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Population Dynamics of Some Native Florida Epiphytes

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INTRODUCTION

A long-term project to monitor the growth and survival of Florida epiphytes was started during early 1993 on a coastal site that has been conserved as part of a development at Longboat Key, Sarasota County. The aims of the project are to examine growth, survival, longevity, and succession of an epiphyte community in a tree canopy.

The St. James condominium development, which is being constructed in the town of Longboat Key, is located in the remnants of a coastal cedar hammock that once extended throughout the island. As the result of building construction, the ecosystem being monitored is limited to a plot slightly larger than two acres. Under the guidance of the St. James Company and Dr. John Morrill of New College in Sarasota, that space is being restored to a native plant community typical of such a hammock. Selby Gardens was offered collaborative use of the site with New College to study canopy plants. The construction and other development on the hammock may, however, produce interesting variations on the growth of vegetation, particularly the epiphytes. Both bromeliads and orchids are represented among those epiphytes. They include *Tillandsia utriculata*, *T. recurvata*, *T. usneoides*, and the single orchid species, *Encyclia tampensis*. All of these species are present in southern red cedar trees (*Juniperus silicola*) both inside and outside the hammock formation.

METHODS

We counted the epiphyte populations of three large and three small trees in both open and wooded areas. The "open" trees were observed to have grown unrestricted and unassociated with the canopies of other trees. The "wooded" trees were surrounded by other trees and shrubs with canopies more heavily shaded.

We tagged each epiphyte with yellow flagging tape on monofilament line tied loosely about the base of the plant. We recorded the location by numbering and lettering successive divisions of the branches from the base, progressing around the tree clockwise from the northernmost trunk division.

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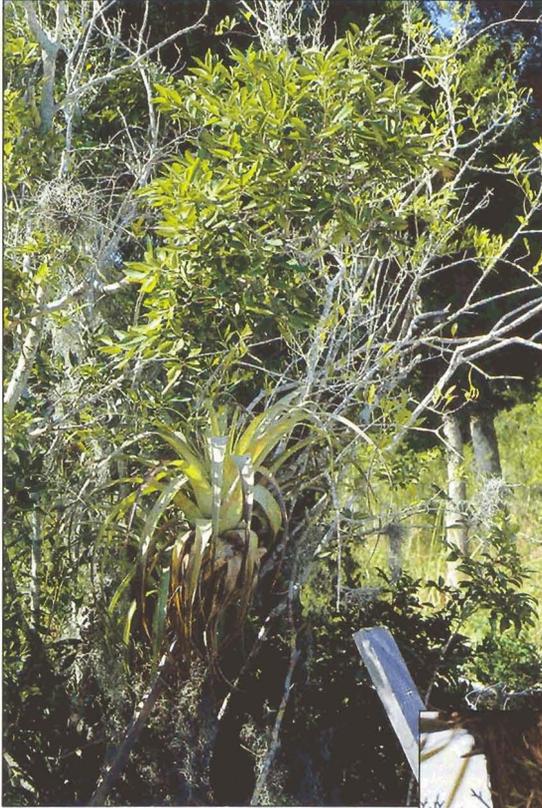


Figure 9.
Tillandsia utriculata in cedar at
St. James site on Longboat Key.

Photos by Jennifer Whitfield



Figure 10.
Encyclia tampensis in the
canopy of a red cedar tree.

We reached the upper branches with a ladder or by climbing when possible, or used binoculars to count the highest plants. The size and species, as well as the location of each epiphyte, were recorded. The size was determined in *T. utriculata* and *T. recurvata* by the length of the longest green leaf. Individual plants with leaves less than 25 mm long were excluded. For *T. usneoides*, the length of the clump was recorded as size and the density was noted. One clump counted as one individual. In the case of *Encyclia tampensis*, we counted the number of bulbs with leaves in order to approximate the size of the group.

RESULTS

To date, epiphytes have been marked, but long-term information on growth and mortality is not yet available. Two large trees contained 232 and 150 epiphytes, respectively, with an average of 40% orchids and 60% bromeliads. Sizes ranged from juvenile bromeliads less than 1 cm to mature *T. utriculata* with leaves greater than 1 m. We also counted epiphytes in some trees without marking individual plants and found that some canopies, approximately 12 m high, contained more than 700 epiphytes.

As the construction progresses, we hope to quantify epiphyte survival. Since most Florida hammocks are affected by encroaching development, we hope that our results will provide information on the future of local epiphyte populations.

CONGRATULATIONS TO TWO OF OUR SENIOR, AFFILIATED SOCIETIES:

The Bromeliad Society of New Zealand, Incorporated celebrated its 30th anniversary recently with dinner attended by many of the members including four of the 23 charter members. The four included Bea Hanson, now patron and life member after having served as editor of their newsletter for 26 years. We quote frequently her knowledgeable and highly readable articles; Harry Martin our honorary trustee from that country; and Laurie Dephoff, who is now historian of the society. We are sorry that we don't know the fourth member who surely must be as hospitable and friendly as the three named.

The Bromeliad Society/Houston is celebrating its Silver Anniversary this year. The April 1993 issue of the society newsletter included a large, silver-colored badge announcing the event. This year, the group will produce its 25th annual show and sale, always a test of the enthusiasm and endurance of the members. In 1974, Houston donated an expensive infrared gas analyzer to the College of Agriculture at Texas A&M University. The society was host to the 1990 World Bromeliad Conference and contributed generously from the proceeds to the Victoria Padilla Research Fund of the BSI. Three of its members are officers of the BSI and one is a newly elected director and committee chairman.

Our best wishes to the officers and members of both societies.—Ed.