



United States Air Force

Air Force Materiel Command

Air Force Development Test Center, Office of Public Affairs

101 W. D Avenue, Suite 110, Eglin AFB, FL 32542-5498 Tel. (850) 882-3931



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FACT SHEET

Rare Plant Species

Introduction

Eglin Air Force Base is the largest air force base in the free world, including 724 square miles of land area and about 130,000 square miles of controlled airspace overlying land and water. In this setting, Eglin conducts its primary mission of full-service air armament development through weapons system research, development, testing and evaluation; training; space operations; and base and range support. While fulfilling its mission, Eglin also manages its natural resources, acting as a steward to protect plants and animals for future generations.

Eglin contains some of the highest quality natural areas in Florida and in the Southeast United States. Within the various ecosystems found on the base, Eglin pursues a goal of protecting and enhancing populations of native plants and animals. Ongoing botanical studies seek to identify the rare plants on the base and to classify appropriate species as threatened or endangered.

The Florida Natural Areas Inventory (FNAI) is a part of the Nature Conservancy, a national conservation organization. In a study led by the FNAI, scientists surveyed over 300 sites on the base. A total of 60 rare plant species have been documented at Eglin, occurring at 1,747 locations across the base. A variety of natural communities have been identified which support these plants, including seepage slopes, wet flatwoods, dome swamps, bogs, wet prairies, sandhills, scrubs and blackwater streams. Twenty-five different community types in all were found to have rare plants. The diversity of plants within these communities is second only to that of a tropical rain forest.

Rare plants provide an essential connection in the network of plant and animal life. They offer protection and reproductive and hunting habitats for insects, aquatic mammals, waterfowl, and fish. Plants also contribute to

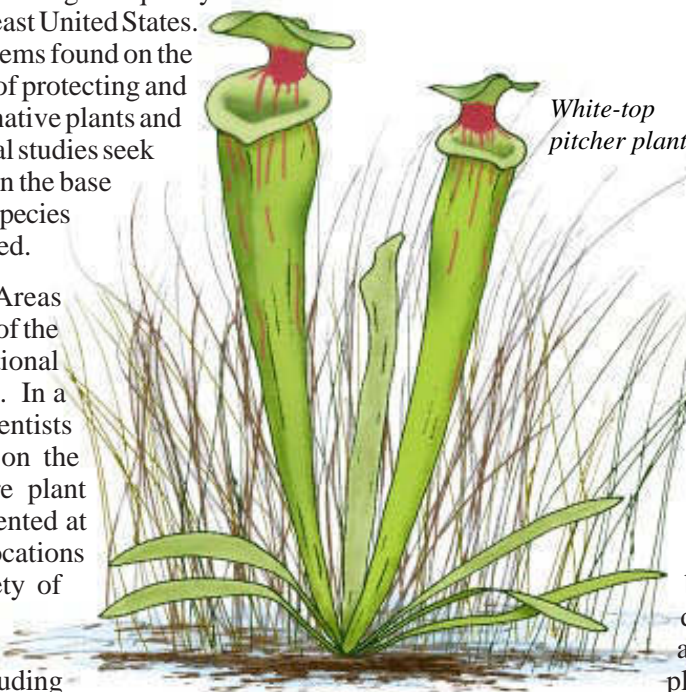
human habitat by maintaining water quality. Plant-filled areas slow down floodwaters, filter out sediment, and absorb some of the potentially damaging nutrients and microbes. Rare plants contribute significantly to native biodiversity and often are indicators of healthy ecosystems.

Rare plants at Eglin include one species listed by the federal government as endangered. Thirty other plant species believed to grow at Eglin are listed as candidates for federal threatened or endangered status. The state of Florida lists some of these 30 plants, plus eight others, as endangered.

Candidates for Federal Listing

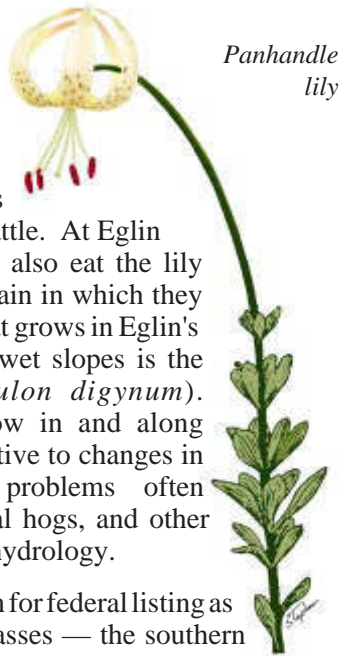
One of these listed plants, the white-top pitcher plant (*Sarracenia leucophylla*) is a showy, insect-eating plant that lives in wet prairies, woodlands, and swamps and even along fire-swept slopes. The pitcher plant has elongated funnels or pitchers that hold liquid and hooded tops streaked with bright red. Insects, attracted by the color and the fragrance of the plant, crawl along the slippery rim of the pitcher and fall into the liquid. Because of downward pointing hairs along the pitcher's interior, prey cannot climb back out. The bodies of the insects are eventually digested by the enzymes of the liquid and the nutrients are absorbed by the plant. At Eglin, pitcher plants form extensive colonies in wet, highly acidic soil. Thousands of plants live along the partially open canopy of trees along creek beds. One impressive colony has grown together to form a large floating mat along a stream bank.

The panhandle lily (*Lilium iridollae*) also enjoys what botanists call "wet feet." The lily thrives in poorly drained soil along streams and bays. Its brightly colored flowers that appear in late summer attract bees, butterflies, and hummingbirds. The species has dwindled drastically





throughout the Florida Panhandle and adjacent counties in Alabama. It is sensitive to changes in drainage and water quality, and its flowers and bulbs are relished by deer and cattle. At Eglin and elsewhere, feral hogs also eat the lily bulbs and degrade the terrain in which they live. Another rare plant that grows in Eglin's swamps, bogs and along wet slopes is the bog-button (*Lachnocaulon digynum*). Because bog-buttons grow in and along streambeds, they are sensitive to changes in water flow and seepage, problems often caused by destructive feral hogs, and other disruptions in the natural hydrology.

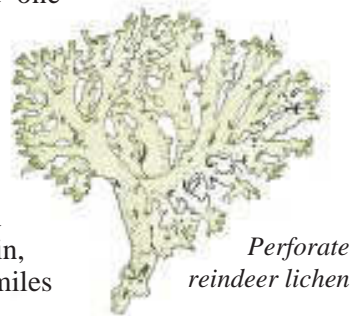


Panhandle lily

Also under consideration for federal listing as endangered are several grasses — the southern three awned grass (*Aristida simpliciflora*), Curtiss' sandgrass (*Calamovilfa curtissii*), naked-stemmed panic grass (*Panicum nudicaule*), and Drummond's yellow-eyed grass (*Xyris drummondii*). All of these grasses benefit from fires that reduce encroaching shrubs and other competition. All but the southern three awned grass grow in wet soil in open prairies or bogs. Songbirds and waterfowl use these grasses for protection and nesting, and they often feed upon the seeds.

An Endangered Lichen

Lichens are not true plants but are a combination of fungi and algae growing together. One lichen known to grow at Eglin, the perforate reindeer lichen (*Cladonia perforata*), is listed as a federally endangered species. This small, pale yellow-green ground lichen is found on Santa Rosa Island, a barrier island that is part of the Eglin base. Resource managers have identified one "mega" population and two other smaller populations of the slow-growing lichen on Santa Rosa Island. The perforate reindeer lichen prefers exposed patches of sand in coastal grassland and scrub and, other than at Eglin, is found several hundred miles away in south Florida.



Perforate reindeer lichen

Resource Management

Many of the rare plants at Eglin require specific growing conditions and can benefit from resource management activities. Natural resource managers can set controlled

fires, for example, to maintain or alter vegetation composition in natural communities. Many plants and animals inhabiting the base are adapted to periodic fires, and several species depend on fire to eliminate competitive plants and to trigger their own reproduction. Fire also releases nutrients bound up in standing vegetation. Such releases stimulate flower and fruit production and are ideal for seed germination on fire-exposed soil.

Exotic plants not native to the area can threaten native vegetation and must be aggressively managed. On the base, the two most invasive and problematic plants are cogon grass and Chinese tallow trees. Cogon grass spreads rapidly, crowds out native grasses, and survives seasonal fires, dense pine needle ground cover and shade. The Chinese tallow tree was originally introduced as an ornamental but now must be eradicated because it too threatens native communities with its rapid growth. Management for these species includes mechanical removal and the use of herbicides to fight against the encroachment of these plants.

Habitat Protection: Key to Species Preservation

An important part of preserving a threatened or endangered plant species is preserving its habitat. Natural resource managers at Eglin have targeted their efforts to provide long-term species protection by encouraging a healthy ecosystem.

Eglin's natural resources program has been recognized through conservation awards from the Nature Conservancy, the Air Force, and the Office of the Secretary of Defense. Proactive measures and vigilance may well ensure the long-term survival of these rare plant species.

Endangered* and Potentially Endangered Plants

- | | |
|-----------------------------|------------------------------|
| perforate reindeer lichen * | bog spicebush |
| southern three awned grass | Alabama spiny-pod |
| southern milkweed | Piedmont water-milfoil |
| Chapman's aster | west Florida cowlily |
| snakeroot aster | naked-stemmed panic grass |
| hairy wild indigo | Chapman's butterwort |
| Curtiss' sandgrass | large-leaved jointweed |
| Baltzell's sedge | small-flowered meadowbeauty |
| Godfrey's golden aster | panhandle meadowbeauty |
| Cruise's golden aster | hairy-peduncled beakrush |
| Piedmont jointgrass | white-top pitcher plant |
| bog-button | pineland hoary-pea |
| West's flax | Drummond's yellow-eyed grass |
| gulf coast lupine | Karst pond yellow-eyed grass |
| Ashe's magnolia | Harper's yellow-eyed grass |
| panhandle lily | |