



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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November 17, 2003

Mr. John C. Bisbee, District Ranger
Houston/Rolla/Cedar Creek Ranger District
Mark Twain National Forest
108 S. Sam Houston Blvd.
Houston, Missouri 65483

Dear Mr. Bisbee:

This letter is in response to your September 30, 2003, request for site-specific review, pursuant to section 7 of the Endangered Species Act of 1973, as amended, on the proposed Middle River Project on the Houston/Rolla/Cedar Creek Ranger District (District) in Calloway 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 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 Middle River Project is a Tier 2 consultation. We have reviewed the information contained in the Middle

River Project Biological Assessment (BA), submitted by your office on September 30, 2003, and an updated BA received on October 14, 2003, 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 Middle River 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, Topeka shiner, running buffalo clover and bald eagle.

Description of the Proposed Action/Preferred Alternative

The Middle River Project area contains 1,296 acres of Forest Service System lands. The MTNF analyzed three alternatives for the Middle River Project and Alternative 3 is the preferred alternative. Alternative three includes the following activities:

A. Wildlife Habitat Enhancement Actions:

1. Reduce Open/Semi-Open Habitat.

- Proposed Action A1a: Maintain existing open/semi-open habitat and native ecosystems on 430 acres. This would be accomplished through prescribed burning and/or grazing, and mechanical treatments in both warm and cool season grasses. Seeding and fertilizing to maintain these open grazed areas would also continue as needed.
- Proposed Action A1b: Plant hardwoods on approximately 8 acres of open lands and reduce prescribed burning on an additional 40 acres of open/semi-open lands to allow these areas to grow into forested habitat.

2. Provide Woodland Habitat in Old Growth Conditions

- Proposed Action A2: Designated and additional 107 acres of old growth in the Middle River project area.

3. Provide 50 percent of the sawtimber component of the Woodland Habitat in oak, oak-pine, and pine to exhibit a condition of 20-30 percent forbs, grass, and shrub ground cover.

- Proposed Action A3a: Create approximately 460 acres of 20-30 percent ground cover with forbs, grasses and shrub habitat. This would be accomplished with uneven-aged management (individual and group selection harvest) in both hardwood and cedar stands.
- Proposed Action A3b: Prescribed burning within 250 acres of woodlands.

4. Provide Woodland Habitat in the 0-9 Year Age Class

- Proposed Action A4: Using group selection harvest, create 69 acres of 0-9 year age class habitat.

5. Provide Diverse Amphibian Habitat

- Proposed Action A5: Breach and lower one pond in the project area.

B. Watershed Health Actions**1. Fencing to Exclude Livestock**

- Proposed Action B1: Restrict livestock from steeper eroded areas and drainages with fencing.

2. Pond Reconstruction

- Proposed Action B2: Reconstruct a pond in the project area, and fence to exclude livestock and place a cattle watering tank outside.

3. Reconstruct existing forest road

- Proposed Action B3: Reconstruct Forest Road 1686 (0.9 miles) to improve present drainage crossing and reduce soil movement.

4. Improve Pasture Access

- Proposed Action B4: Improve access through the pastures and protect the soil resources with spot gravel in low or muddy areas in four locations.

5. Road Closure

- Proposed Action B5: Close approximately 0.4 miles of non-system roads through the use of boulders and/or gates.

6. Planting/watershed control structure

- Proposed Action B6: Reduce soil movement at three wooded draws by planting and/or seeding native vegetation or installing a watershed control structure

7. Well closure

- Proposed Action B7: Close two existing open wells to improve safety for area users and protect soil resources.

8. Pond Maintenance

- Proposed Action B8: Maintain existing ponds as needed with methods such as mowing pond banks to control vegetation, fencing, or replacement of livestock watering tanks.

C. Recreation Management Needs**1. Improve Parking Lots**

- Proposed Action C1: Improve five parking lots with gravel

2. Interpretive Signing

- Proposed Action C2: Construct interpretive signs for cultural history

3. Self closing gate

- Proposed Action C3: Improve dispersed access for fishing by installing a self-closing gate.

D. Associated or Connected Actions

- Proposed Action D1: Construct approximately 1 mile of mechanical fire lines
- Proposed Action D2: Reduce the spread and infestation of non-native invasive and noxious weeds such as multi-flora rose and/or sericea lespedeza. Spot treat individual plants with herbicide on 59 acres (hand application only)
- Proposed Action D3: Improve hardwood seedling survival. Spot treat seedling planting sites with herbicide within 45 acres to improve survival (by hand only)

In addition to the MTNF's implementation of the RPM's and TC's in the Programmatic BO and other protective measures, the following information was considered in determining the projects effects on the gray bat.

Gray bat: 1) The project area is 15 air miles west of the nearest gray bat cave; 2) smoke from the prescribed burns are not likely to displace gray bats; 3) herbicide use will not affect the gray bat; 4) riparian area enhancements will improve habitat for the gray bat and; 7) any sediment produced by the project activities would not be of a magnitude where the prey base will be affected.

Based on the site-specific information above, we concur with your determination that the Middle River Project "may affect, but is not likely to adversely affect" the gray bat. We also concur with your determination that the project will have "no effect" on the bald eagle, Topeka shiner and running buffalo clover. As described in the Service's Programmatic BO, we believe that adverse effects are likely to occur to the Indiana bat.

Biological Opinion

The following biological opinion is based on likely adverse effects to the Indiana bat from activities associated with the Middle River 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 Middle River Project and the cumulative total of incidental take for the MTNF for the 2003-2007 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. Mist net surveys were conducted for bats on the Mark Twain National Forest between 1997 and 2001. These surveys resulted in the capture of 501 individual bats of 9 species during 594 hours of mist netting, but no Indiana bats were captured. In September 2002, mist netting efforts at Lake Wappapello led to the capture of three Indiana bats. Additional male Indiana bats have been captured in (the summer of 2003) recent weeks at Lake Wappapello. Mist net and Anabat surveys in May 2003, led to the capture of one reproductively active female Indiana bat on the Potosi/Fredericktown Ranger District. The nearest Indiana Bat caves are over 14 air miles south and east of the project area. The nearest capture site of a reproductive female is approximately 70 air miles from the project area and the project area is approximately 70 air miles north of the nearest maternity colony. Surveys that utilized a combination of Anabat and mist netting techniques were conducted in the project area in 2003 and no Indiana bats were detected or captured. However, these surveys were conducted after the recommended season, therefore, the exact status of Indian bats within the Middle River project area is unknown. The project area is not in an Indiana bat area of influence (MTNF Management Area 3.5).

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 percentage's of the other two age classes (20-49 years old and 10-19 years old) was 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, but could also pose a risk from catastrophic wildfire.

Effects of the Action

Based on our analysis of information provided in your June 10, 2002 BE for the Middle River 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. Indiana bats could be potentially impacted from the proposed activities. Adverse effects to the Indiana bat from this project could occur from the removal of potential roost trees in the timber harvest areas. The prescribed burning will be conducted in late winter or early spring when bats are still hibernating. The burns will only be conducted using the above mentioned resource protection measures, to push smoke away from the hibernaculum. In addition, the project area is far enough from the hibernaculum that smoke would have no effect on the Indiana bat. The prescribed burns may also have a beneficial effect by opening forest canopies and decreasing dense understory vegetation that could inhibit bat movements to foraging habitats and roosting sites. The MTNF has also agreed to implement the following conservation measures to protect the Indiana bat: 1) implementation of the project would not remove any live potential roost trees greater than or equal to 26" dbh (unless they are an immediate safety hazard); 2) implementation of the project would not remove any dead potential roost trees greater than or equal to 20' dbh; 3) the project would retain all the shagbark hickory,

shellbark hickory, and lightning struck trees greater than or equal to 9" dbh within harvest units; and 4) prescribed burning and uneven aged silvicultural treatments will provide the 60-80 percent canopy closure for ideal roosting sites. 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.

Harm to Indiana bats could also occur if the removal of suitable roost trees causes bats to abandon a traditionally used roost site. 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.

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 Middle River 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 Middle River 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 Middle River 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,

Rick L. Hansen

for Charles M. Scott
Field Supervisor

cc: Field Supervisor, Indiana ESFO, Bloomington, IN
Theresa Davidson, USFWS, Ava, MO



Table 1. Incidental take of Indiana bats for the Middle River 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.

	2003	2004	2005	2006	2007	ACRES EXEMPTED ANNUALLY
Timber Harvest	0	230	230	0	0	20000
Cumulative Total	15807	12310	5153	4270	3918	_____