United States Department of the Interior

FISH AND WILDLIFE SERVICE

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Elkins, West Virginia 26241

February 2, 2007

Mr. Clyde N. Thompson
Forest Supervisor
U.S. Forest Service
Monongahela National Forest
200 Sycamore Street
Elkins, West Virginia 26241

Re: Biological Opinion on the Proposed Allegheny Wood Products Access Easement in Blackwater Canyon

Dear Mr. Thompson:

This letter is in response to your request, dated January 26, 2006 (received on January 30, 2006), for a site-specific review of the proposed U.S. Forest Service easement to Allegheny Wood products (AWP) for access to Blackwater Canyon in Tucker County, West Virginia. The following comments are provided pursuant to the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

This document is based on information provided in the Forest Service's January 2006 Biological Assessment; the Forest Service's December 2005 draft Environmental Impact Statement; the U.S. Fish and Wildlife Service's (FWS) July 7, 2006 programmatic biological opinion on the Forest Plan Revision; correspondence and discussions between the FWS, Forest Service, and AWP; and other sources of information.

Consultation History

On March 26, 2002, the FWS issued a programmatic biological opinion for the continued implementation of the 1986 (as amended) Monongahela National Forest Land and Resource Management Plan (Forest Plan). The Forest Service completed a threatened and endangered species amendment to the Forest Plan in March of 2004. This amendment incorporated into the Forest Plan the reasonable and prudent measures identified in the 2002 programmatic biological opinion. The Forest Plan subsequently was revised and the revised plan is expected to become effective in late 2006. On July 7, 2006, the FWS completed a programmatic biological opinion on the 2006 Forest Plan Revision. It is our understanding that the proposed access easement to AWP will likely be implemented after the 2006 Forest Plan revision takes effect. In order to

incorporate the most current information, as well as address the timing of the proposed action, this document references the July 2006 biological opinion, rather than the previous March 2002 opinion.

The 2002 and 2006 programmatic opinions established a two-tiered consultation process for Forest Plan activities, whereby the FWS reviews, as they are developed, site-specific projects that may affect federally listed species. Under current processes, the FWS determines 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 FWS's 2006 programmatic opinion. We consider this site-specific project analysis for the AWP access easement to be "Tier 2" of the consultation process, with the 2006 programmatic consultation (and resulting biological opinion) constituting the "Tier 1" consultation. Our project-specific (Tier 2) consultation focuses on: 1) compliance with the reasonable and prudent measures and associated terms and conditions in the FWS 2006 programmatic opinion; 2) consistency with the scope and effects previously analyzed and disclosed in the FWS 2006 programmatic opinion and associated Forest Service Biological Assessment; 3) project-specific incidental take vs. take estimated in the 2006 programmatic opinion; and 4) project-specific reasonable and prudent measures and associated terms and conditions 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 2006 programmatic opinion, no further evaluation by the FWS is necessary and ESA section 7(a)(2) consultation will be considered complete for that project via a concurrence letter documenting the conclusion of informal consultation.

Table 1 provides a summary of events and actions during the long consultation history of the Forest Service's proposed site-specific action of approving a request from AWP for motorized access to Blackwater Canyon.

Table1. Summary of section 7 consultation history for the proposed access easement in Blackwater Canyon.

Date	Event/Action
7/17/2001	AWP submits to the Monongahela National Forest an application for motorized access across national forest lands within the railroad grade in Blackwater Canyon.
11/2002	Forest Service initiates a public scoping period with the intention of preparing an Environmental Assessment. Approximately 4,500 responses are received during this initial scoping period.
4/2005	Forest Service publishes a Notice of Intent in the Federal Register to prepare an Environmental Impact Statement. During the 45-day scoping period, roughly 800 responses are received. FWS and Forest Service meet to

	discuss the scope of the Forest Service action and effects to ESA listed species.
1/26/2006	Letter from Forest Service to FWS, transmitting a Biological Assessment and requesting formal consultation pursuant to the ESA.
2/1/2006	Letter from the Department of Interior to the Forest Service, transmitting comments on the draft Environmental Impact Statement.
2/10/2006	Letter from Dr. Ed Michael (consultant to AWP), to FWS, submitting information on ESA listed species occurrences on the north side of Blackwater Canyon.
3/27/2006	Meeting between FWS and Forest Service to discuss status of the project, schedule, and scope of consultation.
4/20/2006	Letter from FWS to Forest Service acknowledging receipt of the Biological Assessment, and responding to request for concurrence with Forest Service determinations of effects and request for formal consultation. Response establishes a June 15, 2006 time frame for providing a biological opinion.
4/26/2006	FWS meeting with AWP and their consultants on their Blackwater Canyon Habitat Conservation Plan, including discussion of FWS April 20, 2006 letter to the Forest Service. FWS requests that AWP provide a written description of long-term timber harvest activities on the north side of the canyon.
5/15/ 2006	Meeting between FWS and Forest Service seeking clarification on provisions of FWS April 20, 2006 letter; primarily habitat mapping and buffers for the Cheat mountain salamander.
5/22/2006; 6/2/06; 6/22/06; 6/29/06; 8/1/06; 8/9/06; 8/21/06; 8/25/05; 9/27/06.	Series of e-mail exchanges and phone conversations between FWS and AWP, seeking clarification on proposed timber management activities on the north side of the canyon, and development of conservation measures to avoid and minimize impacts to listed species.
6/14/2006	FWS letter to Forest Service requesting an extension of consultation.
7/19/2006	Forest Service letter to FWS granting an

	extension of consultation.
8/16/2006	FWS submits draft biological opinion to Forest Service for review.
8/23/2006	Forest Service e-mail and phone call to FWS to discuss comments on the draft biological opinion.
9/2006	FWS phone call to Forest Service requesting a letter clarifying the Forest Service determination that its Federal action facilitates (but is not essential to) AWP's planned timber management activities.
10/10/2006	AWP letter to FWS requesting take coverage for the entire 13 acres of the easement, including the 6.5-acre portion of the easement that is privately owned by AWP.
10/19/2006	Forest Service letter to FWS justifying the determination by the Forest Service that the proposed easement facilitates (but is not essential to) AWP's timber management activities.
11/7/2006	AWP e-mail to FWS confirming conservation measures.
12/15/2006	FWS submits revised draft biological opinion to Forest Service for review.
1/26/2007	Forest Service submits comments to FWS on 12/15/06 version of draft biological opinion.

Description of the Proposed Action

In response to a July 2001 special use permit application from AWP, the Forest Service proposes to convey a reciprocal easement for access across national forest system lands to AWP's private inholdings. The easement would be in perpetuity. The footprint of the proposed easement is roughly 13 acres: approximately 29,000-feet long by 20-feet wide. The prospective easement is along a 5.5-mile portion of the 9-mile long Blackwater Canyon Rail-Trail (hereafter referred to as the railroad grade), located on the northern side of the Blackwater River in Tucker County, West Virginia (see figures 1 and 2 in the Forest Service's January 2006 Biological Assessment). The abandoned railroad grade follows the river, linking the towns of Hendricks and Thomas between State Routes 72 and 27. This 5.5-mile section of the grade currently is closed to vehicular traffic and is used as a recreational trail for hiking, biking, and cross-country skiing.

The Forest Service owns approximately 6.5 acres of land within the railroad grade (the uphill side) and AWP owns the remaining portion (the downhill side). AWP also owns and manages land on both sides of the river in Blackwater Canyon. Whereas AWP has access to its lands on the south side of the canyon (approximately 2,607 acres), it currently lacks logging truck access to its property on the north side of the canyon because it owns only half of the width of the

railroad grade. Full access to the entire width of the grade would allow passage of logging trucks. AWP lands on the north side of the canyon extend from roughly the centerline of the proposed easement downslope to the river (approximately 325 acres total), and are known as the Railroad Unit.

In its application for a special use permit, AWP stated the purpose of its access request was to: (1) reconstruct the grade for motorized use, including repair and maintenance of drainage structures; (2) allow access for long-term timber management on AWP lands on the north side of the river, including light commercial thinning; and (3) allow access to protect forest health (including prevention of fire, disease, and insect infestations). The proposed action by the Forest Service would restrict uses of the easement by AWP to these purposes.

As an alternative to a special use permit, the Forest Service proposes to establish a reciprocal easement whereby the Forest Service would obtain an easement across the AWP-owned portion of the railroad grade, and AWP would obtain an easement across Forest Service-owned portions of the grade. This reciprocal easement would allow each party to have motorized access across the full width of the grade. The easement would allow Forest Service motorized access to manage recreation and heritage resources along the grade. The easement also would allow AWP motorized access for timber management activities within AWP's Railroad Unit. AWP motorized access would include use of all-terrain vehicles, pick-up trucks, and logging equipment such as tandems, tri-axles, and tractor/trailors.

In addition, the easement would allow AWP to reconstruct the grade as needed for safe passage of pick-up truck traffic on a yearly basis and for log truck traffic on an estimated 10-20 year interval. Activities may include removal of encroaching vegetation, placement of surface materials, replacement of culverts, increasing the number and size of culverts, stabilizing existing slumps, and installing and maintaining silt fencing if cut banks are disturbed during culvert replacement. AWP would be required to seed or mulch disturbed soil on Forest Service lands, and on private lands, to follow West Virginia Silvicultural Best Management Practices for Controlling Soil, Erosion, and Sedimentation from Logging Operations.

The Forest Service and AWP would share maintenance of the grade. AWP would maintain the grade for timber management on AWP's Railroad Unit, including cleaning culverts and ditches, grading the road surface, and repairing future slumps or slides. The Forest Service would maintain the road to manage recreation and heritage resources along the grade.

Conservation Measures

As part of its project description, AWP has agreed to implement the following conservation measures for the Indiana bat within the action area (Kelly Riddle, AWP, pers. comm. 11/7/06):

1. AWP will conduct additional mist net and Anabat surveys in the action area using standard FWS protocol, before conducting any future tree cutting in the action area after May 15, 2008.[1]

2. AWP will conduct exit counts of adult and young Indiana bats in the event that an occupied Indiana bat roost tree is located in the action area, and the tree is to be cut during April 1 – November 14 (the non-hibernating season). To avoid and minimize the chance of killing or injuring an Indiana bat that is occupying the roost tree, cutting of the tree would occur at a time when observations indicate that bats are not using it.[2]

For Forest Service activities related to managing recreational and cultural resources on Forest Service lands within the action area, the Forest Service will implement provisions of the 2006 Forest Plan Revision. This plan requires managing naturally occurring tree species composition to provide a continuous supply of suitable roost trees and foraging habitat for Indiana bat and achieving vegetative diversity that maintains or improves Indiana bat habitat (TE 29). It also requires retention of all known roost trees (TE 25).

Action Area

The action area is defined as all areas to be affected directly or indirectly by the proposed Federal action of granting access across Federal lands. The effects of the action are the direct and indirect effects to species caused by the granting of access across Federal land. Indirect effects are those effects to the species that are caused by the proposed Federal action, are later in time, and are reasonably certain to occur.

For this biological opinion, listed species would be affected directly or indirectly by the Federal action within the footprint of the proposed access easement (13 acres). In a letter dated October 19, 2006, the Forest Service determined that approval of the access easement would facilitate AWP's timber management activities but is not essential for such activities to occur on AWP property that would result in effects to listed species on private land. The Forest Service reached this conclusion after considering AWP's stated purposes in requesting access: to allow for an economically feasible avenue to conduct timber stand improvement and commercial thinning; to respond quickly to insect and disease infestation and wildfire; and to improve drainage structures that are damaging AWP's property. The Forest Service determined that the easement is not essential to these stated purposes because:

1. AWP has existing access to their property on the north side of Blackwater Canyon (i.e., AWP owns half of the existing railroad grade).
2. AWP has demonstrated in the past that it is technologically and economically feasible to harvest timber on the north side of the canyon by helicopter logging.
3. It is feasible for AWP to suppress fire on its lands by utilizing hand crews with foot access (a standard fire suppression technique).
4. It is feasible for AWP to conduct timber stand improvements such as thinning by utilizing hand crews with chain saws walking to stands along the grade.
5. As an alternative to a long-term easement for vehicular access, AWP could request a short-term permit and/or enter into a short term cost-share agreement with the Forest Service to replace culverts causing damage on AWP's property.

In consideration of these facts, the Forest Service concluded that approval of the access easement would facilitate AWP's timber management activities by allowing for easier and more cost effective management of AWP property, but is not essential for such activities to occur.

FWS policy dated July 1, 2005 (FWS 2005) indicates that if the Forest Service makes a determination that access only facilitates and is not essential to causing an effect to listed species on private land, then the effects of activities on private land are not subject to consultation. A literal interpretation of this policy would restrict the action area to only the Federal land component of the access easement (6.5 acres). However, a joint interagency agreement in 2003 (U.S. Forest Service et al. 2003) indicates that an applicant has a right to receive an incidental take statement if take is anticipated from the access itself. This agreement further states that the modification or regulation of activities on private lands is not authorized unless the applicant requests the consultation to include activities on private land. In this case, AWP has requested take coverage for its use of the entire 13-acre easement (6.5 acres of private land and 6.5 acres of Federal land) (AWP 2006a).

Therefore, consistent with this policy (FWS 2005) and interagency agreement (U.S. Forest Service et al. 2003), the indirect effects of proposed timber harvest by AWP on its remaining lands in the Railroad Unit (approximately 318.5 acres) will not be included as part of the action area and are not subject to this consultation.[3]

AWP lands on the south side of Blackwater Canyon also are not included as part of this consultation. The proposed easement does not provide AWP access to its lands on the south side of the canyon. AWP already has access to these lands. Thus the Forest Service action of a proposed easement on the north side of the canyon does not facilitate, nor is it essential to, AWP's future actions on the south side of the canyon.

Outside of the access easement, AWP has not requested take coverage through this biological opinion for its other lands in Blackwater Canyon. The FWS has advised AWP of the need for acquiring an ESA section 10(a)(1)(B) permit before proceeding with actions outside of the access easement that would result in a taking of listed species. AWP is currently working with the Service on an HCP for all of its lands in Blackwater Canyon.

Therefore, for the purposes of this biological opinion, the FWS has determined that the action area lies entirely within Tucker County, West Virginia, and contains 13 acres contained within the footprint of the area of the access easement.

Species Not Likely To Be Adversely Affected

We have reviewed the information contained in the January 25, 2006 Biological Assessment for the Proposed AWP Access Easement in Blackwater Canyon and the associated December 2005 draft Environmental Impact Statement, which describe the potential effects of the proposed projects on federally listed species. After consulting with Forest Service staff, we concur with your determinations of no effect, or not likely to adversely affect, the bald eagle (*Haliaeetus leucocephalus*), Virginia big-eared bat (*Corynorhinus townsendii virginianus*), Shale Barren

Rock Cress (*Arabis serotina*), Running Buffalo Clover (*Trifolium stoloniferum*), small-whorled pogonia (*Isotria medeoloide*), and Virginia spiraea (*Spiraea virginiana*). Our rationale is documented in a letter dated April 20, 2006, hereby incorporated by reference.

In that letter, we also concurred with your determination of no effect to the Cheat Mountain salamander (*Plethodon nettingi*) and West Virginia northern flying squirrel (*Glaucomys sabrinus fuscus*), provided that certain conditions were met. At the time that we wrote the April 20, 2006 letter, we envisioned an action area larger than the 13-acre easement. Subsequently, we have modified the scope of the action area to the 13-acre easement, consistent with FWS policy (FWS 2005), and based upon a determination by the Forest Service that the effects of the action are limited to the 13-acre easement. Since the effects to the Cheat Mountain Salamander and West Virginia northern flying squirrel that we were initially concerned about occur outside of the 13-acre easement, they now are not considered to be effects of the agency action. Therefore, we now concur that there will no effect to these species by the agency action. AWP has indicated that the conditions we identified for protecting the Cheat Mountain salamander and West Virginia northern flying squirrel (on AWP lands outside of the access easement) will be incorporated into their HCP for Blackwater Canyon (S. Quarles e-mail on behalf of K. Riddle, dated 8/21/ 2006).

Species Likely To Be Adversely Affected

As described in the FWS's April 20, 2006 letter and in our 2006 programmatic biological opinion on the Forest Plan Revision, adverse effects are likely to occur to the Indiana bat (*Myotis sodalis*) from direct and indirect effects of harvesting or tree removal associated with the proposed action. Therefore, given the nature of activities associated with the proposed action, we concur with your determination that incidental take of Indiana bats is reasonably foreseeable within the action area. However, based on the implementation of reasonable and prudent measures and associated terms and conditions from the 2006 programmatic biological opinion, and the proposed site-specific avoidance and conservation measures that will minimize the impact of any incidental take, we have concluded that activities associated with the proposed action will not result in adverse effects to the Indiana bat beyond those that were previously disclosed and discussed in the FWS's 2006 programmatic biological opinion. This Tier 2 biological opinion identifies the incidental take anticipated due to implementation of proposed activities within the easement area, and the cumulative total of incidental take which has been exempted to the Forest Service due road construction/maintenance activities during this calendar year.

Status of the Indiana Bat

The Indiana bat is a migratory species ranging throughout much of the eastern half of the United States. In 1967 the Indiana bat was listed as endangered by the FWS pursuant to the ESA (32 Federal Register 4001). Listing was warranted based primarily on large-scale habitat loss and degradation, especially at winter hibernation sites, and significant population declines that continue today. From the time that the species was listed, the range-wide population of the Indiana bat has declined approximately 48 percent, from roughly 883,000 Indiana bats during 1960/1970 to 457,000 bats during 2004/2005 (Clawson 2002; Andrew King, personal

communication, 2006). The statistical significance of this long-term trend is unknown because of error associated with counting techniques. In addition, this decline is not evenly distributed across the range of the Indiana bat. Biennial winter counts suggest that populations have been increasing in West Virginia since the early 1980's [West Virginia Division of Natural Resources (WVDNR) 2004]. The estimated hibernating population in West Virginia has almost doubled from 6,500 in 1990 to 12,677 Indiana bats in 2004 (WVDNR 2004). Increases in numbers of bats at Hellhole have accounted for most of this growth.

Due to the colonial nature of Indiana bats, conducting censuses of hibernating bats is the most reliable method of tracking population/distribution trends range-wide, and provides a good representation of the overall population status and distribution. However, the relationship between wintering populations and summering populations is not clearly understood. Because individuals of a particular maternity colony can originate from one to many different hibernacula, the summer location of most, if any, individuals of any particular hibernacula is often not known. Indiana bats have been documented to travel up to 300 miles from their hibernaculum to their maternity areas (Gardner and Cook 2002). Therefore, bats wintering or summering in West Virginia may come from a number of surrounding states, and the status of Indiana bats within each state's hibernacula may not reflect the status of that state's maternity population. Additional information on the status of the species is provided in the 2006 programmatic biological opinion, and is incorporated herein by reference.

Reasons for Decline and Continued Threats

Because disturbance to hibernacula is a major threat to the Indiana bat, protection of hibernacula is a management priority. While many hibernacula have been protected, disturbance to hibernacula continues. For example, the largest hibernacula in Indiana (50,941 Indiana bats in 2003) is not gated, and based on data from electronic monitors in the cave, unauthorized visits to this cave occur during critical life stage periods. Also, at the only large hibernacula in Ohio (9,436 Indiana bats in 2004), there are still tours, as well as other commercial activities, taking place in the cave during the hibernation period.

Land use practices have also been identified as a suspected cause in the decline of the Indiana bat, particularly because habitat in the bats' maternity range has changed dramatically from pre-settlement conditions. Indiana bats exhibit site fidelity to their traditional summer maternity and foraging areas, and are known to return to the same general area to establish maternity colonies from year-to-year (Humphrey et al. 1977; Gardner et al. 1991a, b; Callahan et al. 1997; Indianapolis Airport Authority 2003, 2004; Kurta and Murray 2002; Butchkoski and Hassinger 2002; Gardner et al. 1991a, Gardner et al. 1996). Roosting/foraging area fidelity may serve to increase the probability of successful reproduction, and to maintain social interactions between members of the population. Bats using familiar foraging and roosting areas may have decreased susceptibility to predators, increased foraging efficiency, and an improved ability to switch roosts if impacts occur to the original roost (Gumbert et al. 2002). In turn, site fidelity may also inhibit the ability of Indiana bats to pioneer new areas (Sparks *in* FWS 2004c). Due to the

ephemeral nature of roosting sites, bats are probably not dependant on the continued suitability of an individual tree. However, landscape level alterations in traditional maternity habitats may adversely affect Indiana bat survival and reproductive success.

Indiana Bat Life History

The life history of the Indiana bat is fully described in the 2006 programmatic biological opinion, and is incorporated herein by reference. Because all of the action area is potential roosting and foraging habitat for the Indiana bat, we summarize these aspects of the species' ecology below.

Foraging Ecology

The Indiana bat emerges shortly after sunset and begins feeding on a variety of insects, which are captured and consumed while flying. Its diet varies through time and across the geographic range of the species. The most common foods are moths, beetle flies, caddisflies, ants, and wasps (Brack and LaVal 1985, Kurta and Whitaker 1998, Whitaker 2004). Some Indiana bats forage up to 6 miles away from their roost, but most travel less than half that distance (Murray and Kurta 2004, Sparks 2005).

Indiana bats use many habitat types for foraging, including riparian areas, ponds, fields, woodlots, and a variety of upland forests. They appear to be opportunistic in selecting summer foraging habitats. Foraging occurs above, below, and around tree canopies in forested habitats (LaVal et al. 1977), along the forest/stream edge in riparian areas (Brack 1983), and in open areas such as cropland (Gardner et al. 1991b) and along the edge of pastures and old fields (Brack 1983). Based on a review of literature, Romme et al. (1995) concluded that Indiana bats prefer to forage within upper canopy layers where overstory canopy ranges from 50-70 percent. Gardner at al. (1991), however, determined that foraging Indiana bats in Illinois selected closed canopy floodplain forest (with 80 to 100% canopy closure) out of proportion to its availability.

Kiser and Elliot (1996) reported a minimum foraging area for 15 Indiana bats in Kentucky that ranged from 69 to 734 acres (mean: 385 $\pm$ 249 acres). The size seems to depend on sex and age of the bat, reproductive status, and location of the foraging areas (Belwood 1979). The foraging ranges of individual bats commonly overlap. There is also evidence that Indiana bats return to the same summer foraging areas each year (Sparks 2005).

Indiana bats have been known to forage in areas that have been selectively harvested (Gardner et al. 1991). These observations suggest that Indiana bats forage in areas where some timber harvesting has occurred, but they are not useful in determining preference or avoidance of harvested areas. Research is needed on the effects of various timber harvest methods (e.g. shelterwood, deferment, selection cuts, and clear cuts) on the suitability of Indiana bat foraging habitat. Research is also needed to understand the effects of forest management on the foraging habitats of Indiana bat during the spring and fall swarm and during summer months.

Roosting Ecology

Outside the hibernation period, Indiana bats use live tees and snags for roosts. Although roosts have been documented in a wide variety of hardwood and pine species, trees and snags with exfoliating bark appear to be important. Roost trees have been reported within forests above and below canopy level and among isolated trees or single trees in open areas with wide ranges in solar exposure (FWS 1999). Indiana bat maternity colonies use both primary and alternate roost trees (Britzke et al. 2003). Bats may switch between shaded and unshaded roost trees depending on weather conditions and physiological requirements associated with thermoregulation (Callahan et al. 1997).

Roost tree density to support Indiana bats is not understood and thresholds linked to roost abundance are unknown. Forest cover around Indiana bat roosts ranges from less than 33 percent in the agricultural Midwest to virtually 100 percent in the Appalachians (Gardner et al. 1991b). Based on a review of literature, Romme et al. (1995) developed a Habitat Suitability Index model that described optimal roosting habitat as having 60 to 80 percent canopy cover, an abundance of large trees and snags (> 8.7 inches dbh), and a relatively open understory.

Environmental Baseline

The environmental baseline conditions in relation to the Indiana bat and its habitat within the Monongahela National Forest (MNF) were established and described on pages 39-40 and 43-47 in the 2006 programmatic biological opinion on the Forest Plan Revision. These descriptions remain current with the following exceptions. Surveys were conducted during the summer of 2006 at the site of the suspected maternity colony in Pendleton County (as described on page 39 of the July 2006 BO). Emergence counts at the previously identified roost tree documented over 30 bats emerging from the tree, however subsequent mist netting in the area suggests that no maternity activity is occurring at the site. Rather these surveys indicate that the tree and area is used by a bachelor colony of male Indiana bats (B. Douglas, C. Stihler, D. Arling, C. Sanders; personal observations).

Additional surveys at the previously documented maternity colony on the MNF in Tucker County were also conducted in the summer of 2006. While the roost trees that were used in the previous years have become unsuitable, habitat reviews indicate that area continues to provide a large number of potentially suitable maternity roost trees. Although numerous male Indiana bats were captured, mist net surveys did not result in the capture of any female Indiana bats. These results indicate that Indiana bats continue to use the areas for roosting and foraging throughout the summer and that a maternity colony potentially may still exist in the area.

Status of the Species within the Action Area

A small portion of the extensive range of the Indiana bat occurs within the action area. The action area provides suitable foraging habitat for the Indiana bat and a few potential roost trees (greater than 5 inches dbh). Extensive suitable Indiana bat habitat surrounds the action area.[4]

Bat surveys have been conducted in and near the action area. To date, no Indiana bats have been captured within the action area, although areas within 2 to 5 miles of Blackwater Canyon are known to be occupied by Indiana bats. During August 10-14, 2005, Ecological Specialties, LLC conducted mist net and AnaBat surveys on AWP lands in Blackwater Canyon within a 1,100-acre study area (which included the 331.5-acre action area). Six sites were surveyed on the south side of the canyon and six sites on the north side (in the Railroad Unit). No Indiana bats were captured (Ecological Specialties 2005).

Because the Monongahela National Forest (MNF) has no imminent plans for timber harvest in Blackwater Canyon, the Forest Service has not conducted bat mist-net surveys there. However, the Forest Service has conducted surveys in nearby areas. During summer 2003, the MNF surveyed Clover Run, approximately 5 miles northwest of Blackwater Canyon. No Indiana bats were caught. In 2004, long-term monitoring of the lower Glady Fork watershed, 5 miles south of Blackwater Canyon, resulted in the capture of a lactating female Indiana bat, leading to the discovery of the only known maternity colony within the MNF proclamation boundary. In 2005, four males were captured at this site, but no females.

Blackwater Canyon also is not known to contain bat hibernacula. The closest known hibernacula are Big Springs Cave, Cave Hollow-Arbogast, and Coal Run Cave, all located within 2 to 5 miles of the southwestern end of the action area. Due to inaccessibility, Coal Run Cave has not been surveyed since 1992-93 when one Indiana bat was counted. A total of 243 Indiana bats were counted in Big Springs Cave and 234 Indiana bats in Cave Hollow-Arbogast during the last winter survey of these caves during December 2004. Collectively, these 477 bats represent 3.8 percent of the winter 2005 surveyed population of Indiana bats in West Virginia (WVDNR 2005), although individual bats can occur outside this area.

Even with information from site-specific surveys, the possibility that Blackwater Canyon is used by a maternity colony or by roosting males can not reasonably be ruled out, or that the action area is used by foraging Indiana bats or by roosting males, particularly since: 1) most of the canyon provides potential summer habitat; 2) a maternity colony is located within 5 miles of the canyon, and 3) a large portion of the canyon is within 5 miles of three known hibernacula. Primary foraging, summer roosting, and fall swarming activity is believed to be concentrated within 5-mile radii around hibernacula; however, Indiana bats are known to travel further than 5 miles between hibernacula and maternity colonies, and to travel further than 5 miles from maternity colonies to forage. In addition, the proposed easement would grant access to AWP in perpetuity and maintenance of the easement (including periodic tree cutting and trimming at 10-20 year intervals to maintain clearance for logging trucks) would extend long into the future. It would be impossible to predict Indiana bat presence or absence in the action area without additional bat surveys, conducted close to the time of each maintenance activity. Thus for the purposes of this biological opinion, we are taking a conservative approach and assuming Indiana bat presence within the action area because of suitable habitat and proximity to concentrations of Indiana bats.

Factors Affecting the Environment of the Species (on the MNF and in the Action Area)

The effects of past and ongoing human and natural factors have led to the current status of the species, its habitat, and ecosystem within the MNF and the action area. The habitat within the action area (i.e. the area of the easement) consists primarily of small trees, saplings, and brush. The surrounding habitat is of much greater value to the Indiana bat than the habitat in the action area. Within the MNF system lands, approximately 87 percent of the forested stands are greater than 70 years of age, and provide extensive suitable habitat for Indiana bat at the landscape level (Forest Service 2006).

Past disturbances and forest succession have resulted in the mature, second-growth forest that occupies much of Blackwater Canyon today. Soil and rock disturbance and some vegetation disturbance associated with construction of the railroad grade in the 1800s persist today. The entire canyon was clearcut logged during the 1800s and early 1900s. Historically, past timbering has included episodes of logging during 1902-07; clearcutting during 1907-1916; logging during the 1950s; and logging during 1966-79 (Sturgill 1999). More recently, during the winter of 2000 (bat hibernation period), AWP used helicopter logging to conduct a selective removal of individual trees with a minimum 20-inch dbh at low elevation in the Railroad Unit. This recent harvesting has created small shrubby openings and an uneven-aged stand structure in the Railroad Unit, which differs from the even-aged structure that is more typical of other areas in Blackwater Canyon. Stand data collected by AWP in the Railroad Unit in 2003 indicate a predominance of large residual trees: approximately 46% of the trees in the unit were 11-12 inches dbh, 45% were between 13 and 18 inches dbh, and 9% were 19 inches dbh or greater.

Effects of the Action

Effects on Habitat

The proposed action of granting a reciprocal easement would directly and indirectly affect 13 acres of suitable Indiana bat habitat within the area of the access easement. Reconstruction and maintenance of the railroad grade within the 13-acre access easement may require some tree felling. Reconstruction activities within the footprint of the easement would primarily remove shrubs, saplings, herbaceous vegetation, and overhanging tree limbs which have encroached on the railroad grade. In some areas, reconstruction may result in removal of a few mature trees growing on the cut-and-fill slopes of the existing grade. Cutting of larger trees could remove potential roost trees if snags or trees with sloughing bark are removed. For Forest Service activities in the action area related to recreational and cultural resource management, the Forest Service would implement provisions of the 2006 Forest Plan Revision, which require retention of all known Indiana bat roost trees (TE25).

Vegetation removal along the grade would enlarge the existing linear canopy opening in localized places along the grade. We do not expect that such work would remove all canopy within the entire 13-acre easement. Enlargement of small canopy openings could improve roosting habitat along the grade by exposing more potential roost trees to sunlight. The canopy

opening and associated edge habitat also may improve foraging habitat by creating canopy gaps associated with preferred foraging habitat.

The duration of these habitat effects would depend on the frequency of maintenance. Herbaceous and shrubby vegetation would be expected to regrow within 5 years of maintenance episodes. Maintenance that occurs in conjunction with log hauling would be expected every 10-20 years. This would result in a cycle of up to 5 years of reduced herbaceous and shrubby vegetation and overhanging trees, followed by 5-15 years of vegetation conditions similar to the current condition.

Indiana bats have been known to forage and travel along narrow forest roads with good canopy cover. Therefore, it is possible that activities associated with the the 13-acre railroad grade could affect Indiana bats, and that tree removal associated with these activities could result in the removal of potential roost trees. However, because of the small acreage involved, few large trees currently in the footprint of the access easement, localized edge effects, anticipated cycle of vegetative growth and regrowth in the easement area, and the large amount of surrounding forest remaining with an intact canopy,[5] these types of activities would not substantially decrease overall habitat suitability for the Indiana bat.

The effects of AWP's harvest of its private lands in Blackwater Canyon are not subject to this consultation with the Forest Service. While these effects cannot be reliably predicted or analyzed at present, they will be dealt with more fully in AWP's habitat conservation plan for all of its lands in Blackwater Canyon. The habitat conservation plan would identify avoidance and minimization measures and could identify a process for project-by-project review of future harvests at the time that these details become known. It is important to emphasize that this biological opinion on the access easement is not exempting take of Indiana bat outside of the footprint of the access easement; thus speculation about such effects is unwarranted.

Effects on Individuals

Based on survey results from 2005 (which expire in 2008), it appears that the action area does not currently support the Indiana bat. However, given the concentration of Indiana bats within close proximity to the action area, the duration of the proposed easement (in perpetuity), the timing and frequency of tree cutting and trimming within the action area, and the presence of suitable habitat, it is reasonable to expect that that Indiana bats may occur in the action area and could be taken by the direct or indirect effects of the proposed action.

Tree removal during the non-hibernation period (April 1 – November 14) may result in mortality (take) of an individual roosting Indiana bat, if a tree that contains a roosting bat is removed intentionally or felled accidentally. The risk of mortality is low within the footprint of the access easement because most trees that would be cut here are small (less than 5 inches dbh) and do not provide potential roost sites. If a bat using a roost tree that is removed is not killed during the removal, it may be forced to find an alternative roost tree, potentially expending a significant amount of energy that would result in harm or harassment of the individual. If the affected roost tree is a primary roost tree used by an Indiana bat maternity colony, adverse effects could include reduced colony cohesion; increased stress; and increased energy demands from searching for

new roost areas, including decreased thermoregulatory efficiency. These impacts can lead to reduced reproductive success (Kurta et al. 2002; Kurta and Murray 2002; Gumbert et al. 2002; Kunz and Lumsden 2003; Indianapolis Airport Authority 2003; Garner and Gardner 1992; Racey and Entwistle 2003; Humphrey et al. 1977; Pierson 1998). Loss of an inhabited primary roost tree is most likely to occur during the maternity period (May 15 to August 15).

Based on the results of the project specific surveys and the incorporation of conservation measures by AWP (e.g. surveys and exit counts) and by the Forest Service (e.g. retention of snags and shagbark hickories, etc.), the Service concludes that while there is potential to unknowingly remove an established Indiana bat roost tree during reconstruction and maintenance of the easement, this likelihood will be small, and would be restricted to the removal of single (rather than multiple) lower quality alternate roost trees. This determination is consistent with the rationale and conclusions of the programmatic biological opinion, and is more fully described on page 53 of that document.

Noise associated with recreational use of the grade, reconstruction and maintenance of the grade, tree cutting within the grade, and log hauling activities within the grade may disturb Indiana bats if they are roosting or foraging in or adjacent to the grade. Noise disturbances may cause these bats to switch roosts or alter foraging sites; however, alternate suitable roosting and foraging habitat is nearby and abundant throughout the MNF and Blackwater Canyon.

Mortality or injury of Indiana bats from vehicle strikes in the action area is highly unlikely. We anticipate that bats would be able to avoid slow-moving heavy equipment and vehicles on the grade.

In summary, potential adverse effects of the proposed action are consistent with the effects described on pages 51-56 of the 2006 programmatic biological opinion. The implementation of the terms and conditions of the 2006 programmatic biological opinion, in combination with project-specific avoidance and conservation measures, will minimize any incidental take and ensure that the action area will continue to provide potential habitat to support Indiana bats. All proposed activities fall within the scale and scope addressed in the 2006 programmatic biological opinion and within the level of take identified in the Incidental Take Statement within that opinion. The proposed action will not affect habitats known to be used by Indiana bats for swarming, hibernating, or maternity activity. We therefore anticipate that overall the proposed action will not result in a long-term or significant reduction of the Indiana bat on the MNF.

Cumulative Effects

Cumulative effects include the combined effects of any future state, local, or private actions that are reasonably certain to occur within the action area covered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

As noted in the Environmental Baseline section, lands within the action area consist of a mixture of publicly owned National Forest Lands (6.5 acres), and privately owned AWP lands (6.5

acres). Because all activities that occur within the National Forest are subject to consultation under section 7 of the ESA, no cumulative impacts within suitable Indiana bat habitat on public lands are expected within the action area.

The remainder of the action area (6.5 acres) is owned by AWP. Aside from AWP's activities associated with the proposed action (e.g., motorized access, and reconstruction and maintenance of the grade), we are not aware of any future unrelated non-Federal actions that are reasonably certain to occur on these 6.5 acres.

Therefore, cumulative effects, as defined in the ESA, are not reasonably certain to occur within the action area and will not be addressed further in this biological opinion.[6]

Conclusion

The actions and effects associated with the proposed access easement are consistent with those identified and discussed in the Service's 2006 programmatic biological opinion. After reviewing the size and scope of the proposed action, 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 because: 1) surveys indicate there is only a low likelihood of Indiana bats using the action area; 2) a large portion of the surrounding area will remain as suitable Indiana bat habitat; and 3) the likelihood of take of individual Indiana bats is low due to the conservation measures proposed by AWP and the Forest Service.

Incidental Take Statement

As noted in the Environmental Baseline section, surveys conducted in and around the action area during 2004 and 2005 failed to document Indiana bats within the action area but did document them within 5 miles of the action area. The results of these surveys should not be used to quantify the number of Indiana bats that may be affected by the proposed action. First of all, these surveys were conducted in 2004 and 2005, whereas the proposed activities may occur long into the future. As a result, the survey data are not likely to be reflective of populations within the action area at the time that the impacts will occur. In addition, mist net surveys for this species are problematic for determining population levels. Rather these results serve to confirm that suitable habitat within and around the action area is reasonably certain to be occupied by individual Indiana bats long into the future. There is no practical means to directly measure the number of individual Indiana bats affected by the alteration of suitable habitat associated with the proposed action, and the FWS anticipates incidental take of the Indiana bat will be difficult to detect because of the behavior of the species. Therefore, for most forms of take, the anticipated level of take is expressed most accurately in terms of acres of habitat affected.

The FWS anticipates that the proposed actions associated with the AWP access easement in Blackwater Canyon will result in the incidental take of Indiana bat as outlined in Table 1. We anticipate that the proposed action would cause harm to 13 acres of habitat within the footprint of the access easement that results in mortality or harassment of individual bats. Please note that

this incidental take statement does not authorize or exempt take outside of the footprint of the 13-acre access easement. Indiana bats present within the easement area will suffer harm as a result of a decreased ability to feed, breed, and obtain shelter. These effects may cause increased mortality or harassment of Indiana bats within the affected areas as described below:

- Mortality of an individual roosting Indiana bat could occur, if a tree that contains a roosting bat is removed intentionally or felled accidentally, during the non-hibernation period (April 1 – November 14).

- If a bat using a roost tree that is removed is not killed during the removal, it may be forced to find an alternative roost tree, potentially expending a significant amount of energy that would indirectly result in harm or harassment of the individual. If the affected roost tree is a primary roost tree used by an Indiana bat maternity colony, adverse effects could lead to reduced reproductive success, as further described in the Analysis of Effects section of this opinion.

Table 1: Authorized incidental take (as measured indirectly by acreage) due to the removal or disturbance of potential Indiana bat habitat during calendar year 2006 pursuant to the Forest Plan Revision for the MNF.

Activity	AWP Access Easement (Authorized Take)	Other Projects Authorized during 2006	Total (2006)
Road Construction/Maintenance	13	61.2	**74.2**

Please note that as per the terms and conditions of the July 2006 programmatic biological opinion, Tier 2 opinions, including this one, will track the amount of incidental take authorized. However, incidental take does not actually occur until the time that the project is implemented. Most projects authorized under Tier 2 biological opinions will not be implemented for a number of years, therefore the Forest Service must annually report the total amount of incidental take that occurs each year and for each project. This number will be compared to the maximum annual incidental take as authorized in the July 2006 programmatic biological opinion. Additional consultation with the FWS will be required if it is determined during future project planning or the course of project implementation that either the authorized amount of project specific incidental take as detailed above, or the maximum amount of annual incidental take as detailed in the programmatic biological opinion, may be exceeded.

Reasonable and Prudent Measures

The Forest Service must implement all pertinent reasonable and prudent measures and terms and conditions, including reporting requirements, stipulated in the 2006 programmatic biological opinion 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 ESA. The FWS has determined that

implementing the reasonable and prudent measures and terms and conditions specified in the 2006 programmatic opinion, in conjunction with the project-specific conservation measures included in the project description for this Tier 2 opinion, will adequately minimize the impact of incidental take of the Indiana bat anticipated for the proposed activities in the action area. On that basis, the only project-specific non-discretionary term and condition included herein concerns monitoring and reporting requirements:

- By December 31 of each year the easement is in effect, AWP shall provide an annual report to the Forest Service and the FWS describing (1) the location and amount of Indiana bat habitat removed or disturbed within the 13-acre access easement; and (2) a description of conservation measures implemented therein, including the results of bat surveys, a description of the number and location of occupied roost trees (if any), and a description of any measures taken to avoid and/or minimize the mortality or injury of Indiana bats caused by the cutting of known roost trees.

Reinitiation Notice

Incidental take that occurs as a result of this and other projects on the MNF cannot exceed the annual or cumulative incidental take levels established in the 2006 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, annual reports should be provided to this office tabulating the amount of incidental take on projects being implemented and authorized throughout the MNF, as indirectly measured by acres affected. Incidental take that is implemented each year will be compared against the level authorized in the biological opinion to determine whether annual levels have been exceeded. To determine whether take is exceeded at the project level, the level of take implemented will be compared against the level authorized under each Tier 2 biological opinion.

This fulfills your consultation requirements for this action. Should new information reveal effects of the agency action that 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.

The FWS appreciates the opportunity to work with the Forest Service and AWP in fulfilling our mutual responsibilities under the Endangered Species Act. If you have any questions regarding this letter, please contact Ms. Laura Hill of my staff at (304) 636-6586 ext. 18, or at the letterhead address.

Sincerely,

Thomas R. Chapman
Field Supervisor

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Endnotes

[1]Since bat survey data generally are considered current for 3 years (the season they are completed and the following two summer seasons), and because AWP last surveyed their lands in Blackwater Canyon during summer 2005, the surveys will expire May 15, 2008.

[2] It should be noted that young Indiana bats are incapable of flight when they are first born and would not be able to leave the tree until they learn to fly, typically within a month of birth.

[3] Although the effects of timber management outside of the easement are not part of this consultation, in the interest of full disclosure, AWP further described its long-term plans for timber management in the entire Railroad Unit (K. Riddle e-mail dated 5/26/06). At 10-20 year intervals, AWP would harvest trees in the Railroad Unit, primarily by selection cutting methods. Trees 16 inches diameter-at-breast height (dbh) and larger would be harvested, as well as trees less than 16 inches dbh which are not commonly valuable or where the stand stocking is too high (exceeds 80 percent of the desired stocking rate) and the trees need to be thinned to allow residual trees to grow at a maximum rate. Trees from a broad range of diameter classes would be selected for cutting, with the goal of leaving a residual stand that is 60-80 percent of beginning stand density. The focus would be on removing trees which are mature (either biologically or financially), in addition to removing trees which are damaged, diseased, or of a non-commercial species, in order to improve the quality and growing conditions of residual trees.

Although selection cutting would be the primary form of timber management, AWP may opt to use other types of timber management in the Railroad Unit in the future. AWP has indicated that specific timber management methods can not be reliably predicted for the long term and would not be known until the time of harvest. Factors that may influence the type of harvesting include: stand age, species composition, evidence of insects or disease, current market conditions, presence or lack of advanced regeneration, past logging history, and presence of listed species.

[4] The forest composition adjacent to the action area includes large trees that have exfoliating bark and crevices, reported to be suitable as potential roosting habitat for Indiana bats: hickories (*Carya* spp.) maples (*Acer* spp.), ashes (*Fraxinus* spp), oaks (*Quercus* spp.), beech (*Fagus* spp,), and birch (*Betula* spp.) (FWS 2005). Currently, overstory canopy in the forest surrounding the action area (the Railroad Unit overall) appears to be within the range known to provide relatively good foraging habitat for Indiana bats (50 percent or greater).

[5] On the MNF, 87 percent of the hardwood forest is more than 70 years old and provides an abundance of potential foraging and roosting habitat for the Indiana bat.

[6] Activities outside of the action area are not considered cumulative effects. Nevertheless, in the interest of full disclosure, we acknowledge that outside of the action area, AWP currently is pursuing an application for an incidental take permit and is developing a habitat conservation plan (HCP) for all of its private lands in Blackwater Canyon. This HCP would include all private land within the access easement, as well as all AWP lands on the north and south sides of

the canyon. Proposed covered activities on AWP lands include timber harvest on both sides of the canyon. Because issuance of an incidental take permit is a Federal action, a future section 7 consultation will be completed on the application and therefore is not considered a cumulative effect of the current Forest Service action of proposing to grant an access easement on the north side of the canyon.

AWP's current and foreseeable management of its lands in Blackwater Canyon is focused on timber management. In a letter to the Forest Service, the president of AWP wrote that their current plan does not include development of homes on their lands in Blackwater Canyon (AWP 2006b). AWP has considered potential residential development in the past and has prepared a preliminary concept plan for a "Canaan Mountain resort" on these lands. AWP speculates that at some point in the future, their ongoing market evaluation of these lands may lead to a decision to pursue development of the preliminary plan, a modified plan, or not to develop these lands at all. Because development of such lands is outside the action area for this biological opinion and is not reasonably certain to occur, the effects are not considered cumulative to the current Forest Service action. In addition, unless take of listed species could be avoided through project and siting design, such development likely would require future consultation under section 7 of the ESA (triggered by an application for an incidental take permit or provision of another Federal nexus).