Protection of Endangered Species

I am a member of the Wildlife Advisory Group, appointed by the Department of Community Affairs to develop a rule for wildlife mitigation for DRIs (Development of Regional Impact). At one of our meetings the question of whether endangered plants should be protected came up. I wrote this article because I would like members of the Florida Native Plant Society to be aware of the situation. Some of them might be interested in participating in the public workshops that will be held this autumn as part of the rule-making process.

Support for state and federal laws to protect endangered species illustrate newly emerging values in our society. Most Americans now believe that species should be protected from extinction. There is little evidence that the public thought much about species extinctions until recently. Aldo Leopold said in 1947 at the dedication of a monument to the Passenger Pigeon. "For one species to mourn the death of another is a new thing under the sun."

These values have been slow to develop, and we have not resolved, nor are we yet fully aware of, the conflicts they will present. One of the first federal acts intended to protect endangered plants and animals was the ratification of an international treaty proposed at the 1940 Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere. It states that the nations signing the treaty should adopt suitable laws and regulations for the protection and preservation of flora and fauna that are within their national boundaries, but not included in the national parks, national reserves, nature monuments, or strict wilderness reserves. Although 17 countries ratified the treaty, there is no evidence that any of the signatories, including the United States, paid much attention to it afterward.

Nevertheless, the treaty was cited as a precedent for the legality of the Endangered Species Act of 1973 and was notable for including plants as well as animals as deserving protection. Throughout the short history of endangered species legislation, plants have received less protection than animals. Two earlier versions of the Endangered Species Act protected only animals. Before amendments passed in 1982, the Endangered Species Act prohibited only the interstate commerce, import, and export of endangered or threatened plant species. It did not prohibit the taking of listed plants. Plants were also excluded from emergency listing.

The present law prohibits the taking or destruction of threatened or endangered wildlife (wildlife legally refers to animals, although plants can certainly be construed as wildlife), but plants are prohibited only from being removed and "reduced to possession" from areas under federal jurisdiction. They can be killed or destroyed on site. The only protection that threatened or endangered plant habitat has is in Section 7 which directs all federal departments and agencies to "take action necessary to assure that acts authorized, funded, or carried out by them not jeopardize the continued existence of such . . . species or result in the modification of habitat of such species." Plants are protected on projects such as dams or power plants which are licensed or funded by the federal government.

The Fish and Wildlife Service, which implements the Endangered Species Act, instituted a ranking system for priority review of candidate species for the list. It was in the following order: mammals, birds, fish, reptiles, amphibians, vascular plants, insects, mollusks, and other plants and invertebrates. This ranking was not based on risk of extinction, but apparently on an arbitrary value system that esteem the preservation of mammals over birds and the preservation of amphibians over plants.

Plants are not in less danger than animals. By 1950, 90 plant species were known to have become extinct in the United States. More than 2500 have been proposed for listing by botanists. Of these listed species, 984 are in Category I which is defined as showing substantial evidence of some degree of biological vulnerability and/or threat. There are 126 candidate threatened or endangered species in Florida, and 26 species that are actually listed, and therefore under whatever protection the law provides.

Florida laws offer less protection to plants than Federal legislation. Wildlife (animals) is protected by the Florida Endangered and Threatened Species Act of 1977 (Section 372.02 Florida Statutes). Under its provisions, "No person shall pursue, molest, harm, harass, capture, or possess any endangered or threatened species or parts thereof." The law is monitored and enforced by the Game and

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Fresh Water Fish Commission, who must submit revised and updated plans for management and conservation of endangered and threatened wildlife, including research and management priorities and educational programs. The Commission has a reward program to pay for information about illegal killing, wounding, or wrongful possession of endangered or threatened wildlife.

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Plants are protected under the Preservation of Native Flora of Florida Act (Sections 581.185, 581.186, and 581.201 FS). Under this act, "it is unlawful to willfully destroy or harvest . . . plants growing on the private land of another or on public land without obtaining written permission of the landowner." Specifically exempt from the act are destruction of plants due to clearing or land disturbance by the landowner, clearing for agriculture or silviculture or mining assessment, and clearing of land by a public agency or public utility when acting in performance of its obligation to provide service to the public. Essentially, protection of threatened and endangered plants listed by the state is a law against plant theft.

Animals also receive legal protection to prevent them from becoming threatened or endangered. Wildlife management, hunting and fishing regulation, and non-game programs protect wildlife populations. There are no similar vegetation habitat management programs or policies for the positive protection of plant populations.

Large developments in Florida that are permitted under the Development of Regional Impact process must protect any onsite threatened and endangered species. The inclusion of plants in this protection has been inconsistent and has depended upon the regional planning council involved. The Department of Community Affairs is developing a new rule to determine how much mitigation should be offered by a developer for destruction of wildlife habitat. Mitigation could be either preservation on site or contribution to a fund to buy off-site habitat that could receive necessary management (e.g., a site containing the species that is adjacent to an existing preserve). It has been suggested that such a rule should protect only animals and not plants.

Various reasons have been suggested for the lack of protection given to plants in comparison with animals. Wild animals were regarded as incapable of individual ownership because they are mobile and move from property to property. Ownership of plants accompanies the title to the real estate on which they grow. Animal species are also seen as being more charismatic and appealing than plants, perhaps because their behaviors resemble some human behaviors.

Ironically, the opponents of strong protection for endangered or threatened species, concerned because of the threat such laws pose to economic development, often support the protection of animals over plants. Yet those who would protect natural resources only when they can be shown to have some economic use for humanity should favor protection of plants over animals.

Plants as a group have been much more useful to society than animals, and endangered plants are even more likely to be useful than endangered animals. Most medicines and drugs have been derived from plants or are analogs of plant products. These include morphine, aspirin, digitalis, atropine, alcohol, mustard, menthol, quinine, curare, and a variety of germicidal and insecticidal substances.

The new science of biotechnology seeks to improve crops by incorporating genes from wild plants that will enhance tolerance to cold, drought, disease, or other stresses. Endangered plant species often live in unusual habitats and have evolved unusual adaptations to stress or have unique compounds. For example, a new species of Dicerandra on Florida scrub communities was noticed by its discoverer, Steve Christman, because it smelled different than known Dicerandra species. A different odor implies that novel aromatic terpenes are present in this mint.

Food, fuel, and fiber come from plants. It is the destruction of plants that is causing the "greenhouse effect". Humans could exist without other animals. We could not last long without plants. I do not argue that plants should be protected because they possess drugs that are yet unknown to us or because they may improve the growth of soybeans. Plants are more subtle and less well understood than animals. But those of us that know plants find an ancient longleaf pine to be as inspiring as a panther, and a pitcher plant or sundew to be as incredible as a manatee.

Nor am I saying that we should not protect threatened and endangered animal species. Like most Americans I am willing to pay the price for the protection of all species.

What I am trying to show is that our laws protect only part of the "biotic enterprise";

"Destroying species is like tearing pages out of an unread book, written in a language humans hardly know how to read, about the place they live."
(H. Rolston, Philosophy Gone Wild, 1986)

"We are fellow-voyagers with other creatures in the odyssey of evolution and this knowledge should give us a sense of kinship with fellow-creatures: a wish to live and let live: a sense of wonder over the magnitude and duration of the biotic enterprise."
(Aldo Leopold, A Sand County Almanac, 1966)

as Aldo Leopold calls it. If endangered species are to be protected either for utilitarian reasons or for their own value, there is no rational basis for not extending the full protection of threatened and endangered species legislation to members of the plant kingdom.

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