Managing the nature preserves

Spring Island has been described as “a great maritime forest.” Live oaks cast their shadows across the landscape and these imposing ancient trees along with 90 other species thrive – more than three times the number found on neighboring barrier islands. Six hundred types of flora, 700 fauna types, and 19 varieties of soil have also been identified on the island.

The day-to-day management of the over 1,800 acres of preserved land is one of patience, precision and passion.

Succession

Succession, a fundamental ecological concept, refers to the predictable changes that occur in a habitat over time. Throughout the successional process, plant species come and go. When a field on Spring Island is plowed and then abandoned for 100 years, a predictable series of habitat stages occurs. First, herbaceous weedy species appear, such as dog fennel, broomsedge and goldenrod, followed a few years later by shrubs such as wax myrtles and yaupon holly. Within five to six years sapling trees, such as loblolly pines, sweetgums and live oaks, begin to populate the field, eventually shading out low-growing herbaceous plants and shrubs. After 50 years, mature pines begin dying because of lightning strikes or beetle infestations. Then the understory hardwood saplings grow up quickly to fill in the gaps. A century after the field is abandoned, it becomes a mature mixed hardwood-pine forest.

The wildlife community changes along with the plant species. For example, bluebirds and other early successional species prefer recently abandoned fields, but forest-dwelling birds replace them when trees dominate.

The forests, fields and wildlife are adapted to change because the Coastal Plain of South Carolina evolved with frequent disturbances through fires and

hurricanes. Biodiversity is typically higher in areas that are periodically disturbed because it maintains a mosaic of different habitats. Without disturbance, Spring Island would become one expansive mixed oak-pine forest with a heavily shaded forest floor. A variety of habitat management techniques manipulate the successional process.

Why protect native habitats?

Just as old ruins connect the present to the past, certain habitats can represent different times. On Spring Island, some habitats are remnants from pre-Columbian times. These include pine savannas, hardwood bottom swamp forest, maritime forest and forest with shell-rich soil. Other habitats are remnants from Spring Island's agrarian period (the past two centuries). These include fallow agricultural fields, early successional fields and the upland live oak forests that have overtaken old sea island cotton fields.

Protecting native habitats on Spring Island is important to regional conservation efforts because some of the habitats that exist on Spring Island are disappearing quickly in other places. Big Neck's slash pine savanna is one of only two in South Carolina. The other locale is near Charleston and slated for development. The wildflower Eupatorium scrabridum occurs in South Carolina only at these two sites.

These native habitats are home to a variety of wildlife, including bald eagles and wood storks. Some species, while common on Spring Island, are declining elsewhere: the painted bunting, Acadian flycatcher, rusty blackbird, several tree frog species and a dragonfly called the comet darner.

Habitat protection on Spring Island not only preserves a sense of place and helps with regional conservation efforts, but also increases the quality of the outdoor experience for residents and visitors. Our curiosity draws us to new things, so a greater number of species provides a richer sensory experience. Spring Island is home to more than 600 species of plants, 200 species of birds, 50 species of butterflies, 40 species of reptiles and amphibians, 20 species of dragonflies and 25 species of mammals.

Why is disturbance important in nature?

Mimicking natural fires, pre-Columbian Indians lit fires in pine savannas to keep these areas open for hunting deer and for greater visibility around their

villages. Fallow agricultural fields provide habitat for plant species adapted to colonizing patches of bare soil left by seasonal fires.

Small-scale disturbances also play an important role in the ecology of a forest. Each time a large tree crashes to the ground it creates a gap that allows sunlight to reach a patch of otherwise shady forest floor. This sunlight will nourish a small shrub thicket in the understory, providing cover for nesting songbirds as well as host plants for insect species.

Why are non-native species considered harmful to native habitats?

As humans traveled from place to place they carried plants and animals with them, sometimes intentionally, sometimes inadvertently. While Indians moved plants from place to place within the Southeast, Europeans moved plants and animals between continents. Often a non-native species introduced into a new area did not survive. Other species flourished, sometimes to the detriment of native species.

Some non-native species, such as kudzu, fescue grass, English ivy and Chinese tallow tree, thrive in a new environment because there are no insects or predators adapted to feed on them. Others, such as bamboo, German cockroaches, wharf rats and fire ants, thrive in disturbed habitats created by humans. These non-native species can overgrow and transform native habitats.