When The Sun Shines at Camp Pirtle – How Much Can Plants Tolerate?

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One thing leads to another, especially in the forest. For example, natural succession is the process of one plant community being replaced by another in the same place over time. The driving force behind plant succession is competition for natural resources that include water, food, and sunlight. There is not much that forest managers can do about the amount of water that falls onto a forest and just a little that they can do about the amount of food or nutrients in the soil, but there is quite a bit that foresters can do about the amount of sunlight that individual plants receive.

Sunlight provides the energy that plants need to convert carbon dioxide and water into the leaves, stems, and roots of plants and provide oxygen to the atmosphere. Some plants require more energy than others to compete, survive, reproduce, and thrive, while others require less. The result of that competition and interaction determines the mix of plant species that exist in a forest at any one time. That's where the forest manager comes into the picture.

Plants that require a lot of sunlight and that don't do well in the shade are called "shade intolerant" plants. They will not tolerate being heavily shaded and will eventually die out and their offspring will not survive to succeed them. Instead, they will be replaced by plants that can thrive under low light conditions. Those are called "shade tolerant" plants. Examples of shade intolerant plants of Camp Pirtle's forest are grasses, American beautyberry, yaupon, loblolly and shortleaf pine, sweetgum, and hickory. Shade tolerant plants at GWP include Eastern hophornbeam, flowering dogwood, American holly, red maple, and white and red oak.

Wildlife responds in a similar manner to the flow of the sun's energy into a forest. Small mammals, some birds, and reptiles require habitats that are more open to the sun and that grow thick vegetation. They use those areas for feeding, safe nesting, and travel. As the forest thins out due to competition larger mammals, many birds, and some reptiles will utilize the area for feeding and as a safe haven. Mature, open, deeply shaded forests will be used as travel corridors by large animals and as nesting sites for some birds and tree-cavity dwelling mammals such as squirrels and raccoons. Forest management activities that influence the plant composition of a forest have a direct impact on the wildlife that inhabits that forest.

Camp Pirtle's Forestry Committee uses all of that knowledge to make decisions about the plant composition of the GWP Forest and to manage the amount of sunlight that penetrates the forest's floor to accomplish the Forest Stewardship Plan's objectives. For instance, if the council finds it desirable to grow more shade intolerant plants and trees, those that would shade the ground and prevent their growth and regeneration are harvested or removed. If a decision is made to grow more tolerant plants, the forest canopy will be allowed to remain shadier to limit the competition that those plants would encounter. In practice, to ensure forest diversity and sustainability, a variety of

management techniques will be employed at GWP. Here are some examples of forestry operations that have taken place in the last 3 years to achieve specific results.

In 2003, the ETAC Board of Directors agreed with the GWP Forest Stewardship Committee that a 37 acre area south of COPE could successfully grow shade intolerant loblolly pines. A harvest of all marketable trees was conducted and the area was prepared for planting by temporarily removing competing brush and grasses. The area was planted the following winter and is now growing a healthy young loblolly pine forest.

The 2001 Forest Stewardship Plan recommended a harvest in 2004 of selected trees both in the Administrative Area around the camp's buildings, behind the Rangers' home, and in the planted area near the camp's entrance. Some shade intolerant pine trees were removed, allowing other trees to thrive. Camp user safety was the reason for removing some trees and others were harvested to allow more energy and nutrients to reach the remaining trees, improving their growth and vigor.

For the area below the Lake Murvaul dam, the plan recommended a harvest to improve the stand of trees and grow shade tolerant trees like oaks. Past harvests left less vigorous trees and a limited variety of species. To improve both the forest's health and diversity a harvest of all marketable trees was conducted. The site will be prepared for planting with a greater variety of healthy shade tolerant oaks. Ash and other light-seeded species will come into the stand naturally through floods, animals, and wind.

In effect, GWP's Forest Stewardship Committee is managing the amount of the sun's energy that reaches the camp's forest floor. By allowing more or less sunlight to reach the ground, the health, usability, diversity, and productivity of the forest and its inhabitants will be improved.