</b> <b>0.4</b>	<b>14</b>	0037 0627 TU 1251 MA 1832	<b>0.3</b> <b>5.6</b> <b>1.3</b> <b>6.2</b>	<b>0.1</b> <b>1.7</b> <b>0.4</b> <b>1.9</b>	<b>29</b>	0027 0637 WE 1232 ME 1827	<b>1.0</b> <b>4.9</b> <b>2.0</b> <b>5.6</b>	<b>0.3</b> <b>1.5</b> <b>0.6</b> <b>1.7</b>
<b>15</b>	0504 1131 FR 1738 VE	<b>5.6</b> <b>0.7</b> <b>6.2</b> <b>1.9</b>	<b>1.7</b> <b>0.2</b> <b>1.9</b> <b>0.4</b>	<b>30</b>	0022 0609 SA 1229 SA 1821	<b>1.3</b> <b>5.2</b> <b>1.6</b> <b>5.6</b>	<b>0.4</b> <b>1.6</b> <b>0.5</b> <b>1.7</b>	<b>15</b>	0545 1205 SU 1759 DI	<b>5.6</b> <b>1.0</b> <b>6.6</b> <b>2.0</b>	<b>1.7</b> <b>0.3</b> <b>2.0</b> <b>0.4</b>	<b>30</b>	0022 0623 MO 1225 LU 1818	<b>1.3</b> <b>4.9</b> <b>2.0</b> <b>5.6</b>	<b>0.4</b> <b>1.5</b> <b>0.6</b> <b>1.7</b>	<b>15</b>	0131 0721 WE 1347 ME 1924	<b>0.3</b> <b>5.6</b> <b>1.3</b> <b>6.2</b>	<b>0.1</b> <b>1.7</b> <b>0.4</b> <b>1.9</b>	<b>30</b>	0112 0719 TH 1317 JE 1910	<b>0.7</b> <b>5.2</b> <b>1.6</b> <b>5.9</b>	<b>0.2</b> <b>1.6</b> <b>0.5</b> <b>1.8</b>

ALL TIMES ARE AST







### **NEXT DEADLINE**

**21st of May for the June, 2011 Issue**

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email submissions to [sdhaythorn@ns.sympatico.ca](mailto:sdhaythorn@ns.sympatico.ca)**