

Program

# Western Bat Working Group Meeting



Spotted bats at Mesa Verde National Park by Lucas Navo

**11 - 14 April 2017**

Hilton Hotel, 425 Prospect Rd., Fort Collins, Colorado

Local Hosts: Colorado Bat Working Group

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S C I E N T I F I C



## **Meeting Agenda At-A-Glance**

### **Tuesday, April 11, 2017**

- 3:00 pm – 6:00 pm Registration, Fort Collins Hilton Lobby  
5:30 pm – 6:30 pm WBWG officers meeting, Odell Brewing Company Community Room, 800 E. Lincoln Ave (WBWG officers only)  
7:00 pm – 9:00 pm Welcoming social, Odell Brewing Company 800 E. Lincoln Ave

### **Wednesday, April 12, 2017**

- 7:00 am – 8:00 am Continental Breakfast  
7:00 am – 9:00 am Registration, Fort Collins Hilton  
8:00 am – 8:45 am Welcome and Keynote address  
8:45 am – 12:05 pm General Session  
12:05 pm – 1:30 pm Lunch on your own  
1:30 pm – 4:20 pm General Session  
4:45 pm – 6:45 pm Poster Session

### **Thursday, April 13, 2017**

- 7:00 am – 8:00 am Continental Breakfast  
8:00 am – 12:15 pm White-nose Syndrome in Western North America Special Session  
12:15 pm – 1:30 pm Lunch on your own  
1:30 pm – 5:30 pm White-nose Syndrome in Western North America Special Session  
6:00 pm – 9:00 pm Banquet and Auction

### **Friday, April 14, 2017**

- 7:00 am – 8:00 pm Continental Breakfast  
8:00 am – 11:50 am Special Session on Acoustic Monitoring in Western U.S.  
11:50 am – 12:00 pm Meeting adjourned  
1:15 pm – 4:45 pm WNS/Pd Surveillance Best Practices Workshop, registration required

## Tuesday, 11 April 2017

3:00 - 6:00 PM Registration (Hilton Hotel Lobby)

7:00 - 9:00 PM Social at Odell's Brewery

## Wednesday, 12 April 2017

7:00 - 8:00 AM Continental Breakfast

8:00 - 8:15 AM Welcome & Logistics - Ernie Valdez, President of WBWG

8:15 - 8:45 AM Keynote Address - Bat Conservation on a Changing Planet  
*\*John Hayes, Dean of the Warner College of Natural Resources, Colorado State University*

### Habitat Use (*Tanya Dewey, Moderator*)

8:45 - 9:00 AM Winter Occupancy Trends of Hibernating Cave Myotis in the South Central Great Plains  
*\*Katie Gillies, Jonah Evans, Lynda Loucks, Jason Shaw, and William Caire*

9:00 - 9:15 AM Long-term Trends of Hibernating Bat Abundance in Southern Idaho: Implications for Conservation and Management  
*\*Jericho C. Whiting, Brent Sewall, Bill Doering, G.J. Wright, Devin Englestead, Justin Frye, and Todd Stefanic*

9:15 - 9:30 AM Habitat Selection of *Corynorhinus townsendii* in Volcanic Caves at Lava Beds National Monument  
*\*Katrina Smith, Daniel Barton, and David Riggs*

9:30 - 9:45 AM Establishing a Pre-WNS Baseline for Bats on a Remote Island Archipelago  
*\*Carita Bergman, Elin Price, and Leah Russ*

9:45 - 10:00 AM Western Bats as a Reservoir of *Actinobacteria* Species with Antifungal Activity  
*\*Debbie Buecher, Paris Hamm, Nicole Caimi, Diana Northup, Ara Winter, Ernie Valdez, and Andrea Porras-Alfaro*

10:00 - 10:20 AM Break

## **Conservation and Ecology of Bats** **(Toni Piaggio, Moderator)**

- 10:20 - 10:35 AM Winter and Summer Torpor in a Free-ranging Subtropical Desert Bat, *Myotis vivesi*  
*\*Dave Johnston, Valeria Salinas R., Jose Juan Flores-Martinez, and L. Gerardo Herrera M.*
- 10:35 - 10:50 AM Conservation of Endangered Pollinators: Designing Community “Bat-friendly” Agave Management Programs in Northeast Mexico through Interdisciplinary Research  
*\*Kristen Lear, Jeffrey Hepinstall-Cymerman, Elizabeth King, Laura German, Clint Moore, Meredith Welch-Devine, and Jose Juan Flores Maldonado*
- 10:50 - 11:05 AM Climate Change Modeling Reveals Major Shifts in Suitable Habitat Niches for Western North American Bats  
*Mattia Piccioloi, \*Daniel Taylor, Rachel Blakey, Trish Badeen, Sally Butts, and Hugo Rebelo*
- 11:05 - 11:20 AM Recovering America’s Wildlife Act of 2016 and What Passage of the Act May Mean to You and the Bats You Love  
*\*Lauri Hanauska-Brown*
- 11:20 - 11:35 AM Molecular Analysis of the Diet of *Parastrellus hesperus*  
*\*Krysta Demere and Loren Ammerman*
- 11:35 - 11:50 AM Tree-roosting Bats in Western United States: What We Know and What’s Next  
*\*Jesse Alston, Douglas Keinath, and Jacob Goheen*
- 11:50 - 12:05 PM Wet Refuges for Bats: What Influences Bat Use of Waterbodies at the Landscape Scale?  
*\*Rachel Blakey, Blair McLaughlin, and Winifred Frick*
- 12:05 - 1:30 PM Lunch (on your own)

## **Acoustics** **(Jeremy Siemers, Moderator)**

- 1:30 - 1:45 PM Acoustic Assessment of Year-round Bat Activity and Distribution in Montana and Surrounding Areas  
*\*Daniel Bachen, Braden Burkholder, Alexis McEwan, and Bryce Maxell*
- 1:45 - 2:00 PM Acoustic Bat Activity and Fatality Estimates from Post-construction Monitoring at a Montana Wind Farm

*\*Kimberly Linnell, Dan Bachen, and Kristina Smucker*

- 2:00 - 2:15 PM Combining Acoustic Monitoring of Bats with Other Species for Monitoring Projects in Northern Alberta  
*\*Delanie Player*
- 2:15 - 2:30 PM The Role of Accidental Bat Translocation in the Fungal Transmission Dynamics of *Pseudogymnoascus destructans*  
*Tory Rhoads and \*Karen Blejwas*
- 2:30 - 2:45 PM Estimating Bat Species Occupancy and Habitat Use in the Great Basin  
*Bryan Hamilton and \*Dylan Rhea-Fournier*
- 2:45 - 3:00 PM Static Long-term Acoustic Monitoring for Migratory Bat Detection  
*\*William Rainey*
- 3:00 - 3:20 PM Break

### **Technological Advances (Paul Cryan, Moderator)**

- 3:20 - 3:35 PM Utilizing Large Acoustic Detector Arrays to Account for Spatiotemporal Variation in Bats  
*\*Zachary Warren, Michael Whitby, Baxter Seguin, Catherine Berrick, and Craig Allen*
- 3:35 - 3:50 PM Are Bats Acoustically Challenged by Mine Closures Using Corrugated Culverts?  
*\*Patricia Brown, James Simmons, Kelsey Hom, Meike Linnenschmidt, Tyler Beck, and Zelda Blowers*
- 3:50 - 4:05 PM Use of Miniature GPS Tags and Data Loggers to Track Microbats Long-term  
*\*Kevin Castle, Ted Weller, Paul Cryan, Cris Hein, Michael Schirmacher, and T.A. Dewey*
- 4:05 - 4:20 PM Ultraviolet Illumination as a Means of Reducing Bat Activity  
*\*Paul Cryan, P. Marcos Gorresen, David Dalton, Sandy Wolf, and Frank Bonaccorso*
- 4:20 - 4:45 PM Break

4:45 - 6:45 PM

**Poster Session**  
(ordered alphabetically by 1st author)

Summer Roost Selection of Four *Myotis* Species in the Pine Ridge Region of Western Nebraska

*\*Brett Andersen and Keith Geluso*

In-hand Measurements of Adult Bats of the Northern Great Plains and Rocky Mountains

*\*Daniel Bachen, Ellen Whittle, and Bryce Maxell*

Implications Associated with the Western Range Expansion of Eastern Red Bat Species in the United States

*Brett Andersen, Keith Geluso, \*Larisa Bishop-Boros*

Bats in the Boondocks: Citizen Science Bat Monitoring in Southeastern Alaska

*\*Karen Blejwas, Michael Kohan, Tory Rhoads, and Grey Pendleton*

Acoustic Monitoring for Bats in Alaska's National Parks

*\*Paul Burger*

Crucial Hibernacula for Bats in Southern Idaho: Implications for Conservation and Management

*\*Bryan Bybee, Bill Doering, Jericho Whiting, Joe Lowe, Devin Englestead, Justin Frye, Scott Earl, April Earl, Rob Cavallaro, Todd Stefanic, and Bill Bosworth*

Baseline Data on Wintering Bats and Hibernacula in Texas

*Melissa B. Meierhofer, \*Krysta Demere, Michael Morrison, Brian Pierce, Joseph Szewczak, and Jonah Evans*

Winter Activity of Bats Outside of Nine Desert Caves in Idaho

*\*Bill Doering, Jericho Whiting, and Bryan Bybee*

Tailoring the Analysis of Bat Acoustic Recordings to Ecological Research Goals: Effects of Changing Software Parameters

*\*Tabitha Gulley, Michelle Verant, Megan McKenna, Dan Licht, and Rachel Buxton*

Identifying and Characterizing Roosts of *Lasiurus ega* and *Lasiurus intermedius*

*P. Citlally Jimenez, Ben Skipper, and \*Loren Ammerman*

Searching for Natural Defenses (Actinobacteria) Against White-Nose Syndrome Found on Bats at a Gateway to the West

*Emily Johnson, Edward Strach, Patrick Lewis, Nicole Caimi, \*Ernie Valdez, and Diana Northrup*

Long-eared Bat Taxonomy: Nuclear Genetic Evidence Eliminates the Species Status of Keen's *Myotis*

*\*Cori Lausen, Doug Burtles, Dave Nagorsen, Karen Blejwas, Purnima Govindarajulu, and Laura Friis*

Do Dams Affect Bat Diets

*\*Anya Metcalfe*

Swarming Surveys in Colorado: Standardized Sampling and Evaluation as a Potential Vector for the Transmission of White-Nose Syndrome in Bats

*\*Daniel Neubaum, Jeremy Siemers, and Kirk Navo*

Bat Acoustics at Lava Beds National Monument

*David Riggs*

Acoustic Investigation of a Southern Arizona Bat Roost

*\*Iris Rodden and Don Carter*

Climbers for Bat Conservation: Citizen Science for Understanding Bat Use of Cracks and Crevices

*\*Robert Schorr, Bernadette Kuhn, and Shawn Davis*

Little Brown Bat (*Myotis lucifugus*) Maternity Colony Monitoring in Northwestern Colorado: Site Fidelity and Early Efforts to Assess Tag Loss

*\*Robert Schorr and \*Jeremy Siemers*

Multi-Scale Occupancy Estimation Using NABat Data in Colorado: Effects of Noise, Clutter, and Weather

*\*Savanna Smith and Jeremy Siemers*

Conservation of Historic Building for *Corynorhinus townsendii*, and Site Faithfulness Following Substantial Roost Disturbance and Renovation

*\*Greg Tatarian*

Does the Size and Tree Composition of Monterey Pine Habitat Affect Bat Activity and Diversity

*Kelly Terry, Oscar Scholin, Niklas Kennedy, Kaeden Fletcher-Vogel, Matthew Mendez, Julius Gutierrez, Leo Lauritzen, Elijah Taurke, Dylan MacLaren, Kira Kitayama, Yuri Suzuki, Robertson Rice, and \*Dave Johnston*

How Rare? Limits of Detection of a Genetic Assay for Species Identification from Guano

*Faith Walker, Viacheslav Fofanov, Abigail Tobin, Colin Sobek, \*Daniel Sanchez, and Carol Chambers*

Bat Mortality at Wind-energy Facilities in Southern Idaho

*\*J. Daniel Whittle, Nicholas Royston, Becky Abel, Jericho Whiting, and Bill Doering*

## Thursday, 13 April 2017

7:00 - 8:00 AM Continental Breakfast (Location)

8:00 - 10:15 AM **White-nose Syndrome in Western North America**

8:00 - 8:30 AM Introduction



- 8:00 - 8:10 AM Welcome, Introduction, Overview, and Announcements  
*\*Katie Gillies*
- 8:10 - 8:30 AM Managing the Spread of *Pseudogymnoascus destructans* and Conservation Bats Threatened by White-nose Syndrome in North America  
*Jeremy Coleman, \*Ann Froschauer, Rich Geboy, Bronwyn Hogan, Julie Reeves, and Jonathan Reichard*
- 8:30 - 10:15 AM **Caves and Mines Session (Dan Neubaum, Moderator)**
- 8:30 - 8:45 AM A Review of Bat Hibernacula in the Western United States: Implications for White-nose Syndrome Surveillance  
*\*Ted Weller and Thomas Rodhouse*
- 8:45 - 9:00 AM Monitoring Western Bats in the Face of White-nose Syndrome  
*\*Debbie Buecher and Diana Northup*
- 9:00 - 9:15 AM The Use of Abandoned Mines and Caves by Bats in Colorado, and Implications for Winter Surveillance  
*\*Kirk Navo, Tom Ingersoll, Lea' Bonewell, Nancy LaMantia-Olson, Mark Hayes, and Antoinette Piaggio*
- 9:15 - 9:30 AM Bat Use, Human Visitation, and Environmental Attributes of Cave Hibernacula in Montana  
*\*Dan Bachen, Bryce Maxell, and Lauri Hanauska-Brown*
- 9:30 - 9:45 AM A West-wide Perspective on Subterranean Roost Conditions  
*\*Jason Corbett*
- 9:45 - 10:15 AM Panel Discussion
- 10:15 - 10:45 AM Break
- 10:45 - 12:15 PM **Crevice and Talus Roosting Session (Ernie Valdez, Moderator)**
- 10:45 - 11:00 AM Unsuspected Retreats: Use of Rock Crevices and Talus as Autumn Transition Roosts and Potential Hibernacula  
*\*Dan Neubaum*
- 11:00 - 11:15 AM Crevice-roosting Bats: Hibernacula and Winter Flights  
*\*Cori Lausen, Brandon Klug-Baerwald, and Thomas Hill*
- 11:15 - 11:30 AM Emerging Insights: Transition Season Behavior and Winter Roosts of Little Brown Bats in Southeast Alaska  
*\*Karen Blejwas, Michael Kohan, Laura Beard and Grey Pendleton*
- 11:30 - 11:45 AM Winter Bat Activity in a Landscape without Traditional Hibernacula

*\*Amy Hammesfahr and Rene Ohms*

11:45 - 12:15 PM

Panel Discussion

12:15 - 1:30 PM

Lunch (on your own)

1:30 - 3:15 PM

**WNS Decontamination and Winter Acoustics**  
*(Roger Rodriguez, Moderator)*

1:30 - 1:45 PM

Developing Guidance for White-nose Syndrome Decontamination at Non-subterranean Bat Roosts in the Pacific Northwest

*\*Abby Tobin and Katie Haman*

1:45 - 2:00 PM

Winter Bat Activity in Western Canada

*\*Cori Lausen, Brandon Klug-Baerwald, and Elizabeth Claire*

2:00 - 2:15 PM

Use of Acoustic Monitoring to Detect Cave Use and Unknown Hibernacula of Bats on Extinct Lava Flows in New Mexico

*\*Ernie Valdez, Ara S. Winter, Clara L. Hittel, and Emily Johnson*

2:15 - 2:30 PM

Large-scale Winter Acoustic Monitoring in Colorado

*\*Tina Jackson, Daniel Neubaum, and Kellen M. Keisling*

2:30 - 2:45 PM

Sharing Acoustic Data to Help Conserve Bats Over Their Full Annual Cycle

*\*Ted Weller and Karen Blejwas*

2:45 - 3:15 PM

Panel Discussion

3:15 - 3:35 PM

Break

3:35 - 5:30 PM

**WNS Surveillance** *(Michelle Verant, Moderator)*

3:35 - 3:50 PM

Region-wide Western Bat Working Group WNS Surveillance Activities

*\*Katie Gillies*

3:50 - 4:05 PM

WNS Surveillance in the Pacific Northwest: Winter 2017 Field Work

*\*Shawn Thomas*

4:05 - 4:20 PM

Understanding the Impacts of White-nose Syndrome on Washington's Bat Population

*\*Abby Tobin, Katie Haman, and Chris Anderson*

4:20 - 4:35 PM

An Examination of Fungal Diversity of Resident and Migratory Bat Species in Colorado

*\*Erin Lehmer, Kirk Navo, and Steven Fenster*

4:35 - 5:00 PM

WNS/Pd Surveillance Guidance for Western States

*\*Anne Ballmann, Kyle George, Elizabeth Bohuski, and Jeff Lorch*

5:00 - 5:30 PM      Panel Discussion  
6:00 - 9:00 PM      Banquet and Auction

## Friday, 14 April 2017

7:00 - 8:00 AM      Continental Breakfast

### **Special Session on Acoustic Monitoring in Western U.S.**

8:00 - 8:10 AM      Welcome & Overview - Roger Rodriguez

8:10 - 9:40 AM      **Current Issues in Acoustic Monitoring Session**  
*(Rob Schorr, Moderator)*

8:10 - 8:25 AM      Unraveling Zero Crossing and Full Spectrum - What Does it all Mean?  
*\*Ian Agranat*

8:25 - 8:40 AM      Progress and Limitations of Bat Acoustic Species Classification  
*\*Joe Szewczak*

8:40 - 8:55 AM      Recognizing Bat Social Calls  
*\*Chris Corben*

8:55 - 9:10 AM      The Application of Acoustic Detection Technology for Bat Conservation:  
The Goals, Challenges, and Needs of Land and Natural Resource  
Management Agencies (Summary of Discussion at 2017 Bat  
Echolocation Symposium)  
*\*Bronwyn Hogan*

9:10 - 9:40 AM      Panel Discussion

9:40 - 10:00 AM      Break

10:00 - 10:15 AM      NABat: The Program, Recent Advances, and Unmet Challenges  
*\*Brian Reichert and Patty Stevens*

10:15 - 11:35 AM      **Pilot Studies in NABat Session**  
*(Ernie Valdez, Moderator)*

10:15 - 10:25 AM      North American Bat Monitoring Pilot Surveys in Arizona  
*\*Angie McIntire*

10:25 - 10:35 AM      Colorado NABat

*\*Jeremy Siemers and Tina Jackson*

- 10:35 - 10:45 AM California NABat  
*\*Bronwyn Hogan*
- 10:45 - 10:55 AM From Concept to Implementation: Lessons Learned from Getting NABat Started in Nebraska  
*\*Michael Whitby, Baxter Seguin, and Craig Allen*
- 10:55 - 11:05 AM Bat Grid 2.0: Integrating the Original Bat Grid and the North American Bat Monitoring Program in Oregon  
*\*Roger Rodriguez, Sarah Reif, Thomas J. Rodhouse, Pat Ormsbee, and Kathryn Irvine*
- 11:05 - 11:35 AM Panel Discussion
- 11:35 - 11:50 AM NABat and Stats: Exploring and Improving Statistical Guidance in “the Plan”  
*\*Kathi Irvine, Wilson Wright, Thomas Rodhouse, Roger Rodriguez, Sarah Reif, Pat Ormsbee, Katharine Banner, Andrea Litt, and Jenny Barnett*
- 11:50 - 12:00 PM Final Words - Ernie Valdez
- 12:00 - 1:15 PM Lunch (on your own)
- 1:15 - 4:45 PM WNS/Pd Best Practices Workshop - for more information, see <http://wbg.org/wnsdpd-surveillance-best-practices-workshop/>

A special thanks to IndyInk for printing the pint glasses and t-shirts.



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Thank you to the WBWG Meeting Organizers and Volunteers:

Colorado Local Committee: Laura Ellison, Kirk Navo, Toni Piaggio, Roger Rodriguez, Rob Schorr, and Jeremy Siemers

WNS Special Session Organizers: Karen Blejwas, Ann Froschauer, Katie Gillies, Bronwyn Hogan, Kirk Navo, Dan Neubaum, Roger Rodriguez, Ernie Valdez, and Michelle Verant

Acoustics Special Session Organizers: Laura Ellison, Kirk Navo, Dan Neubaum, Roger Rodriguez, and Jeremy Siemers

Volunteers: Larisa Bishop-Boros, Misty Cain, Kevin Castle, April Estep, Laura Heiker, Shannon Hilty, Mikele Painter, and Milu Velardi