

**Biological Evaluation of  
Aquatic Regional Forester Sensitive Species  
Broken Wheel Ranch - Special Use Permit  
Mississippi Bluffs Ranger District  
Shawnee National Forest**

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## **Introduction**

This Biological Evaluation analyzes the potential effects of the proposed Broken Wheel Ranch special use permit on listed species occurring within the boundaries of the Shawnee National Forest. The primary purpose of this Biological Evaluation is to determine whether the likely effects on these species would result in a trend toward Federal listing.

Formal objectives of this Biological Evaluation include:

- 1) Identify sensitive species that would be affected by the proposed project (FSM 2672.42).
- 2) Ensure that Forest Service actions do not result in the loss of viability of any native or desired non-native plant or animal species, or create significant trends toward Federal listing of any species (FSM 2672.41).
- 3) Provide a process and standard that ensures that sensitive species receive full consideration in the decision making process (FSM 2672.24b-2676.17e).
- 4) Make certain that best management practices, as per the Shawnee National Forest Land and Resource Management Plan (USDA 2006), are followed.
- 5) To maintain a project file on actions regulated under the Environmental Policy and Procedures Handbook (FSH 1909.15 chapter 30).

## **Current Management Direction**

- ❖ Current policy as stated in the Forest Service Manual (FSM 2672.1) includes the following: Sensitive species of native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing.
- ❖ The management direction specified by the Shawnee National Forest Land and Resource Management Plan (Forest Plan; USDA 2006) is to protect and/or manage habitat to ensure the continued existence of these species on the Forest.

An analysis of the project area indicated that two aquatic Regional Forester Sensitive Species and one Federally-listed species were known to occur within Jackson and Union Counties (Table 1). Upon further review, only one of the species, subtle cave amphipod, was found to occur within the project area

**Table 1. Aquatic Regional Forester Sensitive Species known to occur in Jackson and Union County, Illinois. Source Illinois Natural History Survey Databases (available at <http://ellipse.inhs.uiuc.edu:591/INHSCollections>).**

<b>Species Common Name (scientific name)</b>	<b>Habitat suitability or known occurrence of listed species within project area</b>	<b>Species to be analyzed further? (Yes or No)*</b>
<b>Pallid Sturgeon (<i>Scaphirhynchus albus</i>) Federal T&amp;E</b>	No know populations on the Forest, this species occurs in the Mississippi River.	No. The species does not occur on the Forest.
<b>Subtle Cave Amphipod (<i>Stygobromus subtilis</i>) RFSS</b>	Known populations and suitable habitat within the project area.	Yes
<b>Bantam Sunfish (<i>Lepomis symmetricus</i>) RFSS</b>	Species occurs in Pine Hills Swamp and Wolf Lake, but not within the project area.	No. The species does not occur within the project area
*Yes – The proposed project’s potential effects on these species will be further analyzed in this document. *No – No further analysis is necessary and a determination of “No impact” is rendered.		

## **Description of the Proposed Project**

The Broken Wheel Ranch property has recently been purchased and the new owner is seeking a special use permit so that his overnight clients can utilize the surrounding Shawnee National Forest for equestrian riding. The majority of the use would be in the Bald Knob and Clear Springs Wildernesses, with access by the River to River Trailhead immediately adjacent to the private property boundary. Hikers and equestrian riders will be able to leave the overnight rental property and immediately enter the River-to-River trail system. Some overnight horse accommodations are available, although limited. During times when the wilderness is not available for horse use, the Cedar Lake and Kincaid trail systems will be highlighted as alternate riding locations.

A special use permit that would allow for this activity to occur would be issued. By issuing this permit, the Forest will be improving upon the now unregulated use, improve resource protection while at the same time, assist in providing for a growing business opportunity, in association with the demand for horse riding within the western portion of the Shawnee National Forest.

In order to ensure the protection of wilderness character during the relatively short term of the permit, the following resource protection measures would be incorporated within the permit:

- ❖ Broken Wheel Ranch clients will only be allowed to ride trails identified in the permit (Appendix A) within Bald Knob and Clear Springs wilderness areas.
- ❖ Broken Wheel Ranch clients will be allowed to ride April 1 – November 30 in Bald Knob and Clear Springs Wilderness Areas (the wilderness would be closed to Broken Wheel Ranch clients from December 1<sup>st</sup> to March 31<sup>st</sup>).
- ❖ The Forest Service shall determine the extent of moisture impacts on the trails within the Bald Knob and Clear Springs Wilderness Areas and exercise its authority to temporarily close those trails it deems unreasonably wet for equestrian traffic until drier conditions prevail.

- ❖ The Broken Wheel Ranch will also be responsible for determining if trails are unreasonably wet and would notify clients when the trails are unsuitable for horse traffic. The Broken Wheel Ranch may suggest other non-wilderness trails as alternatives.
- ❖ Broken Wheel Ranch clients shall limit group size within the Bald Knob and Clear Springs Wildernesses to no more than 10 people at any one time.
- ❖ Equestrians from the Broken Wheel Ranch will display bridal tags on their horses in a visible place.
- ❖ The Broken Wheel Ranch will inform clients of the forest order not to harm/harass snakes on the Forest.

Analysis of the proposed projects effects on the subtle cave amphipod assumes that the permit maintenance and operation plan (Case File) will be strictly followed to minimize soil disturbance and greatly reduce the potential for groundwater contamination via sedimentation and livestock waste.

**Duration and Timing:** A decision is expected by September 2007 and the permit would be issued shortly thereafter. This decision will allow a short-term special-use permit to be used to limit the impact of equestrian recreation on the Forest while additional site-specific analyses for the development of a designated trail system are completed.

### **Existing Environment - Subtle Cave Amphipod**

The subtle cave amphipod is designated as a Regional Forester Sensitive Species on the Shawnee National Forest in the Eastern Region of the Forest Service. The Subtle cave amphipod is a subterranean crustacean known from groundwater seeps and drip pools in caves of western Illinois and eastern Missouri (USDA Forest Service 2002). The area of potential affect for the subtle cave amphipod for this project includes the Cave-Creek-Cedar Creek watershed.

According to Forest records, in the project area has been found in a small seep in a sandstone sinkhole near the Toothless Cave, in Jackson County, Illinois. The entrance to Bat (Toothless) Cave has been gated to protect the bat population, although this site remains a privately owned property within the boundary of the Shawnee National Forest. The Forest Service property that contains Toothless Cave is designated as the Toothless Zoological Area and none of the permitted trails are within the Cave Creek-Cedar Creek watershed (USDA Forest Service 2002).

This is a small, eyeless, unpigmented amphipod crustacean, the largest male being 5mm, largest female 4.5mm. Identification of this species requires laboratory dissection and examination of slide-mounted appendages under a compound microscope by a specialist in amphipod taxonomy (USDA Forest Service 2002). The subtle cave amphipod has a limited range. It has been found in thirteen locations in Adams County, Illinois, south-south-southeastward to Union County. Within this area, the species is extremely restricted to specialized and rare habitat. The largest collection came from Giant City State Park in Jackson County (NatureServe 2007).

This species is a subterranean obligate but is occasionally captured in cave pools and seeps. The degradation of caves and aquifers, and the resulting siltation, water contamination, inundation of habitat, or alteration of hydrology is the largest threat to the species (NatureServe 2007).

## **Effects of the Proposed Action - Subtle Cave Amphipod**

Given that this species is found only in cave pools and seeps and is subterranean in nature, there will be no direct or indirect effects to the species or their habitat. The Forest Service property that contains Toothless Cave is designated as the Toothless Zoological Area and none of the permitted trails are within the Cave Creek-Cedar Creek watershed. One potential, indirect effect would be increased visitor use and the potential for vandalism or contamination of caves and seeps but this is unlikely because there are not equestrian trails in this vicinity and the cave entrance, which is on private property, is gated. With a lack of direct or indirect effects to the species there should be no cumulative effects.

## **Determination**

As a result of this evaluation, it is my professional determination that issuance of a special use permit is not likely to impact individual amphipod populations or existing habitat. Thus, it will not contribute to a trend toward Federal listing or cause a loss of viability to the population or species.

## **Management Recommendations**

No recommendations were identified for this project for sensitive aquatic species.

## **Literature Citations**

Illinois Natural History Survey. 2007. INHS Collection Database. INHS, Champaign, Illinois. Available: <http://www.ellipse.inhs.uiuc.edu:591/INHSCollections> (Accessed: January, 2007).

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 1.8 NatureServe, Arlington, Virginia. Available: <http://www.natureserve.org/explorer> (Accessed: January, 2007).

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