



WBWG NEWS

Volume 7, Number 2

Spring 2012



Hibernating silver-haired bat (C. Lausen photo)



WESTERN BAT WORKING GROUP NEWSLETTER

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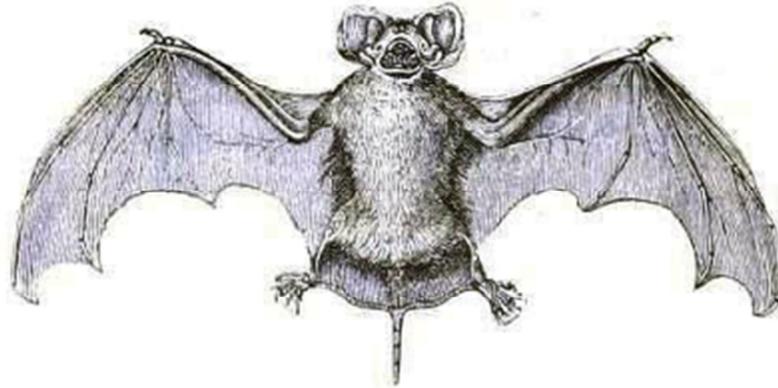
The Western Bat Working Group (WBWG) is a partner in the Coalition of North American Bat Working Groups. The WBWG is comprised of agencies, organizations and individuals interested in bat research, management, and conservation from 13 western States, the Provinces of British Columbia and Alberta, and Northern Mexico.

Membership in the WBWG is open to anyone who is interested in participating in bat conservation. There are no membership fees or dues. Funding for bat conservation work accomplished by the WBWG is generated by State and Federal land management agencies, non-governmental organizations, and by donations from individual members.

Visit our web page <http://wbwg.org> to contact us, find information on bat conservation and upcoming meetings, become a member, link to state or provincial bat working groups, or download previous issues of this newsletter.

President	Angie McIntire
Vice President	Dave Johnston
Treasurer	Brad Phillips
Secretary	Rob Schorr
At-large representatives:	Amie Shovlain, Donald Solick

Newsletter Editors: Lorraine Andrusiak, Julie York



NOTE: Generally common names are used for bat species in the newsletter. Corresponding scientific names are listed below.

Common Name	Scientific Name
Arizona myotis	<i>Myotis occultus</i>
Big brown bat	<i>Eptesicus fuscus</i>
Cave myotis	<i>Myotis velifer</i>
Eastern red bat	<i>Lasiurus borealis</i>
Fringed myotis	<i>Myotis thysanodes</i>
Hoary bat	<i>Lasiurus cinereus</i>
Little brown myotis	<i>Myotis lucifugus</i>
Long-eared myotis	<i>Myotis evotis</i>
Long-legged myotis	<i>Myotis volans</i>
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>
Northern myotis	<i>Myotis septentrionalis</i>
Pallid bat	<i>Antrozous pallidus</i>
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>
Silver-haired bat	<i>Lasionycterus noctivagans</i>
Southwestern myotis	<i>Myotis auriculus</i>
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>
Western small-footed myotis	<i>Myotis ciliolabrum</i>
Yuma myotis	<i>Myotis yumanensis</i>

WBWG

Julie York is resigning her position as newsletter co-editor. Julie has put in a lot of much-appreciated work for us over the last few years and we are sorry to see her go!



STATE/PROVINCIAL UPDATES

CANADA

British Columbia

Winter Bat Activity in BC

—Submitted by Cori Lausen, Wildlife Conservation Society Canada, Kaslo, BC.
info@batsRus.ca

This past winter I began my postdoc research (IRDF, NSERC) with Wildlife Conservation Society Canada. Thanks to funding from Habitat Conservation Trust Fund in BC, Fish and Wildlife Compensation Program through BC Hydro, and Canadian Wildlife Service (Environment Canada), I was able to work with many other bat biologists across BC to gather a tremendous amount of baseline acoustics data this past winter. Only a small portion of these data have been analyzed to date, but the following are preliminary results: most active throughout winter



Gillian Sanders deals with frozen mist nets while capturing bats during a British Columbia winter.

are big brown bats, silver-haired bats, California myotis, and Townsend's big-eared bats. A handful of other *Myotis* recordings (and other bats such as pallids) have shown up in some locations. Next year we will try to follow up in these locations with further monitoring and some targeted mistnetting and radiotracking.

Mistnetting and radiotracking took place in West Kootenay during the fall and winter (2011/2012). A total of 38 sites were sampled/monitored between mid Sept. 2011 and mid April 2012. A total of 265 bats of 5 species was captured over 39 mistnet nights; 58 of these bats were captured mid-winter (Nov – Feb.). Eighteen bats of 4

species were radio-tracked. Nine of these were tracked in the fall (fringed and Yuma myotis, Townsend's big-eared bat), and nine in winter (silver-haired bat, California myotis). Large numbers of Yuma myotis were active late into fall and early in spring, but none of this species was captured during winter, suggesting they may not be active in winter months. They were the first species to 'reappear' in the spring (early March), although we cannot be completely sure that this species wasn't active in winter given that it is acoustically similar to the California myotis which was captured flying in and out of mines throughout winter.

Winter roosts of male and female California myotis were located using telemetry: rock crevices and mines were used. Winter roosts of male and female silver-haired bats were located: rock crevices, snags, trees and mines were used. Roost switching was frequent in silver-haired bats. Temperature-sensitive transmitters were used and activity patterns suggested frequent (weekly) arousals, often associated with roost switching. Males and females and all ages were active: 74% were males and 34% were juveniles. Plastic laid in mines revealed a small amount of fecal production throughout winter months, suggesting some feeding behaviour mid-winter in at least one bat species; insects consumed were likely those hibernating in mines, but genetic analyses of feces has yet to be conducted. Stereo microphone recordings with SM2Bat detectors confirmed that California myotis were flying in and out of mines most winter nights, although few were found hibernating in the mines during the day. Further mist-netting is planned for fall and winter 2012/2013 in the West Kootenay and Okanagan regions.



As part of my postdoc research I am also working with the BC Ministry of Environment and Ministry of Energy and Mines to discuss how the government assesses mines for reopening/closure and how bats and WNS-prevention strategies can be incorporated into procedures. Also, we are working with the provincial geocaching and caving groups to increase awareness of WNS spread prevention.

Kootenay Community Bat Project: A Community Approach to Bat Conservation

—Submitted by Juliet Craig, Nelson, BC

The Kootenay Community Bat Project (KCBP) is a community approach to bat inventory, roost enhancement and conservation. This project, located in southeastern BC, promotes education and awareness of bats, identifies bat roost sites (particularly on private land), assists landowners with roost conservation planning, and involves community members in monitoring bat populations. Extension activities include numerous press releases, bat-house building workshops, school programs, interpretive programs and public mist-netting nights. Residents are encouraged to report their bats so that project biologists can visit their roost sites, identify species present, and discuss and address their issues. As well, we provide strategies to conserve and enhance roosts, and encourage residents to monitor their bat populations. During the first three years of the project (2004 to 2006), we conducted approximately 385 site visits to actual and suspected bat roosts and identified 289 roost sites, including 161 maternity roosts, 132 day roosts, 36 night roosts, and 24 unknown roosts. Seven bat species were seen or detected including Townsend's big-eared, California myotis, little brown myotis, Yuma myotis, big brown bat, silver-haired bat and long-legged myotis. In light of WNS and the increased need for bat conservation of little brown bats and other common species, we are beginning the KCBP again in 2012. To find out more, please visit www.kootenaybats.com.

ANNOUNCEMENT: We are currently seeking old bat research equipment that our project educators can use for school programs. If you have torn mist-nets, old radio transmitters, broken bat detectors or anything else you don't need, please send them to us so we can use them as props in school programs. We have eleven educators conducting school programs on bats so the more equipment the better. Please contact Juliet Craig at kootenaybats@gmail.com for more details.

Bat Blitz

—Submitted by Lorraine Andrusiak

The BC Bat Action Team held its semi-annual Bat Blitz in the south Okanagan on the weekend of May 25th. An intrepid group of federal and provincial biologists, consultant biologists, and bat fans braved rattlesnakes, ticks and random thundershowers to conduct 3 nights of netting at three cliff sites. A variety of species was captured, including big brown bat, pallid bat, Townsend's big-eared bat, little brown myotis, fringed myotis, and western small-footed myotis.



Townsend's big-eared bat.
Photo by Lorraine Andrusiak



USA

Alaska

Southeast Alaska Overwintering Bat Project

—Submitted by Karen Blejwas, Regional Wildlife Biologist, Wildlife Diversity Program, Alaska Department of Fish & Game

Work continues on a project to collect basic information about the distribution, abundance, habitat use, life history, and overwintering strategies of bats in Southeast Alaska. We established 14 year-round monitoring stations along the Juneau road system in spring 2011 to obtain baseline information on daily and seasonal activity patterns and to determine the timing of emergence in spring and emigration/hibernation in fall. This past winter we expanded the acoustic monitoring to include 9 other communities in southeast Alaska. We plan to deploy detectors in 3 additional communities and along 3 transboundary rivers this spring. Bats across southeast Alaska became active between mid-March and the first week of April. Bat activity peaked in July and August and dropped to low levels by September. We did detect silver-haired bats and California myotis at a few sites in Juneau during winter (Dec – Feb) and California myotis were active throughout the winter at a site on the outer coast in Sitka. One monitoring station in Juneau showed a very different seasonal activity pattern, with very strong peaks in activity in early spring and late fall, suggesting little brown bats may be using that area as a migratory stopover site. Fifteen little brown bats were captured and radio-tagged there and at one other site in Juneau last fall, but attempts to track them to their wintering grounds were unsuccessful. We are tagging bats at that same site this spring in hopes of tracking them to their summering grounds. We hope through increased regionwide monitoring and additional capture and radio-telemetry efforts to learn more about what our bats do in the winter.

New Northern Bat Working Group Formed

The April 2012 meeting of the Alaska Chapter of the Wildlife Society in Anchorage, Alaska included a session organized by Link Olson (UAM) and Karen Blejwas (ADF&G) on “Bat Ecology in Alaska - Assessing the Risk of White-nose Syndrome.” Presentations by researchers from Alaska and Canada provided an excellent overview of the state of our knowledge about northern bats. Abstracts from that session are available on the web at: http://www.wildlifeprofessional.org/Alaska2010/public/conferences/1/schedConfs/4/program-en_US.pdf.



ADF&G photo

In the afternoon, biologists and managers from Alaska, Yukon, Northwest Territories, and British Columbia gathered together for a working session.

It was wonderful to have the opportunity to meet face-to-face and discuss the issues and challenges that are unique to northern bats. Tom Jung (Yukon) and Cori Lausen (British Columbia) encouraged the group to take the next step and form a Northern Bat Working Group – so we did!

The purpose of this new regional working group (NBWG) will be to share new information and knowledge among those working with bats in northern Canada and Alaska. Interest in bats in



the north is definitely increasing and the working group is intended to connect bat workers across this vast region. The working group has not formalized a precise geographic region that encompasses “the north,” and welcomes participants from Alaska and northern Canada, including the northern boreal portions of the western provinces and the Pacific coast, including Haida Gwaii.

This will be a largely informal group organized under the Western Bat Working Group. For the first year Karen Blejwas (ADF&G) and Miranda Terwilliger (Wrangell-St. Elias NP) will serve as co-chairs. We are planning to develop a website and start a listserv for the group. One of the first tasks for the NBWG will be to identify the top research and management priorities for northern bats. In addition, we will hold semiannual conference calls in fall and spring (open to everyone) to keep folks updated on new research findings and management actions. To join the NBWG, please contact Miranda Terwilliger (Miranda_Terwilliger@nps.gov).



Members of the New Northern Bat Working Group: From left to right: Karen Blejwas, Joanna Wilson, Kelly Walton, Link Olson, Tom Jung, Dave Tessler, Miranda Terwilliger, Paul Burger, Doreen Parker-McNeil, Rachel Shively, Jessica Iles, Marilyn Myers, Cori Lausen



Figure 1. Wood roost

Arizona

UPDATE – Increased use of artificial roosts by forest bats in ponderosa pine forests in northern Arizona

—Submitted by Carol Chambers

Northern Arizona has 16 species of bats, 7 of which use large (>65 cm dbh) snags as roosts during summer. Snags are often lost during forest management or through natural processes and this can affect bat populations. Given the success of artificial roosts in other locations, we tested 2 types of roosts for use to supplement natural habitat. Liz Mering installed and tracked roosts the first 2 years of our study (2009, 2010). During the third year (2011), Nicole Woodrow, an undergraduate from Hartnell Community



College (Salinas, CA), monitored roosts for her Research Experience for Undergraduates project with me. Roosts were installed on large diameter, live ponderosa pine trees around Flagstaff. We tested 2 types of roosts: wood (52 roosts) and resin (52 roosts, Figure 1.) that mimicked the appearance of ponderosa pine bark. Roosts were placed at 26 sites in a 'clump' of 3 roosts (on trees within 65 feet of each other) and as a 'single' roost about 500 feet from the clump. We checked the roosts every 2 weeks from June to October and captured as many bats using the roosts as possible to identify species, sex, and reproductive condition. Guano traps placed about 1.5 feet below the roost also allowed us to identify use between checks whether bats were present or not on our check date. We tracked bats to determine occupation increase; roost type preference; maternity use, and species.

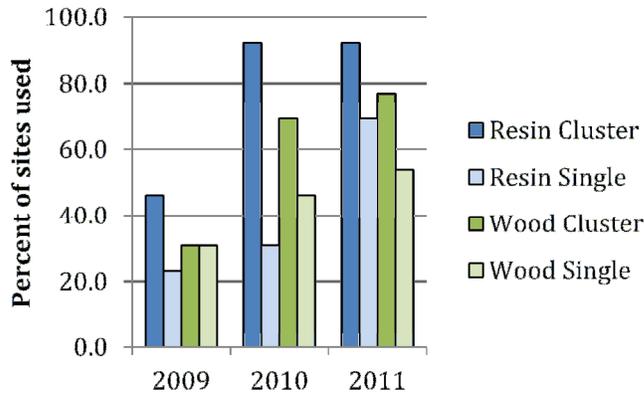


Figure 2. Comparison of use of different roost types

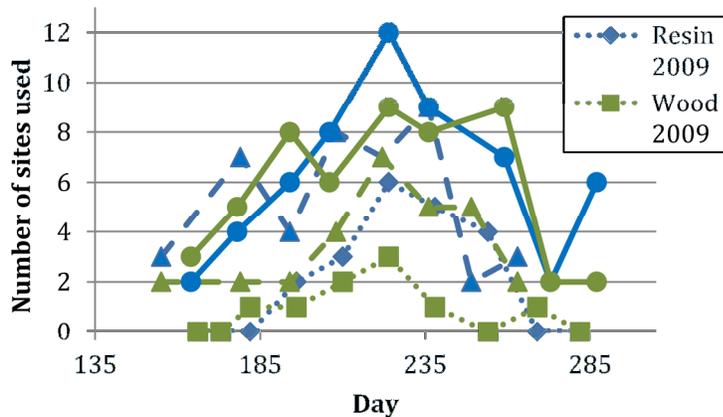


Figure 3. Duration of roost use

During our 3 years of monitoring, we saw an increase in occupation of artificial roosts. Bats seemed to find clusters more easily than single roosts but used both configurations. Although there might be a preference for resin over wood roosts, both types were used (Figure 2). In our first year, roosts were occupied only by single adult males; no roosts were used by maternity colonies. During our second and third years, we captured lactating females (1 in 2010 and 4 in 2011). Peak use occurred in early August (Days 213 to 227 in Figure 3). We think that during August 2010 and 2011, as maternity colonies dissolved, more bats needed roost space and they used our artificial roosts since we captured post-lactating females and juveniles.

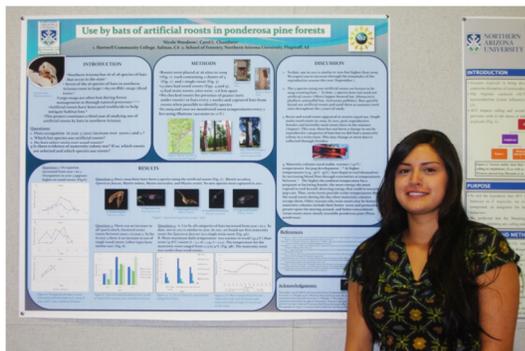


Figure 4. Nicole Woodrow presents her results.

To date, we have captured 5 species using our roosts: Arizona myotis (*Myotis occultus*), long-legged myotis (*M. volans*), southwestern myotis (*M. auriculus*), long-eared myotis (*M. evotis*), and big brown bat. Both types of artificial roosts supplement bat habitat; however maternity colonies have only occurred in resin roosts to date and this roost type may provide a more secure environment. We expect to see an increase in use by maternity colonies in the future. Liz Mering completed her Master's degree in 2010. Nicole Woodrow (Figure 4) presented her research results last summer.



Colorado

Bat Activity across an Arid Landscape: Assessing the Potential Impacts to Bats from Solar and Geothermal Energy Developments

—Submitted by Roger Rodriguez, Zotz Ecological Solutions, LLC, Denver, CO, roger@zotzeco.com and Joe Vieira, Bureau of Land Management, Monte Vista, CO

Working with Joe Vieira, Roger Rodriguez completed a study to assess the potential impacts to bats from solar and geothermal energy developments in the San Luis Valley of Colorado. The impact to bats from wind energy development has been well documented from turbine-related mortalities. Yet little is known about the potential impacts of other renewable energy developments on bats. With increasing mortalities from wind energy and White-Nose Syndrome, the cumulative negative impact to bat populations nationwide has become a major concern. Currently, public lands within the San Luis Valley of Colorado are being considered for development of utility-scale solar and geothermal energy. These developments, particularly solar energy, have become a concern to wildlife in the southwestern United States because of potential habitat loss and fragmentation. The objectives of this study were: 1) to assess pre-construction bat activity at proposed solar energy zones (SEZs) throughout the San Luis Valley via acoustic surveys, 2) assess bat activity at non-SEZ suitable bat habitat areas (SBHs) within the region for comparison of bat activity at the SEZs, 3) determine whether bat activity is related to geothermal energy potential, and 4) determine environmental correlates of bat activity. Based on passive acoustic data, there was 38.6% more bat activity at SBHs compared to SEZs; however, one SEZ had bat activity similar to three SBHs. The site with the highest geothermal energy potential had the greatest bat activity. Nightly average temperature was positively correlated to bat activity among the majority of SEZs and SBHs. Results from this study could help inform energy development decisions in the region to minimize impacts to bats.

Utah

—Compiled by Kimberly Asmus Hersey, Sensitive Species Biologist, Utah Division of Wildlife Resources

Over 30 biologist and managers met for the spring meeting of the Utah Bat Conservation Cooperative (UBCC). Attendees received a refresher in spotted, Allen's big-eared, and Townsend's big-eared bat ecology by George Oliver, and enjoyed presentations on ongoing efforts occurring in the state.

Robert Roy of First Wind updated the group on bat survey efforts at the Millford wind farm site. Pre-constructions acoustic surveys documented western small-footed bats, Brazilian free-tailed bats, little brown bats, big brown bats, and hoary bats most frequently. In contrast, Brazilian free-tailed bats, hoary bats, and silver-haired bats accounted for the majority of carcasses found during mortality surveys. Approximately 90% of fatalities were found in the late summer and fall.

Brian Maxfield of the Utah Division of Wildlife instructed the group on the use of triple-high mist net systems. During the summer of 2011, his crew captured a spotted bat 3 inches from the top of the set. It was the first spotted bat ever documented in the area.



Researchers suit up in protective gear before entering an abandoned uranium mine

Anthony Gallegos of the Utah Department of Oil, Gas, and Mining updated the UBCC on research BCI and Northern Arizona University are doing on radiation exposures for bats that use abandoned uranium mines as habitat. This work includes safely collecting radiation readings inside abandoned uranium mines at the locations being utilized by bats. To avoid personal radon exposure (inhalation or ingestion) the underground survey crew is using a Self-Contained Breathing Apparatus (SCBA). The type of SCBA used is the same one firefighters use. In December 2011, the research team took all the mine safety, radiation measuring, and data collection equipment into abandoned underground uranium mines in the San Rafael Swell area. Abandoned mine specialists from the National Park Service, Colorado Inactive Mine Reclamation Program and the Utah Abandoned Mine Reclamation Program participated in this field work. The research team is planning to collect real data sometime during the 2012 field season. The attached photos were taken during the 2011 field testing.

For more information on this research, contact: Jason Corbett, BCI, jcorbett@batcon.org or Cecelia Melder, NAU, cecilia.melder@usu.edu

Lucas Hall with Brigham Young University is conducting research on the use of natural and artificial water sources by bats in the Mojave and Great Basin deserts. The goals of the study are to identify water sources, then correlate use to site characteristics including the type of water source (e.g. guzzler, stock tank, spring), surface area, and structural cover. Acoustic detectors were placed at 55 sites in 2010 and 2011 and recorded 8,055 calls representing 16 species. Larger water sources such as livestock tanks had both greater activity and species diversity. Activity was 4 times greater at water sites without covers. He documented several cases of bats entangled and killed in moss. To better assess use, he is also experimentally manipulating surface areas and structural cover at sites in the Mojave and Great Basin.



Remote camera image of bat using wildlife guzzler



Washington

Wolf Haven Prairie-Oak Habitat Restoration

—Submitted by Sanders Freed, Center for Natural Lands Management



Sanders Freed and Tim Leque help Wolf Haven's Tim McElwee raise a bat box on Wolf Haven property

Wolf Haven International, a sanctuary for displaced and captive-born wolves, is located on 80 acres of native prairie-oak habitat in rural western Washington State. This prairie habitat type is disappearing from this region as invasive species lower the habitat quality and suburban development displaces the remaining fragments of native prairie. In partnership with the USFWS and the Center for Natural Lands Management, Wolf Haven is undertaking restoration of its prairie lands, and to commemorate *The Year of the Bat* has included bat roost habitat and bat education in this project. Bat boxes have been constructed and installed and interpretive signs are in production. Educational bat talks will be included at the popular summer evening "howl-in" events. We are hoping that the dual-chambered rocket boxes and a custom maternity roost box (pictured) which we've installed will help provide some replacement to the loss of snags and other natural roost habitat.

Bob Berry Scholarship Award – Winter Bat Project

—Submitted by Greg Falxa, Cascadia Research, Olympia, WA

This project grew from a volunteer effort during winter 2010/2011 when we visited rural buildings in central western Washington state to document roosting bats. During previous summer bat work in this area, we had heard reports from residents about a few wintering bats in various out-buildings and unheated structures. Starting with these reports, we eventually located over a dozen buildings that had between 1 and 8 roosting bats, with a total of 5 species. We monitored these bats throughout the winter for presence or absence and found that most of these roosting bats were in the same locations week after week, except when the daytime air temperature dropped



Microphone for the long-term bat acoustic station.



below freezing. During the winter's 3 sub-freezing weather events when temperatures were below -4°C for 3-4 consecutive days, most of these roosting bats vacated their customary winter roost site. When the temperature climbed above freezing, bats were back in the previous roost locations.

The Bob Berry Scholarship award for radio tags (donated by Holohil, Ltd) has allowed us to begin radio tracking this winter, when we located several alternate roost sites used by silver-haired bats during sub-freezing weather. A health issue forced me to postpone some of the tracking effort until next winter. In addition to the radio tracking, we continued the visual searches and set up long-term acoustic monitoring with SM2BAT detectors, and localized temperature monitoring with iButton loggers. Preliminary analysis shows frequent California myotis and silver-haired bat activity with feeding buzzes. This winter work is beginning to fill the gap in our knowledge about winter roosting behavior in this region.

WHITE-NOSE SYNDROME UPDATES

New decontamination procedures released:

http://whitenosesyndrome.org/sites/default/files/resource/national_wns_decontamination_protocol_v_03.15.2012.pdf

PDF CORNER

The PDF Corner lists recent open-access publications that may be of interest to WBWG members. If you come across a full-text on-line publication that you think should be listed here, please send the link to lorraine.Andrusiak@keystonewildlife.com.

Chaturvedi, V., and S. Chaturvedi. 2011. Editorial: What is in a name? a proposal to use geomycosis instead of white nose syndrome (WNS) to describe bat infection caused by *Geomyces destructans*. *Mycopathologia* 171:231–233.

<http://www.springerlink.com/content/yq32316511k7u286/fulltext.pdf>

Christopher A. Dobony, Alan C. Hicks, Kate E. Langwig, Ryan I. von Linden, Joseph C. Okoniewski, Raymond E. Rainbolt (2011) Little Brown Myotis Persist Despite Exposure to White-Nose Syndrome. *Journal of Fish and Wildlife Management*: December 2011, Vol. 2, No. 2, pp. 190-195. <http://www.fwspubs.org/doi/pdf/10.3996/022011-JFWM-014>

Clare, E. L., B. R. Barber, B. W. Sweeney, P. D. N. Hebert, and M. B. Fenton. 2011. Eating local: influences of habitat on the diet of little brown bats (*Myotis lucifugus*). *Molecular Ecology* 20:1772–1780.

http://xa.yimg.com/kq/groups/21289390/869247824/name/Clare+etal2011_+Eating+local+Influences+of+habitat+on+the+diet+of+little+brown+bats.pdf

Coleman JL, Barclay RMR (2011) Influence of urbanization on demography of little brown bats (*Myotis lucifugus*) in the prairies of North America. *PLoS ONE* 6(5): e20483. doi:10.1371/journal.pone.0020483

<http://www.plosone.org/article/fetchObjectAttachment.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0020483&representation=PDF>



Cryan, P.M. 2011. Wind turbines as landscape impediments to the migratory connectivity of bats. *Environmental Law* 41: 355-370.

http://www.fort.usgs.gov/products/publications/pub_abstract.asp?PubID=23085

Cryan, Paul M.; Stricker, Craig A.; Wunder, Michael B. 2012. Evidence of cryptic individual specialization in an opportunistic insectivorous bat. *Journal of Mammalogy* 93(2): 381-389

<http://www.asmjournals.org/doi/pdf/10.1644/11-MAMM-S-162.1>

Ethier, Kevin, and L. Fahrig. 2011. Positive effects of forest fragmentation, independent of forest amount, on bat abundance in eastern Ontario, Canada. *Landscape Ecology*. 26: 865-876.

<http://www.glel.carleton.ca/PDF/webDump/11Ethier&FahrigLandEcol.pdf>

Kniowski, Andrew Broni. Summer Ecology of the Indiana bat (*Myotis sodalis*) in an Agricultural Landscape. M. Sc. Thesis, Ohio State University.

http://etd.ohiolink.edu/view.cgi?acc_num=osu1299554522

Johnson, Joshua B.; Ford, W. Mark; Rodrigue, Jane L.; Edwards, John W. 2012. Effects of acoustic deterrents on foraging bats. Res. Note NRS-129. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.

http://www.nrs.fs.fed.us/pubs/rn/rn_nrs129.pdf

McAlpine, D. F., K. J. Vanderwolf, G. J. Forbes, and D. Malloch. 2011. Consumption of bats (*Myotis* spp.) by raccoons (*Procyon lotor*) during an outbreak of white-nose syndrome in New Brunswick, Canada: implications for estimates of bat mortality. *The Canadian Field-Naturalist* 125:257–260. <http://www.canadianfieldnaturalist.ca/index.php/cfn/article/viewFile/1231/1219>

Sterbing-D'Angelo S, Chadha M, Chiu C, Falk B, Xian W, Barcelo J, Zook JM, Moss CF. 2011. Bat wing sensors support flight control. *Proc Natl Acad Sci* 108(27):11291-6.

<http://www.bsos.umd.edu/psyc/batlab/publication/Bat%20wing%20sensors%20support%20flight%20control.pdf>

UPCOMING EVENTS

USA

The Wildlife Society 19th Annual Conference. Portland, Oregon, October 13-18, 2012. <http://wildlifesociety.org/>

Pathways to Success - Integrating Human Dimensions into Fish and Wildlife Management: An Essential Component of Adaptive Capacity. Beaver Run Resort in Breckenridge, Colorado, September 24-27, 2012. <http://www.hdfwconference.org/>

WBWG Conference 2013 - April 2-4, 2013, at Santa Fe hotel. Details TBA.

ELSEWHERE

Wildlife Disease Association 61st Annual International Conference. 22-27 July 2012. Lyon, France. <http://wda2012.vetagro-sup.fr/>

2012 UK National Bat Conference. University of York, 14-16 September. http://www.bats.org.uk/pages/national_bat_conference.html