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December 11, 2003

John Schultz, District Ranger
Allegheny National Forest
Bradford Ranger District
Star Route 1, Box 88
Bradford, PA 16701

Dear Mr. Schultz:

This responds to your letter of January 23, 2003, requesting Fish and Wildlife Service review of the Bradford Oak Administrative Study (Oak Burn) Biological Evaluation (BE). On June 6, 2003, a revised BE (reflecting the removal of alternative 5 from consideration) was submitted to our office. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

On June 1, 1999, the Fish and Wildlife Service issued a biological opinion (BO) regarding the impacts of forest management and other activities that would be implemented under the 1986 Land and Resource Management Plan (Forest Plan) for the Allegheny National Forest (ANF). The Service's programmatic BO evaluated the effects of Forest Service management program activities, including timber management, on the bald eagle (*Haliaeetus leucocephalus*), Indiana bat (*Myotis sodalis*), clubshell mussel (*Pleurobema clava*), and northern riffleshell mussel (*Epioblasma torulosa rangiana*).

In the programmatic biological opinion, we determined that the implementation of projects predicated upon the Forest Plan is not likely to jeopardize the continued existence of the bald eagle, Indiana bat, or clubshell mussel. We also determined that implementation of the Forest Plan and most projects predicated upon it (with the exception of boating facility operation) are not likely to jeopardize the continued existence of the northern riffleshell. A jeopardy determination was made for the operation of boating facilities with respect to the northern riffleshell mussel, and reasonable and prudent alternatives were identified to avoid jeopardy to this species.

Although the Service has provided a programmatic biological opinion to the Forest Service for the ANF Forest Plan, the Service will review, as they are developed, site-specific projects that the Forest Service determines "may affect" federally listed species. The Service will determine if any effects will occur as a result of a site-specific project in a manner, or to an extent, not evaluated or previously disclosed and discussed in the Service's programmatic BO. We consider this site-specific project analysis to be "Tier 2" of the consultation process, with the programmatic consultation (and resulting BO) constituting the "Tier 1" consultation. Our

project-specific (Tier 2) consultations will focus on: 1) compliance with the reasonable and prudent measures and associated terms and conditions in the programmatic BO; 2) consistency with the scope and effects previously analyzed in the programmatic BO; 3) project-specific incidental take vs. take estimated in the programmatic BO; and 4) project-specific reasonable and prudent measures and associated terms and conditions (i.e., for non-jeopardy determinations). In the event of a “may affect” but “not likely to adversely affect” determination for a specific project that is consistent with the programmatic BO, no further evaluation by the Service is necessary and section 7(a)(2) consultation will be considered complete for that project (e.g., via a concurrence letter documenting the conclusion of informal consultation).

We have reviewed the information contained in the Bradford Oak Burn BE, which describes the potential effects of the proposed project on federally listed species. The proposed project types (e.g., timber harvesting, prescribed burning) and their effects were discussed and evaluated in the Forest Plan BA and programmatic BO. Therefore, this consultation qualifies as a “Tier 2” consultation under the Forest Plan BO.

Forest Service Effect Determinations

The Forest Service initially determined that the federally listed Indiana bat, bald eagle, small-whorled pogonia (*Isotria medeoloides*), clubshell mussel, and northern riffleshell mussel occur or may occur in the project area or supporting watersheds.

Based on species surveys, and a further assessment of the potential effects of this project on listed species, the Forest Service reached a “no effect” determination for the small-whorled pogonia; a “may affect, not likely to adversely affect” determination for the bald eagle, clubshell, and northern riffleshell; and a “may affect, likely to adversely affect” determination for the Indiana bat. You requested our review of, and concurrence with, these effect determinations. Based on our review of the project BE and programmatic BO, our comments on your determinations follow.

Small-whorled Pogonia

The BE (p. 33) indicates that all sites proposed for treatment were surveyed, but that no small-whorled pogonias were found. Considering the results of these surveys, we concur with the Forest Service’s “no effect” determination.

Bald Eagle

Based on available information, no bald eagle nest sites are located in or near any of the four proposed analysis areas (BE, p. 29-30). The closest known bald eagle nest site is located approximately two miles north of the treatment sites within Area 4. Suitable bald eagle foraging habitat is available along the Allegheny River in Area 1, but the river is approximately 0.5 mile from the treatment site within Area 1. Prescribed burning will be done under conditions that either keep smoke from drifting toward eagle nests, or ensure it dissipates rapidly. Based on this information, we concur with your determination that implementation of Alternative 2 is not likely to adversely affect the bald eagle.

Clubshell and Northern Riffleshell

The clubshell and northern riffleshell are known to occur in the Allegheny River; therefore, the portion of the river that lies within analysis Area 1 is considered occupied habitat for these species. Neither species is known to occur in analysis areas 2-4. Due to the small acreage being treated (20 acres in Area 1), and the implementation of Forest Plan Standards and Guidelines to reduce erosion and sedimentation, the Forest Service reached a “not likely to adversely affect” determination. We concur with this determination.

Indiana Bat

The Forest Service determined that implementation of this project “may affect, is likely to adversely affect” the Indiana bat. Given the nature of activities associated with the proposed project, we concur with your determination that incidental take of Indiana bats is possible within the analysis areas. As described in the Service’s Programmatic BO, we believe that adverse effects are likely to occur to the Indiana bat from timber harvesting and prescribed burning under the Forest Service’s management program activities. However, based on the implementation of reasonable and prudent measures and associated terms and conditions from the programmatic BO, and the conservation measures proposed with the Bradford Oak Burn project that will minimize the impact of any incidental take, we have concluded that activities associated with the Bradford Oak Burn project will not result in adverse effects to the Indiana bat beyond those that were previously disclosed and discussed in the Service’s programmatic BO.

The following biological opinion is based on potential adverse effects to the Indiana bat from prescribed burning, and the removal of suitable habitat during timber harvesting associated with the Bradford Oak Burn project. This Tier 2 BO identifies the incidental take anticipated due to implementation of the Bradford Oak Burn project (Alternative 2), and the cumulative total of incidental take which has occurred (Table 1).

Description of the Proposed Action

The proposed action (Alternative 2) involves prescribed burning as part of a controlled study to determine its effectiveness in promoting oak regeneration. In each of the five study sites, half of the acreage will be subjected to a spring burn (between April 15 and May 30), while half will remain unburned as a control. The five study sites are located in four areas, as follows: 20 acres in Area 1, 27 acres in Area 2, 11 acres in Area 3, and 12 and 18 acres in Area 4. In total, 44 acres will be burned, and 44 acres will serve as the control. Up to three burns may be necessary to achieve the desired results. Once oak seedlings are established, up to 88 acres of shelterwood removal cutting will occur.

The primary purpose of this project is to 1) determine whether a shelterwood-burn technique will improve the proportion of oak in advance regeneration of oak stands; and 2) determine whether this burn technique will reduce hazardous fuel loading.

Four alternatives were assessed in the BE for the 2003-2010 planning seasons. The Forest Service has selected Alternative 2 as the preliminary preferred alternative; therefore, this

biological opinion focuses on the effects expected due to implementation of this alternative. Activities associated with Alternative 2 that may result in incidental take of the Indiana bat include: 44 acres of prescribed burning, and 88 acres of timber harvest. In total, 132 acres are proposed to be treated between 2003 and 2010.

All the above activities will affect a total of 132 forested acres, and are therefore counted toward the cumulative annual incidental take as outlined in Table 6 (p. 67) of the programmatic BO. The types of timber harvest activities proposed were described on pages 7-8 of the programmatic BO, and the effects of timber harvesting on the Indiana bat were discussed on pages 46 and 65 of the programmatic BO. Prescribed burning activities were described on page 11 of the programmatic BO, and were analyzed on page 53 of the programmatic BO.

The Forest Service has proposed to implement the following project conservation measures (summarized from the BE, pp. 18, 23), based on the presence of suitable Indiana bat habitat in the project area, and the assumption that the habitat is occupied by this species.

- Retain all shagbark and shellbark hickories (live, dead and dying), regardless of size, in partial and final harvest cutting units (green and salvage units).
- Retain 4-6 live den trees per acre. Where an inadequate number of live trees occur, retain older, larger trees, especially those with old wounds and broken limbs.
- Mark for retention a clump approximately 0.25 acre in size for every 5 acres harvested. Where possible, clumps of trees in a variety of sizes should contain any or all of the following: den trees, snags, oak/hickory, conifers, minority, and/or mast trees. The Forest Service will protect these clumps and note the clumps on the sale area map.
- For both partial and final harvests in green units, retain all snags. Retain at least 8-15 live trees \geq 9 inches d.b.h. per acre in final harvest units, and at least 16 live trees \geq 9 inches d.b.h. per acre in partial harvest units.
- Live residual trees to be retained will be Class 1 or Class 2 trees (Romme *et al.* 1995), or other trees exhibiting or likely to develop characteristics preferred by Indiana bats (e.g., exfoliating bark).
- For partial/intermediate harvests in healthy stands, reduce canopy closure to $>54\%$.
- Designate and retain living residual trees in the vicinity of one third of all large diameter snags with exfoliating bark to provide them with partial shade in summer.
- Conduct prescribed burning between April 15 and May 30 (when only volant bats are present).
- To minimize the loss of existing roost trees, remove slash from an area around all existing snags with sloughing bark, as well as from any live trees that exhibit sloughing

bark on 20% or more of the trunk. Create a scratch line around these trees to further protect them.

Other proposed activities associated with Alternative 2 are not expected to remove suitable Indiana bat habitat, or result in direct or indirect effects on, or take of, the Indiana bat. These activities include 88 acres of site preparation, and 20 acres of fence construction.

Status of the Species

Species description, life history, population dynamics, status and distribution of the Indiana bat are fully described on pages 21 to 36 of the programmatic BO, and are hereby incorporated by reference. New information on the status of the Indiana bat obtained since the Forest Plan and programmatic BO follow.

A biennial survey was conducted on Indiana bat Priority I hibernacula since the issuance of the Service's programmatic BO. Approximately 102,870 Indiana bats were counted during surveys conducted in 2000 and 2001. This compares to the 115,885 Indiana bats that were estimated in 1999 at the same locations (Richard Clawson, Missouri Department of Conservation, *in litt.* 2001 -- as presented at the Indiana Bat Symposium held in Lexington, Kentucky, March 29-31, 2001).

In Pennsylvania, an Indiana bat hibernaculum was located in January of 2000 in an abandoned limestone mine in Armstrong County, approximately 50 miles southwest of the ANF. During a survey of the mine, 67 Indiana bats were located; however, additional surveys of this extensive mine system are needed to determine the extent of this wintering Indiana bat population. Another Indiana bat hibernaculum was recently located in Lawrence County (southwest of the ANF). A survey of this abandoned limestone mine in 2001 revealed the presence of 21 Indiana bats. In February of 2001, the Pennsylvania Game Commission documented the presence of 604 Indiana bats at the Canoe Creek mine in Blair County, approximately 75 miles southeast of the ANF.

Terms and conditions from the programmatic BO (p. 73-75, item 5), describe monitoring procedures for the Forest Service to use to determine use of the ANF by Indiana bats. Between 1998 and 2002, 186 sites were surveyed (i.e., mist-netted) for bats on the ANF. In addition, 123 of these sites were also sampled using Anabat detectors. The mist net survey protocol from the draft Indiana Bat Recovery Plan has been used, and in some cases, sampling efforts exceeded those outlined in the protocol. One male Indiana bat was captured on the ANF in 1998, and another male Indiana bat was captured on private land adjacent to the ANF in 2001.

Between 1998 and 2001, potential Indiana bat vocalizations were detected at 16 of 123 Anabat sampling sites. Positive detection of bats with this equipment could form the basis of a presumption of Indiana bat presence. Recent studies indicate that the echo-location calls of Indiana bats can be distinguished from other *Myotis* bats. While the system definitely shows promise, it still requires substantial development before it can reliably determine whether Indiana bat vocalizations were detected. At this time, the Service does not believe that this technique alone (i.e., without positive mist-net survey results) is sufficient to determine whether Indiana bats are present in a project's action area.

Other mist-netting efforts in and near the ANF included a survey conducted in 2001 in association with a proposed natural gas pipeline project. During that survey effort, mist-netting was conducted at 100 sites along the proposed pipeline right-of-way, which extends from the Pennsylvania-Ohio State line in Lawrence County (near the North Fork Little Beaver Creek) east to Clinton County, Pennsylvania (near the town of Tamarack). The pipeline goes through portions of Lawrence, Butler, Armstrong, Clarion, Jefferson, Elk, Forest, McKean, Cameron, Potter, and Clinton Counties, Pennsylvania. Portions of McKean, Forest, and Elk Counties occur within the ANF proclamation boundary. Out of the 100 sites surveyed, 12 survey sites were located within the ANF. No Indiana bats were captured at any of the survey sites.

Environmental Baseline

The environmental baseline for the ANF was established and described on pages 7-12 and 42-44 in the programmatic BO. Since issuance of the BO, the environmental baseline on the ANF has changed as follows.

Factors Affecting the Species' Environment (on the ANF)

The percentage of trees in the 90 years and older age classes has increased, and includes a 6.8% increase in trees in the 90-109 year-old age class, and an increase of 9.6% in trees 110 years and older. Conversely, trees in the 60-89 year age class have decreased by 4.3%. Additionally, there has been a decrease of 9.9% in trees in the 20-59 year age class and a 2.1% decrease in understocked savannahs and openings. Stands in the 0-19 year age class have increased slightly (0.2%). Other changes relate to a decrease in timber harvest between 1998 and 2001. The average timber harvest on the ANF has decreased from an average annual harvest of 7556 acres between 1986 and 1997, to 2557 acres between 1998 and 2001. This represents a 66% reduction in timber harvest since 1997.

Although the amount of timber harvest has been reduced in the last five years, the mix of timber harvest practices has remained relatively unchanged. Of the 2557 acres harvested annually on the ANF between 1998 and 2001, an annual average of 789 acres (31%) involves thinning and salvage treatments, 175 acres (7%) includes uneven-aged management (i.e., group and individual tree selection), and 902 acres (62%) were associated with even-aged regeneration harvest techniques (e.g., shelterwood seedtree harvest, removal cutting and clear-cutting). Although the amount of timber harvest has been reduced since 1997, reforestation treatments have not changed appreciably. Since 1998, the average annual amount of reforestation (herbicide application, site preparation, TSI, fencing, planting, fertilization, release) that has occurred on ANF has been 4818 acres. The average annual amount was 4469 acres between 1986 and 1997.

Activities that benefit wildlife such as prescribed fire, tree and shrub planting, opening construction, and shrub and tree release have decreased from an average annual amount of approximately 2200 acres between 1986 and 1997, to an average annual amount of approximately 1600 acres since 1998. This represents a 30% reduction in the total amount of wildlife and fish habitat improvement work that has been completed annually across the ANF since the programmatic BO was issued.

There has also been a reduction in the amount of road work completed on the ANF. New road construction has dropped from an annual average of 13.7 miles between 1986 and 1997, to an annual average of 0.1 mile of new road construction since 1998. Road reconstruction has had a similar reduction, and road betterment has dropped from an average annual of 10.1 miles from 1986 to 1997, to an annual amount of 0.1 mile between 1998 and 2000. Since 1998, the average annual amount of road restoration has been 36.9 miles, which represents a 22% reduction in annual road restoration over what was completed between 1986 and 1997 (46.8 miles per year).

Status of the Species Within the Action Area

Although no mist-net surveys have been conducted in the study area, the Forest Service has assumed that Indiana bats could be present due to the presence of suitable roosting and foraging habitat for this species.

A 2-mile radius area around each treatment site was evaluated to determine the amount and distribution of Indiana bat habitat. This is the area that would be expected to receive use, if an Indiana bat roost site occurred in a treatment stand. Based on this analysis, suitable habitat occurs on 92% of Areas 2 and 4; 83% of Area 3; and 70% of Area 1 (BE, p. 16).

Effects of the Action

Service analysis of the preliminary preferred alternative (Alternative 2) for the Bradford Oak Burn Project includes consideration of the assumed presence of Indiana bats and their habitat in the project area.

The Service anticipates that the proposed actions associated with the Bradford Oak Burn Project could result in the incidental take of Indiana bats through harm or harassment, especially if those activities occur when bats may be present (i.e., between April 1 and September 30).

Within the treatment stands (totaling 88 acres), currently suitable roosting and foraging habitat for Indiana bats will become unsuitable following the shelterwood removal. However, within the 2-mile radius analysis areas, there will be no significant change in the amount of suitable habitat due to prescribed burning or timber harvesting (BE, Table 13).

The types of timber harvest and prescribed burning activities proposed were described on pages 7-8, and 11 of the programmatic BO. The potential direct and indirect effects to the Indiana bat from harvest or removal of trees, and prescribed burning, are consistent with those identified and evaluated in the programmatic BO (pp. 46-48, 51, 53, 65-66), and are hereby incorporated by reference. Minimization of adverse effects will be addressed by implementation of the project-specific conservation measures, as described in the "Proposed Action" section of this opinion.

As described in the Service's programmatic BO, we believe that adverse effects to the Indiana bat are likely to occur from timber harvesting and prescribed burning under the Forest Service's management program activities. Therefore, given the nature of activities associated with the proposed project, we believe that incidental take of Indiana bats is possible within the study sites. However, we have concluded that activities associated with the Bradford Oak Burn Project will

not result in adverse effects to the Indiana bat beyond those that were previously disclosed and discussed in the Service's programmatic BO.

Cumulative Effects

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. No cumulative effects are anticipated to occur within the five study sites.

Conclusion

The actions and effects associated with the proposed Bradford Oak Burn 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 overall status of the Indiana bat, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the proposed action is not likely to jeopardize the continued existence of the Indiana bat.

This project has not resulted in a jeopardy determination because: 1) the project's impacts are consistent with those identified and discussed in the programmatic BO; and 2) the Forest Service has proposed to implement project conservation measures to minimize take, including Forest Plan standards and guidelines, and the terms and conditions from the programmatic BO.

Incidental Take Statement

This biological opinion is based on likely adverse effects to the Indiana bat from prescribed burning and the removal of suitable foraging and roosting habitat during timber harvesting within the Bradford Oak Burn Project area. This Tier 2 BO identifies the incidental take anticipated due to implementation of the Bradford Oak Burn Project (Alternative 2), and the cumulative total of incidental take which has occurred (Table 1).

Consistent with the approach taken in the programmatic BO, incidental take for this species is measured indirectly as loss or alteration of forested habitat (in acres), as outlined in Table 1. Thus, implementation of Alternative 2 will result in the take of Indiana bats, as measured by the loss/alteration of 132 acres of forested habitat between 2003 and 2010. This take is counted toward the cumulative annual incidental take as outlined in the programmatic BO (Table 6, p. 67).

The actual incidental take reported by the Forest Service (fiscal years 1998 through 2003), has consistently been far below the annual levels estimated (authorized) in the programmatic BO (see Table 1). Therefore, we do not anticipate that implementation of this project will cause the take levels in the programmatic BO to be exceeded.

Table 1. Actual vs. authorized incidental take (as measured indirectly by acreage) due to the removal or disturbance of potential Indiana bat habitat on the Allegheny National Forest, Pennsylvania

Activity	Acres Actually vs. (Authorized to be) Removed/Disturbed						
	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	Total ¹
Trail Construction							
• Pedestrian	.3 (0)	7.8 (8)	.3 (2)	.2 (2)	0 (2)	0 (2)	8.6 (16)
• Motorized - winter	.3 (4)	3.6 (0)	0 (4)	.6 (4)	0 (4)	0 (4)	4.5 (20)
• Motorized - summer	6 (0)	1.2 (0)	3.2 (4)	2.14 (4)	0 (4)	0.42 (4)	12.96 (16)
Timber management							
• Clearcut	191 (220)	222 (220)	0 (420)	59 (220)	6 (220)	0 (220)	478 (1520)
• Shelterwood seed/prep	1558 (1640)	521 (1640)	299 (4000)	395 (2000)	575 (2000)	518 (2000)	3866 (13,280)
• Shelterwood removal	1203 (1864)	573 (1864)	488 (1864)	843 (1864)	381 (1864)	617 (1864)	4105 (11,184)
• Thinning	1526 (3225)	732 (3225)	240 (7000)	659 (3225)	988 (3225)	692 (3225)	4837 (23,125)
• Selection cut	458 (334)	184 (334)	17 (700)	40 (800)	63 (800)	0 (800)	762 (3768)
Wildlife Habitat Management	10 (10)	7 (10)	4 (10)	0 (10)	0 (10)	5 (10)	26 (60)
Prescribed burning	0 (40)	10 (40)	3 (40)	0 (40)	0 (40)	0 (40)	13 (240)
Roads							
• Construction	0 (1)	0 (0)	0 (73)	1.44 (55)	1.8 (55)	0 (55)	3.24 (239)
• Reconstruction/betterment	0 (0)	0 (0)	0 (55)	4.44 (55)	2.28 (55)	0 (55)	6.72 (220)
• Restoration	2 (2)	3 (3)	4.14 (3)	1.99 (3)	1.01 (3)	2.83 (3)	14.97 (17)
Oil and Gas Development	149 (149)	206 (112)	258.75 (112)	236.25 (112)	194.25 (112)	151.5 (112)	1195.75 (709)
TOTALS	5103.6 (7489)	2470.6 (7456)	1317.39 (14,287)	2243.06 (8394)	2212.34 (8394)	1986.75 (8394)	15,333.74 (54,414)

¹ Total actual take (FY 1998-2003) vs. authorized take (total estimated in programmatic BO)

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the Indiana bat.

- Ensure that suitable Indiana bat foraging and roosting habitat is retained within the project analysis areas.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Forest Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described above, and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

- Implement project conservation measures (as detailed on pages 18 and 23 of the BA; and pages 4-5 of this BO).
- Continue to report incidental take to the Fish and Wildlife Service quarterly.

Reinitiation Notice

We would like to remind you that, in accordance with our June 1, 1999, biological opinion, and the June 1, 2000, amendment to that opinion, incidental take that occurs as a result of this and other projects on the ANF cannot exceed the annual or cumulative incidental take levels established in the programmatic biological opinion. If implementation of any project or projects is anticipated to exceed these take levels, further consultation will be necessary. To ensure that incidental take is not exceeded, quarterly reports should continue to be provided to this office tabulating the amount of incidental take (as it occurs) on projects being implemented throughout the Forest, as indirectly measured by acres affected. In addition, you should be aware that this project may be subject to further consultation pending the outcome of future consultations on the Forest Plan or Forest Plan amendments.

Should new information reveal that the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; or the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or a new species is listed or critical habitat is designated that may be affected by the action; or the amount or extent of take as identified in Table 1 is exceeded, reinitiation of formal consultation as outlined in 50 CFR 402.16 is required.

If you have any questions regarding our response, or if you need additional information, please contact Carole Copeyon of my staff at 814-234-4090.

Sincerely,

David Densmore
Supervisor

LITERATURE CITED

Romme, R.C., K. Tyrell and V. Brack, Jr. 1995. Literature summary and habitat suitability index model: components of summer habitat for the Indiana bat, *Myotis sodalis*. Report submitted to the Indiana Department of Natural Resources, Division of Wildlife, Bloomington, Indiana by 3D/Environmental, Cincinnati, Ohio. Federal Aid Project E-1-7, Study No. 8, 38 pp.

cc:
Project file (CKC)
Readers file
ES file: ANF - Mini-BO
ES:PAFO:CCopeyon/ckc:12/10/2003
filename: Bradford Oak Burn MBO_121103