

MEETING NOTES

Cumberland Water Resources Habitat Conservation Plan Steering Committee
Morgan County School Administration Building
136 Flat Fork Rd., Wartburg, TN
August 25, 2010

ATTENDEES

Name		Affiliation
Erik	Andelman	Morgan County
Steve	Bakaletz	National Park Service – Big South Fork
Tim	Begley	City of Crossville
Everett	Bolin	Crab Orchard U.D.
Stephanie	Chance	USFWS
Joe	Dario	HCP Team
Malissa	Davis	HCP Team
Kevin	Dean	City of Crossville
Jennifer	Gihring	HCP Team
Dennis	Gregg	Obed Watershed Community Association
Jerry	Hardin	Emory River Watershed Association
Hon. Brock	Hill	Cumberland County
John	Johansen	HCP Team
Katherine	Medlock	HCP Team
Teresa	Payne	ECE
Gay	Reeves-Stewart	Home Builders Association of Cumberland County
Derek	Street	HCP Team

MEETING GOALS

- Enhance understanding of aquatic ecosystems.
- Review draft HCP covered species list.

WELCOME AND INTRODUCTIONS

- Jennifer Gihring (HCP staff) welcomed all attendees.
- Attendees introduced themselves to the group.
- Jennifer reviewed the purpose of the meeting.

Cumberland Critters and their Habitat Needs

Presented by Dr. John Johansen, TTU

Media: Powerpoint

Dr. John Johansen of Tennessee Tech University presented an overview of key instream habitat components and their relationship to selected aquatic species. Highlights:

- The South-East, including the Cumberland Plateau, is extraordinarily diverse, especially in mussels and crayfish.
- Certain fauna are characteristic of in-stream conditions (e.g. riffles vs. pools).
- A combination of current, substrate, temperature, and oxygen create habitat diversity that supports a wide variety of species.
- The substrate of a stream is heavily influenced by the current, with a progression of larger to smaller material present in the substrate as current slows.
- Water temperature extremes are more important than the average water temperature. Organisms are adapted to specific ranges and particular temperatures initiate life cycle events in some species.
- Impoundments can impact stream fauna by disrupting natural hydrology, stratifying water, and scouring of the stream below the impoundment.
- Agriculture and urbanization have had negative impacts on streams through sedimentation, pollution, changes in turbidity, and potential increases in conductivity.
- The loss of riparian buffers means the loss of a natural filter system that removes nitrates, suspended solids, minimizes erosion by slowing water, shades streams to help maintain cooler temperatures, and provides a terrestrial input of food.
- Mining, and its associated activities, can alter the chemical makeup of water, which can lead to changes in conductivity and Ph.
- Invasive species can take advantage of altered stream conditions to out-compete the native fauna.
- Unforeseen catastrophic events on streams can potentially eliminate small populations, and can be especially damaging on smaller streams and isolated populations.

Q&A

What is conductivity?	John: It is a measure of water’s ability to pass an electrical current. It is affected by organic and inorganic material in the water and is used as an indicator of water quality.
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Understanding the Water Resources HCP Take Model: Instream Habitat

Presented by Dr. Joe Daraio, HCP Team

Media: Powerpoint and handouts

Dr. Joe Daraio (HCP Team) continued the discussion from the last meeting regarding the effect of hydrologic changes on instream habitat. Highlights:

- “Take” is quantified by estimating habitat loss and degradation.
- Long-term records at several stations in the Cumberlands show changes in hydrology over time (Daddy’s Creek example).
- Balance between sediment size and load vs. stream slope and discharge. Tipping the balance towards particle size and sediment load will result in aggradation (i.e.

accumulation of sediment), while tipping it the other way results in degradation (i.e. channel erosion). Therefore, altering any of these factors (discharge, sediment load, or stream slope) can dramatically change habitat.

Q&A (Responses from Joe Daraio)

What about adding rain data to flow charts to see what new patterns become evident?	This is a possibility for the future but rainfall data is inherently variable.
What gives us the knowledge and/or right to say what exists now is better than what was here in the past?	When humans make changes to the landscape they tend to be quicker and more widespread than natural changes. This means many species cannot move or adapt at the speed we are impacting their environment and the result can be extinction.
What about changing flow patterns on a creek to what they were historically? Such as Daddy's Creek?	It is something to consider as we do more detailed work on hydrology. We might not be able to fix the problems of the past, but if we understand the problems we may be able to mitigate against continuing a harmful trend. We can also see what opportunities for change lay ahead.
Are we just considering death of individual animals and plants or also habitat?	Take includes both impacts to individuals and their habitat. (Post-meeting note: see the USFWS HCP fact sheet for the full definition of take: http://www.fws.gov/endangered/esa-library/pdf/hcp.pdf)

Review and Discussion of Draft Covered Species List

Presented by Malissa Davis, WRHCP Science Coordinator

Media: Powerpoint and draft species list handout

Malissa Davis (HCP Team) discussed the development of the draft covered species list.

Highlights:

- Reviewed the species decision tree from the previous meeting.
- Occurrence record lists for the draft covered species primarily have come from the Tennessee Natural Heritage database. A few individual biologists have also contributed. Some species only have very old occurrence dates and we will work to update those.
- Species were identified if their occurrence or critical habitat is within the jurisdiction's boundaries or within the specified buffer (2km for mussels and plants; 10km for other species).
- Some species are very likely to end up listed within the time frame of the HCP (e.g. species of bats due to White Nose Syndrome [WNS]).
- There will be a species expert survey within the next few months to try and update records and/or add species. There will also be an update from the Tennessee Natural Heritage database.

- Some of the species on the draft list may be removed because they are located on Federal or State land and we will not be impacting them. At this time, all occurrences on protected lands have been included until we have more information from the model.
- The next steps are modeling species habitat, selecting covered activities per applicant, and continuing to update the draft species list as new occurrence data is available.
- The species lists will change and it should be remembered they are currently only a draft. Some changes are likely to occur through the Science Advisory Committee survey and meeting coming up in October.

Q&A (Responses from Malissa Davis)

Are the listed occurrences generated by USFWS and UT?	We mainly work with occurrences that are in the Natural Heritage database. We are also interested in additional occurrences that come from other scientists or from past surveys that have been required of the applicants.
Why is Crossville broken out of Cumberland County?	The city of Crossville and Cumberland County are separate applicants.
What is the latest information from USFWS on dealing with WNS in a project area like the HCP?	Unsure. The Core Team will discuss this with USFWS.
If WNS will wipe out the bats, do we try to help them anyways? Who will make the decision?	The Steering Committee will make a recommendation to the applicants. If the bats become listed and we do not include them, USFWS can come back and ask for additional measures for their protection. WNS is out of our control, but it is still possible for the applicants to have impacts on the bat populations.

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ACTION ITEMS

Responsible Party	Item	Deadline
Core Team	Continue to revise the covered species list	Ongoing

The next SC meeting is scheduled for Wednesday Oct. 20th from 1-4PM Eastern at the same facility (Morgan County School Administration building on Flat Fork Rd., Wartburg).