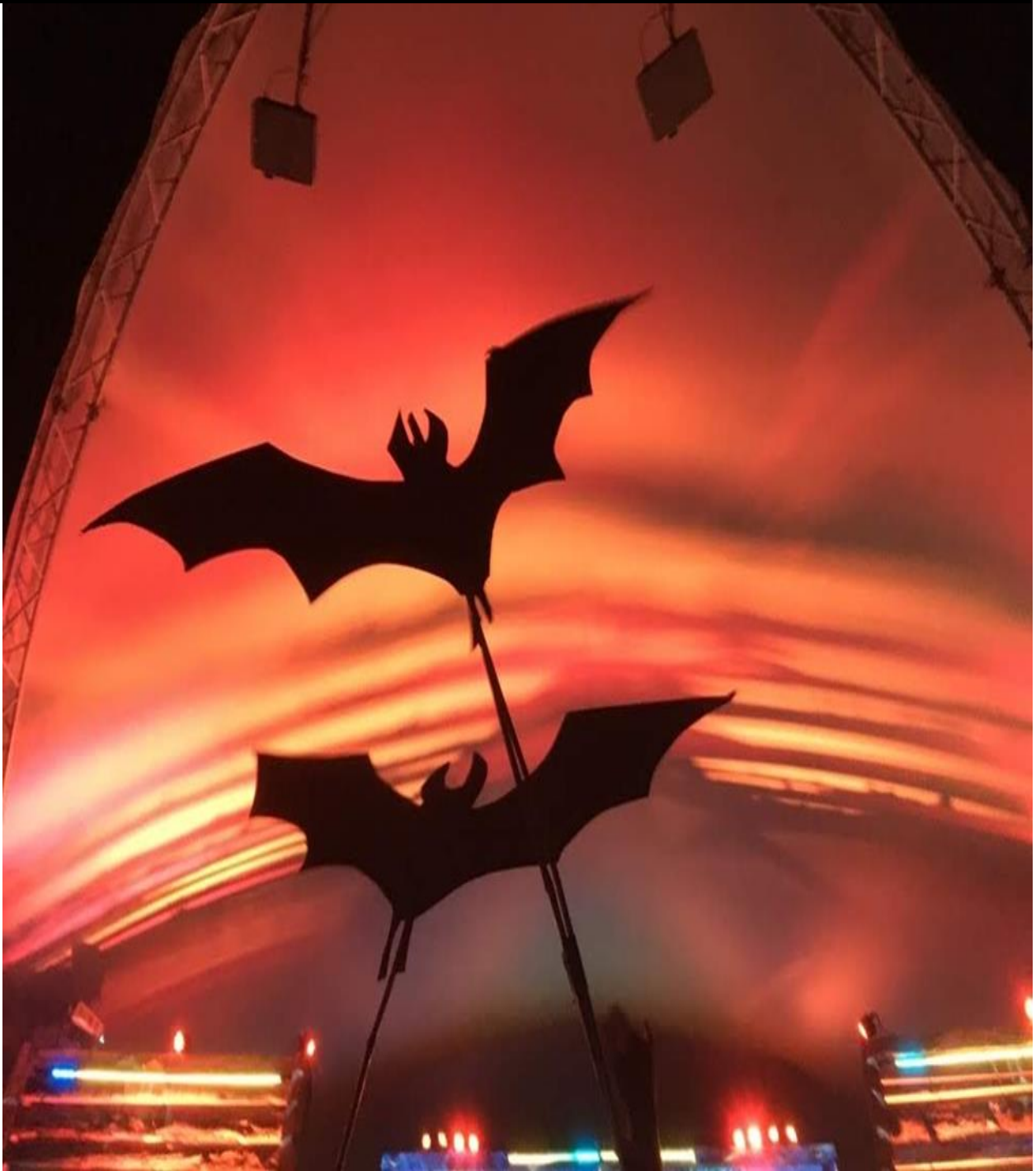


Western Canada Bat Network Newsletter



Issue No. 35 Fall 2019

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Cover: Shadow puppet bats at Cumberland Wild Music Festival

Updates by Region

Alberta

Alberta Provincial Update

Lisa Wilkinson, Species at Risk Biologist,
Alberta Environment and Parks lisa.wilkinson@gov.ab.ca

Alberta continues to operate NABat grids and we are starting to deploy detectors to try to identify migration routes. Mist-netting in southeast Alberta verified the presence of western-small footed bats, representing a small range expansion. We hope to visit another area in southeast Alberta next year (close to the USA border), with hopes of confirming a new species for the province. An AEP committee continues to work on reviewing and updating protocols for pre- and post-construction at wind farms, as well as looking at mitigation options and requirements.

The Alberta Endangered Species Conservation Committee reviewed the status of the *M. lucifugus* and *septentrionalis* last year and delivered a recommendation to the Minister. However, this occurred just prior to the spring election and there has been no response from the Minister yet. We have contracted a detailed status report for the hoary bat, which is currently under review. It is likely that the status of the hoary bat will be reviewed in the near future.

Increasingly, those of us in the bat community have recognized the importance of working with the pest control industry. Last year I gave a presentation at the Alberta Pest Control Association, and we are looking forward to developing training materials and working with other jurisdictions towards this end. This will be an important first step towards protecting important anthropogenic roosts.

We continue with baseline surveillance for WNS, and have improved our guidance for public and AEP offices regarding what to do when a bat is found, i.e., when and if a bat should be submitted for testing. The government website has been undergoing many changes, and I'm trying to ensure that errors and omissions regarding bats are addressed; however, these things take time.

The joint BC/AB bat meeting was terrific – thanks to all the organizers. Let's do it again next year!

Alberta Community Bat Program

Susan Holroyd and Cory Olson, Alberta Community Bat Program, WCS Canada

The Alberta Community Bat Program continues to grow and 2019 was the busiest year yet. Interest in bat conservation is continuing to build with more communities looking for ways to help bats. Edmonton, Calgary and Medicine Hat all proclaimed International Bat Week to celebrate the importance of bats in our cities.

As of the first week of December 2019, coordinators with the bat program, as well as several volunteers, delivered over 70 events to greater than 9,000 participants at 22 municipalities across the province. Our social media following has climbed to 2,598 users on Facebook and 2,649 users on Twitter. During the most active month, coinciding with “Bat Appreciation Month” and “Bat Week” in October, the program reached 108,322 different users, with 9,244 of these users engaging with program content at least once. The program’s social media content has appeared on people’s screen over 1.3 million times during the last year. Calls and emails to the program seeking information on bats continues to be strong.

This year we updated our Managing Bats in Buildings guidebook and produced a Bat Ambassador Training Program guidebook. The bat ambassador guide is not yet being promoted, but other guides have been downloaded several thousand times over the last year. The Bat Ambassador Program aims to provide bat conservation information and materials to groups such as park interpreters and naturalists who are already doing interpretive work but lack the background information on bats. We shared a “bat trunk” with Cypress Hills Boundary Park in southeast Alberta and they made extensive use of the materials. Park interpreters ran a bat walk for campers every weekend all summer and set up materials in their main interpretive centre. A second bat trunk was shared with the Waterton area and was used by one of our own program coordinators to provide interpretive booths in the National Park, as well as bat walks in the Waterton Biosphere Reserve (WBR). We hope to expand the Bat Ambassador Program this summer and develop smaller “bat pack” kits, which are intended to be shared with groups such as Scouts, Jr Forest Wardens, or various naturalist groups (kits would include an EMTouch detector, tablets and other compact resources).

Over the summer, we partnered with the Edmonton Area Land Trust, and Nature Conservancy Canada, to monitor two grid cells in the Edmonton region using protocols of the North American Bat Monitoring Program (NABat). This work will contribute monitoring data to NABat, while also providing data that can be used for biodiversity monitoring of conservation lands in the Edmonton region. We are hoping to expand coverage in 2020. Submissions of roost observations to the citizen science program continue to be strong (but no doubt accounts for a small portion of known roosts in the province); this data is currently being analyzed.

Several bat houses, bat condos, and buildings are being monitored using temperature/humidity sensors and, when possible, roost loggers; many of these are being monitored in collaboration with Highway 2 Conservation. Our objective is to examine use of bat houses as tools for habitat enhancement and mitigation in Alberta. This includes examining whether bat condos are a better alternative to bat houses for providing high quality alternative roosting habitat for bats. Three bat condos were installed in Alberta by private landowners during 2019 (that we are aware of) and all are currently being monitored. All bat condos have been occupied, but it is currently unclear if they will be successful in attracting enough bats to justify their considerable expense.



Figure 1. "Mini" Bat condo installed near Barrhead, Alberta (Sparshu Condo)

We are currently developing a brochure highlighting best practices for managing bats for Pest Control Operators in the province and we are continuing to develop educational support materials that will be posted for sharing on our website. In 2020 we are hoping to commission the creation of professional video segments promoting an appreciation of bats and showcasing bat-friendly management practices (a natural extension of terrific work already showcased in the ["Bats of Alberta"](#) documentary).

We wish to thank Alberta Environment and Parks for supporting this project, as well as the Edmonton Community Foundation, Alberta Conservation Association, The Chawkers Foundation, Alberta Ecotrust, and Environment and Climate Change Canada for their financial contributions. We are especially grateful to the many people and organizations that have contributed to this project and promote the work we are doing.



Figure 2. Eastern Red Bat found roosting under a sidewalk canopy in downtown Edmonton and reported to the bat program (August 14).

Banff National Park Inventory and Telemetry Trial

Cory Olson, Sky Ecological, Anne Forshner and Barb Johnston, Parks Canada

During the summer and fall of 2019 we conducted a bat inventory in southern Banff National Park. This continues a multi-year bat inventory of the regional Rocky Mountain national parks, including the Saskatchewan Crossing area of Banff National Park (2016), Kootenay National Park (2017), and Yoho National Park (2018). This project had two objectives: (1) contribute to a baseline bat species inventory in the region, especially prior to the arrival of white-nose syndrome; and (2) examine seasonal changes of bat activity in the Rocky Mountains.

Methods included a combination of live-capture using mist-nets and acoustic detection. Capture and most acoustic monitoring occurred in or near the Banff townsite. Netting occurred over 4 nights from June 27-30, 2019 at three locations: along the Fenland Trail, at Johnson Lake and near Cave & Basin (no captures due to rain). A total of 49 bats were captured, one Long-eared Myotis (Fenland Trail) and 48 Little Brown Myotis. Cold, wet conditions impeded captures on two of the nights.

Bat detectors were also deployed at 5 locations in the study area to collect data from spring through fall migration. These data have not yet been analyzed. One detector has been left up for the winter season in an effort to assess winter bat activity.

This year we also piloted telemetry methods for a research project. The goal of the project is to understand the importance of anthropogenic vs natural Little Brown Myotis roosts in Banff National Park. In late June and early July 2019 we tagged and tracked 5 individuals for approximately 10 days each. Very preliminary results suggest that the bats used a combination of natural (e.g. rock crevice and trees) and anthropogenic (e.g. exterior of buildings and a retaining wall along the highway) roosts. Capture and telemetry efforts will increase in 2020 and will form the basis of an MSc project conducted by Emma Micalizzi in the Barclay lab at the University of Calgary.

For 2020-21 we are also planning to continue inventory and research efforts focusing on Southern Banff National Park and the Saskatchewan River Crossing area.

A big thanks to those who helped out with the project including: Susan Holroyd, Emma Micalizzi, Bryan Macbeth, Eric Knight, Jen Reimer, Stephenie Zyvatkauskas, Patrick Gibeau, Stephen Andriashek, Petah Low, Peter White, Simon Ham, John Kellas, Robin Baron and Louis Sobol.



Anne Forshner / Parks Canada

Figure 3. Cory Olsen setting up Johnson Lake nets at twilight.



Anne Forshner / Parks Canada

Figure 5. Eric, Jen, and Cory setting up nets over water at Fenlands.



Cory Olson / Sky Ecological

Figure 4. Little brown myotis with radio-transmitter.

Update from Alberta Peace Region

Courtney Hughes, Sr. Biodiversity and Landscape Specialist, AB Environment and Parks, Peace Region

Alberta's Peace River and surrounding region is a beautiful boreal landscape with varying land uses that can effect boreal bat species and their habitat. From 2018 to present, Alberta Environment and Parks regional staff have implemented acoustic monitoring in support of local data needs and the North American Bat Monitoring Program, alongside citizen science and outreach efforts to engage and excite local community members in bat conservation.

Currently data analysis is underway, with results expected to help fill data gaps on boreal bats and inform local land use planning and management. For more information contact Courtney Hughes (courtney.hughes@gov.ab.ca) or Natalka Melnycky (Natalka.melnycky@gov.ab.ca) in Peace River.



Figure 6. Image of a bat release sent in by Delanie Player. The images were part of an experiment to capture a release without a flash.

British Columbia

Northeastern BC Bat Update

Brian Paterson and Inge-Jean Hansen

Northern Myotis Maternal Roost Study

Despite a very wet 2019 season in the Peace Region, we successfully captured 11 Northern Myotis including 8 reproductive females over ten nights of trapping that were tracked to 22 tree roost locations including 15 used by reproductive females. Many of these tree roosts were used communally and roost switching was common. Occasionally, tagged females would move between roosts together or rejoin after spending time separated, indicative of a fission-fusion relationship. In our study area, female Northern Myotis selected exclusively for trembling aspen with longitudinal cracks and openings likely initiated as a result of frost cracking or fire scarring. Another year of capture and tracking in 2020 with funding from the Habitat Conservation Trust Foundation and the Peace Fish and Wildlife Compensation Program will expand the study area and help refine habitat preferences in the Peace Region. Early results highlight the importance of stand-level management for multiple roosting trees.



Figure 7. Inge-Jean Hansen stands beside a heavily used Northern Myotis maternal roost trembling aspen.

Williston Winter Bat Ecology

With a big thanks to cavers Kirk Safford, Trent Blair, and Jared Habiak, we were able to retrieve roost loggers deployed in cave systems in the Williston Basin way back in 2017. The results suggest a well used winter bat cave based on 16 winter *Myotis* detections and high fall and spring *Myotis* activity. These are only the second winter *Myotis* detections we have recorded in the Peace Region. We will revisit the remote cave system in 2020 to try and determine species presence, location within the cave (which has not been mapped to its full extent), and to identify additional sites that may provide winter habitat for bats with funding from the Peace Region Fish and Wildlife Compensation Program.



Figure 8. Newly discovered cave with winter myotis activity in Northeastern BC.

White-nose Probiotic Project

Cori Lausen

In August 2019, Nick Fontaine (MSc student) and Taylor Kutzley, students at Thompson Rivers University under the supervision of Ann Cheeptham, met up with Leah Rensel (UBCO MSc student; supervisor Karen Hodges) and myself in Metro Vancouver for a field pilot of the new anti-WNS probiotic. The TRU students

worked with Julian Davies' lab at UBC to mass-produce a cocktail of 4 bacteria freeze-dried in clay powder. As a reminder, this probiotic was sourced from BC bats, and 4 bacteria that worked well in synergy were identified by McMaster University (Adrian Forsythe, under supervision of JP Xu). These bacteria slow or inhibit the growth of the fungus that causes WNS (Pd).

In our field pilot, vial by vial, this cocktail was sprayed up into bat boxes used by two Yuma *Myotis* colonies: one at Colony Farm Regional Park and another at Stave Lake (BC Hydro installation). A simple and easy to use method of applying the probiotic to roosting surfaces was developed by Nick – using a compressed can of air, and a vial of probiotic-laden clay.



Figure 9. Nick Fontaine (right) and undergraduate TRU student Taylor Kutzley (left) prepare to spray probiotic into the bat boxes at Colony Farm Regional Park. Taylor wears tyvec suit and mask to reduce breathing the dust and to keep the powdered clay off clothing. The clay powder lightly coats the inside of the bat boxes with probiotic bacteria that are naturally found in soil and on some bat's wings.

CBC television and Spotlight Productions were on scene for the first night of this field pilot at Colony Farm, and the coverage from these media sources have been widespread (e.g., CBC The National <https://www.youtube.com/watch?v=RtgRBU4C8cM&feature=youtu.be&t=2344>; Telus Documentary <https://www.youtube.com/watch?v=5m8WJG53gF0>). At the end of August, bats were still using the roosts at Stave Lake, although the bats at Colony Farm left mid-August, as they typically do each year. Leah swab sampled the bats at Stave, and having seen that they were roosting on the clay-sprayed roosting surfaces, hypothesized that we had successfully transferred the probiotic to the bats' wings. McMaster University confirmed this hypothesis after running qPCR on the samples. Most bats in the Stave Lake colony are PIT-

tagged and thus return rates can be quantified in spring 2020 when bats return and Chris Currie and Aimee Mitchell swab them to look for any evidence of Pd and hopefully some retention of the probiotic bacteria. Meanwhile, back in the lab this fall, Nick has been working with MSc student Susan Dulc (TRU supervisor Karl Larsen) to build a modified fridge for a hibernation simulation experiment using the last of the captive bats from the summer probiotic trials. The bats were moved from their Kamloops Wildlife Park enclosure into the fridge in November and the experiment is off to a great start!



Figure 10. Nick Fontaine stands with the modified fridge, putting a bat back into it after swabbing and weighing it.



Figure 11. Inside the "bat fridge" where hibernation conditions are simulated for bats with probiotics on their wings.

We are testing the hypothesis that the probiotic bacteria, under hibernation conditions of high humidity and cool temperatures, will increase in number of the bat wings affording protection against Pd during hibernation. Adrian, using qPCR, compared concentration of probiotic cells on bats before going into the fridge, with levels 10 days into the hibernation simulation experiment, and probiotic cells have increased substantially, with one of the bacteria more than doubling in concentration. We are cautiously optimistic that this means the probiotic bacteria could be effective on bat wings during winter and increase survival of bats exposed to Pd. However, measuring realized rates of increased survivorship remain challenging given that this depends on WNS moving into the Metro Vancouver area to compare impact of the disease on colonies that receive probiotic (Colony Farm, Stave Lake) vs those that do not (Alice Lake, Burville). We have applied for continued funding in 2020, and if granted, will conduct a comprehensive study this summer of incorporation of the probiotic onto bat wings in the wild, building on our successful proof of concept field pilot. The field pilot was made possible by assistance from a large number of volunteers, including John Sarembe who helped with logistics; we additionally thank our main funders Fish and Wildlife Compensation Program Coastal, Bats for the Future Fund (National Fish and Wildlife Foundation), and Habitat Conservation Trust Foundation (Forest Enhancement Society of BC). The Advisory Committee for this project continues to provide invaluable advice and guidance – we thank Dave Sedgeman, Helen Schwantje, Glenna McGregor, Purnima Govindarajulu, Orville Dyer, Craig Willis, and Yvonne Dzal.

NatureKids BC

Paula Rodriguez de la Vega

NatureKids BC is a non-profit organization whose mission is to help children get outdoors to explore, play, learn about and take action for nature. This last year, it launched the Bat Citizen Science Project (<https://www.naturekidsbc.ca/be-a-naturekid/stewardship-citizen-science/bat-citizen-science/>) which aims to get children and youth involved in learning about and taking action for bats.

NatureKids BC has developed an introductory webinar for club leaders and educators that explains the activities in the bat themed 'Explorer Days'. They have also developed Bat ID Cards featuring 8 different BC bat species. They have 4 bat themed Explorer Days – Bat Buddy (Meet the Bats), Bat Detective (Bat Counts), Bat Champion (Bat Week Action), and Bat Bestie (Bat Habitat Stewardship). These are available FREE to download. Their NatureWILD magazines also have had 2 articles featuring bats! For more information visit www.naturekidsbc.ca.

Travelling BC Bat Museum and Bat Edu-kit

Paula Rodriguez de la Vega

A traveling exhibit is being spearheaded by the BC Community Bat Program and the Peachland Bat Education and Ecological Protection Society, in partnership with the Regional District Central Okanagan, BC Government, Kelowna Museums, Penticton Museum and Archives, and several others. The exhibit is due to open at the Kelowna Museum in mid-March 2020. In addition, we are developing 4 Bat Edu-kits that can be borrowed by Okanagan schools and educational organizations or clubs with a focus on teaching children and youth about bats. The 4 key messages being: Bats are interesting; bats are important; bats are in trouble; and you can help bats. This will be tied to the Bat-Friendly Communities Initiative and to Bat Week and Bat Appreciation Day. We would be happy to share the Bat Edu-kits it with other regions in BC so they can copy and develop their own Bat Edu-kits. We are also hoping to include First Nations content and are in the process of building relationships with the En'owkin Centre.

Update on “Critical Assessment of Bat Boxes as a Conservation Tool” Research Project

Susan Dulc, Thompson Rivers University (TRU); Cori Lausen, Wildlife Conservation Society Canada; Leigh Anne Isaac, Kootenay Community Bat Project

Under the supervision of Cori Lausen, Wildlife Conservation Society Canada (WCS), and Dr. Karl Larsen (TRU) with additional support from Leigh Anne Isaac (Kootenay Community Bat Project, KCBP), and Dr. Mark Paetkau (TRU) - a very successful first field season ended in the fall, and data analysis is just underway. For this collaborative project comparing known maternity colonies in bat boxes with those in buildings, we collected microclimate data (temperature and humidity) from three building roosts, one bat condo, six bat boxes and ambient conditions at each of seven sites in the Kootenays. Together with Tanya Luszc (Canadian Wildlife Service) and Sara Bunge (BC Parks), similar data were collected from a total of eleven bat boxes and one building in the Okanagan.

In order to correlate available microclimates with occupancy of these roost structures, we used Titley Roost Loggers to record acoustic activity (Okanagan and Kootenay sites) and conducted roost exit counts (Kootenay sites only). Our counts augmented those conducted by KCBP volunteers; the KCBP conducts exit counts (at least two pre-pup and two post-pup counts) at each of the known maternity sites on an ongoing, yearly basis. In addition to the count and acoustic data, infrared-based, passive occupancy monitors, designed by Jason Rae (WCS), were deployed at two bat boxes for a short-term field trial as a method for continuous monitoring of occupancy.



Figure 12. Above Left: Bat boxes with guano traps, roost Loggers, occupancy monitor and HOBO logger. Credit: S. Dulc; Above Right: Photo of tractor harp trap. Credit: L. Mills



Figure 13. Triple high nets being set and checked by the TRU Condo Team, Credit: S. Dulc

We were also able to conduct multiple captures at our Kootenay sites, to determine reproductive status of adults early in the summer and track growth of volant juveniles later in the season. During our 38 nights of netting this summer, we captured 1,605 adults and 955 volant juveniles, a total of 2,555 bats! Of these, 2,199 were MYYU, 193 were MYLU and 163 were YULU (undetermined MYYU or MYLU). We used mist-nets and harp traps at our sites, in combination with some rather atypical equipment (as seen in one of my favourite photos from the summer).

We banded 1,234 bats during the summer and, while we only had 69 recaptures during the summer, an interesting “recapture” was reported in late September. Gillian Sanders had a bat with a band in her bat box near the north end of Kootenay Lake – the band number matched a female MYLU we had banded more than 100 km to the south in June.

By all accounts, it was an unusual year in the Kootenay region for weather patterns. The anticipated rain in June didn’t materialize and the timing of very hot temperatures was delayed until late July. Landowners with boxes were asked to contact us if they noticed any signs of heat stress (bulging bats, daytime flying, or mortalities) but, thankfully for the bats, we only had one such event in mid-June. On June 12th, we received a call from one of our landowners that bats were hanging out of the bottom of the box and flying around. Emily de Freitas (WCS, field assistant) and I attended, noted conditions (bat box 41° C, RH 100%, ambient temperature ~31° C) and observed bats flying to, and roosting in, the shade of a nearby walnut tree. The success (and minimal stress) of this field season is due in large part to the amazing help I had over the

summer. Great field assistants, including a group of truly dedicated volunteers, helped throughout the summer - setting up equipment, extracting and processing bats or data recording on capture nights. Findings from this research project will help inform the new Best Management Practices guidance that is underway (see update from Cori Lausen on development of Bat Box BMP also in this newsletter). We are grateful for project funding provided by the US Fish and Wildlife Service and a Mitacs Accelerate internship and additional support from the Western Bat Working Group (WBWG) and Holohil. Special thanks to: all of the participating landowners in both the Kootenay and Okanagan regions; the Kootenay Community Bat Project's Donna Carlyle, Georgie West and Justine Balderson and all other volunteer participants (too numerous to mention!); Marc Andre Beaucher and Julia Shewan, of the Creston Valley Wildlife Management Area (CVWMA); Tanya Luszcz (CWS) and Sara Bunge (BC Parks). You all contributed enormously to a smooth and successful first field season!

Cumberland Bat Collective Comox Valley, Vancouver Island

Tim Ennis, North Island Regional Coordinator northisland@bcbats.ca



The Cumberland Bat Project undertook three main initiatives in 2019:

1. Operation of the Comox grid cell for the NABAT program;
2. Operation of the North Island Chapter of the BC Community Bat Program, and;
3. Conducting basic acoustic sampling of bats in the Puntledge River watershed on behalf of the Fish and Wildlife Compensation Program.

Our first year of participation with the BC Community Bat Program was a huge success. Engagement with the media was unexpectedly high due to the unfortunate mortality of a young man who contracted rabies from a bat encounter in central Vancouver Island. Many subsequent rabies-positive bat tests on the island therefore also made headlines. This situation enabled our team to provide accurate, science-based health information to the public, dispelling some of the typical myths, providing health and safety best practices and highlighting the importance of bat conservation.

Our education and outreach program was very successful in other ways as well. Public “bat walks” with

acoustic monitoring gear were extremely popular. One “bat walk” event post on our facebook page reached over 16,000 people. Thankfully only 86 people showed up. Another public bat walk into higher elevation areas of Strathcona Provincial Park was also surprisingly well attended. Partnering with the Cumberland Wild music festival by providing a bat tour of the adjacent wetland to festival-goers was also a fun way to engage with the community. Ongoing requests for bat interpretation with youth this winter outstrips our capacity to provide these opportunities, and we are currently taking bookings for summer 2020.

Our first year of receiving and responding to reports of day roosts/maternal colonies was also very successful. Many of the roosts were counted by our team at least once, while we became comfortable with roost count methodologies and trained volunteers. Receiving reports of roost sites and other bat activity (e.g., cat kills etc.) was a direct result of our outreach efforts. Confirming a large California Myotis colony on Berry Island in the Broughton Archipelago was a highlight. We look forward to ramping up roost monitoring in 2020.

Acoustic sampling of bat populations in the Puntledge watershed was highly informative. Our efforts spanned numerous habitat types from estuarine environments to high elevation sites in the Beaufort and Vancouver Island Ranges. Driving transects and a permanently installed automated acoustic device were the primary means of data collection, supplemented by walking transects and point counts. We look forward to playing with the data over the winter and refining our study methodologies going forward.



Figure 14. Public bat tour to Battleship Lake, Strathcona Park



Figure 15. Public bat presentation at Comox Lake



Figure 16. Bat shadow puppet used to "shadow bomb" the stage at Cumberland Wild music festival. Credit: Sarah Kempner Photography

Saskatchewan

Brigham lab update

Mark Brigham, University of Regina

Dr. Erin Baerwald is MOVING to become a professor at UNBC. Good luck to you Erin. Dana Green gave a poster at the most recent NASBR while Erin Baerwald, Erin Swerdfeger, Adam Sprott and Mark Brigham all gave talks. Erin Baerwald's talk contributed to the long history of the lab giving talks about animals other than just bats, namely Common Nighthawks. We would be happy to speak, email with you about our presentations if you are interested. You can find the abstracts on the NASBR website. Adam had perhaps the most interesting experience, having a fire alarm go off in the middle of his talk. It was a false alarm and he handled the situation wonderfully. He was presented with the "Best under Fire" award for this talk at the banquet. Adam and Erin S. are in the home stretch of writing up there M.Sc. theses. The most fun part of the program.

Brigham Lab Update: Dana Green

Dana M. Green, PhD student, University of Regina; Brigham Bird and Bat Lab

Studying migratory bat behaviour is on the docket for the up coming summer 2020! Over the past year, I have been putting together my research project to study migratory bats in the Cypress Hills of Saskatchewan. My plan for the summer 2020 season is to [hopefully] have a returning undergraduate student, Kaelen Bennett, continue her research on fission-fusion colonies of silver-haired bats. We got preliminary results last summer and hope to increase the sample size next summer. For my personal research, I am continuing to collect wing morphometric photos for a cross taxa comparison of migratory vs. non-migratory bats. In addition, I will be starting an orientation study to explore silver-haired and hoary bats ability to determine direction for migration! Lots of new and exciting work will be coming out of the lab soon!

In the Cypress Hills this past summer, we were happy to host visiting biologists from New Zealand, Abi and Tim Quinnell. They have worked with NZ bats (two out of the whopping three species!), but had never seen North American species. We were happy to show them how to net over creeks and were lucky enough to capture all four species that commonly occur in the Hills. Out of all four species, it appeared that they were most excited to see big brown bats!

I recently collaborated with biologists in Arkansas, United States on a very interesting observation. A hoary bat was actively attacking a tri-coloured bat, resulting in its death. You can find the publication on this

observation on my research gate or on BioOne.org titled “Interspecific Aggression between a Hoary Bat (*Lasiurus cinereus*) and a Tricolored Bat (*Perimyotis subflavus*) in Northern Arkansas”.

Finally, I am still collecting data for a landscape level meta-analysis on migration timing and regional differences in arrival of silver-haired bats. This portion of my thesis is also a large, cross taxa comparison to explore if silver-haired bats have different timing of spring and fall migrations regionally, which may indicate partial migration. I am collecting data, such as analysed acoustic data and capture records from the fall, winter, and spring from as many sources as possible. If interested in contributing, please contact me at dana.green.eco@gmail.com.



Figure 17. Dana Green – PhD student, tracking a Silver haired bat



Figure 18. Abi and Tim Quinnet feeding a hoary bat.



Figure 20. Kaeleen Bennett with a Little brown myotis.



Figure 19. Silver haired bat before release

Saskatchewan National Park Bat Surveys

Cory Olson, Sky Ecological

Over the summer and fall of 2019, I conducted two separate bat inventories in Saskatchewan on behalf of, and in collaboration with, the Parks Canada Agency—one in Grasslands National Park (4 capture nights; July 4-7) and another in Prince Albert National Park (5 capture nights; July 11-15). The Grasslands survey was the second year of a bat inventory that was started in 2018. All surveys included a combination of mist-netting, acoustic detection, and building inspections.



Figure 21. Above Left: Hoary Bat captured in Grasslands National Park. Credit: Cory Olson; Above Right: Eastern Red Bat captured in Prince Albert National Park, Credit: Cory Olsen

Five species were captured in Grasslands National Park (Little Brown Myotis, Long-eared Myotis, Western Small-footed Myotis, Big Brown Bat, and Hoary Bat) and four species were captured in Prince Albert National Park (Little Brown Myotis, Big Brown Bat, Hoary Bat, and Eastern Red Bat). One or more maternity colonies of the endangered Little Brown Myotis were identified in both Grasslands and Prince Albert National Park. A single Hoary Bat was captured in each park, and both were lactating females. The Eastern Red Bat captured in Prince Albert National Park was an adult male, as were all five Western Small-footed Myotis captured in Grasslands National Park (including the one from 2018). Acoustic detection continued until the late fall in both parks and recordings are currently being analyzed.

I am grateful to Stefano Liccioli (Grasslands National Park) and Fiona Moreland (Prince Albert National Park) for initiating and coordinating this project within their respective jurisdictions, as well as Susan Holroyd and Mike Kelly for field support while in Grasslands National Park and Prince Albert National Park, respectively.

Western

North American Bat Monitoring Program Update

Jason Rae, Wildlife Conservation Society Canada

Under the coordination of Jason Rae (WCS Canada) the 4th year of BC's North American Bat Monitoring (NABat) took place this summer. This year's monitoring captured data from 51 10 x 10km grid cells. Each year since the program's implementation in BC, we have increased sample sizes and geographic coverage across the province through connection with additional partners, biologists, and volunteers. Just over 1/3 of this year's sampling efforts were contributed through our continuing collaboration with BC Ministry of Environment and BC Parks, orchestrated by Orville Dyer (BC MoE). The acoustic data collected through our continuing efforts will contribute to critical baseline data and will serve as reference points for future monitoring. Baseline data is essential to detecting species diversity changes and evaluating the impacts of stressors on bat populations, such as white-nose syndrome and habitat changes. The dedication of our many volunteers, landowners, and biologists from across the province is critical to the success of our program.

We thank our partners, including the BC Community Bat Program, BC Parks, BC Ministry of Environment, Fernie Nature, Habitat Acquisition Trust, Lillooet Naturalist Society, Nature Conservancy of Canada, Parks Canada, Pemberton Wildlife Association, Quest University, Sunshine Coast Wildlife Project, South Coast Bat Conservation Society, Slocan Solutions Society and Slocan Lake Stewardship Society (via Slocan Wetland Assessment and Monitoring Project), Stewardship Pemberton Society, and Salt Spring Conservancy. WCS Canada would also like to include a special thanks to our funders: Habitat Conservation Trust Foundation, BC Parks, BC Ministry of Environment, Fish and Wildlife Compensation Program, and Environment and Climate Change Canada and all the local grants that have generously supported the on-the ground work in several of our grid cells.

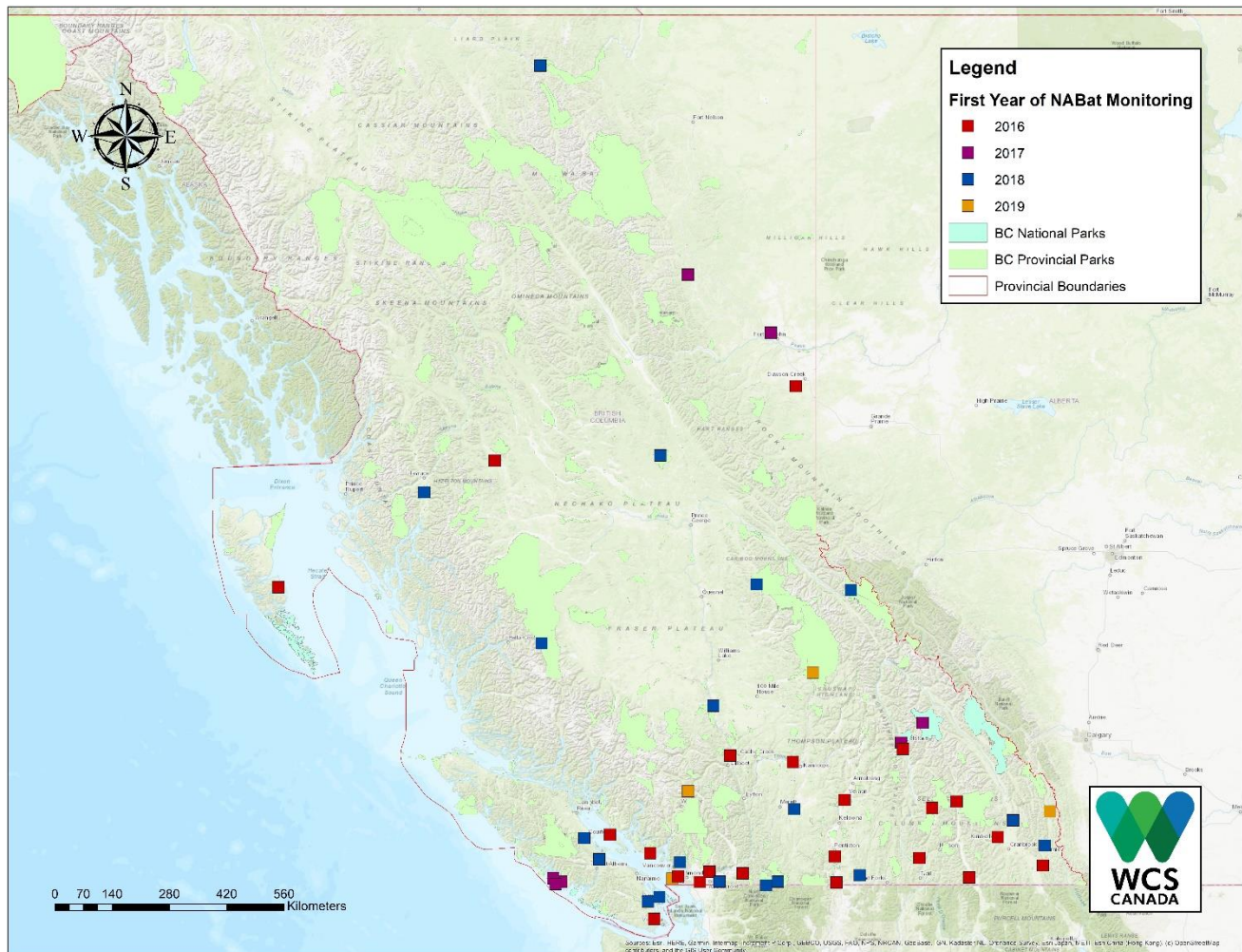


Figure 22. NA Bat grid cells monitored in BC as of 2019

International

Development of Bat Box Best Management Practices for US and Canada – NASBR workshop

Cori Lausen

Jordi Segers, Canadian Wildlife Health Cooperative (CWHC), and myself are co-leading the development of the international Bat Box BMP. Emily de Freitas and Susan Dulc are working with committee members to compile relevant data and resources, and identify roles for writing this plan over the course of the next year. This is officially a subgroup of the WNS Conservation and Recovery Working Group. Underpinning this initiative are several field-based research efforts by WCS Canada including some monitoring of bat boxes by Cory Olson in Alberta and bat captures comparing building to box roosts by Susan Dulc in Creston; this work is being funded in part by US Fish and Wildlife Service, Environment and Climate Change Canada, and Edmonton Community Foundation. Many members of the international Bat Box BMP Committee are also doing field-based work to fill knowledge gaps that will help shape this guidance document. As part of this project, CWHC hosted my bat box webinar (Roosts for Tomorrow) over the summer, which is available at: <https://www.youtube.com/watch?v=jqcr0h56P5A>.

To draw on the expertise of a large group of bat biologists and managers, I hosted a lunch-hour workshop at North American Symposium for Bat Research in October at Kalamazoo, Michigan. This was well attended by approximately 40 participants, and a comprehensive list of points were generated, and key messages identified, that will underpin the BMP.

White nose syndrome

Current decontamination protocols

The most recent Canadian decontamination protocol for WNS continues to be available on the Canadian Cooperative Wildlife Health website (http://www.cwhc-rccsf.ca/wns_resources.php), as well as on the White-nose Syndrome Response Team website (<https://www.whitenosesyndrome.org/static-page/decontamination-information>).

Updated Spread Map

Visit <https://www.whitenosesyndrome.org/> to get the most up-to-date WNS spread map as well as previous years spread maps, dating back to November 2010.

Funding for WNS research

The Canadian Cooperative Wildlife Health website also has information on funding for WNS-related research (<http://www.cwhc-rccsf.ca/docs/WNS%20Funding%20opportunities.pdf>)

Recent literature/resources

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- White, J.A., P. Freeman, H.W. Otto, and C. Lemen. 2020. Winter use of a rock crevice by northern long-eared myotis (*Myotis septentrionalis*) in Nebraska. *Western North American Naturalist* 80 (1): 114-119 <https://scholarsarchive.byu.edu/wnan/vol80/iss1/14>
- *Zhou, P., Yang, X., Wang, X. *et al.* 2020. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature* 579: 270–273 <https://doi.org/10.1038/s41586-020-2012-7>

Conferences and training

Western Bat Working Group Biennial Conference comes to Canada for the first time ever!

By Cori Lausen

Mark your calendars! **12 – 15 April 2021** will be the next meeting of the Western Bat Working Group (www.wbwg.org). We are excited to host bat biologists from across western North America at the Hotel Grande Pacific in Victoria, BC. If you are interested in joining the Organizing Committee and/or have ideas for symposia, workshops, sponsors, or field events, please contact me clausen@wcs.org.

NASBR 2020 Symposium

Oct. 28-31, 2020: Tempe, AZ. <https://www.nasbr.org/annual-meetings>

Bat Training in 2020 – Acoustic and Capture Course Announcements

WCS Canada will be offering two courses this summer in BC – one acoustics course, and one mistnetting course.

To get updates on these courses, details or to register, please check www.batsRus.ca or www.wcsbats.ca – details and pricing should be posted by mid January 2020. Contact hgates@wcs.org if interested.

1. **Acoustic course:** Comprehensive 5 day course provides training on all aspects of bat detectors, deployment, site selection, and call analysis in **Richmond** – hosted by Dillon Consulting Limited. Tentative schedule: 4 – 8 April 2020. All popular bat detectors are addressed, and analysis software instruction includes Sonobat, KaleidoscopePro, Analook and Insight.

2. **Mistnetting course:** 6 day capture inventory course in **Lillooet** – Thompson Rivers University Campus. Tentative schedule: 17 – 22 July 2020

This location has 14 bat species including Spotted Bats. Registration will be limited to ~12 to ensure a high level of hands-on experience.

WBCN newsletter submissions

Please submit all newsletter submissions to Inge-Jean Hansen and Brian Paterson:

Western.canada.bat.network@gmail.com Submissions can be made at any time.

Archived newsletters

This newsletter first started in Fall 2002. It is produced two times per year and until recently was housed by the Alberta Sustainable Resource Development on the Alberta Bat Action Team website. Changes to government procedures has resulted in the need for a change of host. Thanks very much to Dana Blouin of WCS and to Cory Olsen of the Alberta Community Bat Program for hosting all past issues. They can be accessed at the following links:

<http://www.bcbat.ca/links/>

<http://www.albertabats.ca/newsletters>

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