

(Catalog of Federal Domestic Assistance No. 83.100, "Flood Insurance.")

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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

RIN 1018-AT37

#### Endangered and Threatened Wildlife and Plants; Proposed Rule to Remove the Virginia Northern Flying Squirrel (*Glaucomys sabrinus fuscus*) From the Federal List of Endangered and Threatened Wildlife

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** Under the authority of the Endangered Species Act of 1973 (Act), as amended, we, the U.S. Fish and Wildlife Service (Service, us, our, or we), propose to remove the West Virginia northern flying squirrel (WVNFS) (*Glaucomys sabrinus fuscus*) from the Federal List of Endangered and Threatened Wildlife, due to recovery. This action is based on a review of the best available scientific and commercial data, which indicates that the subspecies is no longer endangered or threatened with extinction, or likely to become so within the foreseeable future. Recovery actions have resulted in a reduction in the threats which has led to: (1) A significant increase in the number of known WVNFS capture sites; (2) an increase in the number of individual squirrels; (3) multiple generation reproduction; (4) the proven resiliency of the squirrels; and (5) the vast improvement and continued expansion of suitable habitat.

**DATES:** We will consider comments on this proposed delisting if they are received by February 20, 2007. Public hearing requests must be received by February 2, 2007.

**ADDRESSES:** If you wish to comment on this proposed delisting, you may submit your comments and materials concerning this proposal by any one of several methods:

1. You may submit written comments and information to the Assistant Chief, Division of Endangered and Threatened Species, U.S. Fish and Wildlife Service,

Northeast Regional Office, 300 Westgate Center Drive, Hadley, MA 01035.

2. You may hand-deliver written comments to our Northeast Regional Office, at the above address.

3. You may fax your comments to 413-253-8482.

4. You may use the Federal Rulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.

Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

#### FOR FURTHER INFORMATION CONTACT:

Diane Lynch at the above address (telephone: 413-253-8628) or the Field Office Supervisor, West Virginia Field Office, 694 Beverly Pike, Elkins, WV 26241 (telephone: 304-636-6586, extension 15).

#### Public Comments Solicited

We intend for any final action resulting from this proposal to be as accurate as possible. Therefore, we solicit data, comments, or suggestions from the public, other concerned government agencies, the scientific community, industry, Tribes, or any other interested party concerning this proposed rule. We particularly seek comments concerning: (1) Biological, commercial, trade, or other relevant data concerning any threat (or lack thereof) to the WVNFS; (2) additional information on the range, distribution, and population size of the WVNFS and its habitat; (3) the location of any additional populations of the WVNFS; and (4) data on population trends. Please note that comments merely stating support or opposition to the actions under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act (16 U.S.C. 1531 *et seq.*) directs that determinations as to whether any species is a threatened or endangered species shall be made "solely on the basis of the best scientific and commercial data available."

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their name and/or home address, etc., but if you wish us to consider withholding this information, you must state this prominently at the beginning of your comments. In addition, you must present rationale for withholding this information. This rationale must demonstrate that disclosure would constitute a clearly unwarranted invasion of privacy.

Unsupported assertions will not meet this burden. In the absence of exceptional, documentable circumstances, this information will be released. We will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Comments and other information received, as well as supporting documentation used to write this rule, will be available for public inspection, by appointment, during normal business hours at our Northeast Regional Office (see **ADDRESSES**). In making a final decision on this proposal, we will take into consideration the comments and any additional information we receive. Such communications may lead to a final rule that differs from this proposal.

#### SUPPLEMENTARY INFORMATION:

##### Background

The northern flying squirrel, *Glaucomys sabrinus*, is comprised of 25 subspecies, including the Virginia northern flying squirrel, *G. s. fuscus*. Miller (1936, p. 143) first described *G. s. fuscus*, based on specimens collected in the Appalachian Mountains of eastern West Virginia. The Virginia northern flying squirrel was listed as endangered under the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*) on July 1, 1985 (Service 1985 (50 FR 26999, p. 27002)). However, it was subsequently determined that a more suitable common name for *G. s. fuscus* is the West Virginia northern flying squirrel (WVNFS), due to the majority of the range of the subspecies occurring in West Virginia, and will be referred to as such throughout the rest of this document. Information about the WVNFS' life history can be found in the final listing rule (50 FR 26999), the Appalachian Northern Flying Squirrels Recovery Plan (Service 1990, pp. 1-11), and the recent 5-year review (Service 2006b, pp. 6-10).

##### Previous Federal Actions

Additional information regarding previous Federal action for the WVNFS can be obtained by consulting the subspecies' regulatory profile found at: [http://ecos.fws.gov/species\\_profile/servlet/gov.doi.species\\_profile.servlets.SpeciesProfile?spcode=A09R](http://ecos.fws.gov/species_profile/servlet/gov.doi.species_profile.servlets.SpeciesProfile?spcode=A09R).

##### Recovery Planning

Recovery plans are not regulatory documents and are instead intended to provide guidance to the Service, States,

and other partners on methods of minimizing threats to listed species and on criteria that may be used to determine when recovery is achieved. There are many paths to accomplishing recovery of a species and recovery may be achieved without all criteria being fully met. For example, one or more criteria may have been exceeded while other criteria may not have been accomplished. In that instance, the Service may judge that, over all, the threats have been minimized sufficiently, and the species is robust enough, to reclassify the species from endangered to threatened or perhaps delist the species. In other cases, recovery opportunities may have been recognized that were not known at the time the recovery plan was finalized. These opportunities may be used instead of methods identified in the recovery plan. Likewise, information on the species may be learned that was not known at the time the recovery plan was finalized. The new information may change the extent that criteria need to be met for recognizing recovery of the species. Overall, recovery of species is a dynamic process requiring adaptive management, and judging the degree of recovery of a species is also an adaptive management process that may, or may not, fully follow the guidance provided in a recovery plan.

When the 1990 final recovery plan was approved, the recovery criteria as they apply to the WVNFS were deemed objective, measurable, and adequate (Service 1990, p. 19). The recovery criteria did not change with a 2001 recovery plan amendment (Service 2001, pp. 1–6). However, the 2001 amendment included an update to Appendix A, Guidelines for Habitat Identification and Management for the WVNFS. Implementation of the amended Appendix A Guidelines by the Monongahela National Forest (MNF) effectively abated the main threat to the squirrel (i.e., habitat loss from timber management) throughout the majority of its range, by eliminating adverse impacts on all suitable habitat on the MNF without having to prove WVNFS presence (Service 2001, pp. 1–6; Service 2006b, pp. 3–4).

With the exception of the 2001 amendment to Appendix A, the recovery plan is no longer actively used to guide recovery of the WVNFS because it is outdated (Service 2006b, pp. 4–6). The recovery criteria do not specifically address the five threat factors used for listing, reclassifying, or delisting a species (Service 2006b, pp. 5–6). Consequently, the recovery plan does not provide an explicit reference point for determining the appropriate

legal status of the WVNFS based either on alleviating the specific factors that resulted in its initial listing as an endangered species or on addressing new risk factors that may have emerged since listing. Additionally, the current known range of the WVNFS (Service 2006b, pp. 7–10) is much more widespread than the Geographic Recovery Areas designated in the recovery plan (Service 1990, p. 16). Thus, these focus areas for recovery, which do not have formal or regulatory distinction, are outdated. Therefore, our analysis of the threats to the WVNFS was based largely on the recently completed 5-year review (Service 2006b, pp. 1–20). This review is available at <http://www.fws.gov/northeast/pdf/flysqrev.pdf>.

Recovery efforts have provided increased attention and focus on the WVNFS and the habitat upon which it depends. Numerous conservation actions have been implemented since 1985 by land stewards, biologists, and conservation groups. These include research and recovery actions specified in the 1990 recovery plan and 2001 recovery plan update for the WVNFS; minimization and mitigation measures specified in two Habitat Conservation Plans (HCPs) at Snowshoe Mountain, specifically the protection of approximately 200 acres of WVNFS habitat in perpetuity (BHE 2003, pp. 34–42, Appendix F; BHE 2005, pp. 49–55); red spruce plantings; and conservation provisions in the 1986 MNF Land and Resource Management Plan (U.S. Department of Agriculture (USDA) Forest Service (Forest Service) 1986, pp. X–1–X–3), 2004 Forest Plan Amendment (USDA Forest Service 2004, pp. 84, 84a, 84c, 87, 234–234b), and Forest Plan Revision (USDA Forest Service 2006 pp. 12, 19–20, 27). Of particular note are the habitat protection initiatives that have occurred on both public and private lands, the development of a habitat model and research on red spruce habitat restoration, the establishment of Canaan Valley National Wildlife Refuge (NWR), and the growing interest in spruce ecosystem restoration.

For example, we continue to work with interested land management and conservation entities to secure long-term commitments to continue conservation efforts already initiated to protect, manage, and monitor the habitat upon which the WVNFS depends. Although not one of the bases for the proposed WVNFS delisting, the Service is developing a long-term Memorandum of Understanding (MOU) with several Federal and non-federal entities, including the MNF, Canaan Valley

NWR, The Nature Conservancy, and the West Virginia Department of Natural Resources (WVDNR). This MOU demonstrates a long-term commitment to continue protecting, managing for, and monitoring the red spruce-northern hardwood ecosystem, WVNFS, and other species. Furthermore, non-Federal land managers in several key areas (Kumbrabow State Forest, MeadWestvaco Ecosystem Research Forest, Snowshoe Mountain, Blackwater Canyon, and Canaan Valley) have expressed an interest to further red spruce conservation, regardless of the regulatory status of the WVNFS (Service 2006b, pp. 13–14).

### Summary of Factors Affecting the Species

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing species, reclassifying species, or removing species from listed status. We may determine a species to be an endangered or threatened species because of one or more of the five factors described in section 4(a)(1) of the Act, and we must consider these same five factors in delisting a species. We may delist a species according to § 424.11(d) if the best available scientific and commercial data indicate that the species is neither endangered nor threatened for the following reasons: (1) The species is extinct; (2) the species has recovered and is no longer endangered or threatened (as is the case with the WVNFS); and/or (3) the original scientific data used at the time the species was classified were in error. The five factors listed under section 4(a)(1) of the Act and their application to the WVNFS are as follows:

#### *A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range*

##### WVNFS Distribution

At the time of listing (1985), 10 WVNFS individuals were known from Randolph and Pocahontas Counties, WV, and Highland County, VA (Service 2006b, p. 8). It was thought that vast stretches of unsuitable habitat separated the four known population centers and that the WVNFS still existed but that it was very rare, and perhaps no longer present in much of its former range (50 FR 26999, p. 26999). The final listing rule qualitatively described historic habitat losses and suggested that, “[I]n these last occupied zones, the squirrels [*G. s. fuscus* and *G. s. coloratus*] and their habitat may be coming under increasing pressure from human

disturbances such as logging and development” (50 FR 26999, p. 27000).

The current known range of WVNFS follows the spine of the high Allegheny Plateau in a northeast to southwest alignment. Helmick Run (Grant County, WV) marks the northeast periphery and Briery Knob (Greenbrier County, WV) the southwest periphery, covering seven counties in West Virginia and Highland County, Virginia (Service 2006b, p. 25). There is a total of 107 WVNFS capture sites, 105 of which are in West Virginia and 2 in Highland County, Virginia (Service 2006b, pp. 8, 25; WVDNR 2005, pp. 1–105). These capture sites are dispersed across seven general areas of relict habitat in the Allegheny Highlands region (Service 2006b, pp. 9, 26).

As of 2005, there had been 1,141 captures (including 78 recaptures) distributed throughout the 107 capture sites (Service 2006b, p. 7; WVDNR 2005, pp. 1–105). Sixty percent of these sites document WVNFS occurrence through time (WVDNR 2005, pp. 1–16, 18–20, 22–24, 26, 28–33, 35–36, 39–49, 52–53, 59–60, 62–64, 66–71, 73–75, 77–82, 84–87, 89, 92–93, 95–96, 98–102, 104–105). WVNFS are nocturnal, leaving the nest to forage at night and returning during the day. Nest box monitoring results are contingent upon WVNFS occupying the box on the day of the survey (Service 2006, p. 7). Therefore, considering that the nest box monitoring program has had only a 2 percent average success rate of squirrel occupancy per box checked (Service 2006b, p. 7), the presence of long-term nest box monitoring data provides strong evidence of the WVNFS’ continued presence throughout its range over the last couple of decades (WVDNR 2005, pp. 1–16, 18–20, 22–24, 26, 28–33, 35–36, 39–49, 52–53, 59–60, 62–64, 66–71, 73–75, 77–82, 84–87, 89, 92–93, 95–96, 98–102, 104–105).

We now know that the WVNFS continues to occupy the areas identified in the 1985 final listing rule as well as numerous additional sites dispersed throughout its historical range, suggesting that its current range roughly approximates the extent of its historical range. Studies have confirmed the ability of the WVNFS to adjust its foraging and denning behavior (*i.e.*, the ability to nest in a wide variety of trees) to persist in and around relict red spruce-northern hardwood forest patches (Menzel *et al.* 2004, pp. 360, 363–364; Menzel *et al.* 2006a, pp. 1–3, 6, 7; Menzel *et al.* 2006b, p. 208; Ford *et al.* 2004, p. 430).

#### Habitat Quantity and Quality

Prior to European settlement, there were in excess of 500,000 acres (some sources suggest 600,000+ acres) of old-growth red spruce-northern hardwood forests, the preferred habitat of the WVNFS, in the Allegheny Highlands. These forests (occupying ridges, slopes, and drainages) in West Virginia extended from the vicinity of Mount Storm (Grant County) in the north to Cold Knob (Greenbrier County) in the south, east to the Allegheny Front (Pendleton County), and west to Webster and Nicholas Counties. These red spruce-northern hardwood forests were more contiguous across the Allegheny Highlands than are the well-known “sky-islands” of the Southern Appalachians, which support *G. s. coloratus* (Service 1990, pp. 16–17; USDA Forest Service Northeastern Research Station 2006, unpublished data, pp. 2–3).

Logging activity and associated widespread fires at the turn of the 20th century decimated the red spruce-northern hardwood forests, resulting in younger forests with less red spruce, and in many areas, a mixed mesophytic (moderately moist environment), oak-dominated forest (Menzel *et al.* 2006a, p. 6; Rollins 2005, pp. 12–13; Schuler *et al.* 2002, pp. 88–89). Consequently, this resulted in less, and poorer quality, WVNFS habitat because younger forests with fewer red spruce provided reduced foraging and sheltering opportunities (Service 2006b, p. 6). Also, the presence of oak and its associated mast (*i.e.*, acorns), provided a competitive advantage of food resources for the more aggressive southern flying squirrel (*Glaucomys volans*). The WVNFS’ rarity was understood to be a consequence of its specialized use of a precipitously declining habitat type (Service 2006b, p. 11).

Currently, it is estimated that there are approximately 242,000 acres of WVNFS habitat (USDA Forest Service Northeastern Research Station 2006, unpublished data, p. 4). This estimate is based in part on the results of several habitat models, and includes all “optimal” habitat as well as “likely” habitat located in close proximity to red spruce-northern hardwood forests. “Likely” and “optimal” are terms and definitions imparted by the Menzel model, with “likely” areas having a greater than 50 percent chance of being occupied by the WVNFS, and “optimal” areas having a greater than 75 percent probability of being occupied (Menzel 2003, pp. 84–85, 87–89; Menzel *et al.* 2006b, pp. 15–16). The models allow us to estimate the amount of potential and

high quality habitat in the Allegheny Highlands (Menzel *et al.* 2006a, p. 7), prioritize areas for restoration and recovery (Menzel *et al.* 2006a, p. 7), assess anthropogenic (manmade) and geologic fragmentation of the spruce forest, and analyze stewardship of the suitable habitat (Menzel *et al.* 2006b, p. 15).

The forested areas used by the WVNFS across most of its range have continued to mature in the 20 years since listing. For example, about half of the rangewide area modeled as optimal habitat are red-spruce northern hardwood forest stands on the MNF that are over 75 years old (Menzel *et al.* 2006b, p. 4; Service 2006b, pp. 10–11; USDA Forest Service Northeastern Research Station 2006, unpublished data, p. 2). Even though current habitat conditions are not as favorable for the WVNFS as historic conditions, current conditions are much improved compared to that at the time of listing. With the exception of localized habitat impacts, forest succession has resulted in older forest stands with improved forest structure, reflecting a continuing, positive rangewide trend (Service 2006b, pp. 11–14, 19–20). With regard to forest composition, the amount and extent of red spruce also appears to be gradually increasing, as suggested by Rollins (2005, pp. 39–51).

We analyzed impacts the balsam and hemlock woolly adelgids, insect parasites accidentally introduced from Europe (Service 1990, p. 13), may be having on the WVNFS’ habitat (Service 2006b, p. 17). The balsam woolly adelgid infects balsam fir (*Abies balsamea*) trees, causing damage or mortality to the host trees (Service 1990, p. 13). However, we believe the effect of the balsam woolly adelgid on WVNFS habitat is discountable because balsam fir is limited to a minor component of the WVNFS habitat. Red spruce occurs in or near stands of balsam fir, providing the WVNFS with alternative and higher value habitat where damage from the balsam woolly adelgid may have occurred. In addition, the impact of the balsam woolly adelgid on the small component of balsam fir within WVNFS habitat has already occurred (Service 2006b, p. 17).

The hemlock woolly adelgid has been in the United States since 1924. The insect damages eastern hemlock (*Tsuga canadensis*) trees by damaging new growth, which can cause defoliation and mortality (Service 2006b, p. 17). Only seven percent of the WVNFS capture sites are dominated by Eastern hemlock instead of red spruce (Service 2006b, p. 17). Loss of Eastern hemlock, due to the hemlock woolly adelgid, may reduce the

chances of WVNFS dispersal between patches and within metapopulations, potentially having a very local, isolating impact in a limited number of situations. While hemlock woolly adelgid may remove the montane conifer component at less than 10 percent of the known capture sites, most, if not all, of these areas are in close proximity to red spruce-northern hardwood forests, significantly reducing the occasions where loss of Eastern hemlock will be detrimental to the WVNFS (Service 2006b, p. 17).

Additionally, the West Virginia Department of Agriculture has an active detection program for hemlock woolly adelgid and a treatment program that will remain in place regardless of the listing status of the WVNFS. Therefore, even though the hemlock woolly adelgid may impact a minor component of the squirrel's habitat, we consider it to pose a negligible degree of risk to the WVNFS, because of the limited role of hemlock in the species' survival, and presence of red spruce in the majority of the areas (Service 2006b, p. 17).

The potential impact of beech bark disease was also analyzed. Beech bark disease is caused by the beech scale insect (*Cryptococcus fagisuga*), followed by one of two fungi (*Nectria coccinea* var. *faginata* or *N. galligena*). The scale stresses and weakens the American beech tree (*Fagus grandifolia*) and the fungi then causes either localized lesions or decay and death of the entire tree (Service 2006b, pp. 17–18). Although American beech trees are common to the spruce-northern hardwood forests of the Allegheny Highlands, in WVNFS habitat they usually occur in combination with spruce and other hardwoods, particularly birch and maple. Therefore, despite having a devastating impact on the American beech component of the red spruce-northern hardwood forest, beech bark disease is not thought to render WVNFS habitat unsuitable (Service 2006b, p. 18). There is actually a potential short-term benefit to the WVNFS due to the creation of new nest cavities in the holes of dead and decaying beech. Foraging habitat for the WVNFS may also improve with increases in large woody debris on the forest floor from the dead beech trees, which could promote the growth of underground fungi, one of the WVNFS' primary food sources (Carey *et al.* 1999, p. 54; Pyare and Longland 2001, p. 1008; Rosenberg and Anthony 1992, p. 161; Waters *et al.* 2000, p. 85). Additionally, the removal of beech nuts is thought to be more detrimental to the southern flying squirrel because it is a

high energy food source for that species, and, therefore, would counter any small amount of direct competition between the WVNFS and the southern flying squirrel. Therefore, while beech bark disease affects a minor component of WVNFS habitat rangewide, we consider it to pose an overall low-to-moderate degree of risk for WVNFS, and this risk may be offset by the potential benefits of creation of new nest cavities, increase in a primary food source, and potential harm to the food supply of the southern flying squirrel (Service 2006b, p. 18).

#### Land Use Planning

Available information indicates that the threat posed by past habitat loss has been largely abated across most of the WVNFS' range. Implementation of the 2001 recovery plan amendment (Service 2001, p. 4) by the MNF and the 2004 amendment to the MNF Land and Resource Management Plan (USDA Forest Service 2004, pp. 84a–84c, 87, 234–234b) significantly removed the threat of habitat loss (via logging) across much of the WVNFS' range. The recovery plan amendment recommended that suitable WVNFS habitat be considered during consultation with Federal agencies. The Forest Service reinforced this recommendation through an amendment to the MNF Land and Resource Management Plan, that limited vegetation management in all "suitable habitat" (as determined collaboratively by the Forest Service, and WVDNR) to only certain activities: Research covered under an Endangered Species Act section 10 permit; actions to improve or maintain WVNFS populations after research has demonstrated the beneficial effects of the proposed management; or when project-level assessment results in no adverse effects. This conservation strategy has been carried forward into the MNF's recent Forest Plan Revision (USDA Forest Service 2005, pp. II–20, II–24, III–9–III–16; USDA Forest Service 2006, pp. 12, 19–20, 27). The former primary cause of habitat loss (detrimental logging practices) has been abated on the MNF, and proactive conservation throughout much of the WVNFS' range has and will continue to eliminate impacts from past logging practices, and focus on restoration of this ecosystem. For example, tens of thousands of red spruce trees have been planted over the last 4 years and more is being done to protect and restore this ecosystem (West Virginia Highlands Conservancy 2006, p. 10).

There is no evidence of any new sources of habitat loss throughout the current range of the WVNFS. According

to analyses using the Menzel model, over 60% of areas modeled as likely habitat are now considered secured by public ownership and/or managed for the protection of the WVNFS (Menzel *et al.* 2006b, p. 4). These areas include Canaan Valley NWR (created in 1994), Blackwater Falls and Canaan Valley State parks, Handley Wildlife Management Area, Kumbrow State Forest, and the MNF (Service 2006b, pp. 12–14).

Activities that have contributed to habitat loss and degradation since the time of listing have been localized and/or have occurred on the periphery of the WVNFS' range (Service 2006b, pp. 11, 14, 20). These activities include limited highway development, recreational development, mining and gas exploration, timber management, and wind farm development. With regard to activities that are reasonably foreseeable to occur, some low level of local impacts are likely to continue into the future; however, there is no indication that the activities would ever be likely to occur over a landscape level, or at such a magnitude as to pose a threat to the continued existence of WVNFS (Service 2006b, pp. 11, 14, 19–20). For example, in addition to the majority of WVNFS habitat being publicly owned and managed, future development throughout the range of the WVNFS is expected to be minimal. The entire range of the WVNFS is within the Allegheny Mountains Valley Physiographic Region, an area of steep terrain and low human population density and growth. In 2005, the proportion of land use classified as low density and high density development within this physiographic region in West Virginia was 0.4% and 0.1%, respectively (WVDNR 2006, p. 10). During 2000, population densities in the counties in West Virginia in which the WVNFS occurs were among the lowest in the State, ranging from 9.7–40.4 persons per square mile (WVDNR 2006, p. 17); and with the exception of Randolph County (0.3% increase), the 10-year population trend (1990–2000) in all of these counties decreased (WVDNR 2006, p. 18).

*Summary of Factor A:* Although the quantity and quality of WVNFS habitat is reduced from historical levels, we now know that the WVNFS is more resilient in its habitat use than formerly thought (probably because of its mobility and plasticity in nest tree selection), and that habitat trends are moving in a positive direction in terms of forest regeneration and conservation. Therefore, the present or threatened destruction, modification, or curtailment of its habitat or range is no

longer considered a threat to the WVNFS.

*B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

The final listing rule concluded that the WVNFS was not known to be jeopardized by human utilization but noted that flying squirrels are highly desirable as pets to some persons, and collecting for such purposes is at least a potential threat to the already rare WVNFS (50 FR 26999, p. 27000). The WVNFS has been captured only for scientific purposes through nest box and live trap methods, and not for market collecting or commercial use. Capture for scientific purposes has been very limited, and has not proven to be detrimental to the continued existence of the WVNFS.

In the 21 years since listing, the Service has not received any evidence that commercial use in the pet trade or recreational use of the WVNFS is a threat. The WVNFS is a thinly dispersed, nocturnal mammal that is very difficult to catch. For example, Menzel captured the WVNFS at a rate of 0.227 captures per 100 trap nights (Menzel 2003, p. 65), and the WVDNR's nest box monitoring program has had only a 2 percent average success rate of squirrel occupancy per box checked (Service 2006b, p. 7). Additionally, due to its nocturnal nature, this squirrel has not been widely hunted.

*Summary of Factor B:* Overutilization for any purpose is not currently considered a threat, and is not anticipated to emerge as a threat in the future, given the difficulties in collecting the WVNFS (*i.e.*, its nocturnal and secretive habits, and the remoteness of its habitat (Service 2006b, p. 14)).

*C. Disease or Predation*

The final listing rule made no mention of disease as a threat to the WVNFS, and we are not aware of any evidence since the time of listing that suggests the health of WVNFS individuals is threatened by disease. Of the more than 1,100 individual squirrels captured since 1985, none have shown signs of disease (Service 2006b, p. 15).

The final listing rule predicted that increasing human recreational use of northern flying squirrel habitat might result in predation on the WVNFS by pets, especially cats (50 FR 26999, p. 27000). While natural predators of the WVNFS may include weasel, fox, mink, owl, hawks, bobcat, skunk, raccoon, snakes, and fisher, we are not aware of any scientific or circumstantial evidence since the time of listing to support pets preying upon WVNFS (Service 2006a, p.

15), or to suggest that natural predation limits populations of WVNFS. As analyzed in our biological opinion for the Camp Wilderness HCP (Service 2003, pp. 12, 23), there are no documented deaths of northern flying squirrels, particularly the WVNFS, as a result of impacts of human recreational use or occupancy in, or near, its habitat, and pets are not predicted to be a substantial threat in the future (Service 2003, pp. 12, 23–25). Since the majority of WVNFS habitat is found on the MNF, human encroachment into WVNFS habitat is uncommon and localized (*e.g.*, Canaan Valley and Snowshoe Mountain) (Service 2003, pp. 12, 23–25; Service 2006a, p. 15; Service 2006b, pp. 15, 20), and is therefore precluded from becoming a threat in the future to the WVNFS.

*Summary of Factor C:* Disease and predation are not currently considered a threat to the WVNFS and are not considered to become a threat in the foreseeable future.

*D. Inadequacy of Existing Regulatory Mechanisms*

The final listing rule stated that this factor was not known to be applicable (50 FR 26999, p. 27000). Prior to its listing in 1985, there were no known existing regulatory mechanisms protecting the WVNFS.

*State Laws*

The State of West Virginia does not currently have any State laws protecting endangered species. However, for the reasons stated in the discussions of Factors A, B, C and E, there are no current threats to the species as a whole that require additional regulation. Therefore, the lack of an endangered species State law in West Virginia is not expected to negatively impact the WVNFS.

In the Commonwealth of Virginia, the WVNFS has been listed as endangered under the Commonwealth's endangered species act since its Federal listing in 1985. This Commonwealth law, which is administered by the Virginia Department of Game and Inland Fisheries, prohibits take of Commonwealth-listed species and is applicable to the WVNFS regardless of the squirrel's status under the federal Endangered Species Act. The WVNFS will remain listed under the Virginia law if it is removed from the Federal List of Threatened and Endangered Wildlife (VDGIF 2006, p. 2). Lack of current threats, along with the Commonwealth's endangered species act, ensures the WVNFS' persistence in Virginia into the foreseeable future.

*Federal Laws*

The MNF and the George Washington National Forest (GWNF) each developed forest management plans that contain provisions to protect, manage, restore, and monitor the WVNFS and its habitat (USDA Forest Service 2006, pp. 12, 19–20, 27; USDA Forest Service 1997, pp. 3–4, 3–23, 3–28, 3–110). These provisions, contained in both Forests' current plan revisions, will be retained by the Forests, irrespective of the WVNFS' Federal listing status. Additionally, the National Forest Management Act and other Forest Service implementing guidance and regulations, state that national forests should be managed to preserve and enhance the diversity of plant and animal communities, and will continue to apply if the WVNFS is delisted. According to the Forest Service Manual, if a species is removed from the Federal List of Threatened and Endangered Wildlife, that species would be placed on a list of sensitive species for 5 years, during which time the Forest Service would evaluate whether any of their proposed actions would result in a trend toward Federal relisting (USDA Forest Service 2001, p. 3).

Overall, improving habitat conditions, the WVNFS' resiliency, and lack of rangewide threats indicate that the long-term survival of the WVNFS can be sustained without the protections of the Act. In addition, the binding standards of the MNF's Forest Plan will remain in effect after delisting, providing an existing regulatory mechanism for addressing the historical threat of loss of forest habitat.

*Summary of Factor D:* Given the MNF's Forest Plan's standards that apply to a majority of the range and the resiliency and lack of rangewide threats to the species, the inadequacy of regulatory mechanisms is not now, or for the foreseeable future, considered a threat to the WVNFS.

*E. Other Natural or Manmade Factors Affecting the Continued Existence of the Species*

*Competition With Southern Flying Squirrel*

The final listing rule concluded that the WVNFS was threatened by competition with the southern flying squirrel for habitat and by the spread of a parasite from the southern flying squirrel to the WVNFS (50 FR 26999, p. 27000). However, evidence collected since the time of listing indicates that the occurrence and potential severity of the southern flying squirrel's impacts are limited. The sympatric occurrence of the two subspecies has been

documented for decades at 23 of the 107 WVNFS capture sites, most notably at Stuart Knob (Randolph County, WV) since the 1950s (Service 2006b, p. 16). These occurrences span multiple generations of WVNFS (WVDNR 2005, pp. 1–105), indicating that over-competition by the southern flying squirrel for den sites does not appear to be affecting population persistence of the WVNFS. In addition, any competition between the two subspecies may be somewhat ameliorated by the spread of beech bark disease, which results in the reduced availability of beech nuts, an important food source for the southern flying squirrel.

The final listing rule cited evidence from a captive study in the 1960s that a nematode parasite, possibly carried by the southern flying squirrel, might be lethal to the WVNFS (50 FR 26999, p. 26999). The rule stated that while the southern flying squirrels appeared healthy, all the northern flying squirrels weakened and died within 3 months, and this mortality was associated with heavy infestations of the nematode parasite. All the southern flying squirrels also carried the parasite, but they remained in apparent good health and continued to breed (50 FR 26999, p. 27001). Based on review of the original dissertation, the cause of the northern flying squirrel mortality was never completely understood (Weigl 1968, pp. 129–150). Weigl *et al.* (1999, pp. 74–75) hypothesized that survival and maturation rates of the parasite are limited by below-freezing temperatures that occur within the range of the WVNFS, but were not replicated in the 1960s captive study. The conditions created in the captive study apparently do not closely relate to naturally occurring conditions, and observations of WVNFS individuals captured in the last 20 years (including areas also occupied by the southern flying squirrel) have revealed no signs of sickness, debilitation, or death due to parasitic infestation.

#### Other Natural or Manmade Threats

The 1985 final listing rule did not address additional threats under Factor E. However, the delisting criterion within the 1990 recovery plan addressed potential threats, such as forest pests (see Factor A), acid rain, and climate change, to the existence of the high elevation forests on which the squirrels (*G. s. fuscus* and *G. s. coloratus*) depend (Service 1990, p. 19). Although the delisting criterion in the recovery plan is out of date and not based on the five threat factors (as previously described), these potential threats were included in the overall

analysis of the status of the WVNFS in the 5-year review (Service 2006b, pp. 4–6).

Acid precipitation (more appropriately referred to as acid deposition) and climate change have been cited as potentially damaging forest ecosystems, especially the spruce-fir forests in portions of the Appalachian Mountains (NAPAP 2005, p. 41). Although empirical data are lacking regarding specific effects on the WVNFS, the long-term potential exists for anthropogenic acid deposition and climate change to diminish the extent and quality of the boreal-like spruce forests that have survived on the high ridges and plateaus, by pushing them farther up the slopes, and, if warming continues, reducing and eventually eliminating habitat at higher elevations. However, there has been no evidence of acid deposition or climate change reducing the extent of red spruce-northern hardwood forests in the Allegheny Highlands since the WVNFS' listing in 1985 (Rollins 2005, pp. 39–51; Service 2006b, p. 10), and it is not possible to predict measurable impacts on WVNFS habitat through the foreseeable future. Thus, the effects of acid deposition and climate change on *G. s. fuscus* and its habitat are not predictable, and it is beyond our capacity to eliminate such threats through interventions at the species level. Land managers can, however, develop contingency plans to deal with these concerns through mitigation and remediation measures. The MNF Forest Plan Revision calls for monitoring and management responses to any potential effects of acid deposition that may emerge in the future, and the GWJF Forest Plan makes a commitment to retain the integrity of high-elevation forests. Other entities have also expressed an interest in perpetuating a healthy red spruce ecosystem in the Allegheny Highlands (Service 2006b, pp. 18–19).

**Summary of Factor E:** Overall, our analysis of the other natural and manmade factors, either alone or in combination, indicates that the WVNFS is not in danger of extinction throughout all or a significant portion of its range, or likely to become endangered within the foreseeable future.

#### Summary of Findings

We have carefully assessed the best scientific and commercial data available regarding the past, present, and future threats faced by the WVNFS, and conclude that the species has recovered, and is not threatened with extinction or likely to become endangered within the foreseeable future. Due to forest

management practices and rangewide proactive conservation activities, a substantial amount of WVNFS habitat is now considered secure and improving in quality. Relative to the information available at the time of listing, recovery actions have resulted in a reduction of threats that have led to a (1) a significant increase in the number of known WVNFS capture sites; (2) an increase in the number of individual squirrels; (3) multiple generation reproduction; (4) the proven resiliency of the squirrels; and (5) the vast improvement and continued expansion of suitable habitat.

The biological principles under which we evaluate the rangewide population status of the WVNFS relative to its long-term conservation are representation, redundancy, and resiliency. At the time of listing, the WVNFS was thought to be an extremely rare and declining taxon that had disappeared from most of its historical range. We now know that occupancy of available habitat has increased and is much more widespread than formerly thought, and that the geographic extent of the WVNFS' range approximates historical range boundaries. Although the red spruce-northern hardwood forests have not rebounded to pre-logging conditions, we have learned that the WVNFS can utilize sub-optimal habitat adjacent to these forests that constitutes the most essential landscape-level component of the WVNFS' habitat. From this, we can infer that there is more habitat connectivity than previously thought, although there remains geographic separation (and likely has been since the end of the Pleistocene era) between some of the habitat areas supporting population centers. Thus, there is adequate representation (i.e., occupancy of representative habitats formerly occupied by the squirrel across its range) and redundancy (i.e., distribution of populations in a pattern that offsets unforeseen losses across a portion of the WVNFS' range) of the WVNFS.

Also, despite the difficulties inherent in conducting population studies for the WVNFS, it has proven to be resilient. The WVNFS has been shown to be more mobile and flexible in its habitat use than previously thought. Specifically, survey and monitoring efforts at 107 sites over the past 21 years have shown that it is persistent at multiple locations for multiple generations, and there is no evidence of extirpation of a local population. As previously described, the current and future trend for habitat quantity and quality is expected to be favorable because of the gradual recovery of the red spruce-northern hardwood ecosystem and the lack of rangewide threats to WVNFS habitat. As

habitat availability increases into the foreseeable future, the carrying capacity of secured and protected habitat should allow for persistence of viable populations of the WVNFS.

In summary, the threats to the WVNFS have either been eliminated or largely abated. The current available information shows that the WVNFS is persisting throughout its historic range, with areas of known occupancy much more widespread than at the time of listing. Therefore, the WVNFS does not meet the definition of endangered or threatened, and should be removed from the List of Endangered and Threatened Wildlife, due to recovery.

#### Effects of This Rule

This rule, if made final, would revise 50 CFR 17.11(h) to remove the WVNFS from the List of Endangered and Threatened Wildlife, due to recovery. Because no critical habitat was ever designated for this species, this rule would not affect 50 CFR 17.95. The prohibitions and conservation measures provided by the Act, particularly section 7 and section 9, would no longer apply to the WVNFS.

Removal of the WVNFS does not supersede any State regulations. Additionally, for the 60 percent of the WVNFS habitat on the MNF, and the small area of habitat located within the GWNF, the activities impacting the WVNFS and its habitat must comply with appropriate Forest Service regulations.

#### Post-Delisting Monitoring

Section 4(g)(1) of the Act requires the Secretary of the Interior, in cooperation with the States, to implement a system to monitor for not less than 5 years the status of all species that have recovered and been delisted. The purpose of this post-delisting monitoring (PDM) is to verify that a species delisted, due to recovery, remains secure from risk of extinction after it no longer has the protections of the Act. We are to make prompt use of the emergency listing authorities under section 4(b)(7) of the Act to prevent a significant risk to the well being of any recovered species. Section 4(g) of the Act explicitly requires cooperation with the States in development and implementation of PDM programs, but we remain responsible for compliance with section 4(g) and, therefore, must remain actively engaged in all phases of PDM. We also seek active participation of other entities that are expected to assume responsibilities for the species' conservation, post-delisting.

The management practices of, and commitments by, primarily the MNF, on

whose land the majority of habitat occurs, should afford adequate protection to the WVNFS into the foreseeable future upon delisting. In addition to the previously described conservation measures, the Forest Service (MNF and GWNF) would maintain protection of the WVNFS by considering it a sensitive species for a minimum of 5 years after delisting (USDA Forest Service 2006, p. 18). Sensitive species designation ensures that the Forest Service would continue to monitor the status of the WVNFS, and to conduct management activities on Forest Service lands in a manner that strives to ensure that such actions do not contribute to a trend toward federal listing. In addition, the Forest Service and WVDNR have conducted nest box monitoring for the WVNFS in excess of 20 years and will continue to do so for the foreseeable future, regardless of whether the WVNFS is delisted.

Because of these past efforts, a PDM plan is being drafted in a cooperative effort with the Service, the MNF and the WVDNR, and other appropriate land managers, with technical assistance from USDA's Northeastern Research Station, to guide the collection and evaluation of pertinent information over the monitoring period. In the near future, we will publish in the **Federal Register** a notice of availability of the proposed PDM plan, and solicit public comment on that proposed plan.

#### Post-Delisting Monitoring Plan Overview

Development of the PDM plan, required under section 4 of the Act, will be facilitated by the MNF's Forest Plan Revision monitoring (USDA Forest Service 2005, pp. IV-1 – IV-12) and the monitoring specified in the West Virginia Conservation Action Plan (WVDNR 2006, pp. 861–867, 959–969, 1046–1049). The West Virginia Conservation Action Plan is a result of a charge from Congress to each State and territory to develop a comprehensive plan for fish and wildlife conservation. Both of these management plans include requisite monitoring of the WVNFS and its habitat (red spruce-northern hardwood forests) because of the importance placed on the red spruce ecosystem. Under these two plans and separate agreements, the Forest Service, WVDNR, and other entities, will continue to conduct nest box monitoring as well as monitoring of habitat conditions and residual threats at representative sites within the seven areas of relic habitat. For example, through a third party, Snowshoe Mountain, Inc., has expressed an interest in continuing nest

box monitoring on their property, particularly in their approximately 200-acre conservation area already established as part of their HCPs. The Service will effectively monitor the implementation of commitments by entities, particularly the MNF, to conserve red spruce-northern hardwood forests for the first 5 years following delisting. During this time, the Forest Plan Revision, and other commitments of the MNF and other entities will be reviewed annually by the Service. Additionally, as part of the Forest Service monitoring for sensitive species and/or management indicator species, and the WVDNR monitoring as part of their Action Plan, the Service, WVDNR, and Forest Service will monitor the WVNFS and its relationship to habitat affected by active and passive management.

The PDM plan is being designed to monitor the threats to the species by detecting changes in the status of the WVNFS population and its habitat through continued nest box monitoring and monitoring of the quality and quantity of WVNFS habitat throughout its range. Thresholds that would trigger an extension of monitoring or a status review will be presented in the Service's draft post-delisting monitoring plan.

#### Clarity of the Rule

Executive Order 12866 requires agencies to write regulations that are easy to understand. We invite your comments on how to make this rule easier to understand, including answers to the following: (1) Is the discussion in the **SUPPLEMENTARY INFORMATION** section of the preamble helpful in understanding the proposal? (2) Does the proposal contain technical language or jargon that interferes with its clarity? (3) Does the format of the proposal (grouping and order of sections, use of headings, etc.) aid or reduce its clarity? and (4) What else could we do to make the rule easier to understand?

Send a copy of any comments that concern how we could make this proposed rule easier to understand to the Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street, NW., Washington, DC 20240.

#### Peer Review

In accordance with our policy published on July 1, 1994 (50 FR 34270), we will solicit the expert opinions of at least three appropriate and independent specialists for peer review of this proposed rule. The purpose of such review is to ensure that decisions are based on scientifically sound data, assumptions, and analyses.

We will send peer reviewers copies of this proposed rule immediately following publication in the **Federal Register**. We will invite peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposed delisting. We will summarize the opinions of these reviewers in the final decision document, and we will consider their input as part of our process of making a final decision on the proposal.

#### **Paperwork Reduction Act**

This rule does not contain any new collections of information other than those already approved under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) and assigned Office of Management and Budget (OMB) control number 1018-0094, which expires on September 30, 2007. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

#### **National Environmental Policy Act**

We have determined that Environmental Assessments and

Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### **References Cited**

A complete list of all references cited herein is available upon request from the West Virginia Field Office (see **FOR FURTHER INFORMATION CONTACT** above).

#### **Author**

The primary author of this proposed rule is Diane Lynch, Endangered Species Specialist, with technical assistance from Shane Jones, former Endangered Species Biologist and species lead for the WVNFS in our West Virginia Field Office (see **FOR FURTHER INFORMATION CONTACT** section).

#### **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and

recordkeeping requirements, Transportation.

#### **Regulation Promulgation**

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

#### **PART 17—[AMENDED]**

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

#### **§ 17.11 [Amended]**

2. Amend § 17.11(h) by removing the entry “Squirrel, Virginia northern flying” under “MAMMALS” from the List of Endangered and Threatened Wildlife.

Dated: December 6, 2006.

**Marshall Jones,**

*Acting Director, U.S. Fish and Wildlife Service.*

[FR Doc. E6–21530 Filed 12–18–06; 8:45 am]

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