MUSKRAT EXPRESS

WILLIAMS LAKE FIELD NATURALISTS' NEWSLETTER

JANUARY + FEBRUARY 2024

The MUSKRAT EXPRESS **JANUARY 28, 2024**

The newsletter for the:
Williams Lake Field Naturalists
1305A Borland Road, Williams Lake BC, V2G 5K5

Membership fees: Family ($35), single ($30) or student ($10) memberships can be mailed to the above address. Please complete the membership and waiver forms available at the Nature Centre (250) 398-8532, muskratexpress@shaw.ca or the web site below. For more information about the club contact Margaret Waring at (250)398-7724 or e-mail muskratexpress@shaw.ca **Note: 2024 membership dues and forms were due on January 1st**
Williams Lake Field Naturalists Website http://www.williamslakefieldnaturalists.ca
Scout Island Nature Centre Website http://www.scoutislandnaturecentre.ca

Executive of The Williams Lake Field Naturalists: presidential Team Margaret Waring (Chairperson), and Don Lawrence (Scout Island affairs), secretary Nola Daintith, treasurer Katharine VanSpall and directors Peter Opie, Ray Hornby, Jean Oke, Cathie Hamm, Sean Donahue, Lara Roorda and Fred McMechan

Editors: Thanks to all of you who have contributed to this edition of the newsletter. Please expect your next edition of the newsletter early in March. If you have comments, suggestions or articles for the next Muskrat Express please contact Margaret Waring (398-7724), Jim Sims (778 764-2752) or e-mail us at muskratexpress@shaw.ca

ARIZONA SNOWBIRDS: Birding and Hiking in Southern Arizona

By: **Leo Rankin and Connie Haeussler**

Connie and Leo are avid birders and hikers who have made many winter trips to the Southern US. Please join them as they share stories and photographs from their snowbird adventures in Southern Arizona.

When: 7:00 pm on Tuesday January 30th

Where: In the Nature House at Scout Island Nature Centre
1305A Borland Rd. Williams Lake, BC

Cost: FREE! **Please register** as space is limited: email shemphill@xplorenet.com

We hope you can join us for this presentation!

Notice of Annual General Meeting

Friday evening March 22nd, 2024

This event will soon be happening and we hope that you are able to attend. Come to support and give input for your club. Enjoy a delicious supper and social event. Location is in the Scout Island Nature House. Evening will begin at 5:30 PM with Supper at 6:15. The Annual General Meeting (AGM) will be at 7:30.

There will be time for socializing and visiting and maybe some special activities too!

Bottle Depot: Recycle and Donate

Did you know you can support Scout Island Nature Centre by taking your containers, cans and bottles to the recycling depot on Mackenzie Avenue. Have them in a clear plastic bag and tell the employees you would like to donate them to Scout Island.

56th Annual Williams Lake Christmas Bird Count

By Phil Ranson

The 56th annual Williams Lake Christmas bird count on December 17th set another record with a remarkable 69 species. This is 7 more than our previous high set in 2008 and brought our all-time species total to 125. The high species count was due mostly to the mild conditions providing us with an ice-free lake allowing many water birds to stay much later than unusual.

As sometimes happens, although we had a record number of species our total numbers of birds was well below the 10-year average of a little over 5000. We counted 3583 which is almost 4500 less than our best year in 2021 where Bohemian Waxwings made up half those numbers.

After failing to find any new species last year, we added 2 new ones to the list; A Double-crested Cormorant was an unexpected find although it had been seen on the lake earlier in the month. A Canvasback was also making its first appearance on the count with a first December record. Both were part of a water bird contingent consisting of 17 waterfowl species, 2 grebe species, coots, heron and a kingfisher. We also had only the second count appearance for a Blue Jay, coming to a feeder in Wildwood, as well as Gadwall, Ruddy Duck and Horned Grebe on Williams Lake. Another rare appearance and the first in 38 years on the count was a Golden-crowned Sparrow at a N. Lakeside feeder.

Counting waxwings was relatively simple this year with a 35 year low of only 58 reported compared to the 10-year average of around 1500 birds. This also partly explains the paradox between this year's record high number of species and the well below average total number of birds. In fact we didn't have any record high numbers for any species with the exception of marginally higher numbers for 3 waterfowl; Other than that, Black-billed Magpies were 2 shy of the record with 30 and Common Mergansers one less than the previous high of 21, but nothing else came even close to challenging their previous highs.

Black-capped Chickadee, Mountain Chickadee and Red-breasted Nuthatch numbers rebounded to near normal after several years of decreases as did the Downy Woodpecker. With the re-opening of the river valley, we were anticipating a return to good counts of American Dippers - but it wasn't to be with only one seen.
Many thanks to Peter and Skye for hosting the post-count potluck and to the 45 participants in the field and the many feeder watchers.

The count details are summarized at the end of the newsletter

Scout Island Nature Centre

By Sue Hemphill

Job opportunities for university students

Full time summer jobs are available at Scout Island for University Students. We are hiring three students to be Teacher Naturalists for programs for children and the public at Scout Island. Send applications to the Executive Director at Scout Island Nature House or contact 250 398 8532 for more information. The jobs are from May 1st until mid-August. Application deadline is February 21st.
At least enough snow came to allow for "snow play. I am not sure that it is enough to protect all the animals and plants dependent on protection in the subnivean zone-especially with the severe cold the week before. But animals of all types were enjoying it none the less.

Thanks to our great volunteers the paths were shoveled and some even had a once over by a snow blower, so walking was quite good. Martin Kruus and Kim Zalay are busy with winter ecology programs-some at Scout Island and some up Bull Mountain (when conditions allow).

Families with children 0-5 were out with Naomi for Tales and Trails (every Wednesday 10:30-11:30)

We hope to have a Back Yard Bird Count Event for families in February—Stay tuned!

Reflections on our Fox Mountain Christmas bird count from 1991-2023

By Michaela Waterhouse

In 1988, Loyd Csizmadia and I were kindly invited by Anna Roberts to participate in the annual Williams Lake Christmas bird count. Little did we know that 35 years later we would still be collecting data. Every year from 1991 to 2023 (except 1998, 2000 and 2015), we recorded birds on our section of Fox Mountain that includes Enns, Mikulasik, Hilltop, Jacobson, Campbell, Friesen and Radio Range Roads, Glen Drive, the Airport and the forest east of Enns Road. With this long dataset, I was able to document our bird community composition, to explore changes in number of species and individuals over time, and to examine some possible reasons for those changes.

On our route overall years, we found 39 species (3579 individuals), while the annual count averaged 12 species and 119 individuals. Our regular species were black-capped and mountain chickadees, red-breasted nuthatches, downy, hairy and pileated woodpeckers, American crows and common ravens, while bohemian waxwings, pine grosbeaks, common redpolls, red crossbills and pine siskins occur in some years but not others (**Figure 1**).

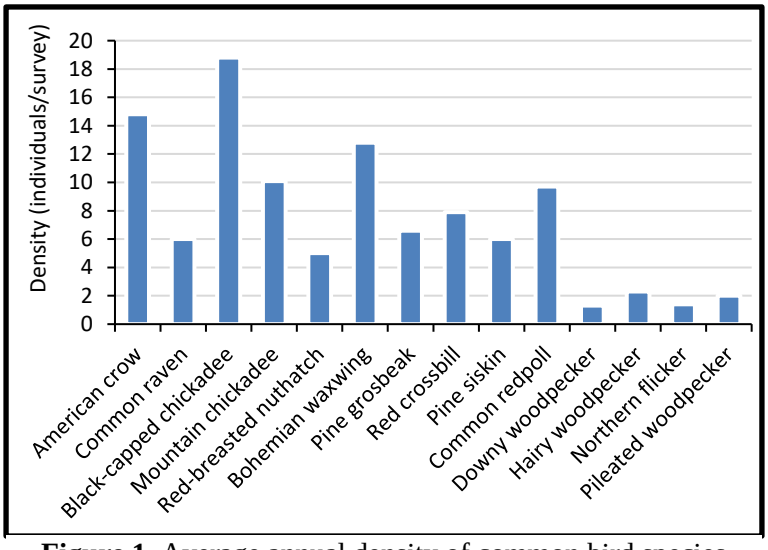

Figure 1. Average annual density of common bird species found on Fox Mountain Christmas bird count route (1991-2023)

Most years we recorded at least one raptor (Bald eagle, pygmy owl, northern shrike, great grey owl, barred owl, rough-legged hawk or red-tailed hawk). Gray jays were common up until 2000 but in later years very infrequent. House finches and American goldfinches arrived for the first time in 2006. Evening grosbeaks were present 2002-2007, but since then, they have not been recorded. The presence and abundance of each species contributes to the overall bird community which goes through changes in time. **Figure 2** shows how both the number of species and individuals fluctuate from year to year. Despite the fluctuations, it appears that both species and individuals have increased since our first counts in the 1990's.

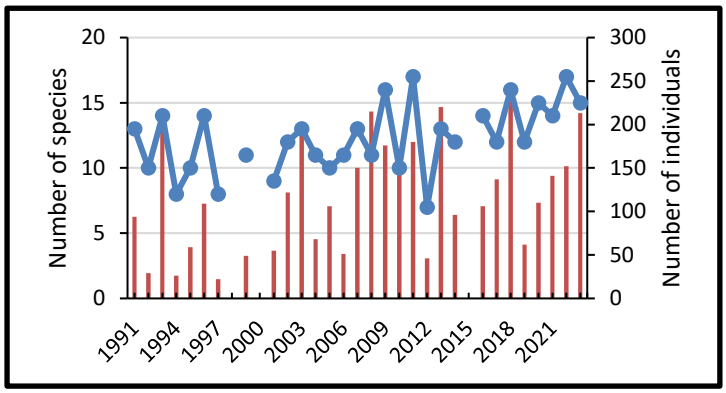

Figure 2. Annual species and individual count of birds on the Fox Mountain route

The fluctuations in number of species and individuals, and the upward trend is a result of many interlinked drivers such as food abundance, weather, human nature, and habitat structure. One pattern visible in our data was the positive relationship between heavy conifer seed production years (noted in various Ministry of Forests reports) and the presence of red crossbills, pine siskins, evening grosbeaks and dark-eyed juncos (**Figure 3**). When these species occur, they usually contribute many individuals to the overall count. Thus, many of our high-count years correspond to big seed years (1993, 2003, 2013, 2018 and 2022).

	1993	**1994**	**1996**	**1999**	**2002**	**2003**	**2005**	**2007**	**2013**	**2016**	**2018**	**2022**
Douglas-fir	■	■		■		■	■	■	■	■	■	■
Hybrid white spruce	■	■	■	■	■	■		■	■		■	■
Red crossbill	▒				▒	▒		▒	▒		▒	▒
Pine siskin	▒	▒	▒								▒	▒
Evening grosbeak					▒	▒		▒				
Dark-eyed junco								▒	▒		▒	▒

Figure 3. Years Douglas-fir and spruce produced many seeds, and presence of species on the Fox Mountain route

Short- and longer-term weather events influence both bird species and number of individuals. Warmer winter weather can increase bird activity (vocalizations, flights, foraging) thus making birds easier to observe on count day, and some species may stay rather than migrate. We had nine count years where both species and individuals exceeded the average values for our study period. Out of those nine counts, eight counts were in mild winters (based on the minimum start temperature > -7° C) so this could be an important factor that causes the variability in the bird count results. We had nine El Niño winters (warmer, drier) over our data collection period. My expectation was that El Niño years would coincide with increases in the bird community, but that was not the case. Only three El Niño years coincided with high count years (2009, 2018 and 2023). In other years, El Niño may have been subdued so didn't affect the interior of BC, or it ended before or started after our bird count. Weather can impact birds in less direct ways as well. For example, a warm, dry June is needed to stimulate heavy seed production in Douglas-fir and spruce. The seed then becomes available for the birds 1.5 years later.

Behaviour by humans can affect the consistency of data and ability to interpret patterns. Some of our behaviours and those of others could have contributed to an upward trend in species and individual numbers over time on our route. In some of the early years, we spent fewer hours observing due to poor weather or other commitments. Our knowledge of species ecology has improved over time. For example, in recent years we purposely looked for black-backed woodpeckers in burned forest and for three-toed woodpeckers in dying spruce forest. Others have made changes that also affect our data. We have better coverage of the route because the road network expanded with development. After 1999, most of our Christmas counts were scheduled earlier than the 1990's, and this increases the probability of warmer

conditions on count day. In the last decade, there are more bird feeders on the route, and they draw in many birds. Finally, there have been many changes to habitat, but they are not easily linked to the patterns in our winter bird count data. Slowly, new subdivisions and roads have been developed. In contrast, rapid change has been caused by natural events such as the mountain pine beetle epidemic (2005-2008), the fire (2017), and the heat dome (2021). A much larger study with suitable methods would be needed to quantify the relationship between winter habitat attributes and winter bird populations.

It has been a memory-filled exercise to find and analyse our old records, then reflect on the species and patterns. I have provided some possible interpretations of our results but am sure there are many others. We are looking forward to the 2024 count. And, the potluck!

Fraser River Bighorn Sheep Disease Mitigation: An Update

By Loyd Csizmadia,

Ewe is hobbled, Hooded and Collared
By Chris Proctor

The California Bighorn Sheep hear it coming long before they see it, 100 decibels of rotor-noise whirring along the Fraser River as the Hughes 500 seeks its female quarry. Then, looking like the massive head of a dragonfly, the helicopter rises over the benchlands of bunchgrass. The Bighorns bolt for their escape-terrain, but it's no use. The wildlife biologist raises a net-gun and "bang," an ewe tumbles to the ground. The biologist then lands, and, in this specialist's hands, the netted ewe is hobbled, hooded, radio-collared, ear-tagged, swabbed, and released. The nasal swab will determine her fate. If the ewe tests positive for M.ovi, the helicopter will return, she will be shot, and tissue will be removed from several of her internal organs. Euphemistically speaking, this treatment is known as "T and R" (short for "Test and Remove"), and it is absolutely necessary for the survival of California Bighorn Sheep living in the low elevation grasslands between Lillooet and Williams Lake. There is no vaccine.

M.ovi, short for *Mycoplasma ovipneumoniae*, is a pathogen that causes bronchopneumonia in all ages of wild sheep. If left unchecked, it can kill an entire herd. Approximately 17 bands of bighorn sheep live between Lillooet and Williams Lake. In the 1990's there were about 2400 animals. Today, there might be 800, and among those remaining, some carriers of the pathogen remain at large. With a limited budget that is 95% funded by private partners, Ministry biologists are doing the best they can, but it costs a lot of money to locate, test, and remove all of the infected ewes. As of 2023, 40 carriers of M.ovi in 8 bands south of the Chilcotin River have been shot. To find the carriers, 258 sheep had to be captured and tested.

The good news is that "T and R" works. After monitoring the post-treatment health and survival of lambs in the 8 bands treated from 2020 to 2023, wildlife biologists report that generally speaking significantly more lambs are living through the summer. Prior to treatment, infected and uninfected ewes gathered and gave birth on the same lambing range. The infected mother would nuzzle her baby, and through this nose-to-nose contact, M.ovi entered the nursery group. Lacking a fully developed immune system, most lambs succumbed to the disease, typically suffocating on their own mucus. Now that more lambs are surviving, it is possible that within eight years time, sheep populations along the Fraser River could rebound to 1990's levels.

For this to happen, however, all of the infected ewes will need to be removed. Between 2024 and 2028, 305 more ewes in 9 bands will need to be captured and tested. Ideally, this should happen in one rather than four years, since M.ovi-free herds could be reinfected by bighorn sheep from untreated herds. Unfortunately, the cost to do this is well over a million dollars—on top of what has already been spent.

And there will be other costs. Habitat will need to be enhanced, some predators may need to be culled, but most

importantly, the main sources of M.ovi will need to be controlled.

Domestic goats and sheep are the best understood source of M.ovi, domestic sheep in particular. Three in ten B.C. sheep carry the disease, but unlike their wild counterparts, few die from it. When wild sheep come into contact with domestic sheep, transmission is very likely. Domestic grazing allotments within 10 kilometers of a wild herd could impact rams, ewes, and lambs alike. Allotments beyond 10 kilometers might still attract males. Rams occasionally foray over long distances and have been documented seeking mates among domestic sheep. When an infected ram returns to his home range, he can wipe out 80% of his herd.

The answer to this problem seems straight forward: prevent contact between wild and domestic sheep. Or, at least reduce the probability of an encounter. In British Columbia, cooperation rather than legislation is the norm. For example, BC's Ministry of Agriculture, Food, and Fisheries recommends double-fencing. The outer fence should be higher than a ram can jump, and the inner fence should be far enough away from the first fence to prevent nasal droplets from infecting any curious wild sheep, male or female. If it is unrealistic to double-fence an entire allotment, a small pen of similar design could be built. Whenever a wild sheep forays into the area, the domestic sheep should be isolated until the bighorn moves on. In addition to isolating the herd, the BC Government asks that anyone who spots a wild sheep near domestic herds report it to **RAPP at 1 877 952-7277.** None of this is law.

Another Ministry recommendation is that farmers regularly test their herds for M.ovi. Nasal swabs can be sent to a lab in Abbotsford, B.C. Animals which test positive should be isolated or culled, and then measures should be taken to protect the M.ovi-free herd from reinfection. If necessary, a veterinarian can guide this entire procedure. Again, B.C. farmers are not obligated to do any of this.

Neighbouring Yukon is taking a firmer approach. In 2020, Yukon's Resource Minister began phasing in a strict set of rules for the farmers of domestic sheep and goats. Proper fencing is mandatory, testing for M.ovi is mandatory, and destroying infected animals is mandatory. In addition, farmers must keep track of every animal in their herd. If one escapes, it must be immediately reported. Failing to follow the rules is an offence under the Animal Health Act. In 2020, the Yukon Government budgeted $752,000 dollars to implement their approach, significantly less than the cost of eliminating M.ovi from wild herds.

The future of California Bighorn Sheep living along the Fraser River is of concern to the Williams Lake Field Naturalists. Annually, for at least 30 years, our members have hiked the Junction Sheep Range, basking in its natural beauty while hoping for a glimpse of rams in rut. On March 8, 2023, our club invited Senior Wildlife Biologist Chris Procter to talk about the decline in Fraser River bighorn sheep. Since then, he and former provincial coordinator for the BC Sheep Separation Program Jeremy Ayotte have co-authored a paper titled *Fraser River Bighorn Sheep Disease Mitigation Program 2023 Progress Report*. Published in December 2023, it gives reason to be cautiously optimistic about the future: mitigation appears to be working, some habitat enhancement has occurred, and a comprehensive, collaborative group known as the Fraser River Bighorn Sheep Working Group (FRBSWG) is tackling domestic sheep policy and legislation. This has to work. A Junction Sheep Range without sheep is unthinkable.

The FBC (Fraser Basin Council) Youth Program

The FBC works to engage, empower and enable youth and young adults to actively participate and contribute to social, environmental, and economic wellbeing in communities throughout BC. **For more information about our youth program and initiatives, please visit our website at www.fbcyouthprogram.ca.**

There is a unique opportunity for youth from the Cariboo-Chilcotin region to be a voice for their communities on sustainability and climate change. **We are recruiting for the 2024-2025 FBC Youth Advisory Committee** and are searching for youth representatives aged 16-30. Applications are due on **Friday, February 9 at 11:59 PM**. More details and the application form are on our website at www.fbcyouthprogram.ca/yc-2/.

1	Canada Goose	1
2	Trumpeter Swan	4
3	Gadwall	3
4	American Wigeon	6
5	Mallard	84
6	Northern Pintail	1
7	Green-winged Teal	1
8	Canvasback	*1
9	Ring-necked Duck	4
10	Greater Scaup	2
11	Lesser Scaup	8
12	Bufflehead	10
13	Common Goldeneye	37
14	Barrow's Goldeneye	2
15	Hooded Merganser	9
16	Common Merganser	20
17	Ruddy Duck	3
18	Ruffed Grouse	8
19	Pied-billed Grebe	2
20	Horned Grebe	2
21	Great Blue Heron	1
22	Bald Eagle	15
23	Red-tailed Hawk	2
24	Rough-legged Hawk	1
25	American Coot	19
26	Double-crested Cormorant	*1
27	Rock Pigeon	508
28	Eurasian Collared Dove	39
29	Northern Pygmy-owl	3
30	Belted Kingfisher	1
31	Downy Woodpecker	22
32	Hairy Woodpecker	25
33	Am. Three-toed Woodpecker	1
34	Black-backed Woodpecker	1
35	Northern Flicker	60
36	Pileated Woodpecker	17
37	Northern Shrike	1
38	Canada Jay	16
39	Steller's Jay	1
40	Blue Jay	1
41	Black-billed Magpie	30
42	American Crow	567
43	Common Raven	204
44	Black-capped Chickadee	250
45	Mountain Chickadee	231
46	Red-breasted Nuthatch	102
47	White-breasted Nuthatch	1
48	American Dipper	1
49	Varied Thrush	2
50	Townsend's Solitaire	18
51	European Starling	58
52	Bohemian Waxwing	↓58
	Snow Bunting	cw
53	Spotted Towhee	1
54	American Tree Sparrow	4
55	Song Sparrow	25
56	White-throated Sparrow	1
57	White-crowned Sparrow	2
58	Golden-crowned Sparrow	1
59	Dark-eyed Junco	28
60	Red-winged Blackbird	32
61	Brewer's Blackbird	9
62	Pine Grosbeak	12
63	House Finch	270
64	Common Redpoll	199
65	White-winged Crossbill	25
66	Pine Siskin	2
67	American Goldfinch	78
68	Evening Grosbeak	9
69	House Sparrow	420
	TOTAL	3583

* New to count

↓ Low count

cw Seen on count week but not count day