ornamental elements. These can be vegetation may be kept as outstanding trees or clumps of create architectural spaces, and enhanced by planting with colorful and shrubs will reduce heat pockets areas which include paved playing fingered, or constructed around and plants of the forest edge, such as

Microclimate Control Parking lots can be sectioned, fingered, or constructed around and within small groves to mitigate both runoff effects and microclimatic effects. Particularly in recreation areas which include paved playing courts, creating a number of small clearings with strips or islands of trees and shrubs will reduce heat pockets and provide shade and wind shelter. In some cases the angling of paths or openings through tree belts or between hedges can promote wind cooling by directing the prevailing winds.

Particularly in Florida’s warm climate, the landscape architect must consider the comfort of the users of a space. A very large open vista may prove too hot for use, whereas a series of smaller vignettes with paths that frequently enter shaded areas and small groves for activities such as picnicking or relaxing will provide more usable space, and disperse users throughout the area.

Distribution of vegetation may be as important as total vegetation in maintaining the sylvan quality of highly developed parks. Very small wildlife (insects, lizards, etc.) are generally not disturbed by human activity, while larger animals and birds are apt to use the area during early morning and evening, when human use is lighter.

All of the criteria used here are unlikely to be met except in the largest urban parks, but, by keeping all of them in mind during the design process, the resulting landscape will incorporate both human activities and environmental values.

AN ECOLOGICAL APPROACH TO PLANTING DESIGN by Joe Cascio

I am not an ecologist, but I felt that my students (of Landscape Architecture) should proceed or mix their study of planting design with as much ecology as they could carry. They were given one hundred questions on plant ecology to research over the first month of the term, and another one hundred on soils and hardness to research for a month at midterm, all in conjunction with design projects requiring an ecological approach.

The first five questions, in the last issue, dealt with the plant community; the next five, addressed below, deal with plant association.

In South Florida, the plant communities such as the upland hammock, are very exciting, due to their great diversity. In one of my projects in Broward County, named Tree Tops Park, the preserved hammock is the southern tip of Pine Island Ridge, with very little variety and very few young trees or undergrowth; it could be called a plant community or more specifically a Live Oak Community, after its dominant species.

A plant community is characterized by its essentially homogeneous physiognomy (characteristic features), ecological structure, and floristic composition. McDougall and Oosting help us classify plant associations with three characteristics determining the association and three creating it! Determinants:

1. Faciation — two or more dominants
2. Consociation — a single dominant
3. Lociations — local units that differ from each other in the relative abundance and grouping of dominants.

Creative influences:

1. Physiognomy
2. Ecological structure
3. Floristic composition

The floristic character of an association, according to McDougall, refers to the species of plants that make up the association, with the most common and conspicuous species — the dominant species — being most important.

Daubenmire explains that floristics deals with plants as elements of a flora; the basic unit of a flora is a species.

The determining factor of this floristic character of the association is therefore whatever makes that dominant species thrive, the operative factors of a habitat: soil, climate, topography, and biota, according to Weaver and Fenneman.

The dominant species may not be the most numerous by plant count, but in North American forests they are the largest in size and the tallest, controlling the appearance and structure of an area as well as the quantity and quality of light available to the understory plants. As Daubenmire and Warning relate, the dominant species determine the other species of an association.

McDougall is very thorough in his definition of dominant species: “Plants that, due to their strength during competition stages, have been successful in surviving and becoming the controlling species. Because the dominant species is so strong and able to withstand the competition, they can control light, space relations, water supply, and, to a certain extent, available food materials.”

In the treeless areas above the treeline on mountainsides or north of the treeline as in Greenland and Iceland, or here in the Keys between mangrove and upland hammock, classification is based upon dominance in shrubs, herbs, lichens, and so forth. Daubenmire cautions us to consider dominance throughout all layers of vegetation.

Understanding these layers of vegetation or strata, understanding the atmosphere and soil conditions related to each layer, understanding their interdependence — these are the critical factors we must learn if we are to effectively modify damage of habitats or accurately construct them from scratch.

McDougall, Oosting, and Tausley help us to define these layer societies:
ECOLOGY _________ from page 6

Usually a tree layer, a shrub layer, an herb layer, and a cryptogamic (ferns, mosses) layer are present. They are not usually continuous but are more or less interrupted. They depend largely upon the amount of light passing through the tree crowns, and partially upon soil moisture and so forth.

The tree crowns are exposed to full sunlight, more wind, and less humidity than the protected layers below. Sunlight and wind decrease, temperature stabilizes, and moisture increases from the upper layer down.

The cryptogamic layer depends on soil stability (erosion and large root systems), humus from decaying vegetation, moisture content of the humus, and shade, which influences the other factors.

The herb layer has similar dependencies plus a reliance on the cryptogamic layer to break down fallen vegetation.

The shrub layer provides a protective canopy for lower layers while those lower strata provide tree and shrub layers with nutrients, moisture, and aeration.

(In the next issue, we’ll investigate how the changing seasons affect the layers in a critical fashion.)

SOCIETY BUSINESS REPORT on FNPS Members’ Meeting

State Government’s Role in Protecting Native Plants and Natural Communities

The FNPS fall program in Tallahassee was, in my opinion, one of our best. It was well organized, the speakers were informative and frank, and the moderators handled the question periods expertly. We heard clear explanations of programs affecting native plants by the majority of those agencies responsible for their protection or restoration, and we heard where those programs need improvements.

The state law protecting rare, endangered, or threatened native plants is a vast improvement over what it was prior to 1978, according to Ralph Brown of the Division of Plant Industry, Dept. of Agriculture. It now calls for a council that advises and develops lists of protected plants and requires permits for collecting them (including written permission from the landowner). The state’s 7,800 nurseries are inspected up to four times a year, but flea markets are a problem. Ralph feels it’s time to move on to unprotected species and asked FNPS members to report apparent violators.

continued next page

RESOLUTION

To Encourage Use of Florida Native Plants in Landscaping by Florida Governmental Agencies

Whereas Florida’s native plants play major roles in controlling erosion and reducing flood damages, assimilating potential pollutants, providing habitat for fish, shellfish, and wildlife, and are sources for medicines and genetic material used in research, and

Whereas native plants are hardy and require little or no maintenance such as fertilizing or pesticiding once established, and

Whereas protection of native plants and restoration of damaged native communities are goals of several state, federal, and local governmental programs, and

Whereas native plants are increasingly available from nurseries in most parts of Florida and can be grown on contract by many nurseries,

Now therefore be it resolved, that the Florida Native Plant Society does urge that all governmental agencies engaged in land management and all governmental agencies that own properties should protect and utilize for landscaping native plants and plant communities to the greatest extent possible when developing, managing, or restoring lands, and

That all agencies engaged in landscaping use appropriate native plants grown from local stock in order to recreate native plant communities similar to those found originally in their areas, and

That by setting landscaping examples for the Florida public, our citizens will be encouraged similarly to protect and restore Florida native plants.

Adopted by the Florida Native Plant Society board of directors in Tallahassee, FL, on October 22, 1983.

TREET CACTUS MAY BE PROTECTED
by Michael Lafferty

Tree Cactus (Cereus robinii), found primarily on Big Pine Key, is being considered by the U.S. Fish and Wildlife Service (FWS) for inclusion in the Federal Endangered Species Act. It is already protected by the state and by Monroe County ordinances, but it may be the first plant in the Keys to be protected by the Federal government, and only the third in Florida (Harper’s beauty and Chapman’s rhododendron are the other two).

Tree Cactus is also found on Lower Matecumbe Key and in the Long Key State Recreation Area.

Tree cactus is not only indigenous to the Keys, but its entire evolution was in the Keys, according to environmental consultant Karen Achor. “It’s so rare in the county that one bad hurricane or one bad fire could be very serious,” said Miss Achor. “I don’t think there is any doubt that people dig it up.”

Standing anywhere from 15 to 20 feet tall, and sometimes as high as 30 feet, Cereus robinii is a branching plant with a ribbed trunk. A flower blooms in the late evening or at night near the plant’s height. A reddish, garlic-smelling fruit is found on the plant. Spines are sharp and bunched in groups of 30-40.

(Thanks to Michael Lafferty and The Florida Keys Keynoter for permission to use this article and photo.)