

# Florida's Native Bromeliads<sup>1</sup>

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Bromeliads are members of the pineapple family Bromeliaceae. They are perennial herbs that lack woody stems and typically grow on other plants or substrates. Bromeliads are not mosses as some of their common names suggest. They are flowering plants, although their blossoms can be very small.

All of Florida's 16 native bromeliad species and two natural hybrids (hybrids are produced when cross-pollination occurs between species, producing a new offspring) are epiphytic, which means they grow on other plants. Although epiphytes may attach root structures to their host plant, they do not parasitize the host plant; they simply use it for support.

Often called "air plants," bromeliads absorb surface minerals and water from specialized disc-shaped leaf structures called trichomes. Some Florida bromeliads are "tank" bromeliads that hold water between the leaf axils. Tanks are formed by many separate leaf axils (the space between the leaf and stem) or the central leaves together may form a large tank. Trapped plant materials (leaves, seeds, and twigs) are decomposed by bacteria and fungi and absorbed by the trichomes lining the bromeliad tanks. Sometimes found among these plant materials are dead and drowning non-aquatic insects, which also provide nutrients for the bromeliads. *Catopsis berteroniana*, a species of tank bromeliad found in south Florida, has evolved the ability to trap insects and use the nutrients to such a degree that

it is essentially a carnivorous plant. Bromeliad tanks also provide habitat for mosquito larvae and various other invertebrate and small vertebrate animals. Consequently, bromeliads play important ecological roles, both as habitat and in nutrient recycling.

Ten of Florida's 16 native bromeliad species are listed as threatened or endangered. A threatened species is at risk of becoming endangered, and an endangered species is at risk of becoming extinct. Loss of habitat, illegal collecting of specimens from natural areas, and the non-native Mexican bromeliad weevil (*Metamasius callizona*) are the greatest threats to Florida's bromeliads. There is also a bromeliad weevil that is native to Florida (*Metamasius mosieri*); but whereas the native weevil does not typically kill the plant, the Mexican bromeliad weevil's larvae typically do. The rapid spread of the Mexican bromeliad weevil throughout south Florida is a potentially serious threat to these rare plants. For more information on the Mexican bromeliad weevil problem, please see the additional information section of this document and visit the "Save Florida's Native Bromeliads" website <http://entomology.ifas.ufl.edu/frank/savebromeliads/>.

This document describes the distinct features of each of Florida's 16 native bromeliads and notes specific conservation concerns. There are also two natural hybrids present in Florida, *Tillandsia bartramii* x *fasciculata* and *Tillandsia balbisiana* x *fasciculata*, which are not described in this

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document. We have used the symbol “~” to represent the word approximately when discussing length of leaves, bracts, flowers, and seed capsules.

## Powdery Strap Airplant



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Catopsis berteroniana*

**Also called:** Powdery catopsis, West Indies catopsis, Yellow catopsis, Mealy wild pine

**Status in Florida:** endangered; rare

**Threats in Florida:** illegal collecting, Mexican bromeliad weevil, habitat loss

**Range:** Florida, Mexico, West Indies, Central and South America

**Distribution in Florida:** Collier, Dade, and mainland Monroe counties

**Habitat:** rockland hammock; slough; tidal swamp; prefers strong light, on high branches of host tree

**Description:** tank epiphyte; when flowering 16 in.; leaves yellow/green, to 18 in., white, chalky, powder covering, especially at the base; **flowers** 15–50, 3/8–1/2 in., white, on a stout scape, usually with 2–8 lateral branches; floral bracts 1/4–1/3 in., sepals 1/2 in. yellow-green; **seed capsule** ~ 1/2 in. long; seeds often germinate on the capsule

**Time of flowering:** all year, especially fall–winter

**Fun facts:** one of three known carnivorous bromeliads; slippery powder on leaf bases may aid in trapping insects

## Florida Strap Airplant



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Catopsis floribunda*

**Also called:** Many-flowered catopsis, Many-flowered airplant, Florida catopsis

**Status in Florida:** endangered, rare

**Threats in Florida:** illegal collecting, habitat loss, Mexican bromeliad weevil

**Range:** Florida, Mexico, West Indies, Central and South America

**Distribution in Florida:** Broward, Collier, Dade, and Monroe counties

**Habitat:** humid, shady habitats; rockland hammocks; cypress swamps

**Description:** tank epiphyte; grows to 28 in. tall; leaves bright green, 8 in., with wide bases and narrowing at tip; **flower stalk** 10 in. or longer, with 5–15 lateral branches; **flowers** 15–50 yellow or white; **seed capsules** 1/2 in. long; vegetative in every month

**Time of flowering:** fall

**Fun facts:** soft leaves form a basal rosette; prefers shady spots on low tree branches.

## Nodding Strap Airplant



Credits: B. Holst, UF/IFAS

**Scientific name:** *Catopsis nutans*

**Also called:** Nodding airplant, Nodding catopsis

**Status in Florida:** endangered, very rare

**Threats in Florida:** restricted range, illegal collecting, Mexican bromeliad weevil

**Range:** Florida, Mexico, West Indies, Central and South America

**Distribution in Florida:** Collier County

**Habitat:** shady, humid hammocks, deep cypress swamp, sloughs

**Description:** tank epiphyte; height 12 in; **leaves** small rosettes overlapping at bases, flexible, spreading, bright green, tapered to tip, 3–6 in. long,  $\frac{3}{4}$  in. wide at base, chalky; **flower stalk** usually simple; **flowers** 3–10 orange/yellow,  $\frac{3}{4}$  in.; **capsules**  $\frac{1}{2}$ – $\frac{3}{4}$  in. long, oval

**Time of flowering:** fall–spring (August–October)

**Fun facts:** flowers open at night; may only exist in the Fakahatchee Strand

## West Indian Tufted Airplant



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Guzmania monostachia*

**Also called:** Fuchs bromeliad, Strap-leaved Guzmania, Striped torch

**Status in Florida:** endangered, restricted, seldom found but locally abundant

**Threats in Florida:** illegal collecting, Mexican bromeliad weevil

**Range:** Florida, West Indies, Mexico, Central America to northern Peru and Brazil

**Distribution in Florida:** Collier, Dade, mainland Monroe counties

**Habitat:** rockland hammock, slough, cypress swamp, most abundant on Pop ash (*Fraxinus caroliniana*) and Pond apple (*Annona glabra*) sloughs with peat soils

**Description:** Tank epiphyte; may be terrestrial; bright green, flexible, **leaves** taper at the tip, about 1 in. wide, usually 10–12 in., may have white stripes; single **floral spike** to 16 in.; many white **flowers** spirally arranged, 1 in.; salmon colored apical floral bracts; cylindrical **seed capsules**, 1½ in.

**Time of flowering:** all year, mainly February–August and especially May–July

**Fun facts:** 100 plants may appear on a single host tree; may produce many vegetative offshoots; genus name honors the 18th century Spanish naturalist Guzman

## Leatherleaf Airplant



Credits: Barbra Larson, UF/IFAS

**Scientific name:** *Tillandsia variabilis* syn *T. valenzuelana*

**Also called:** Soft-leaved wild pine

**Status in Florida:** threatened, occasional

**Threats in Florida:** illegal collecting, Mexican bromeliad weevil, habitat loss

**Range:** Florida, West Indies, Mexico, Central and South America

**Distribution in Florida:** Broward, Collier, Hendry, Highlands, Martin, Dade, Monroe, Okeechobee counties

**Habitat:** shaded hammocks, cypress swamps

**Description:** tank epiphyte; plants usually single; 12–20 in tall; 15–20 soft **leaves** with fine scales, green/gray or silver (may have rose coloring), tapering; simple **flower spike** with reddish floral bracts 13/8 in. long), violet petals, and white sepals

**Time of flowering:** spring–fall

**Fun facts:** color of the flower spike depends greatly on the light level; summer colors are darker than fall

## Giant Airplant



Credits: Barbra Larson, UF/IFAS

**Scientific name:** *Tillandsia utriculata*

**Also called:** Giant/Swollen wild pine; Spreading air plant

**Status in Florida:** endangered, frequent before Mexican bromeliad weevil

**Threats in Florida:** illegal collecting, Mexican bromeliad weevil, habitat loss

**Range:** Florida, West Indies, Mexico, Central/South America

**Distribution in Florida:** Volusia, Putnam, Flagler, Sumter, Lake, and Citrus counties, south to end of peninsula

**Habitat:** dry and mesic hammocks, cypress swamps, pinelands (often in bright exposed areas)

**Description:** tank epiphyte (may grow terrestrially); single plants, 6–12 ft.; 20–75 large, light-green to gray **leaves** (up to 31 in.) with wide base and scales; erect, zigzag branching **flower spike** (40–80 in.) 5–40 branches; floral bracts green or purple; 10–200 flowers, 1 in. petals white at base, violet at end; **seed capsules** up to 2 in.; monocarpic (single flower spike, releases seed and dies); low rate of vegetative reproduction

**Time of flowering:** spring to fall (especially summer)

**Fun facts:** after flower spike appears, seeds are released the following year in late spring; plant may live 20 years

## Northern Needleleaf



Credits: Barbra Larson, UF/IFAS

**Scientific name:** *Tillandsia balbisiana*

**Also called:** Inflated wild pine, Reflexed wild pine, Cuttlefish, Balbis airplant

**Status in Florida:** threatened, occasionally found

**Threats in Florida:** Mexican bromeliad weevil, habitat loss

**Range:** Florida, Mexico, West Indies, Central and South America

**Distribution in Florida:** Orange, Osceola, Polk, Hillsborough, Manatee, Sarasota, DeSoto, Highlands, Okeechobee, Indian River, St. Lucie, Martin, Glades, Charlotte, Lee, Hendry, Palm Beach, Broward, Collier, Monroe, and Dade counties

**Habitat:** scrub, pinelands, cypress swamp, hammocks, mangroves, shell ridges/mounds

**Description:** Tank epiphyte; 28 in. tall, single or in clusters; 15–30 **leaves**, leathery, gray color due to scales, may be reddish; leaves slightly bulbous at base, tapering, curved or twisted at ends; **flower spike** usually 2–10 lateral branches, scape 3–12 in.; floral bracts bright red with violet petals, 5 flowers; **seed capsules** 1¾ in.

**Time of flowering:** fall-summer, especially early spring

**Fun facts:** on older plants, twisted and curved leaves interlock, forming a ball

## Bartram's Airplant



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Tillandsia bartramii*, syn *T. juncea*, *T. myriophylla*

**Status in Florida:** frequently found

**Range:** Florida, Georgia, Caribbean, Mexico

**Distribution in Florida:** Alachua, Baker, Bradford, Citrus, Columbia, Dixie, Duval, Flagler, Franklin, Gilchrist, Gulf, Hernando, Highlands, Hillsborough, Indian River, Jefferson, Lafayette, Lake, Leon, Levy, Liberty, Manatee, Marion, Nassau, Orange, Osceola, Pasco, Polk, Putnam, Seminole, St. Johns, Sumter, Suwannee, Volusia, and Wakulla counties

**Habitat:** hammocks and pinelands

**Description:** epiphytic; 4–12 in. tall, 18–16 in. when flowering; plants clustered; 15 thin leathery, grayish **leaves**; **flower spike** simple or 1–5 side branches; pink to red floral bracts; violet petals; **seed capsules** ~1 inch long

**Time of flowering:** spring-summer (especially spring)

**Fun facts:** leaves resemble those of a wetland rush; Bartram was an early Florida naturalist

## Cardinal Airplant



Credits: Barbra Larson, UF/IFAS

**Scientific name:** *Tillandsia fasciculata* syn *T. hystricina*

**Also called:** Quill-leaf airplant, Common wild pine, Clustered wild pine, Dog-drink-water.

**Status in Florida:** endangered; frequent before weevil

**Threats in Florida:** illegal collecting, Mexican bromeliad weevil, habitat loss

**Range:** Florida, West Indies, Mexico, Central and South America

**Distribution in Florida:** Brevard, Broward, Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Highlands, Hillsborough, Lee, Manatee, Martin, Dade, Monroe, Okeechobee, Orange, Osceola, Palm Beach, Pinellas, Polk, Sarasota, Seminole, and Volusia counties

**Habitat:** hammocks, cypress swamps, pinelands

**Description:** tank epiphyte, often in clusters; 20–50 long, stiff and leathery gray/green **leaves**, (12–28 in.), wider at brown base, tapering; flowering spike 12–24 in., 3–15 branches; floral bracts usually red but vary from yellow, green, to rose; 10–50 violet **flowers**, violet, rarely white, 1¾ in.; **seed capsules** ~ 1 in.; seeds windborne

**Time of flowering:** all year, especially spring to early summer

**Fun facts:** leaves longer in shade, plant smaller and more colorful in open sun

## Twisted Airplant



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Tillandsia flexuosa* syn *T. aloifolia*

**Also called:** Banded/Striped airplant; Flexuous wild pine.

**Status in Florida:** threatened, infrequent

**Threats in Florida:** illegal collecting, Mexican bromeliad weevil, habitat loss

**Range:** Florida, West Indies, Panama, Venezuela, Colombia

**Distribution in Florida:** Broward, Charlotte, Collier, Hendry, Highlands, Lee, Martin, Dade, Monroe, Palm Beach counties

**Habitat:** exposed areas, often coastal; xeric hammock, pinelands, scrub, shell mound, coastal berm, maritime hammock, tidal swamp, cypress swamp

**Description:** tank epiphyte; 8–31 in., bulbous base, gray **leaves**, twisted tips, white bands; zigzag **flower stalk** simple or few branches; spreading floral bracts; rose or purple flowers, 1½ in.; **seed capsules** 2 in. long.

**Time of flowering:** all year, except November and December, mostly spring to summer

**Fun facts:** flowers once, then reproduces vegetatively

## Potbelly Airplant



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Tillandsia paucifolia* syn *T. circinnata*, *T. bulbosa*

**Status in Florida:** occasional

**Threats in Florida:** Mexican bromeliad weevil

**Range:** Florida, Mexico, West Indies, Central and South America

**Distribution in Florida:** Brevard, Broward, Charlotte, Collier, Hendry, Indian River, Lee, Manatee, Martin, Dade, Monroe, Okeechobee, Osceola, Palm Beach, Sarasota, and St. Lucie counties

**Habitat:** coastal strands and hammocks; exposed habitats, cypress swamps

**Description:** Tank epiphyte; 4–14 in. tall, single or in clusters; pseudobulbs; 5–10 long, twisted tapering gray **leaves**; simple flower spike 2–3 in., may have 2–4 branches, 2–15 lavender **flowers** ~1 in; leathery, pale pink floral bracts; brown, pointed **seed capsules** 1½ in. long

**Time of flowering:** spring–summer

**Fun facts:** only flowers once, then produces young sprout “pups” that feed off the mother plant until they drop off

## Fuzzywuzzy Airplant



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Tillandsia pruinosa* syn *T. breviscapa*

**Also called:** Hoary airplant, Tropical airplant

**Status in Florida:** endangered, rare

**Threats in Florida:** illegal collecting, Mexican bromeliad weevil, habitat loss

**Range:** Florida, West Indies, Central and South America

**Distribution in Florida:** Collier county

**Habitat:** shady, humid hammocks, cypress swamps

**Description:** Tank epiphyte, pseudobulb, rarely clustered; 10 in. tall, 5–10 **leaves**; scales create white fuzzy appearance; **flower spike** simple; floral bracts pink, with 5 to many violet **flowers**, ~1 in.; **seed capsule** pointed and 3-sided, 1¾ in. long.

**Time of flowering:** All year, especially winter to spring

**Fun facts:** pointed scales give this plant its fuzziness; short flower stalks are sometimes hidden

## Ball Moss



Credits: Barbra Larson, UF/IFAS

**Scientific name:** *Tillandsia recurvata* syn. *Diaphoranthema recurvata*

**Status in Florida:** common

**Threats in Florida:** none

**Range:** Arizona, Texas, Louisiana, Georgia, Florida, Mexico, Central America, West Indies, Argentina, Chile

**Distribution in Florida:** all counties

**Habitat:** Hammocks (prefer broad-leaved trees), pinelands, scrub; exposed areas

**Description:** Epiphytic; 5–7 in. tall, 6–7 in. wide; rooted crown, cluster of curving stems, compact leaves resulting in ball-like growth; **leaves** stiff, narrow, gray 2–5 blue to violet **flowers** on long central stem; **seed capsule** ~1 in. long

**Time of flowering:** spring

**Fun fact:** several plants often grow together in masses

## Southern Needleleaf

**Scientific name:** *Tillandsia setacea* syn. *T. tenuifolia*

**Also called:** Needleleaf airplant

**Status in Florida:** common

**Threats in Florida:** none

**Range:** Florida, West Indies, Central and South America

**Distribution in Florida:** Brevard, Broward, Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Hernando, Highlands, Hillsborough, Indian River, Lake, Lee, Manatee, Martin, Dade, Monroe, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, Sarasota, Seminole, St. Lucie, Sumter, and Volusia counties

**Habitat:** hammocks, swamps

**Description:** epiphytic, grows to 12 in. long, plants densely clustered, grow in small tufts; **leaves** swollen at base, curving tips, green to red; **flower stalk** 3–6 in.; 3–15 violet flowers, 1 in. long; **seed capsules** ~1 in.

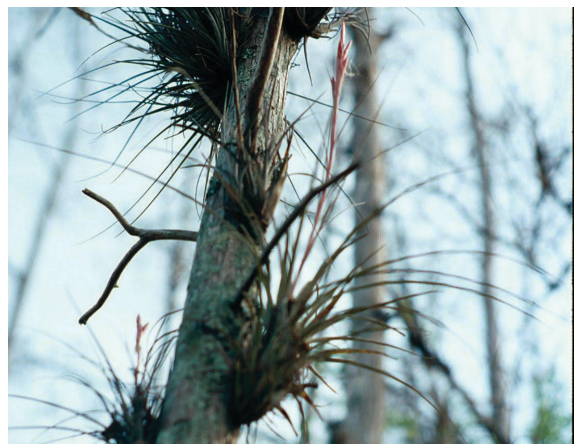
**Time of flowering:** spring

**Fun fact:** similar to *Tillandsia bartramii* except for red tinting



Credits: J. H. Frank, UF/IFAS

## Broad Needleleaf



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Tillandsia simulata*

**Status in Florida:** frequent; precinctive (found nowhere else)

**Threats in Florida:** possibly Mexican bromeliad weevil

**Range:** Florida

**Distribution in Florida:** Citrus, DeSoto, Flagler, Hernando, Highlands, Hillsborough, Indian River, Lake, Levy, Manatee, Orange, Osceola, Pasco, Pinellas, Polk, Putnam, Seminole, Sumter, and Volusia counties

**Habitat:** moist hammocks, swamps, usually in strong light

**Description:** epiphytic, single or in clusters; 8–16 in. tall; gray pointed leathery **leaves**; simple **flower spike** with reddish floral bracts; 5–30 violet flowers, 1¾ in. long; **seed capsules** ~1 in.

**Time of flowering:** spring–summer

**Fun facts:** the only bromeliad species known only from Florida

## Spanish Moss



Credits: J. H. Frank, UF/IFAS

**Scientific name:** *Tillandsia usneoides* syn. *Dendropogon usneoides*

**Status in Florida:** common

**Threats in Florida:** none

**Range:** Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Louisiana, Mississippi, Arkansas, Texas to central Argentina, and Chile

**Distribution in Florida:** all counties

**Habitat:** hammocks (usually on oaks), pinelands and scrub; prefers moist, brightly exposed areas

**Description:** epiphytic; rootless, long branching, up to 18 in. long; **leaves** 1–2 in. long, ¼ in. wide, covered with grayscales; leaves greener when plant healthy; **flowers**, usually one, greenish, fragrant, lasting 4 days; **seed capsules** ½–¾ in. long; seeds 2–23 per capsule, reproduces by seed and vegetatively

**Time of flowering:** spring (mainly April)

**Fun facts:** “ginned” in Florida in early 1900s; bales exported for car seats and mattresses; broadest geographical range of any bromeliad; gray leaves may indicate moisture stress or other environmental factors; can withstand extreme temperature fluctuation and low rainfall

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