DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AC44

Endangered and Threatened Wildlife and Plants; Saint Francis' Satyr Determined To Be Endangered

AGENCY: Fish and Wildlife Service, Interior Department.

ACTION: Final rule.

SUMMARY: The Fish and Wildlife Service (Service) determines the Saint Francis' satyr butterfly (*Neonympha mitchellii francisci*) to be an endangered species under the authority of the Endangered Species Act of 1973, as amended (Act). This butterfly is known only from a single locality in North Carolina. Recent heavy collecting pressure on this butterfly has resulted in the one small remaining population being reduced to near extinction. This action implements Federal protection and recovery provisions for Saint Francis' satyr, as provided by the Act.

EFFECTIVE DATE: February 27, 1995.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Asheville Field Office, U.S. Fish and Wildlife Service, 330 Ridgefield Court, Asheville, North Carolina 28806.

FOR FURTHER INFORMATION CONTACT: Ms. Nora Murdock at the above address (704/665–1195, Ext. 231).

SUPPLEMENTARY INFORMATION:

Background

Neonympha mitchellii francisci is a subspecies of one of two North American species of *Neonympha*. One of the rarest butterflies in eastern North America, it was described by Parshall and Kral in 1989 from material collected in North Carolina. These authors estimated that the single known population probably produced less than 100 adults per year. Shortly thereafter, Saint Francis' satyr was reported to have been collected to extinction (Refsnider 1991, Schweitzer 1989). The species was rediscovered at the type locality in 1992 during the course of a Service-funded status survey. Section 3 of the Act defines ''species'' to include ''any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife * * *.'' Therefore, although *N. m. francisci* is recognized taxonomically as a subspecies, it will be referred to as a ''species'' throughout the remainder of this rule.

Saint Francis' satyr is a fairly small, dark brown butterfly and is a typical member of the Satyrinae, a subfamily of the Nymphalidae family, which includes many species commonly called satyrs and wood nymphs. The wingspan for the species ranges from 34 to 44 mm (Opler and Malikul 1992). Saint Francis' satyr and Mitchell's satyr (*N. m. mitchellii*), the northern subspecies, which was listed as endangered on May 20, 1992 (57 FR 21569), are nearly identical in size and show only a slight degree of sexual size dimorphism (Hall 1993, Parshall and Kral 1989). Like most species in the wood nymph group, Saint Francis' satyr has conspicuous ''eyespots'' on the lower surfaces of the wings. These eyespots are dark maroon-brown in the center, reflecting a silver cast in certain lights. The border of these dark eyespots is straw-yellow in color, with an outermost border of dark brown. The eyespots are usually round to slightly oval and are well developed on the forewing as well as on the hind wing. The spots are accented by two bright orange bands along the posterior wing edges and two darker brown bands across the central portion of each wing. Saint Francis' satyr, like the northern subspecies, can be distinguished from its North American congener, *N. areolata*, by the latter's well-marked eyespots on the upper wing surfaces and brighter orange bands on the hind wing as well by its lighter coloration and stronger flight (Refsnider 1991, McAlpine *et al.* 1960, Wilsman and Schweitzer 1991, Hall 1993).

Saint Francis' satyr is extremely restricted geographically. The northern subspecies has been eliminated from approximately half its known range, primarily due to collecting (Refsnider 1991). Saint Francis' satyr is now known to exist as a single population in North Carolina.

The annual life cycle of *N. m. francisci*, unlike that of its northern relative, is bivoltine. That is, it has two adult flights or generations per year. Larval host plants are believed to be graminoids such as grasses, sedges, and rushes. Little else is known about the life history of this butterfly. The habitat occupied by this satyr consists primarily of wide, wet meadows dominated by sedges and other wetland graminoids. In the North Carolina sandhills, such meadows are often relicts of beaver activity. Unlike the habitat of Mitchell's satyr, the North Carolina species' habitat cannot properly be called a fen because the waters of this sandhills region are extremely poor in inorganic nutrients. Hall (1993) states:

> Whereas true fens—apparently the habitat of the northern form of *N. mitchellii* (Wilsman and Schweitzer 1991)—are circumneutral to basic in pH and are long-lasting features of the landscape, the boggy areas of the sandhills are quite acidic as well as ephemeral, succeeding either to pocosin or swamp forest if not kept open by frequent fire or beaver activity.

Hall (1993) further states:

> Under the natural regime of frequent fires ignited by summer thunderstorms, the sandhills were once covered with a much more open type of woodland, dominated by longleaf pine, wiregrass, and other fire-tolerant species. The type of forest that currently exists along [the creek inhabited by Saint Francis' satyr] can only grow up under a long period of fire suppression. The dominance on this site of loblolly pine, moreover, is due primarily to past forestry management practices, not any form of natural succession.

Parshall and Kral speculated that *N. m. francisci* is a relict from a more widespread southern distribution during the Pleistocene period. Hall (1993) presents the following alternative hypothesis:

> The current narrow distribution of *francisci* could also be a result of the enormous environmental changes that have occurred in the southern coastal plain just within the past 100 years. Only the discovery of additional populations or fossil remains can clarify this situation.

Extensive searches have been made of suitable habitat in North Carolina and South Carolina, but no other populations of this butterfly have been found (Hall 1993, Schweitzer 1989).

Previous Federal Action

Federal government actions on this species began when it was included as a category 2 species in the animal candidate review list published on November 21, 1991 (56 FR 58804). Category 2 species are those for which the Service believes that Federal listing as endangered or threatened may be warranted but for which conclusive data on biological vulnerability and threat are not currently available to support proposed rules. Recent surveys conducted by Service and State personnel led the Service to believe that sufficient information existed to proceed with an emergency rule to list *Neonympha mitchellii francisci* as endangered. The emergency rule was published on April 18, 1994 (59 FR 18324). A proposed rule (59 FR 18350) was published simultaneously to initiate the formal listing process for this species.

Summary of Comments and Recommendations

In the April 18, 1994, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice inviting public comment was published in the ''Fayetteville Observer,'' Fayetteville, North Carolina, on May 6, 1994. Only one written comment was received, and that letter expressed support for the proposal.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that Saint Francis' satyr should be classified as an endangered species. Procedures found at section 4(a)(1) of the Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to Saint Francis' satyr (*Neonympha mitchellii francisci*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* Because of its relatively recent discovery, it is impossible to determine what the original range of Saint Francis' satyr might have been. However, based upon its demonstrated dependency on periodic fires and the general trend of fire suppression on private lands, it seems reasonable to assume that it once occupied a more extensive area. This assumption is further supported by extensive recent searches of suitable habitat where the species could not be found. As stated by Hall (1993):

> In order for *francisci* to have survived over the past 10,000 years, there must surely have been more populations and greater numbers of individuals than apparently now exist * * *. As is true for many species that were once widespread in the sandhills, massive habitat alteration must also be a major factor in the diminution of the range of *francisci* * * * reductions in *francisci*'s range would have accompanied the extensive loss of wetland habitats in the coastal plain. Again, the draining of swamps, pocosins, Carolina bays, savannas, flatwoods, and bogs for conversion to agriculture and silviculture is well known. In the case of *francisci*, however, the extirpation of beavers from the Carolinas may have been the greatest factor.

Beavers had been virtually eliminated from North Carolina by the turn of the century. Reintroductions began in 1939, but it was several decades before they again became an agent for creation of the sedge meadow habitats favored by Saint Francis' satyr (Hall 1993, Woodward and Hazel 1991). Hall further states:

> As the landscape mosaic of open woodlands and wetlands of the coastal plain declined throughout the past two centuries, the range of *francisci* must have become increasingly fragmented. Although isolated populations may have persisted as long as suitable habitat remained, the structure of their metapopulation would have been destroyed. Opportunistic colonization of newly available habitats as well as the repopulation of sites wiped clean by fire or other catastrophe would have become eventually impossible; one by one, the isolated remnants would have blinked out of existence. Although again speculative, the fracturing of metapopulations has been used to explain the decline of the arogos skipper and a number of butterflies associated with the tall-grass prairies (Panzer, 1988, D. Schweitzer, pers. comm.). That *francisci* was a relict to begin with only exacerbated this problem; the overall effect was to bring it as close to extinction as any butterfly in the country.

The sole surviving population of this species is now fragmented into less than half a dozen small colonies that occupy a total area no larger than a few square miles.

B. Overutilization for commercial, recreational, scientific, or educational purposes. Both subspecies of *Neonympha mitchellii* are highly prized by collectors, including commercial collectors who often systematically collect every individual available. Several populations of the northern subspecies are known to have been obliterated by collectors, and others are believed extremely vulnerable to this threat (Refsnider 1991). As mentioned in the Background section, the single known population of Saint Francis' satyr was so hard-hit by collectors in the 3 years following its initial discovery that it was believed to have been collected to extinction. Subsequent to the emergency listing of the northern subspecies in 1991 (56 FR 28828) and prior to the publication of the emergency listing of Saint Francis' satyr, the North Carolina population was the last site where *Neonympha mitchellii* could legally be collected. Following the emergency listing of Mitchell's satyr, the North Carolina Natural Heritage Program received several inquiries from collectors about access to the last available population. Several expressed apprehension about any restriction on collecting of this rare and much-sought-after satyr. Collectors reportedly visited the known site every day throughout the flight periods, taking every adult they saw (Hall 1993). After this first wave of over-collection, many unsuccessful searches for the butterfly were made before it was eventually rediscovered. Numbers of individuals then seen were much lower than those reported by Parshall and Kral (1989), with the highest single count consisting of only 11 butterflies (Hall 1993). Even though part of this population is protected from collectors by virtue of being within dangerous artillery impact areas on Department of Defense (DOD) land, intensive collecting from the periphery of these areas could reduce total population numbers below the levels needed for long-term survival. Very little is known about this species' life history and ecological requirements, but it appears to be a more vagile species than its northern relative. It may well be dependent upon a large metapopulation structure in order to colonize new sites or recolonize those from which it has been extirpated.

C. Disease or predation. This butterfly, like others, is undoubtedly consumed by predators, but there is no evidence that predation is a threat to the species at this point. Disease is not known to be a factor in its decline.

D. The inadequacy of existing regulatory mechanisms. Insects are not protected from collection under North Carolina law. There are also no DOD regulations that would restrict the collecting of Saint Francis' satyr in North Carolina. Federal listing of this species will provide legal protection against indiscriminate taking and illegal trade.

E. Other natural or manmade factors affecting its continued existence. Although the habitat occupied by this species is dependent upon some form of disturbance to set back succession (e.g., periodic fire and/or beaver impoundments), intense fires at critical times during the life cycle of the species can eliminate small colonies. Historically, this would not have been a problem since there were undoubtedly other adjacent populations that could recolonize extirpated sites. However, the fact that only one population of this species now remains makes it more vulnerable to such threats as catastrophic climatic events, inbreeding depression, disease, and parasitism. Part of the occupied area is adjacent to regularly traveled roads, where there is the threat of toxic chemical spills into the species' wetland habitat. Current military use of the impact areas is

favorable to this species; the frequent fires associated with shelling are undoubtedly a principal reason why the species is surviving on military lands and not on surrounding private lands. DOD personnel are aware of the species' plight and have been cooperative in protection efforts. However, heavy siltation is a potential problem that could threaten the small drainages occupied by the species. Although troop movements directly through an area occupied by the satyr could have negative impacts, this has not occurred to date; these activities have now been directed away from areas where the satyr occurs. Other potential threats to the species include pest control programs (for mosquitoes or gypsy moths) and beaver control.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list Saint Francis' satyr as endangered. With only one population remaining (and this one having already been diminished by intensive collecting) and with the other subspecies having been completely eliminated from half the States where it historically occurred, the threat of over-collection cannot be denied. The additional threats to the habitat from fire exclusion and the lack of other processes that formerly created suitable habitat make this species even more vulnerable to extinction. Critical habitat is not being designated for the reasons discussed below.

Critical Habitat

Critical habitat is defined in section 3 of the Act as: (i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection and; (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. ''Conservation'' means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act requires that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. Service regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when or both of the following situations exist—(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species.

As discussed under Factor B in the Summary of Factors Affecting the Species section, Saint Francis' satyr has already been impacted by over-collecting and continues to be threatened by collecting pressure. Publication of critical habitat descriptions and maps would make the satyr more vulnerable to collection and would increase enforcement problems and the likelihood of extinction. Protection of this species' habitat will be addressed through the recovery process and through the section 7 jeopardy standard. The single remaining population is located on military lands, where the DOD is aware of its occurrence.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed animals are discussed, in part, below.

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal activities that could impact Saint Francis' satyr and its habitat in the future include, but are not limited to, the following: road and firebreak construction, pesticide application, beaver control, troop movements, prescribed burning and fire suppression, and facilities construction. The only known population is located on military lands, where the DOD is already working with the Service to secure the protection and proper management of Saint Francis' satyr while accommodating military activities to the extent possible. Conservation of this butterfly is consistent with most ongoing military operations at the occupied site, and the listing of the species is not expected to result in significant restrictions on military use of the land.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

It is the policy of the Service, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time of listing those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of the listing on proposed or ongoing activities within a species' range. Since Saint Francis' satyr is currently only found on DOD lands, and since the DOD is cooperating with the Service in protecting this species, there do not appear to be any current military activities that would likely be a violation of section 9.

Taking the species for butterfly collections or for sale, such as has been done in the past, is prohibited. Possession of specimens legally acquired would not be a violation. The Service is not aware of any otherwise lawful activities being conducted or proposed by the public that will be affected by this listing and result in a violation of section 9. Questions

regarding whether specific activities will constitute a violation of section 9 should be directed to the Field Supervisor of the Service's Asheville Office (see **ADDRESSES** section).

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. Requests for copies of the regulations regarding listed wildlife and inquires about prohibitions and permits should be addressed to the U.S. Fish and Wildlife Service, Regional Permit Coordinator, 1875 Century Boulevard, Suite 200, Atlanta, Georgia 30345 (404/697–7110, facsimile 404/679–7081).

National Environmental Policy Act

The Fish and Wildlife Service has 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 of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

Hall, S. 1993. A rangewide status survey of Saint Francis's satyr *Neonympha mitchellii francisci (Lepidoptera: Nymphalidae*). Report to U.S. Fish and Wildlife Service, Endangered Species Field Office, Asheville, NC. 44 pp.

McAlpine, W., S. Hubble, and T. Pliske. 1960. The distribution, habits, and life history of *Euptychia mitchellii* (*Satyrinae*). J. Lep. Soc. 14:209–225.

Opler, P., and V. Malikul. 1992. A field guide to eastern butterflies. Houghton Miflin Co., New York.

Parshall, D. K., and T. W. Kral. 1989. A new subspecies of *Neonympha mitchellii* (French) (*Satyrinae*) from North Carolina. J. Lep. Soc. 43:114–119.

Refsnider, R. 1991. Emergency rule to list the Mitchell's satyr as endangered. **Federal Register** 56(122):28825.

Schweitzer, D. 1989. A review of category 2 insects in the U.S. Fish and Wildlife Service's Regions 3, 4, and 5. Report to the U.S. Fish and Wildlife Service, Newton Corner, MA. Pp. 132–133.

Wilsman, L., and D. Schweitzer. 1991. A rangewide status survey of Mitchell's satyr, *Neonympha mitchellii mitchellii* (*Lepidoptera: Nymphalidae*). Report to the U.S. Fish and Wildlife Service, Region 3, Endangered Species Office, Twin Cities, MN.

Woodward, D., and R. Hazel. 1991. Beavers in North Carolina; ecology, utilization, and management. Cooperative Extension Service Publication No. AG–434, North Carolina State University, Raleigh, NC.

Author

The primary author of this final rule is Ms. Nora Murdock (see **ADDRESSES** section) (704/665–1195, Ext. 231).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Regulation Promulgation

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended 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.

(2) Section 17.11(h) is amended by adding the following, in alphabetical order under ''Insects,'' to the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	
INSECTS							
*	*	*	*	*	*	*	
Butterfly, Saint Francis' satyr.	*Neonympha mitchellii francisci.*	U.S.A. (NC)	NA	E	539E, 574	NA	NA
*	*	*	*	*	*	*	

Dated: December 21, 1994.

Mollie H. Beattie,

Director, Fish and Wildlife Service.

[FR Doc. 95–1982 Filed 1–25–95; 8:45 am]

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50 CFR Part 17

RIN 1018–AC09

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Hine's Emerald Dragonfly (Somatochlora hineana)

AGENCY: Fish and Wildlife Service, Interior Department.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines the Hine's emerald dragonfly (*Somatochlora hineana*) to be an endangered species pursuant to the Endangered Species Act (Act) of 1973, as amended. Historically, this dragonfly was reported from sites in Indiana and Ohio. Recent reports indicate that it is currently present at only seven small sites within Cook, DuPage, and Will Counties in Illinois, and at six sites in Door County, Wisconsin. This species is threatened primarily by habitat loss and modification. This rule implements the Federal protection provisions afforded by the Act to the Hine's emerald dragonfly.

EFFECTIVE DATE: January 26, 1995.