

APPENDIX A: PROPOSED CHANGES TO THREATENED AND ENDANGERED SPECIES STANDARDS

This appendix describes standards and guidelines that would be modified or added to the 1986 *Monongahela National Forest Land and Resource Management Plan (Forest Plan)* to assist the Monongahela National Forest (MNF) in improving and carrying out programs for the conservation of threatened, endangered, and proposed species consistent with the Endangered Species Act of 1973, as amended.

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INTRODUCTION

To understand how proposed standards would be used to manage threatened, endangered, and proposed species, it helps to know how MNF lands are managed under the existing *Forest Plan*. Forest goals, management objectives, and standards guide MNF management. Forest goals are general in nature and coordinated with the allocations, objectives, and standards or guidelines that are more specific (*Forest Plan*, pp. 37-40). Forest management objectives identify the overall objectives of the Forest in terms of projected outputs, or the levels of goods and services anticipated to be provided as the *Forest Plan* is implemented (*Forest Plan*, pp. 40-42). Standards and guidelines establish rules to follow in conducting activities on the MNF (*Forest Plan*, pp. 49-234). These rules are divided into three types:

1. **Forest-wide** standards (*Forest Plan*, pp. 49-104) - standards that apply across the entire Forest, regardless of the management prescriptions applied to the land.
2. **Management Prescription (MP)** standards (*Forest Plan*, pp. 109-209) - standards that apply where the particular management prescription is implemented. They define the differences between management prescriptions and allow management practices to meet the intent of the prescription.
3. **Zoological Area** standards (*Forest Plan*, pp. 230-234) – standards that apply to a particular geographic location (Opportunity Area) on the Forest, regardless of the MP.

Collectively, these three types of standards implement the goals of the Forest, and provide the framework to guide work on the Forest.

All action alternatives would edit or add **Forest-wide** standards applicable to various species. **Zoological** standards for endangered bats and West Virginia (WV) northern flying squirrel would be revised or added. If the Proposed Action or Alternative 1 were implemented, **MP 6.3** standards also would be added. Seven tables are provided to illustrate the additions, deletions, and revisions that would be made to the *Forest Plan* via the Proposed Action, Alternative 1, or Alternative 2:

1. Proposed **Forest-wide** standards to enhance existing standards on pp. 84-88 of the *Forest Plan* (Appendix A, pp. 2-12).
2. Table of proposed **MP** standards that would be created specifically for the management of Indiana bats, (Appendix A, pp. 13-22).
3. Proposed **Zoological Area** standards to accompany existing VA big-eared bat standards on pp. 230-234 of the *Forest Plan* (Appendix A, pp. 23-28).
4. Proposed **Zoological Area** standards to supplement existing Indiana bat standards on pp. 230-234 of the *Forest Plan* (Appendix A, pp.29-38).
5. Proposed **Zoological Area** standards to replace existing WV Northern Flying Squirrels on pp. 234 of the *Forest Plan*, (Appendix A, pp. 39-41).
6. Proposed **Monitoring and Evaluation** direction to be added to Table 9 of the *Forest Plan*'s Monitoring and Evaluation section to clarify existing monitoring practices (Appendix A, pp. 42-43).
7. Proposed changes to **Appendices** to make the *Forest Plan* consistent with changed proposed in other parts of the *Forest Plan*, (Appendix A, pp. 44).

As the headers of the attached pages explain, words in black currently exist within the *Forest Plan*, and they would not be changed. Words in black that have been ~~struck through~~ are those currently within the *Forest Plan* but proposed for removal. Words *italicized* and **bolded in black** are proposed for adding. “X” indicates which action alternative (Proposed Action, Alternative 1, and Alternative 2) would adopt the standard. “Same as NO ACTION” means that no change to the existing *Forest Plan* standard is proposed.

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Table 1. Proposed Changes to Forest-wide Standards.

The following Proposed Standard & Guideline would apply Forest-wide to All TE		Proposed Action	Alternative 1	Alternative 2
1. Management of habitat critical essential to threatened, endangered, and proposed wildlife and fish species is considered the first priority management activity.		X	X	X
2. Forest personnel will work with State agencies and the <i>U. S. Department of the Interior</i> Fish and Wildlife Service U. S. Department of the Interior (<i>USFWS</i>) in identifying habitat essential for endangered , threatened, endangered , and proposed species critical habitat areas.		X	X	X
3. The requirements of approved Threatened and Endangered Species Recovery Plans and Biological Opinions issued by the USFWS for the MNF will be implemented and fully coordinated with the Forest Land Management Plan.		X	X	X
4. The <i>U.S. Department of Agriculture</i> Forest Service (USDA) (<i>USFS</i>) will participate in the development of recovery plans for all threatened, and endangered, and proposed species.		X	X	X
5. The following federally listed threatened and endangered species are known to occur or may occur on the MNF:		X	X	X
<i>Common Name</i>	<i>Scientific Name</i>	X	X	X
bald eagle	<i>Haliaeetus leucocephalus</i>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
Cheat Mountain salamander	<i>Plethodon nettingi nettingi</i>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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The following Proposed Standard & Guideline would apply Forest-wide to All TE		Proposed Action	Alternative 1	Alternative 2
Indiana bat	<i>Myotis sodalis</i>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
Virginia big-eared bat	<i>Corynorhinus townsendii virginianus</i>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
West Virginia northern flying squirrel	<i>Glaucomys sabrinus fuscus</i>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
running buffalo clover	<i>Trifolium stoloniferum</i>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
shale barren rock cress	<i>Arabis serotina</i>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<i>small-whorled pogonia</i>	<i>Isotria medeoloides</i>	X	X	X
<i>Virginia spiraea</i>	<i>Spiraea virginiana</i>	X	X	X
6. The official list of threatened, endangered, and proposed species is maintained by the USFWS. Any future changes to the official list will replace the list shown here.		X	X	X
7. Avoid activities in known threatened, endangered, and proposed species populations and occupied habitat unless such activities are consistent with the standards for threatened, endangered, and proposed species.		X	X	X

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Table 1. Proposed Changes to Forest-wide Standards.

The following Proposed Standard & Guideline would apply Forest-wide to All TE	Proposed Action	Alternative 1	Alternative 2
<p>8. <i>When activities are proposed in areas with a likelihood of occurrence for threatened, endangered, and proposed species, take one of the following actions:</i></p> <ul style="list-style-type: none"> a. <i>Redesign the proposed action to avoid the area, or</i> b. <i>Conduct on-sites surveys, as appropriate, to establish presence or absence of threatened, endangered, or proposed species. If threatened, endangered, or proposed species are not found, the action may proceed; if they are found, actions will be dropped or designed to avoid adverse effects to threatened, endangered, and proposed species, or</i> c. <i>Assume potential presence of threatened, endangered, and proposed species and proceed with action if appropriate mitigation or beneficial measures can be implemented, or</i> d. <i>In rare instances where adverse effects to threatened, endangered, and proposed species cannot be avoided, the Forest will consult with the USFWS.</i> 	X	X	X
<p>9. <i>Areas of influence will be identified for all threatened, endangered, and proposed species or populations to assist in their recovery. All threatened and endangered species’ areas of influence will be managed via Forest wide threatened and endangered species’ standards, but the areas of influence of the following species also will be managed under specific Management Prescription and Zoological standards:</i></p>	X	X	X
<ul style="list-style-type: none"> a. <i>The area of influence for Virginia big-eared bat will be assigned to MP 8.0, Opportunity Area 837. Forest wide, MP 8.0, and Zoological standards for OA 837 will be used to manage Virginia big-eared populations.</i> 	X	X	X

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Table 1. Proposed Changes to Forest-wide Standards.

The following Proposed Standard & Guideline would apply Forest-wide to All TE	Proposed Action	Alternative 1	Alternative 2
b. <i>The area of influence for Indiana bats is recognized as three distinct areas—hibernacula, key areas, and primary range. Hibernacula and key areas of Indiana bats will be assigned to MP 8.0, Opportunity Area 838; and primary range will be assigned to MP 6.3. Therefore, Forest wide, MP 6.3, MP 8.0, and Zoological standards for OA 838 will be used to manage Indiana bat populations.</i>	X	X	Not Applicable
b. <i>The area of influence for Indiana bats is recognized as three distinct areas—hibernacula, key areas, and primary range—all of which will be assigned to MP 8.0, Opportunity Area 838. Forest wide, MP 8.0, and Zoological standards for OA 838 will be used to manage Indiana bat populations.</i>	Not Applicable	Not Applicable	X
c. <i>The area of influence for West Virginia northern flying squirrels is recognized as their suitable habitat as defined by the updated Appalachian Northern Flying Squirrels Recovery Plan and will be assigned to MP 8.0, Opportunity Area 832. Forest wide, MP 8.0, and Zoological standards for OA 832 will be used to manage West Virginia northern flying squirrel populations.</i>	X	X	X
10. <i>Areas of influence will be based on known populations and results of on-site surveys. They are intended to be dynamic and based on the most current scientific information for a given species.</i>	X	X	X
11. <i>Determine and implement appropriate habitat management techniques to maintain or enhance populations of threatened, endangered, and proposed species.</i>	X	X	X
12. <i>Project analyses will consider, as needed, ways of minimizing or eliminating threats to threatened, endangered, and proposed species due to non-native invasive species.</i>	X	X	X

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The following Proposed Standard & Guideline would apply Forest-wide to All TE	Proposed Action	Alternative 1	Alternative 2
13. <i>Additional Forest-wide standards to address the specific needs of threatened, endangered and proposed</i> or status unknown species, are identified below with standards applicable to each.	X	X	X
b. Virginia Big-Eared Bat <ol style="list-style-type: none"> 1. Identified nursery colonies, hibernation sites, and corridors will be managed under <i>MP 8.0</i> and Zoological Area standards <i>for Opportunity Area 837</i>. Foraging habitat will be managed under Forest-wide riparian area standards, 2670 C. 	X	X	X
<ol style="list-style-type: none"> 2. <i>Before taking any actions on buildings that are within 6 miles of Virginia big-eared bat hibernacula or maternity sites, evaluate their potential to serve as roosting habitat and apply management protections as necessary.</i> 	X	X	X
<ol style="list-style-type: none"> 3. A forested travel corridor <i>of 330 feet wide will be protected</i> between cave entrances and foraging areas. In travel corridors, the objective is to maintain or create an unbroken Forest canopy. <i>Use of pesticides will be limited in the corridor.</i> 	X	X	X
<ol style="list-style-type: none"> 4. <i>Burn plans for prescribed fires will be developed to ensure adverse effects to Virginia big-eared bats are avoided.</i> 	X	X	X

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Table 1. Proposed Changes to Forest-wide Standards.

The following Proposed Standard & Guideline would apply Forest-wide to All TE	Proposed Action	Alternative 1	Alternative 2
<p>c. Indiana Bat</p> <p>1. Identified nursery colonies, hibernation sites, and corridors <i>Hibernacula, maternity colonies, and key areas of the Indiana bat</i> will be managed under <i>MP 8.0 and Zoological Area standards for Opportunity Area 838. The primary range of the Indiana bat will be managed under Management Prescription 6.3 direction and standards.</i> Forage habitat will be managed under Forest-wide riparian area standards, 2670 C <i>and the following standards will also be used to manage these areas.</i></p>	X	X	Not Applicable
<p>c. Indiana Bat</p> <p>1. Identified nursery colonies, hibernation sites, and corridors <i>Hibernacula, maternity colonies, key areas, and the primary range of the Indiana bat</i> will be managed under <i>MP 8.0 and Zoological Area standards for Opportunity Area 838.</i> Forage habitat will be managed under Forest-wide riparian area standards, 2670 C <i>and the following standards also will be used to manage these areas.</i></p>	Not Applicable	Not Applicable	X
<p><i>2. Each year, report quarterly to the USFWS the cumulative amount of acres involved in tree removal and prescribed burning.</i></p>	X	X	X
<p><i>3. Retain all shagbark hickory trees in cutting units except where public safety concerns exist.</i></p>	X	X	X
<p><i>4. Monitor snag retention in cutting units. If an average of less than 6 snags/acre with 9” dbh exists, manually create additional snags.</i></p>	X	X	X
<p><i>5. Protect all known roost trees on the MNF until such time as they no longer serve as roost trees (e.g. lose their exfoliating bark or cavities, fall down, or decay).</i></p>	X	X	X

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<p><i>6. Where evidence of possible maternity colonies (lactating females or juveniles prior to August 15) is discovered, a temporary 3-year, 2-mile radius buffer will be established around the discovery site. Continue to search for actual maternity colonies within a 2-mile radius of the site using mist netting, and radio telemetry if feasible. Continue this search for a period of 3 years following the discovery, or until a maternity site is confirmed, whichever occurs sooner.</i></p>	X	X	X
<p><i>7. If monitoring activities result in the discovery of maternity sites on the MNF, roost trees used by a maternity colony will be protected by establishing a zone centered on the maternity roost site. This zone would be assigned to MP 8.0 and Opportunity Area 838. This zone would be managed under Forest wide, MP 8.0, and Zoological Area standards for OA 838. The actual area, not to exceed a 2-mile radius around the colony, will be determined by a combination of topography, known roost tree locations, proximity of permanent water, and a site-specific evaluation of the habitat characteristics associated with the colony. Protective measures shall be determined at a site-specific level by developing a management strategy in cooperation with the USFWS and the WVDNR.</i></p>	X	X	X
<p><i>8. If any new Indiana bat hibernacula are discovered, the MNF shall develop an appropriate protection plan, which could include signs, fences, or gates.</i></p>	X	X	X

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Table 1. Proposed Changes to Forest-wide Standards.

The following Proposed Standard & Guideline would apply Forest-wide to All TE	Proposed Action	Alternative 1	Alternative 2
<p>9. <i>In addition to those projects allowed under the programmatic incidental take statement, specific projects may proceed without <u>formal</u> consultations if implemented during the <u>hibernation</u> period.</i> <i>(a) These projects do not count against the annual allowable acres permitted under the programmatic incidental take statement.</i></p> <p>10. <i>In addition to those projects allowed under the programmatic incidental take statement, specific projects may also proceed during the <u>non-hibernation</u> period without <u>formal</u> consultation if:</i> <i>(a) They occur outside of the area surrounding known roost trees or capture sites, hibernacula, maternity colonies, key areas and primary ranges of the Indiana bat, <u>and</u></i> <i>(b) They are surveyed for Indiana bats according to protocols established by the USFWS, <u>and</u></i> <i>(c) No Indiana bats are detected.</i> <i>(i) When Indiana bats are not detected, it will be assumed they may be present, but in such low numbers that the project is not likely to adversely affect them.</i> <i>(ii) Projects cleared by mist netting under this standard must be completed within three years of the netting.</i> <i>(d) These projects do not count against the annual allowable acres permitted under the programmatic incidental take statement.</i></p>	X	X	X

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The following Proposed Standard & Guideline would apply Forest-wide to All TE	Proposed Action	Alternative 1	Alternative 2
<p><i>11. To ensure that the exemption of incidental take is appropriately documented, the USFWS will implement a tiered programmatic consultation approach. As individual projects are proposed under the Forest Plan, the MNF shall provide project- specific information to the USFWS that (1) describes the proposed action and the specific area to be affected, (2) identifies the species that may be affected, (3) describes the manner in which the proposed action may affect listed species, and the anticipated effects, (4) specifies that the “anticipated effects from the proposed project are similar to those anticipated in the programmatic biological opinion”, (5) a cumulative total of take that has occurred thus far under the tier I biological opinion, and (6) describes any additional effects, if any, not considered in the tier I consultation.</i></p>	X	X	X
<p><i>12. Develop an outreach program specifically directed towards eastern woodland bat species and their conservation needs. The program would target federal, state, and private foresters, land managers, and the general public.</i></p>	Not Applicable	X	X
<p><i>13. Retain or create small pools of water during road abandonment where appropriate, given other resource concerns. These pools will provide additional sources of drinking water for forest bats.</i></p>	Not Applicable	X	X
<p><i>14. Burn plans for prescribed fires will be developed to ensure adverse effects to Indiana bats are avoided.</i></p>	X	X	X
<p>e. Cheat Mountain Salamander 1. The Cheat Mountain salamander is a woodland species found only in West Virginia. While it appears to prefer red spruce forests, it has been found in hardwoods some distance from spruce. It usually occurs above 3,400 2,600 feet in elevation, in or under logs, under rocks and mosses, and where critical temperatures, humidity, and</p>	X	X	X

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<p>moisture regimes meet their close tolerance needs. Since occupied habitat is not continuous and is not easily discernible, an on-the-ground survey for occupancy prior to vegetation and surface disturbance will be conducted. Located colonies, <i>including their buffer</i>, will be avoided. where possible. Identified colonies may be relocated, but only if techniques currently under study are proven effective. Salamander sites will not be shown on maps.</p>			
<p>2. <i>A minimum 300-foot buffer zone will be established around known Cheat Mountain salamander populations. The buffer zone will be based on information in the Recovery Plan for the Cheat Mountain Salamander or the best, most current scientific literature.</i></p>	X	X	X
<p>g. <i>West Virginia Northern Flying Squirrel</i> See Appendix X for interim standards.</p>	X	X	X
<p>1. <i>Suitable habitat for the West Virginia northern flying squirrel will be managed under MP 8.0 and Zoological Area standards for Opportunity Area 832, consistent with the Guidelines for Habitat Identification and Management found in the Appalachian Northern Flying Squirrels Recovery Plan (Updated).</i></p>	X	X	X
<p>h. Shale Barren Rock Cress. The shale barren rock cress was listed as a Federally endangered plant species in 1989. The recovery plan, completed and approved in June 1992, required the following guidelines to be applied:</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<p>1. Prior to conducting any activity on National Forest System land within Greenbrier County, WV, surveys may have to be conducted to locate and identify shale barrens</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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The following Proposed Standard & Guideline would apply Forest-wide to All TE	Proposed Action	Alternative 1	Alternative 2
and shale barren rock cress populations. This guideline will be applied on a case-by-case basis in consultation with the USFWS.			
2. Most Forest authorized activities (other than activities such as research/information gathering) are prohibited within shale barrens (i.e. shale barrens will be avoided). Exceptions to this standard will be decided on a case-by-case basis in consultation with the USFWS.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
i. Running Buffalo Clover Survey broken canopied forest or non-forest areas to be affected by land transfer, repeated vehicular use, or earth disturbing activities. Examples of such areas are old home sites, woods roads, savannas, wildlife openings, grazing allotments, old log landings, and roadsides. Known running buffalo clover sites will be protected.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
<p><u>PURPOSE</u> <i>This prescription will emphasize the following:</i></p> <p><u>PRIMARY</u></p> <ul style="list-style-type: none"> - <i>Management of the habitat most likely to be used as summer roosting and foraging habitat by Indiana bats. This habitat is referred to as the primary range of the Indiana bat.</i> <p><u>SECONDARY</u></p> <ul style="list-style-type: none"> - <i>A semi-primitive and nonmotorized type of recreational environment. When roads are open to motorized use, semi-primitive motorized experiences will be provided.</i> - <i>A mix of forest products.</i> 	X	X	Not Applicable
<p><u>AREA DESCRIPTION</u> <i>This management prescription (MP) is assigned to lands that exist within five miles of known Indiana bat hibernacula but that are not identified as hibernacula or key areas. MP 6.3 lands are considered to be the primary range of Indiana bats and will be managed to provide the basic habitat components needed by the Indiana bat over time.</i></p> <p><i>Lands within MP 6.3 were previously allocated to MP 2.0 (managed for shade tolerant tree species using un-evenaged silviculture), MP 3.0 (managed for shade intolerant hardwood tree species using even-aged silviculture), MP 4.0 (managed primarily for conifer species), MP 6.1 (remote habitat for wildlife and a mix of forest products), and MP 7.0 (high density, recreation environment). These lands may continue to be subject to MP 2.0, 3.0, 4.0, 6.1, and 7.0 standards; however, MP 6.3 standards will override other standards.</i></p>	X	X	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
<p><i>The primary range of Indiana bats that occur within MP 5.0 (wilderness protection), MP 6.2 (no timber management and semi-primitive, non-motorized recreation areas), and MP 8.0 (preservation of special areas) are not reassigned to MP 6.3 because MP 5.0, 6.2, and 8.0 management do not generally conflict with Indiana bat management. However, MP 6.3 standards may be applied to Indiana bat primary ranges within MP 5.0, 6.2, and 8.0 areas to the extent that MP 6.3 standards are consistent with the Wilderness Act and the standards of MP 5.0, 6.2, and 8.0.</i></p>	X	X	Not Applicable
<p><u>DESIRED FUTURE CONDITION</u></p> <p><i>Management Prescription 6.3 Areas will be defined around known Indiana bat hibernacula. Areas may vary in size, but will extend no more than 5 miles in radius from hibernacula.</i></p> <p><i>Emphasis will focus on management of the naturally occurring tree species composition to provide a continuous supply of suitable roost trees and preferred foraging habitat for Indiana bat. Normal forest management activities will be used to achieve vegetative diversity that will enhance the habitat of the Indiana bat. Management activities may contribute to a sustained yield of timber products.</i></p> <p><i>A system of roads and trails will provide access within the area for administrative and management purposes, including the transportation of forest products. Nonmotorized recreation opportunities will be provided by controlling public motorized vehicle use. Where roads are temporarily opened, semi-primitive motorized experiences will be provided.</i></p> <p><i>The permanent road system will be constructed to the lowest standard possible. The construction standards will protect the soil and water resource. Permanent road density will be influenced by terrain and the needs of the wildlife species in the Management Area. Most roads will be seeded to preferred wildlife food when not open for vehicle traffic.</i></p>	X	X	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
<i>Facilities such as utility corridors or other special uses will be permitted, provided they are compatible with Indiana bat habitat management.</i>	X	X	Not Applicable
1900 Vegetation 1. <i>Management of vegetation that is less than 5” dbh may occur any time of the year.</i>	X	X	Not Applicable
2. <i>Management of vegetation that is 5” dbh or greater may be implemented within the primary range of Indiana bats only to improve or enhance Indiana bat habitat, to maintain or enhance natural vegetative communities on appropriate sites (see Forest-wide standards and guidelines 1900 – Vegetation) or for public safety. Also, see MP 6.3 standards for 2400 (Timber Management), 2410(Timber Regulation), 2460 (Other than Commercial Sales), 2470 (Silvicultural Systems), and 2600 (Wildlife), which are related to vegetation management.</i>	X	X	Not Applicable
3. <i>To reduce the chance of “taking” a roosting Indiana bat, tree felling for large-scale activities (e.g. most timber sales, construction of collector and arterial roads, etc.) is prohibited within the primary range between April 1 and November 15. However, tree felling for small-scale activities (e.g. development of individual gas well pads, construction of local roads, road maintenance, etc.) may be allowed anytime of the year since such smaller disturbances are less likely to “take” a bat.</i>	X	Not Applicable	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
4. <i>Snags and cull trees will be managed to keep them available in this prescription throughout the entire rotation.</i>	X	X	Not Applicable
<i>a. Retain all known Indiana bat roost trees.</i>	X	X	Not Applicable
<i>b. Retain all shagbark hickory trees, unless they create a safety hazard.</i>	X	X	Not Applicable
<i>c. Retain all snags unless they create a safety hazard. If an average of less than 6 snags/acre with 9” dbh exist, manually create additional snags, prioritized by the following size classes when available: 16 inches dbh or greater, 9 to 16 inches dbh, 5 to 9 inches dbh.</i>	X	X	Not Applicable
<i>d. Leave at least 5 cull trees per acre--preferably shagbark hickory, bitternut hickory, red oak, white oak, sugar maple, white ash, green ash, and/or sassafras, prioritized by the following size classes when available: 16 inches dbh or greater, 9 to 16 inches dbh.</i>	X	X	Not Applicable
2150 Pesticide Use, Management, and Coordination <i>Limit use of pesticides in these areas.</i>	X	X	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
<p>2200 Range Management</p> <p><i>The development of the forage resource will be limited to existing allotments within the Indiana bat primary range. Allotment plans will be designed to protect or enhance Indiana bat habitat and water quality values.</i></p>	X	X	Not Applicable
<p>2300 Recreation Management</p> <p><i>The semi-primitive non-motorized ROS class will be emphasized in the primary range of Indiana bat, except within the boundaries of developed recreation sites.</i></p>	X	X	Not Applicable
<p>2380 Visual Management</p> <p><i>The Indiana bat primary range will be managed to meet the same visual quality objectives identified for MP 6.1 areas.</i></p>	X	X	Not Applicable
<p>2400 Timber Management</p> <p><i>Timber management practices may be implemented on National Forest lands within the primary range of Indiana bats only to improve or enhance Indiana bat habitat, to maintain or enhance natural vegetative communities on appropriate sites (see Forest-wide standards and guidelines 1900 – Vegetation), or for public safety.</i></p>	X	X	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2															
<p>2410 Timber Regulation</p> <p>1. <i>To meet Indiana bat and other wildlife needs, seek to establish a balanced age class distribution. Normal rotation ages would be:</i></p> <table border="1"> <thead> <tr> <th><i><u>Species</u></i></th> <th><i><u>Productivity</u></i></th> <th><i><u>Rotation Ages</u></i></th> </tr> </thead> <tbody> <tr> <td><i>Oak Hickory</i></td> <td><i>All sites</i></td> <td><i>200</i></td> </tr> <tr> <td><i>Mixed Hardwood</i></td> <td><i>All sites</i></td> <td><i>200</i></td> </tr> <tr> <td><i>Conifer (Spruce & Pine)</i></td> <td><i>All sites</i></td> <td><i>80-100</i></td> </tr> <tr> <td><i>Black Cherry</i></td> <td><i>All sites</i></td> <td><i>120</i></td> </tr> </tbody> </table>	<i><u>Species</u></i>	<i><u>Productivity</u></i>	<i><u>Rotation Ages</u></i>	<i>Oak Hickory</i>	<i>All sites</i>	<i>200</i>	<i>Mixed Hardwood</i>	<i>All sites</i>	<i>200</i>	<i>Conifer (Spruce & Pine)</i>	<i>All sites</i>	<i>80-100</i>	<i>Black Cherry</i>	<i>All sites</i>	<i>120</i>	X	X	Not Applicable
<i><u>Species</u></i>	<i><u>Productivity</u></i>	<i><u>Rotation Ages</u></i>																
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<i>Black Cherry</i>	<i>All sites</i>	<i>120</i>																
<p>2. <i>To minimize disturbance and provide “escape areas” for wildlife, no more than 40 percent of the opportunity area acreage will be directly disturbed at any given time.</i></p>	X	X	Not Applicable															
<p>2460 Other than Commercial Sales</p> <p><i>Dead and down firewood may be cut any time during the year along forest roads open to the public. Cutters must have a valid permit.</i></p>	X	X	Not Applicable															
<p>2470 Silvicultural Systems</p> <p>1. <i>The even-aged silvicultural system generally will be used to create age class diversity and balance age classes over the long term. However, the un-evenaged silvicultural system may be used if deemed appropriate after a site-specific analysis.</i></p>	X	X	Not Applicable															

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
2. <i>Of the even-aged silvicultural methods that could be implemented, shelterwood and two-aged regeneration harvests generally will be used to provide preferred foraging and roosting habitat. However, clearcutting with residuals may be used if needed for the regeneration of a particular tree species or to meet other wildlife objectives when consistent with Indiana bat management.</i>	X	X	Not Applicable
3. <i>Without preventing the regeneration of desired tree species, retain as much basal area as possible in even-aged cut units so as to meet the habitat needs of Indiana bats.</i>	X	X	Not Applicable
4. <i>When designing regeneration harvest areas under the even-aged system, the following will be used to insure appropriate “leave trees” are retained for Indiana bat habitat:</i>	X	X	Not Applicable
<i>a. Follow 1900 standards for snag and cull management.</i>	X	X	Not Applicable
<i>b. For shelterwood and two-aged regeneration harvests, retain a component of the largest live shagbark hickory, bitternut hickory, red oak, white oak, sugar maple, white ash, green ash, and/or sassafras, prioritized by the following size classes when available: 16 inches dbh or greater, 9 to 16 inches dbh.</i>	X	X	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
<i>c. Retain clumps of live trees (preferably shagbark hickory, bitternut hickory, red oak, white oak, sugar maple, white ash, green ash, and/or sassafras) and shrubs around known Indiana bat roost trees, shagbark hickories, culls or larger diameter snags.</i>	X	X	Not Applicable
<i>(1) Leave clumps should be retained at a rate of one-third an acre per five to eight acres of regeneration harvest area.</i>	X	X	Not Applicable
<i>(2) These clumps should be attached to the woodland edge by a corridor of trees, if possible.</i>	X	X	Not Applicable
<i>(3) Snag or cull clumps left along stream shade strips or seeps are preferred over isolated clumps or clumps along other edges.</i>	X	X	Not Applicable
<i>d. Retain living residual trees (identified via 1900 and 2470 #4) in the vicinity of 1/3 of the snags to provide them with partial shade in summer.</i>	X	X	Not Applicable
5. <i>If individual and group selection harvests are implemented, insure that a component of large, over-mature trees, if available, remain in the immediate vicinity to provide suitable roosting habitat.</i>	X	X	Not Applicable
6. <i>Until a balanced age class distribution is achieved, regeneration harvests may occur anytime after age 70 and will emphasize stands originating after 1905.</i>	X	X	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
7. <i>Harvests to improve Indiana bat habitat may be conducted at any stand age. However, thinning from below would be the preferred method for stands originating before 1905.</i>	X	X	Not Applicable
2600 Wildlife Management	X	X	Not Applicable
1. <i>Provide a continuous supply of suitable roost trees by maintaining a minimum of 20 percent of the primary range in old growth and a minimum of 50 percent in oak and northern hardwood types over 50 years of age.</i>	X	X	Not Applicable
2. <i>Provide ample preferred foraging habitat by maintaining a minimum of 50 percent of the primary range in pole and saw timber size classes that have crown closures of 50 percent or greater.</i>	X	X	Not Applicable
3. <i>Maintain no more than 7.5 percent of the primary range in the 0-14 age class (woodland habitat) at any time.</i>	X	X	Not Applicable
4. <i>Provide adequate water sources by creating or maintaining between 1 and 4 water sources per square mile within the primary range.</i>	X	X	Not Applicable
5. <i>To maintain viable populations of management indicator species, sensitive species, and other threatened, endangered, or proposed species while providing ample Indiana bat foraging habitat, maintain at least 5 percent of the primary range in open or semi-open habitats.</i>	X	X	Not Applicable

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Table 2. Creation of MP 6.3 Areas for Indiana Bat Primary Range.

Description of Desired Future Condition & Associated Standards	Proposed Action	Alternative 1	Alternative 2
2700 Special Use Management <i>Special use permits may be issued within the primary range if they are compatible with Indiana bat management.</i>	X	X	Not Applicable
2800 Minerals and Geology 1. <i>Gas development within the primary range may be allowed when compatible with management objectives for Indiana bat.</i>	X	X	Not Applicable
2. <i>When minerals are privately owned, consultation with the USFWS will be undertaken to minimize adverse effects on habitat.</i>	X	X	Not Applicable
5100 Fire Management 1. <i>Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover.</i>	X	X	Not Applicable
2. <i>Burn plans for prescribed fires within the primary range will include a smoke management plan that minimizes the duration of smoke in the area, and maximizes smoke dispersion from the area.</i>	X	X	Not Applicable
6760 Safety <i>Dynamiting may be permitted within the primary range if compatible with Indiana bat management.</i>	X	X	Not Applicable
7700 Transportation System <i>Roads and trails leading to hibernacula may be blocked or obliterated to further discourage access.</i>	X	X	Not Applicable

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Table 3. Proposed changes to Zoological Area Standards of VA Big-Eared Bats.

Standards and Guidelines for <i>VA Big-Eared Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p>1560 <i>Interdepartmental State, Co., and Local Agencies</i> Project activities in these areas will require consultation with USDI, <i>the U. S. Department of the Interior Fish and Wildlife Service (USFWS)</i>. <i>The West Virginia Division of Natural Resources</i> (WVDNR) will be kept informed of activities.</p>	X	X	X
<p>1600 <i>Information</i> Cave entrances will be signed and posted against entry. Signs may include USDI, Fish and Wildlife Service and West Virginia Department of Natural Resources authorities. Although signed at cave entrances, caves will not be located on maps published for distribution to the public. No directional signs on roads or trails will be posted directing people to these caves.</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<p>1900 <i>Vegetation</i> <i>Vegetation management will be conducted within 200 feet of hibernacula only (1) to ensure a diversity of habitat types are available to improve or enhance Virginia big-eared bat habitat (Forest Plan, pp. 54-56), or (2) for public safety.</i></p>	X	X	X
<p>1950 <i>NEPA</i> Standards and Guidelines listed here are minimal. Others may be added as appropriate when designating each new opportunity area for these bats.</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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Table 3. Proposed changes to Zoological Area Standards of VA Big-Eared Bats.

Standards and Guidelines for <i>VA Big-Eared Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
1. Opportunity areas will be defined as:	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
a) An area at least 200 feet in radius from the entrance of inhabited caves.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
b) An area at least 200 feet in radius around a maternity colony of Virginia big-eared bat as long as the site is used.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
e) A forested travel corridor 330 feet wide between cave entrances and foraging areas. (Note: this standard was moved to the Forest-wide section)	X	X	X
2150 Avoid Limit use of pesticides in these management areas.	X	X	X
2300 Recreation No new facilities will be constructed for public recreation use.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
2400 Timber Vegetative treatments may be undertaken if coordinated with bat habitat requirements in the opportunity area. In travel corridors, the objective is to maintain or create an unbroken Forest canopy.	X	X	X

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Standards and Guidelines for <i>VA Big-Eared Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
2630 2670 Threatened, Endangered, and Proposed Species Management	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
1. Public entrance into caves used as hibernacula for Virginia big-eared bat will be prohibited from September 1 to May 15.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
2. Public entrance into caves occupied on the National Forest will be prohibited during the nursery season from April 1 to September 15.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
3. Entry into caves during the closed periods for scientific study and observation will be permitted by written approval of the Forest Supervisor and permit from the USDI, USFWS, or equivalent.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
4. Gates or fences installed at cave entrances will allow free entry and exit by the bats and will not restrict normal airflows.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
5. Gate installation that disturb cave features or floor must have an archaeological survey prior to disturbance.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
6. Gate installation must conform to requirements of applicable State laws and regulations.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
7. Gates and fences will be monitored and maintained. Frequency of monitoring should be scheduled based on past cave visits, vandalism history, access, and other conditions of potential gate disturbances. A schedule of at least once a month is recommended. Maintenance and repair of gates should be undertaken within reasonable time from vandalism discovery during the period of closure (Generally within two weeks).	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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Table 3. Proposed changes to Zoological Area Standards of VA Big-Eared Bats.

Standards and Guidelines for <i>VA Big-Eared Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
8. Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover. (Note: this standard would be moved to section 5100).	X	X	X
9. Prohibit any construction or permanent type of activities <i>within the opportunity area</i> unless created for the protection of threatened or endangered <i>Virginia big-eared bats</i> .	X	X	X
2700 <i>Special Uses</i> 1. Prohibit special uses in the travel corridor <i>opportunity area</i> that would be adverse to bat use.	X	X	X
2. <i>Special use permits will not be issued for caves that harbor Virginia big-eared bats.</i>	X	X	X
2800 <i>Minerals and Geology</i> 1. Surface occupancy will not be permitted for mineral operations on U.S. <i>Federal</i> minerals that are within this opportunity area. When minerals are privately owned, consultation with the USFWS will be undertaken to minimize adverse effects on habitat. <i>Also refer to mandatory standards in Appendix K.</i>	X	X	X
2. <i>Shot detonation and ground vibration generally will not be allowed within the opportunity area.</i>	X	X	X
5100 <i>Fire Management</i> 1. <i>Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover.</i>	X	X	X

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Table 3. Proposed changes to Zoological Area Standards of VA Big-Eared Bats.

Standards and Guidelines for <i>VA Big-Eared Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p>5400 <i>Landownership</i> Establish as high priority acquisition any caves inside the Monongahela Proclamation Boundary or Purchase Units, except commercially operated caves, that is are used by either of these two endangered <i>Virginia big-eared bats</i>.</p>	X	X	X
<p>6760 <i>Safety</i> 1. <i>Dynamiting generally will not be conducted within the opportunity area of a Virginia big-eared cave.</i></p>	X	X	X
<p>2. Dynamiting during maternity or hibernation periods could create a severe stress on these bats. Prohibit dynamiting near caves when the blast exceeds a peak particle velocity of .02 inches per second at the site of the bat colonies. Several formulae are provided here to assist blasters determine safe limits. The formulae are taken from the 1977, Blasters Handbook published by DuPont.</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<p>a) When distance from blast site to the bat colony is known and the weight of the dynamite is needed: $W = (R^{1.6} \times V)^{1.25}$</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<p>b) When pounds of dynamite is known and the distance from blast site to colony is needed: $R = \frac{(160 \times W^{.8})}{(V)^{.63}}$</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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Standards and Guidelines for <i>VA Big-Eared Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p>c) When peak particle velocity is needed and distance from colony to blast site and pounds of dynamite are known:</p> $V = 160 \frac{(R)^{-1.6}}{(W^{1/2})}$ <p>or</p> $V = 160 \frac{(R)^{.63}}{(W^{.8})}$	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<p>Where: V = peak particle velocity in inches per second. R = distance between blast site and colony site in the cave. W = Maximum pounds of dynamite (or its equivalent) per delay period of eight (8) milliseconds or more.</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<p>7710 <i>Transportation Planning</i> Transportation or utility routes should avoid the opportunity area, if possible. Prohibit placement of new utilities or roads across opportunity areas without assessment.</p>	X	X	X

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
1560 <i>Interdepartmental State, Co., and Local Agencies</i> Project activities in these areas will require consultation with USDI, Fish and Wildlife Service. WVDNR will be kept informed of activities.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
1600 <i>Information</i> Cave entrances will be signed and posted against entry. Signs may include USDI, Fish and Wildlife Service and West Virginia Department of Natural Resources authorities. Although signed at cave entrances, caves will not be located on maps published for distribution to the public. No directional signs on roads or trails will be posted directing people to these caves.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
1900 <i>NEPA</i> 1. Standards and Guidelines listed here are minimal. Others may be added as appropriate when designating each new opportunity area for these bats.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
2. Opportunity areas will be defined as: a) <i>Indiana bat hibernacula (caves and an area at least 200 feet in radius from cave entrances) and key areas (area near hibernacula that includes mature stands); and/or</i> b) <i>Land within two miles of a maternity colony for the Indiana bat, unless consultation with the USFWS on a site-specific basis indicates otherwise.</i>	X	X	Not Applicable

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p>2. Opportunity areas will be defined as:</p> <p>a) <i>A 5-mile radius around hibernacula that contains the following elements: 1) hibernacula (caves and cave entrances); 2) key area (area near hibernacula that includes mature stands); 3: primary range (stands adjacent to key area, up to 5 miles radius from cave entrances); and/or</i></p> <p>b) <i>Land within two miles of a maternity colony for the Indiana bat, unless consultation with the USFWS on a site-specific basis indicates otherwise.</i></p>	Not Applicable	Not Applicable	X
<p>e) An area at least 200 feet in radius from the entrance of inhabited caves.</p>	X	X	X
<p>d) An area at least 200 feet in radius around a maternity colony of Indiana Bats as long as the site is used.</p>	X	X	X
<p>e) A forested travel corridor 330 feet wide between cave entrances and foraging areas.</p>	X	X	X
<p>3. <i>Standards for Management Areas 2.0, 3.0, 4.0, 6.1, and 7.0 (areas from which OA 838 may be derived) will continue to apply unless inconsistent with OA 838 standards for Indiana bat.</i></p>	X	X	X
<p>4. <i>OA 838 will not be created from MP 5.0, 6.2, or other 8.0 areas. OA 838 standards will be applied to MP 5.0, 6.2, or other 8.0 acres that are around cave entrances and mature stands near Indiana bat hibernacula, but only to the extent that they are consistent with the Wilderness Act or the standards for these three Management Areas.</i></p>	X	X	Not Applicable

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p><i>4. OA 838 will not be created from MP 5.0, 6.2, or other 8.0 areas. OA 838 standards will be applied to MP 5.0, 6.2, or other 8.0 acres that are within five miles of Indiana bat hibernacula to the extent that they are consistent with the Wilderness Act or the standards for these three Management Areas.</i></p>	Not Applicable	Not Applicable	X
<p>1900 Vegetation</p> <p><i>1. Management of vegetation that is less than 5” in diameter generally may occur in the opportunity area during any time of the year, provided adverse disturbance to bats can be avoided.</i></p>	X	X	X
<p><i>2. Management of vegetation 5” dbh or greater may be implemented within the key areas of Indiana bats or within two miles of their maternity colonies, but only to improve or enhance Indiana bat habitat or for public safety. Activities driven by other legal requirements (e.g. access to private lands) may be allowed after consultation with USFWS and a site-specific analysis determines that there are no other reasonable alternatives. Also, see OA 838 standards for 2400 (Timber Management) and 2670 (Wildlife) that are related to vegetation management.</i></p>	X	X	X
<p><i>3. Management of vegetation 5” dbh or greater may be implemented within the primary range of Indiana bats, but only to improve or enhance Indiana bat habitat, to maintain or enhance natural vegetative communities on appropriate sites (see Forest-wide standards and guidelines 1900 – Vegetation), or for public safety. Also, see OA 838 standards for 2400 (Timber Management) and 2670 (Threatened and Endangered Species that are related to vegetation management).</i></p>	Not Applicable	Not Applicable	X

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p><i>4. To reduce the chance of “taking” a roosting Indiana bat, tree felling for large-scale activities (e.g. most timber sales, construction of collector and arterial roads, etc.) is prohibited within key area and within two miles of maternity colonies between April 1 and November 15.</i></p>	X	Not Applicable	Not Applicable
<p>2150 <i>Pesticide Use, Management, and Coordination</i> Avoid<i>Limit</i> use of pesticides in the management areas<i>opportunity area</i>.</p>	X	X	X
<p>2300 <i>Recreation</i> No new facilities will be constructed for public recreation use <i>at hibernacula or within key areas (see 2670)</i>.</p>	X	X	X
<p>2400 <i>Timber</i> Vegetative treatments may be undertaken if coordinated with bat habitat requirements in the opportunity area. In travel corridors, the objective is to maintain or create an unbroken Forest canopy.</p>	X	X	X
<p><i>1. Commercial timber harvests may occur within key areas and within two miles of maternity colonies only if used as a tool to enhance Indiana bat habitat.</i></p>	X	X	Not Applicable
<p><i>1. Commercial timber harvests may not occur within the primary range, key areas, or within two miles of maternity colonies.</i></p>	Not Applicable	Not Applicable	X

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
2630-2670 <i>Threatened, Endangered, and Proposed Species Management</i> 1. <i>Provide adequate water sources by creating or maintaining between 1 and 4 water sources per square mile.</i>	X	X	X
2. <i>Hibernacula (Caves and cave entrances)</i>	X	X	X
a) Public entrances into caves used as hibernacula for Indiana Bats will be prohibited from September 1 to May 15.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
b) Entry into caves during the closed periods for scientific study and observation will be permitted by written approval of the Forest Supervisor and permit from the USFWS or equivalent.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
c) Gates or fences installed at cave entrances will allow free entry and exit by the bats and will not restrict normal airflows.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
d) Gate installations that disturb cave features or floor must have an archaeological survey prior to disturbance.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
e) Gate installation must conform to requirements of applicable State laws and regulations.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
f) Gates and fences will be monitored and maintained. Frequency of monitoring should be scheduled based on past cave visits, vandalism history, access, and other conditions of potential gate disturbances. A schedule of at least once a month is recommended. Maintenance and repair of gates should be undertaken within reasonable time from vandalism discovery during the period of closure (Generally within two weeks).	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
g) Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover. [Note: this standard has been moved to the 5100 section].	X	X	X
h) Prohibit any construction or permanent type of activities <i>at cave entrances</i> unless created for the protection of threatened or endangered <i>Indiana</i> bats.	X	X	X
3. <i>Key Area</i> a) <i>Protect the surface surrounding each Indiana bat hibernacula by maintaining mature stands near hibernacula that include a minimum of 150 acres. When available, this area should include 20 acres of old growth forest or potential old growth and an additional 130 acres of mature forest. As appropriate, the area should include the area around the cave entrance, area above the known cave entrance, foraging corridor, and ridgetops/side slopes around the cave.</i>	X	X	X
b) <i>Construction or other permanent activities generally will be prohibited in key areas unless needed to protect or enhance habitat for Indiana bats or for public safety.</i>	X	X	X

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
2700 <i>Special Uses</i> Prohibit special uses in the travel corridor that would be adverse to bat use.	X	X	X
1. <i>Special use permits will not be issued within Indiana bat hibernacula.</i>	X	X	X
2. <i>Special use permits may be issued within key areas and within two miles of maternity colonies only if they are compatible with Indiana bat management.</i>	X	X	Not Applicable
3. <i>Special use permits may be issued within the primary range, within key areas, and within two miles of maternity colonies if they are compatible with Indiana bat management.</i>	Not Applicable	Not Applicable	X
2800 <i>Minerals and Geology</i> 1. Surface occupancy will not be permitted for mineral operations on U.S. Federal minerals <i>at cave entrances, within key areas, or within two miles of maternity colonies.</i>	X	X	X
2. <i>Gas development within the primary range may be allowed when compatible with management objectives for Indiana bat.</i>	Not Applicable	Not Applicable	X
3. When minerals are privately owned, consultation with the USDI <i>USFWS</i> will be undertaken to minimize adverse effects on habitat.	X	X	X
4. <i>Shot detonation and ground vibration generally will not be initiated within hibernacula, within key areas, or within two miles of maternity colonies.</i>	X	X	X

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p>5100 Fire Management</p> <p>1. <i>Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover.</i></p>	X	X	X
<p>2. <i>Burn plans for prescribed fires within the primary range will include a smoke management plan that minimizes the duration of smoke in the area, and maximizes smoke dispersion from the area.</i></p>	X	X	X
<p>5400 Landownership</p> <p>Establish as high priority acquisition any caves inside the Monongahela Proclamation Boundary or Purchase Units, except commercially operated caves, that is are used by either of these two endangered <i>Indiana</i> bats.</p>	X	X	X
<p>6760 Safety</p> <p>1. Dynamiting during maternity or hibernation periods could create a severe stress on these bats. Prohibit dynamiting near caves when the blast exceeds a peak particle velocity of .02 inches per second at the site of the bat colonies. Several formulae are provided here to assist blasters determine safe limits. The formulae are taken from the 1977, Blasters Handbook published by DuPont.</p>	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
<p>2. <i>Dynamiting generally will not be conducted within key areas or within two miles of a maternity colony.</i></p>	X	X	X
<p>3. <i>Dynamiting may be permitted within the primary range if compatible with Indiana bat management.</i></p>	Not Applicable	Not Applicable	X

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
4. When distance from blast site to the bat colony is known and the weight of the dynamite is needed:	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
$W = (R^{1.6} \times V)^{1.25}$	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
5. When pounds of dynamite is known and the distance from blast site to colony is needed: $R = \frac{(160 \times W^{.8})^{.63}}{(V)}$	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
6. When peak particle velocity is needed and distance from colony to blast site and pounds of dynamite are known: $V = 160 \frac{(R)^{-1.6}}{(W^{1/2})}$ or $V = 160 \frac{(R)^{.63}}{(W^{.8})}$	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION
Where: V = peak particle velocity in inches per second. R = distance between blast site and colony site in the cave. W = Maximum pounds of dynamite (or its equivalent) per delay period of eight (8) milliseconds or more.	Same as NO ACTION	Same as NO ACTION	Same as NO ACTION

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Table 4. Proposed Changes to Zoological Area Standards for Indiana Bats.

Standards and Guidelines for <i>Indiana Bats</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p>7710 <i>Transportation Planning</i></p> <p>1. Transportation or utility routes should avoid <i>hibernacula, key areas, and maternity sites.</i> the opportunity area, if possible. Prohibit placement of new utilities or roads across opportunity areas without assessment.</p>	X	X	X
<p>2. <i>Roads and trails leading to hibernacula may be blocked or obliterated to further discourage access.</i></p>	X	X	X

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Table 5. Proposed Changes to Zoological Area Standards for WV Northern Flying Squirrels.

Standards and Guidelines for <i>WV Northern Flying Squirrels</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
1560 <i>Interdepartmental State, Co., and Local Agencies</i> Project activities in these areas will require consultation with USDI, Fish and Wildlife Service USFWS . WVDNR will be kept informed of activities.	X	X	X
1900 <i>Vegetation</i> 1. <i>Vegetation management will be conducted only (1) to improve or enhance West Virginia northern flying squirrel habitat or (2) for public safety.</i>	X	X	X
<i>a. If a research permit under the Endangered Species Act section 10 is obtained, vegetation management activities may be allowed in suitable habitat to enhance the recovery of the subspecies and/or determine the affects of an activity on WV northern flying squirrel.</i>	X	X	X
<i>b. Vegetation management for the preservation or enhancement of other threatened and endangered species may be implemented on a limited, case-by-case basis, after consultation with the USFWS.</i>	X	X	X
1950 <i>NEPA</i> Opportunity Areas will be defined as within ½ mile of the confirmed location of the species.	X	X	X
1. Opportunity areas will be defined as: <i>National Forest System lands that provide suitable habitat characteristics consistent with the Guidelines for Habitat Identification and Management found in the Recovery Plan for Appalachian Northern Flying Squirrels, unless consultation with the USFWS on a site-specific basis indicates otherwise.</i>	X	X	X

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Table 5. Proposed Changes to Zoological Area Standards for WV Northern Flying Squirrels.

Standards and Guidelines for <i>WV Northern Flying Squirrels</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
2. <i>A map of suitable habitat will be produced, reviewed periodically, and refined collaboratively with USFWS and WVDNR as needed.</i>	X	X	X
3. <i>All mapped suitable habitat will be considered as potentially occupied by the West Virginia northern flying squirrel, and emphasis will be placed on protecting this habitat.</i>	X	X	X
4. <i>Standards for Management Areas 2.0, 3.0, 4.0, 6.1, and 7.0 (areas from which OA 832 is derived) will continue to apply unless inconsistent with OA 832 standards for West Virginia northern flying squirrel.</i>	X	X	X
5. <i>OA 832 will not be created from MP 5.0, 6.2, or other 8.0 areas. OA 832 standards will be applied to MP 5.0, 6.2, or other 8.0 acres that provide suitable habitat for West Virginia northern flying squirrel to the extent that they are consistent with the Wilderness Act or the standards for these three Management Areas.</i>	X	X	X
2000 See also the interim standards and guidelines in the Plan Appendix.	X	X	X
2300 Recreation <i>No new developed facilities (such as visitor centers and campgrounds) will be constructed. Smaller facilities (such as foot trails, trailheads, picnic sites, ¼ acre vistas) may be constructed if compatible with West Virginia northern flying squirrel management.</i>	X	X	X

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Table 5. Proposed Changes to Zoological Area Standards for WV Northern Flying Squirrels.

Standards and Guidelines for <i>WV Northern Flying Squirrels</i> (in addition to Standards Found in Forest-wide Direction)	Proposed Action	Alternative 1	Alternative 2
<p><i>2400 Timber</i></p> <p><i>Commercial timber outputs will be incidental and subject to guidance under 1900.</i></p>	X	X	X
<p><i>2700 Special Uses</i></p> <p><i>Special use permits may be issued if they are compatible with West Virginia northern flying squirrel management.</i></p>	X	X	X
<p><i>2800 Minerals</i></p> <p><i>Development of federal gas would generally be allowed as long as (1) it remains within the limits projected in the 1991 Environmental Assessment Oil and Gas Leasing and Development and (2) if protection measures for West Virginia northern flying squirrel are developed through consultation with the USFWS prior to Forest Service approval of operations.</i></p>	X	X	X
<p><i>7700 Transportation</i></p> <p><i>Road construction will not normally occur in suitable West Virginia northern flying squirrel habitat. Limited exceptions to this may be made for research related projects or other projects (e.g. related to gas well development, access to private lands, etc.) approved after consultation with the USFWS.</i></p>	X	X	X

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Table 6. Proposed Monitoring and Evaluation Direction applicable under all action alternatives.

MONONGAHELA NATIONAL FOREST						
Monitoring and Evaluation						
NFMA Required	Purpose of Monitoring	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
Ref. To Regs. 219.19 Monitor population trends in indicator species as result of habitat changes.	Determine whether population trends indicate that viable populations of all wildlife species are being maintained.	<i>West Virginia Northern Flying Squirrel</i>	<i>Amount of habitat available and Population trends</i>	<i>3 Years</i>	<i>Moderate</i>	<i>Moderate</i>
Concern #4 Wildlife Management	<i>Survey for new populations of threatened, endangered, and proposed species.</i>	<i>Site specific survey of potential habitat</i>	<i>Number of new populations identified by species</i>	<i>Annual or as needed</i>	<i>High</i>	<i>High</i>
Concern #4 Wildlife Management	<i>Identify and monitor threats to known threatened, endangered, and proposed species’ populations. Evaluate the effectiveness of protection and management programs; redirect efforts as necessary.</i>	<i>Plan standards and guidelines.</i>	<i>Population trends and habitat changes</i>	<i>Frequency depends on species</i>	<i>Moderate</i>	<i>Moderate</i>
Concern #4 Wildlife Management	<i>Monitor existing populations and new sites of threatened, endangered, and proposed species.</i>	<i>Threatened, endangered, and proposed</i>	<i>Amount of habitat available and</i>	<i>3 Years</i>	<i>Moderate to low</i>	<i>Moderate to low</i>

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Table 6. Proposed Monitoring and Evaluation Direction applicable under all action alternatives.

MONONGAHELA NATIONAL FOREST						
Monitoring and Evaluation						
NFMA Required	Purpose of Monitoring	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
		<i>species</i>	<i>population trends</i>			
Concern #4 Wildlife Management	<i>Monitor federally listed threatened, endangered, and proposed species to meet requirements outlined in any Biological Opinion issued by the USFWS for the MNF as a result of formal consultation.</i>	<i>Threatened, endangered, and proposed species</i>	<i>As necessary to meet requirements of Biological Opinions.</i>	<i>As necessary to meet requirements of Biological Opinions.</i>	<i>Moderate</i>	<i>Moderate</i>
Concern #4 Wildlife Management	<i>Continue to seek Indiana bat maternity sites and evidence of summer use on the MNF on a watershed basis using survey methods and frequencies that follow guidelines and protocols established by the USFWS, in consultation with the USFWS and the WVDNR.</i>	<i>Indiana bat</i>	<i>As necessary to meet requirements of Biological Opinion.</i>	<i>As necessary to meet requirements of Biological Opinion.</i>	<i>Moderate</i>	<i>Moderate</i>

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Table 7. Proposed Changes to *Forest Plan* Appendices.

Changes to Appendices	Reason for Modifying
<p>Appendix K, page 15: (16) Threatened or Endangered, and sensitive flora and fauna and their habitat will be protected. See Plan forest-wide standards and guidelines 2670, special area zoological area standards and guidelines namely Essential Habitat for T&E bats and Occupied Habitat for West Virginia Northern Flying Squirrel (VNFS), Plan Appendices X (VNFS) and Appendix U (Sensitive Plant and Animal Species); and any recovery plans for T&E species.</p>	<p>Appendix X is no longer up-to-date with the recovery plan for West Virginia northern flying squirrel. The action alternatives would rescind Appendix X and only use the <i>Appalachian Northern Flying Squirrels Recovery Plan (Updated)</i> to manage West Virginia northern flying squirrel. Tiering to the squirrel’s recovery plan is consistent with <i>Forest Plan</i>, p. 84.</p>
<p>Appendix K, page 17: (6) Within 1320 feet of caves used by the INDIANA OR VIRGINIA BIG EARED BATS, construction and gas drilling and development will not be allowed when the caves are occupied by these bats. <i>See Zoological Area 2800 Minerals and Geology standards for guidelines applicable to Indiana bats.</i></p> <p>Consultation with the US Fish and Wildlife Service is mandatory prior to allowing gas development near designated MA-8 bat caves <i>within the opportunity areas established for Virginia big-eared bat and Indiana bat.</i></p>	<p>Changes to Virginia big-eared and Indiana bats standards are proposed.</p>
<p>Appendix K, page 17: (8) No earth disturbance or vehicle use will be permitted at known locations of running buffalo clover <i>threatened, endangered, and proposed plant species.</i></p>	<p>Other plant species have been identified as threatened and endangered since the mineral amendment was completed. This language would address change.</p>
<p>Appendix X would be deleted in its entirety.</p>	<p>Appendix X is not consistent with the <i>Appalachian Northern Flying Squirrels Recovery Plan (Updated)</i>.</p>