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 Servicefunded 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 evespots are dark maroonbrown 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 longlasting 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 firetolerant 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.