

A photograph of two bats hanging upside down from tree branches. The bat in the foreground is the primary focus, showing its dark fur, wings, and large, folded ears. The background is filled with green leaves and branches, creating a natural, outdoor setting. The text 'Western Canadian Bat Network NEWSLETTER' is overlaid on a semi-transparent white box in the upper center of the image.

Western Canadian Bat Network  
NEWSLETTER

Issue No. 17  
Autumn 2010



# From the Editor



Brandon Klug

*Happy Autumn Everyone!*

I hope everyone enjoyed Denver, Colorado and had a fantastic time at NASBR. My name is Jen Talerico and I am the new Editor of the Western Canadian Bat Network Newsletter. I graduated from Robert Barclay's lab at the University of Calgary in 2008. My M.Sc. research focused on the behaviour, diet and morphology of the little brown bat near the northern extent of its range in Yukon Canada. Currently, I have the best job in the entire world, I am a stay at home mom to a beautiful baby girl named Clara.

I would like to thank Cori Lausen for putting together so many beautiful issues of the WCBN newsletter over the past six years. The bat community appreciates all Cori's hard work and dedication!

## **White-Nose Syndrome**

Please submit your input to the draft US National WNS Plan available: <http://www.fws.gov/whitenosesyn-drome/>

## **Request for Educational Materials:**

Lisa Wilkinson, Alberta Sustainable Resource Development, is compiling education materials about bats. Please email her for more details: [lisa.wilkinson@gov.ab.ca](mailto:lisa.wilkinson@gov.ab.ca)

## **Question:**

Would you like WCBN emails to be strictly related to the newsletter (requests and final issue) or would it be acceptable if occasional emails regarding requests or jobs etc that do not fall within the timeframe of the two annual newsletters be sent out? Please let us know: [western.canada.bat.network@gmail.com](mailto:western.canada.bat.network@gmail.com)

Cheers,

*Jen Talerico*

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# Western Canada Bat Network Newsletter

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Autumn 2010

Issue No. 17

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# UPDATES BY REGION

## Alberta

### Alberta Sustainable Resource Development Lisa Wilkinson

**WNS** - A provincial WNS committee was formed in 2009, and with the confirmation of WNS in Ontario, the committee recommended that Alberta hibernacula be closed to the public as a precautionary measure. The caves are Cadomin and Wapiabi, under Provincial Parks and Sustainable Resource Development jurisdiction, respectively. Closures came into effect in the summer, and plans are underway to build gates at both sites. Signs have been placed at both sites, as well as postings on government and speleological websites. The spelilogic community, and public in general, have been supportive of this initiative. Closures will remain in place for the immediate future.

**Windfarms** - Work is underway to produce post-construction protocol for bat surveys, and the pre-construction protocol will be updated soon.

**ABAT** - Next meeting will be held on 2 December 2010 in Calgary. Location and details TBA, contact Lisa Wilkinson for information: [lisa.wilkinson@gov.ab.ca](mailto:lisa.wilkinson@gov.ab.ca)



7 day old hoary pup napping on a bat bag  
(Photo: Brandon Klug)

### University of Calgary, Bat Lab Update

We would like to welcome back Jes Reimer to University of Calgary Bat Lab. In 2008, Jes completed her honours thesis titled: Migrating bats and wind turbines: investigating the fatal attraction of hoary bats (*Lasiurus cinereus*) and silver-haired bats (*Lasionycteris noctivagans*) to wind turbines in the foothills of Alberta. She will be doing research for her M.Sc. on northern bats in the Northwest Territories starting next summer.

Congratulations to Joanna Coleman for successfully defending her PhD thesis on the effects of urbanization on prairie bats in July.



## Brandon Klug

This past summer, I had another successful field season investigating thermoregulation and roost selection during early development in the hoary bat. Some of my more interesting findings were: females use daily torpor and adjust torpor use throughout the lactation period, using less torpor as the pups grow bigger and require more resources; hoary bat maternity-roosts are not just any old random trees, but are carefully selected for based on microclimate optimas and may be reused by multiple families; and it appears as though baby hoary bats have the ability to actively thermoregulate within days of parturition.

On top of getting tons more great data this past summer, I also managed to take many pictures of very cute baby hoary bats. I am currently writing up and preparing my data for publication.



3 week old hoary pup trying to hide in Brandon's field beard

## Cory Olson



Cory Olson

During the summers of 2009 and 2010, I captured and radio tracked reproductive little brown and northern long-eared bats in Lesser Slave Lake Provincial Park, Alberta as part of my M.Sc. research at the University of Calgary. Little brown bats in the park roost mainly in the cavities of large aspen and balsam poplar, either individually or in groups of up to at least 400. Northern long-eared bats also roost in tree cavities but tend towards smaller group size. The choice of roost tree and the size of roosting groups changes nearly nightly for both these species, resulting in diverse habitat use and cryptic colony structure. I am examining roost switching behaviour and roosting habitat use/selection by colonies of these two species, with particular emphasis on how thermoregulatory strategy influences roosting behaviour in the little brown bat. Analysis of these data should be concluded within the next few months.



Brandon Klug

### Measuring the forearm of a six day old hoary pup

#### Jesika Reimer

We recently published a paper outlining the diet of hoary (*Lasiurus cinereus*) and silver-haired (*Lasionycteris noctivagans*) bats while migrating through southwestern Alberta in late summer and autumn. Numerous studies have documented feeding habits of these species in their summer grounds, but this is one of the first studies to look at their feeding habits during migration. This paper provides a stepping-stone for investigating the relation of feeding behaviour to turbine fatalities, and assessing the hypothesis that migrating bats are killed by wind turbines due to feeding on insect congregations around turbine nacelles. I am currently working on analyzing echolocation calls from wind farms to further examine this hypothesis.

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### Long-term Bat Monitoring

#### Cory Olson and Erin Baerwald, University of Calgary

Long-term monitoring of bat populations is needed to better understand the basic biology of North American bats, including the timing of migration and hibernation, inter-annual fluctuations in bat activity, the influence of weather on bat activity, and the distribution of bat activity across North America. The monitoring of bat populations is especially important given emerging threats to bats from white-nose syndrome and wind energy facilities. Recently, several bat monitoring stations have been set up across Alberta and in Manitoba with the goal of monitoring bat activity in Canada over the long-term. Cory Olson currently has one station running near the Lesser Slave Lake Bird Observatory that is being maintained with the assistance of Richard Krikun. Chuck Priestley has also begun monitoring bat activity at the Beaverhill Bird Observatory, located about 60 km east of Edmonton. Erin Baerwald and Brandon Klug have two detectors set up at the Delta Marsh Field Station in Manitoba that have been running since 2009. Erin has also deployed detectors in the Crowsnest Pass with the hope of determining if the pass is serving as a migration corridor for bats. The Crowsnest detectors are being maintained with the help of Dale Patton. We hope additional detectors can be deployed in the coming years to increase spatial replication and improve representation of different regions.

## 25-years of survey data at the Cadomin Cave hibernaculum in Alberta

Cory Olson, University of Calgary



The Cadomin Cave hibernaculum (located about 262 km west of Edmonton) has among the longest running bat census records of caves in the Canadian Rockies. Regular censuses of the hibernating bat population began in 1972 (by Dave Schowalter of the Alberta Fish and Wildlife Division), and biennial censuses continue to occur with the direction of Dave Hobson and Margo Pybus (Alberta Fish and Wildlife), along with the help of several volunteers. With the assistance of Dave and Margo, I analyzed these census records to determine how the winter population of bats occupying the cave has been doing over the past quarter-century.

Fortunately, at a time when good news regarding cave hibernating bats in North America is becoming scarce, there is strong evidence that the winter population of bats in Cadomin Cave has been increasing for much of the last 25-years. We analyzed data from 1983 onward (when new and consistent survey protocols were established), and found a significant overall trend towards increasing bat numbers. The increasing trend is evident for both the Mess Hall (a large cavern where slightly over half the censused bats hibernate) and the remaining sections of the cave where regular census data are available, suggesting that bats are not merely moving locations within the cave.

The reason for the increase in bat numbers is not clear. However, improved restrictions on human access during late fall and winter that were implemented about a decade ago are likely an important factor. Indeed, most of the best years in terms of bat activity occur after 1997 when signs were placed at the trail head requesting people not to enter the cave during the hibernation period. It is also probable that intensive capturing and banding during the fall swarming period during the 1970's and 1980's (and perhaps the more regular censuses that occurred during that period) contributed to an initial suppression of the bat population, and it has been recovering since that time. These results highlight the importance of reducing disturbance to hibernating bats and the slow rate of recovery in a hibernating population. The analysis of these data will hopefully be published within the next year.



## Wood Buffalo National Park – September Bat Survey

Cori Lausen, Birchdale Ecological,  
info@batsRus.ca Kaslo, B.C.



Dave Hobson, ASRD Fish and Wildlife, and I travelled to Ft. Smith, Northwest Territories in September to conduct a survey of bats in the Alberta portion of Wood Buffalo National Park. There is a sink-hole cave hibernaculum there, first discovered and last surveyed in the 1970's when Tim Schowalter and others did an internal winter survey by boat. Dave and I were very happy to discover that water levels were low inside the sink hole and the entire cave could be accessed with chest waders only. We found a few clusters of bats, and confirmed the presence of three species in the cave: big brown, northern myotis and little brown.

The confirmation of big brown bats is actually very interesting from an Alberta bat distribution stand-point. This species is found in southern Alberta through to central Alberta. However, in over ten years of bat survey in northeastern Alberta (in the area of the tar sands) not a single big brown has been captured, and no conclusive big brown acoustic recordings have been made (Scott Grindal et al., pers. comm.). This begs the question: why the 'black hole' for big browns in northeastern Alberta? (Perhaps habitat modeling is needed to get at the answer?) It would be very interesting to know where the big browns that are hibernating in Wood Buffalo National Park are coming from – I suspect they are coming from southern Northwest Territories where deciduous trees and karst sink holes are abundant.

Dave and I were assisted by several Parks Canada staff: Sharon Irwin, Mike Vassal, John McKinnon, and Rhona Kindopp. Mistnetting of foraging bats yielded surprisingly large numbers of captures despite below freezing temperatures. I noted that the crazy moths were still flying in cold and snow, and so perhaps that is why the bats were too! Bats with very full tummies were being captured. However, as September progressed and my work shifted into the Northwest Territories, capture patterns were less indicative of foraging bats, and more in line with bats moving into the karst area to overwinter (see NWT section).



# British Columbia



**Vivian Birch Jones**  
Lillooet Naturalist Society

We had a sad event of four long-eared bats trapped in burdock here in September. I put an information bulletin in the Lillooet news to let people know how nasty burdock is.

On a happier note the bat research in our area this past summer, led by MOE and funded by BC Hydro's Fish and Wildlife Compensation program, went really well. Reports are being written and we are looking forward to a presentation about the project in our community in early November. This community is bat friendly and the public outreach has been a wild success, so that's neat.

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## New Bat Species Confirmed in British Columbia

Charlie Palmer of Hemmera reports that eastern red bat (*Lasiurus borealis*) has been documented present in northeast BC this year, approximately 20 km from the Alberta border. The discovery was made by Brian Paterson of Hemmera, and was confirmed by David Nagorsen of Mammalia Consulting. Though the species was long suspected to occur, this is the first documentation of its presence in the province. A short communication on the confirmation will be written by Hemmera / Mammalia during winter 2010/2011. This discovery adds a new species to the list of bats that should be considered by biologists working in northeastern BC.

**Doug Burles**  
Emeritus Scientist, Kamloops

Last summer I worked on three bat projects, as follows:

I worked with the Lillooet Naturalist Society (LNS) who have been actively restoring disturbed land near a local BC Hydro generating station by planting vegetation and restricting vehicular activity. The purpose of my study was to establish a baseline of bat activity with which future changes in bat activity can be compared. I used two approaches to accomplish this – passive recording of bat activity using a Song Meter SM2BAT unit to determine level of bat use and tentatively identify species using the restoration lands, and live capture to confirm species present. I made full spectrum recordings of all bats captured that I used to compare with recordings of free-flying bats. During my visit to Lillooet I also participated in a “Bringing Nature to Schools” event sponsored by the LNS.

Mist netting results revealed that at least three species of myotis bats (*Myotis lucifugus*, *M. yumanenesis*, and an as yet unknown long-eared myotis) were using the restoration lands. An additional four species (*Euderma maculatum*, *Lasionycteris noctivagans*, *Eptesicus fuscus* and *Lasiurus cinereus*) were tentatively identified from passive recordings. There was tantalizing evidence that a second long-eared bat, *M. thysanodes*, was also present, but it was too weak to declare this with any level of certainty. No day roosts were identified in the study area and no bats appeared to be using the two bat houses that were placed on artificial snags in 2009, but a maternity colony of greater than 100 *M. yumanenesis* was discovered less than 1 km from the study area.

Bat activity, as measured by the Song meter recording unit, averaged 20.7 bat passes/hr during 87 hours of recording between 20 June and 26 August at three different sites in the study area. Activity varied geographically from an average of 32.3 and 16.8 bat passes/hr at sites 1 and 2 (two treed sites) respectively, to only 8.4 bat passes/hr at site 3 (an open, disturbed area). Activity also varied temporally, with more than twice as much bat activity being recorded immediately after sunset than in the early morning hours.

Because of the variable quality of many of the recordings and the close similarity of the echolocation calls of some species, it was not possible to classify most bat passes to species. Recordings were therefore classified all bat passes into five arbitrarily defined categories, or “species groups” based on echolocation call parameters. Almost 99% of all bat passes recorded fell within the three higher frequency categories, which included most of the common *Myotis* species found in B.C., as well as two of the more common larger bats, *L. noctivagans* and *E. fuscus*. The few recordings that fell into the 2 low frequency categories were significant because they represented large bats such as *E. maculatum* and *L. cinereus* that are not abundant in BC.

I also worked with Gwaii Haanas National Park Reserve and Haida Heritage Site to monitor bat activity of the bat colony at Hotsprings Island. The Northern Saw-whet owl, which began frequenting this colony in 2009, was again present in 2010. As a result, numbers using the colony has been reduced by about 90%, and I could not confirm that Keen’s myotis were continuing to use the roosts. My tentative plan for 2011 is to return to Hotsprings Island early in the year and attempt to locate where the owl is nesting. If I can find the nest, I hope to collect some owl pellets to see if I can find any evidence of bat predation.

I also continued to participate in a project along with Cori Lausen, David Nagorsen and Purnima Govindarijulu that is working on the question of the taxonomy of long-eared bats in B.C. In 2010 we were in the field again at a number of locations in 2010 to capture long-ears in order to collect physical information as well as tissue samples for genetic analysis.



## Lillooet Bat Inventory

Mike Sarell, Ophiuchus Consulting



BC Hydro Fish and Wildlife Compensation Program (FWCP) and the Ministry of Environment funded the sampling of over 20 sites in the Lillooet area. The study area has a rugged topography and ranges from dry bunchgrass ecosystems along the Fraser River west into the wet watersheds toward the coast. This summer was the first time that the bat fauna in Lillooet was extensively sampled. We captured a total of 10 species. In addition to the usual suspects, we confirmed the presence of townsend's big-eared bats, western small-footed myotis and the fringed myotis, which are range expansions for these species. We also reconfirmed that spotted bats are present, albeit in low numbers. DNA and acoustic call analysis may yield additional species. Five bats were tracked using radiotransmitters. The most significant finding was townsend's big-eared bats using natural caves as roosts and foraging almost exclusively in riparian areas. Similar behaviour also was observed with a fringed myotis.

This project was successful in meeting all objectives and could not have been possible without support from the community of Lillooet and the Lillooet Tribal Council. In particular, the Lillooet Naturalist Society volunteered over 250 person hours for the project. Two community outreach events were a definite highlight for project biologists, these events drew over 100 people and provided everyone an opportunity to get involved in a night of mist netting while learning more about these elusive animals.

The bat team consisted of Mike Sarell, Thomas Hill, Jared Hobbs and Francis Iredale. Special thanks to Vivian Birch-Jones and Ian Routley, as well as many other keen volunteers, that assisted with the project. Breanne Patterson (FWCP) oversaw the project and enthusiastically helped on several nights.

## Urban Keen's?

### Long-eared bats captured in remnant old-growth in Whistler, B.C

Cori Lausen, Birchdale Ecological, info@batsRus.ca Kaslo, B.C.

Bob Brett, Whistler Biodiversity Project, organized a survey of bats in Whistler. For 3 days in August Leigh Anne Isaac, Cori Lausen, Purnima Govindarajulu and Bob netted and acoustically monitored bats within the municipal boundaries of Whistler; weather was conducive to netting two of those nights. Species captured included *Myotis californicus*, *M. lucifugus*, *M. yumanensis*, and at least one species of long-eared bat. Two of the three long-eared bats displayed typical characteristics of Keen's myotis (*M. keenii*), while one was more typical of long-eared *Myotis* (*M. evotis*). Genetic samples were submitted for species testing as part of the B.C. Long-eared Bat Taxonomy project. The putative Keen's captures are of specific interest because this species is thought to be associated with old growth, of which little remains in Whistler. The captures of the long-eared bats occurred in one of the few remnants of old growth left in the city, associated with a private resort. The only previous records of this species in Whistler are one from Ken Racey in 1941 and a second from his son-in-law Ian McTaggart-Cowan in 1944 (both specimens are at the Royal BC Museum). Acoustics data from the survey are still being analyzed, but at least one additional species (silver-haired bat) has so far been acoustically confirmed in the municipality.

For more information on the biodiversity surveys in Whistler, visit: [www.whistlerbiodiversity.ca](http://www.whistlerbiodiversity.ca).

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## B.C. Long-eared Bat Project in Final Stages

Cori Lausen, Birchdale Ecological,  
info@batsRus.ca Kaslo, B.C.

This past summer Doug Burles, Dave Nagorsen, and Cori Lausen, together with assistance from Purnima Govindarajulu, Thomas Hill, Mike Sarell, Bryce Mackinnon, Gillian Sanders, Lorraine Andrusiak, Rhonda Millikin and others, completed the last formal field season of data collection for the MOE Long-eared Bat Taxonomy project. Mistnet capture took place in the south Okanagan; Cranbrook, Castlegar, Trail, Grand Forks areas of the Columbia Basin; and the UBC Research Forest. Additional samples were obtained in conjunction with survey work taking place in the Lillooet area (BC Hydro and MOE). Samples are now being genetically processed by Mike Russello in UBC Kelowna. The analysis for this project will take place later this winter.



# Northwest Territories

**Joanna Wilson**

Species at Risk Secretariat, Department of Environment and Natural Resources

A bat survey was conducted from 15 – 19 September, 2010, in the South Slave region of the Northwest Territories (NWT) near Fort Smith. Little brown bats (*Myotis lucifugus*), northern long-eared bats (*Myotis septentrionalis*), and one big brown bat (*Eptesicus fuscus*) were captured. The region contains substantial limestone karst formations and could provide a great deal of important bat hibernation habitat. One hibernaculum was confirmed in the area which contained over 2000 little brown bats. This is the first confirmed hibernaculum in the NWT and it is outside the boundary of Wood Buffalo National Park. No visible signs of white-nose syndrome were observed. A potential study is being planned to gather local knowledge on bats and other lesser-known species in the South Slave and Dehcho regions, to improve baseline information on bats in the NWT and possibly identify other potential hibernacula. Government of the Northwest Territories now has a bat detector to help with monitoring and collection of baseline information.



Joanna Wilson

# Manitoba

## University of Winnipeg, Bat Lab Update

Craig Willis

Our group continues to work on WNS and the wind turbine issue as well as a few curiosity questions along the way. Kristin Jonasson's M.Sc. thesis, which tests her "thrifty female hypothesis" (i.e. understanding how male and female bats budget energy during hibernation) sheds new light on hibernation physiology and is now in committee hands with a defense coming soon. Joel Jameson is in a similar boat with a draft of his M.Sc. thesis complete and exciting results about tall-structure attraction in migratory bats with implications for wind power mortality and mitigation. Kaleigh Norquay has begun M.Sc. work using band-recapture data and PIT tags to examine survival in little brown bats before and (hopefully not in the timescale of her thesis but possibly) after the arrival of WNS in Manitoba and northwestern Ontario. With Winifred Frick (U. California, Santa Cruz) and Jack Dubois (Manitoba Conservation), Kaleigh has begun analysis of a 21-year mark-recapture dataset of more than 10,000 bats. Felix Martinex-Nunez has begun M.Sc. work using these band-recapture/PIT-tag data and molecular methods to study movements and individual associations of bats within and among hibernacula and summer roosts.

The international flavor of the lab has gone up since August with the arrival of two postdocs, Dr. Lisa Warnecke (Government of Canada Post-Doctoral Research Fellow) from Germany; and Dr. James Turner (University of Winnipeg Post-Doctoral Research Associate) from Australia. Both are experts in hibernation physiology and are applying this expertise to two WNS projects funded by U.S. Fish and Wildlife. The first, in collaboration with Dr. Vikram Misra (U. Saskatchewan) will test hypotheses about physiological effects of North American and European isolates of *Geomyces destructans* on bats. This will help us understand mechanisms underlying mortality and work out if the fungus is an invasive species from Europe as many of us suspect. With Dr. David Blehert (USGS) and Dr. Paul Cryan (USGS) we will also be testing the susceptibility of other bat and non-bat hibernators to the fungus. The second project, in collaboration with Dr. DeeAnn Reeder's (Bucknell University) group aims to identify what, if anything, is different about bats which survive WNS and quantify the heritability of possible survival traits. This is important for understanding if natural selection can operate strongly enough to help populations rebound from the disease.

Our intrepid undergrads are also doing important work. Chantal Carriere is working on her honours thesis addressing the repeatable tendencies of individual bats to express torpor and Allyson Menzies is tackling hypotheses about physiological differences between European vs. North American bats to understand WNS mortality. Principal Investigator/head custodian, Craig is trying to keep up or stay out of the way as appropriate and also working on some non-bat projects including a study of overwintering strategies in star-nosed moles with M.Sc. candidate Nadine Price and Dr. Kevin Campbell (U. of Manitoba), and the evolution of traits important for hibernation energy balance and reproduction in Columbian ground squirrels with Dr. Jeff Lane (Centre National de la Recherche Scientifique France).

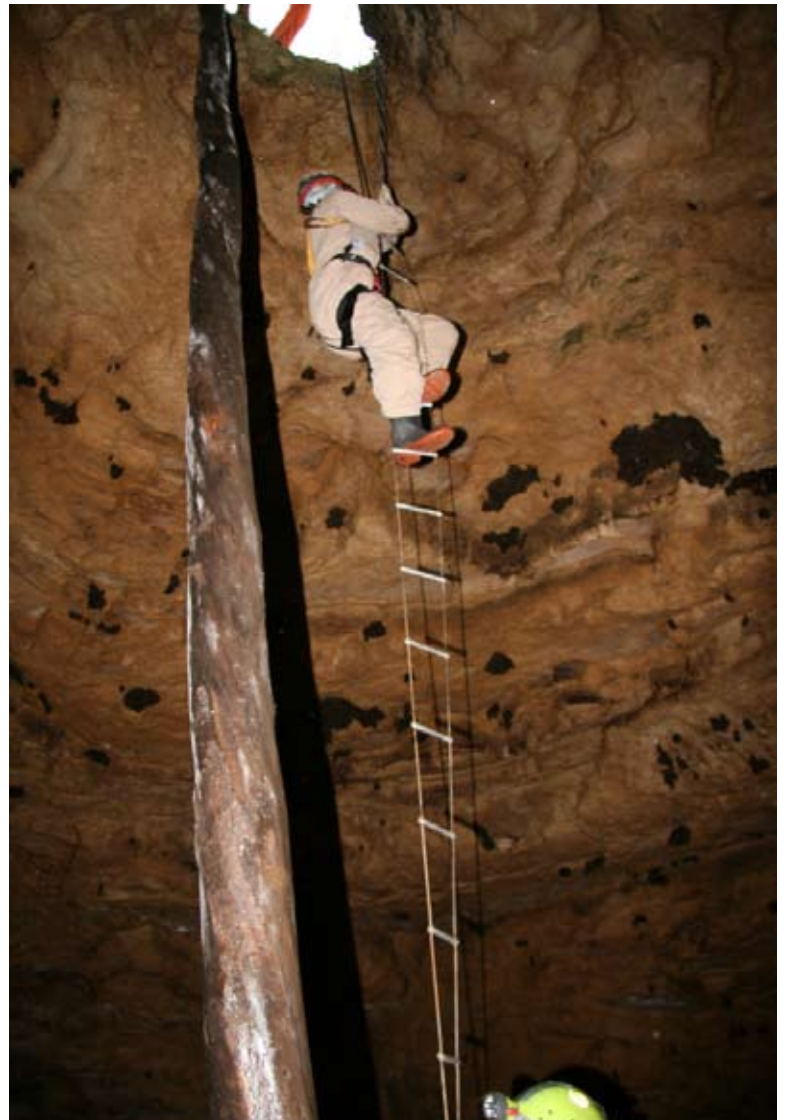
In addition to support from our usual funders (NSERC, CFI, U.S. Fish and Wildlife, Manitoba Conservation, Manitoba Hydro and others), we wish to thank Wendy Gardiner and Kevin Johnson (U of Winnipeg Alumni) for their very generous support of WNS research via their annual giving to the University of Winnipeg Foundation. We appreciate it a lot!





Kristin Jonasson and Kaleigh Norquay ham it up in the background while Dale Brown (Manitoba Speleological Society) belays a climber into a sinkhole cave during WNS surveillance.

Kaleigh Norquay climbs down the wire ladder into Okaw Cave near The Pas in central Manitoba during spring 2010 to conduct the first population count for this cave (note clusters in the background) and start WNS surveillance. This site houses about 5000 bats but was only discovered in the past few years by a logging company – there are many undiscovered hibernacula in Manitoba.



# Saskatchewan

## University of Regina, Bat Lab Update

Mark Brigham

I am currently on a year long sabbatical working in David Jacob's lab at the University of Cape Town in South Africa. This comes at the cost of forsaking the joys of being the Head of the biology department so that I can do some field work, write up a bunch of data in hand, and help a bunch of recently graduated students turn these into manuscripts. In between there is a bit of time to see some really cool animals in National Parks, taste a little local wine and play a little golf. I am also now acting as a co-supervisor for Ms. Dawn Cory Toussaint a new M.Sc. student at the University of Pretoria. She is working on the influence of Baobab trees on thermoregulation by the bat, *Nycteris thebaica*.

Also currently (or recently) in the lab:

**Sam Skalak** defended his M.Sc. in April on acoustic sampling design for bats and has taken up a position at Ash Meadows National Wildlife Refuge north of Las Vegas.

**Miranda Dunbar** finished up a brief post-doc in the lab and took up a position as an Assistant Professor at Southern Connecticut State University on 1 August.

**Julia Kilgour** defended her M.Sc. on bat social interactions in the summer and is teaching Introductory Biology this fall at the University of Regina. She gave a talk on her work at NASBR.

**Yvonne Dzal** defended her M.Sc. thesis on torpor use by little brown bats in October and has moved to UBC to undertake a PhD.

**Joe Poissant** is in the process of writing a formal proposal on his PhD plans. He started his program in Sept. of 2009.

**Jody Rintoul** joined the lab in September 2010 and is also in the midst of proposal writing.



**A *Rhinolophus capensis* from Tsisikamma National Park on the Garden Route between Cape Town and Port Elizabeth (Photo: Anne Brigham).**

# Yukon

## Of Bats and Bugs: Ectoparasites of Little Brown Bats in Yukon

Tom Jung, Yukon Department of Environment



Brian Slough



Shannon Barker

During summer 2010, Treharne Drury, Tom Jung and Brian Slough undertook studies of the ectoparasite fauna of little brown bats (*Myotis lucifugus*) in Yukon. We captured and inspected over 800 bats from several colonies for ectoparasites. While species are still being identified, we found about seven species of ectoparasites on little brown bats, including *Spinipalpus americanus* and *Cimex spp.* Some bats were very infested, while others appeared free of ectoparasites. Treharne will use these data for his undergraduate thesis at Vancouver Island University. He will describe the ectoparasite fauna on little brown bats, and compare differences in prevalence and intensity between colonies and periods in the summer. Moreover, we intend to examine the relationship between ectoparasite loads and body condition and reproductive status. Results should be available early in the new year.

### Continued Bat Work in Yukon

Brian Slough, Whitehorse

In collaboration with Tom Jung, Yukon Department of Environment, I continued to monitor bat colonies and started recording full spectrum ultrasound (Pettersson D500X) across the Yukon to identify species and examine regional differences of *M. lucifugus* calls.



# Alaska

## Acoustic Monitoring of Bats in Juneau, Alaska

Karen Blejwas

Regional Wildlife Biologist, Wildlife Diversity Program  
Alaska Department of Fish & Game

Five species of bats have been documented in Southeast Alaska: little brown bat (*Myotis lucifugus*), Keen's myotis (*M. keenii*), California myotis (*M. californicus*), long-legged myotis (*M. volans*), and silver-haired bat (*Lasionycteris noctivagans*). All five were identified in Alaska's State Wildlife Action Plan as species of concern due to a lack of basic information about their distribution, abundance, habitat use, population structure, life history, and migration habits. To help address these information gaps, we initiated an acoustic monitoring study of bats in the Juneau area in April, 2010, using a combination of active and passive monitoring with Anabat detectors. We actively surveyed all or part of 32 hiking trails along the road system to obtain baseline information on distribution, relative abundance, and habitat use of bats in the Juneau area. Bats were detected on every trail we surveyed except one. Several "hot spots" of high activity were observed. Although the locations of the hot spots changed over the course of the season, all were in the Mendenhall Valley. We also established two passive monitoring stations - one at a maternity roost site and the other near a lake - to obtain baseline information on daily and seasonal activity patterns of bats and to determine the timing of emergence in spring and emigration/hibernation in fall. Bats were already active at both monitoring sites when they were established in mid-April. Activity dropped off sharply at both sites in early October.

Passive monitoring will continue over the fall and winter and will expand to include potential hibernacula sites. We plan to capture and radiotag bats next fall to identify where Juneau bats are overwintering and to help locate hibernacula. We will also use the captures to build a local call library to assist with analyzing the acoustic data for species identification. We will be intensifying our efforts to establish a Citizen Science Acoustic Monitoring project to continue the active surveys in the Juneau area next spring. We will also be expanding the passive monitoring to other communities around Southeast to examine regional variation in activity patterns and the timing of emergence and migration/hibernation.

We would like to thank Aaron Poe, Chugach National Forest and Dave Schirokauer, Klondike Gold Rush National Historical Park for loaning us their Anabat equipment and Cori Lausen, Birchdale Ecological, Ltd., British Columbia for guidance on setting up and operating the equipment and analyzing the call files.

# 40th NASBR - Denver, CO

Yvonne Dzal

Some dress up in costume and go trick-or-treating, while others watch horror films or give out candy, but one may wonder how North America's biggest bat enthusiasts celebrate All Hallow's Eve? In honour of the creature of the night 400 bat biologists met in beautiful Denver, CO for the 40th annual NASBR meeting, hosted by Rick Adams and his Colorado crew.

Although storms across North America prevented some of us to get to NASBR as planned, many of us reunited on Wednesday evening on the top floor of the Hyatt to enjoy the panoramic view of Denver and share stories from the past year over a few drinks.

On Thursday morning we all congregated to participate in a day filled with student presentations. Speaking to past and present NASBR attendees the student competition has always been a favorite among many. With talks ranging from ecology and conservation to physiology and behaviour, all students enlightened us with their findings and successfully set the stage for presentations that followed throughout the weekend.

On Thursday evening Al Hicks (from NYSDEC), and a board of White-Nose Syndrome (WNS) specialists informed us on the current status of WNS across North America. In just four-years WNS has killed over a million *Myotis lucifugus*. Its rapid spread has gotten many bat biologists concerned, intrigued, and on board to research and prevent the further spread of the disease. Paul Cryan (from USGS) called out to the bat community to help resolve any research gaps that remain and ended the session emphasizing that no project is too small in answering or helping with the understanding of this disease. The WNS specialists strongly encouraged all NASBR members to go to <http://www.fws.gov/whitenosesyndrome/> and comment on the national WNS plan. The national plan was published on 27 October 2010 in attempt to manage WNS and is open for public comment until 26 December 2010.

This year's NASBR ended with a highly successful and entertaining banquet. Each year the Gerrit S. Miller Award is presented at the banquet to recognize a fellow bat biologist who has exemplified outstanding service and contribution to the study of bat biology. This year's award winner was no other than Wiesław Bogdanowicz, a bat biologist based in Poland whose research has concentrated on various aspects of bat biology and evolution. In 1999 Wiesław founded and continues to be the chief editor of the only peer reviewed journal which concentrates solely on the study of bats (*Acta Chiropterologica*).

The night commenced with the Spallanzani Award auction. For those of you who missed it at the 26th NASBR (1996 Bloomington, IL) Tom Kunz, Gary McCracken, Wiesław Bogdanowicz and Frank Bonaccorso reunited to perform a synchronized Macarena dance number, while the three tenors (Rodrigo Medellin, Armando Rodriguez-Duran, and Frank Bonaccorso) swooned the crowd, singing acapella. Not only were the performances highly entertaining, and caught on video for future YouTube uploading, they raised substantial funds for the Spallanzani award.

I would like to thank all of you for the beautiful donations to the auction, Robert Barclay for being a comical and captivating auctioneer, and for everyone else who participated and helped out. I had a lot of fun being part of the auction and am looking forward to next year's meeting in Toronto.



Dave Johnston



Dave Johnston



# White-Nose Syndrome

**Margo Pybus**

Provincial Wildlife Disease Specialist, Fish and Wildlife Division

With devastating effects, WNS continues to expand across eastern regions of North America. Rather than re-iterate the info readily available on web pages, I'll just hit a few highlights on an international, national, and provincial scale:

## **In the USA:**

- Researchers have estimated that little brown bats could be extirpated locally in northeast states in less than 20 years.
- Once common species in the northeast USA are becoming scarce and may warrant federal listing.
- The draft US National WNS Plan is available for public input at [http://www.fws.gov/WhiteNoseSyndrome/pdf/WNSNational%20Plan\\_DRAFT\\_10.21.2010.pdf](http://www.fws.gov/WhiteNoseSyndrome/pdf/WNSNational%20Plan_DRAFT_10.21.2010.pdf) This is a high level document that lays a foundation on which to build an action/implementation plan. USFWS & associates are well on their way to developing the implementation plan.
- In September, all caves and mines throughout the US National Refuge System were closed to public use as a precautionary measure to avoid inadvertent human transfer of WNS

## **In Canada:**

An ad hoc national WNS Working Group formed among concerned agencies and bat researchers. Three national teleconference calls have taken place since May 2010. Canadian participation in bi-weekly USA national conference calls remains high. These calls are very informative and keep all doors open for agencies to share information and research results. The next call is in December 2010.

Calls focused on:

- sharing info regarding provincial, territorial, federal info re: bat distribution and hibernacula as well as perspectives on WNS;
- finding consistency in approach and surveillance tools;
- promoting documentation of more hibernacula; and
- discussion of a national database to track WNS occurrence or work in conjunction with US national database.

## **In Alberta:**

- Multi-agency cooperation remains high. Known hibernacula on provincial and federal lands are closed to public access until further notice.
- Bat handling procedures for inventory and research activities were amended to include WNS precautions.

# WBWG

## Election and Conference

A two year term is coming to completion for the Western Bat Working Group Board of Officers. They had an informal meeting at NASBR together with members of the Board of Directors who were attending the conference. The group continues to have regular monthly conference calls and is gearing up for elections before the end of the year. Current president, Rita Dixon of Idaho, vice president, Cori Lausen of B.C., and M.A.L. Martin Grenier of Wyoming, are stepping down from the Board. Other M.A.L.'s Dave Johnston and Angie McIntire and running for positions to be elected to the Board for another term (see below). Elections will take place before the end of 2010, so stayed tuned! Your provincial/territorial representative will contact you for your vote. He/she will tally the votes and submit one vote for the province/territory. Remember that the WBWG is the umbrella organization for all other bat working groups in the west, and therefore it is important that we all participate in the elections. Only WBWG members can vote, so if you are not a member, you can sign up on [www.wbwg.org](http://www.wbwg.org) (currently there is no charge for membership, although this is expected to change in the near future). Also check out the website for biosketches of the following candidates:

### President

Angie McIntire

Katie Miller

### Vice President

Dave Johnston

Scott Osborn

### Secretary

Diane Probasco

Rob Schorr

### Treasurer

Brad Phillips

### At-large Representative (2)

Carson Brown

Bill Doering

Jeff Gruver

Amie Shovlain

Donald Solick



# BC Bat Action Team



BCBAT met via conference call on 26 May, 2010. Items discussed included an update from the 3 main committees: Mines Committee, Wind Energy Committee, and WNS Committee. These issues feed into the Bat Plan that is being finished by Vanessa Craig and Susan Holroyd this fall and winter. BCBAT anticipates another conference call before the end of the 2010 year. Details of meetings and protocols can be accessed: <http://bcbats.tripod.com>

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## Upcoming Workshops

### **AnalookW Analysis Workshop.**

The first workshop of its kind was held in Las Vegas, Oct. 2010. The next one is in San Francisco January 17 – 20, 2011, followed by one in Ohio in February.

Topics include: scans, filters, autoID, data and file management, pivot tables and data summary, use of call parameters, and more.

Prerequisites: a basic knowledge of AnalookW and bat species identification.

Remember that AnalookW is used to analyze zero-crossing data – currently these data are generated by the Anabat and the new SM2BAT.

For more information or to register contact Cori at [info@batsRus.ca](mailto:info@batsRus.ca) or Kim at [Kim.Livengood@gmail.com](mailto:Kim.Livengood@gmail.com).

Workshop updates: [www.batsRus.ca](http://www.batsRus.ca).

### **Anabat Techniques Workshop.**

There is a workshop planned tentatively for Creston in late May or June, 2011 providing there is enough interest. There will be other techniques workshops taking place in western U.S.A. this spring.

Topics include: Anabat technology, principles of acoustics and bat echolocation, bat ID, field deployment, reference call collection, CFCRead, intro to AnalookW, passive monitoring, and active monitoring.

There is a nightly field component with hands-on training. If you are interested, please contact Kim at [Kim.Livengood@gmail.com](mailto:Kim.Livengood@gmail.com) or Cori at [info@batsRus.ca](mailto:info@batsRus.ca).

Workshop updates: [www.batsRus.ca](http://www.batsRus.ca).



# Conferences

- Western Bat Working Group Conference, April 3–6, 2011, Green Valley Ranch Resort, Spa & Casino, Las Vegas, Nevada.
- Western Bat Working Group Bats and Wind Training, April 6–8, 2011, Green Valley Ranch Resort, Spa & Casino, Las Vegas, Nevada
- 41st North American Symposium on Bat Research 2011. Dates TBA. Toronto, Ontario.
- 42nd North American Symposium on Bat Research 2012. Dates TBA. San Juan, Puerto Rico.

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# Recent Literature

## Theses

Coleman, J. 2010. Effects of urbanization on Prairie bats. Biological Sciences. University of Calgary, PhD thesis, Calgary, AB, pp. 192.

## Recently Published

Bexton, S.B and D. Couper. 2010. Handling and veterinary care of British bats. In Practice 32:254-262.

Dunbar, M.B. and R.M. Brigham. 2010. Thermoregulatory variation among populations of bats along a latitudinal gradient. J. Comp. Physiol. B. 180:885-893.

Jonasson, K. A., M.E. Timonin, K.J.O. Norquay, A.K. Menzies, J. Dubois, and C.K.R. Willis (2010) A little brown bat (*Myotis lucifugus*) survives in the wild with only one foot. Journal of Wildlife Rehabilitation. In Press.

Matheson, A.L., K.L. Campbell and C.K.R. Willis (2010) Feasting, fasting and freezing: Energetic effects of meal size and temperature on torpor expression by little brown bats. Journal of Experimental Biology. 213:2165-2173

Norquay, K.J.O., A.K. Menzies, C.S. McKibbin, M.E. Timonin, D.E. Baloun and C.K.R. Willis (2010) Silver-haired bats (*Lasiurus noctivagans*) found ensnared on burdock (*Arctium minus*). Northwestern Naturalist. In Press.

Reimer, J.P, E.F. Baerwald and R.M.R. Barclay. 2010. Diet of Hoary (*Lasiurus cinereus*) and Silver-haired (*Lasiurus noctivagans*) Bats While Migrating Through Southwestern Alberta in Late Summer and Autumn. Am. Midl. Nat. 164: 230-237.

Willis, C.K.R. and M.B. Fenton (2010) Social organization and communication. Pp. 57-72 In: Bats in Captivity. (Barnard S. ed.). Logos Press, Washington D.C.

# Field Notes

Cori Lausen, Birchdale Ecological,  
info@batsRus.ca Kaslo, B.C.

## What's new in radio-transmitters?

BIOTRACK/LOTEK now has available the smallest radiotransmitter on the market – 0.19 g! ATS runs a close second, offering a 0.20 g transmitter.

## What's new in acoustics?

### ANABAT:

- **Firmware Upgrade:** Since the spring issue of the newsletter, Titley has upgraded the SD2 firmware such that the USB connection can now be used in place of the 9 pin for updating Anabat clocks. This new firmware also enables the SD2 to accept a huge range of CF card types. Firmware upgrades are now easily made using the CFcard, and no longer require connection of the detector to your computer.
- **Getting help and asking questions:** Titley has launched a forum for Anabat users <http://www.titleysupport.com>
- **U.S. office:** Titley has plans to open their North American office in early 2011 in Austin, Texas. They expect the services offered by this office to expand over time, but at minimum there will be a Titley employee answering the phone during North American office hours!

### SM2 – WILDLIFE ACOUSTICS:

- **New 384 model:** The SM2 now comes in two different forms: 192x2 stereo or the 384 mono. These refer to the sampling frequencies: the 192 version samples at 192 kHz 16 bit and can record input from up to 2 microphones; the 384 samples at 384 kHz 16 bit allowing higher frequencies to be recorded, but only one microphone can be used. If you are interested in buying the 192x2 model, you may wish to do so before the end of 2010 – the price goes up by ~\$150 in the new year.
- **Active monitoring:** All SM2 detectors come with a plug for earphones. Even though the unit is designed mainly for passive monitoring, you can now you can listen to bats in 'real time' if you'd like! You can also use this ear phone option to check out the noise level in your recording environment to decide what trigger threshold might be most appropriate for minimizing large numbers of noise files.
- **GPS:** The SM2 now comes with an optional GPS accessory allowing you to: map/track acoustic recordings during transect surveys or mobile monitoring (e.g. for Google Earth display or other maps). There is automatic entry of GPS coordinates into all acoustic files [.wav or zero-crossing files] and you can synchronize the clocks of multiple SM2 units in the field

# Field Notes cont...

## What's new with mistnets?

I recently learned from Avinet that they sell more net lengths than are listed in their catalogue! As many of you have likely noticed, especially when targeting long-eared bats, quad trails and logging road-beds tend to be ~4 to 5 metres wide. This makes the 3 m Polish monofilament nets too short for good coverage, and the 6 m standard US nets too long to squeeze in without major effort. Turns out that Avinet sells 4 m and 5 m wide nets – you just have to request them!

## What's new in gear for WNS decontamination?

### Disinfection:

This summer I used a fungicide readily available in Canada (through the ZEP Manufacturing Company of Canada, Edmonton; distributors across Canada). The chemical is called AQUA SAN. It is marketed as a fungicide that requires no rinse. (In fact, Canada's FDA allows this chemical as a final rinse of restaurant dishes – although I do find this highly disturbing I must admit!)

AQUA SAN meets the criteria set out by the USFWS in the USA for WNS fungal decontaminant: 3% quaternary ammonium compounds. I soak or spray my nets down with this chemical instead of using bleach, because many bat biologists in the US have complained of mistnets being brittle by the end of the field season when 10% bleach has been used for decontamination.

Formula 409 is being recommended in the USA as an alternative to bleach, but this chemical is not easily obtained in Canada. Please note that although some earlier field protocols recommended use of Lysol wipes, it has since been advised that Lysol not be used around bats – two independent employees of Lysol have advised that small mammals should not come in contact with a surface cleaned with Lysol, even if the surface has dried.

### Net Storage Bags for washing/soaking nets:

No 'ideal' commercially available mesh bags for nets have come available to my knowledge. Avinet sells a medium-sized mesh bag that is \$6/bag with a drawstring and black clip; however, I find that the black clip gets tangled in the net and I like to be able to put the strings of my nets on handles like I do with plastic shopping bags. Bat Conservation and Management sells a stiff rubberized mesh bag that has 2 handles for the strings of the net ends, which is great, but their current style has some internal hem edges exposed that catch on the net. They are working on having their manufacturer make the bags inside out with the hem rolled and that should alleviate this problem. The bags are \$6 and hold promise once the hems are tucked in. However, they are quite small (difficult to stuff longer nets into them), and I have asked the company if they would consider larger bags.

## Where can you send your bat DNA samples for species identification?

Wildlife Genetics International (WGI) in Nelson B.C. is a world renowned genetics lab, conducting DNA analyses for carnivores and bears around the world. Dr. Dave Paetkau, President and Molecular Geneticist, has shown substantial interest in sequencing bats for species identification, and started offering this service in fall 2010. As many of you are finding, it is getting harder and harder to find a lab to do this type of analysis, so if you have DNA samples that you would like to have processed, check out: <http://www.wildlifegenetics.ca/> A single sample will run you about \$100, but the cost goes down tremendously with multiple samples.



# Archived Newsletters

This newsletter first started in Fall 2002. It is produced two times per year and is housed by the Alberta Sustainable Resource Development on the Alberta Bat Action Team website. All past issues can be accessed at the following link:

<http://www.srd.alberta.ca/BioDiversityStewardship/AlbertaBatActionTeam/ABATProgramsPublications.aspx>

Currently ASRD is behind in the posting of these newsletters, so if you require any recent issues, please contact Jen Talerico: [western.canada.bat.network@gmail.com](mailto:western.canada.bat.network@gmail.com) directly.

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## WCBN Newsletter Submissions

Please submit all newsletter submissions to Jen Talerico: [western.canada.bat.network@gmail.com](mailto:western.canada.bat.network@gmail.com)

Submissions can be made at any time.

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Brandon Klug

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