

WESTERN CANADA BAT WORKING GROUP

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NEWSLETTER

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FROM THE EDITOR

Thank you to all of those who made a submission. Thank you also to those who have spread the word about the Western Canada Bat Working Group Newsletter. Our 'batty network' continues to grow! Although I formally request submissions only in the fall and spring, please feel free to send material my way at any time of the year; I am always looking to expand the newsletter with news, views, research, announcements, publications and more!

Happy hibernating...will be in touch again in the spring,

Cori Lausen

UPDATES BY REGION

There were no submissions this round from NWT, Manitoba, Alaska, Washington, Montana, or Idaho.

BRITISH COLUMBIA

The Slocan Valley Bat Project: A Model for a Community-Based Bat Inventory

Juliet Craig, M.Sc., R.P.Bio. and Mike Sarell, R.P.Bio.

The Slocan Valley Bat Project (near Nelson, BC) was initiated in May 2004 as a community-based project to identify, conserve and enhance critical bat roost habitat. The goals of the project were 1) to promote education and awareness of bats and their habitats and involved the public in bat conservation, 2) to identify bat roosts on private land, including houses and outbuildings, and 3) to work with land owners to promote the conservation and enhancement of these roost sites. This community-based project, funded by the Columbia Basin Trust, provides a model for involving the public in research and conservation of species at risk.

The Project was promoted using newspaper articles, radio advertisements, posters and a website. Throughout the summer, residents reported their bat colonies to the Project, and project biologists responded to these calls. During a site visit, the resident was provided information about bats, was shown a bat up close when possible, and was provided with ideas about modifying or enhancing their roost structure. In some cases the resident was provided advice on how to conserve the bat roost while reducing or eliminating any discomforts to the residents or to provide alternate roosting opportunities.

Through the efforts of the Project and the enthusiasm and input of residents, dozens of roost sites were identified, including two maternity colonies of the blue-listed Townsend's big-eared bat (COTO) and eleven maternity colonies of the blue-listed northern long-eared bat (MYSE - confirmation pending DNA results), neither of which were previously documented in the area. Maternity roosts were also discovered for little brown (MYLU), Yuma (MYU), western long-eared (MYEV), long-legged (MYVO) and big brown (EPFU) bats, and other bat species including fringed (MYTH), silver-haired (LANO) and hoary (LACI) were detected, but unconfirmed. Roosts were documented in attics, outbuildings, rock crevices, trees, and mines. As well, awareness about bats was raised, and local residents became interested and involved in the conservation of local bat species.

The success of this type of community-based approach is encouraging and is a valuable approach to initiate in other areas. This method is especially important for documenting bat roosts in a region while raising public awareness, and developing those important bat enthusiasts that can continue the momentum within these communities. For more information on this project, please contact Juliet Craig at kootenaybats@uniserve.com, or see <http://www.kootenaybats.com/>.



Protecting Threatened Pallid bats (*Antrozous pallidus*) on the Nk'Mip (Osoyoos) Indian Band Reserve, British Columbia

Daniela A. Rambaldini, Department of Biology, University of Regina, S4S 0A2

This past summer, I continued my research on *Antrozous pallidus* and spent another 4 glorious months studying the population in the Okanagan Valley. *A. pallidus* is federally classified as Threatened and is a provincially Red Listed species. As in previous years, I collaborated closely with the Nk'Mip Indian Band, British Columbia Ministry of Land, Water and Air Protection, South Okanagan-Similkameen Conservation Program (S.O.S.C.P.), and the Pallid bat Recovery Team. I conducted all my field work on the Nk'Mip Indian Band reserve in Oliver.

I had originally set out to accomplish numerous objectives, but the 3 most important were: quantifying use of vineyards, versus native habitat, for foraging; locating a hibernaculum; and participating in, as well as helping to develop, community education and outreach programs. I only used radio telemetry from mid-August to early October.

I captured 9 male bats this year; only 1 was a juvenile. With the help of my research team, I located 4 new roosts. I have yet to fully analyze the foraging survey data, so I can't report numbers for habitat use at this time.

At the end of August, I monitored the day roost movements of 2 tagged bats to determine when and where bats from the Canadian population of *A. pallidus* overwinters. Bats showed high fidelity to the cliff face roost (each bat roosted in a location other than the cliff face on only 1 occasion; $n = 1$ and 2 nights, respectively) but occasionally switched between rock crevices within the cliff. In 2002 and 2003, I found that this same cliff face was occupied by many Pallid bats, Spotted bats, Fringed bats, Canyon Wrens, swifts, and swallows. By 10 October, one tagged bat had either shed his transmitter within the roost or switched roosts, or both, whereas the other tagged bat was still roosting in the cliff. Based on the movements of tagged Pallid bats from my work in 2002 and 2003, I expected bats to begin their migration to hibernacula at the end of August / beginning of September. I was unable to extend my field season to monitor the remaining tagged bat and as a result I did not find any hibernacula this year.

The education and outreach programs were a great success. With the help of project sponsors and collaborators, this research provided employment and training opportunities for youth interns from the Nk'Mip Band. In addition to giving numerous bat talk presentations at schools, nature centres, festivals, and events, I collaborated with the Nk'Mip Desert & Heritage Centre to develop a permanent bat education program to satisfy the increasing demand by community residents, tourists, and schools for bat talks. I also helped organize a workshop for local owners and managers of vineyards to: establish a mutually beneficial partnership between vineyard management and local conservationists and biologists; educate vineyard management about local habitat and wildlife, with a focus on species-at-risk; promote sustainable management practices in the viticulture industry; and encourage mitigation of detrimental impacts to local wildlife. This workshop was designed as a pilot project for subsequent, yearly workshops. I gave a presentation about bats to: present my preliminary data of bats foraging in vineyards; promote bats as predators of moths, including the cutworm moth pest; promote installation of bat boxes in vineyards; and promote decreased use of pesticides.

Next summer, I hope to return to the Okanagan Valley to continue all of this work, with a strong focus on radio telemetry and locating a hibernaculum.



West Kootenay Townsend's Big-eared Bat Project Update

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 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.

Activities during the 2004 field season included more mapping of abandoned mines, natural caves and buildings, mist netting in a variety of habitats and radiotelemetry of female Townsend's big-eared bats of two known populations.

The mine mapping component of 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. Since 2002 we have mapped a total of 49 abandoned mines in the region and are continuing to collect data at these locations that will assist in developing recommendations concerning appropriate closure techniques.

As of September 2004, Townsend's Big-eared bats have been confirmed day roosting in 13 abandoned mines, 13 buildings and 19 natural caves at various locations in the West Kootenay. Additionally, night-roosts have been confirmed in three mine adits and five natural caves. Two hibernacula have also been located.

All of the mines, buildings and natural caves occur in the Interior Cedar Hemlock (*ICH*) Biogeoclimatic (*BGC*) Zone and are within the dry warm (*dw*) or very dry warm (*xw*) subzones. Eleven of the 13 mines occur in the *ICHxw* and the other two in the *dw* subzone. All 13 buildings occur within the *ICHxw* and 18 of the 19 natural caves are in the *xw*, with the other occurrence in the *dw* subzone.

Radiotelemetry activities were undertaken in the Creston Valley and in an area known locally as Fort Shepherd, just south of Trail, BC on the west-side the Columbia River. Our objective was to locate roosts where advanced foetal development, parturition and lactation were occurring. A total of five female Townsend's big-eared bats were fitted with transmitters in the Creston area and three at Fort Sheppard. The Creston bats led us to a natural cave on a steep south-west aspect, in five-hectare boulder field at 1250 meters. Within the cave there were an estimated 150 Townsend's big-eared bats roosting in close proximity to one another on the backside of the south-west facing wall. The Fort Shepherd bats led us to a variety of natural caves and one building. The latter was an abandoned cabin containing an estimated 60-70 female Townsend's big-eared bats roosting together in a tight cluster.

While mist netting at the entrance of a mine in the Creston Valley in an attempt to capture female Townsend's Big-eared bats coming into night roost, we captured an adult male Fringed Myotis (*Myotis thysanodes*). A post-lactating female and a juvenile Fringed Myotis were captured later in the season elsewhere in the Creston Valley. We submitted the record to the Conservation Data Centre in Victoria, British Columbia and



were informed that prior to August 2004 the eastern-most record for this species in British Columbia is from the Osoyoos area, approximately 300 km west of Creston in a desert climate.

Activities planned for the 2005 field season include extending the abandoned mine survey to other locations within the West Kootenay, further identification of maternity roosts and hibernacula and environmental data collection at known maternity roosts and hibernacula.

Foraging Behaviour of Insectivorous Bats During an Outbreak of Western Spruce Budworm

Joanna Wilson, University of Calgary

Joanna completed her MSc. thesis in June 2004. Here is a brief synopsis of her thesis abstract:

I investigated the interactions between a forest pest (western spruce budworm, *Choristoneura occidentalis*), and insectivorous bats (Chiroptera) in southern interior British Columbia, Canada. Because budworm moths occur in large numbers during an outbreak and could represent dense patches of prey, I hypothesized that bats would alter their foraging behaviour in response to the outbreak. I did not detect an aggregative numerical response (change in foraging site), suggesting that prey availability was not the dominant factor influencing bats' choices of foraging sites. *Myotis evotis* and aerial-foraging *Myotis* bats showed a functional response (change in diet) in 1 out of 2 years. The bats' foraging strategies and the availability of alternative prey seemed to be important in determining the response. I estimate that bats could have eaten approximately 140,000 budworm moths per 10km² over the season, and discuss the potential impact of bat predation. Bats also consumed relatively large numbers of budworm-like caterpillars.

ALBERTA

Fort McMurray Bat Surveys

Chris Godwin-Sheppard, AMEC Earth and Environmental, Calgary T2E 6J5

A bat survey was conducted within the Fort McMurray region from 7 to 11 August 2004, for Birch Mountain Resources. The study area was less than 3000 ha, and sampling locations targeted upland habitats where bats would most likely be found. Six nets were set up each night, ranging in height from 10 feet to as high as 20 feet across cutlines.

Site-specific data on bat activity was collected from tape recordings of bat echolocation calls over a three-hour period during each net night. An Anabat II Bat Detector with tape recorder attachment was used, and tapes were analyzed to determine species and activity levels within the area.

Total capture effort was 147.8 net-hours over the five nights. Forty-two bats were captured during the survey and included 10 little brown (*Myotis lucifugus*), one silver haired (*Lasionycteris noctivagans*), and 31 northern long-eared bats (*Myotis*



septentrionalis). Capture rate was 0.28 bats per net-hour. The results of this survey have been compared to surveys conducted in July 2003 elsewhere in the region (Table 1). The capture rate of the 2004 survey is well above the 0.09 bats per net-hour in the 2003 surveys. Factors that may have contributed to the higher capture rate in 2004 include survey timing, habitat conditions, and weather.

Table 1: Number of Juvenile and Adult Bats Captured of Each Species

Study Area	Adult						Juvenile					
	Little Brown		Silver-haired		Northern Long-eared		Little Brown		Silver-haired		Northern Long-eared	
	F	M	F	M	F	M	F	M	F	M	F	M
Birch Mountain Resources 2004 (147.8 net-hrs)	6	2	-	-	18	5	1	1	1	-	5	3
Birch Mountain Resources 2003 (24.9 net-hrs)	-	-	-	-	-	1	1	-	-	-	-	-
Husky 2003 (220.0 net-hrs)	4	1	1	-	1	-	2	-	-	2	1	2
Control Area 2003 (117.4 net-hrs)	1	1	-	-	-	-	-	-	-	-	-	-
Syncrude 2003 (225.3 net-hrs)	11	-	2	-	3	-	2	5	5	5	-	2
Total (n=735.4 net-hrs)	22	4	3	-	22	6	6	6	7	6	7	7

In addition to the three bat species captured, analyses of the Anabat recordings indicated that the hoary bat (*Lasiurus cinereus*) was also present in 2003 and 2004. The recordings of echolocation calls of big brown bats cannot be distinguished from silver-haired bats. Big browns were not captured during any of the surveys, and little information is available on the distribution of this species in the study area. The majority of large bat passes recorded with the Anabat detector are likely silver-haired bats. Activity rates within the 2004 survey are higher than the regional average for all species recorded (Table 2).

Table 2: Bat Activity Levels Per Hour

Study Area	Myotis spp.		Large Bat spp.		Hoary Bat		Northern Long-eared Bat	
	Passes	Buzzes	Passes	Buzzes	Passes	Buzzes	Passes	Buzzes
Birch Mountain Resources 2004 (n=15 hrs)	50.00 (3.33)*	2.40 (0.16)	10.40 (0.69)	1.60 (0.11)	0.20 (0.01)	-	2.33 (0.16)	0.73 (0.05)
Birch Mountain Resources 2003 (n=3 hrs)	5.67 (1.89)	0.33 (0.11)	1.33 (0.44)	-	-	-	-	-
Husky 2003 (n=30 hrs)	5.87 (0.20)	0.10 (<0.01)	0.80 (0.03)	0.07 (<0.01)	-	-	0.03 (<0.01)	-
Control Area 2003 (n=15 hrs)	1.73 (0.12)	-	1.47 (0.10)	-	0.07 (<0.01)	-	-	-
Syncrude 2003 (n=30 hrs)	19.33 (0.64)	1.40 (0.05)	24.57 (0.82)	1.77 (0.06)	0.07 (<0.01)	-	0.93 (0.03)	-
Average Regional Activity (n=93 hrs)	16.56 (0.18)	0.88 (0.01)	8.77 (0.09)	0.65 (0.01)	0.06 (<0.01)	-	0.69 (0.01)	0.12 (<0.01)

*Value in brackets represents activity rate per hour.



As part of the project mitigation and monitoring program, six bat houses were installed along the perimeter of the study area in September and October 2004. Three small and three large structures were designed according to ASRD recommendations. Husky has also indicated that these structures will be used within the recently applied for Sunrise Thermal project.

Thermoregulation by Big Brown Bats (*Eptesicus fuscus*): ontogeny, proximate mechanisms, and dietary influences

Lydia Hollis, University of Calgary

Lydia completed her Ph.D. dissertation in Sept. 2004 and just recently convocated. Here is a brief synopsis of her thesis abstract:

My research focused on the development of thermoregulation in big brown bats, *Eptesicus fuscus*. I examined proximate mechanisms (e.g., degree of insulation, hair development, clustering behaviour, and changes in metabolic rate) and dietary factors that may influence the use of torpor. On a daily basis, estimated energy expenditure of individual bats in the field was 5-19% lower than if they had remained normothermic over 24 h. Clustering within the roost reduced metabolic expenditure (up to 52%). By going torpid at low ambient temperatures, metabolic savings up to 98% were realized by bats during metabolic trials. Early prevolant juveniles appear incapable of staying warm when their mothers leave the roost to forage at night. Previant bats were fully furred by 7 days of age, coinciding with fully developed thermoregulatory capability. Early prevolant juveniles may not realize any energetic benefits of clustering, and it may be more beneficial for them to roost alone. My research on dietary factors suggests that diet may play a significant role in limiting use of torpor by big brown bats. I am currently writing up my results for publication.

Landscape Ecology of Prairie Bats

Cori Lausen, University of Calgary

I finished the bulk of my PhD fieldwork this summer, collecting DNA tissue samples throughout southern Alberta. Fell just short of the 1100 bat captures record set by my netting team last summer, but we caught a lot of bats nonetheless! The largest single bat capture took place at Dinosaur Provincial Park where in the course of two nights we captured nearly 300 bats, of which most were scrotal big brown males. This lends further support to my hypothesis that prairie bats are hibernating in the Park. I am continuing to acoustically monitor the park throughout the winter using solar panels to power a digital flashcard Anabat system. I am similarly monitoring a section of Red Deer River valley further upriver near Drumheller. As of early November, bats were still active in both locations, with the bulk of the activity being big browns. This past summer I also collected hundreds of reference calls and am currently using discriminant function analyses to identify *Myotis* to species.



Update from the University of Calgary Bat Lab and News From South Africa

The U of C Bat Lab has dwindled in size to two: Jeff Gruver and Cori Lausen. Lydia Hollis and Joanna Wilson defended their theses over the summer (see above for theses abstracts).

Jeff Gruver, who is investigating evaporative water loss in relation to physiology and ecology, netted bats near Drumheller, Alberta throughout June, July and August, focusing on *Myotis evotis* and *M. ciliolabrum*.

Dr. Robert Barclay is currently on sabbatical in South Africa. He is working with Dr. David Jacobs on a number of bat projects. Currently they are radio-tracking male and female Egyptian fruit bats. The bats roost in a cave in the middle of Cape Town and feed on a variety of fruits in the suburbs. Robert is interested in whether males and females forage on different plants, as female bats need more calcium than males do and certain types of fruits may be able to provide those extra resources.

Bat Work in Fort McMurray and Internationally

Scott Grindal, AXYS Environmental Consulting Ltd., Calgary T2P 1H7

I was involved with 3 bat projects during the 2004 season. The first project was for a terrestrial and wetland monitoring program related to an oil sands development in the Fort McMurray region. This summer we added a bat component to the ongoing program begun in 2001. Baseline conditions for bat echolocation and capture data were collected at replicated sample stations in different treatment areas (control and experimental).

The second bat project was to support an environmental impact assessment for a proposed oil sands development in the Fort McMurray region. Similar to above, baseline conditions for bat echolocation and capture data were collected at sample stations across the study area.

The third bat project was part of the second phase of a monitoring program (begun in 1998) in Barbados, West Indies. I am looking at the potential effects of tourism development in remnant gully and cave systems on a suite of indicators, including bats. Bats were captured and banded in gully systems. Roost counts were conducted at cave maternity colonies and mortality rates were estimated by counting mortalities (age-class, decay class, species) in ground plots at the base of cave roosts. I also developed a training program for local Bajans to conduct some of the monitoring surveys.



SASKATCHEWAN

Update From the University of Regina Bat (and Bird) Lab

Dr. Mark Brigham has returned from his Australian sabbatical and has a few new bat students in his lab: Jackie Metheny (co-supervised by Dr. Matina Kalcounis-Ruppell, University of North Carolina at Greensboro), Kristin Bondo and Miranda Milam.

Craig Willis has left the lab and is keeping busy Down Under (see 'Batting Around the World').

Kristen Kolar has been PIT-tagging aspen-roosting big brown bats in the Cypress Hills to uncover social interactions. She completed her M.Sc. fieldwork this past summer and will spend her winter writing up.

Daniela Rambaldini has completed the fieldwork for her M.Sc. on torpor use by pallid bats and is currently writing her thesis.

Rumour has it that some Brigham-ites were recently seen picketing a Saskatchewan golf course where Dr. Brigham had hoped to retreat unnoticed given its distance from Regina. The cause of the demonstration is still not well understood, but it ended peacefully and no injuries were reported ☺.

YUKON

Little Brown Bats Banded in the Yukon

Thomas Jung, Yukon Department of Environment, Whitehorse, YT

Building on several years of bat banding by pioneer Yukon bat-bander, Brian Slough, this year we banded a record number of little brown bats from the Yukon. In total, several hundred little browns have been banded in recent years (1997-2004) in the Yukon. Among other questions, Brian and I are interested in where bats summering in the Yukon hibernate; we suspect it's not in the Yukon. Be on the lookout for little brown bats banded in the Yukon in your region. Bats we've banded have either red or gold alloy lipped-bands (Lambournes, UK) punched with UAF and 4 numbers (e.g. UAF 2953), or, more recently banded bats have silver alloy bands (Geys, Pennsylvania, USA) punched with YTG and 3 numbers (e.g. YTG 078). Please contact me at 867-667-5766 should you encounter a bat that we had banded in the Yukon.

Bat Monitoring and Research in the Yukon: An Update

Thomas Jung, Yukon Department of Environment, Whitehorse, YT

Summer 2004 was a busy time for bat monitoring and research in the Yukon! Along with various project partners - Brian Slough (Independent Consultant), David Nagorsen (Mammalia Biological Consulting), Tanya Dewey (Univ. of Michigan), and Todd Powell (Yukon Department of Environment) - and a number of field technicians, we undertook



several pilot studies and surveys in the Yukon with a focus in southeastern Yukon. Specifically, we undertook:

- A mist-net survey of bat diversity in the southeast;
- Investigated the effects of logging on bat activity with AnaBats; and
- Monitored bat populations and banded bats at a few of the larger colonies.

One of the more interesting findings was the first records of *Myotis septentrionalis* in the Yukon. A brief note on this new record has been prepared and will be submitted for publication. Based on this year's projects, we plan to continue and expand upon this work. For example, more intensive work on the foraging ecology of northern populations of little brown bats, using telemetry and diet analysis, is planned. Also, we may be looking for a graduate student to tackle the work on the effects of logging and habitat use patterns of northern populations of forest-dwelling little brown bats. We will also continue to document the diversity and distribution of bats in the Yukon.

BATting AROUND THE WORLD

Bat Work in Australia

Craig Willis

After completing Ph.D. work in the Brigham Bat and Bird Lab at the University of Regina in August 2003, I have just about finished the first year of a two-year post-doc with the Centre for Behavioural and Physiology Ecology at the University of New England in Armidale, New South Wales, Australia. I get to spend some of my time studying small native Australian marsupials called dunnarts (*Sminthopsis macroura*) and pygmy possums (*Cercartetus nanus*), but I also get to work with a number of species of Australian vespertilionids. At the moment I am involved with several lab and field projects addressing aspects of the thermal biology and physiological ecology of long-eared bats (*Nyctophilus* sp.), small cave and forest bats (*Vespadelus* sp.), and wattled bats (*Chalinolobus* sp.) in a region known as The New England Tablelands of New South Wales. Australia is a fabulous place to work. I've learned a great deal and I'm keen to apply some of this knowledge when I return to Canada at the end of 2005.

Other International Work

Two other western Canadians are involved with international bat work: Scott Grindal of AXYS Environmental Consulting is conducting bat work in Barbados and Dr. Robert Barclay, University of Calgary, is currently working on several bat projects in South Africa where he is collaborating with Dr. David Jacobs, University of Cape Town (see U of C Bat Lab Update).



BAT CONSERVATION STRATEGY FOR B.C. AND ALBERTA

Vanessa Craig, Ph.D., R.P. Bio., EcoLogic Research, Gabriola Island, B.C.

In the Fall 2003 newsletter I provided information about a Bat Conservation Strategy that is being developed for B.C. and Alberta (a collaboration of Laura Friis and Lisa Wilkinson among others). An outline of the Strategy, written by Susan Holroyd and me, is now complete. Robert Barclay assisted in identifying key themes to be addressed in the document. The Strategy is meant to provide a framework for future conservation and management activities for bats in B.C. and Alberta. The Strategy identifies issues that have the potential to affect bats and bat habitat, outlines conservation goals and objectives, and identifies key knowledge gaps. In addition, it identifies research and inventory necessary to fill information gaps.

Specific conservation concerns that have been identified include:

- Forest management (loss of tree roosting habitat, modification of roost habitat characteristics, habitat fragmentation, changes in foraging habitat, and pesticide use)
- Agriculture (loss of riparian and wetland habitat, water quality and availability for bats, habitat degradation, pesticide use)
- Hydroelectric development (loss of roost habitat, simplification of vegetation surrounding hydro reservoirs/loss of foraging habitat, use of herbicides)
- Mining (inadequate knowledge of bat dependence on mines, management and closure of abandoned /inactive mines, active mining and potential impacts, contamination of water)
- Cave and crevice management (lack of knowledge, recreational caving and rock climbing, human disturbance at roost sites, management procedures for surface and subsurface geological features)
- Urban development (loss of roost habitat, degradation and loss of foraging habitat, disturbance at roost sites, use of pesticides)
- Oil and gas developments (loss or degradation of foraging habitat, loss or disturbance of roost habitat, loss or contamination of water source)
- Wind turbines (positioning of windfarms in bat migratory corridors, bat mortality and windfarms, perception of windfarms by bats)

Work on the Strategy continues. The forest management section is the most fully developed to date. Laura has funding from BC Hydro Bridge Coastal Restoration Program to develop the hydroelectric section of the strategy, has funding from FIA to develop BMPs for forest management, and will submit a proposal to HCTF to develop public stewardship of bats. Forestry industry personnel in both Alberta and B.C have expressed interest in and support of the idea of the Strategy.

For additional information, please contact Laura Friis (Laura.Friis@gems8.gov.bc.ca), Lisa Wilkinson (Lisa.Wilkinson@gov.ab.ca), or Vanessa Craig (vjcraig@shaw.ca)



ABAT MEETING

The 10th Alberta Bat Action Team meeting was held in Calgary September 19 during The Wildlife Society Conference. This was an informal meeting of any ABAT members attending the conference. Cori Lausen and Jeff Gruver gave a brief summary of their recent bat work, Dave Hobson announced he will be doing a count in Cadomin Cave in February, and Doug Collister (Ursus Consulting, Calgary) indicated he is doing bat work in southern Alberta as part of an EIA. A more formal ABAT meeting will be held in the spring.

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NORTH AMERICAN SYMPOSIUM ON BAT RESEARCH

The 34th Annual North American Symposium on Bat Research was held in Salt Lake City, Utah, October 27-30. This was the largest NASBR to date with nearly 300 registrants. There were 14 papers in the student competition, an additional 31 student papers not judged, and 50 non-student papers. The poster session consisted of 55 posters of which 8 were entered in the student competition. Sessions included Agroecology, Zoogeography/Systematics, Evolution/Genetics, Ecology, Echolocation/Natural History, Conservation, Physiology, and Phylogenetic Approaches to Understanding Bat Diversity. This year the Conservation Session included an extensive discussion on wind turbines, and there was a separate evening meeting hosted by Ed Arnett to provide an update on the Bats and Wind Energy Cooperative. The full symposium schedule can be viewed at www.nasbr.org.

CLASSIFIEDS

Qualified Bat Biologist/Fish Physiologist-Toxicologist Looking for Work

I have recently completed my Ph.D. at the University of Calgary, and I will be convocating in November 2004. I am looking for full-time employment/post-doctoral research in Canada beginning January 2005. If you are aware of any positions concerning bats or fish physiology/toxicology within your company/institution, please forward the contact information to me.

Sincerely,
Lydia Hollis
lmhollis@ucalgary.ca
(403) 220-3561

Anabat Reference Calls Library

As part of the Western Canada Bat Working Group's initiative to establish an extensive reference call library for members to access, please let us know if you have any reference calls from your area. Contact Krista Patriquin lasiurus_cin@yahoo.ca.



RECENT PUBLICATIONS/RESOURCES

As you publish any bat related materials, please send them to the editor (corilausen@hotmail.com) for inclusion in this section.

Papers

- Barclay, R.M.R. et al. 2004. Variation in the reproductive rate of bats. Canadian Journal of Zoology. 82: 688-693.
- Lane, J.E., C.L. Buck and R.M. Brigham. 2003. The bat fauna of southeast South Dakota. The Prairie Naturalist 35: 247-256.
- Lausen, C.L. *In press*. First record of hosts for the bat tick, *Carios kelleyi* (Acari: Ixodida: Argasidae) in Canada and Montana. Journal of Medical Entomology.
- Willis, C. and R.M. Brigham. *In press*. Physiological and ecological aspects of roost selection by reproductive female hoary bats (*Lasiurus cinereus*). Journal of Mammalogy.
- Willis, C.K.R. and R.M. Brigham. 2004. Roost switching, roost sharing and social cohesion: Forest-dwelling big brown bats (*Eptesicus fuscus*) conform to the fission-fusion model. Anim. Behav. 68: 495-505.
- Willis, C.K.R. and R.M. Brigham. 2003. New Records of the Eastern Red Bat, *Lasiurus borealis*, from Cypress Hills Provincial Park, Saskatchewan: A response to climate change? Can. Field-Nat. 117:651-654.

Theses/Dissertations

- Hollis, L. Thermoregulation by Big Brown Bats (*Eptesicus fuscus*): ontogeny, proximate mechanisms, and dietary influences. Ph.D. Thesis, University of Calgary, AB.
- Wilson, J. 2004. Foraging behaviour of insectivorous bats during an outbreak of western spruce budworm, MSc. Thesis, University of Calgary, Calgary, AB.

Books/Chapters

- 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. 167 pp.
- Willis, C.K.R., J.E. Lane, E.T. Liknes, D.L. Swanson & R.M. Brigham. 2004. A technique for modelling thermoregulatory energy expenditure in free-ranging endotherms. Pp. 209-220 In B.M. Barnes and C.M. Carey (eds.). Life in the Cold: Evolution, Mechanisms, Adaptation, and Application. Twelfth International Hibernation Symposium. Biological papers of the University of Alaska, number 27. Fairbanks, AK, USA: Institute of Arctic Biology, University of Alaska.
- Barclay, R.M.R. & R.M. Brigham. 2004. Geographic variation in the echolocation calls of bats: a complication for identifying species by their calls. Pp. 144-149 In: Brigham, R.M. et al. (eds.) 2004. Bat Echolocation Research: tools, techniques and analysis. Bat Conservation International. Austin, TX.



ANNOUNCEMENTS MEETINGS AND CONFERENCES

35TH ANNUAL NORTH AMERICAN SYMPOSIUM ON BAT RESEARCH, October 19-22, 2005, Sacramento, California.

2005 CONFERENCE FOR THE MANAGEMENT AND CONSERVATION OF BATS, Western Bat Working Group, March 31-April 2, Portland, Oregon.

9th INTERNATIONAL MAMMALOGICAL CONGRESS, July 31-August 5, 2005, Sapporo, Japan (includes a symposium on "Ecology and Conservation of Bats in the Pacific Rim").

36TH ANNUAL NORTH AMERICAN SYMPOSIUM ON BAT RESEARCH, October 18-21, 2006, Wrightsville Beach, North Carolina.

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