

WESTERN CANADA BAT WORKING GROUP

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NEWSLETTER

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FROM THE EDITOR

Thank you to Krista Patriquin, the former editor, for establishing the framework of this newsletter. As the new editor, I would like to thank all of you for your contributions and continued interest in the newsletter. I welcome any suggestions about how this newsletter could be improved, and encourage you to send me updates/submissions throughout the summer for inclusion in the next issue, tentatively scheduled for November 2004. It is great to see that our distribution list is still expanding. Please contact me to add email addresses to the list. It is particularly nice to see that we have more U.S. addresses on the list, and I encourage American submissions; afterall, bats know no borders!

Sincerely,

Cori Lausen

RESEARCH UPDATES

BRITISH COLUMBIA

2002 / 2003 Abandoned Mine Mapping and Townsend's Big-Eared Bat Survey in the West Kootenay

Thomas Hill, Aaron Reid and Ross Clarke - Columbia Basin Fish and Wildlife Compensation Program, Nelson BC.

Based on current knowledge of habitat requirements and present distribution of Townsend's Big-eared bat (*Corynorhinus townsendii*) the potential existed for this bat species to have been impacted by the creation of reservoirs by BC Hydro for hydroelectric development in the West Kootenay. Roost sites such as natural caves, abandoned mines and buildings were potentially lost due to the flooding.

The objective of this project is to document abandoned mines used by Townsend's Big-eared bats or any other bat species if encountered in the West Kootenay. Abandoned mines within the Interior Cedar Hemlock (ICH) Biogeoclimatic (BGC) zone near Creston, the Pend d'Oreille valley and Ainsworth, British Columbia were mapped and monitored for use by Townsends Big-Eared bats in the summers of 2002 (Ainsworth) and 2003 (Creston, Pend d'Oreille valley). BGC subzones sampled included the very dry warm (xw), dry warm (dw) and moist warm (mw) units. Types of surveys conducted include daytime external and daytime internal. A total of 18 abandoned mines were mapped and monitored in the Ainsworth area, 21 in the vicinity of Creston, and 4 in the Pend d'Oreille valley. No bats were detected in the Ainsworth area but eight of the 21 mines in the Creston survey contained Townsend's Big-Eared bats, with seven of the eight roosts occurring in the ICHxw and the other in the dw subzone. The numbers of bats roosting in the mines ranged from one to three. In the Pend d'Oreille valley 2 of the 4 mines occurring within the ICHxw subzone contained individual Townsend's Big-Eared bats.

This project was designed to provide us with a layout of mines that can be continually monitored for use by bats and to develop a protocol with the Ministry of Mines which incorporates the needs of bats into plans for mine entrance closures. Activities planned for the 2004 field season will include extending the abandoned mine survey to other locations within the West Kootenay, identification of maternity roosts and hibernacula of known populations and the identification of abandoned mine characteristics important to Townsend's Big-eared bats.



Bat Houses in the Old Bridge at Lillooet, BC

Vivian Birch-Jones, President, Lillooet Naturalist Society, Lillooet, BC

When we heard that our historic bridge over the Fraser River at Lillooet was being refurbished I immediately thought of retrofitting for some bat houses at the same time. It was an ideal site - a small bat house set up downriver the previous summer had promptly attracted bats. The Lillooet Naturalist Society supported the idea so I took it to the local Village Council. The Council approved the notion with the provision that the Naturalist Society pay any extra costs (and being the eternal optimist, I committed to that without a pause - in fact with calm authority although my heart skipped a beat...).

The Village Clerk, who thinks bats are cool, and the interim Administrator, who saw the value in mosquito control for combating West Nile, put me promptly in touch with the Engineer. It wasn't too hard to get by the scepticism of the Engineer as Bat Conservation International (batcon.org), zoomed in at my request for help and provided top quality advice, support and consultation by phone and email, speaking to the Engineer in his 'language', and the plans were done. I was really pleased when I saw the plans and then the request for bids in the local newspaper, which included 'installing bat houses', in the old bridge restoration work. The plan was really taking shape.

Lillooet has eight confirmed species of bats. Five of these are endangered or threatened (see table). Most of our bats are tree bats, and they are all insectivores. This project provided a new roosting shelter and a chance to mitigate some of the harm that development and resource extraction have done in our area. Little is known about our local bats but interest has certainly grown in Lillooet and this project has provided great discussion and interest, and wonderful PR for our bats. Since one of the biggest challenges in bat conservation is a general lack of knowledge, this project is already a success.

It wasn't long before the uproar started, "...rabies, bat attacks, what are you people thinking....?! COSTS....!?" The Village and our Naturalist Society took a bit of flak but we set up an educational session and invited all the critics, none of whom turned up, and held an enjoyable bat education session with videos, slides and bat information for all. The Young Naturalists hosted this, and most youngsters are bat fans, so it quickly took a general turn for the better and enthusiasm was restored. So much so that some local folks have recently asked if we are putting in any bat houses at the *new* bridge.

When the newspaper squeaked about costs (misinformed by one of the critics, but, as Robertson Davies says, "Democracy, everyone is entitled to their own uninformed opinion.....") the Lillooet Lions organization came forward and helped with the construction of the houses.

In a grand volunteer effort the houses were built and installed in two Saturday mornings through the Lion's efforts. The local club is pleased with the project and they are considering featuring bats in their float at the May Day parade! Information on our Lillooet bats and how to construct bat houses will be available at the event. Total costs for the project, due to the Lions' efforts went from \$2,000. to \$1,000. The cost saving created by the Lion's work also left some funds for the educational sign (Bat Conservation International committed \$400. and the Federation of BC Naturalists matched them. Costs have totalled out at \$500 so we have \$300 for a sign.) We plan a sign that is educational, credits the volunteers and contributors, and celebrates our bats. It should prove to be a place of interest in a very picturesque setting.

Now, we look forward to watching the evening sky at the old bridge as summer approaches. We'll see if we can spy some of our amazing flying friends. And we'll see how long it takes for them to discover this new site, the bat's measure of success.



Bat Caves on Vancouver Island

Martin Davis

For the last several years I have been gathering data regarding bat use of caves on Vancouver Island. Having worked closely with Canadian Forest Products in the Nimpkish Valley, we have identified two significant bat cave sites in their TFL. One site, Dreamtime Cave, is a very large cave that is the only cave site exclusively used by Keen's Myotis (as far as we know to date). The 20m wide entrance is a feeding site and the interior is used by swarming bats and probably also for hibernation. The second site is Larch Mountain, which contains numerous caves and at least three with use by Keen's and/or Long-Legged myotis. Canfor has agreed to set aside 68 ha at Dreamtime and 123 ha at Larch as OGMA's (Old Growth Management Areas) in perpetuity. Dreamtime also includes potential Marbled Murrelet nesting habitat and Larch includes bat feeding sites. Thanks to Canfor and John Deal for their proactive stance regarding bat conservation.

Community Structure and Habitat Use by Forest-Dwelling Bats in Southwestern British Columbia

Tanya Luszcz, University of Calgary, Calgary, AB

Tanya just defended her MSc thesis in April and has moved to the West Coast to work at Bamfield Marine Research Station. Here is the thesis abstract:

Bat species diversity and distribution vary with climate and with behaviour of sexes and reproductive classes. Furthermore, a bat's ability to deal with habitat structural complexity is influenced by body size, wing morphology and echolocation-call structure. I examined factors influencing community structure and habitat use of forest-dwelling bats among forests of different biogeoclimatic ecosystem zones and ages in southwestern British Columbia, using mistnetting and ultrasonic detection. Species composition varied with ecosystem zone, but not consistently between sampling techniques. Both ecosystem zone and forest age influenced habitat use by *Myotis* species. Black cottonwood stands and lower elevation forests were important for foraging *Myotis*. Older forests were more important to foraging *Myotis* species than young and medium-aged forests; however, foraging bats strongly preferred riparian areas. Habitat use by species of large bats did not follow clear patterns among ecosystem zones or forest ages, and results suggest that they may avoid forest interiors.

Habitat Use and Roost Selection by Pallid Bats (*Antrozous pallidus*) in British Columbia

D.A. Rambaldini, University of Regina, Regina, SK

Daniela will be returning to the Okanagan Valley this summer to continue studying Pallid bats, although she has completed data collection for her MSc., and plans to defend her Thesis this fall.



Insectivorous bats as predators in forest pest outbreaks

Joanna Wilson, University of Calgary, Calgary, AB

I am wrapping up my M.Sc. research on the foraging behaviour of bats in a western spruce budworm outbreak. I found that some species of bats showed a functional response (i.e. change in diet) in response to the pest outbreak, but bats did not seem to change where they were foraging on a large scale. I estimated the potential impact of bat predation on budworm. I also found that bats ate surprisingly large numbers of caterpillars (presumably budworm). I plan to defend my thesis in June and will be looking for work after that!

ALBERTA**Northern Alberta Bat Work**

Abbie Stewart, AXYS Environmental Consulting Ltd, Calgary, AB

AXYS will be conducting bat surveys for two projects in the Fort McMurray area during the summer of 2004. One project is designed to collect baseline data for bats in the area, while the other is the continuation of a monitoring program. Bat surveys will be conducted nocturnally during July using ultrasonic detection and mistnet capture. General bat community and species group activity patterns will be monitored through the use of remote ultrasonic ANABAT bat detectors. The capture of bats through mistnet techniques will permit bats to be identified to species, sexed, aged, and assessed for reproductive condition. Overall, these bat surveys will provide information on the relative abundance, diversity, and habitat use patterns of bats in the Fort McMurray area.

University of Calgary Bat Lab

The U of C Bat Lab says farewell to a large number of students this summer! Joanna Wilson, Lydia Hollis, Donald Solick and Tanya Luszcz all defend their theses prior to Dr. Robert Barclay leaving for sabbatical in July. Cori Lausen and Jeff Gruver, the remaining Barclay-ites, will be working in SE Alberta this summer. Robert will also be initiating a project in SW Alberta looking at the effects of wind turbines on bats.

U of C Students working in Alberta:**Proposed Research**

Jeff Gruver, University of Calgary

I have recently begun PhD work with Robert Barclay at the University of Calgary. In general, my research will revolve around the physiological ecology of 2 small bats: one prairie-dwelling species, *Myotis ciliolabrum*, and one that is found both in the prairies and the mountains, *M. evotis*. I plan to spend the summer of 2004 in the Drumheller area where I will begin investigating the role of evaporative water loss and its influence on torpor use in these two species.



**Ontogeny of thermoregulation in big brown bats, *Eptesicus fuscus*:
proximate mechanisms influencing ability to thermoregulate**

Lydia Hollis, University of Calgary

I am currently writing up my dissertation with the expectation of defending this summer. My Ph.D. research focused on the development of thermoregulation in big brown bats, *Eptesicus fuscus*. I examined proximate mechanisms (e.g., degree of insulation, clustering behaviour, and changes in metabolic rate) that may influence thermoregulatory ability. It appears that early prevalent juveniles are incapable of staying warm at low ambient temperatures. This may be particularly important when their mothers are away from the roost during foraging. Growth rates are reduced at low body temperatures, thus torpid juveniles (i.e., lowered body temperature and metabolic rate) may suffer reduced growth if they do not stay warm at night. Clustering and selection of warm roosts by reproductive females may reduce the costs associated with torpor use by prevalent juveniles. However, there may be trade-offs for older juveniles (i.e., volant) in terms of staying warm to increase growth or going torpid to increase fat accumulation. Early volant juveniles chose to stay warm within the roost, which may be critical for maximizing growth rates. Alternatively, late volant juveniles spent more time in torpor, which may maximize fat deposition prior to hibernation. The short growing season available to temperate bats may not allow enough time to accumulate sufficient fat stores. As a matter of fact, over-winter survival data for *E. fuscus* from my study area (Medicine Hat, Alberta) indicate an 80-90% return rate for adult females and only 50% for juvenile females.

**Differences in the morphology and behaviour of western long-eared bats
(*Myotis evotis*) within and between environments**

Donald Solick, University of Calgary

Donald is scheduled to defend his MSc thesis in June 2004. Here is a sneak peek at his thesis abstract:

I studied western long-eared bats living in a mountain and a prairie environment to determine whether differences in morphology and behaviour were related to differences in thermoregulatory and reproductive demands. Morphological differences occurred between environments, but were likely related to differences in foraging habitat rather than climate. Females were larger than males, although the degree of dimorphism was similar across environments, suggesting that thermoregulation was not an important factor driving dimorphism. Thermoregulatory strategies differed between reproductive and non-reproductive females living in the mountains. Reproductive females selected roosting situations that minimized torpor use, while non-reproductive females maximized energy savings. Mountain females also spent less time in torpor, and chose warmer roosts or clustered with more individuals than prairie females did, suggesting pressure to accelerate reproduction. I conclude that the ability to seek out roosting situations that minimize energy expenditure allows temperate zone bats to reproduce in variable and unpredictable environments.



Hibernation of Prairie Bats

Cori Lausen, University of Calgary

It seems that I didn't really ever get out of the field this winter! After a summer of netting bats in the prairies of Alberta and Montana, I netted bats in Dinosaur Provincial Park (DPP) until the end of October 2003. The last species to be captured (22 Oct) was *M. ciliolabrum*, but *Eptesicus fuscus* were detected until 27 October, one night prior to the onset of snow and cold. The next warm period did not hit the Park until the beginning of March. I set out ANABATs at this time and detected big browns on a nightly basis throughout the month, whenever emergence temperatures were above freezing. Bats were detected flying at temperatures below freezing during the night and at dawn. I netted *E. fuscus* at the end of March, and despite detecting *Myotis* by this time, I did not capture any. I have yet to collect more reference calls (this summer) and analyze these spring passes to determine species. However, based on these winter captures/detection, I have confirmed that bats use the rock crevices of the Red Deer River in the DPP area to hibernate. In addition to DPP, I monitored an area by the Suffield Army Base on the South Saskatchewan River this winter, and have concluded bats hibernate in the rock crevices there also. Based on these findings, I suggest that prairie bats hibernate throughout the river valleys in places where suitable deep rock crevices exist. Despite putting transmitters on bats in DPP this past fall, I was unable to locate any rock hibernacula. Determining what type of rock crevices are being used by bats in the winter is still high on my priority list, but is going to be far more challenging than I had first anticipated! I have not formalized any plans for next fall/winter.

I will spend my summer collecting samples in for my REAL PhD project! I will establish a new netting site at Drumheller, and finish sampling my other sites scattered across SE Alberta and NC Montana.

SASKATCHEWAN (and AUSTRALIA!)

Update From the University of Regina Bat Lab

Dr. Mark Brigham, University of Regina, SK

I will complete a sabbatical leave at the University of New England in Australia at the end of June 2004. Most of my work here has been on things other than bats (Australian Owlet-nightjars, kookaburras and a small marsupial carnivore called a dunnart). However I have kept my hands in the bat world, by presenting a paper on some of Craig Willis's work at the Australian Ecological Society meetings in Armidale in December. I will present the outcome of collaborative work (Matina Kalcounis-Rüppell, Jen Psyllakis) on bats uses of tree roosts at the Australasian bat meetings in mid-April. I have also just finished reviewing the final galley proofs for the proceedings of the bat echolocation workshop held in Austin, TX in April 2002.



University of Regina Students:

Craig Willis completed his Phd in June 2003 and took up an NSERC PDF at the University of New England in Armidale, NSW Australia. He is going to be doing some energetics work with several species of *Vespadelus*, which occur locally.

Kristen Kolar is preparing for her 2nd and final M.Sc. field season in the Cypress Hills of Saskatchewan. She has been PIT-tagging big brown bats with a goal to understanding more about their social interactions as they move between aspen cavities. This follows on from the radio-telemetry data that Craig collected as part of his Phd (see paper in press in *Animal Behaviour*).

Jackie Methany - will begin work in the Cypress Hills this summer focusing on the genetic relationships between big browns. Hopefully this will help us explain the data on social interactions that Kristen will have. Jackie will be a student at the University of North Carolina – Greensboro and be co-supervised by Dr. Matina Kalcounis-Rüppell and myself.

Daniela Rambaldini has completed the fieldwork for her M.Sc. on torpor use by Pallid bats and hopes to defend in the fall of 2004. She will be back in the Okanagan this summer continuing her work on the conservation biology of the species.

Melissa Ranalli was awarded a summer NSERC scholarship and will help in the Cypress Hills this summer. She will conduct an independent project using ANABAT on the comings and goings of bats at roost entrances.

MANITOBA

Monitoring Bat Hibernacula

Jack Dubois, President, Speleological Society of Manitoba

I and other members of the Speleological Society of Manitoba (SSM) will be removing in late May some instrumentation (recording relative humidity, temperature and activity) left in the largest known Manitoba little brown bat hibernaculum over winter. Known hibernacula will be checked during a field trip to the main cave area of the province, the Grand Rapids area, on the May long weekend, plus there will be exploration for new hibernacula. I anticipate placing instruments in a few caves in September to record entry and exit of LBB's from hibernation over next winter. Canada and Manitoba recently signed a memorandum of understanding confirming their desire to create a new national park in the Manitoba Lowlands Region, part of the purpose of which would be to protect caves used by bats. The SSM is quite excited about that.



ALASKA

Evaluating seasonal bat activity in five forested habitats on the northern Kenai Peninsula, Alaska

Aaron Poe and Bridget Brown, Chugach National Forest, Girdwood, AK 99587

Abstract from Recent Poster: Little is known about the distribution and ecology of bat species within Alaska. We evaluated bat seasonal activity in five forested habitat types: mature cottonwood, medium-age cottonwood, live spruce, beetle-kill spruce, and hemlock. We established 20 monitoring plots evenly distributed across these habitat types in the Resurrection and Sixmile watersheds on the northern Kenai Peninsula. Ten plots were monitored simultaneously during each year using Anabat II[®] bat detectors. Solar sensors activated the Anabat units each night from mid-May through early October during 2001 and 2002. The calls of bats were recorded to micro cassette tapes with a time stamp. Blank cassette tapes and new batteries were installed in the units following sampling periods seven consecutive days. Each tape was evaluated by an observer to enumerate bat detections and determine the approximate amount of time the detector was active during each sample period. The date and time of all recorded detections were entered into an Access database and codified by habitat, season (*spring* = mid-May-June, *summer* = July-mid-August, *Fall* = mid-August-early October) and 7-day sample period.

We conducted a total of 8565 hours of acoustic sampling on 209 nights and recorded 4726 individual bat detections and generated the following preliminary results. Bats were active from early May through early October with statistically similar rates of activity between years and during spring, summer, and fall. Detections/hour was highest in mature cottonwood and decreased for, live spruce, medium-age cottonwood, hemlock, and beetle-kill spruce. Detections/hour were significantly greater in mature cottonwood than medium-age cottonwood, hemlock, and beetle-kill spruce stands. We found no relationship between minimum nightly temperature (1-13° C) and detections per night. Bats were detected during 12 one hour categories throughout the sampling season. Detections were significantly greater between 2300-0300 hours than other hours of the night. Detections were significantly less during 0000, 0600, and 0700 hour categories. No interaction was found between number of detections per hourly category and month of sampling.

The second phase of this project will evaluate species or acoustic species-group membership through analysis of recorded signatures and evaluate bat activity related to vegetative structure data collected from each site including: canopy cover, percent tree species cover, tree decay class, DBH, and canopy height.

BATTING AROUND THE WORLD

Dr. Mark Brigham of University of Regina will be returning shortly from his one year sabbatical in Australia (see summary above). Dr. Robert Barclay leaves this July for a one year sabbatical in South Africa. We look forward to hearing about his African bat adventures in next spring's edition!



BC/ALBERTA BAT CONSERVATION PLAN

Vanessa Craig, B.C. and Susan Holroyd, A.B.

Susan, Laura Friis and Lisa initiated the Bat Conservation Plan for Alberta and B.C. - part of North American Bat Conservation Plan - Vanessa Craig is working on this with Susan. In the last edition of this newsletter, Vanessa outlined this project in detail. At the last ABAT Meeting, Susan updated the Alberta Bat Action Team members of progress that has been made. Wind Farms, Oil and Gas, Hydroelectric, Agriculture, Forestry, Mining, and Urban threats are the main subject areas in the plan. So far they have done the Forestry section in detail and will now work on the Hydroelectric section (where the funding is now coming from). This is a multi-year project as they gather more money from the target industries. Susan had a poster up at the Species at Risk Conference about this conservation plan.

ABAT MEETING MINUTES

I have highlighted items from the meeting minutes of the 9th Alberta Bat Action Team meeting held April 1, 2004 at the University of Calgary. If you would like the detailed meeting minutes, please contact Lisa Wilkinson or Cori Lausen.

CONFERENCE/MEETING UPDATES:

Wind Power Meeting in Juno Beach, Florida Feb 19 and 20, 2004

Robert gave us a summary of this meeting that he attended. BCI sponsored the meeting together with U.S. Fish and Wildlife, the U.S. Department of Energy's National Renewable Energy Laboratory and the American Wind Energy Association. It was hosted by FPL Energy Group of Florida Power and Light. Problems were identified, and research needs and potential solutions outlined. Ed Arnett is drafting a series of protocols for energy companies, including pre-site surveys, and a North American-wide study effort will begin this summer, including some work that Robert will be initiating in the Pincher Creek area of Alberta (in conjunction with TransAlta/VisionQuest).

Bats and Forests Symposium - 2nd North American Symposium Workshop on Bat Conservation and Forest Management, Hot Springs, Arkansas, March 8-11, 2004

Robert attended and provided summary. Consensus at conference was that we now know a lot about roosting behaviour of forest bats but far less about foraging in forests. There will be a Proceedings book for this symposium, as there was with the 1st.

As a side-note, Robert mentioned that he found a new source for small radio-transmitters:

Blackburn Transmitters (Philip Blackburn) 0.23 grams and soon will have ones that weigh 0.17 g. Cost: \$125/transmitter U.S. and his turn-around time is only two weeks! No temperature-sensitive. Contact: 936-560-3360 pblackburn@cox-internet.com

NEW and CONTINUING BUSINESS:

Alberta Bat Inventory Protocol Handbook- final edits on this document are now in but will take time to process. Some updates are being added, such as the new flashcard ANABAT systems.



Milk River Drainage project - Brad and Brandy Downey may be netting the Milk River for *M. ciliolabrum* this summer as part of the MULTISAR (Multi-species conservation strategy for species at risk in the Milk River Basin). This is a joint initiative between Alberta Fish and Wildlife and Alberta Conservation Association.

Provincial Database - past bat captures records from the University of Calgary Bat Lab are in the process of being entered into BSOD (Alberta Biodiversity/Species Observation Database).

Bat Conservation Plan - Susan updated us on the progress that she and Vanessa Craig have made over the winter (see above).

Bibliography - Susan has produced a Bibliography of Bat Resources in Alberta and B.C. This is an update of the Bibliography that was done a few years ago by Cori and Krista Patriquin.

Next meeting:

Tentatively September 17-22 in conjunction with The Wildlife Society Conference in Calgary. It was suggested a social might be a good idea, where we can invite all "bat people" attending the conference to get together for an informal gathering. Lisa will look in to this closer to then.

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NEWS FROM THE WESTERN BAT WORKING GROUP

Upcoming Election - Representatives Needed

Kirk Navo, Colorado Division of Wildlife, Monte Vista Service Center, 0722 S. Rd
1E Monte Vista, CO 81144, 719-587-6906

The first election of the WBWG officers will be taking place over the next year. Official transition of the "new" officers takes place at the WBWG Conference in Seattle, April 2005.

Positions Open For Nomination:

President

Vice-President

Treasurer

Secretary

At-Large

At-Large (Canadian Representative)

In addition, each state/province must decide who will be their official Board of Director member. That person will also become the official BOD at the WBWG conference in Seattle.

Timeline:

May 7, 2004 - nomination period opens; all nominations/bios sent to Amy Kuenzi by either email (akuenzi@mttech.edu) or regular mail (Dept. Biology, Montana Tech of the University of Montana, 1300 W. Park St. Butte, MT 59701). Any member of the WBWG can be nominated for any of the positions under consideration. (Must have consent of the nominee!) All nominees must provide a



written bio-sketch of themselves (in Word format), by the deadline in order to be considered and on the ballot. The info will be sent to each State/Province Chair along with the "official" ballot.

September 30 - Nomination period closes.

October 31 - Official ballot complete and sent to each state/province chair, and posted on the website.

November - December 31, 2004 - Voting process underway by each state/province, with the Chair (BOD) casting it's vote by December 31. Votes sent to Kirk Navo, either by email (k_nav@state.co.us) or mail. (Colorado Division of Wildlife, 0722 S. Rd 1E, Monte Vista, CO 81144)

January 1 - 7, 2005 - Votes counted and summarized for feedback to each state/province & general membership. **If no nominee receives a majority of the available votes, a run-off vote will be conducted with the top two vote getters.

February 1, 2005 - final vote deadline, if run-off is necessary.

It will be important for each state/province to start now in deciding how they will conduct their voting process for each of the positions. The state/province Chair (BOD) will be responsible for casting the official vote, as stated above.

For more information, nominations, or suggestions contact Lisa Wilkinson lisa.wilkinson@gov.ab.ca who is the current BOD for Alberta (and represents the WCBWG).

REQUESTS

NATIONAL FORESTS NEED BAT INPUT

Two U.S. national forests, which border British Columbia and Alberta, are revising their forest plan. The forest plan is the document which will guide how the U.S. Forest Service manages the Idaho Panhandle National Forests and the Kootenai National Forest for the next 15 years. Forest plan standards for closing abandoned mines, logging practices and protecting snags will be based partly on public comments. If you would like to suggest how the U.S. Forest Service should manage bats and their habitats on these two forests, visit their web site. You may submit comments at: www.fs.fed.us/kipz/comment/index.shtml. For more information, contact wildlife biologist Jenny Taylor at (208) 765-7206 or jctaylor@fs.fed.us.

ANABAT REFERENCE CALLS

I am responsible for compiling a list of reference calls collected with Anabat detectors. Originally this list was to include only Alberta, however, now that we have created the WCBWG, I feel the list should be more exhaustive. If any of you have reference calls, could you please notify me and include the geographic region, species, number of individuals per species and habitat in which the calls were collected as well as your contact information. Thanks for your help, Krista Patriquin, lasirus_cin@yahoo.ca.



RECENT PUBLICATIONS/RESOURCES

WESTERN CANADA BAT BIBLIOGRAPHY

Susan Holroyd, Cori Lausen and Krista Patriquin, with the Alberta Bat Action Team, have created a bibliography of bat-related reference material for Alberta and British Columbia. We hope to expand this to Saskatchewan. If you would like a copy of this bibliography and /or if you have citations to add to it please let us know. We would like to keep this bibliography up-to-date, therefore, as you publish new materials, please email your citations to Susan or Cori. Thanks!

RECENT PUBLICATIONS FROM THE UNIVERSITY OF REGINA BAT LAB:

- Sleep, D.J.H. and R.M. Brigham. 2003. An experimental test of clutter tolerance in bats. *Journal of Mammalogy* 84: 216-224
- Willis, C.K.R. and R.M. Brigham. 2003. Defining torpor in free-ranging bats: Experimental evaluation of external temperature sensitive radio-transmitters and the concept of active temperature. *J. Comp. Physiol. B.*, 173:379-389.
- Willis, C.K.R., K. A. Kolar, A. L. Karst, M. C. Kalcounis-Rueppell and R. M. Brigham. 2003. Long term reuse of trembling aspen cavities as roosts by big brown bats (*Eptesicus fuscus*). *Acta Chiropterologica* 5:85-90.
- Lane, J.E., C.L. Buck and R.M. Brigham. 2003. The bat fauna of southeast South Dakota. *In Press. The Prairie Naturalist* 35: 247-256.
- Willis, C.K.R. and R.M. Brigham. *In press*. Roost switching, roost sharing and social cohesion: Forest-dwelling big brown bats (*Eptesicus fuscus*) conform to the fission-fusion model. *Anim. Behav.*

Books

- Brigham, R.M., E. Kalko, G. Jones, S. Parsons & H. Limpens (eds.). 2004. *Bat Echolocation Research: tools, techniques and analysis*. Bat Conservation International. Austin, TX.

Book Reviews

- Brigham, R.M. 2004. *Bat Ecology*. TH Kunz and MB Fenton (eds.). 2003. University of Chicago Press. *J. Wildlife Manage.* 68:215-216.

Refereed Conference Proceedings

- Geiser, F., R.L. Drury, G. Körtner, C. Turbill, C.R. Pavey & R.M. Brigham. 2004. Passive re-warming from torpor in mammals and birds: energetic, ecological and evolutionary implications. *In press: Life in the Cold: Twelfth International Hibernation Symposium*. B.M. Barnes and C.M. Carey (eds.).
- Willis, C.K.R., J.E. Lane, E.T. Liknes, D.L. Swanson & R.M. Brigham. 2004. Techniques for modeling thermoregulatory energy expenditure in free-ranging endotherms. *In press: Life in the Cold: Twelfth International Hibernation Symposium*. B.M. Barnes and C.M. Carey (eds.).
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- Brigham, R.M. et al. (eds.) 2004. *Bat Echolocation Research: tools, techniques and analysis*. Bat Conservation International. Austin, TX.



ANNOUNCEMENTS

MEETINGS AND CONFERENCES

34TH ANNUAL NORTH AMERICAN SYMPOSIUM ON BAT RESEARCH

Salt Lake City, Utah, 27-30 October 2004. Hosted by **Michael Herder**, USDI Bureau of Land Management. www.nasbr.org

10th ABAT (Alberta Bat Action Team) MEETING TBA: likely end of September in conjunction with The Wildlife Society Conference in Calgary.

11th ANNUAL TWS (The Wildlife Society) CONFERENCE September 18-22, 2004, Calgary, AB. www.wildlife.org

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