



## Managing Forests

The Spring Island Trust team manages the Island's vast maritime forest through a variety of techniques and best practices including prescribed fire, mowing to mitigate and manage fires, and timber harvests to improve the habitat quality of young pine forests and to re-establish a forest with large healthy trees and selective use of herbicides to kill non-native undesirable plants.

### *Fire*

Fire is a natural occurrence in the Southeast. In the past, fires created by lightning strikes swept through thousands of understory acres in longleaf pine forests. For the past century, however, fire suppression has prevented it from shaping the landscape.

Prescribed fire is an important management technique on Spring Island. Our forests and fields thrive on fire. By burning these areas every two to four years we stimulate the growth of native grasses and flowering plants. Many wildlife species also benefit from the increase in diversity of ground plants following a fire.

Prescribed burns make Spring Island safer by reducing the chance of a catastrophic wildfire. They prevent buildup of fuel load such as dead branches, pine cones and pine needles. With reduced fuel load on the ground the risk that a fire will become hot enough to ignite live tree trunks and spread into the canopy, where it could then become a dangerous forest fire, is reduced.

The Trust conducts most prescribed burns in late winter and spring. Prior to burning an area, the fire boss evaluates the weather (wind speed and direction, relative humidity, upper atmospheric conditions and fuel moisture) to determine if conditions are favorable for accomplishing the burn objectives. Because Spring Island is a residential community close to other urban areas, conditions are further limited because upper atmospheric conditions must minimize the ground-level smoke that persists after the burn.

Burning trees are extinguished whenever possible. However, some trees and stumps may continue to burn for days after a prescribed fire. It is common and safe and typically does not kill a live tree. The Trust never leaves a fire that is potentially unsafe unattended. Security frequently patrols burn areas at night.

However, we appreciate members keeping an eye on recently burned areas. Call Security if you are concerned about a fire.

The continued use of prescribed fire on Spring Island is a reflection of the community's commitment to conservation. A total of 920 acres are managed by using prescribed burns, and approximately 400 acres are burned annually. Fire must be used as a primary management technique in the nature preserves if Spring Island is to maintain its biodiversity and beauty.

### ***Mowing***

In the past, much of Spring Island was bush-hogged to maintain open quail habitat. The bush-hog is a heavy-duty mower pulled and powered by a tractor. It is able to cut saplings and shrubs up to several inches in diameter. Mowing creates an artificially open forest in areas that cannot carry a fire. Areas where the ground is covered with oak or wax myrtle leaves are good bush-hogging candidates.

Today, the Trust uses prescribed fires in areas that have been recently bush-hogged. This is a more effective way to maintain open forest habitat and to increase habitat diversity. If a section of forest does not burn, it remains thick and provides nesting habitat for songbirds and cover for other species.

The bush-hog has an important role on present-day Spring Island. The Master Plan suggests that the live oak forests along Spring Island Drive be bush-hogged annually to create a park-like forest vista. This reduces the wildlife value of this area, but people enjoy the views of the large oak trees.

Most bush-hogging on Spring Island is done before the growing season (February-March). This timing allows for a quick recovery of the habitat, minimizing the negative effects on wildlife and the aesthetics. Select roadside meadows are bush-hogged in June to promote habitat for fall flowering perennials and grasses.

Unlike fire, mowing does not reduce the vegetation biomass (fuel) in a management area because it is scattered on the ground. Prescribed fires consume the vegetation and release nutrients back into the soil.

### ***Timber harvests***

Spring Island has a long history of logging. In 1872, Cochran's Island (now Spring Island) was listed for sale in the Charleston Daily Courier and described as "3,000 acres high land, about 2,000 of which are cleared...". The sale of timbered lumber was a primary source of revenue for the Island's owners during the first half of the 20th century. When the Walkers purchased Spring Island as a hunting plantation, they cleared second growth pine forests to improve habitat for game species.

The Trust uses timber harvests as a tool to improve the habitat quality of young pine forests. The goal of a selective timber harvest is to re-establish a forest with large, healthy trees and a diverse ground cover of grasses, forbs and scattered shrubs. Our southern climate leads to rapid plant growth. In less than 25 years a field can convert to a mature pine forest dominated by mature trees and little understory.

Timber harvests are messy even when special care is taken to minimize the disturbance. An area that has been thinned will take several years to fully recover. However, the ends justify the means!

### ***Use of herbicides in the forest***

Herbicides are chemicals that control or kill undesirable plants. When applied at normal rates the

herbicides that are commonly used on Spring Island do not affect the physiology of animals. Herbicides are expensive, but they are cost effective when used properly.

When hardwood species in a pine forest, such as oaks and sweet gums, become established they often shade out native grasses. This loss of vegetation decreases the wildlife value of the habitat and reduces the ability of the forest to burn. Herbicide applied along with a prescribed burn can restore the habitat.

Following a timber harvest, the shrub layer can proliferate, often shading out native grasses and forbs. When this occurs, these areas are often sprayed with a selective herbicide that kills the shrubs but not the grasses. After one year's application the shrub growth can be controlled in future years with a regular schedule of prescribed burns.

Herbicides are the only effective way to combat four kinds of non-native, invasive plants that can overtake forest habitat on Spring Island:

Chinese tallow tree

Japanese climbing fern

Privet (two species)

Turf-forming grasses (primarily bahiagrass and bermudagrass).

Tallow trees occur throughout the Island, and, like privet, are dispersed by birds. Thousands of tallow trees have been eliminated by Spring Island volunteers and staff during the last decade. Without the use of herbicides, a tallow tree that is cut down will sprout a group of trees. Japanese climbing fern can occur anywhere on the Island because it invades through airborne spores. Privet (*Ligustrum*) originated

from the Copp era plantings at Bonny Shore Landing, but birds eat the berries and disperse the seeds. Turf grasses originating from roadsides are now invading sunny pine savannas

Herbicides are applied different ways. The most effective method for small plants is to spray the leaves in late summer when the plant is transporting sugars from the leaves back to the roots. The herbicide can be applied cost-effectively to an entire tract of forest by using a sprayer mounted on a tractor or ATV. On larger trees, an axe is used to hack into the bark and herbicide is sprayed into the cut.