

**Cumberlands HCP Science Advisory Committee Meeting, 20 September 2007**  
**Small Group Assignments**

**Small group session I**

*Group A: Species Coverage for Water Resources HCP*

Paul Ayers, Steve Bakaletz, Yvette Clark, Stephen Haase, Kevin McAbee, Vince Neary, Nate Nibbelink, Mark Thurman

*Directions:* Evaluate the current list of species recommended for coverage under the Water Resources HCP for Crossville and Cumberland County and add appropriate taxa for coverage. Then consider how the list should be expanded if Morgan, Scott, Fentress counties were to join the Water Resources HCP. Each species should have a high likelihood of take due to landuse activities (e.g., commercial or urban development, road crossings, water supply, small reservoir construction, etc.) that would be covered by the HCP. Discuss as a group and then transfer answers to the single page of colored paper.

Current Species List (Crossville and Cumberland County)

| Scientific name                     | Common name          | Comments   |
|-------------------------------------|----------------------|--|
| <i>Erimonax monachus</i>            | Spotfin chub         | Highly recommended; one of six focal species; recent research on habitat use |
| <i>Villosa perpurpurea</i>          | Purple bean          | Highly recommended; one of six focal species                                 |
| <i>Cambarus</i> sp.                 | Emory River crayfish | Highly recommended; endemic to watershed; need information on habitat use    |
| <i>Phoxinus saylori</i>             | Laurel dace          | Marginal impact  |
| <i>Etheostoma</i> sp.               | Bluemask darter      | Caney Fork   |
| <i>Cambarus obeyensis</i>           | Obey crayfish        |  |
| <i>Etheostoma cinereum</i>          | Ashy darter          |  |
| <i>Cryptobranchus alleganiensis</i> | Hellbender           | Needs survey before listing  |
| <i>Percina squamata</i>             | Olive darter         |  |

Expanded Species List (Cumberland, Morgan, Fentress, and Scott counties)

| Scientific name                     | Common name          | Comments           |
|-------------------------------------|----------------------|--------------------|
| <i>Erimonax monachus</i>            | Spotfin chub         | Highly recommended |
| <i>Villosa perpurpurea</i>          | Purple bean          | Highly recommended |
| <i>Cambarus</i> sp.                 | Emory River crayfish | Highly recommended |
| <i>Phoxinus saylori</i>             | Laurel dace          | Marginal           |
| <i>Etheostoma</i> sp.               | Bluemask darter      | Caney Fork         |
| <i>Cambarus obeyensis</i>           | Obey crayfish        |                    |
| <i>Etheostoma cinereum</i>          | Ashy darter          |                    |
| <i>Cryptobranchus alleganiensis</i> | Hellbender           |                    |
| <i>Percina squamata</i>             | Olive darter         |                    |
| <i>Etheostoma baileyi</i>           | Emerald darter       |                    |
| <i>Phoxinus cumberlandensis</i>     | Blackside dace       |                    |

|  |                          |   |
|--|--------------------------|---|
| <i>Etheostoma blennioides</i><br><i>sequatchie</i> | Sequatchie blenny darter |   |
| <i>Alasmidonta atropurpurea</i>                    | Cumberland elktoe        | Highly recommend, tributaries                   |
| <i>Epioblasma brevidens</i>                        | Cumberlandian Combshell  |   |
| <i>Epioblasma capsaeformis</i>                     | Oyster mussel            |   |
| <i>Epioblasma florentina walkeri</i>               | Tan riffleshell          |   |
| <i>Pegias fabula</i>                               | Little-wing pearl mussel |   |
| <i>Ptychobranhus subtentum</i>                     | Fluted kidneyshell       |   |
| <i>Villosa trabalis</i>                            | Cumberland bean          |   |
| <i>Etheostoma nigrum susanae</i>                   | Cumberland darter        |   |
| <i>Cambarus bouchardi</i>                          | Big South Fork crayfish  | Check projected growth upper end Roaring Paunch |
| <i>Notropis albizonatus</i>                        | Palezone shiner          | Need survey before listing                      |

*Group B: Species Coverage for Forest Resources HCP*

Tiffany Beachy, Dave Buehler, Kelly Caruso, Jeff Hawkins, Mick Harvey, Trisha Johnson, Kirk Miles, Dave Pelren, Piper Roby

*Directions:* Evaluate the current list of species recommended for coverage under the Forest Resources HCP and add any species as needed. Consider how the list should be expanded if private landowners in the project area could participate under an umbrella HCP. Each species should have a high likelihood of take due to forestry practices (e.g., controlled burning, different types of cutting strategies, road building, stream crossings, best management practices, etc.) that would be covered by the HCP. Discuss as a group and then transfer answers to the single page of colored paper.

Current Species List (Wildlife Management Areas in KY and TN)

| Scientific name                 | Common name                | Comments   |
|---------------------------------|----------------------------|--|
| <i>Dendroica cerulea</i>        | Cerulean warbler           | One of six focal species; Recent and current research                        |
| <i>Myotis sodalist</i>          | Indiana bat                | One of six focal species; Rated high at last SAC meeting, but not on surveys |
| <i>Vermivora crysoptera</i>     | Golden-winged warbler      | Global conservation, mgmt issues, 25% decline/yr in WVa                      |
| <i>Sylvilagus obscurus</i>      | Appalachian cottontail     |  |
| <i>Neotoma pennsylvanica</i>    | Alleghany wood rat         |  |
| <i>Myotis leibii</i>            | Eastern small-footed bat   |  |
| <i>Corynorhinus rafinesquii</i> | Rafinesque's big-eared bat | Forage impacts-disturb roost sites   |
| <i>Phoxinus cumberlandensis</i> | Blackside dace             | Poor BMP use   |

|                                  |                   |              |
|----------------------------------|-------------------|--------------|
| <i>Erimonax monachus</i>         | Spotfin chub      | Poor BMP use |
| <i>Alasmidonta atropurpurea</i>  | Cumberland elktoe | Poor BMP use |
| <i>Etheostoma cinereum</i>       | Ashy darter       | Poor BMP use |
| <i>Etheostoma nigrum susanae</i> | Cumberland darter | Poor BMP use |
| <i>Corvus corax</i>              | Common raven      |              |

*Group C: Plants of Conservation Concern*

Andrea Bishop, Geoff Call, Christy Carter, Barbara Goodson, Cory Holliday, Emily Woodle, Alex Wyss

*Directions:* Review the summary-of-take handout from the previous SAC meeting regarding plant species. Add any relevant plant species that should be considered for coverage under the Water Resources HCP or Forest Resources HCP to the chart below and provide comments. Each species should have a high likelihood of take due to water development (e.g., commercial or urban development, road crossings, water supply, small reservoir construction, etc.) or forestry practices (e.g., controlled burning, different types of cutting strategies, road building, stream crossings, best management practices, etc.) that would be covered by the HCPs. Discuss as a group and then transfer answers to the single page of colored paper.

| Scientific name                  | Common name                      | Coverage Under Water HCP Forest HCP, or both? | Comments                           |
|----------------------------------|----------------------------------|---|------------------------------------|
| <i>Conradina verticillata</i>    | Cumberland rosemary              | Water Resources HCP                           | Rated high for Water Resources HCP |
| <i>Spiraea virginiana</i>        | Virginia spiraea                 | Water Resources HCP                           | Rated high for Water Resources HCP |
| <i>Marshallia grandiflora</i>    | Large flowered Barbara's buttons | Water Resources HCP                           | High/cobble bars                   |
| <i>Calamovilfa arcuata</i>       | Cumberland sand grass            | Water Resources HCP                           | High/cobble bars                   |
| <i>Plantanthera integrilabia</i> | White fringeless orchid          | Forest Resources HCP                          | Medium/Wetlands                    |

**Small group Session II: Current Monitoring**

*Group A: Current Research and Monitoring: Water Resources*

Steve Bakaletz, Stephen Haase, Trisha Johnson, Kevin McAbee, Vince Neary, Dave Pelren, Mark Thurman

- NPS gage stations
- NPS annual fish, invertebrate surveys
- Cook et. al. need to check to see what current spotfin work is being done
- TVA bluemask darter work
- TVA monitoring site on Obed
- REGAP from TWRA need to check to see when it will be available
- Laurel dace O8 TWRA will be assessing critical habitat (State listed spp)
- Hellbender current work next year TWRA will have more information

- UGA Kevin McAbee and Nathan Nibblelink current work
- Natural Heritage Data need to find out what new info was added this summer
- Next year Heritage data should be incorporated into TWRA SWAP
- TWRA SWAP database
- TWRA periodic sampling of fish inverts in HCP area.

*Group B: Current Research and Monitoring: State WMAs*

- Tiffany Beachy, Dave Buehler, Christy Carter, Kelly Caruso, Barbara Goodson, Mick Harvey, Jeff Hawkins, Kirk Miles, Alex Wyss
- TVA bats on Royal Blue
- UT Cerulean Warbler in Sundquist and Royal Blue
- Eric Britzke small mammal in Obed and Big South Fork
- UT and UK golden winged warbler in Sundquist and Royal Blue
- TTU blackside dace, fair amount of monitoring but still gaps
- Others, Copperhead bats
- J. Schwartz UT Sedimentation study on New River
- Mike Lacki bats.

*Group C: GIS and Data Management Opportunities*

Paul Ayers, Andrea Bishop, Geoff Call, Yvette Clark, Cory Holliday, Nate Nibbelink, Piper Roby, Emily Woodle

- SWAP
- stream data
- Heritage EOR data
- KY landuse planning maps
- check on DEMs for area
- shape classification map
- GAP or ReGAP data
- NPS databases
- Hydrology/sedimentation models/erosion models
- ID models (use the outline of HCP area)

**Small group Session II: Information Gaps**

*Group A: Current Research and Monitoring: Water Resources*

Steve Bakaletz, Stephen Haase, Trisha Johnson, Kevin McAbee, Vince Neary, Dave Pelren, Mark Thurman

- Health assessment for Cumberland Bean
- Monitor re-introduced mussels
- Low flow groundwater
- ***Determine threshold for species survival***
- Turbidity-sediment correlations
- Land use changes

- Another gap is due to finding of gage stations, the HCP could think about partnering to fund some that are going to be losing funding.

*Group B: Current Research and Monitoring: State WMAs*

Tiffany Beachy, Dave Buehler, Christy Carter, Kelly Caruso, Barbara Goodson, Mick Harvey, Jeff Hawkins, Kirk Miles, Alex Wyss

- Distribution for each WMA, which species are there and where are they?
- Inventory of activities for each WMA, what are they doing, what type of forest management?
- ***Relationship with take on species, which activities result in take for each species?***
- The group also identified the need to understand the relationship between the New England and Appalachian cottontail, and surveys to determine distribution in WMAs in Tennessee and Kentucky.

*Group C: GIS and Data Management Opportunities*

Paul Ayers, Andrea Bishop, Geoff Call, Yvette Clark, Cory Holliday, Nate Nibbelink, Piper Roby, Emily Woodle

- TN landuse planning map
- ID which models of process and species modeling
- KY geological survey data
- BSF GIS group data
- Climate
- Growth models
- ***Model influences of land use activities on responses of species***
- Erosion