

White-haired Goldenrod (*Solidago albopilosa*)

An herbaceous plant in the aster family (Asteraceae), *S. albopilosa* is endemic to outcrops of Pottsville sandstone found within eastern Kentucky's Red River Gorge area of Menisee, Powell, and Wolfe Counties. It grows primarily in rockhouses (natural, shallow, cave-like formations) and beneath overhanging ledges. Intensive recreational use of these outcrops is damaging *S. albopilosa* habitat, and the FWS has proposed to list the species as Endangered (F.R. 4/24/87).

Most of the Red River Gorge is within Daniel Boone National Forest, and it has been designated a National Geological Area for its unusual topography. (There are several small, private inholdings within the gorge, but the U.S. Forest Service plans to acquire those judged most significant.) The geological features (rockhouses) with which *S. albopilosa* is associated are common in this area, but only a small number currently support the species.

Red River Gorge is a recreational area that draws approximately 240,000 "visitor-use days" per year. The rockhouses are very popular destinations or sites for hiking, camping, climbing, and picnicking. Also, because of the presence of Indian artifacts, collectors dig in even the most remote rockhouses. These activities have resulted in intensive disturbance to *S. albopilosa* habitat. The species has been extirpated from some sites and is being damaged at most of the others.

A threat of a more potential nature is the proposed Red River Lake project. Although the high-water level would not inundate rockhouses, the species' habitat could be damaged by associated construction and recreational activities. The proposed impoundment, however, is opposed by the State of Kentucky and is no longer being pursued as a viable project by the U.S. Army Corps of Engineers. In the event that the proposal is someday revived, plans for protecting *S. albopilosa* would need to be incorporated; however, reauthorization is not expected.

If the species is listed, effects on Forest Service management should be minimal. They would consist primarily of measures to reduce visitor damage at the most important *S. albopilosa* sites and careful planning of any future logging operations.

Aleutian Shield-fern (*Polystichum aleuticum*)

P. aleuticum, a perennial in the fern family (Polypodiaceae), is an extremely rare plant known from only two sites in Alaska's Aleutian Islands. This diminutive species arises from a stout, dark brown rhizome and sends out fronds that reach only about 6 inches (15 cm) high. There are no closely related ferns in North America or

South America. Grazing, soil instability, and the species' low numbers threaten it with extinction, and the fern has been proposed for listing as Endangered (F.R. 4/24/87).

For many years, *P. aleuticum* was known only from a 1932 collection on Atka Island. Surveys conducted in 1984 and 1985 were not successful in finding the population, although the original collection site is not known and could have been overlooked. On the other hand, reindeer, non-native animals introduced to Atka in 1914, have overgrazed the west end of the island and may have contributed to the fern's apparent disappearance. In 1975, a second *P. aleuticum* population of only 15 plants was discovered on Adak Island near the summit of Mt. Reed. The site consists of treeless, alpine talus slopes vegetated with low-growing herbs and prostrate shrubs.

Caribou were introduced on Adak in 1958, and up to 400 now occur on the island. Because they are present in the Mt. Reed area, caribou may be affecting *P. aleuticum* by grazing or trampling. A more likely limiting factor is the instability of the alpine habitat on Mt. Reed due to wind erosion and solifluction (soil movement).

Both Atka and Adak Islands are within the Aleutian Islands Unit of the Alaska Maritime National Wildlife Refuge. However, part of Atka was selected and conveyed to the Atkam Native Corporation under the Alaska Native Claims Settlement Act of 1971. The northern half of Adak (including Mt. Reed), though still within the refuge, is a U.S. Naval Reservation within which the Navy has development rights. These rights can be exercised if compatible with the refuge, and discussions with the Navy have revealed no conflicts.

The listing proposal identified several immediate measures to conserve and recover *P. aleuticum*, and some have already begun. Intensive surveys for the plant are under way, and "wanted" posters have been distributed to all refuge and Naval personnel and interested private citizens. Future activities may include fencing of fern sites to exclude caribou and propagation of the plant to create a supply for reintroduction. . . .

Available Conservation Measures

Among the conservation benefits provided by a listing as Threatened or Endangered under the Endangered Species Act are: protection from adverse effects of Federal activities; prohibitions against certain practices; the requirement for the FWS to develop and implement recovery plans; the possibility of Federal aid to State and Commonwealth conservation departments that have signed Endangered Species Cooperative Agreements with the FWS; and the authorization to seek land purchases or exchanges for important

habitat. Listing also lends greater recognition to a species' precarious status, which encourages further conservation efforts by State and local agencies, various organizations, and individuals. Section 7 of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for listed species. It also requires these agencies to ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the survival of a listed species. If any agency finds that one of its activities may affect a listed species, it is required to consult with the FWS on ways to avoid jeopardy or adverse modification of Critical Habitat. For species that are proposed for listing and for which jeopardy or adverse modification is found, Federal agencies are required to "confer" with the FWS, although the results of such a conference are non-binding. Potential conflicts almost always are avoided by planning early and using the Section 7 process.

Further protection is authorized by Section 9 of the Act, which makes it illegal to take, possess, transport, or engage in interstate or international trafficking in listed animals, except by permit for certain conservation purposes. For listed plants, the rule is different; the trafficking restrictions apply, but collecting of listed plants without a permit is prohibited only on lands under Federal jurisdiction. Some States, however, have their own laws protecting listed plants and animals that may be more restrictive.

Parvovirus and Heartworm Found in Minnesota Wolves

L. David Mech and Steven H. Fritts¹

Just when it looked like the main threat to the Minnesota wolf (*Canis lupus*) population was long-term human development of habitat, two new, more immediate problems have appeared. Canine parvovirus (CPV) and heartworm (*Dirofilaria immitis*) recently were documented in Minnesota wolves. Both are potentially fatal and are new to wild gray wolves. Their threat to the population is unknown but could be serious.

CPV is a newly discovered disease thought to be an escaped laboratory artifact, and was first found in 1976 in domestic dogs. It raced through the dog population and killed numerous pets — especially pups — before a vaccine was developed. Affecting primarily the digestive system, it is spread via infected feces. CPV had reached the dog population in Ely, the heart of the Minnesota wolf range,

(continued on page 6)

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