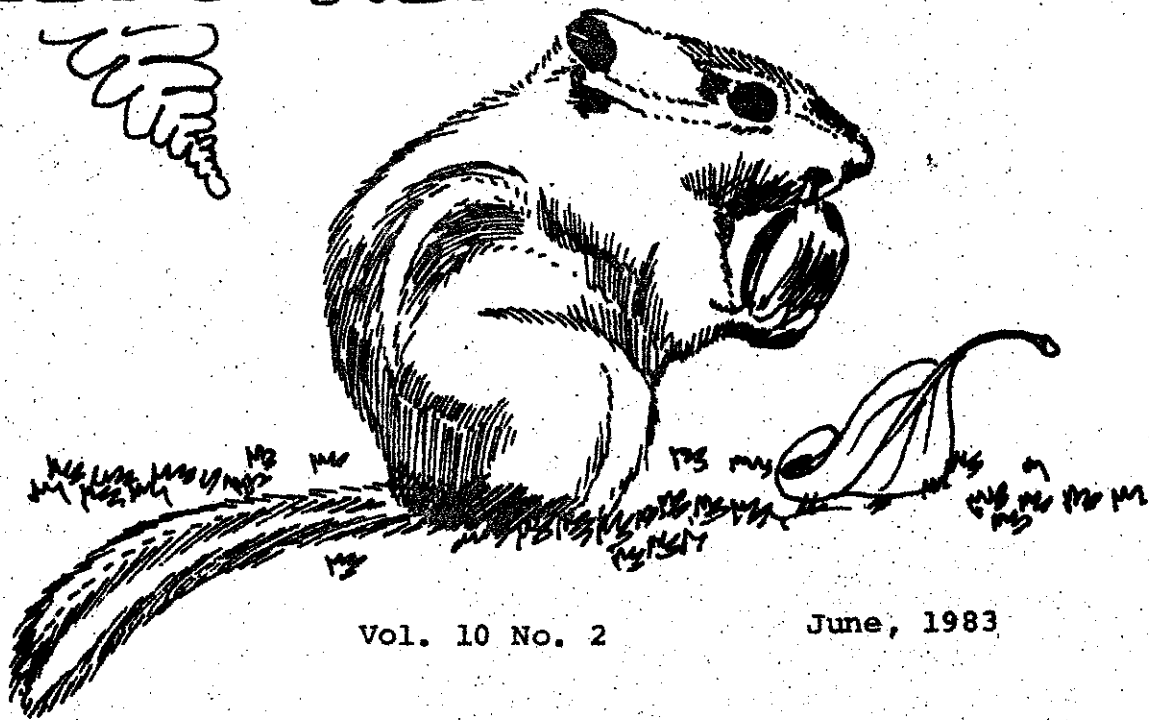


BLOMIDON NATURALISTS' SOCIETY NEWSLETTER



Vol. 10 No. 2

June, 1983

The BNS is published on the equinoxes and solstices.

EDITORS: Jean Timpa and Lynn Coldwell
 ART & PRODUCTION: Larry Bogan
 Brenda Thexton
 Lana Churchill

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, waters, air and stars.

- From the BNS Constitution

SCHEDULE OF EVENTS SUMMER-AUTUMN

1. September 18, Sunday. SHORE BIRDS - Led by Jim Wolford in conjunction with the Nova Scotia Bird Society. This trip will return us to the Evangeline Beach area to view a greater diversity of migratory shore birds. Meet at the Acadia Gym Parking Lot at 10 A.M. or the Grand Pre Park Parking Lot at 10:30 A.M. This trip will probably extend into the afternoon so a lunch should be brought along.
2. September 19, Monday. Origin of the Universe with Roy Bishop. Beveridge Arts Center, BAC Room 244 7:30 P.M. - our first fall lecture meeting. Please note the time of 7:30 P.M. as we have changed all our meetings to this time so our evenings aren't so late.

3. October 1, Saturday or October 2, Sunday if weather is foul on Saturday. Annual Fungi Walk with Dr. Ken Harrison in the Kentville Ravine. Decidedly one of our most popular trips, we just couldn't go through autumn without it. For young and old alike. Meet at the Acadia Gym Parking Lot at 1 P.M. or at the Kentville Research Station Picnic Area at 1:30 P.M.
4. October 17, Monday. Bird Nests in Kings County with Bernie Forsythe. Also our annual meeting. BAC, Room 244 at 7:30 P.M.

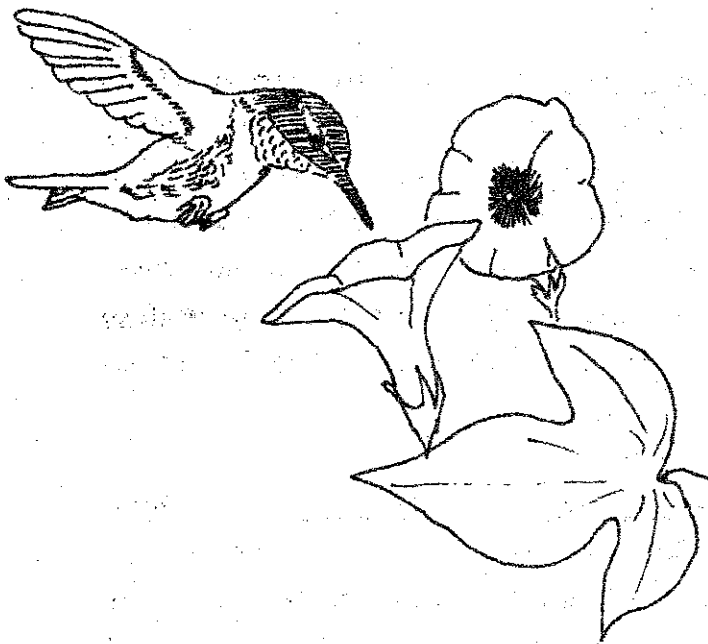
ACKNOWLEDGEMENTS

Special thanks this quarter go to our last speaker before the summer field trip schedule. Reid Dexter who so skillfully held us spell bound with his weather predicting techniques and slides. We are grateful, too, to all field trip leaders including Richard Stern, Sherman Bleakney, Jim Wolford, and Larry Bogan, to Rachel Erskine for the evening "lunch" she provided, and to all those who worked on this Newsletter in one way or another.

BNS Deadline - Sept. 23

More articles are always needed! Anybody for poetry, original or just something you have particularly enjoyed related to natural history? Contributions from the younger set? Stories of the unusual? Or humorous? Five or six line observations are very welcome! Everything adds up to a much better issue if you participate!

HUMMINGBIRD



A magic spring
Must be hidden in
This tiny, fairy,
Flying thing
No bigger than
A bumblebee -
Without its
Feather coat;
That stands on airy
Flies backward,
Wears a ruby
At its throat.

I think that God,
In a mood of joy,
Made this bird
For an angel's toy.

- Marion Doyle

REPORTS OF OUTINGS

YELLOW LADY SLIPPERS - June 18, 1983

Jim Wolford, Wolfville

About 20 people in 6 cars caravanned out to Poplar Grove, north of Windsor, on an overcast cool morning that later became sunny and muggy and very warm. On our walk in the woods we encountered fly-agaric mushrooms (*Amanita muscaria*), firs with witches'-brooms that were ripe with spores of the rust (a fungus), a garter snake, a leopard frog, a variety of herbs and shrubs in bloom, many bird songs, an interesting flock of perhaps 100 small birds (crossbills?) flying about, and tracks of raccoon and deer.

Eventually we found our objective, a piece of gypsum topography with an abundance of yellow lady's-slippers (*Cypripedium calceolus*). We noted that many of the beautiful yellow "slippers" (lower petal) had conspicuous holes in them, and, coincidentally one slipper was found to contain a land-snail (*Cepaea*).

A conspicuous difference from last year's trip (closer to Windsor), aside from a lack of ram's-head orchids, was the apparent absence of poison ivy.

Thanks to Ruth and Reg Newell for helping in scouting out this year's site.

FIELD TRIP TO BENTLY MEADOW - June 26, 1983

- Bernard Forsythe, Wolfville

This was supposed to be a trip to Bishop Pond but had to be changed because of the low water level at the pond caused by the loss of the resident beavers. About 15 interested people met for the outing and were shown a small painted turtle, and several very large bullfrog tadpoles by Jim Wolford, who also pointed out a Horned Owl high in an elm on Acadia campus - a great beginning for the afternoon.

There were many stops along the wood road to Bently Meadow to look at plants and enjoy the bird songs. A few of the plants seen were Twinflower, Fly and Bush-honeysuckle, Indian Cucumber-root, Spotted Coralroot, Wood-sorrel, one-flowered Wintergreen, a White Moccasin-flower, and many others. Several species of birds were heard singing such as Hermit Thrush, Veery Ovenbird, Black-throated Green Warbler, Parula Warbler, and Wood Pewee to name a few.

At the pond, thanks to Jim's dip nets and trays we were able to get a good look at the great variety of small life in the pond too numerous to list here. Some time was spent just enjoying the look of the place with the yellow of the Cow Lily on the water, the rich green of the sedges and

bushes on the ponds edge, the many dragon and damselflies darting about, and the sound of a pair of Cedar Waxwings over us and the quick-three-beers call of an Olive-sided Flycatcher on the opposite side. Thus the afternoon ended with enough variety to interest everyone.

SUMMER BIRDING - July 17, 1983

- Richard Stern, Kentville

A pleasingly large contingent met on a fine Sunday morning for a rather impromptu field trip in the Kentville area. It was good to note several newcomers, as well as more familiar faces. We started out walking down the track behind the nursing home in Kentville, towards the federal Wildlife Sanctuary, and without having to move more than a few feet from the cars, we saw Alder Flycatchers, a Hummingbird, Eastern Kingbird, Yellowthroat, Redstarts and a family of Rose-breasted Grosbeaks. Walking through the woods we saw and/or heard Veeries, Catbirds, Least Flycatcher Parula Warblers, etc. The trees were beautiful, especially a gnarled and very stately oak.

On returning to the nursing home, we all had splendid views of an adult and a young Barred Owl, with much mutual staring, and much (human only) photography.

We went on to the track near Lovett Road along the Cornwallis River, for more summer birds, and in a small pond were Bullfrogs, Green Frogs, a Painted Turtle, numerous Damselflies, and a Leopard Frog nearby. After pouring over a wildflower field guide, we spied a Mockingbird on the wire by the roadside, then a second bird close by. Although winter sightings of this bird are not rare, summer ones, especially of a pair, are decidedly so, so this was a great thrill.

We went on to check on the Kentville sewage pond, where we were greeted by a family of Green-winged Teal, but, as yet, no shorebirds.

Finally some members of the party went to see Merritt Gibson's Himmungbird nest before the young finally flew, and on the way back to Wolfville others had a nice view of an adult Bald Eagle.

Overall, a successful trip, with good weather, and a nice mix of birds, flowers and amphibians, (and even a snake), and lots to learn for everybody.

Follow-up on the Mockingbirds:

Five days later a group of us discovered the two adult birds being very aggressive to us. I then found a newly

fledged chick in a bush, which was then fed choke-cherries by one of the adults. There are so far, less than a dozen documented instances of nesting of this species in the province.



KINGSPORT SALT MARSH - July 30, 1983

- Jim Wolford, Wolfville

Twelve of us were given an introduction to local marine life by Sherman Bleakney. He handed out an informative booklet entitled "The Yummy Muds of Minas", we all doped ourselves against the teeming hordes of hungry no-see-ums (biting midges), and then we headed into the marsh with assorted buckets, nets, seine, and microscopes.

Sherman pointed out a mat of algae on the mud at the base of the cord-grasses (*Spartina* spp.); on this mat were large numbers of tiny brownish blobs that, when examined with the microscope, turned out to be algae-eating sea slugs (*Alderia*). Later, in the marsh pools and on the edge of a large tidal creek, he showed us much larger sea slugs (*Elysia*) that are usually green from algae-chloroplasts which they can somehow "farm" for their own use (i.e. photosynthesis)!

The muddy banks of the tidal creeks harboured very large concentrations of a small crustacean (*Corophium*), which is the major food of our transient sandpipers, plus long thin red worms (*Heteromastus*); and on top of the mud were thousands of conspicuous mud snails (*Nassarius*).

Then we looked at some marsh pools, where the first thing we noticed was huge numbers of small whitish sea anemones (*Nematostella*) on the muddy bottom (we were fortunate that the water was unusually clear). Running a sieve through that mud revealed zillions of tiny salt-marsh snails (*Hydrobia*).

Finally Sherman got out a long seine which we passed through a large shallow pool, and everyone was surprised by the large fish population captured:

- hundreds of mummichogs (*Killifish*), both adults and youngsters;
- lots of sticklebacks of two species - three-spined youngsters and four-spined adults;
- fair numbers of silversides, mostly youngsters;
- one small common eel (yearling?);
- about 10 green crabs (*Carcinus*);
- thousands of tiny whitish clams (*Gemma*).

Sherman informed us that most of these fishes move out to forage among the marsh-grasses when the tide is high, then returning to the pools when the water level drops.

Since most of the transient sandpipers were out on the mudflats, we didn't see many birds in the marsh itself. A few cormorants and starlings flew by, and two pools showed tracks of a great blue heron.

I believe that this exercise was, for all of us, a good mixture of culture (information) and enjoyment, in spite of the no-see-ums.

Sherman's remarks and his pamphlet emphasized the uniqueness of the Minas Basin and the importance of our salt-marshes as a basis for the huge productivity of this system.

Dr. Bleakney has kindly allowed us to reproduce his guide notes and drawings to the Acadia Lyceum (1983) students which certainly portrays the tremendous variety of life here in the Minas Basin.

ACADIA LYCEUM 1983

"THE YUMMY MUDS OF MINAS"

Life Sciences Field Trip

Minas Basin Sea Shore

July 14

- Sherman Bleakney

INTRODUCTION

The Minas Basin is one of the world's most unusual bodies of water. The tides are now 14 to 16 meters twice daily, but 6000 years ago the tidal amplitudes were nil. About 1/3 of the floor of the Basin is exposed on each tide, nearly 240 sq. km, and at several sites this inter-tidal exposure is 3 km wide. In summer the water reaches 22°C and high tides lap along shores where apples, tobacco, and grapes are growing. But in winter the frozen inter-tidal flats chill the Basin waters to -1.5°C and create blocks of ice, some 5 m thick, which form great drifting masses of pack ice.

This constantly churning shallow basin is obviously a muddy mess. Light can hardly penetrate the first meter, thus plankton is sparse, and therefore (the textbooks tell us) without much plant life there will be very little animal life. Rockweeds and kelps can't grow on mud and sand, so again without the primary produces (plants) there can't be primary consumers (herbivores) nor secondary consumers (carnivores). So the Minas Basin should be a write off- but it certainly is not.

The muds and sands are packed with animals. We know of at least 440 species. In fact, the flats are so rich in animal matter that 10's of thousands of shorebirds

which nest in the Arctic, fly here in July-August-September to refuel on their way to South America. They quickly double their body weight by adding layers of fat from eating worms and crustaceans from Minas Basin muds and then they take off and fly to South America.

As yet marine scientists do not really know how the Minas Basin functions, that is, they can not explain where all the stored energy comes from to feed so many animals. Is it possible that the Basin functions very much as a cow's stomach and a rabbit's intestine? Can you deduce and explain how there could be such a relationship?

To introduce you to the variety and density of Minas Basin organisms we have organized a triple-trip.

First Area: Muddy ooze at Cape Blomidon Park.

We will look for the little Macoma clam, of which (it has been estimated) there are 24×10^9 in the Minas Basin. They produce each day 6×10^6 kg of excreta (feces and pseudofeces) which drift about suspended by tidal currents, and upon which bacteria flourish, and upon which, in turn, the numerous tentacle and filter feeders depend for much of their nutrition.

Note the Macoma star-pattern feeding trails. How are these created. Take a count from 0.25 m^2 of mud after screening it in the stream.

1. Macoma balthica (clam)
2. Corophium volutator (crustacean)
3. Heteromastus filiformis (worm)

Second Area: Saltmarsh grassy flats and pools and creeks near Kingsport.

1. Grassy salt marsh flats. Now you are tramping over (and on!) insects, spiders, beach fleas, crabs, snails and sea slugs. There are about 1470 hectares of salt marsh habitat in Kings County. The dead grasses wash out to sea with high tides and add plant matter to the entire Minas Basin, thus creating a bacteria-rich detritus foundation for the Basin's peculiar ecosystem.

2. Pools. There are 783 of these marsh pools in Kings County and they range in size from 6 m^2 to 403 m^2 (with a rough average near 100 m^2). So far, 73 species of animals belonging to 11 Phyla have been found in these pools.

Look for the unusual white sea anemones protruding from the bottom that eat insects and snails; examine under binocular microscope. Seive 15 cm^2 of mud from bottom of a pool and count the tiny adult Hydrobia snails. These are like rabbits in their feeding habits (coprophagous).

Numbers of Hydrobia: _____

MINAS BASIN SALT MARSH KINGSFORT - NOVA SCOTIA

← DECREASING NUMBER OF LAND SPECIES
(BIRDS, RACCOON, MINK, MICE, INSECTS, PLANTS)

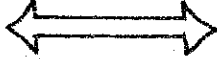
DECREASING NUMBER OF MARINE SPECIES →

EXTREME OF HIGH TIDE

MANY CRUSTACEANS, MOLLUSCS ARE ACTIVE WHEN TIDE IS IN
MANY INSECTS AND SPIDERS ARE ACTIVE WHEN TIDE IS OUT

POOL HAS DITCH GRASS, BUGS
BEETLES, MITES, FLIES FROM THE LAND ENVIRONMENT

FISH MOVE IN AND OUT WITH TIDE



POOL

POOL HAS ALGAE, CRUSTACEANS, MOLLUSCS
ANEMONE, FISH SEA SLUGS FROM THE MARINE ENVIRONMENT

EXTREME OF LOW TIDE

ADAPTED FROM SKETCH BY BLEAKNEY

Now seine a pool and identify the fish:

Species:

Number of Fish:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

3. Creeks: If you block off the upper kilometer of one of these creeks at high tide, as many as 6,000 Gaspereau and 15,000 Herring can be trapped by your net as they retreat back into the Basin with the ebbing tide. About two thousand fish/tide would be average in summer and 18 different species of fish have been caught in these creek nets. There are 8 to 10 km of creeks in Kings County, so potentially how many fish might be feeding in these creeks in one 24 hr day?

(1a). Try pulling the seine net through a pool in the marsh creek and discover what fish and other creatures are living there.

Species:

Total number:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

(10). What do the larger fish, that come up these tidal creeks, find so attractive? Food? Mark off 0.25 m² and seive the mud and count some of the yummy critters that live there. Corophium volutator
 (Sandpipers snap these up at the rate of 20 to 30/min and can consume 9600 to 26,100 in a day, which at the end of 1 to 3 weeks makes them 10 gms fatter).

(1c). Examine the green algal carpet that coats the surface of the mud high up the sides of the creek and try to find a green photosynthesizing snail without a shell (*Elysia chlorotica*). Examine under the microscopes.

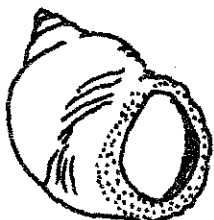
Third Area: Tidal Cornwallis River at Port Williams Bridge.

High tide at 4:50 P.M.) We will hang a plankton net from the bridge and let the tidal stream push the water through the fine screening. After about 5 minutes haul in the net and pour some of the muddy water into a large white pan.

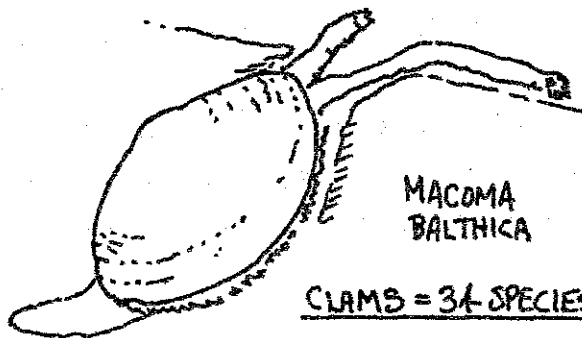
How much is mud and how much is animals?

Examine smaller sub-samples under the binocular microscopes and refer to your guide sheet of plankton organisms.

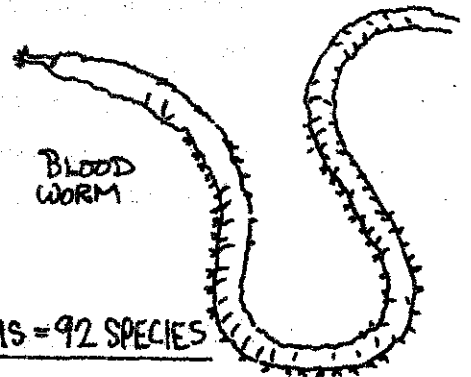
Most marine ecosystems are based on sunlight and multiplying phytoplankton, and these tiny one-celled plants are in turn eaten by zooplankton, particularly copepods, crustaceans, planktonic larvae of worms, barnacles, snails, fish and so on. It is a seasonal system because the sun is high in summer and low in winter. However, this unique muddy Minas Basin has a food chain not based on phytoplankton but instead on bacteria coated yuk (pieces of dead marsh plants, dead seaweeds and distoms, pseudofeces and feces by the ton!). Constantly stirred up and suspended and transported by the world's greatest tides. As sunlight is of lesser importance in this marine system of constantly stirred bowl of Basin soup, there are as many (often more) copopods in the water at Port William's bridge in cold dark December as there are in July.



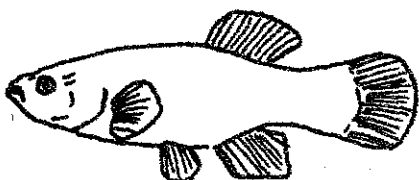
COMMON PERIWINKLE
SNAILS = 58 SPECIES



MACOMA
 BALTHICA
CLAMS = 34 SPECIES



BLOOD
 WORM
WORMS = 92 SPECIES



COMMON KILLIFISH
38 FISH SPECIES IN MINAS BASIN
 (18 IN MARSHES AND CREEKS)



GAMMARUS

CRUSTACEANS = 91 SPECIES

SHOREBIRD MIGRATION - August 6, 1983

- Jim Wolford, Wolfville

We had one of those strange Maritimes days that was windy but also muggy and hot, with occasional sunny periods ("partly cloudy"). Our caravan of 7 cars carrying about 15 birders first visited 2 open fields on the Grand Pre dykelands. The first field was a roost for a few hundred "peeps", mainly semipalmated sandpipers with lesser numbers of least sandpipers. The second roost held good numbers of the "peeps" plus semipalmated plovers, black-bellied plovers, ruddy turnstones, red knots, dowitchers (probably all shoot-billed?), and Hudsonian godwits. A nice bonus was that two of the "peeps" were yellow-dyed, presumably from James Bay (southern tip of Hudson Bay) as in previous years.

By then (after lunch) it was well past high tide, and we walked the beach, east of Evangeline Beach, toward Boot Island. There was only one roost of "peeps", but then at the end of the beach we all had good looks at red knots, dowitchers, black-bellied plovers, and the very handsome ruddy turnstones. All of these were beginning to forage as the tide receded from the shore.

SKY OBSERVING - August 11, 9:30 P.M.

- Larry Bogan, Cambridge

Since the 10th of August had cloudy skies, the 11th was clear until time for the observing session, then of course the clouds moved over the sky. I was at the Ridge Park in Wolfville, when 7 or 8 other naturalists arrived. We were bemoaning the cloudy skies when a large hole in the cloud cover drifted over Wolfville and gave us a view of many constellations: Bootes, Ursa Major, Ursa Minor, Lyra, Cygnus Pegasus, and Cassiopeia. There was enough time to observe one telescopic object, the globular cluster in Hercules.

After more pleasant conversation, and suggestions for more scheduled observing sessions, the group gave up hope of more clearing and went their separate ways.

WINTER BIRDING AT HOME - Jean Tempa, Wolfville

Several of us, just for the "fun of it" kept track of the kinds and numbers of birds at our feeders last winter or birds seen from or in our yards even though not at the feeders, as such.

Brenda Thexton writes with her notes, "Perhaps the most interesting was our chickadee with an all-white tail. And our grackle with several white feathers on and under

the right wing, a crop breast and a few on the left wing. No snow buntings this winter!"

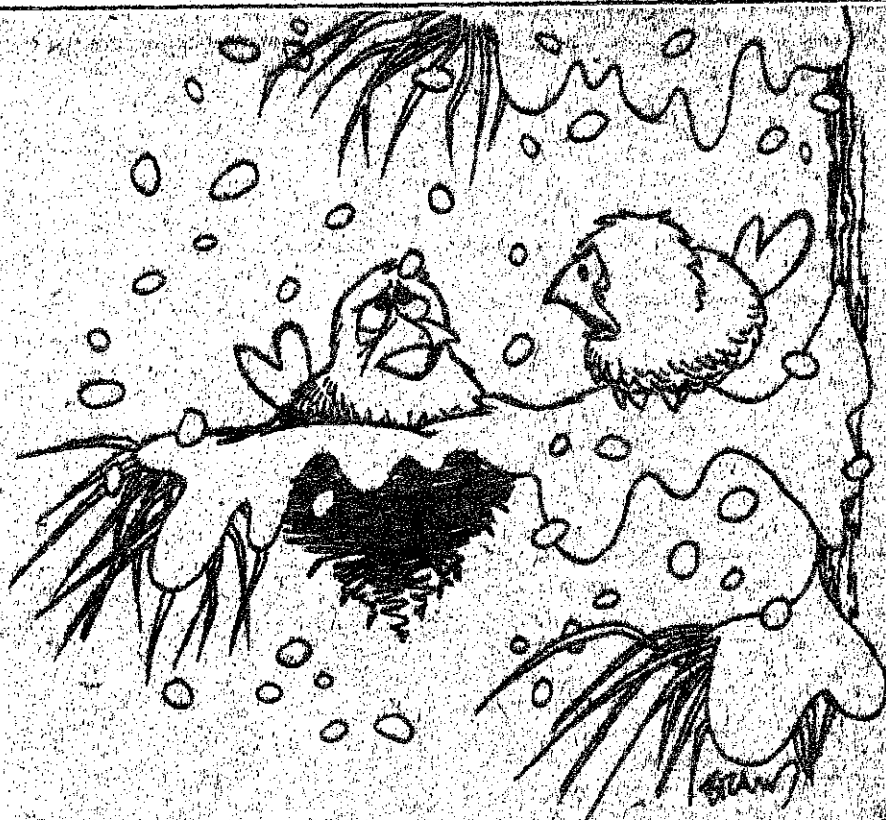
My most memorable moments were the immature Broad-winged Hawk (Jan. 23) watching my feeder from my neighbour's chimney; the lovely, but deadly female Sharp-skinned Hawk which appeared periodically and finally did make a successful kill only to dine on her prey about 10 feet from one of my windows; and the seven days (April 3-9) when a female House Finch came regularly to the feeder, and I had the fun of actually identifying this LBJ correctly as confirmed by Jim Wolford who patiently sat it out for three mornings until she finally co-operated by showing up! Brenda's white-tailed chickadee also showed up here for 3 or 4 days and then disappeared.

Lana Churchill nonchalantly mentioned to Brenda and I one day that she quite regularly has white-crowned sparrows in the winter. Lana didn't realize that most of us would consider them rarities!

Numbers represent maximum numbers seen at any one time

| Species | Lana (Port Williams) | Brenda (Main St. Wolf.) | Jean (Gaspereau Ave. Wolf) |
|--------------------------|--------------------------|----------------------------|---|
| Canada Goose | 10-12 V's thin winter | | 50 flying SW-NE in March |
| Sharp-shinned Hawk | 1 female | 1 | 1 female |
| Red-tailed Hawk | lots | 2 | 1 |
| Broad-winged Hawk | 1 | | 1 across street on neighbour's chimney |
| Bald Eagle | lots | 1 | |
| Merlin | | 1 | |
| Ring-necked Pheasant | 2M, 3F | 4M (Dec.) 20F (March) | |
| Iceland Gull | 4-5 during winter | | |
| Gr. Black-Backed Gull | | commonly over our | seen flying properties |
| Herring Gull | | commonly over | seen flying our properties |
| Rock Dove | | 8 | 2 |
| Mourning Dove | 8 | 1 | |
| Common Flicker | | 1 (April) | |
| Hairy Woodpecker | 8 | 1 F | 1M, 1F |
| Downy Woodpecker | 8 | 2M, 2F | 2M, 1F |
| Blue Jay | 21 | 12 | 14 |
| Northern Raven | | 4 | |

| Species | Lana | Brenda | Jean |
|---------------------------|--------|-----------|--|
| American Crow | 12 | 22 | 2 at feeders but scads passing overhead |
| Bl-capped Chickadee | 8 | 8 | 6 |
| White-Br. Nuthatch | | | 1 across street |
| Am. Robin | | 13 | |
| Cedar Waxwing | | 40 (Dec.) | |
| European Starling | 200+ | 125 | 20 |
| House Sparrow | 46 | 36 | 25-30 |
| Red-winged Blackbird | 1M, 1F | | 4M |
| Common Crackle | 2 | 42 (Apr.) | 3 |
| Brown-Headed Cowbird | 35 | 24 | 10 |
| Evening Grosbeak | 87 | 100+ | 200 |
| House Finch | | | 1F (Apr. 3-9) |
| Purple Finch | 5 | 12 (Apr.) | 6 |
| Common Redpoll | 2 | | |
| Pine Siskin | | | 2 (Apr. 8) |
| American Goldfinch | 4 | 1 | 13 |
| Northern Junco | 1 | 13 | 8 |
| Am. Tree Sparrow | 3 | 20 | |
| White-Cr. Sparrow | 1 | | |
| White-Throated Sparrow | | 3 | |
| Song Sparrow | 6 | 3 | 1 |



"We beat the crowds, all right. I hope you're satisfied."

TOTALS:

| | | | |
|---|----------------------------|------------------------------|------------------------------|
| 38 species in all for 3 observers | 28 species (Nov.-March) | 29 species (Dec. 1-May 1) | 26 species (Dec. 1-May 1) |
|---|----------------------------|------------------------------|------------------------------|

Do any of you readers have feeder lists from the 1982-83 winter? We'd like to publish them. Anybody who wants to keep records for 1983-84 to be published next June? Here are the rules:

1. List birds at feeders or seen from your property (across street, flying overhead starting Nov. 1 and ending April 15 when migration usually gets into full swing again.
2. Report species, maximum numbers seen at any one time, male or female where possible.
3. Report albinism, injuries.

It's probably best to start a new list at the beginning of each month and then summarize it in April as Brenda did for me.

BLOMIDON NATURALISTS SOCIETY MEMBERSHIP!!!!

If you are interested in membership in our Society or a copy of this Newsletter, please write to our treasurer:

Dr. Norman McGuinness
c/o School of Business
Acadia University
Wolfville, Nova Scotia
BOP 1X0

or call Norman at 542-2201, ext. 425