

SAC Annual Meeting NCFRHCP Afternoon Activity Notes 10.26.2010

One of the challenges for Habitat Conservation Plans (HCPs) is to design efficient and effective monitoring programs. Tennessee Wildlife Resources Agency (TWRA) and the Cumberland HCP Science Advisory Committee (SAC) staff are currently in the process of revising and finalizing the draft monitoring framework. They are relying heavily on the support of the SAC to ensure the best available science is being used in conjunction with constraints such as man power and budget. TWRA and the SAC Staff utilized a survey to gain feedback from the SAC on the draft monitoring framework. Substantial feedback was received; however, one question that was posed resulted in very few responses in the survey results. This question was focused on the population monitoring component of the monitoring framework. For each species that TWRA will be monitoring, the USFWS requires that an adaptive management approach is integrated into the monitoring framework. We have done this by integrating triggers that will cause TWRA to respond to the change in population status. We chose species for population monitoring based on two criteria: if the species was federally listed currently or has a high potential to become federally listed and so that we monitored populations of at least one species in each of the 6 biological communities. Table L from the monitoring framework below shows the draft triggers we currently have identified. We have also provided in the tables below the triggers that were proposed during the survey and written comments divided by taxonomic group (bats, fish, etc) to help your discussion.

To address the need for further discussion and feedback on this question, small groups were formed to record potential triggers and responses. The following are the results from the group activity. TWRA and the SAC Staff will utilize these results to complete the monitoring program for the HCP.

If the groups had time after completing the triggers exercise, they were asked to document survey methods to avoid.

Indiana bat	Black mountain salamander	Four-toed salamander	Cumberland elktoe & purple bean
~Presence of female bats in the summer	~Timber harvesting or other activities <u>near</u> 1 st and 2 nd order streams	~Timber harvesting or other activities <u>near</u> known breeding pools	~What we have described is appropriate ~(No YOY present in 2 consecutive surveys)
Spotfin Chub	Blackside Dace	Cumberland Rosemary	Virginia Spiraea
~5% decline ~ <u>Decline</u> correlated with <u>sediment/turbidity</u> , related to forestry practices	~5% decline ~Lack of young or reproduction ~ <u>Decline</u> correlated with <u>sediment/turbidity</u> related to forestry practices	~Not known	~Not known

Table L. 7 federally listed species and 4 umbrella species covered under the NCFRHCP; population monitoring variables, triggers, and proposed response.

Species	Variable Detected	Trigger	Response
Indiana Bat ^a	Presence	Presence	No harvest buffers (see monitoring plan for bats)
Cerulean Warbler	Presence/density	Decline X % Decline X % (compared to other states such as WV)	Follow cerulean warbler flow chart or discuss with experts to determine if change in management is feasible. Contact other state and federal agencies to gain information about global population declines. No change in current HCP management.
Golden-winged Warbler	Presence/density	Decline X % Decline X % (compared to other states such as)	Report and discuss funding a project to determine cause of population decline Contact other state and federal agencies to gain information about global population declines. No change in current HCP management.
Black Mountain Salamander	Presence	Decline X %	Report and discuss funding a project to determine cause of population decline
Four-toed Salamander	Presence	Decline X %	Report and discuss funding a project to determine cause of population decline
Spotfin Chub ^b	Follow rare fish monitoring protocol	Need info from protocol.	Follow response in rare fish monitoring protocol.
Blackside Dace ^b	Presence	Decline X %.	Report and discuss funding a project to determine cause of population decline
Cumberland Elktoe ^a	Recruitment Presence	No young of year present 2 consecutive surveys	Report and discuss funding a project to intensively survey
Purple Bean ^a	Recruitment Presence	No young of year present 2 consecutive surveys	Report and discuss funding a project to intensively survey site
Cumberland Rosemary ^b	Absence	Absence at site 004	Report to USFWS & TDEC & contact TDEC to det if reintroduction
Virginia Spiraea ^b	Absence	Absence of clusters at sites	Report to USFWS and TDEC & determine cause of pop declines.

^a - Federally Endangered

^b - Federally Threatened

Indiana Bat Group Participants:

Roger Applegate, Mark Gumbert, Cory Holliday, and Piper Roby

Species	Trigger	Response
Indiana Bat	Management areas within 5 miles of hibernacula	-No response policy within a 5-mile radius -Some timber management could benefit bats -No action within 5 miles, and use coal mining PEP -Monitor hibernacula

Additional Notes:

- Methods to avoid include Anabat, mist netting, and harp traps.

Golden-winged Warbler and Cerulean Warbler Group Participants:

Than Boves, Dave Buehler, Jennifer Gihring, Kirk Miles, Katie Percy, Christie Peterson, Scott Somershoe, Melinda Welton, and Samantha Wyatt

Species	Trigger	Response
Golden-winged Warbler	Abundance & occupancy: same %s as CERW. Productivity: evaluate Katie's data & use that to identify a trigger. % change for GWWAs = % change in number of sites where birds were observed in previous year.	Not discussed. Side note: Need to monitor hybridization with blue-winged warblers through blood work. (Dave's suggestion) = should not be linked to adaptive management, but needs to be tracked.
Cerulean Warbler	Difference between control and managed stands, or compare based on elevation (<1800 ft, 1800-2100 ft, and >2100 ft). Abundance & occupancy: 5 % decline annually or 25 % decline over 5 years. Productivity: 10 % decline over 5 years. Productivity is key for CERW.	Monitor abundance and occupancy annually and productivity every other year or every 3 years. Evaluate abundance, occupancy, and productivity every 5 years. Response needs to focus on changing the location of harvests. When harvested stands begin to look like controls, then evaluate possibility of increasing harvest. This may mean we increase harvests above 2100 ft (Melinda's comment).

Additional Notes:

- Numbers (%ages) are still very uncertain; all assumes we sample the same sites each year.

Black Mountain Salamander and Four-toed Salamander Group Participants:

Sean Blomquist, Sterling Daniels, Chris Simpson, and Pete Wyatt

Species	Trigger	Response
Black Mountain Salamander	>10 % reduction annually or biennially	Investigate reasons for decline -rainfall -landuse (recreation activity - anthropogenic activity) -water quality
Four-toed Salamander	>10 % reduction annually or biennially	Investigate reasons for decline -rainfall -landuse (recreation activity - anthropogenic activity) -water quality -proximity of roads/OHV –trail design -intermediate area

Additional Notes:

- Methods to avoid include minnow traps and cover boards. Litter bog for larvae is good. Pit falls are useful.

Spotfin Chub and Blackside Dace Group Participants:

Mark Cantrell, Robert Emmott, Dave Pelren, and Pat Rakes

Species	Trigger	Response
Spotfin Chub	<ol style="list-style-type: none"> 1) Greater than 20 NTU (check this) 2) Population thresholds 	-Trace to source(s), Stop activity
Blackside Dace*	<ol style="list-style-type: none"> 1) Average and peak conductivity 200 or 220 (check with Hayden) 2) Define sedimentation threshold 3) Embeddedness research to define threshold 4) 25% decline of population at one site relative to other locations 5) 25% decline in number of occupied sites within project area 6) 25% decline in any year class at any location 	<p>-Trace to source(s), Avoid, minimize, mitigation activity</p> <p>-Trace to source(s), Stop activity</p> <p>-Trace to source(s), Avoid, minimize, mitigate</p> <p>} Trace to source(s), Avoid, minimize, mitigate If it happens twice, reevaluate BMPs</p>

Additional Notes:

*Blackside dace #1-3 are short-term monitoring and #4-6 are long-term monitoring.

- The group divided the triggers into two categories: population based/long-term monitoring and external or habitat condition/short-term monitoring.
- Trigger values for blackside dace should be adjusted based on baseline data to determine natural range of variability. 25% was a “best guess.”
- The group felt uncomfortable giving a number for spotfin chub population thresholds. Baseline data is needed to determine these.
- The group was concerned about correlating population triggers to specific covered activities. If blackside dace populations decline drastically, for example, could that trigger changes in management even if the declines are unrelated to the covered activities?
- Pat says do not drop sediment monitoring components.

Cumberland Elktoe and Purple Bean Group Participants:

Steve Bakaletz, Malissa Davis, Scott Dykes, and Patrick Flaherty

Species	Trigger	Response
Cumberland Elktoe	Turbidity (variance & frequency); TSS; and Conductivity – Track for 1 st 10 years by using gauging house (New River) (~\$15,000/parameter/gauging station) October is the best time for collection. Age class structure	Recruitment Range expansion Monitor every 36 months and include CPUE.
Purple Bean	Same as Cumberland Elktoe (Adam’s Bridge)	Same as Cumberland Elktoe

Additional Notes:

- Methods to avoid for both species include electrofishing for fish over known mussel beds; quadrats; and sampling in high water. Quadrats and sampling in high water are too time consuming for catch.

Cumberland Rosemary and Virginia Spiraea Group Participants:

Geoff Call, Dave Lincicome, John Mike, Nora Murdock, Rebecca Schapansky, and Beth Stovall

Notes:

- Riparian plants might not be impeded by covered species.
- Status of monitoring/baseline conditions. Cannot establish natural fluctuations.
- Cumberland rosemary – 3X monitoring TDEC
- Virginia Spiraea - struggling to monitor
- Appropriateness of plants as indicators for the community. Better to use aquatic species.
- FWS not going to be tracking take for these plants because there's no incidental take of plants.
- Spotfin chub and blackside dace will be monitored.
- NPS Monitoring: 2U long-term cobble bar sites at both parks
 - Coverage of woody species
 - ½ sites at each year
 - Encroachment of each species onto cobble bars
 - Point intercept
 - Recording grass, herb, woody vegetation, debris
 - Invasive exotics
 - Goal to look for overall changes in cobble bar
 - Steady increase in non-flood adapted trees (i.e., pine) and decrease in grasses – indication of problem
- Geoff would rather see more effort put into fish surveys.