



Blomidon Naturalists Society

Winter 1999 - Volume 26 Number 4

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

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EDITOR'S NOTES



A British physicist, Julian Barbour has recently gained attention for his thesis which, simply put, is that time does not exist; that the world and the universe are a succession of events, and that there is no past or future. Whether you buy into this novel view or not, it is certain that nature takes no notice of our arbitrary assignment of months, years and – wait for it - millennia - to fix events in a way that helps us to make some sense of what we know has happened!

That notwithstanding, several pieces in this issue use the millennium date as an opportunity to reflect on the past and to mark changes that occurred in the local natural world between 1000 and 2000 A.D. I think you will enjoy the reflections - and projections - of Roy Bishop, Sherman Bleakney and Merritt Gibson.

While this is not a literary journal, the main topic of this issue - the past - prompts me to mark the recent death of a truly exceptional writer, Patrick O'Brian, the author of, among other things, a series of brilliant works - billed as novels but in reality, virtual non-fiction - set in the Royal Navy of the 18th and early 19th century. While the core of the books is the naval and political activity during the Napoleonic era, the interest of several of O'Brian's characters in "natural philosophy" (as nature study was then called) allows O'Brian to weave into his stories information on beetles, boobies, penguins, albatross, orang utan, buzzards and any number of natural phenomena. As well, he paints a very good picture of the Royal Society, its principals, its *modus operandi*, and of the intercourse between British and French naturalists, even in the midst of the Napoleonic wars. The tale of the development of interest in natural history is often as interesting as the plants and creatures that are the object of observation and I recommend O'Brian's work to those of you who have in interest in the development of the study of natural history.

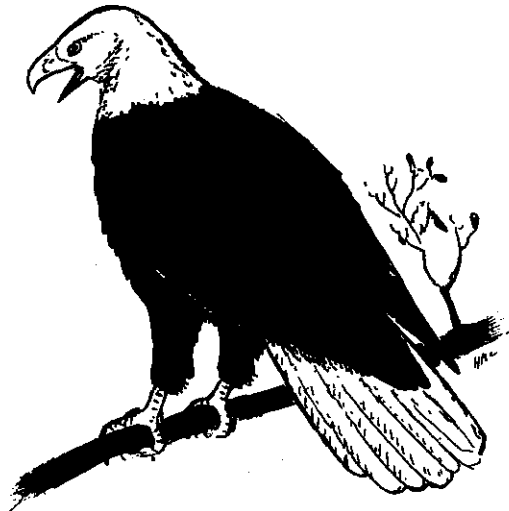
BNS WINTER PROGRAM, 2000

Regular BNS meetings from January through April will be held at 7:30 p.m. in Room 221, Elliot Hall at Acadia University. May and June meetings will be at the Beveridge Arts Centre.

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Jan. 17 - "Good Gnus, Bad Gnus" - A Serengeti Safari Ecotour (?) in East Africa, by Jim Wolford, who visited Kenya & northern Tanzania last July. Jim's presentation features many slides.

Feb. 21 - Annual BNS "Show and Tell" night - open to all. Come to gawk, but preferably bring along, slides, pictures, specimens, collections, favorite books and magazines or anything that might be of interest to fellow naturalists. Begins at 7:30 p.m. in room 308 and adjacent lab in Patterson Hall, University Ave.

Mar. 20 - "Where have all the Salmon gone?" A presentation by Mike Dadswell of the Acadia University Biology Department. Mike will discuss the problems experienced by our Atlantic Salmon, with particular reference to the difficulties of survival at sea.



OTHER MEETINGS OF INTEREST

Friday, Jan. 14. Chris Minty will speak to the Acadia Biology Seminar Club at 3:30 p.m. in room 308, Patterson Hall (4th building on right as you ascend University Ave. from the Acadia gym.) This will be a different talk than that presented to BNS on Jan. 10.

Friday, Feb. 4 - David McCorquodale, entomologist/naturalist at University College of Cape Breton, will speak to the Acadia Biology Seminar Club on WOOD-BORING BEETLES, 3:30 p.m., Patterson Hall Room 308.

Sunday, Feb. 6 - "Alien Invasion: introduced Lady Beetles in Nova Scotia" by Dave McCorquodale. It will take place in Patterson Hall, Room 308, at 1:30p.m. Lady Beetles are seen as beneficial because they eat many insects we consider pests and because of this, some species have been introduced. In some cases, this introduction has been detrimental to native species. Dave will concentrate on the most common lady beetles introduced into Nova Scotia.

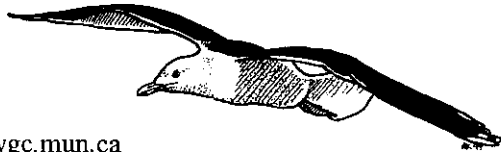
Canadian Nature Federation in Newfoundland

From July 12-16th, the Canadian Nature Federation and the Natural History Society of Newfoundland and Labrador are holding a joint annual general meeting. The joint AGM will be held in Corner Brook, Newfoundland. For more information, contact the host club's organizing committee:

CNF 2000
Humber Natural History Society,
2A Fourth Avenue,
Pasadena, Newfoundland
A0L 1K0

or email

hnhs2000@beothuk.swgc.mun.ca



BNS to Host the 2000 Annual Conference of the Federation of Nova Scotia Naturalists

The Society will host naturalists from all parts of Nova Scotia in early June. We were previously hosts for the Federation in 1990 and 1994. The conference is open to all members of member-societies of the Federation across Nova Scotia. There will be lectures, field trips, informal discussions, morning outings, a picnic luncheon, breakfasts, a banquet, and the annual general meeting of the Federation.

A conference committee has been appointed by the executive. They are Larry Bogan (chairman), Merritt Gibson, George Alliston, George Forsyth, Liz Vermeulen and Winnie Horton.

The committee has just begun planning and has determined that the theme of the conference will be "Nature's millennia" - a look at our region's natural history during the last 1000 years and reflections on required stewardship for the future. The tentative dates will be June 2-4. Full details and registration materials for the conference will be in the March issue of our Newsletter. The committee needs help from BNS members for the many tasks associated with hosting the conference. If you would be willing to help in preparations for and/or at the conference, please phone (678-0446) or email Larry Bogan (larry.bogan@acadiiau.ca).

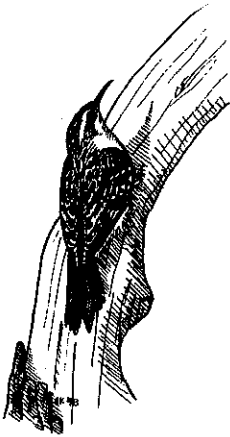


FIELD TRIPS & WALKS

Sat.-Sun., Jan. 29-30 - EAGLE WATCH WEEKEND at Sheffield Mills Community Hall (west from Canning, or north from hwy. 101 Exit 12 along Middle Dyke Road - follow the signs). Pancake breakfast + displays + sales/raffles + eagle videos + maps of eagle hot-spots, all at the hall. Eagles best in mornings. Storm dates are Feb. 5-6.

Sat., Feb. 5 - field trip for EAGLES and OTHER RAPTORS, offered by Halifax Field Naturalists and Blomidon Naturalists Society. Meet at 9:30 a.m. at Robie Tufts Nature Centre (on Wolfville's Front St.). Leader Merritt Gibson (582-7569). There will be a bus (\$5 donations, more or less, appreciated for adults). Bring lunch/drink, binoculars, layers of all-weather clothing. Lunch will be in Acadia Biology Bldg. with videos, mounted eagles, etc. Storm date Feb. 6.

Sat., Feb. 26 - WINTER WALK with Ruth & Reg Newell (542-2095). Meet at 1 p.m. at Robie Tufts Nature Centre, Wolfville. Walk will be somewhere on the South Mountain, to be announced later; possibly near Lumsden Reservoir as for last year, or from Sunken Lake to Moosehorn Lake.



Sun., Apr. 30 - field trip for LOCAL BIRDS, offered by the N.S. Bird Society and BNS. Leader Jim Wolford (542-7650). Meet at 10 a.m. at Robie Tufts Nature Centre, Wolfville. Bring a lunch, wear boots or old shoes, weather layers, binocs, field guides, etc.

Sun., May 21 - field trip to experience INTERTIDAL MUD ("Yummy Muds of Minas") and its biodiversity, offered by Halifax Field Naturalists and BNS. Leader Jim Wolford (542-7650). Meet at 9 a.m. at Robie Tufts Nature Centre, Wolfville, bring lunch, and wear rubber boots or very old shoes that are sure to stay on your feet in sticky mud! We plan to visit Kingsport "Beach" first, and then the east end of Evangeline Beach, where there are fossil tree-stumps of a 4000-year-old forest. And, of course, more mud!

The Millennium – A Birder’s Report

by Merritt Gibson

September 25, 1000 was a warm and sunny day. I canoed to Apchechkumoochwaakade for a few days of birding. Apchechkumoochwaakade is a Mi’kmaq word meaning “home of the black duck”; the area is now known as Canard. There were then no dykes or aboiteaux, and the expansive tidal marshes extended west towards Centreville. Twice each day, enormous schools of fish came in with the tide to feed on the marsh, and large rafts of birds followed them. It was an ideal place to start my Millennium List!

The Moeak (sea ducks) included huge rafts of Black Duck, numbering into the thousands, and smaller groups of Common Eider. I saw many Surf and White-winged Scoters, but could not find any Black Scoter (were they here at that time?). At low water Chijeechkwech (beach birds), including curlew, yellow-legs and plover, were common on the marsh. In the evening I watched Poogwoles (swallows) swooping for insects and later heard a Kwemoo (loon) call from upriver, perhaps near Upper Dyke.

The next morning I walked along the forested upland. The trees were magnificent: maple, ash, oak and pine, many 30 metres tall, for the land had not yet been cleared for agriculture. Abokujech (woodpeckers) were present, and there were many Nikchipkudaagedaoo (leaf rattlers) or robins on the ground. In an open area where a tree had fallen, I was lucky and saw a Nebeaach (Yellow Warbler) and an Amalikchaajit (catbird). There were, however, few “field” birds, for there were no fields.

My walk at Grand Pré on October 30, 1710 was entirely different. It was cold and the snow deep. The Acadians lived here during the “Little Ice Age”, and species that are now more northern in distribution lived in Nova Scotia at this time. Beluga Whale visited the Minas Basin and packs of wolves hunted along the shores. In summer I had birded this area to see the huge numbers of geese and shorebirds that visited the marshes each year. However, my present trip was to find a White Partridge (Willow Ptarmigan) to add to my Millennium List. I found several among the alders along shore, and then in a low area of spruce trees I added a Black Partridge (Spruce Grouse) to my list. Both partridges were common and hunted by the Acadians.

Acadians dyked the marsh lands, cleared small wooded areas and created fields, a new habitat! They also imported plants for medicinal and agricultural purposes. Through the years many of these plants spread over the fields and attracted large numbers of "field" birds.

On February 23, 1830, having no appointments, Judge T.C. Haliburton of Windsor kindly invited me to join him on a birding walk about his property. The oak trees on the hill were filled with noisy, Wild Pigeon (Passenger Pigeon). Several Chewink (Towhees) flitted through the shrubbery and followed us down the hill where, along the river, there were Red Sheldrake (Red-breasted Merganser), Shoal Duck (Common Eider) and dippers (Goldeneye). We saw both Grey and Bald Eagles. Some years later, when it was realized that the Grey Eagle was an immature Bald Eagle, I removed its name from my Millennium List.

There was not much to see on the Windsor dykelands in winter except for a few Tree Bunting (Tree Sparrow). I returned in spring and then found the dykelands filled with Bob Lincoln (Bobolink) singing energetically, Ground Sparrow (Savannah Sparrow) flitting through the grass, and luckily, one Bay-winged Bunting (Vesper Sparrow). There were also a few Marsh Snipe (Pectoral Sandpiper) and Ortolan (Sora) about wet areas.

I celebrated July 1, 1867, Confederation Day, with a birding trip for a change from political commentary (even without TV) was needed. I saw several Golden-wing (flicker), Summer Warbler (Yellow Warbler) and White-bellied Martin (Tree Swallow) near home and started my day's list with them. I also found a Golden-crowned Thrush (Ovenbird) in a wooded area, but my search for Grackles, Catbirds and Red-winged Blackbird was not successful for they were too rare to find easily. I entered a wooded area cautiously for goshawks were abundant and, with young present, readily attacked intruders. I saw several Red-shouldered Hawk and was lucky enough to see one, very rare, Red-tailed Buzzard (Red-tailed Hawk). Gold-crests (kinglets) were common in the woodlands, as were chickadees and Evergreen Warbler (Black-throated Green Warbler). I was fortunate to find a Blue



Flycatcher (Black-throated Blue Warbler) and a strikingly-coloured Hemlock Warbler (Blackburnian Warbler). I hunted for the rare Rose-breasted Grosbeak for its singing is so enjoyable, but was unable to find one. My bird list for July 1, 1867 was a good one - small wonder the rest of the country wanted to join us!

May 16, 1917, was an exciting day. I was birding at Starrs Point when I saw a Double-crested Cormorant at the fish-weir. This was the first sighting of this species on the Minas Basin for nearly two decades. There was also a single Holboell's Grebe (Red-necked Grebe) in the Cornwallis River, where it had spent the winter. I also saw three, uncommon Great Black-backed Gulls flying inland, presumably to their breeding colony at Methal's Lake, and one Great Blue Heron from the heronry at Cloud Lake, the only local heronry at that time.

On December 25, 1936, I joined Robie Tufts and Ronald Smith for the annual Christmas Bird Count. We found 23 species and approximately 1430 individuals. The highlight was seeing 12 Herring Gulls in Port Williams harbour, a new Christmas Count record for gulls. We also saw an estimated 1000 crows, but our attempts to find Starlings and House Sparrows were not successful. By the end of the Millennium, Christmas Bird Counts would report gulls and crows numbering each well into the 30,000s.

The next few decades were good ones for my Millennium List. I added the first Starling in 1944, when 6 flew past while I was waiting for the 3 o'clock train from Yarmouth at the Wolfville Station. Evening Grosbeaks became winter visitors during the mid 1940s, Cowbirds and Killdeer were added in the early 1950s, nesting mockingbirds in the 1970s, and Bohemian Waxwings arrived in numbers in the 1980s. Today, December 31, 1999, as the Millennium is ending the Northern Cardinal is a regular visitor. Will it become a permanent resident?

The past 1000 years have been good ones for local birders. Now we must work to protect habitat so that future birders may continue to enjoy the diversity of living things that we take for granted.

A Century of Astronomy

1900 – 2000

by Roy Bishop

The year 2000 marks the end of the 20th century, whether you consider this event to occur at the beginning or at the end of the year. The past century has been, if anything, a century of science and the applications of science. It has been the century of the relativity and quantum theories, of molecular biology and continental drift, of the automobile, airplane, electrical power, radio, television, and the electronic computer.

The advances in the sciences have been staggering and, in many instances, completely unforeseen. Astronomy, the most popular of the sciences, has been no exception.

A century ago, many fundamental aspects of the physical world relevant to astronomy were unknown. Here is a selection of seven, primarily from the realm of physics:

- The universal speed limit of light
- The equivalence of mass and energy
- The dual wave-particle nature of light and matter
- The structure of the atom
- The existence of the atomic nucleus
- The origin of the chemical elements
- The relation of gravitation to the geometry of spacetime

Also, many key aspects of the universe were unknown in 1900. A selection of seven, from astrophysics and astronomy:

- The energy source of stars
- The end state of a star: white dwarf, neutron star, or black hole
- The presence of vast clouds of dust and molecules between the stars
- The location of the Sun in the Milky Way system
- The existence of galaxies
- The expansion of the universe
- The microwave background radiation

In addition to these discoveries, since 1900 many technological advances have impacted astronomy. Again, a selection of seven:

- Computers to control equipment, handle data, and simulate phenomena
- Optical telescopes of unprecedented size (apertures from 2-10m)
- Radio telescopes
- Infrared, Optical, Ultraviolet, X-ray and Gamma-ray telescopes in space
- Neutrino detectors
- CCDs for recording images and spectra
- Robotic spacecraft visits to planets, satellites, asteroids and comets

It has been my good fortune to have experienced much of this remarkable period, and through the many people I have known who were alive in the 1800s, my "extended experience" stretches back more than a century. I find it astounding how much our knowledge of the universe has advanced in this time.

A century ago no one knew where we were in the universe, no one knew the source of the Sun's energy, no one realized where the atoms of their own bodies had come from. In biology, the DNA molecule, the basis of life and heredity, was unknown. In chemistry, the reason for the patterns in the periodic table of the chemical elements was unknown. Plate tectonics, the central theory of geology, was still in the future.

What will the next 100 years bring in our understanding of nature? A century ago no one could have foreseen most of the 21 items in the above lists. I shall go out on a limb only to offer a general prediction: the 21st century will not match the 20th century in number of fundamental discoveries. Here is why I believe this:

People, planets and peonies are made of atoms, and the 20th century brought a detailed, quantitative, precise understanding of atomic structure and of the atomic nucleus. This understanding may be refined in as yet unknown ways, but the overwhelming success of the atomic description of the material world indicates that in some sense we have attained "truth". Cook and others charted the Pacific, and there is but one Pacific. Heisenberg and others charted the atom, and there is but one atom.

Our understanding of living organisms has reached the molecular level. In principle, although not yet in full detail, we appear to have reached the main boundaries of what we need to know to understand the nature of life. Fundamental advances will likely occur in high energy physics (which concerns sub-nuclear particles), but I think it unlikely that such advances will alter our description of ordinary matter in any major way. The symphony of quarks, leptons and photons which constitute the material world seems too elegant a composition not to be close to the essence of things.

Similarly, we appear to have a firm handle on our place in the cosmos. In the 20th century telescopes revealed a universe composed of a blizzard of galaxies, of which our Milky Way Galaxy is but one of a hundred billion, like a snow flake in a winter storm. Within the Milky Way, our Sun is but one of a hundred billion stars, lost somewhere near the edge of the Orion arm, a rimmed outer fragment of our galactic snowflake. And to the extent that astronomers have been able to measure the motions of the planets, stars and galaxies, the swirling of this galactic blizzard appears to abide by the elegant space-time mathematics of general relativity. This picture of the universe appears to be the way it really is, although there may be much non-luminous mass within and between the galaxies, the nature of which may become clearer in the 21st century.

Science in the 20th century revealed a universe more subtle, more strange, and more beautiful than anyone could have imagined. In particular, the discovery of the DNA molecule confirmed the common ancestry of life on Earth, and nuclear astrophysics revealed that the atoms of which life is composed, hydrogen excepted, were forged within stars which lit the night before our solar system existed.

During the past four billion years, this star dust has been woven into a tapestry of life covering a small blue planet. A mere one hundred thousand years ago a species appeared that was capable of a deep appreciation of the subtlety, strangeness and beauty of the universe. In the past hundred years *Homo sapiens* has attained a phenomenal understanding of the universe from the sub-atomic scale to the galaxies. In a real sense, the universe has finally managed to know itself. This understanding is likely the achievement for which the 20th century will be remembered.

Thoughts on the Year 2000

By Roy Bishop

2000 is the first century leap-year since 1600 (the years 1700, 1800 and 1900 were not leap years). This pattern (century years being leap years only if they are exactly divisible by 400) distinguishes our Gregorian calendar from the older and less accurate Julian calendar in which EVERY fourth year is a leap year. The "Gregorian calendar" is named after Pope Gregory XIII who instituted this reform.

Prior to 1582, the Julian calendar was in use. When the Gregorian calendar was adopted in 1582, 10 days were omitted to bring the calendar back in step with the astronomical seasons: 1582 October 4 was followed by 1582 October 15. This brought the northern vernal equinox back to about March 21. Since 1700 was not a leap year in the Gregorian calendar, when England and its colonies adopted the Gregorian calendar in 1752, 11 days had to be omitted: 1752 September 2 was followed by 1752 September 14. Because of the years 1800 and 1900, the Julian calendar is currently 13 days behind the Gregorian calendar.

With its three 9's, the year 1999 certainly stood out. Also, it was the last of the 1900's. However, as has been frequently pointed out, because there was no year 0 (1 B.C. was followed by 1 A.D.), the completion of two thousand years and the start of the third millennium does not occur until January 1, 2001.

Nevertheless, the transition from 1999 to 2000 is visually more striking than the change from 2000 to 2001. In addition, Y2K computer glitches involved the 1999 to 2000 transition. Also, manufacturers did not want to wait yet another year to sell "millennium" souvenirs. Hence the excitement which surrounded January 1, 2000.

Nevertheless, for at least 4 reasons neither the 1999/2000 transition nor the 2000/2001 transition has any real significance:

Firstly, the choice of January 1 as the "beginning" of a year is an arbitrary thing. Indeed, for many centuries, February was the last full month of the year and the new year began on March 25 (This is why the names of

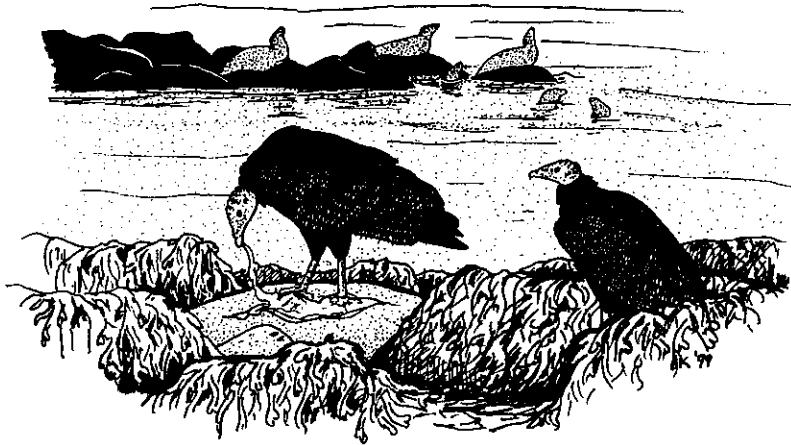
the months September, October, November and December are etymologically connected to the numbers 7, 8, 9 and 10). There is no physical significance to either January 1 or March 25 as far as Earth's orbit is concerned (although the latter date is close to the time of the northern vernal equinox).

Secondly, Jesus was apparently born about 4 B.C., so the Christian third millennium really began a few years ago.

Thirdly, although the Gregorian calendar dominates, there are about 40 other calendars in use in various countries. Many other religions and cultures use other points in history as the basis of a "year 1". The current year 2000 is an artifact of the Christian-based Gregorian calendar.

Fourthly, 2000 (or 2001) is also a mathematical artifact of using a base ten numbering system, which, in turn, likely originated from the number of digits the species *Homo sapiens* happens to have at the extremities of its upper limbs.

Thus all the hype and celebration surrounding January 1, 2000 were based upon several arbitrary human conventions. Mother nature ignored this nonevent.



Turkey Vultures and seals, by Andrea Kingsley

Minas Basin 1899-1999: A Marine Retrospective **by Sherman Bleakney**

Over the past 100 years, the local marine environment has been subjected to turbulent times as well as turbulent tides. Although 1900 ushered in an unprecedented Century of escalating global Environmental Pollution and Habitat Destruction, the century is fortunately terminating as the Century of Environmental Awareness. By mid-century there were happenings that could no longer be ignored: a river that caught fire; a pandemic of soft-shelled eggs in wild bird populations; D.D.T. in polar bear tissues; and after Chernobyl, radioactive lichens in Lapland. Rudolph the red-nosed reindeer is not something to sing about!

However, on the positive side we do exit this century with a totally new attitude and new perspective: we are but passengers on spaceship Earth and if we do not become dedicated stewards of its circulating air and waters, we too could, and justifiably so, become a "diluted" species. Such a fate would be ironically in keeping with our favorite mid-century slogan "The solution to pollution is dilution". Rivers, lakes and oceans were merely convenient dump sites, but we have learned that "out of sight, out of mind" is only the first part of the equation: the second part is an insidious feedback dispersal of toxins into living tissues.

What happened in Minas Basin through the first two decades of the century was truly prophetic. The lucrative shad fishery collapsed. For generations there had been miles of net traps set out on the extensive intertidal flats all about the Basin, but suddenly the fish no longer returned here to feed in summer. It took nearly eighty years to find out what had destroyed such immense fish stocks. Those summer shad had seasonally migrated northward to Nova Scotia from their spawning rivers on the east coast, from as far south as Florida. But the century opened disastrously with the physical closing of large and small rivers through construction of power generating dams, and the opening of innumerable urban and industrial sewers created lethal chemical curtains. The shad died attempting to reach their natal river spawning grounds and thus never returned to their Minas Basin feeding grounds. However, by the 1990s the clean up enacted on many river systems, the installation of sewer treatment plants (even here in Kings County) and the demolition of many redundant dams, has elicited a resurgence in shad populations.

Perhaps the greatest threat to Minas Basin ecology was the 1970s proposed power generating tidal barrier that would have extended north-south across the Basin. With hindsight, we could ask would it have become a mega edition of what has happened at the Windsor causeway? What did happen at the time was funding for environmental assessments, and those studies revealed that the Bay of Fundy and Minas Basin constituted a unique and nutrient rich ecosystem and was a major feeding ground for migratory birds, fish and mammals. Dr. Graham Daborn established the Acadia Centre for Estuarine Research and has guided it to its present level of international significance. ACER, as it is known, is the best thing that ever happened to the Basin over the past century.



We almost had a “Windsor causeway” situation at Wolfville, for in 1907 there was much debate and serious consideration given to damming the Cornwallis River at Town Plot, Starrs Point. It was speculated that at one fell aboiteau, Wolfville could have a deep water port at that causeway, and with the proposed railway from Wolfville across the causeway and into the farming communities to the north, great prosperity would befall the area. It was never attempted.

Until the 1920s, the rich marine silts of the reclaimed marshlands produced an abundance of hay that fetched top prices. The world ran on horse power, as did armies, but after the 1914-18 war the world became mechanized and petrochemicals became the dominant fodder. The dykelands suffered from neglect during the war because of a manpower shortage, then the influenza epidemic, then the collapse of the hay market, then the Depression, all of which added up to too little money and too few affordable men. In late December of 1928, the 3-mile long Wolfville Wickwire Dyke broke at its northern end near Long Island. The entire

Grand Pré marsh was threatened but by refurbishing an original Acadian dyke it was secured. However, only the southern half of the 600 acre Wickwire, the section near Wolfville, could be saved. Those walls lasted until a storm in March of 1931. The farmers simply could not afford the extensive repairs and reconstruction so the land reverted to tidal marshes until 1960 when about 400 acres was redyked. Thus, until that date all the little marine marsh creatures had hundreds of new acres to colonize. It must have been a happy time for ascoglossan sea slugs. [While we are on the subject, it is worth noting that undoubtedly the most significant scientific event of this century has to be the discovery of chimerical photosynthetic sea slugs in Minas Basin. Enquire at your local book store for more details.]

In a sense, World War II saved Grand Pré and other dykelands from total deterioration. Locally sea levels had been rising at the rate of at least 2.5 feet per century, which meant that all the old hand-built dykes needed to be made higher and wider, an expense now beyond the resources of the land owners. But as the war implied impending food shortages, then all farmland became especially valuable and those thousands of acres of dykelands that were threatened with flooding soon became a political issue. Governments soon made funds available for repairs and for new dyke walls. Documents indicate that the government had additional motives, namely that dykeland reclamation could become a make-work programme to occupy returning servicemen.

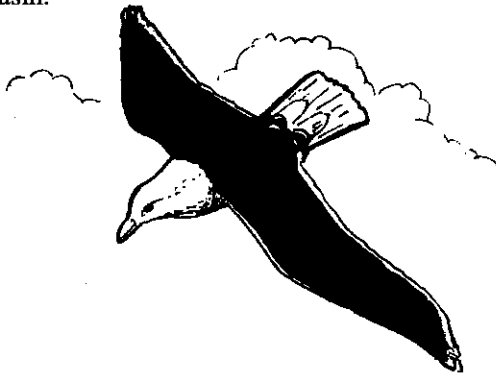
In 1939-40, dykeland commissioner Robert Palmeter broke from tradition, and against all advice from skeptics, successfully used heavy machinery to build a large new dyke at the east side of Grand Pré. This was a major advance in dykeland maintenance, and soon became the norm. In 1944, just months after a new massive machine-built barrier had been completed behind it, the old dyke wall at the northeast corner of Grand Pré washed away. By 1950, federal and provincial government bodies had taken over complete responsibility for upkeep of dyke walls and aboiteaux.

If you are one of those persons who walks on dykes today, for exercise or simply for enjoyment, you are atop a wall the size of which the farmers of 1900 -1940 could hardly have imagined. The crest of your underfoot dyke of 100 years ago would have been 1 or possibly 2 feet wide, 6 to 8

feet high and probably topped with a row of posts and a board fence to keep cattle contained. Small, fragile and unwalkable.

World War II also nearly ruined the future of our marshlands for both farming and recreation. Near the beginning of the war in 1940, the Grand Pré land owners received a request from Ottawa to patriotically turn over their land for use as a weapons testing ground. (That letter was not from the Department of Agriculture!) Imagine the consequences; there would have been live munitions buried in than clay soil for generations. Nevertheless, the farmers seriously considered that if the price was right, why not be patriotic? Fortunately, someone in Quebec managed to have the contract shifted to that province. The marshlands were spared, but the vast watery expanses of the Basin were used by Greenwood aircraft for bombing and gunnery practice.

Our Minas Basin shorelines have been altered this past century by rising sea levels which have created two contrasting effects. On the one hand tides, currents and storms erode the sea cliffs and move these suspended sediments onto the low shores and marshes, gradually burying forests and old dyke walls. On the other hand, as the outer low shorelines erode, those old trees and dykes often become exposed again. That deep, wide channel at The Guzzle at the east side of Grand Pré, is a fascinating special case. It was just a shallow narrow creek in 1899 when geologist Hugh Fletcher surveyed the area. From the 1920s through the 1940s, the Guzzle deepened and widened, to reveal remnants of 4400 year old forests and 3,800 year old oyster beds, providing a dramatic display of what sediment redistribution has been doing for thousands of years in this unique Basin.



In 1899, the local historic landscape had not been much disturbed. Fletcher reported: "The remains of the villages of the Micmac Indians, their landing-places, trails, and burying-grounds, are still traceable at Starrs Point, Canard, Gaspereau and other places. Heaps of shells and bones of various animals attest the former abundance of game and fish. They are associated with implements and arrowheads of a primitive civilization, chipped out of stone obtained from Blomidon or fashioned from pieces of native copper from Cape d'Or. Almost all of those indicators are now lost or obscured, and that in just 100 years." We now have to use aerial photographs from the 1940s to 1960s to detect old dykes and aboiteaux, wharves, basements, roadways and such.

Along similar lines, the tools and methods of dyke, aboiteau and staddle construction were common knowledge 100 years ago. Too common, perhaps, to bother writing down detailed descriptions. Today there is no one alive who was 20 years old in 1920 who could explain to us all the details, their purposes, their simplicity and their elegance. Were there no great diarists early in this century who recorded how things were done by country folk?

Although we end the century in Kings County with a depleted cultural knowledge of its beginnings, with depleted fish stocks, and depleted water quality, we have in these final decades gained profound insights into how our environments interact, and we are attempting to correct past abuses. Let us hope that over the next century the solution to pollution will become "stewardship, monitoring and accountability"

I leave you with an uplifting quote from geologist Hugh Fletcher's 1899 field season report: "Another elevation of great scenic interest in this vicinity is the "Look Off", three miles from Canning, from which an extensive view is presented of the surrounding country, with fine orchards laden with apples, plums, pears, cherries and small fruits, gardens and grazing lands for cattle and sheep; and deep valleys, lakes and woods, dimly seen to the southward, full of trout and salmon, moose, bears, partridges and other game."

Those many lovely aspects of Kings County have not changed these 100 years, which is why most of us are content to live here.

**Birding Activity in BNS area,
Sept. 10-Dec. 31, 1999
by Jean Timpa**

This period covers one of the two great migrations for our birds and thus, not unexpectedly, is full of records, many rarities having been blown in by the remains of hurricanes while others appeared in the annual southward motion of many other species normally found in the high Arctic.

On Sept. 12 Brenda and Bill Thexton were driving on the East Grand Pré dykes when a long legged bird attracted their attention by stepping out into a puddle in front of them and proceeded to wash and preen; an excellent and fascinating close-up of a **Whimbrel**.

Jim Wolford reports a very interesting observation of 2 **Greater Yellowlegs**. "The tide was very nearly up to the top of the mud and bottom of the salt-marsh, when I noticed one yellowlegs trotting/running very rapidly through the water (up to its belly as is often their wont). What seemed weird to me was that the bird held its beak down but pointed forward and pushed it through the water as it moved. Then it was joined by the second bird and they both did it but independently, not together. The beaks were set in the water at such an angle that it reminded me of the way Black Skimmers pass their beaks through the water when attempting to feed. What the yellowlegs were after is conjecture but probably small fish or perhaps amphipod crustaceans."

Angus MacLean summarizes **hummingbird** activity; "male hummers mostly all left by August 15. The majority of females/immatures seen after September 10 are migrants. It will not be surprising if we continue to see the latter into early October, unless the weather turns much colder quickly." In fact there were a few reports for Oct. 2 and 3 of either females or immatures.



Joan Czapalay and Bernice Moores of the NS Bird Society saw 5 **Black-necked Stilts** on the Windsor Causeway on their way to a BNS/N.S. Bird Society meeting.

Gordon and Judy Tufts while trying unsuccessfully to see the **Black-necked Stilts** still did have a good sighting: "A **Peregrine** uncharacteristically almost floated across the road and through the trees this morning at the east end of Wolfville as I was driving to Windsor.... just taking it 'light and easy' ... Maybe with a full tummy?"

During September and October especially there were an unusual number of both **Black-billed** and **Yellow-billed** cuckoos reported on the nature net.

Jim Wolford wrote: "On September 13 and again on the 20th along the Wolfville dyke I had first 3 and then later 4 **American Pipit** feeding along the rockface. They have not stayed here, though, as they did last winter until well into March. Early on the morning of Sept. 25 I heard my first **Evening Grosbeaks** here in the neighbourhood and eventually saw about 6. Now as I write this at the end of December I can't say that I've had any at my feeders, seen many more, or had reports of great numbers of them as they once were here in the early 80's for instance.

Sherman Williams and a group of people he was leading to Cape Split on October 9 watched some very interesting bird behaviour: "I led a group of students on a hike to Cape Split yesterday. A couple of **Peregrine Falcons** were observed in action out at "the Split". They were darting and soaring about, one greyish and one showing quite a bit of brown. One made a sudden, rapid dive (the brownish one), with wings bent back, straight down over the end of the cliff which cut off our view of the purpose and destination of its dive. The same one was seen darting among a pair of **Ravens** that were soaring in the area. There was a bit of an encounter where the falcon was sounding off with a string of rapid, shrill notes "kee-kee-kee-kee" as it manoeuvred around and toward the raven. It seemed that it was done in an effort to harass and drive the raven off. The raven did a flip-flop or two but did not seem overly upset as it shortly resumed its soaring. I suspect the falcons may be connected with the peregrine nest reported at the Split this year."

On October 22 Rick Whitman enjoyed watching young **Bald Eagles** playing: "Probably the most interesting sight of the morning occurred while looking across to the Starr's Point Marsh which was quickly flooding. At first I only noticed one immature Bald Eagle gliding overhead, but then another one appeared, and



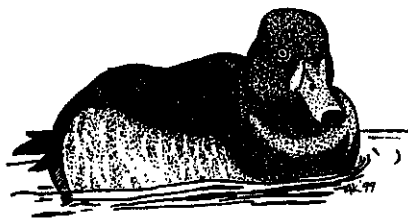
then I noticed some jumping around in the tall grass. At one point I had 14 in the air - all immatures - a regular party of the kids playing tag and hide and go seek in the grasses. Sometimes I could only see a head peeking up. Sometimes they would chase one another

in the air and then come tumbling down on top of one another in the grass. There was a lot of jumping and splashing around until the water finally got too deep and the grasses disappeared beneath them."

Paul Macdonald on October 25 reported: "I was walking on the dykes in Port Williams this morning and saw a **Gyrfalcon** hunting. It is in its white phase and I thought it was a Herring gull at first glance. Quite a remarkable bird really - very distinctive falcon shape and large, with black wing tips." Unfortunately it was not seen again, but a dark phase Gyr was reported about the same time on Cape Sable Island, Shelburne, Co.

On October 28 Angus MacLean reported 11 **Snow Bunting** from the Grand Pre dykelands and a small flock of about 15 **Semipalmated Sandpipers**.

Barb and Pat Giffen reported on Oct. 29 about 30 **Snow Buntings**, some in winter plumage, north of Auburn, Kings Co., on Hwy. 221. They thought it rather early for Snow Buntings, but I'm not so sure it is really. What really became remarkable was that after this point the invasion of Snow Buntings into the Maritimes in general came very quickly, was wide spread and in spectacular numbers for a few weeks and then their numbers seemed to level off considerably.



Late in October/early November three diving ducks appeared on Canard Pond, one of which, after much consultation, hemming and hawing, was finally pronounced as a **Tufted Duck**, most unusual for NS but there have been a

number of other reports this autumn here in NS and NFLD.

In November more and more reports of **Cardinals** came in from all over the province thrilling people, especially those who have them coming to feeders regularly. They are even being reported from Cape Breton.

November 1999 will also be remembered in this province among birders for its huge influx of **Common Redpolls** mixed with a few **Hoary** cousins, **Bohemian Waxwings**, **Snow Buntings** and high numbers and seemingly earlier arrival of **Northern Shrikes**. Rick Whitman of White Rock: "Along with all of the northern finches & buntings, I saw an immature **Northern Shrike** on Nov. 13/ 99, on the Corkum & Burns Rd, Black River area. Seven other sightings since '88 have never been earlier than Dec. 25th."

Towards the end of December Merritt Gibson had between 1000 and 1200 **Bohemian Waxwings** "dripping" off the trees in his yard and is quite concerned about such numbers being able to find sufficient quantities of fruit.

From Robert Phinney of Middleton on Nov. 3: "I saw a **Sandhill Crane** today just west of Middleton. It's a first for me in over 45 years of keen bird observation. I'm curious to know if this is a fairly common sighting." Another sighting was also made up around Antigonish by Randy Lauff and others up there, and reconfirmed on Nov. 9.

Another one of our very favourite birding trips is on the Fundy Shore line especially around Margaretsville and Port George, Annapolis County. Here is what Richard Stern lists for an early trip there on Nov. 5: "At Margaretsville, King's Co., today, 1 pm, lowish tide, very windy - 2 beautiful **M. Harlequin Ducks**, small flocks of **Oldsquaw** and **Common**

Eider, 1 Red-throated Loon, 1 Common Loon, 30 or so Snow Buntings.” Either we are getting more sharp-eyed birders out in the field, or our Harlequin Duck population is increasing, which is indeed very very special.

On the same day Angus MacLean had very good luck at Black Rock: “Checked out a few areas east of here today. The most productive site was Black Rock (Kings Co.) where there were: **4 Dovekies** (3 in a group flying and when they landed, dove instantaneously together. Very typical. How do they do that?). **15+ Common Murres** flying west offshore a distance. Perhaps more since I may have missed the first of them. Scattered numbers of **Kittiwakes** all feeding while flying west. The winds were strong from the west and the seas were quite rough but it did not bother them at all as they swooped down many times to pick tidbits from the water. Also saw **1 Red-throated Loon, 40+ White-winged Scoters, a few female Black Scoters** and **6-8 Gannets** (all immatures)”

On Nov. 26 Richard came away with another fine list from the ‘shore’: “Today, a brief visit to Margaretsville produced some **50+ Oldsquaw, 3 Red-throated Loons**, and just **3 Purple Sandpipers**. On the way back, at Black Rock were **100+ Common Eider, 50+ White-winged Scoter, 20+ Black Scoter** all female (same as Angus saw last weekend?), **6 Razorbills** and **1 Common Murre**. An **American Kestrel** was still present at Woodville.”

A Nov. 6 walk on the Grand Pré dykes by Richard Stern found a few **American Pipits, Tree Sparrows** and a mixed flock of **Black-bellied Plovers** and **White-rumped Sandpipers**. Late, late for that flock-when ever are they going to get going? On Nov. 5 Jim Wolford had **3 Greater Yellowlegs** at the New Minas Sewage Ponds and on Nov. 6 at the Canard Pond, **5 Killdeer** and **10 unidentifiable “peeps”, smaller than the Killdeer**-all asking for trouble this late in the season.

On Nov. 7 Bob & Jean Bellingham at Aylesford saw a male **Yellow-headed Blackbird** with **2 Red-winged Blackbirds**. The Yellow-headed belongs much further to the SW of us, but a number of them have been reported throughout Nova Scotia this fall.

Also this autumn/early winter there seems to be a significant count of **Northern Mockingbirds** in NS. Pat Martell of Port Williams quite enjoyed a late fall Mockingbird serenade as she prepared for Christmas:



“While gathering Holly this morning in our garden I was serenaded for 20 minutes by a Mockingbird. It was lovely!” On Nov. 24th Dianne Thorpe saw two Northern Mockingbirds along Grandview Drive in Wolfville.

Matt Holder and Andrea Kingsley saw a hatch-year **Northern Shrike** at their North Alton feeder, presumably pursuing the **chickadees** and **Dark-eyed Juncos** that are present in large numbers. Also around North Alton on that weekend were some **Pine Grosbeaks** and **Common Redpolls**, along with **White-winged Crossbills**, **Pine Siskins** and **American Goldfinches** which had been around for the two weeks prior.

On Nov. 8 Richard Stern found an immature and a first winter plumage **Bonaparte's Gull** on the New Minas Sewage Ponds-his comment - “most unusual for Kings County.”

Ian Ross called me on Nov. 12 with interesting feeder birds: He and Christine and Bill Caudle had a very excellent look at an immature male **Rose-breasted Grosbeak** on their feeder with the definite beginnings of the red chest ‘V’. Also in November on several occasions they have seen at the same feeder a female **Cardinal** and a **Red Crossbill**. Just before Halloween they had two **Gray Jays**. One has stayed around and was last reported on Jan. 3 by Jim Wolford.

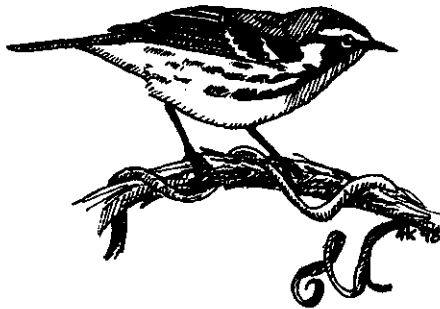
And who says we can't find some nests this time of year? From Jim Wolford on Nov. 15: “Soren Bondrup-Nielsen was out in a boat on Nov. 13 or 14 and found a new (i.e. not previously noted) **Bald Eagle nest** in a deciduous tree along the north shore of Starr's Point. Soren said there was an adult eagle on the nest, and he also saw an immature flying nearby.”

From Tim Hall on Nov. 8: "While out for a short walk outside of Bear River this morning, came across a male spruce grouse. He was very friendly and allowed me to follow him along a woods road for quite some time. Very quiet in the woods, **Snow Buntings** still in large numbers around Cornwallis Park. And on Nov. 21st at Bear River I spotted my first **Golden Eagle**."

We seem to have had a number of sightings of **American Coot** this fall: one on Harris's Pond on Nov. 23, one at New Minas Sewage Ponds on Nov. 26 by Judy Tufts, and one on van Nostrand's Pond on Dec. 12 seen by myself and Elizabeth Doull. The next day we saw two on Harris' Pond in Canning.

On Nov.29 Pat and Barb Giffin saw a most unusual sight in Kingston, NS., a **Yellow-throated Warbler** with other birds at a niger feeder. It's listed as rare to Newfoundland in the fall.

In December, Bernard Forsythe saw a **House Wren** behind his house in Greenwich, and a bright male **Wilson's Warbler** and a **Dickcissel** just east of Wolfville.



CONGRATULATIONS

go to **BERNARD FORSYTHE** on being honoured as **PUFFIN-OF-THE-YEAR**, by the Nova Scotia Bird Society at its October Annual General Meeting. This annual award recognizes individuals who have made outstanding contributions to public understanding of birds and conservation.(Submitted by Jim Wolford).

What's In The Sky?

by Roy Bishop

New Moon: January 6, February 5, March 6

Full Moon: January 21, February 19, March 20

The Spring Equinox is on Monday, March 20 at 3:35 a.m. (AST)

A Mid-Winter Eclipse

A total lunar eclipse, the first visible from Nova Scotia in over 3 years, occurs on the evening of Thursday, January 20. The full Moon (the largest of the year) enters the umbra (the dark part) of Earth's shadow at 11:01 p.m. AST, and is completely within the umbra from 00:04 until 1:22 a.m. It leaves the umbra at 2:26 a.m. If you have time for only a quick look, the best time is at midnight for about 10 minutes. Hope for clear skies, and use your binoculars!

Planets

Jupiter and Saturn continue to dominate the sky, but they are now in the western half of the sky and set a few hours after the Sun goes down. Jupiter, further to the west, is considerably brighter than Saturn. Both are show pieces in a telescope. Binoculars will show the four Galilean satellites of Jupiter (although all four may not be visible on a particular night). If your binoculars have excellent optics, Saturn may appear egg-shaped; however, a telescope is needed for a good view of Saturn's rings.

From about February 10th to the 15th, Mercury is a bright star-like object very low in the western evening twilight. Scan the twilight sky a bit to the left of where the Sun has set within an hour after sunset. Binoculars are helpful. The only other bright object in this part of the sky is Mars, but Mars is to the left of and considerably higher than Mercury.

MAG

The Minas Astronomy Group meets monthly (except July and August) on the second Saturday at seven (SSS) on the second floor of Huggins Science Hall at Acadia. Anyone with an interest in Astronomy is welcome to attend. Call Roy Bishop (542-3992).

Autumn 1999 Weather Summary

by Larry Bogan

We had an abnormal autumn this year. All of the weather parameters were above the long term normals except the mean temperature in October and the rainfall in November. You will notice that I have included the averages for the last five years as well as the longer term 38 year averages. The averages of the last five years show a recent trend of drier and slightly cloudier autumns. In 1999 we have dramatically reversed that trend. For the season, the mean temperature was greater by 1.6°C, the rainfall was 16% greater and bright sunshine was 28% above the long term averages.

Temperature

September was almost unbelievably warm with two highs above 30°C and no lows below 5°C. Normally the first day of frost in the Valley is September 15. The mean temperature for that month was 19°C: 4.5°C above average. All October, the temperatures dropped so that by the end of the month we were getting ice on the ponds. This did not last and in late November we had no ice or snow and a week of temperatures that averaged 10°C. This has been great for the waterfowl and seabirds who seem to be more abundant this autumn. The temperature graph this issue shows the daily extremes of highs and lows.

Rain and Snowfall

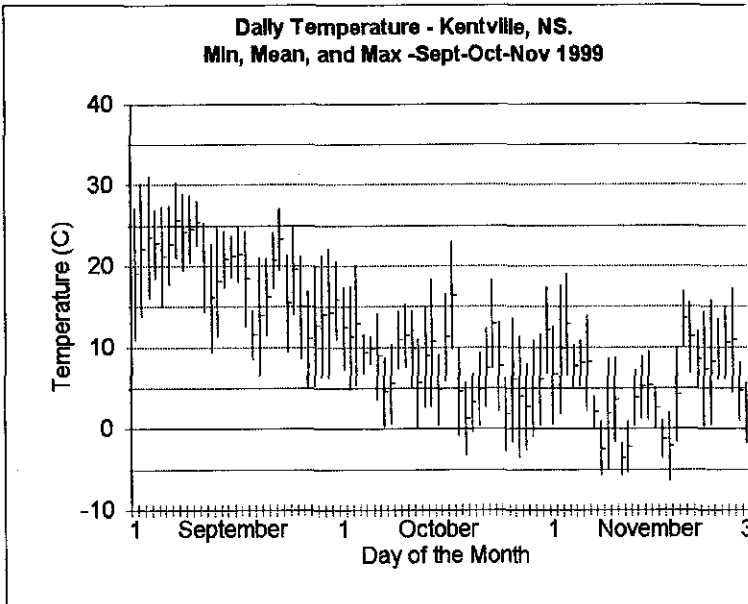
Although we have had very dry summers both last year and this year, the autumns in each case were wet enough to allow us to go into winter with plenty of precipitation. Both last year and this year were 40% above the five-year average for precipitation. We did get 9 cm of snow in early November but less than the normal 13 cm for the month. The distribution of heavy rainfall in September was concentrated in three storms each about a week apart; whereas the precipitation in October and November was distributed in small amounts almost daily through out the period. This heavy precipitation has left the woods that were dry in the summer, wet and soggy this late autumn.

Bright Sunshine Hours

I would expect that with all the rain in the autumn that the bright sunshine hours received would be down, but that is not the case. September actually has 1/3 more sunshine hours than the long-term norms and almost 1/2 again as much as in recent years. Even October and November with their frequent showers, had above average sunshine. The weather systems that came by were not dry this year but dropped rain and snow then left.

El Nina, Winter, and the Year's Median Temperatures

Satellites of the Jet Propulsion Laboratory of NASA (<http://www.jpl.nasa.gov/elnino>) show higher sea levels and warmer than normal temperatures off Asia and lower than normal temperatures in equatorial and eastern Pacific. This will tend to drive storms that normally cross the south west of the USA farther north. The effect on eastern North America is expected to produce a warmer than normal winter.



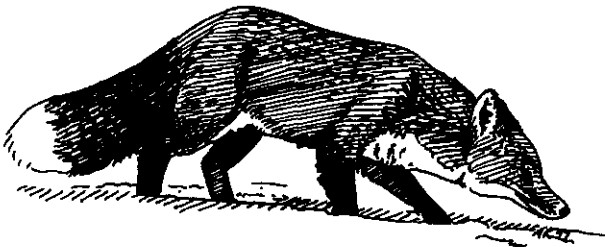
Weather Summaries - September to November 1999

Agriculture Research Station, Kentville, NS

	Mean Daily Temperature (°C)	Rainfall (mm)	Bright Sunshine (hours)
September (5 yr average) (38 yr average)	19.0 (14.5) (14.4)	204 (111) (120)	215 (146) (160)
October (5 yr average) (38 yr average)	8.0 (9.0) (9.2)	113 (87) (103)	180 (131) (137)
November (5 yr average) (38 yr average)	5.2 (3.4) (3.8)	78 (86) (118)	92 (82) (83)
1999 Season 1998 Season (5 yr average) (38 yr average)	10.7 9.0 (9.0) (9.1)	395 408 (284) (341)	487 348 (359) (380)

38 year average = 1961-1998

5 year average = 1994-1998



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Each member receives four issues yearly of the BNS Newsletter. 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

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	Tax-deductible donation	_____	\$ _____
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Memberships are due January 1st, 2000

Sources of Local Natural History
(compiled by Blomidon Naturalists Society)

Information	Source	Office	Home
Rocks & Fossils	Geology Dept. Acadia U.	542-2201	
Fish	NS Dept. of Natural Resources	679-6091	
Flora - General Fungi	Ruth Newell	585-1355	542-2095
	Darryl Grund	585-1252	542-9214
	Nancy Nickerson	679-5333	542-9332
	Lichens	Karen Casselman	424-7370
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

