

Carnivorous Plants Deserve Protection

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Readers of the *Carnivorous Plant Newsletter* surely know that the world's wonderful wild plants are in grave danger. Habitat loss, competition from introduced species, and overexploitation are driving an estimated 25,000 plant species to the brink of extinction. If we do not reverse these trends, we will lose sources of endless delight as well as valuable resources: raw materials for medicine, improved agricultural crops, and industry.

The carnivorous plants which we find so fascinating are no exception to this alarming situation. One, *Sarracenia oreophila*, is officially listed as Endangered under the U.S. Endangered Species Act; it has declined or been extirpated from over 70% of its historic colonies. Several other species of *Sarracenia* are also severely depleted, although bureaucratic delays have prevented their receiving federal legal protection. Some are protected by state laws. Outside the United States are found numerous other rare species, including some of the spectacular *Nepenthes* from Malaysia.

Lovers of wild plants, united in their voluntary societies, are potentially the most powerful advocates for effective conservation programs to prevent extinction of plant species. Who better knows and appreciates their many values—esthetic, scientific, practical? Who can more persuasively argue for their conservation? Who better knows their locations, the threats to their survival, and, often, the actions necessary to conserve them? Unfortunately, most plant societies have been slow to respond to this challenge.

The International Carnivorous Plant Society should speak out on plant conservation: it should help alert the public around the world to threats to plants' survival, and support strong conservation programs.

Carnivorous plants face two major threats, habitat loss and overexploitation by the horticultural trade.

In the United States, habitat loss is the primary cause of endangerment. Most carnivorous plants are confined to low-lying bogs which are rapidly being drained for plantation forestry and agriculture, poisoned by water pollution, or allowed to grow into tangles of vegetation as a result of fire suppression.

The major concentration of pitcher plant bogs occurs along the Gulf Coast. These bogs once covered almost 3,000 km² in natural condition and another 60 km² in altered condition. This severe loss—97%—of habitat is all the more alarming because of the great species diversity of these spectacular bogs. They contain over half the approximately 45 species of carnivorous plants found in North America.

The important bogs of coastal North Carolina, home of the unique Venus fly-trap, are under similar pressure. About 40% of the coastal savannahs and wetlands remain; only about 20% of the pocosins, and very few of the bays. New technologies allow more extensive draining of the savannahs for forestry, so these areas will face added conversion in the near future. Peat mining threatens the remaining pocosins.

A second cause of severe depletion of wild populations of carnivorous plant species is overexploitation. In the U.S., this factor plays largely a supplementary role: once habitat loss has reduced a species, eager collecting can decimate the remaining populations. For example, in the late 1960s there were eight to ten recorded populations of *Sarracenia jonesii*, now there are only two. Of the six populations extirpated, at least one was collected out. Even the more plentiful

species may be suffering long-term effects from massive collecting, however. Botanists still dispute the impacts of the annual collecting of up to four million Venus flytraps in the late 1970s.

Outside the United States, collecting assumes much greater importance as a cause of extinction of carnivorous plants. In tropical countries, the lowland species of carnivorous plants thrive in degraded forests, so they are not as threatened by the rapid destruction of the virgin tropical forests as are certain other plant types. The more rare species tend to be found in seeps on steep hillsides and cliffs and in other mountainous areas unsuitable to agriculture or forest exploitation. Some of these, including some *Nepenthes* species, are also protected by their inclusion in national parks.

Eager collectors seek out these species, ignoring expense, physical discomfort, and frequently the law. This spring, Australian authorities seized a shipment of *Nepenthes rajah* which had been stolen from Kinabalu National Park in Malaysia and exported in violation of an international treaty.

In recent years, several programs have been instituted to control these threats to rare plant species. The U.S. has a particularly extensive network of protective programs aimed at both curbing habitat loss and controlling exploitation.

The Endangered Species Act requires all federal agencies to ensure that activities financed or permitted by them do not disrupt a species' habitat or jeopardize the species' continued survival. This law also prohibits collecting of listed plants from federal lands.

State heritage programs, operated in cooperation with the Nature Conservancy, identify unique or high quality representative ecosystems, some of which are then acquired or protected under other agreements. A number of states, mostly in the Midwest, have enacted natural area programs, which provide various mechanisms for protecting small but biologically important areas.

Many states, including Florida and North Carolina, have enacted their own endangered species laws which identify and provide some protection for rare plants. Florida prohibits the willful injury or destruction of a plant of a species listed as endangered if it is found on another's or public land; it also prohibits collection of three or more of such plants from public land. Included in this protection are all species of *Sarracenia* native to the state. The North Carolina statute prohibits the sale or barter of protected plants, including *S. jonesii*.

These state laws are now reinforced by the Lacey Act, which imposes federal penalties of up to five years in jail and a fine up to \$20,000 for interstate or foreign sale of plants taken in violation of the state law.

The United States also seeks to protect its wetlands. The most important legal protection stems from Section 404 of the Clean Water Act, which requires that anyone wishing to dredge or fill a wetland must obtain a permit from the U.S. Army Corps of Engineers. Such permit applications are reviewed for their impact on wildlife by the Fish and Wildlife Service.

The federal government has also purchased considerable wetland areas, although at least until recently these acquisitions focused on areas of importance to migratory waterfowl. Some of these purchases were financed by waterfowl hunters through the "duck stamp."

Finally, the United States and 80 other countries have signed a treaty which regulates international trade in certain protected species of plants and animals. Four U.S. pitcher plants (*Sarracenia oreophila*, *S. alabamensis*, *S. jonesii*, and *Darlingtonia californica*), and *Nepenthes rajah* are protected by this Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). People wishing to exchange these plants with colleagues in other countries must obtain permits from their government. In the case of the most threatened species, the three *Sarracenia* and the *Nepenthes*, such permits are

granted only for scientific purposes.

Enactment of these programs has not completed the work of plant conservationists, however. All suffer from inadequate budgets and lagging implementation; some come under periodic attack by economic interests and must be defended. The Endangered Species Act survived such an attack last year. The wetland protection program is still in danger, however. Last year, some in Congress tried to restrict the permit requirements to wetlands directly associated with navigable waters. Such a change would have reduced the total area protected from 148 million to 22 million acres, and would have exempted virtually all bogs containing carnivorous plants. These Congressional efforts continue. In the meantime, the Reagan Administration has weakened the existing law by giving a blanket authorization for dredging and filling of inland wetlands, including freshwater bogs; and by carrying out only cursory reviews of developments affecting intermittent streams and other such "functionally limited" wetlands.

Conservation organizations are fighting the Congressional attacks and the Reagan

proposals. But they need more allies, especially carnivorous plant lovers who appreciate the values of small, shallow bogs which do not support ducks and geese.

In other words, there is much for the International Carnivorous Plant Society to do to further conservation of wild populations of these plants. You could lobby in support of existing legal protections and for increased funds to implement land acquisition and other programs. You might consider establishing a conservation fund to purchase land or finance research. At a minimum, the ICPS should take a strong stand on the ethical issue of collecting wild carnivorous plants. It should make it clear that it will not tolerate violators of local, national, or international laws. It should encourage propagation for exchange or sale.

Put your expertise and energy to work for the cause we all support: preserving healthy wild populations of carnivorous plants around the world.

* "The Gulf Coast Pitcher Plant Bogs" by George W. Folkerts, *American Scientists*, Volume 70, pp. 260-267

