Cumberland HCP

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ITEMS OF INTEREST:

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Notes from the HCP Director, Katherine Medlock

The delicate white and pink of dogwoods and redbuds along with the flashy purple of crocus and iris always herald the coming of springtime for me. It means new life and vigor, it means a chance to get outside in the warm sunshine and it means change is in the air. For the HCP staff and our partners, this spring has definitely brought some changes. I am excited to share many of those changes in this newsletter and I hope you will be as pleased as I am with our progress over the past several months. Since our last newsletter, we have a new Science Advisory Coordinator and a new Outreach Coordinator. Hopefully, many of you have met Chris and Teresa already and if you haven't, this newsletter will introduce them. Additionally, we have several other new staff and announcements, so, please check the announcement section for details. You will also find that the HCP project itself is changing. The Forest Resources HCP is undergoing some final revisions before submission to the Fish and Wildlife Service. The Cumberland HCP will no longer be covering Morgan and Scott Counties and though we hate to see those partners leave, we understand their decision and hope they will continue to work toward promoting conservation in ways that make sense for their communities. This change has allowed the project to march ahead with a new quicker pace, and prompted a new name for the project. We will now be calling the Water Resources HCP the Cumberland HCP. I hope you will take this spring to get reacquainted with the HCP project and I hope you will find the changes to be as welcome as the season.

Happy Spring!

Katherine Medlock

Featured Species: Pristine Crayfish, *Cambarus pristinus*

For one who studies crayfish, the streams of the Cumberland Plateau contain a wealth of diversity. This region, the hypothesized birthplace of the crayfish genus *Cambarus*, is home to many species that are found nowhere else in the world. The Pristine Crayfish, *Cambarus pristinus*, is particularly unique among this fauna. The description of the Pristine Crayfish in 1965 created great excitement and changed how the scientific community defined the genus *Cambarus*. Primitive characteristics such as large eyes, elongate claws covered in short stout hairs, and a unique first pleopod (a swimming leg modified for sperm transfer in males) distinguish this species. The ancient nature of this species is represented in its scientific name which is Latin for primitive. Pristine Crayfish is hypothesized to be a relict of the original crayfish stock that inhabited the Cumberland Plateau and eventually gave rise to North America's most species rich genera, *Orconectes* and *Camabrus*.

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Cumberland HCP (Formerly WRHCP) Update

The Cumberland HCP (CHCP) Core Team has experienced many changes during the first months of 2011. Not only have there been staff changes, but there have been significant changes to the HCP applicants, the resulting covered species lists, Biological Goals and Objectives, and timeline for project completion. Staff additions include Dr. Yoichiro Kanno, our new postdoctoral research associate who is working on a novel approach to estimating 'take', or how species will be influenced by covered activities, and Barbara Rosensteel, our new research specialist focusing on facilitating Core Team actions and other scientific aspects of the CHCP. Additionally, Malissa Davis, who had been leading the Core Team, had a baby boy in April and will be focusing on her family. These staff changes have enabled us to reorganize and focus on moving toward completing the CHCP!

The geographic focus of the CHCP has changed a bit as well with county executives in Scott and Morgan counties deciding to discontinue their roles as applicants for the CHCP. Instead, they are going to accept recommendations from the Core Team to develop in a manner that will have a lesser impact on the rare species in their area. These changes result from a development risk analysis projection through 2030 implemented by the Core Team. Results of this analysis determined that future development in Scott and Morgan counties has a low likelihood of influencing federally listed species in those geographic areas. From here on, the CHCP Core Team will focus on developing an HCP for the City of Crossville and Cumberland County.

Due to the decreased geographic coverage of the CHCP, the covered species list has decreased and will likely continue to evolve over the next few months. There are now 23 species of concern on our covered list that aims to protect federally listed species and those likely to become federally listed in the next 30 years. Please refer to our website (www.cumberlandhcp.org) for a current list of covered species.

The Core Team has completed the Biological Goals and Objectives portion of the CHCP which represents principle components that guide conservation measures associated with covered activities. These goals and objectives result from communication over the last year and at the May Steering Committee meeting and group the covered species into terrestrial, semi-aquatic, and aquatic communities. These communities will help us address species needs in the context of City and County development activities.

These changes have enabled us to implement an aggressive timeline for completion of the CHCP. We intend to complete the preliminary draft of the CHCP by November 2011. We are using our bimonthly Steering Committee meetings as milestones for approving and completing specific HCP components to ensure the adherence to this timeline. Please refer to our website to view the new timeline.

Exciting developments and accomplishments continue!

HCP Spotlight: Kevin Dean

On May 11th Samantha Wyatt sat down with Kevin Dean, a native resident of Cumberland County and the Planning and GIS Administrator for the City of Crossville, to get his opinions on the Cumberland HCP. Mr. Dean is an integral member of the steering committee and we value his input on each step of the HCP. We are very thankful that he took the time to sit down for this one-on-one interview.

Q1: What is your involvement in the HCP?
A1: As the mayoral appointed liaison to the HCP, I strive to work toward a compromise between development in the community and environmental conservation, while keeping the best interest of the community and its residents in mind.

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Northern Cumberlands Forest Resources Update

The Core Team and other members of the NCFRHCP are getting very close to completing the forest resources HCP in the Northern Cumberlands. We are working closely with TWRA to develop sampling procedures to monitor the relationship between timber harvest and covered aquatic species. We have completed the 'take model' that estimates the influence of timber harvest on terrestrial communities and species and are very close to submitting the completed NCFRHCP for review by the US Fish and Wildlife Service.

Former HCP member Sean Blomquist developed a complex mathematical estimate (take model) to quantify how terrestrial species might be influenced by timber harvest activities over the next 30 years. TWRA has approved these estimates and will use them to guide future harvest and monitor terrestrial species in the covered areas. These estimates will serve as maximum targets and TWRA will ensure their activities fall within these guidelines. This approach will ensure appropriate habitat and species abundance exist that reflect healthy populations.

Similarly, we are busy ensuring aquatic communities will remain healthy in the area by determining the best method for monitoring these covered species in area streams. We are currently finalizing a monitoring plan to understand current stream sediment/ aquatic population conditions so that TWRA can ensure future conditions remain consistent in the future. Essentially, this will be conducted by monitoring population and sediment dynamics before and after timber harvests. We, along with TWRA, have conducted field surveys to qualitatively assess current conditions and project how future timber management may or may not influence habitat availability. This is a unique approach that will provide accurate data and facilitate progressive and adaptive management of aquatic species.

During summer 2011 we will finalize our adaptive management approach that will combine field surveys and monitoring with terrestrial take estimates to maximize the likelihood of species health. We will continue to work closely with TWRA and the USFWS so we can submit our final draft of the NCFRHCP for review in August, 2011.

HCP Spotlight: Kevin Dean *continued from page 2*

Q2: Why do you support the HCP?
A2: It is important to keep a balance between growth of the community and conservation of its natural resources.

Q3: How do you think the HCP will benefit the City of Crossville and Cumberland County?
A3: The HCP will be a good industrial and commercial recruitment tool by streamlining the permitting process with regulatory agencies. The HCP will fortify the good working relationships between the engineers and stormwater program personnel and encourage environmentally responsible decisions. It will also help maintain the scenic beauty of the community, while allowing growth for future needs.

Q4: What are benefits that have come from the HCP process thus far?
A4: It has been an eye-opening experience to see the diversity of endangered plants and animals that live in the community, and it has helped to keep these species in mind in future planning.

Q5: What have you learned from the HCP process?
A5: I have realized the importance of sustainable development and learned that species' habitat should be considered in the approach for long-range planning.

Q6: What else would you like for others to know about the HCP?
A6: That through the HCP, the community and other agencies will have a better understanding of endangered species in the area and what is required to protect them.

Science Advisory Committee Update

Recent changes to HCP staff have provided fresh insight toward future development of the CHCP. Our collective experience with the NCFRHCP has led us to a novel philosophical approach to the CHCP. We are now working more closely with the City of Crossville and Cumberland County to ensure the final HCP is in an appropriate form for implementation 'on the ground'. We realize that the HCP is a tool to be owned and used by these communities and aim to provide a product that will best meet their needs. The CHCP will facilitate streamlined permitting for development projects while simultaneously protecting covered species while keeping cost at a minimum and using existing staff where possible.

With this new goal in mind we are developing a scientific approach that will enable Crossville and Cumberland County to manage the HCP in the future. This approach focuses on immediate and continual estimates of take associated with new development projects. We envision a GIS-based model that will allow users to place new development parcels on the map and provide an estimate of where and how this activity is likely to influence terrestrial, semi-aquatic, and aquatic species in nearby areas. The interface will be updated in real time and provide an estimate of take for each activity.

We believe a more holistic and practical approach such as this will facilitate the best possible future for managing covered species throughout the CHCP study area. By implementing best available science we include our current understanding of population health and allow continual updating of these conditions as new development occurs in the area. We envision that this type of interface best agrees with what our applicants currently use, accurately depicts how covered activities relate to covered species, and provides applicants with the ability to monitor these changes through time.

We are currently developing innovative ways to estimate take, or how species will be affected by development. These methods focus on contemporary scientific understanding about how habitats are modified by development activity including building homes, roadways, and utilities. By applying this understanding to a GIS template we can predict how things will change in the future and guide the development process in a 'smart' way. This type of proactive approach is very 'forward-thinking' and we applaud the applicants for their efforts.

A Letter From Our Outreach Coordinator

I am very pleased to have joined the HCP Team as the new Outreach Coordinator and to have been given the opportunity to assist Cumberland County and the City of Crossville in the development of the Cumberland HCP.

I have met many of you, but for those I have yet to meet, I'll give a brief background of my qualifications. My professional career includes both private and public sectors for over 15+ years. I have held positions in Long Range & Comprehensive Planning, Environmental Project Management, and Economic Development. My passion is helping communities achieve a successful balance between economic development and conservation of natural resources. These must co-exist if we are to create thriving communities with a superior quality of life for all residents. The Cumberland HCP is a progressive step toward that goal, and the City of Crossville and Cumberland County have embraced that vision.

On a personal note, I have a deep affinity for the Cumberland Plateau. Its biological diversity, wonderful people, and stunning beauty make it a great place to call home. We must work to ensure that we plan thoughtfully for the future.

Together with the applicants and stakeholders, the HCP Team is moving forward with diligence in completing the draft HCP by December 2011. We will keep you informed of our progress on our website at www.cumberlandhcp.org. Please feel free to contact me at any time with questions and/or your input. Thank you for your support of the Cumberland HCP!

Teresa Payne

Cumberland HCP Outreach Coordinator

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Pristine Crayfish, *Cambarus pristinus* *continued from page 1*

Although primitive is a useful descriptor, rare would be another adjective used to describe Pristine Crayfish. Prior to 2004, this species was known from a handful of localities in seven streams. Recent surveys by Tennessee Department of Environment and Conservation and Tennessee Wildlife Resources Agency (TWRA) have increased the known range to around 30 known localities in 4 different watersheds. Two forms of Pristine Crayfish occur on the plateau: one in the Upper Caney Fork and Bee Creek watersheds in Cumberland and Van Buren counties and another in the Cane Creek and Sequatchie watersheds in Bledsoe, Sequatchie, and Van Buren counties. It is possible that these two forms represent two distinct species and may be recognized as such in the future.
Within its range, Pristine Crayfish is anything but common exhibiting a patchy distribution. It prefer medium sized creeks (3rd to 4th order streams) with plenty of slab rocks in slow-flowing pool habitats. Its small range and specific habitat requirements make Pristine Crayfish vulnerable to a number of threats including pollution, habitat loss and degradation, and other threats associated with small isolated populations. For these reasons Pristine Crayfish is listed as endangered by TWRA and is currently being petitioned for federal protection.

Crayfish are important players in aquatic ecosystems filling a variety of niches and serving as keystone species maintaining freshwater communities and ecosystem function. They supply vital ecosystem services such as influencing downstream sediment transport, decomposition, and serving as a food base for many of our freshwater game fish and wading birds. Unfortunately, crayfish are also one of the most endangered taxa on earth today. Projects like the Cumberland Habitat Conservation Plan help involve the community to help protect vulnerable species like Pristine Crayfish by collecting the basic knowledge to assess threats and establish the best management practices needed to alleviate them. Hopefully, as a result of this process we will not have to use "extinct" to describe Pristine Crayfish in the future.

HCP Announcements

We want to congratulate and welcome the following folks:

Welcome to Peggy Shute who is now working for the Fish and Wildlife Service and is their primary point of contact for the Cumberland HCP. Peggy is a highly respected aquatic biologist and comes to the USFWS after 20 years with the Tennessee Valley Authority. We are happy to have Peggy on board to help our efforts.

Trish Johnson has worked for Tennessee Tech on the HCP project for the past 4 years and is now the new East Tennessee Conservation Coordinator for the Tennessee Chapter of the Nature Conservancy. We are happy that Trish will continue to be able to share her wisdom with the project.

Barbara Rosensteel and Yoichiro Kanno are two new science staff working for Tennessee Tech on the HCP project. They have already proved themselves to be valuable additions to the team and we welcome them on board.

As many of you may know, Malissa Davis is expecting her first child in mid-April. By the time this newsletter is delivered, Baby Benjamin will be here and mother Malissa will be on maternity leave. We wish the whole family health and happiness!

HCP Staff

Have you ever wondered who works on the Cumberland HCP? Staff members names and titles are listed below the logo for their respective organizations. Contact information for each individual can also be found on our website, www.cumberlandhcp.org.

The Nature Conservancy
Protecting nature. Preserving life.™

- Katherine Medlock: Project Director
- Trish Johnson: Science Advisory Committee Forest Resources Coordinator
- Paul Kingsbury: Technical Writer

THE UNIVERSITY of TENNESSEE KNOXVILLE

- Dr. Dave Ostermeier: Project Advisor
- Dr. Chris Burcher: Science Coordinator
- Teresa Payne: Outreach Coordinator
- Dr. Karen Lannom: GIS Specialist and Website Support
- Derek Street: Assistant Outreach Coordinator

TTU TENNESSEE TECH UNIVERSITY

- Dr. Hayden Mattingly: Science Advisory Committee Advisor
- Dr. Yoichiro Kanno: Postdoctoral Research Associate (Quantitative Aquatic Ecologist)
- Barbara Rosensteel: Research Specialist
- Samantha Wyatt: Research Technician

The Cumberland HCP Project includes state and local governments, state agencies, organizations, landowners, and other private citizens working together to address issues of growth and conservation of the forests and waters of the Cumberlands of Tennessee.

We'd like to hear from you! For more information about the Cumberland HCP contact Teresa Payne:

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