APPENDIX H:
AUTHORIZED CHANGES TO FOREST PLAN
THREATENED AND ENDANGERED SPECIES STANDARDS

The pages of threatened and endangered species standards and guidelines that are contained within this appendix replace the existing pages of threatened and endangered species standards in the 1986 Forest Plan (Monongahela National Forest Land and Resource Management Plan). These changes will assist the Monongahela National Forest 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.

MONONGAHELA NATIONAL FOREST

Elkins, West Virginia

March 2004

Forest Plan Amendment No. 6

Page Code	Page Color	Superseded (number of pages)	New
84 thru 88	Yellow	6	13
190a-190g	Buff	0	7
230 thru 234b	Orange	5	14
252	Orange	1	1
256-256a	Orange	1	2
K-15	White	1	1
K-17	White	1	1

Digest: Modifies threatened and endangered species standards and guidelines.

Clyde N. Thompson
Forest Supervisor

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity				
FSM	Related	Subject	General Direction	Standard/Guideline
2640	IV	Stocking	A. Exotic fish or wildlife species will not be transplanted to or within National Forest lands unless the transplanting is part of an endangered species program.	
			B. Trout stocking will be permitted within the National Forest.	1. No “put and take” stockings will be made in natural producing native brook trout waters, unless stream productivity is very low and cannot feasibly be improved. Stocking should favor native (brook trout) or naturalized fish species (rainbow or brown trout). 2. Quality will be favored over quantity, and, in some stances, stocking numbers, sizes, and species may be manipulated to provide a quality experience and to protect the stream zone from environmental degradation. 3. Stocking will be in accordance with the current Memorandum of Understanding between the Fish and Wildlife Service, Department of Interior, and the West Virginia Department of Natural Resources.
2670	IV	Threatened and Endangered Species	A. Management will protect or enhance habitat for threatened and endangered species and consider the needs of species identified as special or unique.	1. Management of habitat essential to threatened, endangered, and proposed species is considered the first priority management activity. 2. Forest personnel will work with State agencies and the U.S. Department of the Interior Fish and Wildlife Service (USFWS) in identifying habitat essential for threatened, endangered, and proposed species. 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. 4. The U.S. Department of Agriculture Forest Service (USFS) will participate in the development of recovery plans for all threatened, endangered, and proposed species.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity				
FSM	Related	Subject	General Direction	Standard/Guideline

5. The following federally listed threatened and endangered species are known to occur or may occur on the MNF:

Bald eagle	*Haliaeetus leucocephalus*
Cheat Mountain salamander	*Plethodon nettingi nettingi*
Eastern cougar (considered extirpated)	*Puma concolor couguar*
Indiana bat	*Myotis sodalis*
Virginia big-eared bat	*Corynorhinus townsendii virginianus*
West Virginia northern flying squirrel	*Glaucomys sabrinus fuscus*
Running buffalo clover	*Trifolium stoloniferum*
Shale barren rock cress	*Arabis serotina*
Small whorled pogonia	*Isotria medeoloides*
Virginia spiraea	*Spiraea virginiana*

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.

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.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				8. When activities are proposed in areas with a likelihood of occurrence for threatened, endangered, and proposed species, take one of the following actions: a. Redesign the proposed action to avoid the area, or b. Conduct on-site 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 c. Assume potential presence of threatened, endangered, and proposed species and proceed with action if appropriate mitigation or beneficial measures can be implemented, or d. In rare instances where adverse effects to threatened, endangered, and proposed species cannot be avoided, the Forest will request formal consultation with the USFWS.
				9. 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: a. The area of influence for Virginia big-eared bat is recognized as identified summer colonies, hibernation sites, corridors, and foraging/roosting areas (6 miles in radius from hibernacula and summer colonies). Identified summer colonies, hibernation sites, and corridors will be managed under MP 8.0 and Zoological Area standards for Opportunity Area 837. Forest-wide, MP 8.0, and Zoological standards for OA 837 will be used to manage Virginia big-eared populations.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity				
FSM	Related	Subject	General Direction	Standard/Guideline

b. The area of influence for Indiana bats is recognized as four distinct areas - maternity sites, hibernacula, key areas, and the primary foraging, roosting, and swarming areas (hereinafter referred to as the primary range) of Indiana bats on the MNF. Maternity sites, 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. Forest-wide, MP 6.3, MP 8.0, and Zoological standards for OA 838 will be used to manage Indiana bat populations.

c. 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.

10. 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.

11. Determine and implement appropriate habitat management techniques to maintain or enhance populations of threatened, endangered, and proposed species.

12. Project analyses will consider, as needed, ways of minimizing or eliminating threats to threatened, endangered, and proposed species due to non-native invasive species.

13. Additional Forest-wide standards to address the specific needs of threatened, endangered, and proposed species are identified below.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				a. Peregrine Falcon 1) The Forest will cooperate in the peregrine falcon restoration program by stocking 10 active pairs after inventorying and evaluating potential habitat, and prohibiting public intrusion on cliffs where the falcon has been introduced. The following standards will apply: a) 0-5 chains from nest site. Land uses will be prohibited between February 1 and August 30, except for actions necessary to protect nest sites. Restrictions will also apply to rock climbers and hikers. b) 5-10 chains from nest site. Land uses will not be permitted except those activities which do not make significant changes in the landscape. Permitted activities include thinning, maintenance of permanent openings, pruning, etc. Restrictions will apply yearlong. Clearcutting, land clearing and construction activity will be permitted in this zone during the period September 1 to January 30, in years following a successful stocking and breeding pair establishment, if a review by foresters and biologists concurs with the proposed treatment. c) 10-20 chains from nest site. Land uses are permitted in this zone yearlong, except blasting should be restricted to the September 1 to January 30 period. d) Over 20 chains from nest site. No constraints on management during any time of year.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity				
FSM	Related	Subject	General Direction	Standard/Guideline
				b. Virginia Big-Eared Bat
				1) Identified summer colonies, hibernation sites, and corridors will be managed under MP 8.0 and Zoological Area standards for Opportunity Area 837. Foraging habitat will be managed under Forest-wide standards.
				2) Before taking any actions on buildings that are within 6 miles of Virginia big-eared bat hibernacula or summer colonies, evaluate their potential to serve as roosting habitat and apply management protections as necessary.
				3) A forested travel corridor of 330 feet wide will be protected between cave entrances and foraging areas. In travel corridors, the objective is to maintain or create an unbroken Forest canopy. Use of pesticides will be limited in the corridor.
				4) Burn plans for prescribed fires will be developed to ensure adverse effects to Virginia big-eared bats are avoided.
				c. Indiana Bat
				1) Hibernacula, maternity sites, and key areas of the Indiana bat will be managed under 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. Forest-wide standards and the following standards will also be used to manage these areas.
				2) Each year, report quarterly to the USFWS the cumulative amount of acres involved in tree removal and prescribed burning.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				3) Retain all shagbark hickory trees in cutting units except where public safety concerns exist. 4) Monitor snag retention in cutting units. If an average of less than 6 snags/acre with 9" dbh or greater exists, manually create additional snags. 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). 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. 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 using the best available scientific information.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				8) If any new Indiana bat hibernacula are discovered, the MNF shall develop an appropriate protection plan, which could include signs, fences, or gates. 9) In addition to those projects allowed under the programmatic incidental take statement, specific projects may proceed without formal consultations if implemented during the hibernation period. a) These projects do not count against the annual allowable acres permitted under the programmatic incidental take statement. 10) In addition to those projects allowed under the programmatic incidental take statement, specific projects may also proceed during the non-hibernation period without formal consultation if: a) They occur outside of areas of influence for Indiana bats (2670 (A)(9)(b)), areas surrounding known Indiana bat roost trees or capture sites, and b) They are surveyed for Indiana bats according to protocols established by the USFWS, and c) No Indiana bats are detected. (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. (ii) Projects cleared by surveys under this standard must be completed within three years of the surveys.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity				
FSM	Related	Subject	General Direction	Standard/Guideline

d) These projects do not count against the annual allowable acres permitted under the programmatic incidental take statement. Acres affected under this exception will be reported as required under 2670(A) (13) (c) (2).

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.

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.

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.

14) Burn plans for prescribed fires will be developed to ensure adverse effects to Indiana bats are avoided.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				d. Eastern Cougar Observations or evidence of presence will be reported to WVDNR in order to verify the existence of this species. 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 hardwood stands some distance from spruce – stands which, historically, may have been spruce stands. It usually occurs above 2,600 feet in elevation, in or under logs, under rocks and mosses, and where critical temperatures, humidity, and 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, including their buffer, will be avoided. 2) 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. f. Eagle and Osprey The search for eagle and osprey nests on the Forest will continue. Any nesting sites found will be protected.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		

g. West Virginia Northern Flying Squirrel

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).

h. Shale Barren Rock Cress

1) 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:

a) 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 and shale barren rock cress populations. This guideline will be applied on a case-by-case basis in consultation with the USFWS.

b) 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.

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.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				14. Sensitive, unique, or special plants or animals will be considered in the design of projects. The forest will maintain a list of these species and will coordinate with the WV Heritage Data Base for inventory data (see Appendix U). Mitigation measures will be used as appropriate to protect sensitive species.
		T & E and Sensitive Species	B. Sensitive wildlife species will be afforded the highest possible protection commensurate with the other appropriate uses and benefits.	1. A survey for sensitive species will be done during and as part of normal project reconnaissance and design.
				2. If sensitive species are found, mitigation measures will be made part of the project design.
				3. Data will be collected on sensitive species to determine if they should (1) be dropped from the sensitive species list, (2) be recommended for consideration as a Regional Forester's sensitive specie, or (3) be recommended for Threatened and Endangered Status.
			C. Riparian Management will protect and enhance habitat for wildlife species and consider the needs for species identified as Threatened, Endangered, Special, or Unique.	1. Endangered bat foraging habitat includes riparian land and vegetation approximately 100 feet wide along both sides of streams which are at least 30 feet wide as of June 15. Included are aquatic ecosystems, floodplains, riparian ecosystems, and wetlands. The following guidelines will apply: a. Protect all standing dead trees, except for public safety in trailside areas. Dead down trees may be removed. b. Protect living loose bark trees such as hickories, elms, oaks, and sycamores. c. Protect hollow trees and den trees whether living or dead.

FOREST-WIDE STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				d. Vegetation manipulation, in the form of patch clearcutting (five acres or less), may be accomplished to perpetuate or establish desirable tree species or composition in riparian areas. e. Major occupancy developments in riparian areas will not be encouraged but considered on a case-by-case basis through the Environmental Analysis process. f. Extensive use of pesticides in foraging habitat should be avoided.
2700	XIV	Special Uses	A. Approve application for other special uses involving National Forest lands, including wind, solar, and hydro power generation sites, on an individual basis using standards and guidelines contained in the Regional Guide and Forest Plan.	1. Permittees will meet the same environmental standards as those applied to Forest Service facilities. 2. All new utility right-of-way uses will be placed on existing rights-of-way corridors where feasible. Only as a last resort will new rights-of-way corridors be permitted on National Forest land. 3. Widths of utility corridors may be varied by allowing wider than minimum clearing and corridor maintenance. Varied widths, meandering edge, increased edge vegetative species, and varied density or basal area of bordering vegetation will all promote better wildlife and visual conditions. Corridor route selection and design will be in accordance with sound engineering principles and Volume 2, Chapter 2 of the National Forest Landscape Management Handbook, Utilities. Not all corridors will necessarily be of varied width. The need for and advantages of a varied width will be determined through the corridor design and Environmental Analysis processes. 4. New power lines, less than 34.5 KV, and telephone lines will be placed underground, unless investigation clearly indicates this is not in the public interest or will cause excessive soil disturbance.

MANAGEMENT PRESCRIPTION 6.3

PURPOSE

This prescription will emphasize the following:

Primary

- Management of the habitat most likely to be used as summer roosting, foraging, and fall swarming habitat by Indiana bats on the MNF. This habitat is referred to as the primary range of the Indiana bat.

Secondary

- Management of other threatened and endangered species.
- A semi-primitive and non-motorized type of recreational environment. When roads are open to motorized use, semi-primitive motorized experiences will be provided.
- A mix of forest products.

AREA DESCRIPTION

This management prescription (MP) is assigned to lands that exist within five miles of known Indiana bat hibernacula excluding hibernacula or key areas, which are managed via Forest-wide and MP 838 standards. MP 6.3 lands are considered to be the primary range (summer foraging, roosting, and fall swarming areas) of Indiana bats on the MNF. These areas will be managed to provide the basic habitat components needed by the Indiana bat over time.

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.

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 range 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.

DESIRED FUTURE CONDITION

Management Prescription 6.3 Areas will be defined around known Indiana bat hibernacula and will include Indiana bat primary summer foraging, roosting, and fall swarming habitats. Areas may vary in size, but will extend no more than 5 miles in radius from hibernacula.

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 primarily enhance the habitat of the Indiana bat. Emphasis will also be placed on habitat needs of other threatened and endangered species (e.g. VA big-eared bat). Management activities may contribute to a sustained yield of timber products.

A system of roads and trails will provide access within the area for administrative and management purposes, including the transportation of forest products. Non-motorized recreation opportunities will be provided by controlling public motorized vehicle use. Where roads are temporarily opened, semi-primitive motorized experiences will be provided.

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.

Facilities such as utility corridors or other special uses will be permitted, provided they are compatible with Indiana bat habitat management.

MANAGEMENT PRESCRIPTION 6.3 STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
1500		External Relations		1. Project activities in these areas will require consultation with USDI, Fish and Wildlife Service (USFWS). WVDNR will be kept informed of activities.
1900		Vegetation		1. Management of vegetation that is less than 5" dbh may occur any time of the year. 2. 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 or other threatened and endangered species' 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. 3. Retain all known Indiana bat roost trees. 4. Retain all shagbark hickory trees, unless they create a safety hazard. 5. Snags and cull trees will be managed to keep them available in this prescription throughout the entire rotation. a. Retain all snags unless they create a safety hazard. If an average of less than 6 snags/acre with 9" dbh or greater 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.

MANAGEMENT PRESCRIPTION 6.3 STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				b. 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.
2150		Pesticide Use, Management, and Coordination		1. Limit use of pesticides in these areas.
2200		Range Management		1. 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.
2300		Recreation Management		1. 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.
2380		Visual Management		1. The Indiana bat primary range will be managed to meet the same visual quality objectives identified for MP 6.1 areas.
2400		Timber Management		1. Timber management practices may be implemented on National Forest lands within the primary range of Indiana bats only to improve or enhance Indiana bat or other threatened and endangered species habitat, to maintain or enhance natural vegetative communities on appropriate sites (see Forest-wide standards and guidelines 1900 – Vegetation), or for public safety.

MANAGEMENT PRESCRIPTION 6.3 STANDARDS/GUIDELINES

Management Activity				
FSM	Related	Subject	General Direction	Standard/Guideline
2410		Timber Regulation		1. To meet Indiana bat and other wildlife needs, seek to establish a balanced age class distribution. Normal rotation ages would be: Species / Productivity / Rotation Ages Oak Hickory / All sites / 200 Mixed Hardwood / All sites / 200 Conifer (Spruce & Pine) / All sites / 80-100 Black Cherry / All sites / 120 2. 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.
2460		Other than Commercial Sales		1. 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.
2470		Silvicultural Systems		1. 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. 2. 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.

MANAGEMENT PRESCRIPTION 6.3 STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				3. 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. 4. When designing regeneration harvest areas under the even-aged system, the following will be used to ensure appropriate "leave trees" are retained for Indiana bat habitat: a. Follow 1900 standards for snag and cull management. 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. 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. 1) Leave clumps should be retained at a rate of one-third an acre per five to eight acres of regeneration harvest area. 2) These clumps should be attached to the woodland edge by a corridor of trees, if possible. 3) Snag or cull clumps left along stream shade strips or seeps are preferred over isolated clumps or clumps along other edges.

MANAGEMENT PRESCRIPTION 6.3 STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				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.
				5. If individual and group selection harvests are implemented, ensure that a component of large, over-mature trees, if available, remain in the immediate vicinity to provide suitable roosting habitat.
				6. Until a balanced age class distribution is achieved, regeneration harvests may occur anytime after age 70 and will emphasize stands originating after 1905.
				7. 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.
2600		Wildlife Management		1. 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.
				2. 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.
				3. Maintain no more than 7.5 percent of the primary range in the 0-14 age class (woodland habitat) at any time.
				4. Provide adequate water sources by creating or maintaining between 1 and 4 water sources per square mile within the primary range.

MANAGEMENT PRESCRIPTION 6.3 STANDARDS/GUIDELINES

Management Activity			General Direction	Standard/Guideline
FSM	Related	Subject		
				5. 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.
2700		Special Use Management		1. Special use permits may be issued within the primary range if they are compatible with Indiana bat management.
2800		Minerals and Geology		1. Gas development within the primary range may be allowed when compatible with management objectives for Indiana bat.
				2. When minerals are privately owned, consultation with the USFWS will be undertaken to minimize adverse effects on habitat.
5100		Fire Management		1. Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover.
				2. 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.
6760		Safety		1. Dynamiting may be permitted within the primary range if compatible with Indiana bat management.
7700		Transportation System		1. Roads and trails leading to hibernacula may be blocked or obliterated to further discourage access.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
To be designated	Grouse Management Area	See Direction in Appendix T	
837	Essential Habitat for Virginia Big-eared Bat	Important habitat for Virginia Big-eared Bat (*Corynorhinus townsendii virginianus*) will be managed in order to protect and enhance the population of this species.	1500 External Relations Project activities in these areas will require consultation with the U. S. Department of the Interior Fish and Wildlife Service (USFWS). The West Virginia Division of Natural Resources (WVDNR) will be kept informed of activities. 1600 Information Cave entrances will be signed and posted against entry. Signs may include USFWS and WVDNR 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. 1900 Vegetation Vegetation management will be conducted within opportunity areas 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), (2) for public safety, or (3) in association with abandoned mine site reclamation. 1950 NEPA 1. Standards and Guidelines listed here are minimal. Others may be added as appropriate when designating each new opportunity area for these bats.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			2. Opportunity areas will be defined as: a. An area at least 200 feet in radius from the entrance of inhabited caves. 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. c. An area at least 200 feet in radius from inhabited abandoned mine adits. 2150 Limit use of pesticides in these management areas. 2300 Recreation No new facilities will be constructed for public recreation use. 2400 Timber Vegetative treatments may be undertaken if coordinated with bat habitat requirements in the opportunity area. 2670 Threatened, Endangered, and Proposed Species Management 1. Public entrance into caves used as hibernacula for Virginia big-eared bat will be prohibited from September 1 to May 15. 2. Public entrance into caves occupied on the National Forest will be prohibited during the nursery season from April 1 to September 15. 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.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			4. Gates or fences installed at cave entrances will allow free entry and exit by the bats and will not restrict normal airflows. 5. Gate installation that disturbs cave features or floor must have an archaeological survey prior to disturbance. 6. Gate installation must conform to requirements of applicable State laws and regulations. 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). 8. Prohibit any construction or permanent type of activities within the opportunity area unless created for the protection of Virginia big-eared bats, protection of other cave resources, public safety, or reclamation associated with abandoned mine sites. 2700 Special Uses 1. Prohibit special uses in the opportunity area that would be adverse to bat use. 2. Special use permits will not be issued for caves that harbor Virginia big-eared bats.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			2800 Minerals and Geology 1. Surface occupancy will not be permitted for mineral operations on Federal 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. Also refer to mandatory standards in Appendix K. 2. Shot detonation and ground vibration generally will not be allowed within the opportunity area. 5100 Fire Management Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover. 5400 Landownership Establish as high priority acquisition any caves inside the Monongahela Proclamation Boundary or Purchase Units, except commercially operated caves that are used by Virginia big-eared bats. 6760 Safety 1. Dynamiting generally will not be conducted within the opportunity area of a Virginia big-eared cave. 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.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			a. When distance from blast site to the bat colony is known and the weight of the dynamite is needed: $W = \frac{(R^{1.6} \times V)^{1.25}}{(160)}$
			b. When pounds of dynamite is known and the distance from blast site to colony is needed: $R = \frac{(160 \times W^{.8})^{.63}}{(V)}$
			c. 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 $V = 160 \frac{(R)^{.63}}{(W^{.8})}$
			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.
			7710 Transportation Planning Transportation routes should avoid the opportunity area.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
838	Essential Habitat for Indiana Bat	Important habitat for Indiana Bat (Myotis sodalis) will be managed in order to protect and enhance the population of this species.	1500 External Relations Project activities in these areas will require consultation with USDI, Fish and Wildlife Service (USFWS). West Virginia Division of Natural Resources (WVDNR) will be kept informed of activities. 1600 Information Cave entrances will be signed and posted against entry. Signs may include USFWS and WVDNR 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. 1900 Vegetation 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. 2. Management of vegetation 5" dbh or greater may be implemented within 200 feet of the hibernacula, the key areas of Indiana bats or within two miles of their maternity site, 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. 1950 NEPA 1. Standards and Guidelines listed here are minimal. Others may be added as appropriate when designating each new opportunity area for these bats.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			2. Opportunity areas will be defined as: a. 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 b. Land within two miles of a maternity site for the Indiana bat, unless consultation with the USFWS on a site-specific basis indicates otherwise. 3. 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. 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 near hibernacula or within key areas but only to the extent that they are consistent with the Wilderness Act or the standards for these three Management Areas. 2150 Pesticide Use, Management, and Coordination Limit use of pesticides in the opportunity area. 2300 Recreation No new facilities will be constructed for public recreation use at hibernacula or within key areas (see 2670). 2400 Timber Commercial timber harvest may not occur within 200 feet of hibernacula. Commercial timber harvests may occur within key areas and within two miles of maternity sites only if used as a tool to enhance Indiana bat habitat.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			2670 Threatened, Endangered, and Proposed Species Management 1. Provide adequate water sources by creating or maintaining between 1 and 4 water sources per square mile. 2. Hibernacula (Caves and an area at least 200 feet in radius from cave entrances). a. Public entrances into caves used as hibernacula for Indiana Bats will be prohibited from September 1 to May 15. 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. c. Gates or fences installed at cave entrances will allow free entry and exit by the bats and will not restrict normal airflows. d. Gate installations that disturb cave features or floor must have an archaeological survey prior to disturbance. e. Gate installation must conform to requirements of applicable State laws and regulations. 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).

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			g. Prohibit any construction or permanent type of activities at cave entrances unless created for the protection of Indiana bats, protection of other cave resources, or for public safety.
			3. Key Area
			a. 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 ridge tops/side slopes around the cave.
			b. 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.
			2700 Special Uses
			1. Special use permits will not be issued within Indiana bat hibernacula.
			2. Special use permits may be issued within key areas and within two miles of maternity sites only if they are compatible with Indiana bat management.
			2800 Minerals and Geology
			1. Surface occupancy will not be permitted for mineral operations on Federal minerals at hibernacula, within key areas, or within two miles of maternity sites.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			2. When minerals are privately owned, consultation with the USFWS will be undertaken to minimize adverse effects on habitat.
			3. Shot detonation and ground vibration generally will not be initiated within hibernacula, within key areas, or within two miles of maternity sites.
			5100 Fire Management
			1. Give high priority to controlling forest fires to prevent bat asphyxiation or significant changes to the vegetative cover.
			2. 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.
			5400 Landownership
			Establish as high priority acquisition any caves inside the Monongahela Proclamation Boundary or Purchase Units, except commercially operated caves that are used by Indiana bats.
			6760 Safety
			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.
			2. Dynamiting generally will not be conducted within key areas or within two miles of a maternity colony.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			3. When distance from blast site to the bat colony is known and the weight of the dynamite is needed: $W = \frac{(R^{1.6} \text{ x } V)^{1.25}}{(160)}$ 4. When pounds of dynamite is known and the distance from blast site to colony is needed: $R = \frac{(160 \text{ x } W^{.8})^{.63}}{(V)}$ 5. 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 $V = 160 \frac{(R)^{.63}}{(W^{.8})}$ 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.
			7710 Transportation Planning 1. Transportation routes should avoid hibernacula, key areas, and maternity sites**.** 2. Roads and trails leading to hibernacula may be blocked or obliterated to further discourage access.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
832	Occupied Habitat for West Virginia Northern Flying Squirrels (Glaucomys sabrinus fuscus)	Important habitat for West Virginia Northern Flying Squirrels (Glaucomys sabrinus fuscus) will be managed to protect and enhance the population until it becomes viable.	1500 External Relations 1. A map of suitable habitat will be collaboratively produced with USDI Fish and Wildlife Service (USFWS) and West Virginia Division of Natural Resources (WVDNR). This map will be based on the best scientific and commercial data available and will include all verified capture sites of West Virginia northern flying squirrel. This map may be reviewed periodically and will be refined when USDA Forest Service (USFS) biologists determine that suitable habitat may be present in a project or analysis area and may be affected. 2. Project activities in these areas will require consultation with USFWS. WVDNR will be kept informed of activities. 1900 Vegetation 1. On a limited, case-by-case, basis vegetation management in suitable habitat will be conducted only after consultation with the USFWS, and: a. for public safety, or b. under an Endangered Species Act Section10 research permit to determine the affects of an activity on West Virginia northern flying squirrel and to determine activities that would contribute to the recovery of the species, or c. to improve or enhance West Virginia northern flying squirrel habitat, or d. for the preservation, or enhancement of other threatened and endangered species habitat, or

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			e. when part of allowed activities where project level analysis results in a no effect or may affect, not likely to adversely affect determination (for example activities allowed under OA 832 standards 2300, 2800.
			1950 NEPA
			1. Opportunity areas will be defined as: 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.
			2. 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.
			3. Standards for Management Areas 2.0, 3.0, 4.0, 6.1, 6.3, 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.
			4. 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.
			2300 Recreation
			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.

ZOOLOGICAL AREA STANDARDS/GUIDELINES

OA Number	Zoological Area Name	General Direction	Standard/Guidelines (In addition to standards found in Forest-wide direction)
			2400 Timber Commercial timber outputs will be incidental and subject to guidance under 1900. 2700 Special Uses Special use permits may be issued if they are compatible with West Virginia northern flying squirrel management. 2800 Minerals 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.

TABLE 9 (con't.)

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
			Fenced exclosures	5 Years	Moderate	High
		Endangered Bats (2)	Population trends	2 Years	High	Moderate
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.	West Virginia Northern Flying Squirrel	Amount of habitat available and Population trends	3 Years	Moderate	Moderate
		Black Bear	Amount of habitat available and population trends	Annual	Moderate	High
		Wild Turkey	Amount of habitat available and population trends	Annual	Moderate	Moderate
		Varying Hare	Amount of habitat available and population trends	Every 5 Years	Low	Low
		Gray Squirrel	Amount of habitat available and population trends	Every 5 Years	Low	Low

TABLE 9 (con't.)

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
Management Problem #4 Wildlife Management (Con't.)	Determine if sensitive species objectives and standards are being met.	Sensitive Species list	Number of listed species	3 Years	High	Moderate
	Survey for new populations of threatened, endangered, and proposed species.	Site specific survey of potential habitat	Number of new populations identified by species	Annual or as needed	High	High
	Identify and monitor threats to known threatened, endangered, and proposed species' populations. Evaluate the effectiveness of protection and management programs; redirect efforts as necessary.	Plan standards and guidelines	Population trends and habitat changes	Frequency depends on species	Moderate	Moderate
	Monitor existing populations and new sites of threatened, endangered, and proposed species.	Threatened, endangered, and proposed species	Amount of habitat available and population trends	3 Years	Moderate to low	Moderate to low
	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.	Threatened, endangered, and proposed species	As necessary to meet requirements of Biological Opinions	As necessary to meet requirements of Biological Opinions.	Moderate	Moderate

TABLE 9 (con't.)

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
Management Problem #4 Wildlife Management (Con't.)	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.	Indiana bat	As necessary to meet requirements of Biological Opinion.	As necessary to meet requirements of Biological Opinion.	High	Moderate
Management Problem #5 Conifer Management	Confirm compliance with standards, particularly the vegetative diversity and conifer/hardwood components	Plan Standards and guidelines	Varies	Annual	High	High
Management Problem #6 Vegetation Manipulation	Compare accomplishment with objectives; assure allowable sale quantity not exceeded; confirm that silvicultural intent of management prescriptions met; assure harvest on unsuitable lands is incidental and/or meets other resource needs	Timber Harvest	MMBM and acres by harvest method, management prescription, and timber type.	Quarterly	Very high	Very high

(12) Baffle and/or suppress machinery sounds, if necessary.

(13) Power line right-of-way locations are subject to Forest Service approval.

(14) The operator shall perform all work with explosives in such a manner as not to endanger life or property. The method of storing and handling explosives and flammable materials shall conform to recommended procedures in all Federal, Sate and local laws and regulations.

(15) The Forest Service has the responsibility to ensure that an archaeological survey is made on all sites of proposed mineral activity. If sites are identified, they must be avoided or evaluated to determine if they are significant. Significant sites will be avoided or other steps will be taken to mitigate the activity's effects. Protection measures for significant cultural resource sites will be developed and implemented when a proposal is made to operate on the lease area. See also Plan forest-wide standards and guidelines 2360 B. and Appendix Q.

If cultural resources are discovered, the operator will assume the cost of evaluation and mitigation by a qualified archaeologist. Archaeologists conducting survey, evaluation, and/or mitigation for an operator must first secure a Special Use permit from the Forest Service.

(16) Threatened, 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 Appendix U (Sensitive Plant and Animal Species) and any recovery plans for T&E species.

(17) Roads will not generally be permitted within a wetland. If a wetland cannot be avoided, road construction may be allowed as long as the subsurface drainage patterns can be preserved and maintained. Any road that would cross a wetland should cross in a way that minimizes total disturbance to the wetland. Any wetland habitat destroyed will be replaced or another wetland enhanced by an equal or greater amount of wetland.

(18) When mineral developments are located within 500 feet of the boundary of a developed recreation area, seasonal restrictions will be implemented to mitigate potential user safety hazards and user conflicts.

(19) Where trail locations are used for roads, the trails will be relocated (See forest-wide standards and guidelines 2350 D.2.)

they will develop specific guidelines for the particular nest involved in consultation with the U.S. Fish and Wildlife Service. They could include, but are not limited to restricting all activity within ½ mile of the nest, or placing seasonal restrictions on activities.

(2) Within 660 feet of a PEREGRINE FALCON nest or hack site, no surface occupancy or disturbance will be permitted.

(3) Within 1320 feet of an occupied PEREGRINE FALCON nest or hack site, blasting will not be permitted from February 1 to August 31.

(4) Within 2640 feet of an occupied PEREGRINE FALCON nest or hack site, gas well drilling will into be permitted from February 1 to August 31.

(5) Within 300 feet of a CHEAT MOUNTAIN SALAMANDER colony, no surface occupancy or disturbance will be permitted. Consultation with the U.S. Fish and Wildlife Service is mandatory prior to allowing gas developments near colonies.

(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. See Zoological Area 2800 Minerals and Geology standards for guidelines applicable to these bats.

Consultation with the US Fish and Wildlife Service is mandatory prior to allowing gas development within the opportunity areas established for Indiana and Virginia big-eared bat.

(7) No surface occupancy will be permitted in shale barrens, or at known locations of shale barren rock cress.

(8) No earth disturbance or vehicle use will be permitted at known locations of threatened, endangered, and proposed plant species.

c. Other Resources

(1) The reserve pit for discharge of drilling waste will be installed so that the top edge of the pit is at a slight downgrade (lower elevation) from the hole location.

(2) Drilling pits will be located outside of filter strips of functioning channels as defined below in (8). Pits will be obliterated after pit contents are removed (see (3) and (4) below).

Pit liners shall be 20 miles in thickness unless a proponent can demonstrate success (contents do not leak out) with thinner materials. The liner should be installed so that it does not leak. Liners should be installed and maintained so that they extend up and out of the pit and laid back forming an apron.