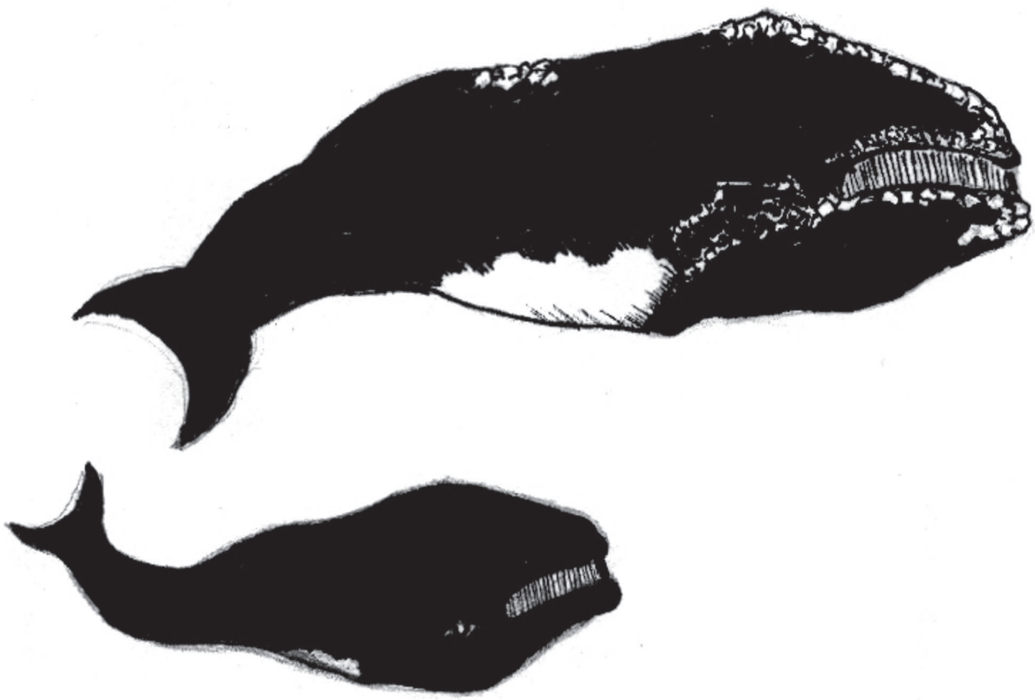

Right Whale and calf

Blomidon Naturalists Society

Summer 2001 – Volume 28 Number 2

Blomidon Naturalists Society

The primary objective of the Society shall be to encourage and develop in its members an understanding and appreciation of nature. For the purpose of the Society, the word "nature" will be interpreted broadly and shall include the rocks, plants, animals, water, air, and stars.
(from the BNS constitution)

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The Blomidon Naturalists Society is a registered charity. Receipts (for income tax purposes) will be issued for all donations.

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Illustrations by Mary Pratt (cover, pp. 3, 8, 9, 10, 13, 21)

Blomidon Naturalists Society
Summer/Fall 2001

Meetings

All meetings begin at 7:30 PM in room 224 of the Beveridge Arts Centre, Acadia University, Wolfville (across Main Street from the Atlantic Theatre Festival parking lot). **All are welcome.**

September 17, 2001 – Bob Bancroft: **Rivers (NS) at Risk – Cry Me a River. How nasty habits have altered the natural habitat** (see *Saltscapes,* Fall 2000).

October 15, 2001 – Elizabeth Kilvert: **Thousand Eyes: Watching Nova Scotia Nature.** One hundred years ago the superintendent of education, Dr. Alexander MacKay, had students from across Nova Scotia record the dates of natural phenomena and their seasonal timings (phenology: the science of nature's cycles and the recording of natural events). These events ranged from the blooming of Mayflowers to the migration of geese. Nova Scotia students are now duplicating this experience so that Museum of Natural History personnel can look for evidence of climate change and seasonal variation. Join Thousand Eyes project coordinator Elizabeth Kilvert for an overview of the program, its implementation, and a sneak peek at the 2001 assessment of findings.

For a preview of the MacKay Project, visit the Nova Scotia phenology Web site at <www.thousandeyes.ca>.

January 21 or February 18, 2002 - Trina Fitzgerald on the **Atlantic Bird Observatory and Monitoring of Migratory Bird Populations** on Bon Portage and Seal Islands, Nova Scotia.

Field Trips

Unless otherwise indicated, all field trips begin at the Robie Tufts Nature Centre (RTNC) on Wolfville's Front Street (look for the weird chimney in the NS Liquor Commission parking lot). Additional field trips may be announced at BNS meetings.

Sunday, July 8, 2001 – **Showy Lady's-slippers** in Smiley's Provincial Park (east of Brooklyn off Hwy. 14). Meet at 2 PM at RTNC or 2:45 at the park gate. Leader: Jim Wolford (542-7650). Bring bug dope, old shoes or rubber-bottomed boots, cameras, and swear an oath of secrecy!

Wednesday, August 22, 2001 – Parks Are For People. An evening nature walk in **Blomidon Provincial Park**. Meet at 6:15 PM at RTNC or 7 PM at the upper park gate. Leader: Ruth Newell (542-2095). An easy 1–2 hour walk for mid-summer plants such as Helleborine and other orchids.

Saturday, August 18 – **Whales & Seabirds** with Brier Island Whale & Seabird Cruises. Meet at 10 AM at RTNC or 1 PM at Westport, Brier Island. **Call 1-800-656-3660 or 1-902-839-2995 soon** to book your own reservations for the 1:30 PM cruise. Mention that you're from BNS to get a discount (seniors receive a double discount). For more info, call Jim Wolford (542-7650). Bring sunscreen, extra layers of clothes, binoculars, seabird guides, etc.

Saturday, August 25 – **Horton Bluff Geology, Trackways, Mud, Etc.** Meet at 9 AM at RTNC or at 9:30 AM at L.E. Shaw School, Avonport. Leader: Sherman Williams (542-5104). Sherman will show us his "back yard," including history and geology, plus ancient amphibian trackways. Wear very old shoes or rubber boots and bring lunch.

October (date to be announced) – **Tour Of Acadia's Irving Project**, with Don Hendricks, project manager.

Exotic and Invasive Plants in Maritime Canada

by Sean Blaney, Botanist
Atlantic Canada Conservation Data Centre

In the last issue of the newsletter, Mark Elderkin and Sherman Boates gave a general introduction to the topic of invasive species, setting the stage for a series of articles about invasive species within different taxonomic groups. Sean's article is the first in that series.

Exotic or alien species are those species that have arrived at an area outside their natural range with deliberate or unintentional human assistance. Today few, if any, regions worldwide are free of alien species. The frequency of exotic introduction continues to increase with human alteration of natural ecosystems and with increasing opportunity for species movement associated with greater global interdependence of economies. Vascular plant invaders are especially numerous. For example, Heywood (1989) estimates the introduced vascular flora of Australia at 1,500–2,000 species. Kent (1992) lists 1,189 established exotic species in the British Isles, and there are more than 700 vascular plant species reported as exotic in at least one of the Maritime provinces (ACCDC database 2001).

Exotic plants are not a new phenomenon in North America; the first alien species arrived with the earliest European settlement. Whitney (1994) cites early records showing that at least 40 species of European weeds were established around settlements in Massachusetts in 1672, with numbers rising to 140 species in the Boston area by 1840. Today, exotic species generally make up 25 to 35 percent of local floras in northeastern North America (Whitney 1994), with higher percentages in heavily urbanized areas. The proportion of exotics continues to increase as new invaders arrive.

Invading plant species can profoundly alter ecosystem processes, structure, and composition, posing serious concerns for the conservation

of native species and often costing millions of dollars in remediation and control efforts. In deserts of the southwestern USA, tamarind shrubs, (*Tamarix* spp.) have been shown to lower water tables due to their dense growth and relatively inefficient water use. The nitrogen-fixing shrub *Myrica faya* (a relative of our Sweet Gale and Bayberry) permanently changes Hawaiian grasslands into shrubland and forest by enriching the nutrient-poor soil. In open rangelands in the western USA, annual grasses (especially *Bromus* species) increase fire frequency because they mature and dry out very early in the growing season. Closer to home, we have the Glossy Buckthorn (*Rhamnus frangula*, also known as *Frangula alnus*), a shrub that reaches tremendous densities in a variety of habitats, sometimes shading out native vegetation almost entirely. These are just a few of the hundreds of examples of ecologically significant plant invaders worldwide.

It is important to note, however, that the exotic species that significantly alter ecosystems are in a very small minority. Most arriving plant invaders never become established, or have no noticeable impact if they do (Williamson and Fitter 1996a, 1996b), especially in cooler northern regions like the Maritimes. We are fortunate that among our many exotic plant species we have only a few that seem to have much negative effect on native biological diversity.

Our exotic species are mostly restricted to open, human-disturbed situations such as agricultural lands, roadsides, and urban areas. Exotic species are relatively uncommon and insignificant in the more natural forests and wetlands of the Maritimes. Even at disturbed open sites, most of the exotic species would not survive were the land left to return to forest. This situation contrasts somewhat with more-densely populated areas to the south and west of us, such as southern Ontario and the eastern and midwest United States. In these regions many natural areas are heavily penetrated by alien species to the point where native species appear to be losing out.

Why this difference? A number of factors are probably important. Our cooler climate reduces the number of invaders suited to our region. Our much smaller and more thinly spread population results in less import and movement of exotic species. Perhaps most importantly, our Maritime landscape is comparatively much more intact. Where human-dominated

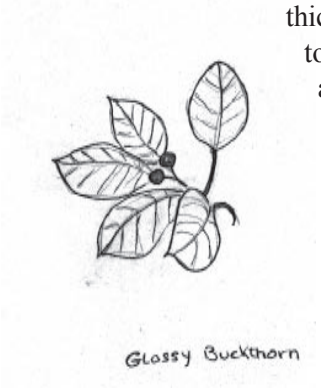
habitats cover the majority of the landscape, small, fragmented natural areas are like islands in a sea of exotic-dominated communities. Native plant populations may become isolated and get eliminated by additional human disturbance or by random events. The dominant exotics meanwhile have a large and continuous numerical advantage in seed production that may swamp the native species.

So do we have reason to be complacent about the relative lack of invasive exotic species here in the Maritimes? Unfortunately not, I would say. First, new species will continue to be introduced to the continent and to spread from surrounding regions into the Maritimes. It is a virtual certainty that, over time, additional problematic invaders will arrive here. Second, the human impact on the landscape is increasing. The construction of new highways, pipelines, and hydro rights-of-way are continuously creating new corridors for exotic plant spread. Urbanization and heavy forestry are also adding to the fragmentation and disturbance that tend to favour exotic species. Finally, we do already have some problematic invaders that are present and spreading.

In the following section I look at a selection of the most important invasive exotics already present in the Maritimes, discussing their habitat, range, and impacts. This is not meant to be a comprehensive list of the exotic species that do, or could, present problems for native species. I would be pleased to hear if readers have additional nominations.

Glossy Buckthorn (*Rhamnus frangula*)

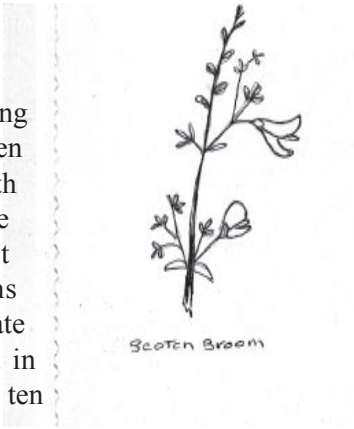
Range: locally abundant near Fredericton, Amherst-Sackville, NB, and Wolfville. Scattered records elsewhere. *Habitat*: moist or wet old field, thicket, and forest. Considered by many botanists to present the greatest threat to native species among all current Canadian invasive species. It can form such a dense understory shrub layer in moist or wet forests that succession or regeneration is virtually halted and herb diversity is greatly reduced. It is capable of tolerating nutrient poor and nutrient rich habitats and, unlike many other invasives, it seems capable of spreading into otherwise undisturbed habitats. Near Fredericton it



is threatening rare silver maple swamp habitats along the Saint John River. The Common Buckthorn (*Rhamnus cathartica*) is also invasive and locally established in the Maritimes, but it prefers somewhat drier habitats.

Scots Pine (*Pinus sylvestris*)
Range: throughout Maritimes near settlement. *Habitat*: moist and dry open areas. This species has been very widely planted and almost invariably escapes to the wild. It reproduces prolifically at a relatively young age for a tree and is capable of growing in very poor soils and dry conditions where many other trees have difficulty becoming established. It can threaten naturally open habitats such as shoreline dunes and bogs by shading out the native species adapted to open conditions.

Scotch Broom (*Cytisus scoparius*)
Range: NS, primarily southern but spreading north. *Habitat*: fields, roadsides, and open forest. Thought to be limited to the south by climate, this shrub may become more problematic with global warming. It is considered invasive in many regions worldwide with Mediterranean or temperate coastal climates. An accelerated spread in Nova Scotia has been reported in the last ten years.

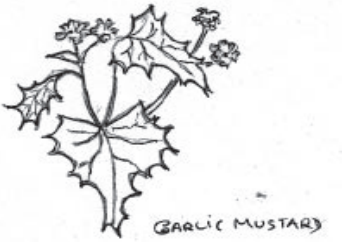


Purple Loosestrife (*Lythrum salicaria*)
Range: throughout most of Maritimes. *Habitat*: marshes, shorelines, moist fields, ditches. Although this species has had the most media coverage of any exotic, it appears less problematic in our region than elsewhere. It never reaches densities in the Maritimes comparable to those to the south and west and does not seem to spread well into undisturbed and nutrient-poor wetlands. Biological control efforts using European beetles appear to be having some success but it is unclear how the

beetles will affect the related rare native Swamp Loosestrife (*Decodon verticillatus*).

Garlic Mustard (*Alliaria petiolata*)

Range: abundant locally in the central Saint John River valley in New Brunswick, apparently absent from Nova Scotia and PEI. *Habitat*: rich, deciduous forest, especially floodplains and shaded urban yards. This forest biennial stores energy in its first year and then sends up tall shoots early the next year, which can shade out native perennial forest herbs. It is a major invasive species throughout the eastern United States and southern Ontario and is locally problematic in very rich floodplain forests of the Saint John River, where it grows with a number of other invasives of restricted Maritime range; i.e., Nipplewort (*Lapsana communis*), Town Avens (*Geum urbanum*), Celandine (*Chelidonium majus*), and the more common Dame's Rocket (*Hesperis matronalis*).



Japanese Bindweed (*Polygonum cuspidatum*)

Range: essentially throughout maritimes near settlement. *Habitat*: moist open areas. This large, shrub-like herb forms dense patches from a massive, creeping root system that is almost impossible to eliminate. Elsewhere, it is most problematic in floodplain habitats in river valleys, but it currently seems to be mostly restricted to roadsides in the Maritimes.

Eurasian Water-Milfoil (*Myriophyllum spicatum*)

Range: only recently found at single locations in Prince Edward Island and Fundy National Parks. *Habitat*: aquatic; circumneutral or basic waters. It may already be more widespread but unrecognized due to similarity to a native species (*M. sibiricum*). It can grow so densely that native aquatic plants may be reduced. Its dense growth also changes light conditions and causes reduced dissolved oxygen levels when it decays.

Finally, what can you do to reduce the impact of invasive species? 1) Become better informed about what species are potentially invasive.

An excellent place to start a search for further information on invasive plants is the *Invasive plants of Canada* website: <http://infoweb.magi.com/~ehaber/ipcan.html>. The number of invasive plants you have in your garden may surprise you! 2) Do not plant any non-native species known to be invasive in Canada or the northern United States. 3) Avoid moving plant material or soil from areas that are likely to have invasive species present. 4) Eliminate invasive species from your property where possible and encourage others to do so as well.

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One of Nature's Special Treats

by Merritt Gibson

Click-Click . . . ClickClickClick . . . Click-Click . . . ClickClickClick: these are the sounds made by tapping two stones together. They are also the sounds made by Yellow Rails. Yellow Rails are very rare in the Maritime provinces, but a few were found several years ago on Grand Lake in New Brunswick. Each year since, biologists have surveyed the lake to see if they are still there and to gain some idea of how many are present. This year, on June 25, I took part in the survey.

We started the boat trip up the lake at about 8 pm, wanting some daylight to locate obstacles before our return trip in the dark. One highlight of the daylight part of the trip was watching about half a dozen Ospreys. They circled above our boat, dove repeatedly, and were remarkably successful in catching fish. There was also one Common Tern perched on a fish weir, and a flock of four or five Black Terns flew overhead. Two Sharp-tailed Sparrows called from the marshes, and mother ducks with flotillas of young scampered across the water and into the reeds as we approached.

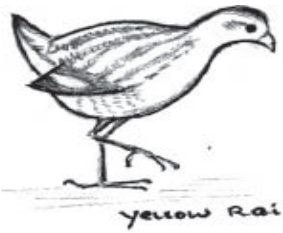
We started listening for Yellow Rails as the darkness deepened after sunset. Two rails were "clicking" in the third marsh we visited, announcing that they had returned for another year. Would there be others? Would we be lucky enough to actually see one?

There were many sounds on the nighttime marsh. The "jug-of-rums" of Bullfrogs provided a continuing background. Snipe called loudly, with the "jack-jack" calls of those on the marsh accompanied by the winnowing sounds of others circling overhead. The plaintive "ker-wees" and whinnies of Sora Rails also were heard, and several clear and descending "kee-a kee-a" calls were heard. These last sounded like Virginia Rails, but these birds are most unusual in the Maritimes. I hope local biologists check the calls; confirmation of Virginia Rails would be an exciting note for Maritime birders.

The crescent moon was overhead when we started up the lake, but

quickly lowered and cast a beam across the water. The Milky Way arched overhead and the sky was full of stars, with many shining brightly against a full background of poorly defined ones. The moon slipped below the horizon around midnight, making the Milky Way and stars even more brilliant. Fireflies flashed everywhere over the marshes.

The fourth marsh immediately produced clicking sounds. We imitated the sounds with our stones, and the rail approached our boat! When was only a few metres away, we turned on our floodlight. At first we could see only the reeds moving as the rail approached, and then it scampered up onto a pile of reeds in full view! We watched it for a few moments before it slipped down into the reeds again and disappeared. It continued clicking and we responded, but it did not reappear.



A loon started wailing from the other side of the lake and called plaintively while we remained about the upper marshes. We then heard the faint clicking of two rails. We decided that one was the same bird that we heard on the previous marsh, apparently still scolding our intrusion. The second was a new bird, and further down the lake we heard the clicking sounds of yet another.

Five Yellow Rails was for me an impressive total for our night's survey, and seeing one was special! We arrived back at the landing about 1 am, more than four hours on the lake. It had been a beautiful night with the sky full of stars, Milky Way, the moon shining across the water as it slid down to the horizon, and fireflies everywhere. For four hours we had been immersed in the sounds of nature with Bullfrogs, snipe, and rails, and a loon wailing in the background. This night surely was one of nature's special treats.

Additional Notes On A Visit To Grand Lake, New Brunswick

by Merritt Gibson

I wrote (in the previous pages) about our search for Yellow Rails on Grand Lake, but my notes started when I arrived before the survey and continued the morning after. On arrival, I found two artificial platforms with active Osprey nests on each. Both platforms had been erected by Ducks Unlimited.

At the home of my hosts, who live near the water, I was asked to watch for turtles and be careful not to step or drive on one. They told me that during recent nights large numbers of Painted Turtles travelled from the water up to the field by their home, where they dug holes and laid eggs. The resident foxes dug up and ate most of the eggs, but we hope that some will survive to hatch in the fall and that the young turtles will find their way down to the water.

At breakfast the next morning, we were entertained by a Great Crested Flycatcher at the window. Apparently, he was admiring his reflection in the glass. My host reported hearing a Black-billed Cuckoo.

On leaving, I decided to take the cable ferry across the river from Jemseg to Gagetown. The best reason I had for doing this was that I could then drive upriver and take another cable ferry from Upper Gagetown back across the river. It was a good decision.

On the first ferry was a Tree Swallow house with swallows busily fluttering about it. These swallows have nested and brought up young while travelling back and forth on the ferry for many years. Several years ago the ferry was taken out of service for repairs and a replacement ferry put into service. When the swallows returned and could not find their house, they created such a clamour that one of the operators went to the regular ferry, got the house, and put it up on the replacement ferry. The swallows immediately settled down, built a nest and raised their brood while sailing back and forth.

There is a martin house near the ferry wharf in Gagetown, and when I arrived about half a dozen Purple Martins were fluttering around it. Not that far away, Grand Lake offers many species that are not usually seen here the Valley.

YUMMY MUDS OF MINAS
Intertidal Life of Kingsport Beach
Blomidon Naturalists Society field trip – June 24, 2001
by Jim Wolford

Please refer to two recent reports in the BNS Newsletter: (1) (Spring 2000) – "Brief Encounter with an Alien Landscape" by Sherman Bleakney on an exploration at Kingsport during a very low tide on May 17,1999, and (2) (Summer 2000) – My account of a field trip there on a mediocre low tide on May 21, 2000

In both articles you'll read what fascinating life forms live along all of our extensive local intertidal shores. The only good guide to much of this biodiversity is the out-of-print *Seashores: Summer Nature Notes for Nova Scotians* (1987) by Merritt Gibson, who tells me he is working on getting it reprinted. Another very useful and colourful book is Chris Harvey-Clark's field guide to life of tidal pools, *Eastern Tidepool & Reef: North-central Atlantic Marinelife Guide* (Surrey, BC: Hancock House, 1997).

Also check out Sherman Williams' Web site at <www.glinx.com/sherm> each month for his graphic summary of the tides (and the BNS calendar, of course). Sherman's graph shows at a glance that today (June 24) was the biggest tide of the month, due to two factors: New Moon on June 21 and Perigee on June 23 (the latter is the shortest distance between the moon and the earth – hence the biggest lunar pull of the month.

Our day was quite warm and muggy but with a nice breeze. We arrived an hour before the low tide, and I showed a collection of shells as a preview of critters and names. The ten participants then walked through the salt marsh in the lee of the old wharf and to the newly exposed upper intertidal mud, which was absolutely covered with wall-to-wall Mud Snails. I always do this initially to emphasize how much life is here in and on the mud.

We then walked along the exposed side of the wharf toward the low-tide level. In the upper sandy intertidal zone, lots of meandering tracks

belonged to what I call Sand Sowbugs (isopod crustaceans). Along the way we saw and dug up Mud Shrimps (*Corophium*) in their U-shaped burrows, white and slimy Ribbon Worms, lots of long and skinny brownish Heteromstus worms, Bamboo worms in sandy tubes, and pink Blooworms or Baitworms (*Glycera*), which have been in the news lately, on account of the unsustainability of the worm-digging industry near Yarmouth and elsewhere.

[Kingsport residents told me that 20 or more Baitworm diggers have been working the Kingsport mud flats (mouth of the Habitant River) for the last two weeks or so.]

I also sieved out lots of Sand Shrimps from a tide pool around a rock, where we also noticed our first of literally millions of Hermit Crabs in their snail-shell homes.

Interestingly, we found two pairs of Hermit Crabs that were interlocked (perhaps a pre-mating "embrace"). One in each pair was markedly larger than the other, but I don't remember whether it was the large one or small one that had the other by one leg in one of its pincers.

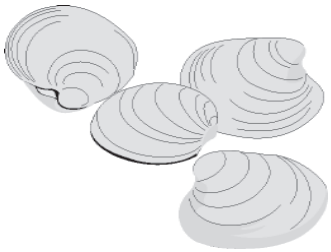
In the lowest intertidal zone, we found oodles of squirting holes – the burrows of large Razor Clams. I dug some up with difficulty, but they wouldn't "perform" for us by re-burrowing. However, a small one quickly stuck out its white foot, grabbed the mud, turned itself upright, and quickly dove down into its new burrow.

Along the low-water line, we also found lots of upper shells (carapaces) of Lady Crabs, a living adult Spider Crab, and two living adult Moon Snails. Not far away were several large "sand collars" (egg cases of Moon Snails), a rock covered with a tan encrusting Sponge, lots of living Dogwinkles with their egg cases, untold zillions of egg cases of Mud Snails covering nearly everything that was solid, one "sexy stack" of two Slipper Shells (a small male on top of a large female, attached to a rock), and a few feathery colonies of attached Hydroids or Hydrozoans, distant cousins of jellyfish and corals and very important to this ecosystem, where the muddy water contains oodles of tiny living zooplankters that the Hydroids eat. Colonies of another Hydroid, *Obelia* (now *Laomedea*), which hang under middle intertidal sandstone outcrops, were much in evidence.

In the eroding sandstone cliff we looked for last year's raven nest We couldn't see the nest, but lines of guano certainly indicated the past presence of some kind of bird.

Also shown was an extremely dense bed of dwarfed, crowded soft-shelled clams (of "clams & chips" fame) in a tiny exposed salt-marsh in the upper mud. We also saw lots of life forms and shells not mentioned in this report. Leaf through Merritt Gibson's *Seashores* if you can find a copy, to see some of the vast diversity of algae, plants, and animals that live along our shores.

Finally, we walked past the southern cottages to a line of very old intertidal tree stumps. Comparable stumps east of Evangeline Beach at Grand Pré are evidence of trees that carbon dating shows died 3,500 to 4,500 years ago. Thanks to the very fine sediments that buried them, these stumps



are so well preserved that they are still made of wood that seems to be not at all mineralized.

We also saw at least seven Great Blue Herons resting in a group on the mudflat and a family group of Razor Clam (or Quahog) diggers in the lowest intertidal zone.

Thanks to Elaine and Don Hendricks for sending me digital photos from the trip and to residents Richard and Merle Foote, who generously washed off our mud with their hose.

King's County Birds

Nova Scotia Bird Society–BNS field trip –April 29, 2001

by Jim Wolford

It was sunny all day, but cold and windy. The group consisted of about 30 participants in a caravan of 15 cars.

We enjoyed a wonderful show at Bernard Forsythe's yard on Wolfville Ridge, where Bernard first showed us a Rattlesnake Plantain orchid that he transplanted from the Kentville Ravine 2 years ago, after a deer had uprooted a few. He showed us the male Barred Owl perched in a poplar tree, as if it were basking in the sun. Then, after telling us about the breeding biology of local Barred Owls, he climbed his ladder to check the nest box not far from his house. He wasn't sure how the parent owls would react, with so many onlookers present. The female soon departed from the box, whereupon the male flew in and struck Bernard – the crash helmet is a very good idea. Nearby Black-capped Chickadees were just as excited as we were. Bernard opened the top of the box, reached in, and brought out the largest of the three owlets. The one he showed was perhaps a week old or less. The first of three eggs had been laid March 17, but Bernard told us that this pair is spoiled by handout dead hamsters all winter and that they lay their eggs well before pairs in the wild. As if that weren't enough, one owl hooted and then the pair duetted for us. Bernard climbed the ladder again, this time to put a dead hamster on his feeding platform, and the male immediately swooped in to take it away into the woods. He then called once or twice, probably to attract the female to come for the food.

Thanks so much, Bernard, for kindly providing this display Later in the season Bernard was able to band all three owlets in that box.

While in Bernard's yard, we also saw 3 Bald Eagles soaring and flapping very high above us (one adult, two immatures). We also viewed the eagle nest north of Noggins Farm Market at Greenwich, and later I was able to show a couple of people another Bald Eagle's nest at Starrs Point, where the adult behaved as if eaglets were in the nest.

At Port Williams a crow was dive-bombing a raven near a crow's nest, and it was instructive to compare the two species. Adjacent to the Port Williams flooded field that had briefly hosted a Glossy Ibis earlier in the year we saw a Red-tailed Hawk, with food in its talons, land on the ground near another Red-tail.

At Canard Pond we saw a male Gadwall, three American Wigeons, several Ring-necked Ducks, two Double-crested Cormorants and, among perhaps thousands of Herring and Great Black-backed Gulls, two all-white immature white-winged gulls, one of them an Iceland Gull, the other a Glaucous Gull, plus another Red-tailed Hawk. It was very nice to have easy comparisons of the four species of gulls all together to facilitate Iceland and Glaucous identifications.

Harris' Pond in Canning produced one Yellow-rumped Warbler and at least six basking Painted Turtles. We stopped in Canning's riverside park and the Canning Aboiteau, where we saw seven Double-crested Cormorants and 180 Canada Geese grazing on short grass along the Habitant River. We also spotted a raven's nest northwest of the Petrocan station.

At Van Nostrand's Pond, Starrs Point, we saw a male Wood Duck, a few Green-winged Teal and Ring-necked Ducks, and three Red-breasted Mergansers (one male with two females). A few Leopard Frogs were "snoring" and another was heard in Hennigar's Marsh near Sheffield Mills.

Swimming Muskrats were on at least three different ponds. A Barn Swallow may have been among the several Tree Swallows sighted.

At Grand Pré, a day after Bernard Forsythe found a single male Eurasian form with several normal Green-winged Teal in a creek along the main dike south from the west end of Long Island, I found it as well.

Ships, Gypsum, and Minas Basin

by Roy Bishop

In the last half of the 19th century, dozens of square-rigged sailing ships sailed the waters of Minas Basin. Many of them were built at communities such as Hantsport, Parrsboro, Kingsport, and Maitland. The last sailing ship in Minas Basin was reported in 1939.

Today, large diesel-powered ore carriers dominate shipping on Minas Basin. Since 1948 they have carried gypsum rock from Fundy Gypsum's large storage shed at Hantsport to ports along the US east coast. These ships enter the Avon River with the incoming tide, dock at Hantsport at mid-tide, and depart three hours later at high tide with 20,000 tonnes of gypsum.

On average, a ship arrives every four or five days, making about 80 ship-visits per year. At 20,000 tonnes per ship since 1948, this amounts to about 80 million tonnes of rock that have come out of the quarries near Windsor and floated out past Blomidon. With a specific density of 2.32, eighty million tonnes of gypsum rock is equivalent to a cube of rock 325 metres on a side.

If this cube of gypsum were placed with its bottom at sea level beside Cape Blomidon, it would extend into the sky about 60 percent higher than Blomidon. Although this is a sizeable volume of rock, to equal the volume of water that flows past Blomidon in any six-hour period (for example, from low tide to high tide), the ships of Fundy Gypsum Company would have to carry gypsum rock at their present rate for 20,000 years.

Nova Scotia Public Lands Coalition

[Note: This piece was originally to appear in the Winter 2000 issue of the BNS newsletter, but there wasn't space. The basic facts have not changed – ed.]

A coalition of over twenty conservation, recreation, and tourism organizations is appealing to the Nova Scotia government to reject the Department of Natural Resources' proposed strategic land use plan for Nova Scotia Crown lands.

The Department's proposed Integrated Resource Management (IRM) plan, which applies to 28 percent of Nova Scotia's land base, recommends protection for less than 1 percent of currently unprotected Crown lands. The Department has slotted all other lands, including several proposed Wilderness Areas, into land use categories that allow industrial uses like clearcutting and mining. Natural Resources' staff designed the plan with no public participation in decision making.

"This plan was supposed to bring different government policies together in a unified and balanced approach. Instead one government department has decided that the lion's share of Crown lands is for industry, while the rest of us are sitting on the sidelines," according to Bob Bancroft, president of the Nova Scotia Federation of Anglers and Hunters, one of the coalition's member groups.

The Nova Scotia Public Lands Coalition says any new plan for Crown lands needs to put conservation first. The coalition wants proposed wilderness areas and remaining Crown wildlands and natural areas spared from industrial development. It is calling on the province to offer legal protection to such sites.

"The woods up here are just getting hammered," says Mark Brennan of the Pictou County Naturalists, referring to clearcutting in northern Nova Scotia. "Public lands are the only places where the province can provide some counterbalance. We think they're worth saving. We could all take pride in a public land base that harbours Nova Scotia's wild forests, rivers, and animals over many generations."

Nova Scotia Public Lands Coalition: Vision Statement

We believe that Nova Scotia's Crown lands form a precious part of the fabric of this province: vast forests, wild rivers, coastal islands and beaches, and secluded lakeshores, all held in a public trust, a legacy to future generations and a source of pride for all Nova Scotians.

We believe that public lands should remain wild lands:

- to provide habitat for salmon, moose, owls, and other wild life
- to keep air and water clean
- to maintain the beauty, solitude, and adventure of the backcountry
- to offer residents and visitors unparalleled outdoor recreation experiences
- to provide new economic opportunities for Nova Scotia communities
- to ensure that future generations of Nova Scotians will never have to wonder what was lost.

We believe these uses of public lands far outweigh whatever could be gained by stripping their timber, damming their rivers, or carving them up with mines, roads, or shopping malls.

We believe public lands deserve better. We believe that the primary role of public lands should be conservation and, accordingly, that most public lands require legal protection from industrial development. We expect our provincial government to honour its promises to complete Nova Scotia's protected areas system.

Finally, we know that with each passing day Nova Scotia loses options to chart a new direction for public lands. We urge the province to give Crown land reforms their immediate attention.

We recognize and respect the inherent treaty rights of the Mi'kmaq First Nation as they pertain to Crown lands.

For more information, see the Coalition Web site:
<www.publicland.ca.>

Annapolis Valley Weather – Spring 2001

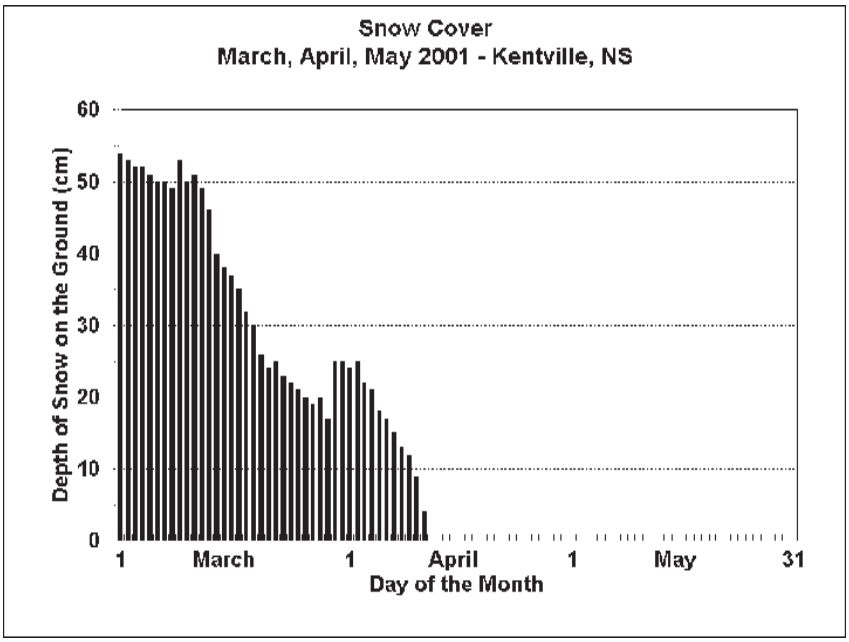
by Larry Bogan

	Mean temperature (deg.C)	Snowfall (cm)	Total precipitation (mm)	Sunshine (h)
March	-1.2	40	67	140
(40 yr. average)	(-0.9	(46)	(110)	(133)
April	3.7	12	66	170
(40 yr. average)	(4.6)	(15)	(83)	(151)
May	12.2	0	138	225
(40 yr. average)	(10.6)	(2)	(77)	(201)
Season	4.9	52	271	535
(40 yr. average)	(4.8)	(63)	(270)	(485)

Kentville, NS, Food & Horticulture Research Centre

A Snowy Spring

Despite the fact that this is a spring-weather summary, I have included graphs of the snow cover to show when we lost the continuous cover we had all winter. It wasn't until mid-April that the snow was gone on the open ground in the Valley. It stayed in the woods and other parts of Nova Scotia. Snowfall and precipitation was below normal in March and April; it was the cooler temperatures that kept the snow around. March was slightly below normal in temperature, but April was nearly a full degree lower. If you look at the graph of the season's daily temperatures you will see the first of March was extremely cold (low of –20°C), and even when it warmed the temperature stayed around 0°C right up until the middle of April. When snow was gone, the temperature quickly rose and May ended up 1.6°C above normal. The overall spring temperature ended up just average.



Kentville, NS. Agriculture Centre

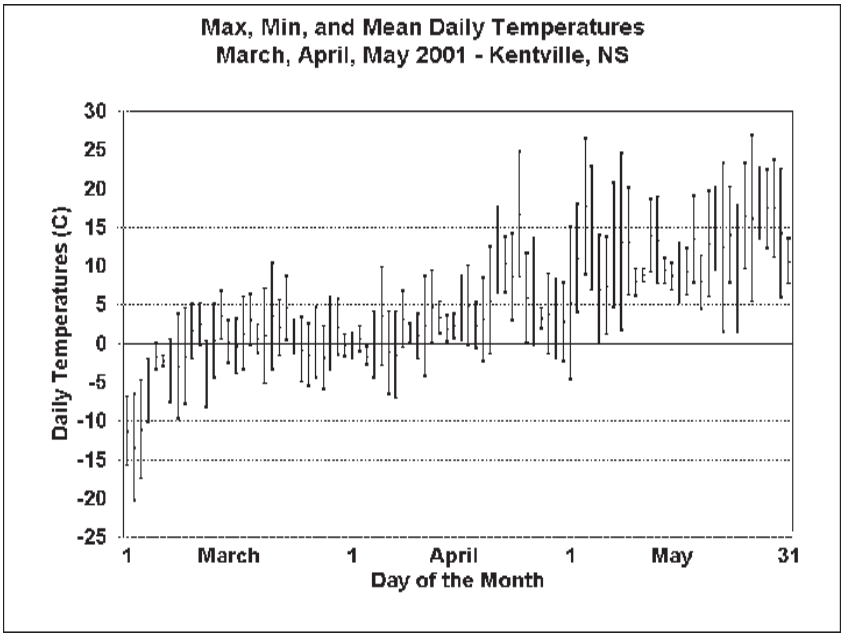
It was – and wasn't – a wet spring

There is still more water in the low areas than we have had in the recent past at this time of year. If you look at the total precipitation for the period, it was just about normal. However, half of it came down in May, which is usually the driest of the three months. The fact that it fell late in the season and that there was snow cover for the first half meant that most of the water entered the ground in the last half of the spring; hence, it is still wet. The season started with half a metre of snow on the ground. That is roughly equivalent to adding 50 mm of precipitation to the season carried over from winter. When that is added in, the water added to the ground in the spring was above normal.

But it was a cheerful spring

When the sun shines everyone is more cheerful. The sunshine got through to the ground more than normal all spring: – in the early part, because there just weren't many clouds around. Even in May, with its nearly double normal precipitation, there was lots of sunshine because most

of the rain came in heavy showers. On the days of May 9–10, Kentville had 60 mm of rain, and three days later it got 50 mm more. More than three-quarters of the month's rain fell in four days in May. So there were plenty of clear days to contribute to the above-average bright sunshine hours for the month.



Kentville, NS. Agriculture Centre

What's in the Sky?
by Roy Bishop

New Moon: July 20, August 18, September 17, October 16
Full Moon: July 5, August 4, September 2, October 2 (Harvest Moon)
Autumn begins on Saturday, September 22, at 20:04 (ADT)

The Changing Stars
Summer evenings give Nova Scotians their best view of our home galaxy, the Milky Way. At this time of year our edge-on view from within this huge spiral galaxy includes the rich star clouds in the constellations Cygnus, Aquila, and Sagittarius. All the individual stars visible in the sky, the relatively nearby stars, are part of this structure. On dark, moonless nights away from the glaring lights of civilization, the summer Milky Way provides the most awe-inspiring celestial sight available to the unaided eye. If you have never scanned the Milky Way with binoculars, do it!

The mottled appearance of our galaxy is primarily because near its central plane are vast dark clouds of interstellar dust that hide the light of stars beyond. On July evenings our view is inward toward the galaxy's centre, which lies low above the southern horizon, beyond the constellation Sagittarius. Were it not for the obscuring interstellar dust, you could read a newspaper by the bright glow from the central part of our galaxy 25,000 light-years away.

The next clear, moonless summer night that you find yourself far from the light pollution of towns and yard lights, gaze upward at the Milky Way and see it as the immense edge-on galaxy of which you are a part – a vast, three-dimensional, edge-on island universe of dust and stars, containing for a time in one of its arms the Sun, Earth, and White-throated Sparrows.

Planets
As described in the last newsletter, in June Mars was closer to Earth and brighter than it has been since 1988. During July evenings, Mars will be an unmistakable bright, orange, star-like object low in the southern night sky. We are now leaving Mars behind as Earth pulls ahead in its faster

orbit, so as the summer progresses Mars becomes dimmer, and by late September it becomes too small to show much detail in a telescope.

Venus is very bright in the eastern pre-dawn sky all summer. It lies very near Saturn on July 15, and two mornings later on the 17th the crescent moon joins the two planets. On both mornings the Hyades star cluster with its bright star, Aldebaran, is nearby. The view from about 3:30 to 4 AM on the morning of the 17th will be particularly attractive both with the unaided eye and with binoculars.

Later that day, July 17, from about 3:40 to 4:22 PM the moon will pass in front of Venus, an event that will be visible in binoculars or a small telescope. The moon will be low in the western sky, well to the right (west) of the sun.

Meteors

The annual Perseid meteor shower peaks on the night of August 11/12. If it is cloudy that night, the next night (August 12/13) should be nearly as good for seeing meteors. Choose a viewing site out in the country, well away from streetlights and yard lights, with a clear view of the eastern half of the sky. Take a lawn chair, warm blanket, hat, and gloves to discourage mosquitoes, and enjoy the celestial show. The moon is at last quarter so the sky will be dark until the moon rises after midnight. On average, at least one meteor per minute should be visible. However, the rate can vary from several in a few seconds to nothing for several minutes.

Tides

This summer the moon is new within a day or two of when it passes perigee, the point in its orbit closest to Earth. This causes extra high perigean spring tides in Minas Basin on July 22–24, August 20–22, and September 17–20. As Sherman Bleakney will point out, on these days the low tide is extra low, and it is worth a muddy hike out to the water's edge at low tide to explore the life forms of a sea bottom that is seldom exposed. (see your BNS Calendar for tide times and ranges).

Blomidon Naturalists Society
2000 Membership Fees

Each member receives four issues yearly of the BNS Newletter. The Blomidon Naturalists Society is a registered charity. Receipts for income tax purposes will be issued for all donations. The membership fee itself is not tax-deductible. Members may also join the Federation of Nova Scotia Naturalists through the BNS and will receive their quarterly newsletter; the membership is not tax-deductible.

Please enclose a cheque or money order payable to "Blomidon Naturalists Society" and forward to:

Harold Forsyth
RR #2, Wolfville, NS. B0P 1X0

Number	Membership Classification	Price	Total
_____	Individual Adult	$15.00	$ _____
_____	Family	$18.00	$ _____
_____	Individual Junior (under 16 years)	$1.00	$ _____
_____	Federation of NS Naturalists Membership	$5.00	$ _____
	Tax-deductible donation	_____	$ _____
		Total	$ _____

Name: _____

Address: _____

_____ Postal Code: _____

Phone: _____

Type of membership: Individual Adult ☐ Individual Junior ☐ Family ☐ (Number of people) ☐

Join the Federation of NS Naturalists? Yes ☐ No ☐

Is this a gift subscription? Yes ☐ No ☐

Memberships are due January 1, 2001

Sources of local natural history

(compiled by Blomidon Naturalists Society)

Information	Source	Office	Home
Rocks & Fossils	Geology Dept., Acadia University	542-2201	
Fish	NS Dept. of Natural Resources	679-6091	
Flora: General	Ruth Newell	585-1355	542-2095
Fungi	Darryl Grund	585-1252	542-9214
	Nancy Nickerson	679-5333	542-9332
Lichens	Karen Casselman	424-7370	633-2837
Seaweeds	Darryl Grund	585-1252	542-9214
Mosses & Ferns	John Pickwell		681-8281
Birds: General	Bernard Forsythe		542-2427
	Richard Stern	678-4742	678-1975
	Gordon & Judy Tufts		542-7800
	Jim Wolford	585-1684	542-7650
	Jean Timpa		542-5678
Hawks & Owls	Bernard Forsythe		542-2427
Falcons & Eagles	Peter Austin-Smith		542-2109
Mammals	Tom Herman	585-1469	678-0383
Amphibians & Reptiles	Sherman Bleakney		542-3604
	Jim Wolford	585-1684	542-7650
Seashore & Marine Life	Sherman Bleakney		542-3604
	Jim Wolford	585-1684	542-7650
	Michael Brylinsky	585-1509	582-7954
Indian Prehistory & Archeology	Ellis Gertridge		542-2816
	James Legge		542-3530
Astronomy	Roy Bishop		542-3992
	Sherman Williams	542-3598	542-5104
	Larry Bogan		678-0446