be realistic. Laws that group plants found in the wilds in abundance with those near extinction are not considered realistic to many people.

It makes the Florida Department of Agriculture and Consumer Services responsible for enforcement. Several agencies could have been named and could have satisfactorily policed the statute. The Florida Department of Agriculture and Consumer Services, Division of Plant Industry, was named, however, probably because the division's responsibility for surveying nurseries, groves, farms, etc., for plant pests, required it to have a trained group of plant specialists. Sale and distribution of plants are regulated by the Division of Plant Industry; thus any offering of plants for sale is a responsibility of the Division of Plant Industry under the plant pest laws and will normally be brought to their attention.

It created the Endangered Plant Advisory Council. The council, consisting of botanists and others interested in native plants, reviews and updates the list of endangered and threatened plants in an orderly fashion.

It requires permitting for plant movement. The 1978 statute requires that the movement of three or more plants on the endangered list must be accompanied by a permit to harvest and move a specified number of a named species from a given location. Previously, one had only the word of the harvester or transporter that he had the permission of the property owner to harvest the plants.

It requires written permission. The property owner or supervisor must give written permission to harvest or transport threatened or endangered plants from a property.

The responsibility of enforcing this statute has been that of the Division of Plant Industry for approximately four years. We realized that enforcement would have needed to control commercial exploitation. Harvesting of wild plants had been occurring unabated since the Spanish came to Florida. We began controlling the sale of endangered species by closer investigation of sales of regulated plant species at nurseries, roadside stands, flea markets, and in shipments to other states. The word quickly made the rounds in commercial circles and to our knowledge the indiscriminate harvesting and sale has abated. It is true that we have had very few reports of violations and no prosecutions, but as with most laws the potential profit has to be sufficient to make the illegal act tempting. In addition, many of the plants harvested in numbers over the past 40 years which are truly endangered are not found in numbers sufficient to make their harvest profitable. For example, the cowhorn orchid was found in numbers in the Everglades 20 years ago. Our division botanist and I spent three days looking for these orchids growing in the wilds in 1980 and found three specimens, through the guidance of my uncle who lived in Ochope and had located the plants while hunting. It certainly would be difficult to make a profit harvesting and selling that species today.

One thing going for conservation of species in the eastern portion of Collier County and the Fakahatchee Strand is government acquisition of that area as a water management area. The elimination of camps and homes over the area and subsequent limiting of human access will be a tremendous help in conservation of plant species found there.

The Division of Plant Industry may be criticized for not requesting a large budget and a small army to police the removal of plants from the wilds. Realistically, however, it would be impossible to police the entire state. It is necessary to utilize citizens such as yourselves and other interested persons. Your attention to the removal and destruction of the plants from the wilds and reporting of violations will help protect endangered plants. Very seldom is it the policeman at the scene of the crime, but he responds when the crime is reported by the victim or other interested parties. You and your children are part of the plant rip-off and we need your help.

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**USING NATIVE PLANTS ON PUBLIC SCHOOL PROPERTY**

by Joseph T. Lawson

Dept. of Maintenance and Operations, Palm Beach County School Board.

There are many reasons for saving and utilizing native plants on land developed by public organizations — Federal, State and Local. Not only can we save our natural heritage for the future and aid in teaching about our environment, but we can realize significant cost savings in our grounds maintenance programs.

A native plant is one that occurs naturally in a geographical area that has not been introduced by man. An exotic, or non-native plant, is one that has been introduced to a geographical area by man. While many of our common exotic plants are attractive ornamentals that pose little threat to the environment except for a drain on energy resources, some exotics are undesirable pest plants that prevent the natural recovery of disturbed ecosystems and even invade native plant communities, disrupting natural function. Problem pest plants like Brazilian pepper, Australian pine, and melaleuca should never be planted and should be destroyed when possible.

The Department of Maintenance and Operations of the School Board of Palm Beach County is actively involved in using native plants for landscaping and educational purposes at county public schools. In addition to using and encouraging the use of natives in campus beautification projects and in landscaping new construction, we are involved with the development of Environmental Study Areas at county school centers.

These programs encompass the preservation and acquisition of native plants through several different methods. We work with other departments of the system to design new school sites so as to incorporate as much of the existing native flora as possible into the landscape site plan and transplant others either on site or on to other school property. We transplant native plants from commercial and private development sites onto school property, with the cooperation of various developers and contractors. When funds are available, we purchase native plants for use in landscape improvements and development of native plant areas. We also propagate and grow natives in our School Board Nursery for use in landscape projects and native plant areas at schools.

For our nursery, we receive donations of native plants from local commercial nurseries and, in some instances, trade excess exotic and native nursery stock for natives which may be in short supply. We currently grow approximately 50% native plants and 50% exotic at the nursery. Our production goal in the next few years is to gradually increase the amount of natives grown to as much as 90%. We are currently in the process of propagating thousands of native seedlings which will be available for landscape projects at school sites.

Although using native plants in landscape situations is not new to the horticultural industry, it has long taken a "back seat" to the use of exotic plant materials in the landscape development of Florida. In developing South Florida into a tropical "paradise," the use of exotics has been encouraged, often to the detriment of the rich diversity of native plant communities that existed. Although well-intentioned, this philosophy has caused problems for our public officials regarding water and energy usage, as well as strain on agency budgets, to maintain these "exotic plant systems." Today, this factor of landscape and maintenance managers is leading government landscape and grounds managers to turn to native plants as a cost effective method to cope with large increases in the amount of acreage for which we are responsible. These increases in acreage are often negatively affected by budget and manpower cutbacks and definitely affected by increasing energy costs.

As mentioned, we encourage school planners and architects to design new school sites so as to preserve important native plant areas and tree buffers around the site, although we realize that many times the physical requirements of the school may conflict with this goal. Existing native areas and buffers worked into the design of a school center cut down on the amount of time and resources that must be expended to maintain the site. Areas planted in turfgrass and exotic plantings are much less cost effective from a maintenance point of view than areas left or planted in natives. With over 2000 acres currently maintained by the Department of Maintenance and Operations, and an in-house grounds, landscape, and nursery staff of less than 50 employees, it is imperative that we use our manpower and resources in the most cost effective manner. Native plants in general need much less water, little or no fertilizer or pesticides,
and less routine maintenance than exotic plantings. This adds up to money saved. Native plants for landscaping, when used correctly, can be every bit as aesthetically pleasing as the exotic landscapes presently being designed, planted and maintained.

We, as public employees, can have an impact on the attitude among the public that exotic plants are more desirable than natives. Although those of us who work in non-instructional branches of the school system are not teachers in the strict sense of the word, all of us who work with the system are, by definition, contributors to the educational process.

As mentioned earlier, our efforts in using native plants on school grounds encompass several different methods of acquiring natives for the development of school sites. I will further detail our efforts in two areas: saving natives from the bulldozer to use on school property and developing native plant learning areas at school centers.

First, a brief summary of the amounts and types of natives we have moved from sites being developed: In the past year we have transplanted several hundred Sabal palms (the state tree), dozens of live oaks and laurel oaks, numerous dahoon holly, several hundred wax myrtle, and numerous assorted understory plants, including two species of wild coffee, two species of Lyonia (fetterbushes), myrsine, small slash pines, gallberry, wild lime, ferns, cocoplum, and small cypress trees. These plants have been transplanted from development sites either directly to school centers or to our School Board Nursery.

One thing we have found to be very important in our efforts is to develop and maintain a network of contacts among native plant people, contractors, developers, nurserymen, landscapers, environmentalists, school system employees, and many other concerned citizens. We keep in close contact with our School Plant Planning Department and superintendents at the job sites of new school construction, from the time a piece of property is acquired until the time it is turned over to us for regular maintenance. These contacts, and the actions taken through them, have resulted in the acquisition of tens of thousands of dollars worth of native plants over the past several years for the school system.

A second area of major emphasis in our use of native plants on school grounds is our participation in the development of Environmental Study Areas at school centers. We aid administrators, teachers, and students in their efforts to develop native plant learning centers for use in teaching about natives. Native plant areas are currently in existence or are being planned or developed at more than 18 schools, including a trail at the School Board Nursery being developed with the cooperation of Hagen Road Elementary. This trail currently has over 160 species of native plants. We envision this as a model trail and center of information for all schools in the system.

The large geographical area, the diversity of natural habitats in Palm Beach County, and the large number of schools in the system, allow for the development of every major native plant community of southeast and south central Florida. These are used to teach students of all ages the importance of saving the "real" Florida from disappearing through well-intentioned, but uninformed, attempts at "improving" it.

Many of these Environmental Study Areas are started with Environmental Education Mini-Grants applied for and received through the State of Florida Department of Education's environmental education program. These grants are seed money provided for initial development of these study areas for the benefit of students and the community. Further development over the years is the responsibility of the school center and the community. The Department of Maintenance and Operations provides help with planning, design, and support services for these areas.

Any effort we make to get the study of native plants included in the curriculum is an important step in educating students about native plants and their natural environment. Nearly half of the tree species native to the continental United States are native to the State of Florida. Florida has 130 species of trees native to the state. Through teaching about native plants we can accomplish a turnaround in attitude among the general public regarding the value of natives in keeping Florida green for future generations and conserving our valuable and vanishing natural resources.

According to Dr. David Lee of Florida International University, in addressing the Florida Native Plant Conference recently, courses in native plants are non-existent in the State of Florida on the primary and secondary school level. We must encourage this information to be taught. Through this article and the presence of native plants on school grounds, we hope to arouse interest in learning more about native plants.

The State of Florida is a great state and Palm Beach County is a great place to live, but only by learning more about how we interrelate with and depend on our natural resources for our quality of life and that of our children can we assure a fair chance for this great natural heritage to survive.

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**USING DESIGN PRINCIPLES WITH NATIVE PLANTS**

by Peter F. Strelkow

Landscape Architect in South Florida and partner in Native Landscaping, contractors.

**Landscape Architect**

Before the invasion of man to South Florida, there existed a tremendous diversity of subtropical indigenous vegetation. Today, this is no longer true. After filling the wetlands and clearing the hardwood hammocks and pinelands, developers and even landscape architects have proceeded to ignore the native vegetation and have planted mostly exotic plant species which now dominate our landscape. The species Schinus terebinthifolius and Melaleuca quinquenervia are now invading the areas which man cannot reach. As a South Florida native, I find this sad note indeed.

I have concluded that the re-establishment of native species in accordance with sound design principles is my guiding design philosophy. I don't discourage the use of all exotics. Today I use approximately 70% natives and 30% exotics. Most of the exotics are flowering trees or unusual specimens.

When designing the landscaping for a residence or commercial building, I first establish what the original plant association was for that area: that is, pineland, hammock, beach, etc. From this information, I can establish a good base plant palette. Then it becomes a matter of working with and educating the client. From there, I can create my garden with the use of textures, colors, accents, and rhythm. I am generally inclined to use organic bedding with lots of lush evergreen foliage. Finally, I always plan for a low maintenance landscape and discourage the use of large turf areas.

I am not yet an expert on native plants of South Florida, but I am steadily increasing my knowledge of their names, attributes, diversities, tolerances, and uses for landscaping.

The most difficult part of working with these plants is in plant- and self-education. I would speculate that there are 200-300 new and old South Florida native species that are available in the nursery trade, and I currently use 150 of these species on a regular basis.

If you are going to use natives in your garden, then you must educate yourself about each species used. Preplanning is the key to a successful landscape. Of course, you will be treading on new turf and experimenting, but knowing the plant beforehand will save you from making too many mistakes. The three best ways to discover these natives are: one, to read horticultural books like Tomlinson, Trees Native to Tropical Florida; Workman, Growing Native; Long and Lakela, A Flora of Tropical Florida; or Georgia Tasker, Wild Things.

A second way is through the Florida Native Plant Society. This has been one of my key resources for learning the plants and where to purchase them, and to meet a fine group of people with a common interest.

Finally, the best method of self-education is to get out in the wild. In South Florida, there are still some hammocks to visit which are probably my favorite learning spots. Also, we have the wonderful Everglades. There is beach vegetation to see, and estuarine (mangrove) systems to observe. A monthly trip to your favorite wild place will be invaluable to your education and, as important, your peace of mind.

It is very difficult for me not to talk on a specific professional level as to the design and theory of landscape architecture. Please bear with me, as the information that I would like to discuss is both relevant and essential to the overall purpose of this discourse.

In utilizing native plants and native plant...