

Western Canada Bat Working Group NEWSLETTER

ISSUE NO. 6

SPRING 2005

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FROM THE EDITOR

The buzzword this spring is 'busy'! Looks like the newsletter deadline next spring should be in March, not April -- I received a lot of "Out in the field" automated email responses! As such, I think many of you missed this round of submissions, but on a positive note, that means you are out in the field having fun! So thanks to those of you who did manage to send in a submission, and for those of you who didn't get a chance to send something this round, we look forward to hearing from you in the fall!

Have a great summer,

Cori Lausen

corilausen@netidea.com

UPDATES BY REGION

BRITISH COLUMBIA

Kootenay Community Bat Project, Nelson, BC

Juliet Craig and Mike Sarell

The Slocan Valley Bat Project was carried out in 2004 to identify bat species and roost sites, to raise awareness about bats, and to promote the conservation and enhancement of roost structures. After the success of 2004, we are expanding the project in 2005 as the Kootenay Community Bat Project. We will be providing bat-house building workshops and interpretive programs, encouraging residents to report bat roost sites, and conducting roost surveys throughout the West Kootenay region in south-eastern BC. A description of the project and recent activities can be found on our website at www.kootenaybats.com.

Protecting Threatened Pallid bats (*Antrozous pallidus*) in the Okanagan Valley, BC

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

The Pallid bat (*Antrozous pallidus*) is a desert-adapted species designated as 'Threatened' by COSEWIC (2002) and included on the legal list of SARA. Although Pallid bats range across western North America including Cuba, Canada's population represents the northern limit of the species' range. *A. pallidus* was first recorded in Canada in 1931, and since then, there have been only 67 confirmed live captures or dead individuals reported. All records of the species are from the semi-arid shrub-steppe ecosystem of the south Okanagan Valley in the southern interior of British Columbia.

The Okanagan Valley is undergoing continued rapid population growth and habitat alteration – practices that threaten the survival of this and other wildlife species. Effective conservation measures depend on well-informed policies and a thorough understanding of the species' ecology. Overall, relatively little is known of the habitat needs of *A. pallidus* in Canada. This is the focus of my research for this field season.

I will be working together with the Pallid bat Recovery Team, Osoyoos (Nk'Mip) Indian Band, and local conservation groups. The team of researchers includes First Nations interns that have a keen interest in wildlife conservation. From May to November 2005, the team will try to: assess habitat needs by quantifying habitat use versus availability, locate new roosting and foraging sites, locate a maternity colony, and locate a hibernaculum. We will also participate in local education and outreach programs to inform local residents, tourists, and businesses (most notably vineyard managers and owners) about the threats to local bat species and about practices that can be adopted to mitigate these negative impacts.

While our work will have serious repercussions for the bats, the team continues to remain inspired by the bright Okanagan sunshine, incredibly helpful and optimistic



disposition of the locals, and our deep-rooted love for wildlife. We hope to have a lot of exciting news to report in the fall ... stay tuned! ... and happy batting ... ^o^

Preliminary forest stand suitability model for forest-roosting bat species in BC (part of the Bat Conservation Strategy for B.C. and Alberta)

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

As part of the Bat Conservation Strategy being developed for BC and AB (described in the Fall 2003 and 2004 newsletters), I am developing a preliminary forest stand suitability model for forest-roosting bat species in BC. The objective of this is to develop a model that can be applied by the forest industry to map bat habitat within their management units. The current draft model uses forest cover data such as the tree species present, stand age class, stand height class, stand crown closure class, and presence/absence of veteran trees to classify potential forest stand suitability as roosting habitat as High, Moderate, Low, Nil, NSR (for areas considered non-productive), or No data (areas missing data). The draft model will be distributed shortly for review.

The draft model has been applied to data from the Boundary TSA (Pope & Talbot Ltd.) to generate a current bat roosting habitat suitability map for the area. In addition, the stand characteristics across the TSA have been modelled for 250 years in the future based on current management practices, and including legal requirements as of 2004 such as the Kootenay-Boundary Higher Level Plan objectives. Based on this forecast the proportion of the landbase comprised of each suitability class has been calculated for each decade to determine how potential bat roosting habitat would change over time under current management regimes.

I am also developing a simple interactive tool for the forest industry that cross-references biogeoclimatic zone, bat species and roost type to permit one-click access of this information. Guidelines for identification of potential roost trees will also be included in the document.

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

Lillooet Naturalist Society

Vivian Birch-Jones, Lillooet, B.C. V0K 1V0

The Lillooet Naturalist Society has written support letters for bat studies in the area this summer but the studies are not confirmed yet. We continue to do educational sessions for the kids and talk up our Fraser River bridge bat houses. Hope to have an educational sign up about our bats for the fall naturalist meetings here.



Bat Work in the Skeena Region

Douglas W. Burles, M. Sc., R P Bio, Environmental Assessment Coordinator/Biologist,
P.O. Box 37 Queen Charlotte City, B.C. V0T 1S0, 250-637-2351
Gwaii Haanas National Park Reserve and Haida Heritage Site

(Editorial Note: My apologies to Doug for missing this submission in the fall edition)

Given the current confusion over the taxonomic relationships and field identification of long-eared bats in the Pacific northwest, Anne Hetherington and I decided to re-visit a site where Anna and Gina Roberts had found *Myotis keenii*, *M. septentrionalis* and *M. evotis* to all be present. Our purpose was to see if all 3 species were still present, to collect tissue samples for genetic analysis, and to determine if we could discover any morphological factor or differences in their echolocation call structure that might serve to identify each species in the field.

During 7 nights of mist netting and harp trapping in late June and early July around a small pond ~10 km northeast of New Hazelton, B.C., we managed to capture 12 bats, of which 7 were long-eareds. As well as taking standard measurements for all (except one long-eared that escaped), we determined reproductive status and described the colour of the ears, face and dorsal pelage. Tissue samples were taken from 10 of the 12 bats captured.

Through mtDNA analysis of tissue samples, Tanya Dewey was able to confirm that we had captured 5 *M. septentrionalis*, 1 potential *M. keenii* that grouped with samples from the Olympic Peninsula, 3 *M. lucifugus*, (eastern form) and 1 *M. volans*. Of the 5 *M. septentrionalis* captured, 2 were pregnant, 2 were lactating and 1 was a non-reproductive female; of the 3 *M. lucifugus* identified, 1 was pregnant, 1 was a non-reproductive female and 1 was a male. The single *M. keenii* was pregnant and the 1 *M. volans* was a male. *M. septentrionalis* could be consistently identified by the presence of pinkish colouration around the eyes and lower lip and at the base of the inner ear, while the single *M. keenii* had a black face, dark lips and no obvious pink colouration in the inner ear. Ear colour in *M. septentrionalis* varied from brownish black to shiny black, while *M. keenii* had shiny black ears. Ear and tragus length were similar for both species, and both had indistinct shoulder patches.

Although our sample size was very small, it does appear that *M. septentrionalis* can be identified in the field by the presence of a fleshy, pinkish colouration around the eyes, lower lip and inner base of the ear. Not enough echolocation calls were recorded to make any meaningful comparisons. Unfortunately, we did not capture any *M. evotis* so comparisons with this species could not be made. Our plan is to return to this site in 2005 to increase our sample size.

We are grateful to Tanya Dewey of the University of Michigan for analyzing our tissue samples. Thanks also to Anne Hetherington for financial support for the fieldwork.



ALBERTA

Bat Surveys in Northeastern Alberta

Carol Stefan, Golder Associates Ltd., Calgary T2P 3T1

We conducted four bat surveys in northeastern Alberta in the summer of 2004. All surveys were in support of environmental impact assessments for oil sands projects. Two projects were in the Fort McMurray region, one near Christina Lake and one near Cold Lake. Surveys included capture and echolocation call detection at study sites through the lease areas.

Bats captured included silver-haired, little brown and northern long-eared bats. *Myotis* sp., big brown/silver-haired, hoary and red bats calls were recorded. Red bats are considered accidental or vagrant in Alberta, however red bat calls were recorded at three of the four sites. This species has also been recorded at other sites in previous years, including one capture in the Fort McMurray area in 2001.

Bat Work Near Bow City

Doug Collister, Ursus Consulting, Calgary, AB

As part of an EIA completed during the summer of 2004, mistnetting was done 4 - 8 August near Bow City, Alberta. Five bats were captured: 2 hoaries, 2 big browns and 1 western small-footed. . This August I will be carrying out a week of reconnaissance mist-netting in the Conklin area primarily aimed at detecting species at risk.

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

Dr. Robert Barclay is still on sabbatical in South Africa until the end of July. He will have at least one new student (Erin Baerwald) starting in his lab in September.

Winter Activity of Prairie Bats

Cori Lausen, University of Calgary

My winter of living in BC and learning to telemark ski was cut short when I discovered that my solar-powered anabats that I had left out for the winter along the Red Deer River, were detecting bats in January! So back I went to the Alberta prairies where I spent over a month netting bats and radiotracking at Dinosaur Provincial Park. Despite *Myotis* being active during the winter, I was unable to capture anything but big browns. I captured male and female big browns and tracked three of them back to two rock crevice hibernacula, the furthest being 5 km from the site of capture. Bats were active at temperatures much colder than expected; *Myotis* were active at temperatures as low as -6.3°C and big browns were active at -7.9°C. In some cases, ambient temperatures remained below freezing all day and yet bats were detected at night! Using discriminant function analyses with ca. 200 prairie bat reference calls, I identified the *Myotis* active in winter to be both *M. ciliolabrum* and *M. evotis*. I have now detected *Myotis* and big brown bats flying in Dinosaur Provincial Park in every month of the year, providing conclusive evidence that this park provides rock hibernacula for these 3 species of bats. I found similar winter activity further upriver on the Red Deer River at East Coulee. This area is just south of Drumheller and is the site of an extensive network of abandoned coal mines. While I am uncertain whether bats are using the mine shafts to hibernate, or



whether rock crevices are being used, it is clear that East Coulee is another hibernation area for big browns, western small-footeds and western long-eareds. These are the first natural prairie hibernation areas identified in western Canada, and I hope to study them further next winter (while I write up my PhD in my 'free time!').

Evaporative water loss in prairie bats

Jeff Gruver, University of Calgary

I have recently successfully defended my Proposal for Research and will be heading back to Drumheller to begin my second field season. Following up on last year's work, I will be measuring metabolic rates in the lab and in the field and trying to determine if evaporative water loss is a problem for singly roosting bats in dry southeastern Alberta. I will be focusing on *Myotis evotis*, but will also squeeze some *M. ciliolabrum* in when I can. The field work involves measuring temperature and relative humidity in roosts, so if anyone has any temp/RH dataloggers that will be sitting on a shelf this summer and would like to see them put to good use, please contact me (jeff.gruver@ucalgary.ca).

SASKATCHEWAN

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

Dr. Mark Brigham

Congratulations to Daniela Rambaldini who successfully defended her M.Sc. thesis on torpor use by male pallid bats.

Kristen Kolar is busy analyzing and writing her M.Sc. on the social aspects of roosting ecology by big brown bats in Cypress Hills SK. She hopes to be done this summer.

This summer in the Cypress Hills, Jackie Metheny (M.Sc. - Univ. of North Carolina - Greensboro) will be doing the 2nd of two field seasons. She is assessing the influence of genetic relationships on social behaviour by big browns in the Cypress Hills. Jackie will be assisted by Kristin Bondo who will formally begin her M.Sc. in Regina on 1 Sept. Kristin will use this summer's exposure to decide on an aspect of big brown ecology that she wants to focus on. Also in the Cypress Hills will be Devin Arbuthnott. Devin will be doing an Hons. project on foraging by big browns. Specifically he is going to test the hypothesis that they will move in response to the normal temperature inversion that happens in the study area each night.

Miranda Milam will join the lab in Sept. to begin a PhD on the hibernation biology of bats.

On the bat front I am busy writing an Introductory chapter to the Bats and Forests II symposium and working on a paper with Kate Jones (soon to be gainfully employed by the Zoological Society in England) about reproductive delays in bats. I recently traveled to UNC-Greensboro to give a talk and take part in the proposal committee meeting of Jackie Metheny whom I am co-supervising with Matina Kalcounis-Rueppell. I am also scheduled to be the external examiner for John Ratcliff's PhD (University of Toronto) at the end of June.



BC/AB CONSERVATION PLAN

Vanessa Craig, Susan Holroyd, Laura Friis, and Lisa Wilkinson

The BC/AB Bat Conservation Strategy is still under development, but considerable progress has been made (see update above). Recent additions to the plan include chapters on Oil and Gas Exploration and Wind Power Development. Further updates will be provided as the strategy evolves.

ABAT MEETING

The Alberta Bat Action Team met briefly in March in conjunction with the Alberta Chapter of The Wildlife Society meeting in Nisku. In attendance were Karen Stroebel, Doug Collister, Robin Gutsell, Scott Grindall, Carol Stefan, Lisa Wilkinson, Dave Hobson, Cori Lausen. To avoid repetition I will only list updates not already appearing in the newsletter:

Scott Grindall, Axys: Last summer did baseline survey of oil sands, a long term monitoring project in oil sands, and a survey in Barbados (which got published in Journal of Natural History of Barbados). Will be doing EIA in oil sands again this summer, and will be continuing Barbados work.

Dave Hobson, AB F&W: 805 bats were counted in Cadomin Cave at the end of February this winter. This is the second highest count on record; more bats in some areas and bats further down on walls, suggesting that efforts to reduce human activity are working. Parks personnel have light counters in cave now to get idea of human visitation and microclimate loggers.

Discussion items included standardizing bat work in EIAs, data submission from permits, the Alberta Protocol (finishing and posting on website), new material for website, wind turbines, and the possibility a wind turbine symposium/workshop at the Alberta Chapter of the Wildlife Society Conference next spring.

WESTERN BAT WORKING GROUP

CONFERENCE FOR THE MANAGEMENT AND CONSERVATION OF BATS

This conference took place at the end of March in Portland, Oregon and was hosted by the Western Bat Working Group. Sessions included: Habitat Use, Management and Mitigation, Drafting and Implementing State Conservation Plans, Research and Inventory Techniques, Assessing Status of Bats, and Bats and Wind Energy. Other highlights of the conference included a Research Techniques Symposium, and an 'unveiling' of the WBWG's Forest Bat Survey Protocol. A full day was dedicated to updating species accounts for high priority species. These accounts are nearly complete and will be posted on the WBWG webpage (www.wbwg.org) within the next month. Abstracts from this conference have also been posted on the website. The new WBWG Board of Directors officially began their 2-year term at this conference. Members of this board, along with State and Provincial representatives, are listed on the website. Canadian representation includes: Lisa Wilkinson (Alberta rep), Mike Fournier (NWT rep), Mark Brigham (Sask. rep), Laura Friis (BC rep), Thomas Jung/Brian Slough (Yukon rep), and Cori Lausen (At-Large Rep on Board).



CLASSIFIEDS

Samples Wanted:

Keen's myotis, western long-eared myotis, and fringed myotis samples requested:

Tissue samples are needed for an effort to better understand the genetic and ecological differences among these three long-eared myotis species. Tissue samples (3 mm wing biopsy) are most valuable when accompanied by echolocation information (full-spectrum), habitat information, roost-tracking data, and faecal samples for dietary analysis. These results will be used in an international effort (U.S. and Canada) to better understand the ecological requirements and differences of these three sensitive species. If you will be working in areas where these bats occur, please consider helping to complete a synthesis of genetic and ecological information that will be used in the conservation and management of long-eared myotis. Contact Tanya Dewey (lqb@umich.edu) or Laura Friis (Laura.Friis@gov.bc.ca).

Job Announcements:

Bat Research Technician and Bat Research Intern. Agency: Utah State University, Location: Central Washington State

Job Description: This project will provide information on important bat roost and foraging habitats in shrub-steppe areas in central Washington. We will use mist netting, echolocation surveys, and radio-telemetry to identify roost and foraging locations in the Moses Coulee watershed in Douglas County. Additionally, we will collect habitat and prey abundance information at foraging locations.

Both positions are expected to last from June 1 – August 31, 2005. Start and end dates may be negotiable. We anticipate hiring 1-2 technicians and 1 intern contingent on funding.

Qualifications: *Technician:* B.S. in biology, wildlife, or related field. Applicants with previous mist netting, Anabat, and bat identification skills are preferred. Previous experience with radio-telemetry is required. Applicants must be flexible, willing to work long hours during day or night, tolerant of hot, dry conditions and close living quarters in a rural setting. Strong data management skills and a high degree of enthusiasm for fieldwork are required. Experience with insect identification a plus.

Intern: Two years of college level classes in biology, wildlife, or related field. Familiarity with field methods such as mist netting, echolocation surveys, and bat identification skills are beneficial. Previous experience with radio-telemetry is preferred. Applicants must be flexible, willing to work long hours during day or night, tolerant of hot, dry conditions and close living quarters in a rural setting. Good data collection skills and a high degree of enthusiasm for fieldwork are required.

Send resume, names and contact information of 3 references, and cover letter in MS Word format to the email address below. Each



applicant will be considered for the technician and intern position, unless otherwise indicated.

Salary: Technician: \$1400/month with housing provided.
Intern: approximately \$840/month per diem reimbursement with housing provided.

Application date: Consideration of applications will begin immediately and extend until suitable applicants are hired.

Contact: Jeff Rosier, j_rosier@hotmail.com, (720) 890-4964

Hoary Bat Research Supervisor, Agency: Hawaii Cooperative Studies Unit, Location: Hawaii Volcanoes National Park

Job Description: Regular, Full-Time, RCUH Non-Civil Service position with the Pacific Island Ecosystems Science Center's Kilauea Field Station, HCSU located in Hawaii Volcanoes National Park (office) and field sites on the island of Hawaii. Plans, schedules, and coordinates field activities; recruits, trains, and supervises field staff; project logistics. Conducts research on behavior and ecology of Hawaiian hoary bats in accordance with approved Animal Care and Use Committee protocols, with focus on movement patterns, habitat, roost selection, and echolocation call recording and analysis. Manages and analyzes data and prepares research reports and scientific publications. Data will be entered into database files and analyzed on computer. Prepares project summaries for internal and general distribution and scientific papers for publication and presentation at meetings. Other duties as assigned.

Qualifications: Minimum: Bachelor's Degree from an accredited four (4) year college or university in Biology, Zoology, Science, or other biological discipline with at least three (3) non-introductory courses in biology, zoology, botany, ecology, or wildlife science. Please check out the website for details on qualifications regarding Experience, Ability/Know/Skills, Physical/Medical Requirements and Desirable Qualifications. Salary: Minimum: \$2607.00

Last Date to apply: **April 29, 2005**, www.rcuh.com

Contact: Sharon Ziegler-Chong, ziegler@hawaii.edu, 808-933-0759 (Preferred)

RECENT LITERATURE

As you publish any bat related materials, please send them to the editor for inclusion in this section.

"Gray" Literature

Craig, J.A. and M. Sarell. 2004. *Slocan Valley Bat Project: A Community Approach to Bat Inventory and Conservation*. Prepared for Columbia Basin Trust, Golden, BC and Columbia Basin Fish and Wildlife Compensation Program, Nelson, BC. Available online at: www.kootenaybats.com under "2004 Bat Project" page.



- Rambaldini, D.A. 2005. Protecting Threatened Pallid bats (*Antrozous pallidus*) in the Okanagan Valley, British Columbia. Unpublished report prepared for the Osoyoos (Nk'Mip) Indian Band. Oliver, B.C.
- Rambaldini, D.A. 2005. Foraging activity of Pallid bats (Chiroptera: *Antrozous pallidus*) in native habitat and vineyards in British Columbia. Unpublished report prepared for the Osoyoos (Nk'Mip) Indian Band (Oliver, B.C.), British Columbia Ministry of Land, Water and Air Protection (Penticton), and Canadian Wildlife Service (Delta, B.C). 32 pp.
- Rambaldini, D.A. and R.M. Brigham. 2004. Habitat use and roost selection by Pallid bats (*Antrozous pallidus*) in the Okanagan Valley, British Columbia. Final Report prepared for the British Columbia Ministry of Land, Water and Air Protection, Osoyoos (Nk'Mip) Indian Band, World Wildlife Fund, Canadian Wildlife Service, Habitat Conservation Trust Fund, The Nature Trust of British Columbia, and Public Conservation Trust Fund. 65 pp.

Papers

- Kalcounis-Rüppell, M.C., J. M. Pysllakis and R.M. Brigham. In press. Tree roost selection by bats: An empirical synthesis using meta-analysis. *Wildlife Society Bulletin*.
- Psyllakis, J.M. and R.M. Brigham. In press. Characteristics of diurnal roosts used by female *Myotis* bats in sub-boreal forests. *Forest Ecology and Management*.
- Willis, C.K.R. & 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.
<http://www.uregina.ca/biology/faculty/brigham/PDF%20files/Willis%20and%20Brigham%20CFN%202003.pdf>
- Willis, C.K.R. and R. M. Brigham. 2005. Physiological and ecological aspects of roost selection by reproductive female hoary bats (*Lasiurus cinereus*). *Journal of Mammalogy* 86:85-94.
<http://www.uregina.ca/biology/faculty/brigham/PDF%20files/Willis%20and%20Brigham%202005%20JM.pdf>
- 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. *Animal Behaviour* 68:495-505.
<http://www.uregina.ca/biology/faculty/brigham/PDF%20files/Willis%20and%20Brigham%202004%20Anim%20behav.pdf>

Theses/Dissertations

- Rambaldini, D.A. 2005. The ecology of torpor use by Pallid bats (*Antrozous pallidus*) at the northern extreme of the species' range. Unpublished M.Sc. thesis. University of Regina. Regina, SK. 120 pp.



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.

ANNOUNCEMENTS

MEETINGS AND CONFERENCES

(*If you have an upcoming event that you would like other “bat folks” to know about, please send your announcement to the editor well in advance of the event.)

SYMPOSIUM ON BATS AND MINES, May 3-5, 2005, Boomtown Hotel and Casino. Examination of past bat and mine conservation efforts, sponsored by Bat Conservation International and others; several excellent field trips (\$20.00). For more information: <https://www.batcatalog.com/adhour/WKS2/default.asp> or contact Faith Watkins, 512-327-9721 fwatkins@batcon.org.

SMALL ABANDONED MINE CLEANUP COURSE, Sandpoint, Idaho, June 13-17, 2005. Contact: Daryl L. Gusey, dgusey@fs.fed.us, 503 808-2488.

NATURAL HISTORY AND MANAGEMENT OF BATS SYMPOSIUM, OCT. 17-19, 2005, Sacramento, California. Basic ecology, conservation, behaviour, survey methodology, habitat evaluation, and status of most western bat species. Register www.tws-west.org.

35TH ANNUAL NORTH AMERICAN SYMPOSIUM ON BAT RESEARCH, October 19-22, 2005, Sacramento, California. Information and registration: www.nasbr.org. Abstract deadline will be around the end of August.

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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