

Colorado Bat Working Group

9 November 2015 – USGS Office, Fort Collins

- 1) Meeting in 2017 -- Rob will be coordinating facilities, but other people will be asked to help put together the logistics. A couple of other venues – Hilton, Marriott, Lory Student Center, but there are not a lot of venues that work well for meetings in Fort Collins (surprisingly). Broomfield has a venue where the wind wildlife meeting is held and that could work. Ernie Valdez wanted to let everyone know that he and the WBWG board should be working on helping get the logistics arranged. Things to think about: facilities, program development, registration, and social events.
- 2) CBWG Conservation Plan – Update. Board put together to focus on this. Sections were divvied up. Conference call to talk about each chapter, the revisions that were done, and what still needs to get done. We still have a long ways to go. Species matrix was done about 5 years ago and the plan was to update every 2 years. Mining, Forest, Urban, Caves, and Disease had section reviews (Kirk, Mikele, Amy, Dan, and Mark have worked on these different chapters). Disease (Mark) – this will be a very general overview of diseases in bats and will be mostly a place for people to go to for resources on where to find MORE information. Energy section (Roger and Mike S). Chapter V and VI – potentially we can combine these 2 chapters. Laura volunteered to look these chapters/sections over and provide new information related to the NABat plan, etc. Review process – send drafts out to board members, time to review with comments, send back to Kirk. Then Kirk will schedule a conference call where the chapter/section is discussed. All the revisions will be put together into one big draft and then that draft will have a review. (Melissa read through and edit the whole thing – did I hear that correctly? Ask Dan and Melissa for verification.) Anything that comes up about energy development and bats, please contact Roger. Species Accounts are being revised by students (Missy). Dan is working on new range maps for species in Colorado. Building raster maps for each species to be incorporated into the plan. Plotting location information into ArcMap. Roost location data in Colorado in addition to capture data. Late winter Dan will have something that could be incorporated into the Plan. Interagency bat database for state data related to bat locations (captures, roost locations) – CPW is heading that direction.
- 3) WBWG Dues – the WBWG will be charging membership dues. This will probably be instigated in 2016. NEBWG and SBDN have dues. The mechanics of this have not been worked out yet. Some ideas that were thrown out were that dues would be assessed when there's a meeting/conference. There would be a discount on the registration for the meetings if you are member...the WBWG board was going to start a conversation with Joy O'Keefe and the SBDN to see how they do all of this. Unknown how/if this would change CBWG membership aspects.
- 4) NABat overview (Laura, USGS)
 - Laura passed out hard copies of the NABat plan.
 - Seeking long-term support of the program within USGS and other agencies
 - Informal Steering Committee formed and developing a charter.

-Bat Population Database update. Hired a database manager for NABat data. Working with NPS on aspects of database management.

-Creating a website for NABat: <https://my-beta.usgs.gov/nabat/index>.

-31 states and 8 Canadian provinces are expanding pilot surveys in 2015 and 2016.

- 5) Colorado update on NABat – Kirk – got a late start last year. 10 grid cells covered in 2014. 5 were stationary points, 5 mobile. 5 were mobile only. Private land was a big deal last year. Used Sonobat to classify calls. 2015 – less prioritization on the mobile routes, doesn't produce a lot of data, focus more on the stationary point surveys. More than 20K calls collected during stationary surveys, only 251 calls collected during the mobile transects. 15 species identified using Sonobat – MYLU, 3,000, TABR, 2,900. MYTH, EUMA, PESU, NYMA, not detected. 3 EUPE detected. Western red bats were recorded in the state. 4 Townsend's and 5 pallids (?). 3,023 calls in 2014, 558 auto-IDed confirmed, --get Kirk's summary again to check my notes (appended to document). There are a lot of acoustic identification issues that need to be worked out in relation to the data workflow for getting this all into a centralized database. 2015 – mobile transects are not a priority. 30 grid cells for 2015 in Colorado. Still gathering the data.
- 6) Rob Schorr provided an overview of monitoring little brown bat survival project that is taking place in Routt County, Colorado, at the Rehder Ranch and the Carpenter Ranch. This is a mark-recapture project using PIT tags and readers at maternity colonies in buildings. Pre-WNS. Question – colony counts – does Colorado want to ramp up this? (NABat would also like to include more emergence counts and hibernacula surveys.)
- 7) Climbers for Bat Conservation – Rob – described a citizen science project developed to increase our understanding of bat use of cracks and crevices. Rob engaged the climbing community because climbers are frequently in locations where bats roost. This was also an effort to empower climbers to be ambassadors for bat conservation. There have been a variety of approaches used to engage the community: Facebook page, t-shirts, logo, stickers, and bat outings. General discussion on value of citizen science use in bat projects.
- 8) WNS update from Paul Cryan. Spread of WNS (PCG map). CPW has been doing winter acoustic monitoring. Dan and Tina are in the process of writing that information up into a report/publication. Collecting microclimate data during the winter. Seeing winter acoustic activity. Typical bat activity, evening, 1 site over 4,000 bat calls. Paul has an updated publications list (get and attach to these notes). Paul's email. Recently funded WNS research (2015 announcement) (document). Swabs from Colorado came back negative.
- 9) Surveillance for Pd on the migratory species *Tadarida brasiliensis* in Colorado. Kirk. Orient Mine project. Started in 2014 with the idea of evaluating the fungal community on a migratory, non-hibernating species of bat in Colorado. Monitor for Pd. Vector for transmission into the state of Colorado? Evaluate viability of fungal spores carried on TABR. Evaluate the value of the Orient Mine as a long-term monitoring site for Pd in the state. Partnership between CPW, Orient Land Trust, academia. Great diversity of fungal communities on the bats. Fungal diversity was lower in adults as compared to juveniles. Fungal communities differ by month (early summer vs. fall). There's a bat roost (EPFU) in a building on the Baca National Wildlife Refuge. (Add to colony monitoring?) Captured 32 EPFU at the building. 2015 still analyzing the data. Cold tolerant fungi were documented on some samples from the EPFU. Project supports view that WNS sampling

can be conducted during “warm” seasons, and thereby avoid potential impacts to hibernating bats from WNS sampling in hibernacula. Where do we go from here about surveillance? Continue sampling at the Orient Mine. Sample more species and more locations in the state (discussion). Seems like most folks were interested in having this happen.

- 10) Bats and AML – prioritizing gating of mines (get Kirk’s help on this section because I came in late). Gate reviews will continue with DRMS, CNHP, and CPW. The need for mine surveys was discussed, and the status regarding the issue of bat gate modifications was discussed. Access doors on gated mines can be requested by agencies, and will be considered by DRMS during construction phase. Maintenance of bat gates and, where they exist, is the responsibility of agencies (i.e. BLM and USFS). The need for surveys prior to closures and gate installation to provide pre-gate data to be used in agency evaluations of the new modified gate design was discussed. DRMS is open for evaluations of the modified gate designs, but it is up to the agencies with land management ownership to plan and provide the surveys. Tap into BLM and BCI to help with pre-gating surveys for bat surveys.
- 11) Katy Warner’s presentation on noise pollution and bats in western Colorado. Get a summary from Katy. She worked for the past 3 years in the Piceance Basin. She collected acoustic data near natural gas developments. Focused on the drilling phase. Is noise affecting bat activity? Recorded the sounds of active drill rigs. Playback the noise at treatment sites that had paired control sites. 20 sites in 2013 and 2014. SM2 bat detectors...3 microphones in an array. Sites were located at undeveloped sites (no established well pads). Consistently lower bat activity at sites with playback. LACI, TABR, and MYCI have reduced activity levels. She also looked at a recovery or lag effect on bat activity. Still analyzing these data. Overall reduction in activity levels, multiple species affected by noise, avoiding noise – reducing available habitat, recovery lag after noise is turned off (for some species).
- 12) Paul Cryan – wind energy update. Bats of several families (Vespertilionids, etc.) can see very dim UV light. This could potentially be a deterrent for bats at wind turbines. Change the appearance of wind turbines to bats, but not be visible to humans. Hawaii experiment – 10 different sites control/treatment. Monitored with thermal video and acoustic detectors. Published now. References from Paul. More research will be done in the next couple of years (including fatality searches).
- 13) Agency updates – BLM decision coming out in Jan/Feb about mining claims. USFS – Mikele – decontamination for cavers in effect, caver registration system in use especially on the White River District. Not a 100% compliance, but the word is definitely getting out. Designating caves as significant (>25 caves designated as significant). Fulford has winter closures. NPS – Mike Wrigley, \$3M committed to WNS to do research/surveillance on NPS lands. IMR – 8 states from Montana down to AZ, TX, OK. Two dozen projects funded. Collecting baseline data, hibernacula searches, resource protection, and gates. Genetics, fungal swabs, acoustic and mist-netting surveys, NABat, microbe analyses, post-processing of acoustic data an issue, publication and outreach (interpretation, signage, social media), decontamination necessary. 3/4ths of the projects are east of the Mississippi so trying to get more funded in the western parks. CPW – Bat Week was 2 weeks ago. Found a TABR maternity roost in a bridge because of someone calling into Tina and Dan about Bat Week.

- 14) Educational resources – CPW has an educational “trunk”, Edubat trunk from USFWS.
- 15) Bat Blitz ideas. Brown’s Park in DINO – netting for next year? Search for Idios? EUMA? Bitterbrush near Maybell? Target – July of next year.
- 16) Put the WNS flexviewer app in the notes for people to look at and provide feedback to.

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2014 Colorado NABat Overview – Provided by Kirk Navo

CPW and CNHP conducted acoustic surveys in **10 grid cells** across the state.

This included 5 stationary, (4 with mobile), and 5 mobile only grids.

All call files were classified to species using Sonobat auto-classification software.

The **stationary** point surveys had **21,799** calls/passes documented. **8,278** classified to species.

The **mobile** surveys produced **251** calls, over 14 survey nights, (3 had ZERO), and **75** classified to species.

The most bat calls collected were in grid 2493, in Eagle County (**10,807**), followed by 2461 in Mesa (**5,478**).

Auto-classification Results:

15 species were ID in total

Species most ID – Mylu (3,151 calls) Second – Tabr (2,949)

Missing were Myth, Euma, Pisu, Labo, Nyma (but Eumops was 3 times); Labl was ID 380 times

Only 4 Coto and 5 Anpa

Kirk (HFB) conducted a manual review of a subset of the calls for the USGS:

A total of **3,023** calls were reviewed.

Of those, **558** auto-ID calls were **confirmed**

2,140 calls were considered “**possible**”

184 calls were “**out of range**”

53 calls were considered **mis-ID**

63 calls were **unknown** – could not be determined, poor quality

2015 NABat work:

- Grid selection was re-done, based on change in priority of mobile surveys, and including private lands.
- 30 Grid cells surveyed; included 3 from 2014 still in despite the re-draw, including Baca and Dan’s
- CPW conducted about ½ of the grid surveys, CNHP about half.
- Had participation by City of Boulder, and BLM in the SW.

- Not all the data has been centralized yet, analysis has not started.