United States Department of the Interior

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February 10, 2014

Kimberly Bittle, District Ranger
Houston/Rolla/Cedar Creek Ranger District
Mark Twain National Forest
108 S. Sam Houston Blvd.
Houston, MO 65483

Dear Ms. Bittle:

Please refer to your November 8, 2013, letter transmitting a Biological Evaluation by Klaus Leidenfrost for the Boiling Spring Project in Texas County, Missouri. On September 16, 2005, the U.S. Fish and Wildlife Service (Service) issued a Programmatic Biological Opinion (Programmatic BO) for the Mark Twain National Forest (MTNF) 2005 Forest Plan (Forest Plan). This Programmatic BO established a two-tiered consultation process for Forest Plan activities, with the 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 not likely to adversely affect federally listed species, the Service will produce a concurrence letter.

In issuance of the Programmatic BO (Tier 1 biological opinion), the Service evaluated the effects of all U.S. Forest Service actions outlined in the Forest Plan for the MTNF. The Programmatic BO evaluated the effects of Forest Service management program activities, including timber management and prescribed burning, gray bat (*Myotis grisescens*), Hine's emerald dragonfly (*Somatochlora hineana*), Indiana bat (*Myotis sodalis*), Mead's milkweed (*Ascelpias meadii*), Pink mucket pearlymussel (*Lampsilis abrupta*), Running buffalo clover (*Trifolium stoloniferum*), Scaleshell mussel (*Leptodea leptodon*), Topeka shiner (*Notropis topeka*), Tumbling Creek cavesnail (*Antrobia culveri*), and Virginia sneezeweed (*Helenium virginicum*). We concurred with your programmatic determinations of "no effect" for Virginia sneezeweed, running buffalo clover, and Topeka shiner. We concurred with your programmatic determinations of "may affect, not likely to adversely affect" for the Hine's emerald dragonfly, Tumbling Creek cavesnail, pink mucket, scaleshell, bald eagle, and gray bat. We also concurred with your programmatic determination of "may affect, likely to adversely affect" for Mead's milkweed and Indiana bat.

In June 2009, the Service provided MTNF with an amended Programmatic BO that addressed

running buffalo clover and updated the status of the species for the Indiana bat. Your request for Service review of the proposed activities associated with the Boiling Spring project is a Tier 2 consultation. We have reviewed the information contained in the Biological Assessment (BA), submitted by your office on November 8, 2013, and agree that gray bat, Indiana bat, and spectaclecase are likely to occur in the project area.

The northern long-eared bat (*Myotis septentrionalis*) (NLEB) is currently proposed for listing under the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). The final listing decision for the NLEB is expected in October 2014. At this time, no critical habitat has been proposed for the NLEB. Pursuant to Section 7(a)(4) of the ESA, federal action agencies are required to confer with the Service if their proposed action is likely to jeopardize the continued existence of the NLEB (50 CFR 402.10(a)). Action agencies may also voluntarily confer with the Service if the proposed action may affect a proposed species. In the December 18, 2013 Biological Assessment, the MTNF voluntarily conferred with the Service on NLEB and determined that the Boiling Spring project is Not Likely to Jeopardize the Continued Existence of the NLEB.

Description of the Proposed Action

The Boiling Spring project area will undergo commercial harvest or thinning (pine seed tree with reserves, pine thin to open woodland, pine thin to closed woodland, pine thin, hardwood shelterwood with reserves, hardwood thin to open woodland, hardwood thin) on approximately 3,690 acres. Non-commercial thinning (mid-story removal, pre-commercial thin) will occur on approximately 4,059 acres. Cedar removal will be conducted throughout the project area. Four-hundred seventy five acres will be designated as old growth. Connected actions include maintenance of pond dams, prescribed burning, system road maintenance, system road decommissioning, non-system road decommissioning, temporary road construction, gate installation, ROWs and Special Uses, and development of a visitor parking area. Actions in the preferred alternative are consistent with the direction of the 2005 Forest Plan. All applicable Forest Standards and Guidelines as described in the Forest Plan will be implemented with this project. Proposed actions are more fully described in the BA and are hereby incorporated by reference.

Status of Listed Species within the Project Area

Gray bat (*Myotis grisescens*)—the project area is located within approximately 20 air miles of the nearest known gray bat maternity cave and within approximately 1 air mile of the nearest gray bat hibernaculum and transitory cave (TEX – 163) located on Private land. No gray bats were found in the Boiling Spring project area during surveys in 2012. However, gray bats have been documented in caves and foraging habitat during the summer within 5 miles to the south of the project area on the Big Piney River, which runs through the Boiling Spring project area. It is likely that additional suitable caves exist along the Big Piney River, and some of these caves are likely occupied by the gray bat. Because of the proximity of the project area to cave TEX-163, the greatest potential impact to gray bats would be from smoke caused by prescribed burning. Resource Protection Measures as described on page 14 of the biological assessment should preclude adverse effects to gray bats from the proposed actions. The Service concurs with the

determination of May Affect – Not Likely to Adversely Affect for the gray bat.

Indiana bat (*Myotis sodalis)*—Male and female Indiana bats, including reproductive individuals, have been documented during the summer months within Houston/Rolla/Cedar Creek Ranger District. Mist net and acoustic surveys conducted in 2012 did not resulted in the documentation of Indiana bats within the project area. There is a documented maternity area approximately one mile west of the project area and another maternity area approximately 4.3 miles south of the project area. The closest hibernaculum (TEX – 163) is located approximately 1 air mile area to the east of the project. Additional hibernacula and documented summer habitat are present in Pulaski County and on Fort Leonard Wood to the north.

Some trees proposed for removal from the project area have characteristics suitable for Indiana bat roosting. It is assumed that National Forest lands within the project area may provide potentially suitable habitat and be occupied by the species during the summer months. Based on the Service's Programmatic BO and the site-specific biological assessment, adverse effects are likely to occur to the Indiana bat from Alternative 2. The following Tiered Biological Opinion addresses those adverse effects to the Indiana bat.

Spectaclecase (*Cumberlandia monodonta*) –There are numerous sightings of this mussel in the Big Piney River (including in the Boiling Spring project area), which forms the eastern boundary of the Boiling Spring project area. This mussel prefers a substrate among rocks where the swift current of the mainstream meets the quieter water at the edge of pools. It also needs a stable bottom of large rocks and boulders.

There could be a temporary impact to local water quality from prescribed fire and/or the associated firelines. However, no dozer lines would be constructed in any riparian zone or Watercourse protection zones. Activities such as commercial tree removal (Pine seed tree, pine thining, hardwood shelterwood, or hardwood thinning) and any road work could also have a temporary negative impact on local water quality. But there would be no impact to the Big Piney River and any Spectaclecase habitat. The Forest Plan has standards and guidelines for eliminating or minimizing any possible effect on water quality including in Riparian areas and Watershed Protection Zones. Implementation of these protective measures will ensure that the water quality of the Big Piney River would not be negatively impacted. The Service concurs with the determination of May Affect – Not Likely to Adversely Affect for the spectaclecase.

Proposed Species and Conference Report

The state of Missouri is within the known range of the NLEB. During the summer, NLEBs typically roost singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically ≥3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices or presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable roost tree are unavailable). They forage for insects in upland and lowland woodlots and tree-lined corridors. During the winter, NLEBs predominately hibernate in caves and abandoned mine portals. Additional habitat types may be identified as new information is obtained.

The NLEB is known to occur and have suitable habitat on the Houston/Rolla portion of the District and NLEBs were found in the Boiling Spring project area. NLEBs have been documented in the Boiling Spring project area through acoustic and mist net surveys that were conducted in 2012. Four adult males and one adult female were caught in the mist nets. No radio telemetry of captured individuals was conducted to provide information on use of specific roost trees. The project area is located within approximately 1 air mile of a historic northern long-eared bat cave (cave # TEX – 163). Therefore, the potential for harming a roosting bat cannot be eliminated for any silivicultural activity that occurs outside the hibernation period.

Roosting habitat for this species will be maintained in the larger Boiling Spring project area. According to the Standards and Guidelines for Indiana bat summer habitat, trees with characteristics of suitable roosts (i.e., dead or dying with exfoliating bark or large living trees with flaking bark) will be maintained wherever possible with regard for public safety and accomplishment of overall resource goals and objectives. Standards and Guidelines for retention of reserve trees and reserve tree groups also will be followed. While activities may affect northern long-eared bats because some trees suitable for roosting by northern long-eared bats would be impacted, suitable roost trees will be retained in the project area to serve as alternates. In addition, Standards and Guidelines relative to winter removal of hazard trees and Resource Protection Measures relative to prescribed burning that will be implemented for gray and Indiana bats will minimize potential impacts to this species.

The Service concurs with the determination that the Boiling Spring Project is Not Likely to Jeopardize the Continued Existence of the northern long-eared bat. Should the species be listed, you should contact our office to determine if further consultation is necessary.

Tiered Biological Opinion

The following tiered biological opinion is based on likely adverse effects to the Indiana bat from activities associated fireline construction, system road maintenance, and temporary road construction in the Boiling Spring project area. In conducting our evaluation of the potential impacts of the project on Indiana bats, our review focused on determining whether; (1) this proposed project falls within the scope of the Programmatic BO issued for the MTNF's Forest Plan, (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 Boiling Springs Project. It conforms to the Service's Programmatic BO (page 14) pertaining to individual projects the Service reviews, following the issuance of the Programmatic BO.

Effects of the Action

Based on our analysis of information provided in your BA for the Boiling Spring Project, we have determined that the potential effects of the proposed action are consistent with those addressed in the Programmatic BO and are hereby incorporated by reference.

The Indiana bat habitat components that would most likely be impacted are summer roosting habitat for males, summer maternity habitat, foraging habitat, and fall swarming/spring emergence habitat. Direct effects could occur to the Indiana bat as a result of removing an occupied roost tree during several activities including fireline construction, removal of leaning trees or trees with overhanging limbs during road maintenance, removal of suitable roost trees during construction of temporary roads, or when hazard trees are cut for safety purposes.

Both pine seed tree and hardwood shelter thinning are regeneration cuts. The result of these activities will be stands between 10-20 basal area (m^2), which is lower than what is considered suitable roosting habitat. However, based on the current tree size, density, and lack of bark characteristics necessary for roosting, these stands are not currently providing suitable roosting habitat for Indiana bats.

The actions of pine thinning and hardwood thinning will reduce the canopy in areas with overly dense canopy. A more open canopy will facilitate foraging by Indiana bats and allow for more sunlight to reach interior trees, which could serve as roost trees. Based on negative surveys in the project area in 2012, it is unlikely that occupied trees will be removed during these activities. No dead trees will be removed unless necessary for safety reasons.

Midstory removal and pre-commercial thinning activities will not impact currently suitable roost trees for Indiana bat. Trees to be removed are small in diameter and occur in stands that are too dense to facilitate roosting or foraging.

Prescribed burning is proposed to occur on approximately 4,699 acres in the Boiling Springs Project. Both dormant and growing season burns will be used. Dormant season burns are less intense are not as likely to damage potential roost trees. They are also less likely to kill trees and create new snags. Growing season burns will be more intense and create more openings in dense forest stands. A greater number of potential roost trees would be removed with growing season burns, but a greater number of snags will be created. Based on negative surveys in the project area in 2012, it is unlikely that occupied trees will be impacted during these activities. Resource Protection Measures will be implemented to ensure that smoke from prescribed burning does not impact cave # TEX-163 during dormant season burns. The measure is intended to prevent smoke from entering the hibernaculum and smoke-sensitive area around the hibernaculum.

The related activity of fireline construction would cause removal of suitable roost trees and snags if they are present in or near the fireline potentially causing take of Indiana bats. Standing dead trees must be removed from the fireline to ensure that the fire is contained in the burn area and for the safety of staff participating in the burn. Based on negative surveys in 2012, the potential for one of these suitable roost trees to be occupied is low but possible. Likewise, system road maintenance and temporary road construction could also result in take of Indiana bats. Potentially suitable roost trees and snags are likely to be removed along the length of current roadways and temporary roads that will be constructed for timber activities.

If an occupied roost tree is cut or knocked down, Indiana bats would normally arouse and fly. Individuals could be injured or killed if a non-volant individual occupies the tree or if an individual does not arouse in time to fly away and avoid being trapped by a falling tree. In

addition, if a tree is removed that was previously used as a roost; bats would use energy to find another suitable tree when they return. Indiana bats evolved using ephemeral roosts, and this species routinely uses more than one roost, presumably as a method of checking the future suitability of roosts. Site fidelity seems to be more important than roost tree fidelity. Therefore, the site needs to have suitable roost trees available upon arrival after hibernation. This is more important than a specific tree being available. An analysis of the likelihood of the proposed actions in the 2005 Forest Plan affecting an occupied roost tree can be found on pages 57 and 58 of the PBO. It was determined that the chances of an occupied roost tree being cut on the MTNF under the 2005 Plan are low. Nevertheless, the chance still exists that an Indiana bat could be injured or killed with implementation of this project.

Tiered Biological Opinion Conclusion

The actions and effects associated with the proposed Boiling Spring 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, including 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 Boiling Spring Project will result in the incidental take of Indiana bat habitat 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 in the Programmatic BO (page 67-69) to be exceeded.

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 be exempt from the take prohibitions of section 9 of the Endangered Species Act (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 for Indiana bat anticipated for the Boiling Spring Project.

This fulfills your consultation requirements under section 7(a)(2) of the Act 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 this response, please contact Shauna Marquardt of my staff at 573-234-2132 ext. 174.

Sincerely,

Amy Salveter
Field Supervisor

cc: USFS, Mark Twain National Forest, Wildlife, Rolla, MO (Theresa Davidson)

Table 1. Anticipated incidental take associated with the Boiling Spring Project

Activity	Proposed in Boiling Spring					FY15 Anticipated Take on MTNF	Annual Take Limit 2005 MTNF BO
	FY14	FY15	FY16	FY17	FY18		
Hazard Tree Removal – Fireline (miles)		8.8	7.5			28.54	240
Hazard Tree Removal – Temporary Road & Skid Trails (acres)		73	52	17		198	4,400

*Hazard tree removal is for temporary road construction, system road reconstruction, trail maintenance, and fireline construction outside of the cutting units and reported in both acres and miles.