



United States Department of the Interior

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December 1, 2004

Mr. Michael Weber, District Ranger
Potosi-Fredericktown Ranger District
Mark Twain National Forest
P.O. Box 188
Potosi, Missouri 63664

Dear Mr. Weber:

This letter is in response to your September 13, 2004, request for site-specific review, pursuant to section 7 of the Endangered Species Act of 1973, as amended, on the proposed Barton Fen Restoration Project on the Potosi-Fredericktown Ranger District (District) in Iron County, Missouri. On June 23, 1999, the U.S. Fish and Wildlife Service (Service) issued a Programmatic Biological Opinion (Programmatic BO) for the Mark Twain's National Forest (MTNF) Land Resource Management Plan (LRMP). This Programmatic BO established a two-tiered consultation process for LRMP activities, with issuance of the programmatic opinion being Tier 1 and all subsequent site-specific project analyses constituting Tier 2 consultations. When it is determined that a site-specific project is likely to adversely affect federally listed species, the Service will produce a "tiered" biological opinion.

In issuance of the Programmatic BO (Tier 1 biological opinion), the Service evaluated the effects of all U.S. Forest Service's actions outlined in the LRMP for the MTNF, as well as a number of identified, proposed site-specific projects that were attached as an appendix to your biological assessment. The Programmatic BO evaluated the effects of Forest Service management program activities, including timber management and prescribe burning, on the bald eagle (*Haliaeetus leucocephalus*), Curtis' pearly mussel (*Epioblasma florentina curtisi*), Indiana bat (*Myotis sodalis*), gray bat (*Myotis grisescens*), Meads milkweed (*Asclepias meadii*), pink mucket pearly mussel (*Lampsilis abrupta*), running buffalo clover (*Trifolium stoloniferum*), Topeka shiner (*Notropis topeka*). We concurred with your determinations of "not likely to adversely affect" for Curtis' pearly mussel, pink mucket pearly mussel, running buffalo clover, and Topeka shiner. We also concurred with your programmatic determination of "likely to adversely affect" for bald eagle, gray bat, Indiana bat, and Mead's milkweed.

Your request for Service review of the proposed activities associated with the Barton Fen Restoration Project is a Tier 2 consultation. We have reviewed the information contained in the

Barton Fen Restoration Project Biological Assessment (BA), submitted by your office on September 13, 2004, describing the potential effects of the proposed project on the above federally listed species.

We concur with your conclusion that there are no additional effects to federally listed species associated with the Barton Fen Restoration Project beyond those that were previously disclosed and discussed in the Service's Programmatic BO of June 23, 1999. We also concur with your determination that the only species that may occur within the project area are Indiana bat, gray bat, Hine's emerald dragonfly, running buffalo clover, and bald eagle.

Description of the Proposed Action/Preferred Alternative

The MTNF is proposing several activities to restore the natural diversity and structure of Barton Fen. A complete description of the following activities can be found in the project BE.

- Removal of old water control ditches and structures, including stone water diversion structures that were historically built to drain the fen. Repair existing ruts and trenches by backfilling or leveling, as needed.
- Blocking illegal OHV access.
- Implement selective cutting and removal of undesirable plants (such as multiflora rose, Japanese honeysuckle, sycamore, elm, ash, sericea lespedeza, alder, dogwood, eastern red cedar) within and immediately adjacent to the fen.
- Conduct periodic prescribed burns within and surrounding the fen. Burning would occur anytime from November 1 through April 30.
- Develop interpretive signs for the fen and vernal pond.
- Construct a protective fence around the high-quality sections of the fen to keep out feral pigs and humans.

In addition to the MTNF's implementation of the RPM's and TC's in the Programmatic BO, the following additional protective measures as outlined in the Biological Evaluation for the Barton Fen Restoration Project will be implemented:

- No heavy equipment (e.g., bulldozers, automobiles, ATV's) would be used on poorly drained (e.g., hydric) soils.
- No construction materials that have a potential for leaching toxic compounds into the environment would be used. Only materials considered "environmentally friendly" such as plastic lumber, ACQ-treated lumber, or non-treated lumber would be used for construction activities.

- Activities that involve extensive walking on hydric soils would be conducted when the ground is frozen or nearly frozen.
- All activities would be approved on-site by a biologist prior to their implementation.

Based on the site-specific information in the BE, we concur with your determination that the Barton Fen Restoration Project will have no effect on the bald eagle. We also concur with your determination that the proposed project may affect, but is not likely to adversely affect the gray bat, running buffalo clover, and the Hine's emerald dragonfly. Furthermore, we agree that the project will provide beneficial effects to the Hine's emerald dragonfly. We also concur with your determination that the project is likely to adversely affect the Indiana bat and are providing our biological opinion below.

Biological Opinion

The following biological opinion is based on likely adverse effects to the Indiana bat from activities associated with the Barton Fen Restoration Project. In conducting our evaluation of the potential impacts of the project on Indiana bat, our review focused on determining whether: (1) this proposed project falls within the scope of the Programmatic BO issued for MTNF's LRMP; (2) the effects of this proposed action are consistent with those anticipated in the Tier 1 Programmatic BO; and (3) the appropriate implementing terms and conditions associated with the reasonable and prudent measures identified in the Tier 1 biological opinion are adhered to. This Tier 2 Biological Opinion also identifies the incidental take anticipated with the Barton Fen Restoration Project and the cumulative total of incidental take for the MTNF for the 2005-2008 planning seasons. It conforms to the Service's Programmatic BO (page 88) pertaining to individual projects the Service reviews following the issuance of the Programmatic BO.

Status of the Species

Species description, life history, population dynamics, status and distribution for the Indiana bat are fully described on pages 40-62 of the Programmatic BO and are hereby incorporated by reference. Since issuance of the Service's Programmatic BO, a biennial survey was conducted on Indiana bat Priority 1 hibernacula. Approximately 105,420 Indiana bats were counted during surveys conducted in 2000 and 2001. Surveys by Rick Clawson (Missouri Department of Conservation, email March 14, 2003) in 2003 show 93,955 Indiana bats in priority one caves and other caves. Indiana bat populations were monitored in the two Indiana bat hibernacula on the MTNF in 2004. The population at one cave increased from 1 bat in the last survey to 33 Indiana bats in 2004; and at the other cave, the population increased from 12 bats in the last survey to 150 Indiana bats.

Mist net and Anabat surveys were conducted for bats on the Mark Twain National Forest between 1997 and 2004. A summary of survey data collected during this period indicates that 16 Indiana bats had been captured on or near the National Forest and 5 captured on the National

Forest. These surveys represented over 400 mist net sites and over 2,500 hours of mist netting, plus over 300 Anabat sites and over 3,500 hours of Anabat detection. Capture of Indiana bats during field surveys is very uncommon, which indicates that Indiana bats are not abundant in the areas that were surveyed. As Brack et al (2002) reasoned it is unlikely that Indiana bats will be equally abundant in all parts of its range because optimal or even suitable habitat conditions are not found equally across the landscape.

The project area is located approximately 2 miles northeast of the nearest known hibernaculum. Thus the project area is within the Area of Influence for that hibernaculum. The project will not take place within the key area (.25 mile area) around the cave. The closest record of a reproductively active female Indiana bat is from the Salem Ranger District, where a lactating Indiana bat was captured in 2004. This female was tracked to the Potosi Ranger District about 2 miles from the project area. No maternity colony roosts were located as a result of this capture. The closest record of a male roosting Indiana bat is from the Potosi District, where a male Indiana bat was found in July 2004 using a pine snag in a tailings pond (not on MTNF). The male was located approximately 2 miles from the project area.

The project area does contain suitable habitat for roosting Indiana bats. Since the project area is within 5 miles of a known hibernaculum, it is possible that some individuals would summer in the project area, especially males. It is also reasonable to assume that some individuals would use the area for foraging and roosting during the fall swarming period.

Environmental Baseline

The environmental baseline for the MTNF was established and fully described in detail on pages 7-16 of the Service's June 23, 1999 Programmatic BO. Since issuance of the Service's Programmatic BO, the environmental baseline on the MTNF has changed. The percentage of trees in the 50 years or older class has increased from 72% to 73% (956,841 acres to 970,131 acres) that includes a 4% increase of trees 90 years old or older-old growth (159,474 acres to 212,631 acres). Additionally, there has been a decrease of 11% to 9% in the 0-9 year's old age class (146,184 acres to 119,605). The relative percentages of the other two age classes (20-49 years old and 10-19 years old) were unchanged. Other changes relate to the decrease in timber harvest on the forest between 1996 and 2000. The average timber harvest on the MTNF has decreased from an average annual harvest of 18,215 acres between 1986 and 1997 to 11,567 acres between 1997 and 2000. Between 1985 and 2000, the average annual harvest volume on the MTNF was 55.3 million board feet of commercial timber, which decreased to an annual harvest volume of 32 million board feet between 1998 and 2000.

Timber management practices utilized on the MNTF have also changed. Of the 11,567 acres harvested annually on the MTNF between 1996 and 2000, an average of 5,487 acres (47%) involved thinning, salvage, and miscellaneous operations (e.g., firewood permits); 3,389 acres (29%) included uneven-aged management (i.e., group selection, single tree selection, and single tree selection with groups harvest technique); and 2,691 acres (23%) were associated with even-aged regeneration harvest techniques (i.e., shelterwood, clearcut, and seedtree harvest methods).

Although approximately 9,300 acres of reforestation via natural regeneration has occurred per year since 1986, the average of such activities decreased to about 7,000 acres (~25%) between 1998 and 2000. Between 1986 and 1997, timber stand improvements (TSI) averaged about 3,850 acres per year. Since 1998, TSI activities averaged 1,938 acres per year, a reduction of approximately 50%. Activities to benefit wildlife (e.g., prescribed fires, tree planting in riparian corridors, construction of ponds or waterholes, brushhogging, planting of food plots, conversion of cool season grasses to native warm-season grasses, etc.) decreased from an annual average of 9,000 acres between 1986 and 1997 to an annual average of approximately 6,000 acres (a reduction of approximately 33%) between 1998 and 2000 (Jody Eberly, U.S. Forest Service in litt. August 13 and 22, 2001).

Missouri experienced severe weather in the spring of 2002. Several tornados in 2002 damaged timber stands on both private and public lands in Missouri. Flooding occurred in many drainages, uprooting trees and causing other structural damage. Some landowners are removing the downed timber in many areas and many are burning the wood that is unsuitable for other products (e.g. sawlogs, firewood, etc.). However, all or most of the downed timber on public and private lands cannot be removed. Once the wood dries out, an unnaturally high fuel loading in Missouri forests will have been created, and the risk of catastrophic fire will increase.

Thousands of acres affected by oak decline are causing concern for the health of forests in Missouri and Arkansas. Many large northern red, southern red, black, and scarlet oaks are declining and dying. The reason for this problem is complex and is not linked to any one cause but trees that are old (70 to 90 years), on shallow, rocky soils, ridgetops and upper slopes, and that have been stressed from drought, are predisposed to decline. There are other factors that contribute to this oak decline: red oak borers, twolined chestnut borers, armillaria root rot, and others (from brochure "Why are the oak trees dying?" produced by the USDA Forest Service 2001). The oak decline problem will create habitat for the Indiana bat in the short term, but could also pose a risk from catastrophic wildfire.

Effects of the Action

Based on our analysis of information provided in your September 13, 2004, BE for the Barton Fen Restoration Project, we have determined that the potential effects of the proposed action are consistent with those addressed in the Programmatic Biological Opinion and are hereby incorporated by reference.

Tree removal and prescribed burning would not occur during the maternity season; therefore no adverse effects will occur to maternity colonies. Up to 20 suitable trees may be removed for fire line construction during the non-maternity season, but not necessarily during the hibernation season. Bats using the area (roosting) in the fall or early spring season could be impacted (harmed), but the likelihood of cutting a tree containing an individual roosting Indiana bat, however, is anticipated to be extremely low because of the rarity of the species on this district and the large number of suitable roost trees present on the MTNF and in the surrounding area.

Prescribed burning would not occur during the maternity season. The MTNF generally conducts prescribed burning between November and April. The majority of Indiana bats are usually hibernating during this time period but some swarming activity may still occur into mid-November and some bats may emerge from hibernation as early as mid-March. Prescribed burns in the area will be conducted so that smoke does not enter the cave, thereby hibernating bats will not be affected. The prescribed burn will be conducted approximately 2 miles from the cave entrance, and only covering 450 forested acres (an additional 32 acres of non-forested habitat will be burned). This leaves the majority of the 5-mile radius around the cave entrance available for use by swarming, roosting and foraging Indiana bats. The loss of up to 20 suitable trees would most likely be offset by the creation of new snags as a result of the burn. Foraging habitat in the area would likely be improved as a result of the burns, because the burn would maintain or create a more open, woodland-type stand, which Indiana bats forage in.

A more complete discussion of these effects can be found in section D- Effects of the action (direct and indirect effects), on pages 62-65 of the Service's June 23, 1999 Programmatic BO.

Implementation of the terms and conditions associated with the reasonable and prudent measures (RPMs) provided on pages 75-81 in the Programmatic Biological Opinion will minimize any potential adverse effects to the Indiana bat by maintaining suitable Indiana bat roosting and foraging habitat.

Conclusion

The actions and effects associated with the proposed Barton Fen Restoration Project are consistent with those identified and discussed in the Service's Programmatic BO. After reviewing the size and scope of the project, the environmental baseline, the status of Indiana bat and its potential occurrence within the project area, the effects of the action; and any cumulative effects, it is the Service's biological opinion that this action is not likely to jeopardize the continued existence of the Indiana bat.

Incidental Take Statement

The Service anticipates that the proposed actions associated with the Barton Fen Restoration Project will result in the incidental take of Indiana bat habitat (acres) as outlined in Table 1. The type and amount of anticipated incidental take is consistent with that described in the Programmatic BO and does not cause the total annual level of incidental take (forested acres) in the Programmatic BO (page 74) to be exceeded (Table 1).

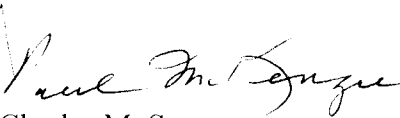
The Forest Service must implement all pertinent reasonable and prudent measures and implementing terms and conditions stipulated in the Programmatic BO to minimize the impact of the anticipated incidental take of Indiana bats, and to be exempt from the take prohibitions of Section 9 of the Act. We have determined that no new reasonable and prudent measures, beyond those specified in the Programmatic BO, are needed to minimize the impact of incidental take anticipated for the Barton Fen Restoration Project. Implementing the measures outlined in your

conservation program for federally listed species on the MTNF (approved March 2000) will further reduce potential adverse effects on the Indiana bat.

This fulfills your consultation requirements for this action. Should the proposed project be modified or if the level of take identified above is exceeded, reinitiation of consultation as outlined in 50 CFR 402.16, is required.

We appreciate your continued efforts to ensure that this project is consistent with all provisions outlined in the Programmatic BO. If you have any questions regarding our response or if you need additional information, please contact Theresa Davidson at (417) 683-4428 ext. 113.

Sincerely,


for Charles M. Scott
Field Supervisor

cc: Field Supervisor, Indiana ESFO, Bloomington, IN
Jennifer Szymanski, RO via electronic mail
Theresa Davidson, USFWS, Ava, MO

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Table 1. Incidental take of Indiana bats for the Barton Fen Restoration Project (forested acres affected annually) and its contribution to the cumulative totals for the Mark Twain National Forest as outlined on page 74 of the Service's Programmatic Biological Opinion of June 23, 1999. Cumulative take acres for prescribed burning will be monitored in real time; areas burned (with potential adverse affects) will not exceed 12,000 acres per year.

	2005	2006	2007	2008	ACRES EXEMPTED ANNUALLY
Prescribed Burning (including removal of roost trees for fire line construction)	450	0	450	0	12000
Cumulative Total	See above				