

ENDANGERED SPECIES

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Protection Proposed for Butterfly and Two Plants

During September 1986, the following taxa were proposed by the Fish and Wildlife Service (FWS) for listing under the Endangered Species Act:

Pawnee montane skipper (*Hesperia leonardus montana*)

This rare brownish-yellow butterfly, endemic to a small mountainous area in central Colorado, was proposed September 25 for listing as a Threatened subspecies. Its limited habitat already has been damaged by off-road vehicle (ORV) use, and up to half of what remains could be eliminated by a proposed reservoir.

Pawnee montane skippers are small, with a wingspan of slightly over one inch (2.5 centimeters), and they complete their life cycle within a single year. Their flight period begins in mid to late August, the adults spending most of their short existence mating and feeding. They secure nectar from several plants, such as the musk thistle (*Carduus nutans*), the Canada thistle (*Cirsium arvense*), an unidentified native thistle, a native pink-flowered *Cirsium*, *Monarda* sp., *Chrysopsis*, and the prairie gayfeather (*Liatris punctata*); their larval food plant is blue grama grass (*Bouteloua gracilis*).

The only places from which the Pawnee montane skipper is known are sites within an area roughly 23 miles (37 kilometers) long and 5 miles (8 km) wide in the South Platte River drainage of Colorado's Front Range. Much of the available habitat is within Pike National Forest; the rest is privately owned. Skippers usually are found within one mile (1.6 km) of a stream on steep, open, ponderosa pine woodlands.

ORV use within the butterfly's range has led to accelerated soil erosion, resulting in the loss of food plants. Other habitat damage may have occurred when Cheesman Reservoir was constructed and when communities within the skipper's range were developed. However, the main threat to the remaining skippers is the proposed Twin Forks Reservoir. Estimates of the amount of butterfly habitat that would be inundated range up to 50 percent, depending on the final impoundment size. Construction activities (roads, access points, maintenance facilities, etc.) and recrea-

tional development associated with the Twin Forks project could further degrade or eliminate even more of the habitat unless located away from prime skipper areas.

A U.S. Army Corps of Engineers (COE) permit would be needed for the Twin Forks project. While additional research is being conducted to better determine the degree of threat to the skipper from the planned reservoir, the FWS will work with the COE, the U.S. Forest Service, and all other involved parties in an effort to conserve the butterfly and its habitat while accommodating project goals to the greatest extent possible. Because printing the maps and detailed habitat descriptions required for a Critical Habitat proposal would make the skipper more vulnerable to collectors, such a designation was not deemed prudent at this time; however, a listing of the butterfly as Threatened would give it and its habitat protection under Section 7 of the Endangered Species Act.

Two Puerto Rico Plants

Cyathea dryopteroides (elfin tree fern) and *Ilex cookii* (Cook's holly), two plants endemic to elfin or cloud forests in the mountains of central Puerto Rico, were proposed for listing as Endangered (F.R. 9/26/86). Both species, which occur within small areas and in very low numbers, are in danger of extinction through direct destruction of the plants and loss of habitat.

A small tree fern, *C. dryopteroides* reaches only 24 inches (60 cm) high with a trunk one inch (2.5 cm) in diameter. It currently is known from populations totalling about 70 individuals on two mountaintops that are approximately 12 miles (20 km) apart. *I. cookii*, an evergreen shrub or small tree, has elliptical leaves that are leathery and dark green on the upper surface. It is thought to be dioecious, and therefore dependent on the existence of both male and female plants in close proximity to each other. The fact that male flowers and ripe fruit have never been observed suggests that production of viable seed rarely occurs. At present, only a single 8-foot (2.5 meter) *I. cookii* specimen with 4 small root sprouts has been documented from one of the species' two known mountaintop sites, and a small

number of sprouts or seedlings have been seen at the other.

Although both species occur on lands that are owned by the Commonwealth of Puerto Rico and managed as units of the Commonwealth Forest System, some sites on peaks and ridges have been cleared for construction after being leased to communications companies. A significant portion of the total *C. dryopteroides* population was destroyed by the development of a single communications installation on Monte Jayuya, and it is likely that some *I. cookii* individuals were lost when a similar facility was built on Puerto Rico's highest mountain, Cerro de Punta. Construction of new facilities, or even expansion of existing ones, could further deplete the surviving populations of *C. dryopteroides* and cause the extinction of *I. cookii*. Forests inhabited by both species also have been used as military training areas, resulting in additional damage to the relatively fragile habitat. Road construction and the indirect effects of such work (e.g., slope instability) in the vicinity could pose further threats.

Both species are attractive and could have potential value as ornamental plants; moreover, considerable commercial trade in some tree fern species already exists. Accordingly, the FWS decided against pointing out the location of the surviving populations with a designation of Critical Habitat. If they are listed, however, the plants and their habitat will receive Section 7 protection against jeopardy from Federal activities. The only Federal agencies whose actions might be expected to affect the plants are the U.S. Army (military exercises) and the Federal Highway Administration (road construction and maintenance). Through careful planning, adverse impact to the two species should be minimal.

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Available Conservation Measures

Among the conservation benefits provided to a species if its listing under the Endangered Species Act as Threatened or Endangered is approved are: protection from adverse effects of Federal activities; prohibitions against certain practices; the

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