

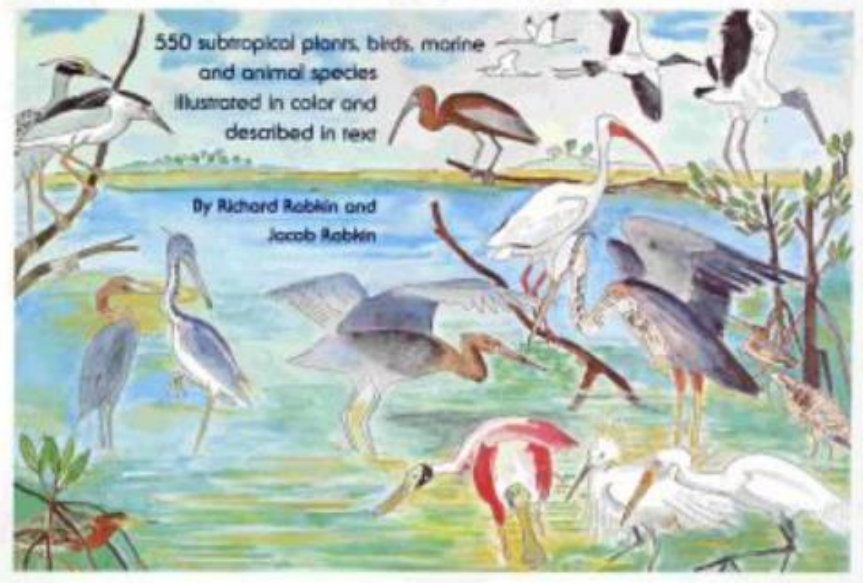
# BIRDS AND BROMELIADS



“Prothonotary warblers, white-eyed vireos, Carolina wrens, and numerous other birds commonly drink from these elevated water sources.”

Butler J. 1974. Pineapples in the treetops. Florida Naturalist 47(4): 13-17.

## Nature Guide to Florida



"The bromeliads are most ingenious in their adaptation. They have developed a special structural form for collection and storing water. Their pointed leaves are furled at the base, but then spread open to form a vase-like container for funneling rainfall and dew. This miniature reservoir becomes the center of an active environment. Mosquitos and other aquatic insects live and breed in the water small tree frogs find shelter and moisture in the rosettes of leaves, snakes search out frogs and lizards, and birds drink from these readily accessible and almost perpetual water sources and forage for insects among the leaves."

Rabkin R, Rabkin J. 1978. Nature Guide to Florida. Banyan Books, Miami, FL. 80 pp.

TABLE 1. Bird use of epiphytes by plant group and resource type, based on information from 55 published reports. A total of 193 bird species have been recorded to use epiphytes. Epiphyte resource type: In = invertebrates; Fl = flowers (mainly nectar); Fr = fruits or seeds; Ne = nesting material, nest sites, or nest cover; Wa = water.

Number of bird species using epiphytes	Plant group	Resource type
58	Bromeliaceae	In Fl Fr Wa Ne
53	Bryophyta	In N Wa
50	Loranthaceae	Fl Fr
39	Margraviaceae	In Fl Fr
18	Ericaceae	Fl Fr Ne
12	Gesneriaceae	Fl Fr
9	Guttiferaceae	Fl Fr
8	Solanaceae	Fr
6	Araceae	Fr Ne
6	Araliaceae	Fr
5	Lichens	In Ne
5	Orchidaceae	Fr Ne
5	Cactaceae	Fr
3	Pteridophyta	Ne
1	Begoniaceae	Ne
1	Piperaceae	Ne
1	Rubiaceae	Fr

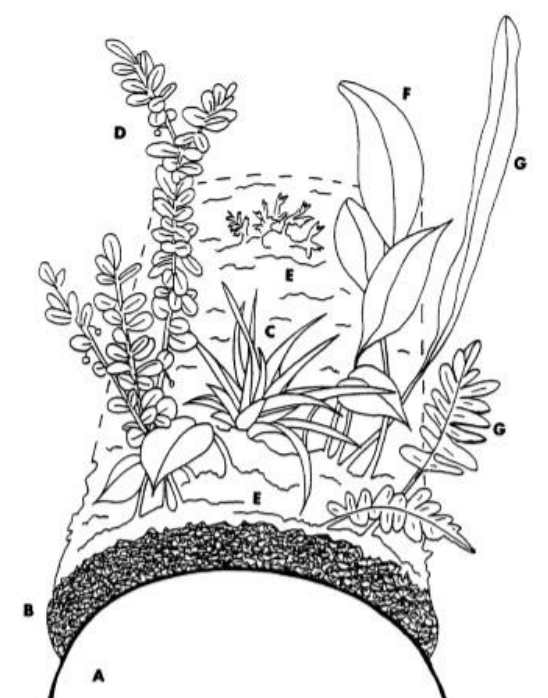


FIGURE 1. Epiphyte mat. A = branch, B = dead organic matter, C = bromeliads, D = ericaceous shrub (woody shrub), E = mosses and filmy ferns, F = orchid (herbaceous plants), G = ferns.

Birds use bromeliads as a water source in the canopy; as hunting grounds; for nesting material, nest sites, or nest cover; and for fruits and flowers. These bromeliads often grow in huge, dense populations, creating an entirely new layer of habitat up in the forest canopies. With the loss of Florida's bromeliads, especially the giant airplant, bird habitat is lost.

Nadkarni NM and Matelson TJ. 1989. Bird use of epiphyte resources in Neotropical trees. The Condor. 91(4): 891-907.



Giant Airplant, *Tillandsia utriculata*



Phytotelm inhabitants include specialist and facultative organisms. The majority of the inhabitants are invertebrates, but frogs and other vertebrates also rely on the water for part of their life cycle. A recent list of specialist aquatic bromeliad-inhabiting organisms in Florida include segmented worms, seed shrimp, copepods, and arthropods including many species of flies.

## PHYTOTELMATA

Phytotelmata are pools of water contained by plants. Epiphytic tank bromeliads include many species that are important phytotelm-supporting plants, particularly in wet, Neotropical forests. The pools of water function as aquatic microcosms for many specialist organisms and as nutrient sources for the bromeliads, and provide habitat and water sources in the canopy. The giant airplant (*Tillandsia utriculata*) is an epiphytic tank bromeliad that was once widespread from Central to South Florida. It has been hit particularly hard by the weevil and is declining rapidly.

What could be lost?

“Twenty-one native species, consisting of 12 bromeliads and at least 9 (perhaps 19) invertebrates are at risk of extinction in Florida and in the USA. At least 6 of them (1 bromeliad and 5 invertebrates) seem to be precinctive species.” Frank and Fish 2008

	time = 0	time = 6 months	time = 25 months
Estimated number of <i>T. utriculata</i>	46,000	8,800	1,100
Estimated volume of phytotelmata (liters):	16,700	3,200	400

Table 1: Estimated number of *T. utriculata* and volume of phytotelmata over a 240,000 m<sup>2</sup> area in the Enchanted Forest Sanctuary, Florida. Cooper, Frank, and Cave 2014

## THE MEXICAN BROMELIAD WEEVIL IN FLORIDA

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