



# WBWG NEWS

Volume 7, Number 3

Fall/Winter 2014



*Spotted Bat (Euderma maculatum) – Bill Doering*



# WESTERN BAT WORKING GROUP NEWSLETTER

Fall/Winter 2014

Volume 7, Number 3

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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, Bronwyn Hogan

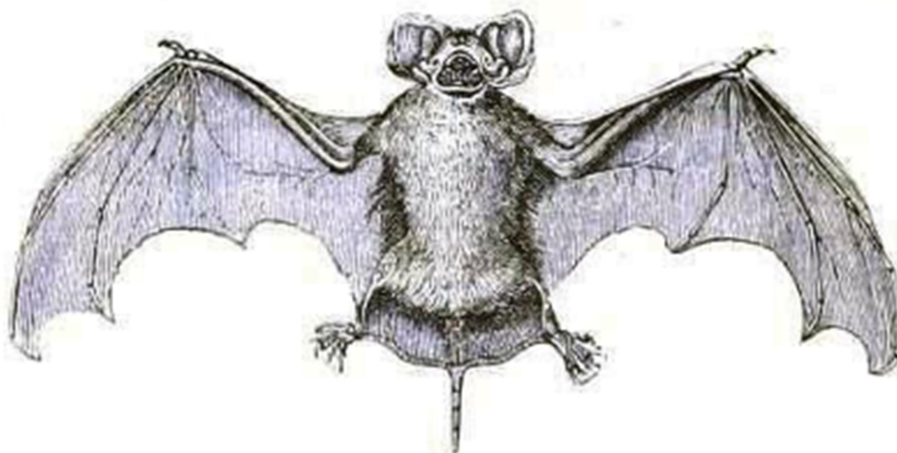
NOTE: Generally common names are used for bat species in the newsletter. Corresponding scientific names are listed below. Common names are consistent with NatureServe Explorer.

Common Name	Scientific Name
Allen's lappet-browed bat	<i>Idionycteris phyllotis</i>
Arizona myotis	<i>Myotis occultus</i>
Big brown bat	<i>Eptesicus fuscus</i>
Californian myotis	<i>Myotis californicus</i>
Canyon bat	<i>Parastrellus hesperus</i>



Cave myotis  
Eastern red bat  
Fringed myotis  
Hoary bat  
Little brown myotis  
Long-eared myotis  
Long-legged myotis  
Brazilian free-tailed bat  
Northern myotis  
Pallid bat  
Pocketed free-tailed bat  
Silver-haired bat  
Southwestern myotis  
Townsend's big-eared bat  
Western small-footed myotis  
Yuma myotis

*Myotis velifer*  
*Lasiurus borealis*  
*Myotis thysanodes*  
*Lasiurus cinereus*  
*Myotis lucifugus*  
*Myotis evotis*  
*Myotis volans*  
*Tadarida brasiliensis*  
*Myotis septentrionalis*  
*Antrozous pallidus*  
*Nyctinomops femorosaccus*  
*Lasionycterus noctivagans*  
*Myotis auriculus*  
*Corynorhinus townsendii*  
*Myotis ciliolabrum*  
*Myotis yumanensis*





## WBWG NEWS

### ELECTIONS

In accordance with WBWG bylaws, every 2 years there is an election of Officers. Elections will be happening soon. Ballots will be e-mailed to each state representative during the week of November 17<sup>th</sup>. A short bio of each candidate will be attached to the email and will also be available on the WBWG website. It will be the responsibility of the state representatives to solicit input/votes from their respective members and then cast a single state vote based on this input (one vote per state, must represent majority of state member votes) by December 31. Members will be voting for President, Vice President, Secretary, Treasurer, and two At-large Board positions. Please see below for a list of candidates:

President - Ernie Valdez  
 Vice-President - Laura Ellison\*; Jenni Jeffers  
 Secretary - Becky Abel\*  
 Treasurer - Brad Phillips\*  
 At Large (vote for 2) - Brandy Conrad; Jonah Evans; Roger Rodriguez\*; Amie Shovlain\*

\* currently on the Board of Officers

Read on for biographical sketches of each candidate:

#### President — Ernie Valdez



I am a Research Wildlife Biologist at the USGS-Fort Collins Science Center, Arid Lands Field Station, located on the University of New Mexico (UNM) campus in Albuquerque, New Mexico. In addition to work-related duties for the USGS,

I also serve as adjunct faculty and committee member of graduate students in the Biology Department at UNM. Some of my research interests include natural history, taxonomy, systematic relationships, feeding ecology, ectoparasites, and conservation of several taxa including some birds, arthropods, and small mammals, with an emphasis on bats. I have been working on bats while in the field and laboratory, as well as across the western United States and its territories for over 20 years.

I specialize on vespertilionid bats with an emphasis on the genus *Myotis*, but also work on other families including Molossidae, Phyllostomidae, Pteropodidae, Emballonuridae, and others. My master's research involved genetic work on *Myotis occultus* and *M. lucifugus* to better understand the taxonomic status of these bats, whereas my doctoral research involved the study of geographic variation in morphology, feeding habits, and ectoparasites of *M. occultus*. I am a member of the Western Bat Working Group, as well as other state working groups such as Arizona and New Mexico, and have served as co-chair for the New Mexico Bat Working Group. At present, I continue to work on bat-related projects that involve migration and feeding ecology of insectivorous bats, white-nose syndrome, and impacts of alternative energy to bats.

#### Vice President — Laura Ellison



I am an Ecologist with the U.S. Geological Survey, Fort Collins Science Center in





Colorado. I was hooked on bats after capturing my first *Antrozous pallidus* at Natural Bridges National Monument, Utah, in 1992 with Dr. Mike Bogan. I've worked on bat research topics since then including acoustic monitoring in New Mexico, Colorado, and Utah, bat population status and trends in the United States and Territories, and population dynamics of big brown bats roosting in buildings in Fort Collins in relation to the rabies virus. I currently lead the Data Management Team of the national response to white-nose syndrome (WNS) and I manage the USGS Bat Population Data (BPD) Project, a web-based database that houses and serves bat colony counts, bibliographic citations, mist net and capture data, and acoustic data. I am also coordinating the North American Bat Population Monitoring Program (NABat), a multi-agency collaborative effort to develop a statistically rigorous and nationally coordinated program to determine the impacts of the many stressors on bat populations, especially WNS and wind-energy impacts. I earned a B.S. in Wildlife Biology from University of California, Davis, and a M.S. in Biology at Northern Arizona University, Flagstaff.

I began working with bat conservation efforts that led to the formation of the Western Bat Working Group in 1996 and attended the inaugural meeting in Reno in 1998. I'm an active member of the Colorado Bat Working Group and I served as Chair from 2000-2003 and as Co-Chair from 2010-present. It has been an honor to be a part of the WBWG; it is an inspirational and diverse group of very dedicated managers, scientists, and conservationists. I look forward to continuing to help with critical bat conservation issues into the future.

**Vice President —  
Jenni Jeffers**

I am currently a wildlife biologist for the Nevada Department of Wildlife. During the past 14 years I have been responsible for the survey, inventory and habitat conservation of mammals and birds of

Nevada. I have been involved in specialized studies of rare and secretive species such as the aplodontia that has a very tiny western extension of their range in the Sierra Nevada Mountains. I work with the Nevada BLM Abandoned Mines Land (AML) conducting underground surveys, identifying key roosts, requesting funding and overseeing the construction of bat-compatible closures on mines in my area of responsibility. I am also very involved in bat conservation and life history education by way of public presentations and a bat brochure that I developed. Currently I am Chairman of the Nevada Bat Working Group. I have over 25 years of field experience as a biologist working with both avian and mammalian species. I previously worked as a wildlife researcher for South Dakota State University tracking large mammals such as deer and mountain lion using radio telemetry and collecting habitat data in the beautiful Black Hills of South Dakota. I originated in New Mexico and after receiving Bachelors and Masters degrees in Wildlife Biology from New Mexico State University I started working as a wildlife biologist for New Mexico State Game and Fish.

My professional interests include wildlife habitat restoration especially enhancement of riparian systems, and radio tracking tree-roosting species of bat to enhance our knowledge of their foraging, roosting, migration and social habits.

**Secretary —  
Becky Abel**



I am a Regional Wildlife Biologist with the Idaho Department of Fish and Game in



Pocatello, Idaho. The majority of my work is dedicated to improving knowledge of the distribution, diversity, and abundance of Species of Greatest Conservation Need in Idaho and providing on-the-ground conservation for wildlife through partnerships with other agencies and entities. I completed my B.S. in Biology at the University of Minnesota Duluth in 2006. In 2011, I completed my M.S. in Integrated Biosciences from the University of Minnesota, where I studied habitat use of seven species of bats in boreal forests of northeastern Minnesota.

Prior to joining Idaho Department of Fish and Game in 2013, I was a bat biologist with the Wyoming Game and Fish Department. There, I co-authored the Strategic Plan for White-nose Syndrome in Wyoming, assisted the U.S. Forest Service Rocky Mountain Region in conducting a risk assessment for WNS in caves and abandoned mines, and developed a long-term, statewide inventory of bats in cliff and canyon habitats of Wyoming. In Idaho, I continue to promote conservation of bats through monitoring, disease surveillance, and education and outreach. I always welcome opportunities to teach both professionals and the public about bats. I am the current Secretary of Western Bat Working Group, a member of Idaho Bat Working Group, North American Society for Bat Research, and Idaho Chapter of The Wildlife Society. I am observant, organized, an excellent communicator, and passionate about bats. I look forward to continue serving the Western Bat Working Group as Secretary.



**Treasurer —**  
**Bradley J. Phillips**



I am seeking re-election as treasurer for Western Bat Working Group. I am employed as a Wildlife Biologist on the Black Hills National Forest (US Forest Service) in Custer, SD. I also serve as one of the contact persons for the Rocky Mountain Region (R2) on issues related to bats and bat habitat. I have a B.S. degree in Wildlife Management (1980) from Humboldt State University, CA.

I also serve as Co-Chairperson for *South Dakota Bat Working Group* (1998-present). I have been the Treasurer for WBWG since 2004. My professional interests include bats, cave/karst management, abandoned mines, forest raptors, and reptiles/amphibians. Thank you for your consideration.

**At-large Representative —**  
**Brandy Conrad**



Animal conservation has always been of great interest to me. After searching the internet two summers ago, I came across the sites for Bat Conservation International (BCI) and the Organization for Bat Conservation (OBC). I



became a member of both groups. Not long after joining, in February 2013, OBC's Rob Mies announced a conservation trip to Nicaragua to assist local scientists with bat surveying. Their mission was to record the bat species found in the country and encourage public education on the importance of bats. I added my name to the list of participants and set off on a 10-day adventure into the jungles of Nicaragua.

That trip was a turning point in my life. I learned the proper way to catch and handle bats, basic surveying methods and was introduced to many life-long acquaintances that share the same excitement for bat conservation. Since that trip I have become involved with the Division of Wildlife Resources and the National Park Service as a volunteer and assisted in conducting bat surveys in American Fork Canyon. I am also a member of the Utah Bat Conservation Cooperative. I attended the Western Bat Acoustic Field Techniques Workshop in Portal, AZ with Bat Conservation and Management last May and I look forward to continuing to learn about bat survey methods. I will be traveling to Trinidad in January to work with OBC and Trinibats.

I have a B.S. in Biology from the University of Utah and I am currently working on a Professional Master's of Science and Technology in Environmental Sciences. I am a biology instructor at Salt Lake Community College and I have worked in microbiology and molecular biology. I intend to work in wildlife conservation, particularly with the bats and small mammals in Utah listed as sensitive species, after completing my Master's degree.

#### **At-large Representative — Jonah Evans**

I am the Mammalogist for Texas Parks and Wildlife and am responsible for non-game mammal research and conservation for the state. In light of the dramatic threat of white-nose syndrome, bats have become one of

my top priorities. I am working on coordinating several bat research efforts in Texas prior to the arrival of WNS.



I have a MS in Wildlife Science from Texas A&M University and worked as the wildlife diversity biologist in West Texas for 5 years prior to taking on my current position. I have a passion for animal tracks and sign

and am the author of iTrack Wildlife, a smartphone field guide to animal tracks. I am also a co-author of Animal Tracks and Scat of California. I have traveled extensively around the United State to train biologists and college students in animal track identification.

#### **At-large Representative — Roger Rodriguez**



I am the owner of Zotz Ecological Solutions, LLC which I have operated for the past 9 years providing research and consultation on the impacts to bats from renewable energy developments.

Over the past 15 years I have studied bats throughout North America, Central America, South America, Micronesia, and East Asia. In 2002, I received a M.S. from Angelo State University, Texas, studying the phylogenetic relationships and phylogeography of *Myotis californicus* and *M. ciliolabrum* in the southwestern U.S.

Experience in the western U.S. has included conducting bat surveys throughout the majority of western states, such as surveys





with the U.S. Geological Survey for the National Park Service Inventory and Monitoring Program, as well as studies of endangered long-nosed bats (*Leptonycteris* species) in New Mexico and Texas. My current work in developing and conducting bat risk assessments at proposed wind energy sites has consisted of projects throughout the U.S. including western states and internationally (e.g., Honduras, Curaçao, and Canada).

I have been a member of the Western Bat Working Group since 2002 and currently serve as an At-large Representative. In this position, I am active in participating in monthly conference calls and am currently working with the WBWG president to update the range maps of western bat species for the USGS/University of Idaho GAP Analysis Program. I am a member of the Colorado Bat Working Group and have been working collaboratively with Michael Schirmacher of Bat Conservation International to incorporate an energy development section to the Colorado Bat Conservation Plan. I am a member of the Texas Bat Working Group and serve as the Co-Chair for the group. Lastly, I am active in the North American Society for Bat Research, the National Wind Coordinating Collaborative Wildlife Workgroup, and the Legislation and Regulations Committee of the American Society of Mammalogists.

**At-large Representative —**  
**Amie Shovlain**



I'm originally from Nebraska where I obtained a B.S. in Forestry, Fisheries, and Wildlife in 1997. I quickly moved out west to explore the wilds of the Rocky Mountains

while working on variety of wildlife projects along the way. I then received my M.S. degree from Oregon State University in 2005 where I studied Oregon spotted frogs. I am currently a wildlife biologist for the Forest Service on the Beaverhead-Deerlodge National Forest where part of my time is spent closing hazardous mines (bat-friendly of course) and general wildlife inventory and monitoring. Primarily though, I've been the Northern Region bat program lead since 2007. I am also an active member of several bat working groups, one of which has recently partnered agencies with local grottos and school groups to deploy microhabitat data loggers and collect soils samples (testing for *Geomyces destructans*) in known hibernacula across northern Idaho and Montana. Additionally, I'm co-coordinating a multi-agency, multi-state acoustic monitoring effort to collect year-round baseline bat activity data in light of the impending threat of WNS. Outside of work, I enjoy backpacking, river trips, snowboarding, music festivals, creating art, home improvement (strange but true), and playing music with my band.

## STATE/PROVINCIAL UPDATES

### CANADA

#### British Columbia

#### **“Got Bats?” B.C. Community Bat Project network**

“Got Bats?” is a network of community bat projects across BC that was launched in May, 2014.

This network promotes bat conservation, particularly of bats in buildings, by 1) detecting and protecting bat roost sites; 2) providing education to counter negative attitudes towards bats; 3) promoting the building and installation of bat-houses; and 4) coordinating a province-wide Citizen



Science annual bat count to monitor bat populations.



Funded by the Habitat Conservation Trust Fund, and in partnership with the Ministry of Environment and BC Conservation Foundation, the network is comprised of 13 regions across BC including: Southern Vancouver Island, Salt Spring Island, South Coast, Haida Gwaii, Sunshine Coast, Okanagan, Thompson, Shuswap, Lillooet, East Kootenay, West Kootenay, Skeena and Peace regions.

The network has a toll-free number (1-855-9BC-BATS) which links to various parts of the province as well as a Facebook page and a website. In 2014, the network received over 400 roost reports and inquiries, conducted over 140 site visits to landowners with bats in their buildings, built more than 280 bat-houses, and provided 30 presentations. In addition, 40 Citizen Scientists participated in the Annual Bat Count at 32 locations in BC.

For more information, please see [www.bcbats.ca](http://www.bcbats.ca).

-submitted by Juliet Craig



## USA

### **Multi-State SWG Grant: Western Coordinated Multi-State Response to a Deadly Emerging Threat: White-Nose Syndrome in Bats (2011-2014)**

This cooperative project between Arizona, California, Idaho, Nevada, Montana, Washington, and Bat Conservation International has provided grant money to the partner states to establish surveillance and various monitoring methodologies for white-nose syndrome. Funds are also being used for outreach, to work on white-nose syndrome action plans, purchase and install data loggers in caves, conduct winter surveys at priority sites, collect soil samples to look for *Geomyces destructans*, deploy acoustic detectors to collect baseline activity data and detect winter bat activity, establish new white-nose syndrome information webpages, and hold coordination meetings with working groups and grottos.

## Alaska

### **Acoustic Bat Monitoring on the Chugach National Forest**

*Jessica Ilse, Chugach National Forest, Glacier Ranger District*

*Dr. Susan Loeb, Forest Service Southern Research Station*

*Dr. Doug Causey, Professor of Biological Sciences, University of Alaska, Anchorage*  
*Jessica Faust, Graduate Student at University of Alaska, Anchorage*

During the 2014 field season we launched into acoustic bat sampling across the Chugach National Forest with a team of two technicians and five interns. By summer's end we sampled 54 random points, and collected vegetation data following the Common Stand Exam (CSE) quick plot methods. We have only begun to look at the data, but hope to see if some habitat



association patterns emerge. One pattern we anecdotally noted was the lack of bat activity at several pure aspen stands. A few detectors continue to collect data into the fall to see how activity levels change over time.

### **Bat Captures and Acoustic Monitoring Efforts in Southcentral and Interior Alaska**

*David Tessler, Marian Snively, and Jen McGrath*

*Alaska Department of Fish and Game, Wildlife Diversity Program*

The field work completed in 2014 is part of a larger cooperative project which addresses the conservation risks of white-nose syndrome and wind energy development for Alaska's bats, and assesses bat related human health concerns. The cooperators include the Alaska Department of Fish and Game (ADF&G), US Army Alaska, Fort Wainwright Garrison, Bureau of Land Management, National Park Service, Department of Biological Science, University of Alaska Anchorage (UAA), US Fish and Wildlife Service, Chugach National Forest, Alaska Biological Research, and Museum of the North, University of Alaska Fairbanks (UAF).

Personnel from ADF&G, UAA and Alaska Natural Heritage Program trapped bats from July 7 through August 8 during the 2014 field season. We used net arrays that included two triple high nets, combined with a number of double high and single high nets. Initially our focus was to trap bats in Anchorage at sites where bat calls were previously detected. No maternity roosts in the Anchorage area have been reported, so capture sites were not closely associated with these in the immediate area. Placement of the nets was mostly in covered flyways and near water bodies. We attempted captures at Potter Marsh for three nights and at Otter Lake for two nights; bats were present but none obtained at either location. During these trapping attempts bats were observed flying up to the

nets, and either flying over or around them. We suspect that the extended daylight provided enough light to enable the bats to see the nets. We learned that Anchorage has some unique challenges for bat trapping, such as very long daylight hours, ubiquitous waterways and water bodies, and seemingly low bat densities.

We changed our primary focus to trapping bats at known maternity roosts. We looked into our state-wide Citizen Science database for known maternity roosts and gained the permission from landowners to trap on their property. We trapped bats along the road system in the following locations: Wasilla, Talkeetna, Byers Lake, North Pole, Delta Junction, Tok, and Glenallen. All of the sites were maternity roosts, except for Byers Lake. Bats were captured at every site.

By the end of the season a total of 59 bats were captured, banded and processed. Fifty-seven bats were caught at maternity roosts and two were caught at Byers Lake at the inflow bridge. The captured bats comprised of 52 females, of which 38 were adults and 14 were juveniles. We also captured 3 adult and 4 juvenile male bats. Processing consisted of collecting wing punch samples, swab samples, morphometric measurements, and weight data from all bats. We assessed sex, reproductive status, age, and wing condition. We also collected ectoparasites from 24 bats and guano from 13. Lastly we recorded bat calls using a zipline or hand releases.

All swab and guano samples will be processed at UAA for pathogen testing. The wing punch samples will be sent to the UAF Museum of the North-Fairbanks for genetic analyses of mitochondrial and nuclear DNA, verifying taxonomy genetically, and assessing the overall level of genetic population structuring. Reference calls will be shared with a northern or Alaskan bat call library (in development), and will be coupled to the genetic identification of individuals (possible



archived in ARCTOS) to aid in the future identification of bats detected acoustically.

Also during this field season, we enhanced our research efforts by placing detectors throughout the Anchorage Bowl to get an idea of where the best capture sites may be located. The detectors were moved around frequently and only deployed at each site for a short duration. A total of 25 locations were monitored during this time. In addition to the Anchorage sites, three sites were monitored in Prince William Sound and one was monitored at Nancy Lakes State Recreation Area. Detectors were also placed at possible capture sites along the road system at Byers Lake, Delta Junction, and Fairbanks. One detector was left with ADF&G staff in Delta Junction to create a long term monitoring site.

As the capture season came to a close in August, acoustic monitoring efforts switched to long-term monitoring sites. Eagle River and Potter Marsh had been designated monitoring sites since fall of 2013 and three more long-term sites were added in September. The detectors are located in areas close to either moving or stagnant water sources. Although sound files from all months have yet to be thoroughly analyzed, preliminary review and capture effort observations suggests that bats in the Anchorage bowl are pervasive and are found in low concentrations, likely due to the ubiquitous nature of Anchorage's waterways and water bodies.

### **Interior Alaska Bat Project**

*Rachel Shively, University of Alaska Fairbanks*

This summer I wrapped up a study of the diet of little brown myotis in interior Alaska. In addition to using microhistology to detect diet changes through the season, I've used the comparison of carbon and nitrogen stable isotope ratios of the guano and collected prey items to look for an alternative method of diet analysis. This August and September I was able to radio

tag and track little brown myotis during their fall migration in this region.

### **Southeast Alaska Bat Research**

*Karen Blejwas, Michael Kohan, Dylan Rhea-Fournier, Laura Beard  
Alaska Department of Fish & Game, Wildlife Diversity Program*

This year was the fourth year of passive acoustic monitoring in Juneau and the third year of monitoring in other communities across Southeast Alaska. This season we reduced our effort in Juneau to 6 monitoring sites and expanded our regional effort to 18 monitoring sites. Acoustic monitoring has provided new insights into the distribution and seasonal activity patterns of silver-haired bats in Southeast Alaska, as well as the first records of hoary bats for the state; these results will be published in an upcoming special issue of *Northwestern Naturalist* devoted to northern bats.



*Long-legged myotis from Haines*

We conducted capture surveys in communities across Southeast Alaska this summer in an effort to better document the diversity and distribution of bat species in the region. We surveyed sites on four islands (Wrangell, Mitkof, Revillagigedo, and Prince of Wales), as well as two locations on the southern mainland (Hugh Smith Lake and Hyder) and two on the northern mainland (Gustavus and Haines). As expected, the little brown myotis comprised most (62%) of the 166 captures. The long-legged myotis was the least frequently trapped bat, comprising only 2% of captures; one of these was in Haines, a





new locality for this species. The remaining species (Californian, Keen's, Yuma, and unidentified *Myotis* sp.) each comprised 7-10% of captures. We collected wing biopsies for genetic confirmation of species identifications and reference calls (kiting, ziplining, and/or hand releases) to add to the Northern Bat Reference Call Library.

We have completed our 4th season of radiotelemetry aimed at identifying fall and winter roosts of little brown myotis in the Juneau area. This fall we tagged 24 bats at 3 sites in the Juneau area during 9/8 – 10/1. Radio-tagged bats used between 1 and 6 roost sites (all in houses or snags) prior to hibernating; we used dataloggers to monitor roost attendance of 21 of the bats for an average of 7 nights each (range = 1 to 24 nights) during the pre-hibernation period. We followed 7 bats to their overwintering areas and located 6 hibernation roosts. Five roosts were located in holes in the ground in rock slide areas on steep, forested hillsides and the 6th roost was underneath a root wad at the edge of a muskeg. All of the roosts were located on the same 2 ridge systems that were used last year; one is a north-facing ridge above the main capture site at Fish Creek and the other is a west-facing ridge approximately 14 km west of Juneau on Admiralty Island. We placed iButtons both inside and outside the roosts to monitor temperature and relative humidity over the winter.

### **Two Keen's myotis in Southeast Alaska test positive for rabies**

This summer two Keen's myotis from Southeast Alaska tested positive for rabies. One was trapped by biologists on Prince of Wales Island in July and the other was collected from a trampoline at a residence in Wrangell in late August. The Wrangell Keen's had a rabies variant typically found in red bats and *Myotis* sp. and the POW Keen's had a silver-haired bat variant of the virus. Prior to this summer, the only confirmed cases of rabies in Alaska were a little brown myotis found in Ketchikan in 1993 and a Keen's myotis trapped by a bat researcher on POW in 2006. The Keen's

myotis is found at low densities throughout most of Southeast Alaska, but is rarely encountered by homeowners.

### **Southeast Alaska Citizen Science Bat Monitoring Project**

*Michael Kohan and Karen Blejwas*  
*Alaska Department of Fish & Game, Wildlife Diversity Program*

The Alaska Department of Fish & Game's Wildlife Diversity Program initiated a citizen science project in the summer of 2014 to collect baseline information on the distribution, habitat use, and seasonal activity of bats in the region. Southeast Alaska is an island archipelago, and most communities are accessible only by boat or plane, making it logistically challenging and expensive for biologists to collect data at multiple locations.



*Young volunteers display the bat detector used in the Gustavus driving surveys. Photo by Emily Herman*

In Southeast Alaska, public libraries connect the community members to local events and serve as a 'hub' for information sharing. We partnered with public libraries in 2 communities to establish a citizen science acoustic survey project. The libraries served as centers for advertising the project and recruiting citizen scientists and librarians were responsible for checking out the equipment and downloading and submitting the data. A total of 30 community members participated in 18 driving surveys that covered specific survey routes and followed



standardized protocols. Through this citizen science effort, we were able to identify which species are present in these remote communities, as well as the habitats they are using. These data will also be contributed to a new national database for monitoring bat population trends. The successful partnership established between ADFG biologists and community libraries will enable us to continue monitoring bat populations in these remote communities.

Michael Kohan will be presenting this information at the Citizen Science Association Conference (a preconference to the annual meeting of the American Association for the Advancement of Science) in February, 2015.

## Arizona

### Flagstaff's diverse assemblage of bats – more than just big brown bats

Rabies is a highly fatal zoonosis that is transmitted by bite. The number of animal rabies cases increased significantly in Arizona during the past decade. This increase is linked to repeated spillover of rabies virus from big brown bats to striped skunks in Flagstaff. We are investigating interactions between these species in Flagstaff in rabies outbreak areas.

In the rabies outbreak area we captured bats on golf course ponds from May to October 2012 and located day roosts of big brown bats using radio telemetry. We captured a diverse assemblage of bats (254 individuals of 11 species; [Table 1](#)) including a lactating female Allen's lappet-browed bat, listed by US Fish & Wildlife Service as a Sensitive Species. The most common bat captured was the Arizona myotis, a close relative of the little brown myotis, which commonly roosts in houses. Big brown bats were also commonly captured and represented 12% of our captures. Most captures of species and individuals occurred in June and July ([Figure 1](#)) when bats are reproductively active and form maternity colonies in northern Arizona. We

had higher captures of big brown bats in May, June, and July and declines in capture rates in August and September.

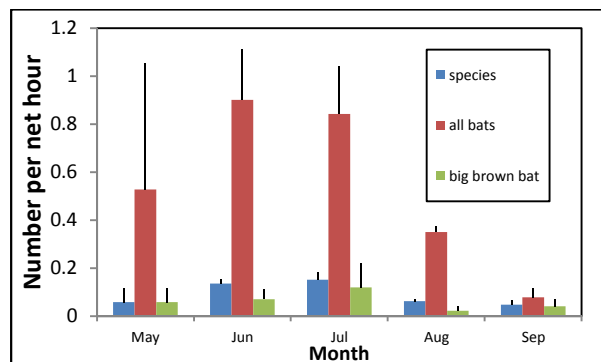


Figure 1. Number of species, individuals, and big brown bats captured per net hour (1 net hour = 1 6-m net open for 1 hour; mean  $\pm$  SE) during the reproductive season for bats in northern Arizona, 2012.

We radio-tagged 20 of 30 big brown bats captured and monitored them for up to 14 days (when transmitters fell off). We also conducted exit counts at roosts. All bats used houses as roosts with the exception of one roost which was an artificial bat roost placed on the side of a house. Interestingly, all roosts were close ( $\leq 500$  m) to capture locations. We identified 16 roosts in 12 houses used by females. Males used 7 houses and never shared female roosts. During the 14-day period bats were tagged, bats used an average of 1.5 roosts. Maternity roosts averaged 30 individuals in May, June, and July (range 3 to 56) but for the single roost documented in August the number of individuals was low ( $n = 4$ ), suggesting maternity colonies were dispersing.

Four of 10 bat roosts were positioned so that bats falling from roosts would contact the ground (as opposed to roof, wood pile or other inaccessible site) and thus be available for scavenging by carnivores. We placed mouse (*Mus musculus*) carcasses on the ground below roosts for 2 weeks at these 4 bat roost sites and found that mice were removed at 2 sites. At one site mice were taken by a raccoon and a skunk, indicating potential for scavenging, contact, and rabies transmission by carnivores. If



these roosts are representative, a rough estimate of bat-skunk contact rate could be based on the assumption that roughly 20% of roosts resulted in contacts. If a higher percentage of roosts were actually accessible for scavenging and all available roosts were visited, the number of bat-skunk exposures could increase substantially.

Next year we will again radio track bats to identify roosts (Figure 2). We will also track bats at night to develop home range estimates and for every bat captured, we will sample DNA to use in estimating populations of Arizona myotis and big brown bats.

- submitted by Carol Chambers

Table 1. Captures of bats from May – October 2012 in the rabies outbreak area of Flagstaff, Arizona.

Common name	# of females	# of males	Total captured	% of Grand Total
Arizona myotis <sup>1</sup>	116	48	165	65.0
big brown bat	21	9	30	11.8
long-legged myotis	17	12	29	11.4
pallid bat	8	0	8	3.2
hoary bat	1	5	6	2.4
long-eared myotis	4	2	6	2.4
Brazilian free-tailed bat	1	3	4	1.6
western small-footed myotis	1	1	2	0.8
fringed myotis	2	0	2	0.8
Allen's lappet-browed bat	1	0	1	0.4
silver-haired bat	0	1	1	0.4
Grand Total			254	100

<sup>1</sup> Includes 1 individual of unknown sex



Figure 2. A big brown bat equipped with a radio transmitter prepares for flight.

## California

After almost 2 years of monitoring bat activity at a large 250-megawatt photovoltaic project in Central California (California Valley Solar Ranch), we're about to wrap up and begin writing our final report. To date, we found no injured bats or bat fatalities at this project. We deployed 26 bat detectors distributed inside arrays and in conservation areas away from the solar arrays. For our first year of data we found that all bats as a group, the Brazilian free-tailed bat, and the canyon bat had higher activity within operating arrays compared to preconstruction and conservation lands activity (0.80, SE= 0.167,  $P<0.05$ ; 0.43, SE=0.203,  $P<0.05$ ; and 0.41, SE=0.152,  $P<0.01$ , respectively). The pallid bat, which specializes in foraging low and on the ground, decreased their activity in array areas (-0.23, SE=0.078,  $P<0.01$ ) during the first year after construction.



HTH bat biologists Meredith Jantzen, Gabe Reyes, and Kim Briones setting up an acoustic station for long-term monitoring at a solar project

We are also implementing the Avian and Bat Protection Plan for the Ivanpah Solar Energy Generation System, to date, the largest operating solar power tower project in the world.

We've worked on some interesting projects in Hawaii for wind energy and forestry projects that included bat activity modelling and radio-tracking of the Hawaiian hoary bat. In the British Virgin Islands we have been monitoring for bats for about a year to learn more about the best areas to site small scale wind and solar projects.





Elizabeth Gruenstein completed her Master's Thesis at San Jose State University. Her thesis was titled "Comparison of Bat Foraging Activity Levels between Lakes Containing Introduced Trout and Fishless Lakes in the Sierra Nevada Mountains, California." Elizabeth observed unexpected results and she plans to present her data at the upcoming North American Symposium for Bat Research meeting in Monterey in October 2015.



*Shown are HTH bat biologists Gabe Reyes, Meredith Jantzen, and Kim Briones on top of the Casa Grande rooftop getting ready to deploy SM2s.*

One of our interesting projects has been working at the Hearst Castle to passively move bats while the Casa Grande (the main part of the castle) is being reroofed.

*~ submitted by Dave Johnston, H. T. Harvey & Associates in California.*

## Idaho

### **Idaho Department of Fish and Game Awarded Grants to Pilot North American Bat Monitoring Program (NABat) and to Continue White-nose Syndrome Surveillance Efforts in Idaho**

*Rita Dixon, Idaho Department of Fish and Game*

The Idaho Department of Fish and Game (IDFG) was awarded 2 grants this summer to pilot the North American Bat Monitoring Program (NABat)—the first in collaboration

with the US Geological Survey, US Forest Service, and National Park Service; the second is a multistate Competitive State Wildlife Grant in collaboration with 8 western states (Arizona, California, Colorado, Idaho, Montana, Texas, Utah, and Washington) and Bat Conservation International.

To date, USGS has distributed an ordered grid of 10 × 10 km grid cells to each state for evaluation and selection of cells that are feasible for conducting both stationary and/or mobile monitoring. IDFG will be working with internal staff and external partners to implement this project over the coming year. Please contact Rita Dixon at [rita.dixon@idfg.idaho.gov](mailto:rita.dixon@idfg.idaho.gov) or (208) 287-2735 if you are interested in being a partner in Idaho's NABat pilot. In particular, we're looking for partners to adopt grid cells or loan acoustic equipment for use in the pilot.

In addition, the White-nose Syndrome (WNS) Capacity Grant from the US Fish and Wildlife Service will enable us to continue efforts in Idaho to conduct surveillance for WNS.

### **Idaho Public Television Features Segment on Bats for their ScienceTREK Series**

*Rita Dixon, IDFG*

Joan Cartan-Hansen and the film crew from Idaho Public Television worked with IDFG Wildlife Veterinarian Mark Drew, Rita Dixon, and Sandy Vistine-Amdor and Toni Holthuijzen (Idaho Power) to film a segment on bats at the Old Swan Falls Power Plant. In August, Joan and crew filmed a 2nd segment for their ScienceTREK series with Jesse Barber (Boise State University) and Rita Dixon. The complete "Bats: The Show" can be viewed at

<http://idahoptv.org/sciencetrek/topics/bats/>

### **Creatures of the Night—In Celebration of National Bat Week**

*—Rita Dixon, IDFG*

As part of the Idaho Department of Fish and Game's 75th Anniversary Milestone Series,





Becky Abel and Rita Dixon developed a story on bats to both celebrate bats and raise awareness for their conservation. The complete story can be viewed at <https://fishandgame.idaho.gov/content/75th-celebration-story/2014-creatures-night> and also includes some vintage Outdoor Idaho video footage of Idaho bat work featuring Lyle Lewis, Chuck Harris, and others.

## 1st Annual Eastern Idaho Bat Blitz

*Becky Abel, IDFG*



*Crew setting up mist nets at the Eastern Idaho Bat Working Group's first annual bat blitz.*

The 1st annual Eastern Idaho Bat Blitz was held on August 28th, 2014 at IDFG's Sand Creek Wildlife Management Area. 26 people attended the event, including Idaho Department of Fish and Game biologists, USFS biologists, BLM biologists and interns, biologists from the Idaho National Laboratory, 6 Idaho Master Naturalists and 2 members of the press. The weather was stormy, but crews managed to capture bats at 3 sites on the WMA. This event will be held annually in areas around eastern Idaho.

## Pilot Test of Aerial Infrared Technology to Detect New Caves

*Todd Stefanic (NPS), Rita Dixon, and Ross Winton (IDFG)*

As part of the Idaho White-nose Syndrome investigation, IDFG and NPS collaborated with Owyhee Air Research, Inc. (OAR) to test the feasibility of using aerial infrared (IR) technology to detect new caves. OAR conducted a flight in the vicinity of Craters of the Moon National Monument and Preserve (CRMO). Later in the year, CRMO staff and

others ground-truthed sites detected during the flight. To date, it appears that the technology needs to be refined before it can be used to reliably detect caves. Of the sites detected, no substantial caves were discovered. That said, IR did detect a 6 × 6 inch hole that was “breathing out” warmer. Ground-truthing the caves proved to be labor-intensive and involved a partnership among CRMO, IDFG, the Idaho Falls Master Naturalist Chapter, and Camas National Wildlife Refuge staff. As IR technology and methods continue to improve, we plan to work with OAR to explore the application of aerial IR as a tool for both surveying bats and detecting new caves.

## US Bureau of Land Management Shoshone Field Office/Craters of the Moon National Monument and Preserve FY 2014 Success Stories

*Submitted by Tara Anderson, Bureau of Land Management*



*NPS crew performing cave surveys in the Craters of the Moon National Monument and Preserve, Idaho.*

Monitoring of caves within the Shoshone Field Office and the adjacent Craters of the Moon National Monument has been conducted since 1987. Surveys occur within two Areas of Critical Environmental Concern (ACEC), McKinney Butte ACEC and Tee-Maze ACEC, which were designated to recognize and protect the high concentration of significant cave resources in these areas. The 27 significant caves within the ACECs contain important cultural, paleontological, geologic, and wildlife values, which collectively qualify the area as a Treasured Landscape under the BLM's national initiatives. For example, the geologic features in several of the caves are



unique to Idaho caves in their variety, abundance, and virtually undisturbed condition. A number of the caves also provide hibernacula for significant numbers of Townsend's big-eared bats as well as year-round habitat for some rare troglobitic invertebrates.

During FY 2014, the Shoshone Field Office received \$2,500 to purchase remote sensing and survey equipment needed to perform cave surveys with both a high level of accuracy and minor human disturbance. Specifically, we purchased temperature and relative humidity sensors, a laser distance meter with an integrated clinometer, a compass, and bat acoustic monitoring equipment including Anabat detectors and microphones.

Caves within the two ACECs have been surveyed regularly by GeoCorp personnel to verify their location and to document the presence or absence of significant resource values, mentioned previously. The acquisition of survey equipment such as the laser distance meter, clinometer, and compass has allowed us to complete detailed, georeferenced surveys necessary to develop 3-dimensional maps for each of the significant caves. A large portion of the survey and monitoring work was accomplished through volunteer efforts of two local caving grottos, the Silver Sage Grotto and the Gem State Grotto. The volunteer labor and transportation provided by the two grottos provided nearly \$3,000 in contributed value to the project. Cave surveys resulting from this effort will improve BLM's management of both surface and subsurface resources in the two ACECs.

In cooperation with the Eastern Idaho Bat Collaborative, including partners such as the U.S. Department of Energy's Idaho National Laboratory, the U.S. Forest Service, the U.S. National Park Service, the U.S. Fish and Wildlife Service, the Wildlife Conservation Society, and local master naturalists, we used recently purchased Anabat detectors to perform passive

(stationary) and active (driving) acoustic monitoring of bat populations and to collect reference acoustic recordings of several at-risk bat species during the group's first annual bat blitz.

A specialized Anabat detector for monitoring bat activity in caves and mines, known as a roost logger, as well as temperature and humidity sensors were placed in some of the caves known to provide hibernacula for Townsend's big-eared bats and western small-footed myotis.



*Roost logger deployed at a cave near Gooding, Idaho.*

These devices will allow us to remotely monitor environmental conditions in the caves as well as the presence/absence of at-risk bat species potentially using the caves as maternity roosts and/or hibernacula.

The data from the bat counts and the remote sensing devices will be incorporated into local and regional research conducted by the Eastern Idaho Bat Collaborative, aimed at detecting trends in bat populations. In addition, the cave temperature and humidity data will be used to document baseline environmental conditions and to establish the level of risk or susceptibility of local bat populations to white-nose syndrome. Although white-nose syndrome has not yet been detected in Idaho, monitoring data are critical for determining species' risks and can serve as an early warning for species that may be experiencing declines throughout their range. In addition, an effective and efficient monitoring program is needed to document the impact of other regional threats such as



wind energy on bat populations and to measure the effectiveness of agencies' conservation and management actions to mitigate these threats.

### **Craters of the Moon National Monument and Preserve (CRMO) Update**

*Submitted by Todd C. Stefanic, National Park Service*

Efforts continued in 2014 to gather baseline data on hibernating bats with 35 caves surveyed (21 revisits, 14 new caves). This brings our total to 49 caves surveyed at least once since 2012. Four new hibernacula were found in 2014 bringing our total to eight. Over the 3 years of surveys, about 30% of caves visited were deemed to be unsuitable for hibernation. Of those caves deemed suitable, bats were found hibernating in 24% of caves. This effort has added 7 new caves to the list of known hibernacula on CRMO. Additionally, a new high count of 38 bats was recorded in Arco Tunnel in 2014.

Summer cave survey and mapping of locations reported during the search and rescue turned up 23 new caves (so far) of which 6 caves have been deemed suitable for hibernation and added to the list for surveys in 2015. Two of these caves turned up proof of at least summertime bat use. One contained an approximately 12 × 12 ft area of floor which was covered by bat guano and in another the floor was covered with moth wings. A 7th and 8th cave (Expedition North and South) were discovered during the Great Rift Expedition and added to the survey list. The Expedition Caves were an especially exciting find as over 1200 ft of passage were mapped on 3 levels and it provides excellent potential for use as a hibernaculum.

Craters also ran 2 bat driving transects this summer the Laidlaw Park—Fish Creek Route and the Blizzard Mountain—Big Lost Route. Craters also received 6 new Anabat SD2s with all the bells and whistles (2 with complete driving transect setups). These

are intended to be used for NABat monitoring and loaned out across Idaho as needed.

### **US Forest Service Intermountain Region (R4) Acquires Acoustic Equipment to Support Bat Survey Work**

*Submitted by Kevin Labrum, USFS*

The US Forest Service Intermountain Region (R4) purchased several bat detectors this year and will soon distribute them to the National Forests in the Region, which includes Forests in Idaho, Utah, Nevada, and Wyoming. In total the Forest Service purchased 13 Wildlife Acoustic SM3 detectors along with 13 Kaleidoscope software licenses. These detectors will be used for a variety of bat survey needs, including pilots underway in these states to implement the North American Bat Monitoring Program (NABat).

### **Late Summer Call Library Work Results in Capture of Two Female Spotted Bats**

*Bill Doering, POWER Engineers*

On August 23, 2014 while working on improving Idaho's regional bat call library, Bill Doering (POWER Engineers), Bill Bosworth (IDFG), and Kevin Warner (IDARNG) mist-netted two rare female spotted bats in southwestern Idaho. In order to obtain good voucher calls, a total of 7 mist nets had been set within an array of Anabat SD2 and Petterson D500X detectors.



*Spotted bat*





The first spotted bat was caught between willows approximately 1.5 m above a creek bed. It seemed we were still in the throes of spotted bat euphoria when “pop” a second female was caught in a triple-high set over the adjacent meadow. Both females were post-lactating, indicating spotted bat breeding activity in the area.

Spotted bats were the most frequently recorded species that evening and were active throughout the night. Very little is known about spotted bats in Idaho with their presence in the state confirmed only in the mid-1990s.



*Capture location for the first spotted bat.*

### **Possible Longevity Record for Townsend’s Big-eared Bat Obtained in Southeastern Idaho**

*Bill Doering, POWER Engineers*

As part of the Eastern Idaho Bat Monitoring Collaborative’s broader effort to obtain good winter habitat data for bats hibernating on the Snake River Plain, Bill Doering (POWER Engineers), Jericho Whiting (Gonzales–Stoller Surveillance), and Bryan Bybee (Gonzales–Stoller Surveillance) spent the week of October 27 installing 16 HOBO temperature/relative humidity data loggers in 8 caves at the Idaho National Laboratory near Idaho Falls.

During this data logger installation work, we observed a Townsend’s big-eared bat with a bi-color numbered split ring plastic band. The band and bat’s wing appeared to be in

good condition. Later we confirmed with IDFG that this bat had been banded as an adult in 1993 during a winter movement study. Currently we are in process of verifying that this is a longevity record for this species. The extreme record we are aware of is 21 years two months.

## **Nevada**

### **2014 Nevada Bat Blitz**



*Survey crew processing a captured bat (photo Jason Patnode).*

During four nights in early August, biologists from six different state and federal agencies (Nevada Department of Wildlife, Nevada Natural Heritage Program, Nevada State Museum, Bureau of Land Management, National Park Service, and US Forest Service) and several volunteers convened on the Nevada side of Lake Tahoe to participate in the 2014 Bat Blitz. With abundant water in the area to choose from, we concentrated our survey efforts around Hobart Reservoir, Spooner Lake, and North Canyon Creek, all located inside Lake Tahoe Nevada State Park. These sites were all located in mature Jeffrey pine and white fir forest, and the main goal of this year’s survey was to determine which species were occupying the east Lake Tahoe Basin.

Despite its allure and the numerous biologists working in the area, the east Lake Tahoe Basin has generally lacked good information on bats. This survey would





hopefully be the first step in identifying sensitive habitats for bats that will require special consideration in an area that sees non-stop recreation, continued development, and numerous forest fuels reduction projects on a regular basis.

Despite unseasonably cold weather and a winter-like rain event that cancelled our first trapping night, we successfully caught 33 bats from six different species using a variety of mist nets (Table 1). The six species were: silver-haired bat, western small-footed myotis, long-legged myotis, little brown myotis, big brown bat and Yuma myotis. In addition to mist nets, Anabat acoustic recorders were deployed at every site. Initial analyses of those recordings show acoustic detections of four additional species: Brazilian free-tailed bat, long-eared myotis, fringed myotis, and pallid bat. Six of the bat species detected are considered “Species of Conservation Priority” in the Nevada Wildlife Action Plan. These designations are mainly due to loss of roosting habitats, human disturbance, and a general lack of information on their distribution in Nevada.

Despite the relatively low number of captured bats, we gained valuable information during our survey, and developed a few follow-up questions that we would like to address during future surveys. Forty-four percent of our captures were silver-haired bats, which are a forest-associated species that commonly uses trees for roosting sites. Fuels reduction protocols at Lake Tahoe always include the retention of a minimum number of standing dead trees, and we hope to use telemetry during future surveys to locate silver-haired bat roost sites. We captured two lactating little brown myotis at Spooner Lake, which indicates that there was a maternity roost nearby. Using telemetry on lactating females during future surveys might help us locate and conserve those important roost sites. Strangely, all 12 bats caught at Hobart Reservoir (elev. 7,600 ft) were males. There was some speculation that females were staying at lower elevations

with their young while the males roosted at high elevations during the day. Staying at lower and warmer elevations would probably reduce the energetic costs for females that are birthing and caring for young, which is another question that we can address in the future.

In all, we got great data, and several people gained valuable bat-handling experience. Hopefully there will be many more bat surveys to come in the east Lake Tahoe Basin, and we can continue to expand our knowledge of the area’s bat species and conserve the most important habitat.

*Table 1. Summary of bats caught during three trapping nights in Lake Tahoe Nevada State Park.*

Species	Hobart Reservoir	Spooner Lake	North Canyon
<i>Myotis lucifugus</i>	8	4	0
<i>Lasionycteris noctivagans</i>	4	0	10
<i>Myotis yumanensis</i>	0	1	1
<i>Myotis volans</i>	0	0	2
<i>Eptesicus fuscus</i>	0	0	1
<i>Myotis ciliolabrum</i>	0	0	2
<b>total</b>	<b>12</b>	<b>5</b>	<b>16</b>

- Submitted by Mark Enders, Nevada Department of Wildlife

## Nevada Bat Gates

A gate was constructed on Dragon’s Gate Cave to protect *Corynorhinus townsendii* and myotis during winter and summer roosting, historical, geological and archaeological resources including human remains and an undocumented new species of millipede. It is on BLM land at an elevation of about 8700 feet and one of Nevada’s lowest in temperature and highest in humidity.

With no road or two-track access materials had to be flown in via helicopter. State contractor Brian Breiter with Environmental



Protection Services did a good job in the construction of this gate while accommodating for natural features of the cave.



*Gate constructed on Dragon's Gate Cave*

Another bat gate was constructed on a mine in the Wonder District, Northern Nevada and was a winter roost for *Parastrellus hesperus* and a maternity roost for pallid bats and *Myotis* species.

These bat-compatible gates protect bats during important life processes while protecting the public from fatal accidents in abandoned mines. Funding for these bat-compatible gates is from Federal and Nevada State Habitat Conservation fees.

- Jenni Jeffers, Nevada Bat Working Group co-chair

## New Mexico

### Cave Fauna Inventory and Monitoring Workshop

A new cave training program was developed on Lincoln National Forest this past summer. Jason Walz, Cave Specialist for the Lincoln NF and Jim Kennedy, Bat Biologist contractor, teamed up to develop a training program focused on internal-cave survey. The training was a great success, incorporating biologists from the Lincoln NF as well as from nearby National Forests and the Bureau of Land Management. Participants learned the proper inventory and monitoring techniques for caves in the

classroom and in the field. They used the latest bat and environmental monitoring equipment to develop monitoring forms through collaboration.

### White Sands Missile Range Mine and Cave Surveys

White Sands Missile Range (WSMR) recently completed a comprehensive survey of mines and caves on the installation, funded by the DoD Legacy program and carried out by Bat Conservation International and MineGates of Tucson, Arizona. The survey team looked at 770 sites, including 192 shafts and 127 adits. The team documented 5 species of bats, and located previously unknown maternity roost and hibernaculum sites. Other military installations in New Mexico were also surveyed. In 2014, WSMR used mist-netting and acoustic recorders to survey 18 water sites, and results will be available soon. Two spotted bats were captured during this effort. The installation has also funded NABat surveys for the 2015 field season. The POC for WSMR bat studies is Trish Cutler [\(575\) 678-2029](tel:575-678-2029).

### New Mexico Abandoned Mine Land Program 2014 Bat-Related Activities

*Linda DeLay, Mining and Minerals Division, New Mexico Energy, Minerals and Natural Resources Department. Santa Fe, NM*

As a result of a MOU between the Bureau of Land Management (BLM, Las Cruces Office) and NM Abandoned Mine Land Program (NM AMLP), several large projects are underway to safeguard mine openings that will include bat compatible structures. Internal mine bat checks required as part of the environmental assessment are in progress or have been completed by Bat Conservation International (BCI) staff on contract to BLM. These projects include sites at the Florida Mountains (Luna Cnty), Gage (Luna Cnty), Orogrande (Otero Cnty) and sections of San Pedro (Santa Fe County) not already managed by the NM AML Program. Bat surveys begun by BCI



at Lemitar (Socorro County) are being wrapped up by Dr. J.S. Scott Altenbach and AML Staff. Dr. Altenbach also assessed bat habitat and use at the Boston Hill Legal Tender Mine and finished assessments at the extensive Cookes Peak complex (Luna Cnty).

Abby Tobin (Carol Chambers, advisor with funding from BCI and BLM) of Northern Arizona University has finished the first field season of a graduate project examining bat activity levels in response to construction of culvert with bat-gate structures and internal environmental measures of each adit selected. Sampling methods included the use of video and acoustic recorders, data loggers that record bat activity within the mine as well as temperature and humidity, internal mine mapping, internal bat checks and mist netting. Observations will occur before and after bat gate construction and the project involves selection of a control adit at each mine site that will not be safeguarded during the study. Cookes Peak was the study site selected in New Mexico in addition to two other mine sites in southern Arizona. The overall study involves three different gates types: culvert, cupola and square-tubed. NM AML Program with Linda DeLay, GIS Specialist and field biologist, facilitated the selection process in New Mexico and participated in video/acoustic work when needed. NM AML's team of engineers, archaeologists and environmental coordinators (Mike Tompson, Lloyd Moiola, and Randall Armijo) worked to manage this small construction project that included environmental clearance, engineering design, and construction oversight. We look forward to another season of Abby's research efforts.

NM AMLP supported a test of the North American Bat Monitoring (NABat) protocol in close proximity to one remediated abandoned mine site, Lake Valley Historic Townsite (Sierra Cnty). Linda DeLay also used GIS to map out other possible NABat survey areas in NM that the program may be able to tackle in subsequent years using

stationary and driving acoustic monitoring protocols within the vicinity of abandoned mines. Linda DeLay working with NM AMLP continued this summer and fall to check on previously gated (and other bat-compatible closures) mine openings for bat activity using night viewing video and acoustic recorders. A FLIR video camera included in recording bat exit counts was generously on loan from the Office of Surface Mine Reclamation and Enforcement, Technical Innovation and Professional Services Program.

*~compiled and submitted by Jennifer Foote.*

## South Dakota



*Eager participants at the Bat Festival.*

The 7<sup>th</sup> Annual 'Bat Festival' hosted by SD Bat Working Group was held August 18<sup>th</sup>. The festival continues to grow and as always is a fun event with activities for kids and adults. It's held in Custer State Park in the southern Black Hills. Planning for next year's event has already started.

The SDBWG 'Bat Books for schools' program continues and a few more sets of books awarded to elementary schools across the state. SDBWG members also did bat education presentations to schools and civic groups, and installed a few bat boxes.

The Black Hills National Forest, working with SDBWG and the Paha Sapa Grotto,



has started a program to monitor for WNS. Temp/Rh data loggers were also installed this summer in a dozen caves known to be bat hibernation sites. The Rocky Mountain Region of the Forest Service is still under an Emergency Cave Closure Order.

- submitted by Brad Phillips

## Texas



*Corynorhinus rafinesquii* artificial roost.

The Republic of Texas has been ramping up bat survey efforts through key partnerships. This summer, Texas Parks and Wildlife and Bat Conservation International partnered to conduct summer roost surveys for *Myotis austroriparius* and *Corynorhinus rafinesquii*. Field surveys were conducted in early July at 13 sites with assistance from USFWS personnel and private landowners. A total of 502 individual bats were documented. This survey effort contributes to one of Texas's only long term bat datasets. Currently, an analysis and report of this 18-year dataset is contracted and should be completed this month. As these two species are rare on the Texas landscape, this report will help resource managers direct limited resources for conservation priorities.

The Texas Parks and Wildlife Department currently has 2 Requests for Proposals out which specifically address bat conservation needs. Wildlife Conservation Grants from TPWD and Section 6 Traditional Grants

from TPWD both seek to expand survey and monitoring efforts for *Geomyces destructans* and White-nose Syndrome as well as collating cave and karst environmental baseline and trend data in the state. Projects that meet these goals will help Texas meet objectives in their Wildlife Action Plan as well as contribute to a national WNS surveillance effort.

Submitted by: Katie Gillies, Bat Conservation International

## Utah

### Utah Bat Blitz 2014 - Grouse Creek Mtns, Box Elder Co, Utah

Fourteen members of the Utah Bat Conservation Cooperative attended the Bat Blitz this year on August 19-21 in the Grouse Creek Mountains. The Grouse Creek Mountains are in western Box Elder County, near Idaho and Nevada. There are several springs feeding open ponds and livestock troughs but is mostly arid, juniper and sage desert. Poking up through the pinyon-juniper are craggy, granite spires that make for striking views and seem to suggest bats. Weather was uncooperative at best, but we still caught some bats. A couple of the more notable captures were an *Antrozous pallidus*, and a few *Corynorhinus townsendii*.

We were lucky enough to have the BLM give us access to the Crystal Cave/Tecoma Mine. This mine was dug in until it met the Crystal Cave and was abandoned. Crystal Cave has been known to house a maternity colony of *C. townsendii* though we found only one. We also found what was likely a *Myotis evotis*, though it wouldn't stay very still for us to be sure, quite far into the cave's maze. The cave had some tight squeezes and twisting passages that crisscross but luckily everyone made it back out. Thanks to all that were able to come, we had biologists from the state Division of Wildlife Resources, BLM, Forest Service, National Park Service, private consulting





companies, and volunteers and enough grilled salmon for us all.

- Submitted by Adam Brewerton

## Washington

### **Bat Acoustic Surveys Across Oregon, Washington and Idaho National Wildlife Refuges**

*Jenny Barnett, Zone Inventory and Monitoring Biologist, Mid-Columbia River National Wildlife Refuge Complex*

The acoustic inventory project on National Wildlife Refuges in Oregon, Washington and Idaho is complete. A final report can be downloaded from ServCat, the USFWS document catalog. The link is:

<https://catalog.data.gov/dataset/region-1-acoustic-bat-inventory-national-wildlife-refuges-in-eastern-oregon-eastern-washin>

Long-term acoustic monitoring stations have been set up at 6 Refuges, Little Pend Oreille, Kootenai, Columbia, Toppenish, McNary, and Malheur. The permanent stations run nightly. We plan to look at seasonal activity and species composition throughout the year. McNary was monitored in 2013, and the other stations were added in 2014. A report will be prepared in early 2015.

### **Bat Acoustic Surveys on the Three Largest Islands in the San Juan Islands Archipelago**

*Russel Barsh, Director, Kwiaht*

A systematic acoustic survey of 22 lakes, ponds and wetlands on the three largest San Juan Archipelago Islands (Lopez, Orcas, San Juan) over 58 nights from April to September 2014 allowed us to record 10,063 WAV files. Nine species were heard on each of the three islands, in decreasing order of activity: *Myotis yumanensis*, *Myotis californicus*, *Myotis lucifugus*, *Lasiurus noctivagus*, *Eptesicus fuscus*, *Myotis evotis*, *Myotis volans*, *Lasiurus cinereus*, and *Corynorhinus townsendii*. Bat activity varied by island, with *M. yumanensis* most often recorded on Lopez Island, *M. lucifugus* recorded more often on Orcas Island, and

both *E. fuscus* and *L. noctivagus* recorded most often on San Juan Island.

*M. yumanensis* were most often recorded over lakes (over one acre open water) while *M. californicus* were most often recorded over woodlands and fields. At wetlands monitored throughout the study period, *M. yumanensis* and *M. californicus* activity varied from month to month, possibly indicating a shift in prey species relative to what was hatching at different locations. *M. yumanensis* were often observed and recorded hunting over salt water. A limited number of recordings identified as primarily *M. californicus*, *M. yumanensis*, and *M. volans* were also made on Lopez Island in winter between January and March.

A more intensive search for bat activity will be pursued this winter on Lopez and Orcas Islands, and more wetlands will be monitored during summer 2015.

### **WDFW White-nose Syndrome of Bats Projects**

*Ella Rowan, Wildlife Biologist, Washington Department of Fish and Wildlife*

#### Hibernacula Surveys

WDFW received federal funding to perform cave surveys for bats during hibernation as a means to locate hibernacula, document colony sizes and species composition, examine the condition of bats for signs of White-nose Syndrome (WNS), and to document microhabitat conditions and bat behaviors. We developed a draft Cave Safety Manual to allow WDFW staff to safely perform cave surveys, purchased equipment necessary to perform cave surveys, had Bat Conservation International train National Speleological Society (NSS) Cascade Grotto members to perform cave surveys for bats, attempted 9 hibernacula surveys, acquired microsite and behavior data, installed hygrometers in 3 large Townsend's big-eared bat hibernacula, and developed a Memorandum of Agreement with the NSS Cascade Grotto to allow them to perform limited bat surveys in caves.



Seven cave and 2 bridge hibernacula surveys were attempted during early March 2013 and late February 2014, although 3 caves were inaccessible due to snow levels. Survey crews saw one to three Townsend's big-eared bats in each cave, except one where species were not identifiable through photos. One bridge contained Townsend's big-eared bats and big brown bats. The US Forest Service assisted WDFW with the installation of hygrometers in 3 large Townsend's big-eared bat hibernacula, which recorded temperatures and humidity values over the course of late winter.



*Hibernating big brown bats in bridge. Photo credit: Ella Rowan*



*NSS Cascade Grotto crew searching for bats. Photo credit: Ron Zuber*

### Winter/Early-spring Acoustic Surveys

WDFW received federal funding to perform winter/early-spring bat acoustic surveys to gain baseline data on bat activity, species present, habitat types used, and associated climate and lunar phase data in regions of the state where climates require long-term hibernation. Work was performed on 3 USFWS National Wildlife Refuges

(Columbia, Turnbull, and Little Pend Oreille), where 3 different "habitat types" (open, water, and edge) were surveyed due to their differences in flora/insect fauna and structure.

Two years of surveys spanning February 1<sup>st</sup> – May 10<sup>th</sup> (during 2013) and January 31<sup>st</sup> – April 11<sup>th</sup> (during 2014) found bats active as early as February on Columbia NWR, and as early as March on Turnbull and Little Pend Oreille NWRs. Bats were not recorded when temperatures were below 28°F (-2.2 °C), and activity picked up on all three refuges when dusk temperatures routinely exceeded 40°F (4.4°C). Temperature, wind speed, barometric pressure, relative humidity, and lunar phase did not appear to present any strong influence over bat activity through modeling and other examinations of data; although, we are hesitant to draw definitive conclusions with our limited dataset.

Analysis showed a difference in bat activity between habitat types, with water sites having greater activity than open and edge sites. Turnbull NWR also had greater activity than Little Pend Oreille NWR, and to a lesser extent more than Columbia NWR. Individual nights on Columbia NWR experienced spikes in activity levels at edge and open sites, which helped increase overall refuge species richness values. While hearing bat activity may be easiest to accomplish at water sites during winter, it may be important to survey in other habitat types to achieve more representative species richness values. Species activity levels also differed between refuges, with *M. californicus* contributing the most calls on Little Pend Oreille NWR, *M. yumanensis* contributing the most calls on Turnbull NWR, and *M. ciliolabrum* contributing the most calls on Columbia NWR.

### Additional WNS-related Work

- Education: Created and maintained updates on a WDFW WNS webpage providing basic information regarding WNS and the causative fungus: <http://wdfw.wa.gov/conservation/health/wns/>; sent WNS updates to internal



wildlife biologists, to the Washington Bat Working Group, and to the local Wildlife Society chapter; performed bat education events in collaboration with Washington State Parks, City of Spokane Parks and Recreation, and the USDI Bureau of Land management.

- Prevention: Instituted gear restriction and decontamination requirements for all staff and scientists applying for research permits to work with bats or in bat roosts and caves.
- Passive Surveillance: Created an online reporting mechanism for the public to report bat mortalities, soon to be uploaded; responded to reports of sick and dead bats and submitted them for testing.
- Coordination and Planning: Attended 2 USFWS-sponsored WNS Symposia; the 2011 Western Association of Fish and Wildlife Agencies meeting, where a special session was held to discuss WNS; participated in USFWS and Western Bat Working Group conference calls; participated in the development of the draft Pacific Northwest Interagency WNS Plan.

### **WDFW Summer Bat Surveys**

*Shelly Ament, Chris Anderson, Anita McMillan, Ruth Milner, Michelle Tirhi, Gary Wiles, Wildlife Biologists, Washington Department of Fish and Wildlife*

Washington Department of Fish and Wildlife performed exit counts at known Townsends big-eared bat maternity roosts this summer, as well continued with, or expanded upon, summer acoustic surveys in regions west of the Cascades. The agency has acquired a new State Wildlife Grant, and anticipates performing extensive acoustic surveys during the next 2 summers.

*~ compiled and submitted by Ella Rowan, Wildlife Biologist, Washington Department of Fish and Wildlife*

## **ANNOUNCEMENTS**

### **SCHOLARSHIP COMPETITIONS**

#### **Dixie Pierson Fund 2014 Donations Request and 2015 Scholarship Award Announcement**

The Dixie Pierson Memorial Fund has been established by her husband, Dr. Bill Rainey, and colleagues at the Western Bat Working Group. Donations are now being accepted for 2015 Scholarship awards, and can be made via [WBWG.org](http://WBWG.org). The hope is to make two \$500 awards every other year at the biennial meeting of WBWG, which will next convene March 3-6, 2015 in St. Louis. The goal of these awards is to defray travel costs and provide the opportunity for biologists to present their papers at the biennial meeting of the WBWG, where they can network with other biologists across the western North America.

Dixie Pierson was one of the core founding members of the Western Bat Working Group. She was a member of the team that developed the Townsend's big-eared bat Conservation Strategy in 1993 and 1994 that eventually led to the formation of the Western Bat Working Group in 1996. Dixie's leadership promoted more effective bat conservation efforts across the western United States. She inspired and provided training and field experience to many students and agency biologists.

Proposals are now being accepted for the Dixie Pierson Scholarship Awards to be announced by February 1, 2015, prior to the WBWG biennial conference in St. Louis from March 3-6, 2015.

#### **Deadline for proposal submission is January 15, 2015.**

Prior recipients of the Bob Berry Scholarships are eligible to apply. Application process and instructions can be downloaded from:

<http://www.wbwg.org/business/dixiepiersonfund.html>





### **Bob Berry Fund 2014 Donations Request and 2015 Scholarship Award**

Dr. Pat Brown-Berry will again match donations up to \$1,000 in 2014 for the Bob Berry Fund 2015 Scholarship award. The hope is to make awards every other year at the biennial meeting of WBWG, which will next convene March 3-6, 2015 in St. Louis.

The impetus behind the generous donations to this fund by the suppliers of bat research equipment is to perpetuate Bob's legacy of assisting others. Bob utilized his engineering and computer skills to refine the tools used for bat-related field work, and to help people to understand the different and changing technologies. Bob worked best one-on-one and offered his expertise to many students and agency biologists until the time of his death in 2008. The goal of these awards is to facilitate research by providing current technology and training from the developers of the technology.

The following awards will be given in 2015:

- **The Bob Berry Holohil Award.** Six transmitters have been donated by Holohil and \$1,000 from the Bob Berry Fund for receiver purchase or to cover research expenses. Applicants for this award must have the training and appropriate permits from their state wildlife agency to capture and attach transmitters to bats.
- **The Bob Berry Titley Scientific Award.** A new AnaBat Express Bat Detector and a free seat in one of the AnaBat trainings donated by Titley Scientific.
- **The Bob Berry Binary Acoustic Technology Award.** The Binary Acoustic Technology IFR-IV recording system and SPECT'R software donated by Mark and Kim Jensen.
- **The Bob Berry SonoBat Award.** SonoBat full software suite and \$1000 (\$500 donated by Joe Szewczak and \$500 from the Bob

Berry Fund) to cover training or equipment expenses.

- **The Bob Berry Wildlife Acoustics Award.** A new Echo Meter Touch, the Discover Bats! curriculum guide and a seat in a future training program.
- **The Bob Berry Pettersson Elektronik Award.** A Pettersson D240X bat detector, a Pettersson M500 USB Ultrasound Microphone and one license for the BatSound software.

Proposals are now being accepted for the Bob Berry Scholarship Fund, with awards to be announced prior to the WBWG biennial conference in St. Louis from March 3-6, 2015. Deadline for proposal submission is February 1, 2015. You are not required to attend the WBWG St. Louis meeting to be eligible for the award.

Please limit proposals to 2 pages (including the cover page) and submitted electronically by **February 1, 2015** to Pat Brown at [patbobbat@aol.com](mailto:patbobbat@aol.com). A committee of five representatives of WBWG will judge the proposals based on the following criteria:

- Demonstrates financial need (project could be compromised without this award)
- Demonstrates urgency for project/research to be conducted
- It is a relevant conservation issue for bats
- Demonstrates a sound scientific approach
- Demonstrates a requirement for and understanding of the equipment for which he/she has applied
- Applicant has outlined a clear plan for how the equipment/money will be used (i.e. the level of funding and/or requested equipment is appropriate for the study)
- It is clear that results from this work will be distributed or made publicly available through publication/report
- Applicant conveys project clearly, demonstrating a sound understanding of his/her proposed





- projects background and objectives
- Demonstrates long term benefits for bat conservation

*For complete instructions and the application forms, please visit:*

<http://www.wbwg.org/business/bobberfund.html>

## SPECIAL ISSUE OF NORTHWESTERN NATURALIST (WINTER 2014):

### **Recent Advances in Bat Research in Northwestern Canada and Alaska**

*-Link Olson and Thomas Jung*

The impetus for this upcoming special issue arose from a symposium and workshop on “Bat Ecology in Alaska: Assessing the Risk of WNS”, organized by Karen Blejwas (Alaska Department of Fish and Game) and Link Olson (University of Alaska Museum) and held in conjunction with the Alaska Chapter of The Wildlife Society’s 2012 annual conference in Anchorage, Alaska. The symposium marked the first gathering of bat researchers from Alaska and northwestern Canada and spawned the Northern Bat Working Group (NBWG), a network of like-minded scientists and enthusiasts recognizing—and striving to address—the need for better communication and coordination among bat researchers and managers. Another outcome was the notion of a special journal issue to capture some of the recent advances in our knowledge of bats in the region.

The 13 papers that comprise this special issue are a combination of select presentations delivered at the 2012 symposium and others solicited from researchers we knew were producing interesting findings on bats in the region. For the purpose of this special issue, our region of interest included Alaska, Yukon,

Northwest Territories, and the northern portions ( $\geq 54^\circ$  latitude) of Alberta and British Columbia. This area spans several ecoregions, including the northern Pacific Coast and the expansive boreal forest of the interior. Much of the work presented in this issue advances our knowledge of the diversity and distribution of bats in the region. This is indicative of the expansiveness and remoteness of the region and the concomitant logistical challenges faced by bat biologists. Other works included in this special issue provide an initial and tantalizing glimpse into the ecology and life history of bats at northern latitudes. These are truly pioneering efforts, and we suspect that this will become a primary research focus as the study of bats in the region advances.

## UPCOMING EVENTS

### USA

Joint Bat Working Group Meeting 2015 (Western Bat Working Group, Midwest Bat Working Group, and Southeast Bat Diversity Network) – 3-6 March 2015 in St. Louis, MO

<http://www.wbwg.org/business/biennialmeetings/2013/2013WBWGmeeting.html>

The Wildlife Society (Western Section) – 26-30 January 2015 in Santa Rosa, CA  
<http://twswest.org/santarosa2015/>

### ELSEWHERE

Conference on Wind Energy and Wildlife Impacts – 10-12 March 2015 in Berlin, Germany  
[http://www.cww2015.tu-berlin.de/menue/cww\\_2015/parameter/de/](http://www.cww2015.tu-berlin.de/menue/cww_2015/parameter/de/)



## WESTERN BAT WORKING GROUP JOINT MEETING WITH MIDWEST BAT WORKING GROUP AND SOUTHEAST BAT DIVERSITY NETWORK

### **North American Joint Bat Working Group Meeting**

**March 3-6, 2015**

**Crowne Plaza, Downtown St. Louis, Missouri**

**Registration details and Call for Abstracts coming soon!**

**Western Bat  
Working  
Group**  
**Midwest Bat  
Working  
Group**

**Southeast Bat  
Diversity  
Network**



## **Save the Date!**

We hope to see you in St. Louis!

