BOW VALLEY NATURALISTS
NEWSLETTER, WINTER 2010
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PROGRAMS/EVENTS

Wed., January 27 7:30 pm.

A Park Warden's Life in Music and Poetry
with Scott Ward, Edwin Knox, Ray Schmidt.
Location: Banff Seniors Centre.

Wed., February 24 7:30 pm.

The Big Little Wildlife Show: Big Stories about Small Animals in the Canadian Rockies with Joel Hagen and Nadine Fletcher.
Location: Banff Seniors Centre.

NOTE.
February 24 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 - evenings) or Heather Dempsey (762-3056 - evenings), or any member of the Board before mid-February.

REMINDER!

Memberships are now due for 2010.

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 24 7:30 pm.

Coexisting with Bears in Other Parts of the World: The Altai Region of Russia and Trentino, Italy with Dr. Mike Gibeau.
Location: Banff Seniors Centre.

Wed., April 28 7:30 pm.

To be announced.
Location: Banff Seniors Centre.

2009 Banff-Canmore Christmas Bird Count

Mike McIvor

The 35th anniversary of this CBC took place on a fine winter day with 55 people participating. The morning sky was grey to the east but showed promise of clearing from the west and by early afternoon almost all the cloud had disappeared. The temperature hovered around zero throughout the day and although it was windy at times in some parts of our circle, everyone seemed to find the conditions a major improvement over the cold we experienced on last year's count.

We found more birds than last year but totals both for species and individuals remained significantly below the long-term averages. With 39 species we managed to exceed last year's record low total by 3 but were still 5 below the average. And while the total of 2252 individual birds was just over 400 more than last year, it was almost exactly 400 below the average. Another relatively quiet winter in this part of the mountains.

Here are some of the noteworthy results. 121 **Mallard**: 267 fewer than last year and after many years in the mid-hundreds as well as 4 years in the early to mid 90s when there were more than 1000, this is our lowest count since 1976. 42 **Common Goldeneye**: This was quite a rebound from 10 last year (and it is worth noting that the section of river between the east park gate and the Canmore Golf Course was not covered this year) but as an indication of much higher numbers in earlier years, it is 63 below the long-term average.

A **Virginia Rail** was recorded at the Cave & Basin for the 5th time and 3rd year in a row. Knowing a young rail had been observed this past summer, the first breeding record for this species in the park, may have placed a small amount of additional pressure on the people who traditionally cover this area to find at least 1. Coincidentally, this is the 3rd year in a row that not 1 Killdeer has been found at the Cave & Basin or anywhere else.

Last year we reported 8 **Three-toed Woodpecker** and when I double-checked the Christmas Bird Count edition of American Birds (2008-2009) I discovered this was the highest count of this species for North America. We'll have to wait and see whether the 11 we found this year will allow us to repeat with the highest count for this species on the continent.

Two species occurring in lower than usual numbers were **Clark's Nutcracker** – 19 birds is the lowest since 1993, while 71 **Black-capped Chickadee** is a new record low. On the other hand, 31 **American Dipper** represented a welcome recovery from last year's record low of 9 and is the highest total in the last 6 years. And 24 **Townsend's Solitaire** set a record beating the previous high by 7 birds.

The main reason the number of individual birds was up from last year is because we reported 822 **Bohemian Waxwing,** 556 more than last year and 35% of the day's total.

Although it is not unusual to see **Grey-crowned Rosy Finch** in the winter, the flock of 36 sighted along the railway tracks near Carrot Creek was the first time we have seen this species on the day of our count since 1997.

Next year's Banff-Canmore CBC will be different and interesting. They always are. The Bow Summit Count was not done this year.

Banff-Canmore Count:

Green-winged Teal	10	Black-capped Chickadee	71
Mallard	121	Mountain Chickadee	110
Common Goldeneye	42	Boreal Chickadee	45
Barrow's Goldeneye	cw	*chickadee sp.*	51
Goldeneye sp.	3	Red-breasted Nuthatch	19
Common Merganser	3	White-breasted Nuthatch	3
Bald Eagle *adult*	3	Brown Creeper	13
Ruffed Grouse	1	American Dipper	31
Virginia Rail	1	Golden-Crowned Kinglet	2
Wilson's Snipe	1	Townsend's Solitaire	24
Rock Pigeon	73	Bohemian Waxwing	822
Northern Hawk Owl	cw	Northern Shrike	cw
Belted Kingfisher	4	*Sparrow sp.*	2
Downy Woodpecker	6	Dark-eyed Junco	4
Hairy Woodpecker	3	Gray-crowned Rosy Finch	36
A. 3-toed Woodpecker	11	Pine Grosbeak	41
Pileated Woodpecker	2	White-winged Crossbill	3
Gray Jay	27	*Crossbill sp.*	2
Blue Jay	6	Common Redpoll	40
Clark's Nutcracker	19	Hoary Redpoll.	3
Black-billed Magpie	122	*Redpoll sp.*	1
American Crow	3	Pine Siskin	1
Common Raven	317	House Sparrow	150

CW: reported count week

TOTAL SPECIES: 39
TOTAL INDIVIDUALS: 2252

ISSUES

Mountain National Park Management Plans

The deadline for public comment on draft new management plans for each of the 7 mountain national parks was January 8, 2010. Many members of the public took the opportunity to express their displeasure with the way the drafts were conceived and structured and with Parks Canada's apparent shift in direction and priorities. Soon, we will learn whether senior managers with Parks Canada were listening. And in the meantime, anyone with ongoing concerns should not hesitate to write the Parks Canada CEO, the park superintendents, the Environment Minister and the Environment critics with the opposition parties.

Draft Park Plans Cool to Global Warming

Mike McIvor

One of the truly surprising things about the draft management plans for the mountain national parks, recently available for public review, is how they paid so little, or no, attention to global warming. It's not as if there hasn't been growing public awareness about this issue and it certainly is not as if Parks Canada is somehow blissfully unaware.

In 1997, The State of the National Parks report identified climate change as a stressor causing significant ecological impacts in 7 national parks. A study published in 2000 titled Climate Change and Canada's National Parks was the result of collaboration between Parks Canada and the University of Waterloo to better understand future implications. This and subsequent studies pointed towards a variety of effects that could occur over the next decades. Examples include: the loss of some high alpine species of flora and fauna as vegetation zones shift; increasing elevation of the snowline and continued retreating of Banff's glaciers; temporary alpine ponds may dry up and permanent ponds may become temporary; water temperature in lakes, rivers, and streams will rise; and water volumes in rivers will decrease over time.*

Given all this, it was reasonable to expect some concentrated effort in the draft plans to address this matter. BVN reviewed and commented on 5 draft plans – the 4 contiguous parks and Waterton Lakes. Here is what we found. For Banff, there is a very promising statement in a section where the "*most pressing challenges and opportunities"* were identified. One of these was "*the need to anticipate and plan proactively for the impacts of global climate change on ecosystems, tourism and hydrology"*. This was on page 11 of an 80 page document but unfortunately, while it was the first mention of the subject, it also was the last. No objectives, no directions, no proposed actions, no means for measuring progress. Nothing to suggest it was taken seriously.

The Jasper draft tried a little harder. It observed that our understanding of how climate change is likely to impact park ecosystems is a major knowledge gap. Then it provided a statement of direction to improve our understanding not only of the impacts but also of management strategies required to adapt to climate change. And it proposed using visitor experience and education opportunities to communicate messages about a changing climate to the public. We were impressed until we looked for evidence of genuine commitment in the form of indicators for measuring progress in carrying out this direction and found none.

But the Jasper draft, and even the Banff draft, was ahead of those for the other parks. The draft plans for Kootenay, Yoho and Waterton Lakes dealt with this issue by ignoring it completely. In our comments we tried to impress on Parks Canada the seriousness of this planning deficiency, describing it as a "*gaping hole"*. And in at least one set of comments we recommended Parks Canada determine the current carbon footprint for human use in the parks and establish targets and timelines for aggressive action to reduce it. National Parks should be models for human endeavor in this regard. We should continue to demand leadership from Parks Canada.

* **These scenarios are depicted in Climate Change and Banff National Park: Implications for Tourism and Recreation by Daniel Scott and Brenda Jones, University of Waterloo. 2005**

Park Management Plans, Acts, Guidelines, Policies and SARA

Dwayne Lepitzki

Some of us spent the days leading up to and after the winter Holiday Season reviewing draft management plans for the mountain and other national parks. A consistent theme, especially in the mountain park draft plans, was a shift in the substance of the plans. They now appear to be less prescriptive and more general than in the past. Being less prescriptive means the direction in the plans is more open to interpretation. A criticism identified in each of the plans was the lack of public consultation in this major shift in national park planning. To quote BVN's review of the Banff plan (available on the BVN website): "the very character of national park plans has been quietly altered by new Management Planning Guidelines developed internally by the Parks Canada Agency."

Now, a little lesson in how governments work. Canadian Laws are based on Acts, passed in Parliament. Because Acts are drafted and vetted by lawyers, the language is open to interpretation. Regulations, Policies, and Guidelines are written so that the provisions for the Acts can be implemented. As suggested above, sometimes those guidelines are written with no opportunities for public review and input. Sometimes, public consultation is part of creating policy. This is the case for the *Species at Risk Act* (SARA).

Canada passed endangered species legislation (see the series of articles in past BVN newsletters) in the form of SARA in the summer of 2002. Typically Acts require periodic review. Section 129 of SARA says that within five years, a committee is to be formed to review the Act. That process is now underway.

One of the ways the review is happening is through public consultation on the draft policy suite for implementing SARA. The draft policy suite and the means to provide comments are at www.sararegistry.gc.ca/document/default_e.cfm?documentID=1916. A copy of SARA is also available at the SARA registry website. The public consultation period on the draft policy document extends from 7 December 2009 through 5 February 2010.

The draft policy suite, the first in the Policy and Guideline Series of SARA, outlines the five steps in species conservation: assessment, protection, recovery planning, implementation, and finally, monitoring and evaluation. Each of the five steps is discussed in a similar fashion, with definitions, guiding principles, roles and responsibilities, and specific policies presented. The overall objective of the policy suite is:

- to clarify the intent of authorities and provisions under SARA;
- to establish guiding principles for implementation of the Act; and
- to clarify the understanding of roles and responsibilities for various jurisdictions involved in species at risk protection and recovery.

So, here is your opportunity to give direction to the government on how to implement legislation to protect species as risk. Please get involved.

The Chair of COSEWIC (Committee on the Status of Endangered Wildlife in Canada), the group responsible for the first of the five steps of species conservation, presented some COSEWIC perspectives to the Standing Committee on Environment and Sustainable Development in May 2009. This is the committee responsible for reviewing SARA. The transcripts of the presentation and the fireworks that erupted over the non-re-appointment of a long-standing and internationally recognized expert on amphibians are available on the Parliament of Canada website: http://www2.parl.gc.ca/HousePublications/Publication.aspx?DocId=3930308&Language=E&Mode=1&Parl=40&Ses=2#Int-2786880. The transcripts give insight on exactly how these committees work: interesting, and troubling, reading.

Many More Dead Black Bears

Mike McIvor

The Fall 2007 BVN newsletter carried an article titled Just Another Black Bear. It brought attention to the number of black bears killed that year on the highways or railway in the Kootenay, Yoho, Lake Louise Field Unit. We suspected this was the tip of the iceberg but could not picture the size of that iceberg until we received a copy of a report released by Parks Canada a week ago. It is a 20 year summary of black bear mortalities in the Mountain National Parks: 1990-2009.

Over this 20 year period, a total of 449 human-caused black bear deaths occurred in the mountain parks – an average of 22.5 bears per year. And these are the minimum known mortalities. It must be noted the authors of the report strongly caution readers not to draw conclusions about the impact on population demographics and viability. But even if the long-term persistence of black bear populations in these national parks is not threatened the slaughter is appalling.

The great majority – 80% - of the deaths occurred on the highways (238) and railway (125) which means there is plenty of responsibility to go around; from Parks Canada that manages the highways, to the Canadian Pacific Railway, to individual drivers. The railway claims to be cleaning up its grain-spill act but has a long way to go. Parks Canada has announced plans to spend several million dollars on mitigations for the Kootenay Parkway (93S) but must do much more to address this problem. (We don't want a dead black bear to replace the beaver as national park symbol.) And individual drivers should be encouraged, or coerced through adequate enforcement, to slow down. Black bears belong in these landscapes; they deserve a better chance from us.

Of Wild Things

International Year of Biodiversity

Mike McIvor

2010 is the 125th anniversary of the first land reserve for what, ultimately, became Banff National Park. And by extension, that act established what would be the beginning of Canada's national system of parks. An anniversary worthy of celebration and a fine time to re-affirm national park values as they have evolved over many decades.

2010 also has been declared the International Year of Biodiversity by the United Nations. This holds particular meaning for Canada

since we were the first industrialized nation to sign the International Convention on Biological Diversity in Rio de Janeiro, Brazil, in 1992. The Convention was negotiated in response to the world-wide loss of biodiversity recognizing this as one of the most significant threats facing the global environment.

Parks Canada's primary policy document, Guiding Principles and Operational Policies, states that through its administration of protected heritage areas, "*Parks Canada plays a major role in implementing the Convention on Biological Diversity"* (p. 9). It also asserts that national parks "*are becoming increasingly important in national and international efforts to maintain biodiversity and genetic resources"* (p. 33).

With this in mind, two months ago I wrote Alan Latourelle, CEO for Parks Canada, and Kevin Van Tighem and Pam Veinotte, the field unit superintendents responsible for Banff National Park, to inquire how Parks Canada planned to mark the International Year, both in Banff and across the national park system. I pointed out that opportunities to educate the public about biodiversity were boundless.

To date, I have not received a reply so I have no idea whether Parks Canada has any plans in place – or in preparation. But biological diversity also is worthy of celebration and protection. Whether or not Parks Canada intends to participate in the International Year, we all should use the occasion to learn more about biodiversity, in our own backyard or globally, and do what we can to preserve it.

Have you ever heard of aerial algae?

Brenda and Dwayne Lepitzki

Over the past decade and a half, we have observed some strange orange plant-like growths (see photo) on a cliff face above a cave while doing our thermal springs research. The largest are about the size of a dime. They are bright orange and fuzzy. We only see them in abundance on one cliff face. The thermal spring water on the floor of the cave ranges from 17 to 29.6° C. We have also seen them much smaller and not as abundant on the cliff face of another mostly extinct thermal spring. We consulted our plant and mushroom books and photographed them numerous times over the years. We consulted the 2003 report on the bryophytes and mosses of the thermal springs. We talked to the McIvors – local mushroom aficionados responsible for the series of excellent mushroom photographs on the BVN website. They remained a mystery.

Just before the COSEWIC (Committee on the Status of Endangered Wildlife in Canada) Species Assessment Meeting in November, we decided to try one more approach. Dwayne would ask the co-chair of the Mosses and Lichens Species Specialist Subcommittee of COSEWIC. We photographed them once again. When the subject was broached on the first day of the meeting, the Mosses and Lichens co-chair was a little disappointed there were no specimens. Dwayne showed the pictures to other COSEWIC members a couple of days later. They too were intrigued and wondered what they were.

Then, the pictures were shown to the Mosses and Lichens co-chair. Instantly, he knew what they were: aerial algae. He has seen them before in the Canadian Rockies although more commonly in British Columbia - but never so robust, so large and colourful. They are most likely *Trentepohlia aurea*, another species without a common name.

Orange fuzzy growths are an aerial alga, most likely *Trentepohlia aurea*.
photo: Dwayne Lepitzki

Back home, we looked at another book in our library: the one on freshwater algae. Yes, they were in there all along. There are apparently 14 species reported from the United States, where the book was written. Other sources say it's also found in Europe and much further south. It's actually a green alga but the chlorophyll pigment is masked by the presence of large amounts of β-carotene, the same photosynthetic pigment that causes the orange colouration of carrots. They grow on moist stones, dripping cliffs, and on moist bark and leaves. The characteristic orange colour makes the algae conspicuous, especially when they occur as a felty-mat over large areas of rocky cliffs. In the southern U.S., the moist sides of trees throughout extensive areas are coloured orange by them. In humid situations in the tropics and subtropics, the alga becomes infested with a fungus to form a lichen called *Coenogonium*.

We'd never even known of aerial algae. The fuzzy orange growths are a small although amazing part of the biodiversity surrounding us. We really should do an all taxa inventory!

Has anyone else observed these in your wanderings through the mountains? If so, please contact us.

Early Frost: Late Leaves

Peter Achuff

This fall in many parts of Alberta, the leaves of trees and shrubs turned dark brown or black and have hung on the branches through the first part of the winter and into the new year. What happened? Why didn't we see the golden and red colours? Why didn't the leaves fall? It's perhaps best to explain this by looking at what happens *normally* and then at what happened this year.

Leaves turning colour from green to yellows and reds and then falling is part of getting ready for winter, a process termed *senescence,* which is triggered initially by shortening day-lengths (actually, longer nights but that's another story). During the growing season, chlorophyll, the green pigment that captures light to make food in the leaves, is continually broken down and re-made within the leaf, maintaining the green colour. In the fall as leaves senesce, chlorophyll synthesis stops and the green colour fades, revealing the yellow and orange colours that have been there all along, masked by the chlorophyll. Red colours also form, fueled by sugars that remain in the leaves. Once senescence begins, its rate

and the colour intensity are influenced by temperature (cooler nights promote more intense colours), light intensity (stronger light increases colour intensity), and moisture (water stress generally increases colour intensity).

photo: D. McIvor

As a leaf shuts down for winter, it transfers nutrients - especially nitrogen, a scarce resource – back into the trunk for winter storage. Once this nutrient export is complete, an *abcission layer* forms at the base of the leaf stalk. The abcission layer typically consists of several rows of thin-walled cells extending across the leaf stalk. Biochemical processes then weaken the cell wall and the combination of leaf weight and wind force soon breaks the connection, and the leaf falls.

Incidentally, some of you may recall oaks, native to other parts of North America, with leaves hanging on into the winter. Oaks don't form an abcission layer during senescence. The leaf remains tethered to the stem by strong tissue and it takes longer for the stalk to weaken and the leaf to drop. Hanging on is normal for oaks. What happened in 2009? Day-lengths shortened as usual from late June onward and by mid-September subalpine larch near treeline was its usual spectacular golden colour. The leaves of woody plants at lower elevation still were generally green, although some early change was evident. Temperatures also cooled gradually, although September was a bit warmer than average and senescence likely was occurring somewhat more slowly than average. Then, between the 9th and 12 th of October, temperatures dropped sharply into the –20C range for several nights. These unusual temperatures exceeded the frost hardiness of the leaves. Ice crystals formed within the leaf cells and killed them. While there is likely variation in frost hardiness among species and from year to year, aspen leaves at this time of year generally can tolerate temperatures down to about –6C. With the killing temperatures this fall, senescence was stopped suddenly – before colour formation or abcission layer development were complete. Thus, greenish black or brown leaves still hanging on the branches.

Are there other possible effects of this early killing frost? With no measurements of the actual conditions in various species and locations, I can only speculate. It seems likely that nutrient export from the leaves was not yet complete and plants will have lost some of the food made during the growing season. However, the amount of loss is relatively small and most plants, if in reasonable condition otherwise, likely can tolerate the loss.

What about other tissues, especially leaf and flower buds, which form at the end of the growing season in preparation for next year? As part of senescence, buds also undergo changes that prepare them for winter temperatures by becoming frost hardy and dormant. Information is limited but aspen buds often seem to develop frost hardiness of –20C to –40C by early October. Was frost hardiness developed to this degree this year? What about other species? I have no information on that but it's possible that some buds may have been damaged. Perhaps damaging effects will be apparent next spring. In any case, it seems unlikely that many plants will have been killed. Woody plants have ways of coping with such setbacks, which are uncommon but not unprecedented.

Dr. Peter Achuff is a botanist, now retired from Parks Canada but holding a position as Scientist Emeritus.

Tales of Warm Life in Cold Stone

Peter Duck

Last fall Diane McIvor showed me some pictures she took of some beautiful funnel or horn-shaped fossils in the piles of stone that now form the embankment of the highway beside Third Vermilion Lake. The fine detail of these images brought back memories of a story I was fond of telling visitors on chilly morning walks in Johnston Canyon. There is a spot just below the Lower Falls where I would often ask guests to press their hands or cheeks against the rock on frigid mornings. With their eyes closed they could imagine a tropical climate with warm seas, shorelines and shallows teeming with life. Could they imagine a coral or evidence of some other life form lying on the sea bed and gradually being buried by shifting sediments? With this image in mind they could then open their eyes and imagine what the ghost of that coral would think suddenly looking out of its once warm marine tomb into this frosted grotto. And there in the wall beside their cheeks would be the fossil - similar in shape to Diane's pictures.

What a journey that organism and evidence of its remains has made. In a sea bed somewhere near the equator it was buried and pressed downwards into the warmth of the earth with its bed slowly drifting northwards all the time with the continental whims until it felt the shake, rattle and slide of earthquakes and was pushed up and north-eastwards above the level of the sea to rest encased in rock well above sea level at 50 degrees latitude. Perhaps erosion allowed it to initially peek out from the walls of a narrow vertical cave into the pitch dark. But eventually the cave lost its roof, perhaps to a glacial rasp, and here it is gazing into the cold.

Examples of these horn shaped corals can be spotted in the walls of Johnston Canyon. But you need not go that far. The local sequence of limestone strata where these fossils are most common are known as the Livingstone, Mount Head and Etherington Formations and are about 340 million years old. These formations poke through the earth in many of our favourite haunts. Diane found her horn coral fossils at Third Lake because the rock ridge that the highway is blasted through above the lake is Livingston Formation. But she could just as easily have been walking the crest of Tunnel Mountain. Along the summit ridge and especially near the elephant trunk tree is a slab of Livingstone worn smooth like the rest of Tunnel's top by the passage of glacial ice. This slab is a veritable nest of horn corals. The same rib of Mount Rundle formed by these formations is the site of the fossil rich and well-known bouldering rocks (Rundle Rock Garden) by the Golf Course Road. Those who aspire to greater heights can look along the upper most reach of the hikers' route to the top of Cascade Mountain. This location, near

the summit of Cascade, allows an old mountaineer to conveniently wave younger members of the family onwards and upwards with the excuse of admiring rocks while sucking oxygen. Having left the flowers that usually provide this excuse well below one must be creative. The west slopes of Mount Rundle and corresponding slopes facing west above Spray Lake are dominated by these formations so adventurers may be familiar with similar fossil finds in these locations.

Diane's corals seem to be examples most likely of those groups shown at the bottom left of page 200 in Gadd's Handbook of the Canadian Rockies - *Ekvasophyllum, Canadiphyllum, and Faberophyllum*. These corals grew up or out from the substrate in elongated cone shapes. Depending on the position they were in when they were buried and the way in which the rock was eroded they may be exposed to us in a variety of cross-sections making similar fossils appear very different. Think of sawing a log in as many different angles as possible. Each slice may reveal a different pattern but it is still the same piece (species) of wood. So it is with the way these fossils are revealed to our eyes.

Horn corals and other common fossils remind us of the fact that much of the rock that surrounds us in the Bow Valley is made from the leftovers of life. Next time you find yourself staring at the laces of your hiking boots cast your eyes a little to the side and see what life springs eternal in the rock. On a cold day press your cheeks against the rock and imagine the tropical warmth!

An Alien Came to Dinner

Brenda Lepitzki

I made a surprising discovery in October 2009. Unbeknownst to me, we had a guest staying on our deck all summer. In fact, I had to save the alien from drowning in the saucer full of water under my basil plant. I had toyed earlier in the week with the idea of bringing the plant inside but before I acted, it had succumbed to the cold, snowy weather that surprised many gardeners this fall. Our guest was very forlorn and certainly not far from death had I not relented and brought the plant and saucer inside for easier investigation. Within the hour, however, it had come back to life, stretching from a blob the thickness and shape of the end of a small pencil to more like an entire small pencil. It was a beautiful light gray colour, with two contrasting darker, brownish black stripes on its mantle and along most of its body length. Two long brown tentacles cautiously protruded from the front end, followed by two more tiny tentacles much lower down, closer to the ground. I could just see the edge of what would later give our alien its name, a perfect porcelain white foot. All in all, quite a handsome alien.

Quickly I improvised a container to keep this creature away from my houseplants. An inverted pickle jar over the plant pot enclosed the plant, some soil, and our guest quite neatly in a makeshift terrarium. As quickly as Whitefoot began to move around and explore, the questions tumbled out of my mind. How long had it been there? Where did it come from? I was pretty sure this was not a native mollusc. I grabbed a book off the shelf and began working through the key to the slugs of BC, and some answers started coming.

Whitefoot is an alien. Known to science as *Arion (Carinarion) circumscriptus*, the Brown-banded Arion is native to Europe, introduced in British Columbia and now Alberta. It is common in many populated places throughout B.C., often numerous in gardens, disturbed sites, and woods near human settlements. We also found this species of Arion in Waterton Lakes National Park near the townsite campground while looking for other molluscs in September 2008.

Brown-banded Arion from Waterton Lakes National Park

Photo: Dwayne Lepitzki

Earlier in the summer I gave up trying to start basil from seed, and instead purchased an established plant from a local garden centre. I suspect Whitefoot began life as an egg or tiny slug in the soil or on the plant, which probably came from a larger nursery supplier in British Columbia. How many other Brown-banded Arions came to

Banff, or went wherever the nursery plants were sent, we'll never know. But it certainly speaks volumes about how easily aliens are transported to new habitats by human enterprise. You may recall that in the fall of 2008 a Chocolate Arion (*Arion rufus*) named Bigfoot was found in Harvie Heights after an early snowfall. It is impossible to say how often and how many of these kinds of alien introductions occur in the Bow Valley. However, the better you know the natives, the easier it is to pick out the newcomers and intervene before ecological damage could occur. These introductions are not the same as natural introductions, being facilitated over longer distances and shorter time frames than nature would normally enable, and should be prevented.

Whitefoot now enjoys life in the plant pot terrarium, sampling a variety of vegetables and mushrooms. Instead of going to school, as Bigfoot did when it went to live at Grant McEwan College (now University), this enigmatic creature is enriching our knowledge of mollusc life history and behaviour.

My Garden of Earthly Delights

Colleen Campbell

In mid-December, local temperatures plunge and the land becomes quiet except for the music of snow crunching underfoot. Everything finds shelter.

One morning, as I putter, I become aware of shadows ghosting past various windows. In my peripheral vision, I realize some small birds are bounding about in the garden and I pay a little more attention. Once again there are many birds in the bare branches of the trees. My garden has become vibrantly alive.

The aspens are laden with a hundred Bohemian waxwings, resting after a bit of frenzied berry-picking in the Rowan, worrying at cones in the larch and finding a few seeds or insects on the birch trees. They are all puffed up to stay warm and are never truly still. One or two flit from one branch to another, causing the abandoned perch to bounce and telegraph a ripple effect to the ones who chose to stay. Those shaken by the first movers then cause further reactions as they all shift constantly in a slow wave of re-perching birds circling within the branches of a few closely located trees. It is all so prettily choreographed I am spellbound for the better part of an hour. Eventually, I leave, responding to a ringing phone; moments later I return to find the action in the trees has been replaced by stillness.

A short time later, I catch the silhouette of a small hawk flying low amongst the houses, searching for little flocks of birds, I'm sure.

Bohemian waxwings are amongst several bird species that winter in our area. They forage seeds from trees and bushes and leave their droppings elsewhere, possibly to grow when conditions are favourable. The snowy ground beneath the abandoned perches amongst my aspens is freshly stained with purple and red, dropped remains of the earlier feasting. The polka-dots are soon covered with wind-blown snow and wait for spring when some may grow and most will, at least, nourish the ground where they have fallen.

Reviews

A Different Kind of Silence

Mike McIvor

In our Winter 2009 newsletter I wrote a review of Into a Wild Sanctuary by Bernie Krause, a book in which he explores some fascinating ideas about the soundscape. I concluded that it had made me listen and think in different ways.

Then in Spring 2009 I reviewed One Square Inch of Silence by Gordon Hempton and John Grossman which is part of Hempton's campaign to protect natural soundscapes. He argues that silence is not the absence of sound, it's the absence of noise and that we should be very concerned about the loss of silence in wild places.

But a recent article in the journal Conservation Biology (Vol. 23, No. 5, 1320-1322) portrays another kind of silence – the silence that occurs in a landscape when a voice that contributes to what Krause calls its "*sound signature"* is heard no more. The author, Erik Beever, is a scientist who has been conducting research for a number of years on American pikas (*Ochotona princeps*) in the mountains of the Great Basin between the Rockies and the Sierras. He writes about the "*ecological silence"* he experienced as isolated populations of pikas disappeared while he studied them. Pikas are adapted to the cold of high elevations and vulnerable to overheating. These local extirpations in the Great Basin – and in the Ruby Range in Kluane National Park in the Yukon documented by other researchers – are attributed to global warming.

photo: Michael Shuster

Beever had first published his findings in 2003, but this article, six years later, is personal and reflective. He recalls an interview with a reporter who, after asking questions about the research, asked him what he felt when he discovered yet another formerly occupied site where pikas no longer could be found. Committed to the principle of scientific objectivity, he had responded that he never considered his feelings in relation to his work. But he began to think about it and over the course of the next few years reached the conclusion that it was possible to objectively observe and record data without denying his own visceral response to what he was observing. And he realized that what hit him the hardest was "*a pronounced awareness of silence*".

This wasn't silence in the sense of being free of anthropogenic noise, this was the silence that descends when something that

belongs in a landscape goes missing. For many of us, pika voices are an important part of what defines high country experiences around here. They might be used for defending territories and hay piles, communicating with offspring, or broadcasting alarms. According to other research, there may be as many as 7 different functions served by these vocalizations. No wonder their calls are heard so often when we are near the talus slopes that form their habitat.

Pikas are not good at dispersing. This means that if there are changes, such as warming, to the relatively narrow range of conditions they require in what are limited habitats to begin with, they really have no where to go. Will pikas in our part of the Rockies be pushed to the edge? Time will tell. Are they encountering thermal stress now? We can't know until studies are done and this kind of work doesn't seem very high on Parks Canada's agenda at the moment. In fact, remarkably, global warming doesn't seem to be much of a concern at all for the Agency.

Unlike habitat destruction, the environmental changes affecting pika populations in other mountain regions are not visible. But when organisms integral to a landscape are squeezed out of it, that lanscape, including the soundscape in the example of pikas, is diminished. We need to confront the causes of global warming and stall, if not reverse, its effects, so that our descendents may know the pleasure of hearing pika voices in the high country.

photo: Michael Shuster

Climate Cover-up: The Crusade to Deny Global Warming

reviewed by Shelley Mardiros

James Hoggan's "Climate Cover-up: The Crusade to Deny Global Warming" is a highly readable, sometimes riveting, account of a campaign to create controversy where none exists. None of the climate scientists doing research in their field and publishing in peer-reviewed science journals dispute that the human release of greenhouse gases is causing climate change.

Anthropogenic global warming is "an inconvenient truth" in Al Gore's phrasing, and it warrants major changes in how our world functions, changes that would be devastatingly inconvenient for the coal industry, the oil-and-gas industry, agro-business et al. And that's where the "other side" comes in. Taking a page from Big Tobacco's playbook, an industry with much to lose pours money into confusing the public's understanding of what objective scientific research has revealed. Some of the tactics are familiar to us, such as using foundations and "think tanks", funded by industry players but cloaked in a misleading name like "The Advancement of Sound Science Coalition", to spread misinformation. If there are scientists or journalists to be bought – and there are always a few – there's plenty of money to buy them, and to support their "work". (Not original scientific research, of course, but main-stream publications and speaking tours.)

Similarly, groups purporting to be "grass-roots" organizations are revealed to be industry-originated and industry-financed. There's even a term for this deceptive tactic: astroturfing. Other tactics for manufacturing doubt about the reality and disastrous consequences of global warming include the bold and unapologetic statement of falsehoods and distortions, including misrepresentation of scientists' views in a variety of ways. This is probably a good time to mention the SLAPP tactic. A Strategic Lawsuit Against Public Participation basically says: my lawyers can keep your lawyers in court until you're bankrupt. Truth ain't the issue.

Despite its well-documented analysis of egregiously deceptive practices, this book is not a downer. On the contrary, it is inspiring. It arms us with information about the ways that canny self-interested proponents can manipulate the media and public opinion, and challenges us to counteract their cynicism by becoming thoughtful and engaged citizens.

The only criticism I would make of "Climate Cover-up" is its rather pedestrian title. Unfortunately "Lies and the Lying Liars Who Tell Them" had already been taken.

(Both books are in the Banff Public Library and available through the Canmore Public Library.)

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