

In With the Tide

The Bay of Fundy Discovery Centre Association Newsletter



Our Fundy-Our Future

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Casie Tidd photos

Ready For All to Enjoy

Islands Consolidated School's Options and Opportunities (O2) students and Digby Neck/Islands GOMI Youth as well as some community volunteers teamed up to clear the trail behind the school to the brook. The number of volunteer hours clearing brush, shoveling gravel and mowing is probably not possible to tally but the trail sure looks wonderful. The trail was mowed with a push mower from the pavement on Lovers Lane to Freeport Brook including the latest two side paths to the school grounds. The students and volunteers are to be congratulated on completing such a fine job. Another island trail is available for outdoor enjoyment!



Drifting Along Digby Neck Shores

Anna-Marie MacKenzie Kelly, Digby Neck/Islands GOMI Youth Leader

Another Ocean Drifter has landed on the shores of Digby Neck. Gulf of Maine Institute (GOMI) Youth at Middlesex Community College deployed this Ocean Drifter into the Gulf of Maine from Newburyport, Massachusetts on June 3, 2015. It traveled close to 5000 kilometres jogging back and forth with the tides as it slowly made its way up the Bay of Fundy. The high winds and rough seas leading into Thanksgiving weekend brought the Drifter ashore on Digby Neck just below Gulliver's Cove. To see its track, the link to the drifter is at [Http://Nefsc.NOAA.gov/drifter/drift_gomi_2015_1.html](http://Nefsc.NOAA.gov/drifter/drift_gomi_2015_1.html)

On the morning of October 12, Kevin Baker, of Gulliver's Cove, was out in his boat searching for buoys along the shore. He stopped to collect a buoy and saw this small white buoy sporting a black hat. Luckily for the Drifter Program, Kevin was curious enough to check it out. He discovered the tiny black box (transmitter) had a name and phone number. He hurried home and insisted his wife, Cindy, call James Manning's number immediately.

James Manning works for the National Oceanic and Atmospheric Administration (NOAA) and coordinates the Drifter Program in the Gulf of

Maine. Drifters are built with sails below the water surface with the transmitters sitting just above the surface. A variety of Drifters help scientists, fishermen and students monitor currents, sea surface temperature, atmospheric pressure, wind and salinity (For more information about the program, check

www.noaa.gov/features/02_monitoring/currentdrifter.html).

This is the second drifter to be found on Digby Neck shores. The first, just a year ago, was recovered close to Trout Cove in Centreville. Another came ashore a year earlier above Granville.

One more Drifter continued to transmit from the Bay of Fundy and beached near Delaps Cove (green track on the same map on the above link). This one, deployed by

students at Nock Middle School in Newburyport, MA, began its journey on 3 June 2015 and has followed an interesting route of well over 5000 kilometres. It first headed towards the Atlantic Ocean but caught a different current off Clark's Harbour and spent a great deal of time traveling up and down the centre of the Bay of Fundy reaching just past Advocate Harbour before turning and heading down the Annapolis Valley coastline. It took a rest on the Hillsburn shore above Delaps Cove on October 20 but was picked up by the tide and was back afloat. This one has yet to be found.

This past summer, GOMI Youth attending the International GOMI Conference at Acadia University, with the help of local fishermen, deployed two Drifters off Brier Island. One is still transmitting and appears to have gone ashore (Oct. 17) on Heron Island near Owl's Head, Maine. To see the route this Drifter followed, go to www.gulfofmaineinstitute.com.

Thanks to Kevin Baker finding and returning the transmitter, it is on its way back to NOAA so more students will have the opportunity to build, deploy and monitor an Ocean Drifter.



Kevin Baker holds the remains of the ocean drifter he found on the shore below Gulliver's Cove. MacKenzie Kelly photo

Renewable Energy Symposium Showcases Digby

By Roger Outhouse

The Digby Port Days & Renewable Energy Symposium (Sept. 17-19) was a terrific introduction to the potential of tidal energy, wind turbines, solar energy, bio-gas energy generation, and biomass furnaces. The three-day event was a sharing time for businesses, levels of government, researchers, technical people, and the general public. Friday featured a special opportunity via a "Renewable Energy Project Tour". At the invitation of Nova Scotia Community College, Islands Consolidated School's Taylor Barnaby was able to attend. Taylor is a grade 12 student and a Gulf of Maine Institute

(GOMI) youth representative.

The charter bus departure from the Digby Pines Hotel made its first stop at the Digby Neck Wind Farm, owned and operated by Nova Scotia Power. The 20 turbines are an impressive sight that have been operating for a number of years and are capable of producing enough annual energy to supply 10,000 homes. It was explained that this particular site has produced more energy than expected and is one of the province's best performers.

pollution hazards by fermenting the waste to a methane gas and burning that gas in a diesel generator owned by the Municipality of Digby. A small amount of electric power (annual power for about 30 homes) is produced and sold to Nova Scotia Power. Excess heat from the generators is used to help in the heating requirements needed to process up to 15,500 cubic meters of waste per year. It is obvious that those staffing the facility are dedicated and care about what they are doing for the environment. While the energy generated is very modest this hi-tech effort is the province's first such attempt to have such a plant that has done much toward resolving an industry concern and making our environment more sustainable. While the learning curve on this project has been both challenging and time consuming it has had positive results and will help in future planning and adaptations.



Taylor poses in front of the high tech digester plant that has a real impact on controlling green gas emissions while helping prevent contamination from the wastes generated by the mink industry.

Next stop was the South West Eco Energy's Weaver Settlement Anaerobic Digester. This was truly a new approach to an environmental problem. The mink industry success in the region has led to an increased amount of animal waste that can lead to disposal difficulties and pollution. The digester collects mink waste from over 50 farming operations and the goal is to neutralize the

Last stop was a visit to Université Sainte-Anne for a look at their green energy efforts over the past number of years. It was explained that through concentrated efforts the university fulfilled its desire to reduce costs and its carbon footprint while fostering co-operation with the local business community. The administration proudly terms their course of action as a "Combined technology Project: Life is GREEN at Université Sainte-



On Friday Sept 18th Taylor Barnaby (Gulf of Maine Institute youth team member and grade 12 student at Islands Consolidated School) accepted an invitation to attend the Renewable Energy Projects Tour. This proved to be a real eye opener about the goal of making Digby the greenest county in all of Nova Scotia. Pictured here are Taylor and her grandmother Nina Barnaby from Nova Scotia Community College who helped with tour arrangements. The wind farm on Digby Neck was an amazing first stop on the tour.

Anne". Two small wind turbines produce enough electricity to reduce their electricity bill by 40%. The 118 solar panels on campus roofs assist with domestic hot water needs. The final addition was a state of the art biomass waste wood (locally supplied) burning/boiler furnace that creates enough heat for the campus buildings (including a fabulous new greenhouse). The burning of oil for heat has been eliminated

reducing greenhouse gas emissions by 90%.

The total costs of the projects were \$3 million but annual savings are in the \$400,000 range – great news for the universit ! The tour was an excellent one and left one with a feeling of optimism and pride about Digby County's goal to become Nova Scotia's leading county in Green Energy!



Universit  Sainte-Anne's big investment in this incredible bio-mass waste wood burning furnace has reduced their greenhouse gas emissions by a whopping 90%.

A Thank You Letter: From Nature Conservancy of Canada to Brier Island Volunteers

Thank you all very much for your participation on Brier Island!

Together we saw a lot, learned a lot, and helped do our part to conserve an important piece of nature in Nova Scotia.

We're always striving to improve and enhance our Conservation Volunteers events. Your feedback is invited; please take a few minutes to complete this survey<<https://www.surveymonkey.com/s/RPZ9DWG>>. If you are interested, you can include your name for a chance to win a \$100 gift card from Mountain Equipment Co-op!

I also invite you to visit and join our Facebook group page: Conserving Brier Island<<https://www.facebook.com/groups/421376414707641/>>. Members post information, updates, and converse about NCC work on Brier. More photographs from this past weekend are also posted there.

[cid:AE06BD00537C6B409F5819245085933F@natureconservancy.ca]

Doug van Hemessen

NS Stewardship Coordinator

Nature Conservancy of Canada | Nova Scotia office

PS: Remember, all, to post your conservation activities on Brier Island – especially with photos – on the Conserving Brier Island Facebook page: <https://www.facebook.com/groups/421376414707641/>

Many Islanders and others are connected to that page. It's a great way to let everyone know what we're all up to!

If it's any easier, you can always send content to me (description, images) and I will post them...

Cheers,
Doug

Creature of the Cove: Common Bumblebee (*Bombus impatiens*)

By Roger Outhouse

As September 2015 came to a close I was watching very large Common Bumblebees flying from a nest under my front concrete doorstep. Throughout the summer months I was aware of many of the hive's industrious smaller worker bees flying in and out of the nest visiting the surrounding flowers gathering nectar and pollen to meet the food requirements of the colony where queens, drones (males) and other workers were all growing in numbers. It was the stunning appearance of about 20 of the larger drone members of the hive buzzing loudly around me within about a ten-yard distance from the nest that really got my attention. I was alarmed that the strange appearance of so many might make the workers (they have stingers) more aggressive but that was not the case.

While this bee is not very aggressive they can sting and one should not attempt to get too close, especially to the nest. When agitated, the common bumblebee will extend one of the middle pair of its six legs as if to say, "Back off!" While being too close can trigger that reaction they really get upset at the smell of mammal breath including humans. With that in mind perhaps a human's dreaded morning breath might indeed be fatal. They had captured my attention and made me want to learn more about this largest of all the many species of bees in North America.



I spy with my little eye...

While the worker bees had been quite skillful as they flew about completing their tasks the large drone bees were very clumsy in flight bumping into windows and other objects. They landed frequently crawling down to dirt level in vegetation and grass where they seemed to rest and made little to no attempt to check out nearby flowers. While drones of some species serve no purpose except mating with a queen bee and consuming the food resources of the hive it seems that the common bumblebee does incubate some of the eggs by fanning them with its wings. On the other hand queen bumblebees are the key to new generations of colonies and that is their sole responsibility. Each fall the honey production drops and the worker bees and drones die off leaving



the queen [female] to hibernate through the winter, awoken in the spring and start single handedly to establish the new colony.

It turns out that the Common Bumblebee is anything but common. True, it does occupy most of Eastern North America from Ontario to the Maritimes and down the seaboard as far as Florida but more importantly it is a huge contributor to our economy and precious food production. Estimates suggest this humble insect that nests in fields, woodlands and sometimes abandoned rodent holes, to be a major pollinator for crops including alfalfa, field beans, pole beans, peas, red clover, plums, currents, rapeseed, apples, tomatoes, sunflowers and strawberries. This specie has a remarkably longer than usual tongue and hairy body to help pollinate plants, has an ability to work in cold weather [they even have records of them flying in sub-zero temperatures] and they are dedicated high-energy workers [they have a body metabolism 75% higher than a hummingbird]. Their value has been so well documented that they have been introduced to greenhouse operations in British Columbia, California, Mexico, New Zealand and Australia.

These bees are not without predators. A number of parasites do cause problems to the health of the colonies along with animals such as skunks, mink, mice, shrews and weasels. Bears and foxes can

and do attack entire nests eating eggs, larvae, wax, honey and any adult bees that do not escape. Birds such as Northern Shrikes will also attack foraging bees pulling off the stingers and eating the insect's abdominal contents. Man's use of pesticides and habitat destruction are likely the biggest threat to the Common Bumblebee and hundreds of other

pollinators. When I mowed my lawn for the last time on November 12th I was both shocked and amazed to find a lone worker bee on a single remaining flower- I respectfully decided to turn off the motor and let it BEE!



Morning sky, November 20, 2015

Plant of the Cove: Common Tansy

By Roger Outhouse

This is a plant that has its origin in Europe and was brought to North America by early settlers. Today it is found in most of Canada and the USA. This member of the Aster Family is adorned with pincushion flowers that are brilliant yellow. Each plant can grow up to 1.5 metres (5 ft) high producing many clusters of flowers supported by a green shrubby stem bearing long green fern like leaves. This has made them a popular ornamental plant in many areas but others including farmers and ranchers consider it an invasive species that needs to be eliminated. The plant is very aromatic but many comments suggest it is overwhelming and even unpleasant.

It has been used since the early times of the Greeks and has a rather impressive number of medicinal uses throughout history. This is a little confusing because the literature also proclaims it to be poisonous to animals and humans and can cause death. Nonetheless the list of uses has been long as people have used it

to treat: migraine headaches, menstrual irregularities, nervous conditions, epilepsy, varicose veins, hysteria, muscle sprains, toothaches, stomach aches, intestinal spasms, inflammation, bruises, arthritis, gout, fevers, tinnitus, vertigo, difficult child births, swollen feet, insect bites, wounds, lack of appetite, flatulence, jaundice, kidney problems, gall bladder issues, tumours, intestinal worm infestations, sore throats, as well as kill fungus and bacteria infections.



The Tansy flower looks like the centre with missing petals but in reality each of the yellow disks contains up to 200 tiny flowers. What you see on this one plant represents thousands of flowers; no wonder bees and butterflies love them!

Before running out to gather this wonderful cure all, please continue reading and remember that THIS TANSY COMES WITH NUMEROUS WARNINGS!!! Remember the old saying that what doesn't kill you simply makes you stronger. THE PART YOU NEED TO REMEMBER IS SOMETIMES IT JUST KILLS!!! THE US DEPT. OF AGRICULTURE HAS BANNED THE SALE OF TANSY IN ANY FOOD OR MEDICINAL FORM.

But like all the flashy adds on TV the amazing possibilities of this plant never seem to end. It has been used to pack around clothing, mattresses, food, and human corpses to kill and repel insects. Gardeners have planted some of them alongside their food producing plants and other ornamentals to ward off damage from insects (this beneficial use makes tansy into what is termed "a companion plant"). Oils from the plant have been used in making cosmetics and perfumes and flavouring some types of alcohol beverages. Europeans

made sweet cakes with bits of tansy pressed in to give consumers a spring tonic, but not anymore. Likewise no one substitutes tansy leaves for sage in today's cooking recipes. It was used in tiny amounts as a seasoning herb for eggs, salads and puddings. The dried plants

can even be hung in a room as a repellent to flies and insects and anyone else present due to its questionable fragrance. Dried plant bits were even spread about in public places such as streets to disinfectant against insects and disease.

They are typically found along roadsides, meadows, and pastures where soils are disturbed and they bloom from July till October. Although human reviews of this beautiful plant remain mixed; bees, butterflies and birds are happy because tansy flowers are a great source of food by way of nectar and seeds.

BAY OF FUNDY DISCOVERY CENTRE ASSOCIATION SUMMARY 2014–2015:

Another fulfilling year of amazing projects thanks to MANY friends of this beautiful community

1. Continued to dialogue with Nature Conservancy Canada with regard to the endangered Eastern Mountain Avens recovery project for the Big Meadow Bog. We met with scientists and funders who are coordinating the upcoming multiple year work towards a healthier peat bog habitat. Our goal is to explore opportunities that would see Islands Consolidated staff members and students take part in aspects of this important project. Our Association has committed \$2,000.00 to this work in addition to several thousand dollars of in-kind contribution.
2. Worked with NCC and Dalhousie student who worked to complete transcripts of the recordings made by GOMI youth who were surveying elders who knew the older state of the Big Meadow Bog before the ditching changed its hydrology.
3. Throughout the winter we designed 5 new interpretive signs at the request of the Municipality. Topics included Wetlands, Mysterious Lichens, Transition of the Fisheries and two related to Geology of the Area. In addition to our own writing of scripts, photo contributions and proofing we coordinated the volunteer efforts of many talented professional geologists, applied geomatics experts, artists, photographers and biologists who made amazing contributions. We also proofed all of the road signage and the 12 additional signs.
4. Another major venture was to gain permission to use the Digby Neck & Islands Eco-tour Map as a basis for adapting it into an improved version with bilingual translation. Todd Graphics completed the design work and we are now in the process of pricing fabrication costs and seeking partners to share in the costs. We are hopeful to have 3 or 4 in place in high traffic walking areas by summer of 2016. It could also be placed on websites in future cooperative efforts.
5. We attended the Rain Garden Education presentation at the invitation of the school O2 teacher and the Clean Nova Scotia to explore what it involves and to begin discussions to create a plan to implement a project at ICS. We wrote a letter of support for the funding but then the worker left for a new job and the project faded away. Not all efforts are rewarded.
6. Assisted with the organization of the Gulf of Maine Mini Conference held at Barrington, Nova Scotia. We contributed to planning, carried out the conference budget, organized and conducted ice breaker and team building activities and transported the Digby Neck/Islands Team, and assisted in the supervision of the youth teams from Islands Consolidated, Barrington Municipal High School, Tantramar Wetlands Centre, and Bear River First Nations. Featured presentations from Bird Studies Canada's Sue Abbott and researcher/author Frances Anderson on mysterious lichens

7. Similarly we assisted in the organization of the Gulf of Maine's five day Conference for Maritime and New England youth teams at Acadia University. Prepared local team, transported them, organized team building activities, and supervised teams. We also secured community funding support for our team's registration. Students got to take part in chosen theme groups covering topics including Climate Change, Tidal Energy, Sustainable Foods and Community Gardens, Satellite Marine Drifters, and Civic Engagement. The mentors in these programs were excellent and the youth theme teams made great presentations to a guest panel on the last day of the conference. A huge thank you to ICS teachers Christina Giles Thibodeau and Helen Ivens whose split supervision duties allowed our team to attend the conference.
8. Assisted O2 students with cutting vegetation at the Freeport Development Centre.
9. Helped ICS teacher Casie Tidd and her O2 and Agricultural classes complete work on the Loyalist Park gardens.
10. Built a six person GOMI Task Force on building rural community support and cooperation on GOMI projects.
11. Helped organize, supply equipment, supervise and transport and GOMI/O2 ICS youth to Balancing Rock Trail where they worked with Municipal employees to make trail improvements to the landscaping around the parking lot, clearing vegetation along the trail, and making other improvements. A similar workday involvement took place in June with O2 youth from ICS, Saint Mary's Bay Academy, and Digby Regional High. This time there was a lot of gravel distributed along the trail, removal of the old signs, drainage added in several locations, and 13 bilingual interpretive signs that were installed a few days later by Municipal Staff. As the summer progressed a few benches and new aluminum railings were installed along with a person counter later in the season.
12. Arranged for ICS teacher Susanna Haley to assist with GOMI youth participation at the Nature Conservancy Canada Volunteer weekend on Brier Island.
13. Supplied supervision, equipment and labour to assist Islands Consolidated O2 students complete the trail from ICS to Lovers Lane Road and along the road to the Freeport Brook. This trail has been inactive for the past 18 years as a hiking trail and it provides a safe non-traffic route for students going to the local store and Highway 217. The hope is to eventually construct a safe crossing of the brook thus extending the trail a short distance which would connect to and through the old Freeport Village Park and exit near the Overcove Rd. bridge. This would create an outdoor nature classroom for students of all grade levels giving them easy walking access to a salt marsh, woodland, bog, freshwater brook seashore in addition to a low difficulty. The youth and instructors Joan O'Neil and Casie Tidd have provided a tremendous service to our communities.
14. Took part in the Digby County Energy Symposium Green Energy Tour and at the invitation on the NSCC transported GOMI youth representative to the event. She also took part in the second day's events.
15. We continue to maintain our memberships with Volunteer Canada, Gulf of Maine Institute, and the Bay of Fundy Ecosystem Partnership, a directorship within Friends of Islands Trails, and a sponsorship of local newsletter Passages.
16. Our quarterly e-newsletter publication edited by Anna-Marie MacKenzie Kelly continues to be an ever popular and growing communication tool with wide distribution.

17. We conducted eight tour opportunities for visitors and locals alike as part of our contributions to the Arts n Adventures in the Cove experiential tourism adventures. Our purchase of 15 hand lenses greatly enhanced the experiences of those who took part. In addition we contributed in helping with the care of the facility. Total hours donated were approximately 50 hours. Unfortunately some sessions had no shows and attendance for most all adventure and craft opportunities was very low.
18. We donated five of the removed older eight plant panels from the Balancing Rock Trail to the Central Grove & Tiverton Heritage Society in support of their future signage requirements in the Boars Head and Bear Cove developments. The remaining three were donated to the Islands Historical Society for signage.



The International GOMI Youth Conference was held at Acadia University in July with teams from Middlesex Community College, Mass., Newburyport, Mass., Lowell, Mass. YWCA, Tantramar Wetlands, NB, Barrington, NS, Bear River, NS, and Digby Neck/Islands, NS.

Please Share With Us!

We welcome your stories and your photos.

- Do you have a comment or question about something you have read in our newsletter?
- Have you been on an outdoor adventure?
- Do you have some great photos of places and things in our local area?
- Do you have an interesting story to share?
- Is there an event coming up? Let us know.

We are happy to hear and share your comments, stories and photos with our readers.

To all our friends, family and supporters, have a safe, enjoyable and peaceful holiday.

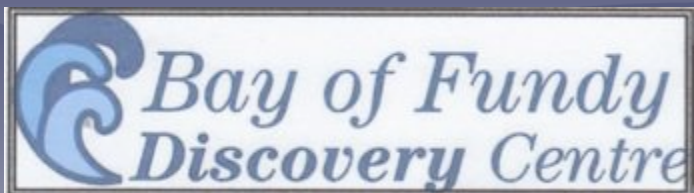


The fog didn't stop RBC staff and families and 1st Digby Pathfinders & Rangers from hauling away quite a pile of refuse scattered along Sandy Cove Beach. As the pile was gathered at the top of the hill, the sun broke through the fog as if to say, "Thank you!"



And, they're off! 6:00 am, November 30, 2015, unlike the last two years, was a calm morning with a light dusting of snow drifting down. Here's hoping everyone has a safe and prosperous season.





Bay of Fundy Discovery Centre Association Board of Directors for 2015-16

- Anna-Marie MacKenzie Kelly (Chair)
- Peter Morehouse (Vice Chair)
- Roger Outhouse (Secretary)
- Shealee Newman (Treasurer)
- Frank Garron (Youth Director)
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