

**BOW VALLEY NATURALISTS
NEWSLETTER, WINTER 2009
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Web site: <http://www.bowvalleynaturalists.org>

PROGRAMS/EVENTS

Wed., January 28 7:30 pm.

Students on Ice: an Arctic Expedition with Leah Pengelly and Alex Taylor.
Location: Banff Seniors Centre.

Wed., February 25 7:30 pm.

Leopards and Tigers and Bears: wildlife of far eastern Russia with John Paczkowski.
Location: Banff Seniors Centre.

NOTE.

February 25 is the evening of our **Annual General Meeting and elections.** Anyone interested in participating on the Board of Directors should contact Peter Duck (762-4335) or Heather Dempsey (762-3056 - evenings), or any member of the Board before mid-February.

REMINDER!

Memberships are now due for 2009.

Our financial year is the calendar year.

We want to keep the membership at the low cost of **\$5.00**. But we should let you know the costs of renting the hall for meetings and mailing the newsletters have gone up again. We want to remind you that you will receive a charitable donation receipt for donations of \$5.00 or more.

Wed., March 25 7:30 pm.

To be announced.

Location: Banff Seniors Centre.

Wed., April 22 7:30 pm.

Plants of the Canadian Rockies and the Selkirks with Bob and Mary Smith.

Location: Banff Seniors Centre.

2008 Banff-Canmore Christmas Bird Count

Mike McIvor

Our 34th annual CBC took place on a spectacularly beautiful winter day in the mountains. OK. OK. I'll admit it was a little on the cool side. And apparently some people felt that having their heads completely wrapped in toques and scarves, and the fact the focusing mechanisms on their binoculars froze and couldn't be operated somehow impaired their ability to detect and identify birds. But in my defence, and in rebuttal to those who insist I always choose the coldest day of the year for our counts, it must be noted that the previous Monday was colder by several degrees.

Knowing how quiet the woods are this winter, no one was particularly surprised by the results, although the record low total of 36 species – the previous low was 38 – was unexpected. This was 11 fewer species than last year, 8 below the long-term average, and the first time we have reported less than 40 species since 1985. The total of 1834 individual birds was not a record low but it was almost 2000 fewer birds than last year and more than 800 below the long-term average.

The dramatic, year-to-year fluctuations in numbers of some species were very much in evidence with the crossbills offering the best examples. Red Crossbill: last year – 214; this year – 0. White-winged Crossbill: last year – 726; this year – 0. Many other species were down as well but it was nice to see Gray Jays bounce back to 27 from last year's record low of 13. Another, less welcome species made a big gain this year, as 255 individuals of the non-native Rock Pigeon set a new record.

Some of the day's highlights included a Northern Goshawk and Northern Hawk Owl in Canmore, a Ruffed Grouse in Harvie Heights, and 2 Virginia Rails at the Cave and Basin Marsh, although with the latter being reported for the 4th time in 11 years, we may have to insist that the folks covering the C&B find one every year before they show up at the potluck.



Virginia Rail

photo: Cliff Hansen

We'll look forward to our 35th count next December. Who knows, maybe it will be a warmer day this time.

Unfortunately, because of poor road conditions and people's schedules, we did not manage to do the Bow Summit CBC, the 4th time this has happened since 1975. We'll try again next year.



Northern Shrike photo: D. McIvor

Banff-Canmore Count:

Mallard	388	Black-billed Magpie	64
Common Goldeneye	10	Common Raven	143
Barrow's Goldeneye	3	Black-capped Chickadee	76
Common Merganser	1	Mountain Chickadee	83
Bald Eagle <i>adult</i>	CW	Boreal Chickadee	50
Northern Goshawk	1	<i>chickadee sp.</i>	28
Ruffed Grouse	1	Red-breasted Nuthatch	20
Virginia Rail	2	White-breasted Nuthatch	6
Wilson's Snipe	1	Brown Creeper	7
Rock Pigeon	255	American Dipper	9
Northern Hawk Owl	1	Golden-Crowned Kinglet	2
Belted Kingfisher	1	Townsend's Solitaire	14
Downy Woodpecker	4	Bohemian Waxwing	266
Hairy Woodpecker	5	Northern Shrike	2
A. 3-toed Woodpecker	8	Snow Bunting	CW
Black-backed Woodpecker	1	Pine Grosbeak	115
<i>woodpecker sp.</i>	1	Common Redpoll	75
Gray Jay	27	Hoary Redpoll	1
Stellar's Jay	1	Evening Grosbeak	CW
Blue Jay	3	House Sparrow	135
Clark's Nutcracker	24		

CW: reported count week

TOTAL SPECIES: 36

TOTAL INDIVIDUALS: 1834

ISSUES

Town of Canmore Community Sustainability Plan

The Town of Canmore is in the process of revising its Municipal Development Plan - now referred to as its Community Sustainability Plan. A draft of this important document will be the subject of a public hearing before Town Council on Tuesday, January 20 (6:00pm) and Saturday, January 24 (10:00am). Some of our Canmore members have informed us they are particularly concerned that the section of the plan dealing with Environmental Stewardship does not offer adequate protection for wildlife corridors and habitat patches. There also appears to be an attempt to weaken the criteria for environmental assessment of proposed development, to evade oversight by independent biologists of corridor viability, and less than full commitment to determining corridors based on the best scientific standards. Canmore residents should participate in this process either at the hearing or

by submitting written comments in advance of those dates. Council (email addresses below) should be made aware that many of its citizens want these kinds of provisions in the Plan to be strengthened not weakened.

planning@canmore.ca

Ron Casey <mayor@canmore.ca>

Corinna Dootjes <cdootjes@canmore.ca>

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Ski Area Petition in Ottawa

Mike McIvor

In November, a petition conforming to the requirements of the Auditor General Act and signed by 3 organizations – the Jasper Environmental Association which had done the bulk of the work preparing the document, BVN, and UTSB Research – was sent to the Commissioner of Environment and Sustainable Development. The petition was in response to Parks Canada's approval of site guidelines for the Marmot Basin Ski Area in Jasper; it expressed concern about the decision itself, the process involved, and potential implications for the 3 ski areas in Banff National Park. We have been notified that the petition was accepted by the Commissioner and forwarded to the new Environment Minister, Jim Prentice, and the CEO of the Parks Canada Agency. They have until April to respond to the list of questions we presented.

Central to the concerns of the conservation groups is the inherently dishonest "gain game" invented by Parks Canada senior managers to facilitate further development at Marmot Basin. This involved the surrender by the ski area of part of its leasehold in a portion of the Whistler's Creek drainage, an undeveloped area already fully protected by the National Parks Act, in exchange for major expansion within and beyond its leasehold. Parks Canada touted this sleight-of-hand as a substantial environmental gain. Our friends with the JEA were aware that Parks Canada's own biologists in Jasper had contributed their opinions about this matter to park managers. Worried that the public was being asked to participate in this planning process without full access to the knowledge and expertise of publicly funded specialists, they asked Mountain Parks Executive Director, Ron Hallman to make this information available to the public. That request was denied, but the JEA persevered. They made a formal Access to Information request and eventually obtained the material they were seeking.

It turned out that in their letter of advice to park managers, the specialists had concluded that removing the entire Whistler's Creek drainage from the leasehold would represent a substantial gain and would be a preferred option, but removing only a portion, as desired by the ski area and park managers, would not be significant, especially given the proposed increase in development. As we know, this advice was ignored as were the concerns of conservation groups and other members of the public. The next step: this petition.

Petitions that have been accepted and forwarded for response are published on the Commissioner's website and in its annual report to the House of Commons. The file number for our petition is #269. We'll keep you posted.

Lands Adjacent to the Town of Banff

Peter Duck

Parks Canada recently held a meeting to share news of progress on implementing recommendations of the LATB advisory group report. Many projects are moving ahead with about \$350,000.00 committed and much more expected to be spent if all proposals are implemented. BVN has supported the protective trail and interpretive work at the Hoodoos that went forward this year and we are anxious to see some management plan wording that will expand the Middle Springs Environmentally Sensitive Site to include the Valleyview-Middle Springs Wetland. Let's hope this important LATB recommendation that requires only words is not lost in the rush to spend money and build things.

Park Management Plan Reviews

The deadline of March 2010 to complete the review of management plans for the mountain national parks still stands but the process will be compressed. Instead of public consultation beginning in the spring of 2008 as we had been led to expect a year ago, now we are informed it may begin later this winter, sometime before spring of 2009.

And the delayed schedule may not be the only change encountered by the public. Despite ongoing assurances from Parks Canada officials that this 10 year review of the management plans would be simply a matter of dealing with some housekeeping items and incorporating minor amendments, with no major re-writing of the plans slated to be undertaken until the 15 year review, it sounds now as if a major re-write may indeed be in the works. Apparently senior managers are anxious to ensure the plans reflect their new, vigorous emphasis on visitor experience. If this is the case, the 2 field unit superintendents certainly were far from forthcoming about it at the annual park planning forum in November. It still is anything but clear what the scope of revisions will be.

Supposedly, there will be no attempt to re-visit previously determined limits attached to development in the parks but if Parks Canada continues to align itself closely with the tourism industry and to use numbers of visitors as its central measure of success, the pressure for expansion will be very real.

BVN members should monitor this process closely whenever it gets underway and participate fully.

Icefields Parkway

The Icefields Parkway Planning Initiative has been underway for well over a year. A multi-stakeholder Advisory Group has been working with Parks Canada to formulate a vision, or Strategic Concept, as well as an Action Plan for implementation. In recent months, Carlos Garcia of UTSB Research has been representing local environmental interests and he has provided us with an update on progress with the Planning Initiative. At a meeting on December 19th the Advisory Group reviewed the Strategic Concept that is nearing its final draft stage and was introduced to the recently drafted Action Plan. (Final drafts of both documents will be released for public consideration as part of the park management plans review.) Carlos is relatively comfortable with the kind of language employed and the principles espoused in both documents. However, at this meeting and in an earlier letter to Mountain Parks Executive Director, Ron Hallman who is leading the Initiative, he

expressed serious concern about major deficiencies. These have to do with the fact the planning rhetoric, so far, is not matched by anything in the way of specific and measurable goals to provide clarity and meaningful direction. If "*environmental gains*" are to be a fundamental objective, how can the success of actions be evaluated if there are no clearly defined indicators and targets? (It is worth noting this is a criticism that also has been levied against many parts of the existing management plans.)

Our thanks to Carlos for his work on these issues. We are hoping the concerns he raised will be addressed. Stay tuned for more updates and be sure to closely scrutinize proposals affecting the future of the Icefields Parkway during the management plans review.

Special Events

Mike McIvor

Special events were the central preoccupation in Parks Canada's approach to the Banff National Park Annual Planning Forum in November. While the stated intent is to design a coherent process for evaluating proposals, it also is clear there are overlapping interests between some senior park managers, marching to the insistent visitor experience drumbeat being pounded at headquarters, and their tourism industry partners, with both parties anxious to attract more visitors in order to generate more revenue.

The push for special events in national parks seems to imply something drastic: these special places are not special enough. As this implication resonated through the discussions at the planning forum, one participant, who was representing recreational groups not conservation groups but was obviously uncomfortable, posed the most memorable question of the day. It was offered in a very low-key, almost perplexed manner, as he simply wanted to know "*What's wrong with Banff National Park? Is it really not good enough the way it is?*" Sounded like a damn good question to me!

The perceived – on the part of some people – inadequacy of this place has nothing to do with its character, its essence as a magnificent landscape and vibrant ecosystem; it has everything to do with its role as a tourist destination in a competitive global marketplace. That's the reason boosters want to dress it up and put ribbons on it. They want people playing here, not at Whistler or some place else.

What final shape the guidelines and criteria for special events will take remains to be seen, but the kinds of events that occur in the future will tell us a lot about how national parks are viewed by those entrusted with managing them. Feel free to pass along your views and concerns.

Environmental Assessment News

Peter Duck

There has been an announcement that in the spring the federal government will propose significant changes to federal environmental assessment legislation. One can be reasonably confident these days that any such changes will not result in more projects undergoing credible environmental assessment.

An educated guess is that this federal government will comply with pressure to limit federal involvement in EA for large projects in provincial jurisdictions such as power dams or oil developments. It also would not be surprising to see provisions that limit the

requirement to conduct EA on all but the larger projects in federal jurisdictions. This is all speculation now since nobody in the government seems to be able to say anything other than "we are up to something". Who knows, maybe they will create some green jobs by giving the current Canadian Environmental Assessment Act some teeth.

The federal environmental assessment process is one of Canada's most fundamental tools for promoting participatory democracy in project planning. We'll let you know if the government decides it should actually review a public planning process in public.

Is there any good news about Canada's Endangered Species?

Dwayne Lepitzki

I recently attended my first COSEWIC (Committee on the Status of Endangered Wildlife in Canada) Species Assessment Meeting. It's at these meetings that a status is assigned to living entities comprising Canada's vast and diverse flora and fauna. As expected, the number of species considered at risk keeps increasing and is up to a whopping 577 species either Extinct (gone forever), Extirpated (gone from the wilds of Canada), Endangered, Threatened, or Special Concern. Another 166 have been designated Not at Risk and 44 have been labeled Data Deficient (not enough information exists to assign a status).

Instead of dwelling on the plight of endangered species, and writing another bad news story I was asked: Is there any good news? After all, the year 2008 was the 30th anniversary of COSEWIC compiling its annual list of species at risk. Have any species been reassessed into a lower at-risk category (downlisted) or actually been dropped completely from the list? Good questions. After a lot of number crunching (all these data are found in the December 2008 Canadian Wildlife Species At Risk booklet available at the COSEWIC website www.cosewic.gc.ca/), the following results can be determined.

First of all, not all species have been re-assessed. Of the 787 plants and animals COSEWIC has examined in its 30 year history, only 407 (51.7%) have been re-assessed. Under the Canadian *Species at Risk Act*, a species listed by COSEWIC as being At-Risk has to be re-evaluated every 10 years, or earlier if warranted. But it's only been since 1994 that COSEWIC began looking at invertebrates, such as butterflies, beetles, and snails. As such, some mammals and birds originally on the 1978 list have been re-assessed up to four times. Conversely, the new members on the list await their second assessment. Of those re-assessed, 231 (56.8%) have remained in the same At-Risk category and 75 (18%) have been up-listed.

Secondly, separate populations of an animal or plant species sometimes are split or combined with other populations, so a category of "reassigned" exists. In this case, the original assessment is deactivated and a new history of assessment and re-assessment begins. Fifty of the 407 reassessed species have been re-assigned (12.3%).

Thirdly, species already assessed as Not at Risk or Data Deficient will only be re-assessed if new information exists which suggests they may now be At Risk or Extinct.

Even with all these complications, there is some good news. Twelve species have been downlisted (2.9%) and another 20 (4.9%) have been removed from the At-Risk species list and are currently classified as being NAR (Not at Risk). Of the 12 species

that have been downlisted, five (2 mammals, 1 fish, 2 vascular plants) are still Threatened (they were originally Endangered), and seven (2 mammals, 1 bird, 4 vascular plants) are still Special Concern.

One example. The Sea Otter, found off the coast of British Columbia and currently Special Concern (SC), has an interesting history. It was originally assessed in 1978 (one of those on the original list) as Endangered, confirmed as Endangered in 1986, downlisted to Threatened in 1996, re-confirmed as Threatened in 2000, and then downlisted once again to its current status in 2007. On the flip side, the increasing numbers of Sea Otters are now a recognized threat to another COSEWIC listed species, the Northern Abalone (Threatened), which will be re-assessed for the first time this April.

Of the 20 species that have been dropped from the At-Risk list, four are mammals, nine are birds, five are fish, and two are vascular plants. The Western North Atlantic population of Humpback Whales (Special Concern in 1985) were re-assessed as NAR in 1993. Closer to home, the Great Grey Owl (SC 1979, SC 1990) is NAR as of 1996 and the American White Pelican (Threatened in 1978) is NAR as of 1987.

What about the Peregrine Falcon? Hasn't it been downlisted? This is one of those species that has been "reassigned". The two new "Designatable Units" for the Peregrine were assessed as SC in 2007 so their history of change for re-assessments won't be written until possibly as late as 2017.

So, yes, there is some good news. Species are downlisted and a few are even dropped from the list altogether. But at the same time, the list continues to grow.

Flushing Success Down the Drain!

Peter Duck

For a year or two I have embarrassed my family by not flushing the toilet and letting the yellow mellow for a few trips before I do. This has resulted in number of sensitive moments when friends were perplexed by the practice. Just when the residents of 334 were beginning to accept my approach to fermenting as a way to save the Earth, Bart Robinson and the Biosphere Institute came into my life.

Bart and the BI team introduced me to their Eco-Team program in which a small group of folks committed to improving their eco lifestyle meet regularly and discuss ways to improve their household's record. Between lunch-time or evening gatherings participants have the opportunity to be guided by reading work books that take them through their house and lifestyle to find ways to improve. I found the chats very informative and was motivated to change a number of things around the house after finding that my supposedly enviro-friendly home had a number of water and energy wasting habits built into it.

While respecting the need to save water and even occasionally joining me in my yellow campaign my family hoped we could find a more aesthetically pleasing solution to the 13 litre toilet. So the water conservation unit of the Eco Team program was welcomed by the rest of the household. It motivated me to finally play handyman and install a spanking new dual flush toilet. Only three litres per flush compared to 13! That's a 77% saving from a Saturday morning spent with simple tools on the bathroom floor. Get this - the Town gave me \$100 to do it! Both Banff and

Canmore have rebate programs. So long, mellow yellow, hello healthy planet!

I'd be happy to share my toilet (and life) changing experience with anyone who owns a water guzzler and is interested in installing a new pot. In fact if you come over we can chat about it over a beer and maybe even test drive the new throne. Bow Valley residents are encouraged to contact Bart Robinson and the Biosphere Institute about their Eco Team program at Biosphere Institute of the Bow Valley, Suite 201, 600 9th St., Canmore, AB T1W 2T2 (403-678-3445), <http://www.biosphereinstitute.org/>

Of Wild Things

Grylloblatta – the “Ice Bug”: The Man Who Discovered It and his Banff Connections.

Mike McIvor

On June 29, 1913 two men stood near the top of Sulphur Mountain. They were staring at an insect one of them, T.B. Kurata, had found under a stone. The other man, Edmund M. Walker (1877-1969), who would go on to become perhaps the pre-eminent entomologist in Canada *, said later “*I knew at once that this creature was something new – unlike anything found before*”. In his Autobiographic Sketch, he wrote “*It was at Banff in company with Mr. Kurata that I made the most remarkable discovery of my life, that of the Grylloblatta....*”



Ice Bug

photo: M. McIvor

At the time, Walker was a faculty member at the University of Toronto teaching zoology – he later became department head. He also was editor of Canadian Entomologist, a position he held for 10 years until stepping down in 1920. Kurata was one of the first permanent staff members of the newly formed Royal Ontario Museum. They were on a summer trip to the Pacific Biological Station on Vancouver Island but were stopping at a few places along the route to collect insects, particularly Odonata (dragonflies and damselflies) and Orthoptera (grasshoppers, katydids and crickets). In a talk to the Biology Club of the University of Toronto in 1948, Walker recalled how they arrived at the Banff train station and after searching for a bus they finally reached the Upper Hot Springs Hotel. He declared it “*the one perfect place for us*” because it was halfway up Sulphur, convenient for collecting trips either to the top of the mountain or down to the valley.

This was not Walker’s first visit to Banff though, nor even his first time on top of Sulphur. In the summer of 1897, after completing

his first year as a university student, he joined an excursion across the country in special trains following meetings of the British Association for the Advancement of Science. A stop in Banff resulted in what he said was the most important event in the entire journey for him. He met botanist John Macoun, a naturalist with the Geological Survey of Canada, who “*at once invited me to climb with him to the top of Sulphur Mountain, a small mountain close to the town*”. Already interested in plants, it was an “*unforgettable experience*” to have Professor Macoun introduce him to “*the various belts of vegetation from the Bow Valley with its tall white spruce, lodgepole pine, and scattered Douglas firs, to the white-barked pines and Lyall’s larch at the timber-line*”.

Walker’s primary research interest was in systematics and morphology but he was also well known for his naturalistic approach to his subjects. (In fact, he was a founding member and president of the Toronto Field Naturalists’ Club and served both as a director and as president of the Federation of Ontario Naturalists.) He was a keen observer rather than a mere collector and understood that organisms must be studied as part of their environment not as separate entities. However, as one of his colleagues explained, there is little doubt it was his knowledge of arthropod morphology that allowed him to instantly recognize the “ice bug” as something new and exciting.

He reported the discovery in Canadian Entomologist in 1914, naming it *Grylloblatta campodeiformis* and stating “*this insect forms the type species of a new genus, Grylloblatta and a new family, Grylloblattidae.*” (In his wonderful book “**Insects Their Natural History and Diversity**”, Stephen Marshall notes that the emblem of the Entomological Society of Canada has a stylized ice bug in its middle making it, he suggests, the closest thing Canada has to a national insect.) In the article, Walker wrote about finding two specimens, both females “*running about like centipedes under the stones of a talus-slope at an altitude of about 6500 feet*”. A hunt for more specimens was unsuccessful and nothing was known about the male of the species until 1919 when the Banff Museum provided him with an adult male and nymphs of both sexes so he could describe them.

Eventually, it came to be generally accepted that this was not just a new species, genus, and family, but an entirely new order of insect: Grylloblattodea, with a common name of Rock Crawler. (The type species has been called Northern Rock Crawler.) In the decades since its discovery on Sulphur, Grylloblatta has been found at a variety of locations in western North America, including at lower elevations than previously expected, and a number of other species have been delineated. It is believed to be primarily a carnivore, feeding on other insects. Two other closely related genera are known from Asia, one from Japan and one from Siberia.

Walker was particularly intrigued by some unusual features of the ice bug, primitive characteristics he felt indicated it was very archaic. This was reflected in the title of his presidential address to the Biological Section of the Royal Society of Canada, published in 1937, “**Grylloblatta, a Living Fossil**”. Here, he provided a general account based not only on his own extensive study of the insect’s anatomy but on its life history, most of the details of which, he acknowledged, had been worked out by Dr. Norma Ford, a student and later, his wife, who, incidentally, despite her initial interest in entomology went on to become one of Canada’s first researchers in human genetics. Beginning in 1924, Dr. Ford had made several trips to the Rocky Mountains of Alberta to collect live specimens for further study in the laboratory. They learned it could tolerate only a very narrow range of cool temperatures (most insect field guides state something to the effect that if you held one of these creatures in your hand the heat would quickly kill it), that

it has an extremely low metabolic rate, and that it lives a long time, with full development under laboratory conditions requiring 7 years.

I knew almost none of this back in October when I turned over a log one afternoon in the deep shade at the base of Mt. Rundle. I was looking for slime moulds to photograph but caught sight of an insect that even to my entomologically illiterate eye, looked very unusual. Calling to Diane who was some distance away to hurry over to see it, I managed to get my camera out in time for a few shots before it disappeared. We sent the images to Terry Thormin in Edmonton, who had spent more than 20 years as curator of the Bug Room at the Royal Alberta Museum; he quickly confirmed that what we had seen was a *Grylloblatta*, something he still is hoping to see himself some day, calling it a holy grail for many entomologists.

While his early interest in Orthoptera remained strong, in his **Autobiographic Sketch**, Walker explained that he became more and more attracted to dragonflies. Part of the attraction for this inquisitive scientist was that dragonflies were even less well known in Canada than Orthoptera. Another trip in 1921, this time by road in a somewhat unreliable Model T Ford took him through Banff again. According to John Acorn's **Damselflies of Alberta**, 3 of the damselflies with the most limited distribution in the province occur in the Banff area, and the first provincial records of all 3 were those of Edmund Walker. These are: **Vivid Dancer** (*Argia vivida*); **Western Red Damsel** (*Amphiagrion abbreviatum*); and **Pacific Forktail** (*Ischnura cervula*). They are very beautiful and very different from each other; in the summer if you look carefully you can find one or more of these species at Vermilion Lakes, the Cave and Basin, or the Valleyview-Middle Springs Wetland.

It was just dumb luck that I stumbled across an ice bug, something that triggered my curiosity and pushed me to learn more about it. But what really matters is that this was so close to home, reminding me that treasures will always be found if we keep looking.

* His contributions were recognized in a Royal Ontario Museum publication **Centennial of Entomology in Canada 1863-1963: A Tribute to Edmund M. Walker**, from which much of the information in this article is taken.

Miserable little *Dendropupa*

Brenda Lepitzki

In October we had a chance to explore an area that in some respects was strangely familiar to us. Towering cliffs displayed interesting rock layers, seams of coal lay nearby, and at our feet were fascinating fossils from the Carboniferous Period 300 million years ago. We felt at home in this place, Canada's newest UNESCO World Heritage Site. The salty air, however, and the need to keep an eye out for the returning tide reminded us that in fact we were far from our back yard.

We had ventured down to the beach at Joggins, Nova Scotia, to experience the exceptional fossil cliffs and the Bay of Fundy. Above us was the new visitor centre, built on the reclaimed site of the Old Joggins No. 7 Coal Mine, mostly using power generated from the site's wind turbine and solar systems. At risk of sounding like an advertisement for the area, we would highly recommend a visit if you are in the neighbourhood.

This is the place where in 1852 Sir Charles Lyell, a contemporary of Charles Darwin, and Sir William Dawson found amphibians and

reptiles entombed within upright fossil trees. Here Dawson revealed the first true reptile that was the first vertebrate to reproduce on land (one of the most significant events in the history of life on earth) and the ancestor to the dinosaurs of 100 million years later in time. Also, the large fossil unionid clam *Archanodon westoni* found at Joggins may be the missing link to current day unionid clams. These coastal cliffs preserve *in situ* the most complete fossil record of terrestrial life from the Pennsylvanian "Coal Age" in the world, and the area has come to be known as the "Coal Age Galapagos". The subject of research and writing and scientific thought since the 1840's, this site continues to provide new discoveries thanks to erosion by the powerful Bay of Fundy tides, the highest in the world.

But it gets better than that. We were excited to see several fossils of the world's oldest known land snail, *Dendropupa vetusta*, protected in the visitor centre. This tiny fossil helped provide the proof Charles Darwin was looking for about the terrestrial origin of coal. This land snail was also central in a contentious debate about evolution between Bishop Samuel Wilberforce and supporters of Darwin's theory of progressive change. Wilberforce, in a review and criticism of "The Origin of Species", chided Darwin about "this miserable little *Dendropupa*". Darwin was clearly pleased when he exclaimed in a letter to Lyell "What a fact about the Coal Land Shells!!!" And, I'd have to say, I'm pretty pleased that a snail played a definitive role in our understanding of evolution and paleontology.

Among the highlights of the trip to Joggins was seeing a caricature of *Dendropupa* - outlined in lights on the telephone poles, as the hook to get you to start the visitor centre's video; it's the star of this video, and appears on locally produced, hand knit sweaters. I wonder if we'll ever see the Banff Springs Snail up in lights?



Snail in lights.

Photo: D. Lepitzki

Middle Springs Corridor News

Peter Duck

It's approaching the time of year to listen for the local Barred Owls (*Strix varia*) to start calling in late evening but no news on that front yet. Maybe we will hear them in a few weeks when the snow becomes denser and the trapped CO² at the ground begins to build up under the snow. The owls may become more active when the voles start popping up to the snow surface to risk talons in exchange for a breath of fresh air.

A Bow Valley Meadow

Colleen Campbell

Four times a week since July, I have walked across a particular meadow regardless of conditions and time of day. It's a place car-trapped people drift past slowly, scanning for silhouettes of mega-fauna and unaware of their own indifference to the splendors of the meadow and the intimate clues it holds to the very creatures they seek.

During most of the summer, the sturdy grasses stood tall enough to hide a bear or the passage of a few wolves. On my traverse of the meadow along a trail periodically shared by others creatures there were places where I, too, was hidden in the tall growth.

As summer passed, trails followed habitually by other creatures appeared, crossing my route, and curving away from view, their scribes unseen and unknown. Occasionally the droppings of an elk or a bear or a wolf punctuated my own path, reminders that I am an interloper. The trails, the scats and occasional clusters of ungulate beds cautioned me that the meadow has many wild keepers.

Some days were wet and the rain sometimes teamed with wind to telegraph shimmers from the length of the upright stalks, points of light flashing, even under a laden sky. Though sensitive to the ephemera of weather, the stalks stood robust and tall until late September when, paling in colour, great shanks of grass began to lie down in a semblance of unruly blond hair.

Into early October, lingering asters punctuated the view with subtle purple. And as the grass hunkered closer to the ground, it became the palette against which the spicy-coloured autumn leaves and the branches of a few small birch and cinquefoil were revealed. Even into November, there was green hidden in the tangles, close to the yet unfrozen earth. Where the trail passes through a stand of aspens, the grasses refused to fall, apparently determined to persist as vertical sentinels until persuaded by a heavy snowfall to change position.

Some mornings the meadow breathed a heavy mist that swirled about me, almost audibly as I walked. Until mid-November, the ground beneath my tread was soft and accepting and I had to remember to announce myself.... just in case. Even in the afternoon, light glinted off the droplets accumulated in the tangle and little light flashes caught my eye, sunlight reflected back from the complicated fallen tangles.

It took months for the metamorphosis from gentle unnamed greens of summer to magnificent golds and bronzes of late autumn, and eventually to the veiled frosted landscape of late-November. Now, the meadow lies under a snowy quilt, grass stalks sticking through like bits of ticking to remind me of the complex ecology beneath the snow. Each day I find new signs of others. A moose traveled my established trail, its tracks overprinted by those of two following wolves. Later a coyote passed in the opposite direction. Across my trail are those of elk, lacing haphazard patterns between pawed areas where they have searched for food or clusters of beds. Some of those trails are also over-traced with a line or two of wolf prints.

Every day, the meadow shares new stories. After Winder Solstice it will respond to the light of longer days, eventually to the warming air of spring and the nurture of the melting snows to stimulate new cycles and stories analogous to last year's. And threads of people will continue driving past, possibly wondering why they never *see anything* in that meadow.

P.S. December 9th

I found fresh moose tracks heading north out of the meadow. They crossed the road and continued north. When I arrived at the tracks, a very large grizzly bear was feeding on grain less than 200 feet east of my site. Needless to say, I left without checking my traps and walked back to the truck, checking my back-trail frequently, just in case my brief presence was detected and the bear became curious.

P.P.S. December 16th

After six days of seriously cold weather I was surprised to discover fresh tracks of an apparently large grizzly bear, leading from the road into the meadow. I found where the bear crossed from north to south, the tracks undisturbed by tread marks.... and undisturbed by the persistent wind. They followed my regular trail across the meadow for 30 or 40 metres then veered to the east into dense bush. It seems the oil-rich grains along the rail and perhaps a few scraps from wolf kills in the area offer enough food to contradict the usual urge of a grizzly bear to sleep through such cold weather and short days.

Book Review

Mike McIvor

Into a Wild Sanctuary: A Life in Music and Natural Sound. Bernie Krause. Heyday Books 1998

This is the autobiography of a man who has been a pioneer in the fields of electronic music and bioacoustics. It traces his journey from a childhood in Detroit where he discovered an inexplicable attraction to the natural world at the same time he was learning from his parents that nature was alien and to be feared; through a career as a guitarist and a folk musician in the 1960's, including a short stint with the Weavers in some of their last performances; past a period of intense involvement with synthesizers in the early days of their development, as a creator and producer of these new sounds, especially for movies and commercials; to a PhD in acoustic ecology and a life devoted to exploring the natural soundscapes of the world, recording them, bringing the beauty and the plight of many, varied ecosystems to the attention of audiences largely disconnected from natural sound.

He began nature recording in the customary manner by trying to isolate the voices of individual animals much as we would expect to hear on a tape of bird songs. But before long, as he listened more carefully he realized these voices couldn't be severed from their context. Behind them, enveloping them, was a symphony of sound produced by other insects, birds, mammals, amphibians. And that symphony was intimately connected to its specific place. He coined a term for this: **Biophony** – "*the combined sound that whole groups of organisms produce in any given biome*".

Every place has its own, unique sound signature. According to Krause, organisms participating in the biophony divide up the acoustic spectrum into niches that can actually be measured by time (rhythm) and frequency (pitch). Each sound producing species finds the slot from which its voice may be heard, unimpeded by others. Territory, he suggests, is more than physical, it is aural as well, another dimension to be added to the traditional definition of habitats or ecosystems.

As both predators and potential prey, early humans were far more attuned to the world around them, than are their modern counterparts. In a few remaining, truly remote parts of the planet,

people we often refer to as “primitive” – even though when it comes to being at home in the places where they live, they are far more advanced than most of us – still navigate their landscapes as much by sound as sight. The current version of humans as almost exclusively visual creatures is relatively recent. Krause believes something vital to humanity is being lost as connections to the natural world through our other senses, lapse.

It is intriguing to consider the possibilities put forward by Krause that, not only is the sound signature of a place a key to its identity, it may be an indicator of its ecological integrity. If he is correct about the division of the acoustic spectrum into vocal niches, then it is most likely that when human-caused noise, or anthrophony – a term not used in this book but in subsequent work – is imposed, it will interfere with part of the spectrum already occupied, compromising the flow of information. Further investigation of these concepts is underway; in 2002, several years after his book was published, Krause was invited by the U.S. National Park Service to direct a project sampling environmental sounds in selected locations in Sequoia and Kings Canyon National Parks. And an article by 3 scientists from the University of Alberta published in a recent edition of the journal, *Conservation Biology* indicates that in their study area in the boreal forest, total songbird density was 50% higher in the vicinity of noiseless energy facilities than near noise-producing sites.

Into a Wild Sanctuary contains details of some of the highlights – and lowlights – of the author’s life, including exciting as well as not so pleasant memories of the music and entertainment business; using sound to rescue a humpback whale that had strayed into San Francisco Bay, far from the open ocean; recording mountain gorillas and other wildlife around Karisoke, the late Dian Fossey’s camp; and brief snapshots of recording trips to other places, both exotic and close to home. He also writes about synthesizing music and natural sound to create sound sculptures. But what has brought me back to this book more than once, are the insights into this other dimension: the soundscape, the unseen part of the world. It has made me listen and think in different ways.

The Bow Valley Fund: a message from the treasurer.

Shelley Mardiros

Mike and Diane McIvor’s passionate interest in the flora, fauna and natural landscape of their adopted valley has, ironically, led them to spend a large proportion of their lives indoors in meeting rooms or public hearings, at their desks and computers, speaking and writing and fighting on behalf of wildlands. Recently, a group of BVN members conspired to award Mike and Diane McIvor a trip to Costa Rica in appreciation of the duo’s four decades of conservation activism. The conspiracy did not quite succeed. Mike wrote in a letter of thanks that “*words cannot express the overwhelming sense of gratitude and humility we feel*”, but then gracefully declined the award:

“The natural splendours of Costa Rica would mean a lot to us but those of the Bow Valley - our home - mean so much more. As our explorations around here have intensified and our interests have broadened beyond spectacular mountain scenery to the life within it, beginning with birds and plants, then on to amphibians, butterflies and, more recently, moths, dragonflies and damselflies, wolves and elk, grizzly bears and snails, ferns and mushrooms, we have realized we are barely scratching the surface of this part of the world. One lifetime each will not be nearly enough but it will

have to do. And we have chosen to continue scratching ever deeper right around here. “

Mike & Diane concluded: “*Therefore, with utmost respect we request that you consider re-directing your generosity so that it flows, not directly to us, but to this place we love. Working together we could identify and support a project, or projects, that would either improve protection of the natural landscape or improve the opportunity for people to understand and appreciate it, or both.*”

The original donors have indeed donated the trip fund to the Bow Valley Naturalists, and, as treasurer of BVN, I have set up a segregated “Bow Valley Fund”, which is currently invested in cashable term deposits (and official receipts will be issued.) BVN members are invited to contribute to the fund, and we especially welcome creative ideas for a meaningful project that would support BVN’s goals of conservation, education, and advocacy in the Bow Valley. Sincere thanks to the individuals who conceived this gesture and to the McIvors who, characteristically, re-shaped it.

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