

CBWG Notes
November 15, 2012
CPW Office, Denver

Attendees:

Michael Schirmacher	Rick Truex	Wes Anderson	Emily Snode
Ron Toretta	Mike Dixon	Toni Piaggio	Mikele Painter
Missy Siders	Jeff Thompson	Joe Ehrenberger	Tom Ryon
Ron Spears	Will Keeley	Julie Annear	Kirk Navo
Apple Snider	Roger Rodriguez	Donald Solick	Mike Sherman
Bob Davies	Lowrey Brown	Rob Schorr	Kristen Philbrook
Paul Cryan	Laura Ellison	Jeremy Siemers	Christine Avena
Ed Schmal	April Estep	Evan Phillips	Mark Hayes
Tina Jackson	Bruce Rittenhouse	Dan Neubaum	Sandy Vana-Miller

Reno Matrix Revision—Kirk Navo

- Based on LCC, CO is in Southern Rockies
- 5 states trying to agree on how to rate various threats based on NatureServe threats (2x as many threats as we analyzed for CO)
- They will need input from CBWG, can use our matrix to help
- Supposed to be completed by APRIL!!
- First sales pitch made by Kirk—let him know if you can help
- Schorr suggests collecting a handful of informed people to work on this, rather than a large group
- Goal = final consensus on what new matrix should be
- Time commitment? Hard tellin' not knowin'. 1-day meeting?

Bats and AML: Status update—Tina Jackson

- CPW bios doing some of the work that BIMP project completed in the past
- Contracting with CNHP
- Tina is working on reports
- A couple of interesting findings:
 - Neubaum—Winter survey in Paradox area with hibernaculum of 60 COTO, might enter this winter to do follow-up, was gated in summer 2012
 - Lance—maybe has something to report?
- Concern about abandoned mines west of Rifle, BLM land

Bat banding—Rob Schorr

- CBWG could create a formal statement about bat banding in CO
- Why? Issue = Banding—unregulated, unmonitored in CO and surrounding states, UT is the only exception

- One possible way: through CPW licensing/permitting office, must provide info about banding—spp, what kind of band, where, etc.
- NASBR has made a similar statement in the past, but it was specific to migratory tree bats—not in support of banding on a broad scale
- ACUC within CPW—possible avenue for best practices, recommendations
- Regulate type of bands, e.g., no zip ties allowed
- Could apply to pit tagging as well

Status of NA Bat Monitoring Project—Laura Ellison

- WNS plan has recommendations for developing monitoring project
- Workshop last spring, proposal through LCC, partially funded for 3 additional workshops (15-20 people each, mostly by invite)
 - People who have already developed monitoring projects, ARMI, BIMP, January, Fort Collins, CO
 - Statisticians—developing framework/design at various scales, TN
 - Writing up results from first 2 workshops, WI
- Need a coordinator for the project—need funding for this!
- Representatives from many agency monitoring/inventory projects
- Framework = place to store all of the data = Bat Population Database—should be ready to roll at the end of the calendar year!
- Discussion about who can enter data, availability to have multiple agencies contribute and query data
- Goal = monitoring for trends in bats, across species, large land areas
 - Occupancy modeling?
 - Will include capture and acoustic data, counts at colonies
- Need to develop scalable, standardized methods

WNS discussions

General update—Paul Cryan

- Still in a holding pattern—massive, quick, fast mortality seen in the first few years—now mortality seems to be slowing as it spreads (exception: little brown bats still crashing, consistent high mortality)
 - What is different about situation after the initial 2007-2011 period? Not sure.
 - Gray bat hasn't show mass mortality/possible extinction that was initially expected
- Paul has a bibliography he's been updating since 2010 with lots of good papers, many have come out in the last year
- All 6 hibernating species in the northeast getting hit hard
 - Esp MYSE and _____
 - Species differences in susceptibility, don't know exactly why
- Probably introduction of single-source point infection from Northern NY, more diverse genetics in Europe, in the US all the same, don't know exactly what part of Europe it came from

- Mark Hayes—Geomyces is in many places—e.g., Antarctica in wood Shackleton huts, ubiquitous in the environment, extremophiles
- Gd is persisting in caves, lasting in the environment for years, even at temps of -80 degrees
- New genetic methods being tested/developed, highly-specific to Gd, should be available within a year
- UV work, black light on bat wing, can see fluorescence of infected areas—best part is *non-lethal* sampling, best used in winter/spring seasons
- Don't know if WNS condition is chronic or if bats may be able to purge the infection after some period of time (probably related to season)
- Maternity colonies (bat houses) have been found to have the fungus present
- What is going on in the Southeast
 - Last couple years La Nina—warmer, drier than typical, El Nino coming back this year
 - Mass mortality more associated with warmer, shorter winters
- In NE, 6 pilot sites (mines, caves), lots of data loggers, sample temp, humidity, where bats are
- Student at CSU did landscape work
- Kate Langwig—temp, humidity
- Smith Fellow in Fort Collins—temp, humidity, how it relates to bat survival over time
- Overall question—what are conditions in hibernacula and outside that give us an idea of whether Gd and bats are going to do well? seeking predictive ability
- Discussion about differences of effects of Gd on bats in NA vs. Europe
- New paper showing dif in growth between strains of Gd, grew many replicates in the lab, all had dif growth characteristics, but similar peak for optimal growth ~55 degrees F, no consistent patterns in growth rate, not sure what influences growth rate
- Infection trials have proven that Gd kills bats without anything else needed, European strain killed NA bats, plans to bring European bats to NA for exposure trials

CO WNS plan—Tina Jackson

- Updates maintain most aspects of previous plan, currently undergoing internal review, then out to public, maybe in a few weeks?

Work CPW has been doing—Tina Jackson, Dan Neubaum

- Winter work—acoustic detectors and data loggers, 27 detectors (95% at mines) running Dec 1- Mar 31, X sites (caves/mines) up to 10 loggers per site, mostly internal, some external as well
- Asking public to report anything unusual
- Receive rabies negative bats from Dept of Public Health—have looked at 230 mortalities, no suspicions of WNS
- 127,000 calls from the 2011-2012 winter

- acoustic data create more questions than answers!
- Mostly nighttime activity, even in winter
- Activity spikes some days, related to weather?
- Discussion about microphone placement
 - Microphones on gates caused distortion
 - Sites near the river (Arkansas), lots of LANO activity
- Data processing
 - Now relying mostly on WAC to WAV and Sonobat scrubber to ID calls
 - Wildlife Acoustics now has a model where you can remote download, not sure how well it works
- Discussion of equipment
 - There is some reasonably-priced off-the-shelf equipment that can be set to needed specs
 - NPS in FC has a video group that is willing to collaborate on testing equipment
- Acoustics—Mark Hayes
 - Goal—look for winter activity baseline to see if there are changes when/if WNS arrives
 - Looked at data in 3 ways:
 - By date and number of calls by site
 - Plot data against hour of the day (daytime or nighttime activity? Predominantly nighttime)
 - Individual and moving ranges of the data, how many calls were expected vs. recorded, calculate CI, look for spikes of activity outside the range of expectation—will be especially useful to use for comparison upon arrival of WNS
- Weather
 - Looked at which weather variables trend with bat activity
 - Preliminary—seems like spikes of bat activity with 3-4 day warming trends
 - Kirk's data—deep inside cave/mine no internal temp change with external temp, so how can a bat tell what the temp is like outside—barometric pressure? Just what does trigger activity? A sentinel/scout bat?
- 77 loggers at 26 sites
 - Key question—what are the baseline winter temp and relative humidity levels in CO? Based on these variables, are our sites cold and damp enough to support WNS infections?
 - >95% had avg temp within known growth range of Gd
 - Saturation—some loggers failed
 - ~50% CO sites have avg relative humidity of >70%, but some drops well below average—could this have an effect?
 - Overall—looks like might be susceptible to WNS—fudge!
 - Question—is there a threshold below which WNS does not tend to develop—if so, what is that threshold?

WBWG News/Update

- Meeting, Santa Fe, NM April 1-4, 2013
- WBWG WNS poll—general confusion about what the poll is, but we know we liked it. Robust argumentative discussion between Rob and Kirk about the poll confusion.
- Elections are coming up!
 - Laura Ellison nominated for VP
 - Jeremy Siemers nominated for member-at-large

CBWG News/Update

- Representative roles
 - Mikele Painter will take over from Apple Snider
- Bat plan discussion tabled until 2013

CPW—Dan Neubaum

- Seasonal movements and roost selection study
 - Maternity colony of MYLU—where are they hibernating?
 - Pilot year, deployed 19 radiotransmitters
 - MYLU dispersed early, moved up to 20 miles/night, 25% of bats used rock fields on Mt. Sopris at elevations of ~10,500-11,000
 - Pit-tagging COTO at maternity colony
 - Pit-tagged ~100 bats in summer, visited hibernaculum in winter, 6 individuals scanned at site 30 miles from summer site
 - Also want to ensure pit tags are not detrimental to bats

WNS FS response—Rick Truex

- Strategy to partner with state agencies, not duplicate efforts
- 2012 winter monitoring
 - 130 data loggers distributed across FS R2 (WY, CO, SD, NE, KS), 2-10 loggers/cave, deployed last spring and will run through the winter
- 2013 work
 - Budgets even tighter
 - Some \$ remaining with CNHP—looking at/monitoring sites after 2011 NSS conference in Glenwood Springs on White River NF, nothing looking like WNS so far
- FS Washington Office was urging caution, then R2 took their own steps
 - July 26, 2010—FS Region 2 emergency cave/mine closure to prevent spread of WNS
 - July 26, 2011—blanket closure reissued
 - August 1, 2012—closure re-issued with additional exemptions

- 2 caving orgs allowed to enter during summer to assist with implementing MOUs, ~16 permits issued in 2012, mostly for 12 caves
 - Closed during bat hibernation Oct 15-Apr 15 (except for WNS-related work)
 - State and FS personnel do not need permits for WNS-related work
- WNS watershed risk assessment
 - Three risk categories (linked to WNS epidemiological triangle), 11 risk factors, factors are weighted
 - Environment
 - Transmission of pathogens
 - Bats
 - Initial results with # of caves/watershed
 - Can be readily updated/modified in GIS based on feedback
 - Tool to prioritize surveillance?

John Burghardt, NPS, engaged in thorough mine/cave assessment \$700,000 for work in 26 states

- FS long-term mgmnt strategy
 - Closure is not a viable long-term solution
 - Have begun NEPA process for WNS and bat conservation
 - Conducting regional assessment
 - All but one Forest (Nebraska) will sign a decision
 - Officially in scoping period—30 days of comments starting Nov 15
 - Mikele Painter and Brad Phillips (SD) are the FS wildlife biologists on the interdisciplinary team
 - Kirk suggests providing a letter/comments from CBWG

BLM WNS update—Wes Anderson (retiring at end of the month)

- All caves open, will remain open until something happens
- All mines administratively closed (not b/c of WNS)
- BLM does follow decontamination protocols
- Considering a state-wide EA, adaptive mgmnt strategy, would only address caves because mines are closed
- NM BLM has an EA and response plan for targeted closures

Fall cave swarming surveys—Dan Neubaum

- 2011 swarming surveys at 3 sites in Deep Ck/Flat Tops area
- 2012—returned to same region and visited additional sites
 - Simultaneously visited multiple sites to see if swarming was occurring at multiple sites at the same time, 4-5 sites per night
 - High level of activity at multiple sites

- Up to 1,000 passes/night/site
- Observed interactions—landings, copulation—activities that could spread the WNS fungus

Biologically important bat roosts document—Dan Neubaum and Jeremy Siemers

- Looking for feedback—please read and let them know what you think
- Couldn't completely divorce recommendations from WNS even though recommendations aren't supposed to be WNS-related per se
- What is the science behind the cut-off line?
- Deep discussion about # of bats/how to define biologically important
- What are the management recommendations that can be made?
- Two issues at hand—biological and anthropogenic/recreational—CBWG has typically taken the path of biological recommendations
- **Deadline for comments to Dan or Jeremy: by December 1, 2012****

Wind energy—Tom Ryon, NREL

- Rocky ridge with lots of pine trees as bat habitat, Boulder and Jefferson counties
- Would like to learn more about bats at site—research site, note solely for production
- Bat surveys
 - 2010: Walsh Environmental: Found lots of bat activity, >12,000 bat passes recorded July-Oct with one unit, ~70 identifiable passes/night, 5 species (Myotis lumped)
 - 2011: TetraTech—mortality survey for birds and bats at 6 sites of large and small turbines, higher levels of mortality late summer/early fall and at larger turbines
 - 2012: 2 acoustic detectors (SM2) with SonoBat on large turbines, 4 species with one additional (TABR)
 - Open to proposals for new ideas and methods

Wind energy—Mike Schirmacher

- Best strategies to minimize impacts
 - Curtailment (turn off turbines during low wind periods)
- Relationship between pre- and post-construction surveys—want to make predictions
- Workshops—including international
- Roger Rodriguez—impacts of solar and geothermal development in the San Luis valley, BLM
- Donald Solick—newer technology to detect migrating animals is picking up on migrating dragonflies and butterflies, need to refine, automated classifiers not yet suitable as sole method for presence/absence surveys

Christine Avena—PhD student at UC Boulder

- Working with prof who has worked with Bd—microbial community on frogs can have some resistance to Bd—might this be the case with bats and Gd?
- She would like to sample bats—if you have any, please let her know and she is also happy to join you in the field. She is also collecting soil samples where bats are found.

Someone working with Carol Chambers in AZ wants EUMA samples for DNA study.

Auto-classification systems suggesting new state records—something to think about and figure out how to sort through this.

Round robin:

- Raquel: Effects of drilling? Literature? Toni suggests there is some literature about reworking mines, perhaps some FS directives. Maybe use recommendations for caves.