The Florida Forest Steward

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Wildfires Ravage Northeast Florida

It is much more pleasant to sit here this afternoon and write this article than it was to be involved in what we were doing during June and July. If you have driven lately on I-95 between Titusville and Jacksonville, you know what I'm talking about. If you haven't, you should take the opportunity to view some of the most extensive wildfire damage in the history of the State of Florida. Keep in mind that these fires and the resulting smoke closed 150 miles of I-95 a month ago, as well as several expanses of US 1, State Road 40, and other major highways on the East coast.

No one would have anticipated a fire season of this magnitude back in February, when flooding from El Niño was a more immediate concern. Then the rain stopped, everywhere. By mid-June, statewide drought indices were almost as high as those found in deserts. Then the dry cold fronts arrived, bringing with them intense lightning activity. In some areas, arsonists also added significantly to the fire problem.

By the time the rains returned in mid-July, almost 500,000 acres had burned. Volusia County suffered the worst damage, with over 140,000 acres burned. The largest fire exceeded 40,000 acres. Other major fires occurred in Flagler County, which had to be totally evacuated for three days; Brevard County, where a large fire also caused evacuations and threatened the City of Titusville; and the San Pedro Bay in Taylor and Lafayette Counties.

It cost $133 million to suppress these fires. The most aircraft ever deployed in the history of the US Forest Service were sent to Florida, and over 7000 individuals, including personnel and equipment from 45 states and Russia, participated in the fire-fighting efforts.

The Division of Forestry is taking steps to handle similar situations in the future. The Division has requested additional fire suppression equipment and personnel from the legislature. Outdoor burning regulations are also being reviewed to make it easier for landowners to conduct prescribed burning. Private landowners who had their timber destroyed may be able to receive financial assistance to replant, as well as access to additional sources of seedlings.

If you have suffered recent wildfire damage and need assistance with either salvage or replanting, contact your local County Forester.

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Fire-related Extension Publications

Two recent extension articles, each 2- to 3-pages long, were written in response to the summer's fire outbreaks, and are now available from your County Extension Office and from the SFRC web site located at:
http://www.sfrc.ufl.edu/Extension/ExtInfo.html
A brief synopsis of each is provided below.

Risk Assessment for Burned Timber: Guidelines for Landowners

Many of the trees that were damaged by recent fires will die or succumb to pine beetle attacks. Landowners need to assess potential tree mortality and harvest the most severely damaged trees first. Some general rules-of-thumb can guide landowners in this decision:

- Trees with greater than 50% stem char and total crown scorch are at high risk of death or beetle attack.
- Trees with less than 50% stem char are at low risk.
- Because of its fire resistance, longleaf pine is not at high risk until stem char reaches 75%.
- If roots are exposed by fire and the bark is burned off, the tree is at high risk.

For each category of wood products, there is a different time frame for getting burned timber to market. Chip-n-saw has a time frame of only 5 to 8 weeks; saw timber and ply logs may have up to 3 months; and pulpwood up to 6 months. The amount of time that passes before your fire-damaged trees lose market value will depend on the severity of damage and weather conditions until harvest. It is quite possible that your trees will lose value in less time than stated above.

County foresters, forestry consulting firms, and consultants from industry landowner assistance programs may be able to assist you in assessing timber damage.

Understanding Tax Deductions for Timber Losses

If your timber has been destroyed, you may be eligible to deduct the loss on your federal income tax return. There are two types of losses from natural events: (1) casualty losses are sudden, unexpected, and unusual—as from fire or storms, (2) non-casualty losses are gradual, unexpected, and unusual—as from insect attack, drought, or disease. Deductions for both types of losses are available to owners who hold timber to produce income. The loss must be physical in nature and caused by an identifiable event or combination of events that has run its course. A deduction is allowed only if the damage renders timber unfit for use.

Loss deductions are limited to your adjusted basis in the timber destroyed, minus any insurance reimbursement or compensation received from salvage operations. Basis is the amount of money you have invested in the timber-producing activity, adjusted for credits and deductions taken, or additional investments made. Tax law allows you to recover this investment, but does not act as insurance on your timber.

To determine your loss deduction, follow these three steps:
1) Determine the volume of timber destroyed
   (or acres for pre-merchantable trees).
2) Calculate the depletion unit:
   Adjusted Basis ÷ Total Timber Volume.
3) Multiply the depletion unit by the volume
   (or acres) destroyed.

Example: If your land has 200 MBF (thousand board feet) of sawtimber, and your adjusted basis is $4000, and fire destroys 25 MBF, your loss deduction is: ($4000 ÷ 200 MBF) x 25 MBF = $500, even though the value of destroyed timber was much higher.

You are obligated to make a genuine effort to sell salvageable timber. If the proceeds from a sale or other reimbursement (e.g., insurance) exceed your adjusted basis in the timber, you will have a taxable gain rather than a loss deduction.

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Stewardship of Longleaf Forests

After this summer's fire outbreaks, it seems appropriate to write about the Southeast's most fire-tolerant pine species—longleaf pine. Longleaf pine forests once covered up to 90 million acres on the Southeast's coastal plain and adjacent areas. This species was part of the largest forest community in North America, with a natural range extending from southeastern Virginia to central Florida, and westward to east Texas. Today less than 3 million acres of longleaf forest remain, of which approximately 950,000 acres are in Florida. The decline can be attributed to land clearing for agriculture and development, the replacement of harvested longleaf stands with faster-growing loblolly and slash pine, and fire suppression.

Longleaf pine ecosystems evolved in the presence of frequent fires. The longleaf forests not only survived the fires—which may have occurred every 3 to 5 years—but benefitted from them. The fires eliminated competing hardwoods, exposed mineral soil for good germination of longleaf seeds, and maintained the vast expanses of open, park-like longleaf forest that welcomed early settlers. In addition, many of the plant species that occur within this community are fire dependent, requiring periodic fire to flower and produce seed.

Longleaf pines have evolved a number of physical adaptations to tolerate fire. In a paper presented at the First Longleaf Alliance Conference, U.S. Forest Service researcher, Dale Wade, commented on longleaf's fire adaptations, "The roots, bole and crown all possess traits that, in combination, make longleaf pine one of the most fire resistant trees on our planet."

These traits include:

- a juvenile grass stage during which the seedling shows little height growth, but develops a long, heavy taproot enabling it to survive frequent dry spells that eliminate many competitors;
- adequate food reserves stored in the thick root collar and taproot so that seedling height growth, when it begins, will be fast enough to place terminal buds above fires;
- enormous buds that help keep cell temperatures below the lethal threshold;
- tufts of needles concentrated at the branch tips, which shield the buds; and
- thick bark that protects the underlying cambium layer (cells that produce living wood and bark) from heat once groundline stem diameter exceeds 1½ inches.

Last year, the Longleaf Alliance published, Stewardship of Longleaf Pine Forests: A Guide for Landowners, to provide private landowners with the information they need to manage longleaf pine forests. The book covers a range of management topics, and also provides two pages of suggested readings, a long list of Federal, State, and private sources of assistance, and a state-by-state listing of sources for longleaf pine seedlings. The present article contains a mere sampling of the wealth of information contained in this book.

Habitat types

Longleaf forests occur on a range of sites, from dry to seasonally wet. Most existing coastal plain longleaf forests fall into one of four categories: Sandhills (the driest sites), Flatwoods (sites with intermediate moisture conditions), Savannahs (the wettest longleaf sites), and Rolling Mesic Hills (characterized by fine- textured soils and subsoils with a high clay content). The typical plant species, in addition to longleaf pine, vary from category to category, as do the rare, threatened and endangered species of plants and animals. Some longleaf sites may contain over forty different plant species per square meter, making these forests some of the most diverse plant communities in North America.

Regeneration

Some landowners are reluctant to plant longleaf pine because of its reputation of being hard to regenerate and a slow grower in its early years. Research has now demonstrated, however, that if longleaf seedlings are properly handled and planted, their survival and growth are comparable to other southern pine species on most sites.

Bare-root seedlings

Longleaf pine seedlings remain in the grass stage until the root collar diameter (RCD) reaches one inch. Once this size is attained, seedlings begin rapid height growth. To minimize the time required to achieve a 1-inch RCD, follow these recommendations:

- Adequately control competing vegetation during site preparation and during the spring after planting. This is especially important on flatwoods sites.
- Buy seedlings that have RCDs between 0.3 and 0.6 inches, and a stout tap root 8 to 10 inches long, with numerous well-developed lateral roots.
- Minimize exposure of roots to the air.
- Plant seedlings as soon as possible after receiving them, within 3 days at least.
- Plant seedlings so that root collars will be slightly below (no more than ½ inch) the settled soil surface 2 to 3 months after

planting.

- Plant seedlings between mid-December and March 1, preferably in the early part of this period. Don't plant during periods of low soil moisture or dry weather, and when strong cold fronts are passing through.

Containerized seedlings

Containerized seedlings have shown better survival and growth than bareroot seedlings, have greater tolerance to herbicides, and can be used to extend the planting season and replant partial regeneration failures. The main disadvantage of containerized seedlings is that they can cost more than three times as much as bareroot seedlings. Containerized seedlings need to be planted when there is adequate soil moisture.

Direct seeding

Direct seeding is less costly than planting, but regeneration failures can occur from inadequate control of competing vegetation, low seeding rates, seeding at the wrong time, using seeds not treated with bird and rodent repellent, or poor weather conditions. The following tips will help you achieve regeneration success with direct seeding:

- Avoid sites that are too wet, too dry, or subject to erosion. The best sites will have soils of medium moisture-holding capacity on gentle slopes.
- Longleaf pine seeds germinate naturally during October and November, so this is usually the best time for direct seeding.
- Use only the best quality seed, purchased from a reputable dealer. Buy seeds treated with bird and rodent repellent.
- Use prescribed burns or other site preparation techniques 3 to 6 months before seeding to expose mineral soil.

The major benefits of direct seeding are speed and cost. The disadvantages are less control over spacing and density, and a lengthy grass stage before height growth begins.

Natural regeneration

Landowners who already have longleaf pine stands can naturally regenerate them by using the shelterwood system. In the shelterwood system, overstory trees are harvested in a series of cuts spaced several years apart, retaining the best quality trees as a seed source. Success depends on four conditions:

- Adequate seed supply. A thinning about 10 years before the final harvest provides space for the growth of the seed trees. A second thinning about 5 years before final harvest (the seed-cut)

provides favorable conditions for the development of new seedlings. When 3000 to 6000 seedlings per acre are present, seed trees can be harvested.
• Receptive seedbed. Three to six months before seedfall, use a prescribed burn or a mechanical treatment, such as chopping, to expose mineral soil and create a receptive seedbed for longleaf germination.

• Minimum vegetative competition. Remove competing woody vegetation, preferably before the seed-cut, by harvesting merchantable trees and using herbicides, prescribed burns or other treatments. The stand is considered established once 1000 to 1500 seedlings per acre have started height growth and are free of overhead competition.
• Ample soil moisture. After removing competing vegetation, there is little else you can do to ensure adequate soil moisture.

Pests

Longleaf pine is generally more resistant than other southern pine species to insect and disease attack, including attacks by the southern pine beetle. The best defense against insect attacks is good stand management, for example, periodic thinnings and avoidance of tree damage during logging and prescribed burns.

Brown-spot needle blight, a fungal disease which attacks the needles of seedlings in the grass stage, can be very destructive. It delays the start of height growth and may kill seedlings. One control option is to dip seedling roots in benomyl fungicide before planting. In established seedling stands, prescribed fire is the only practical means of control. Be sure to monitor seedling stands for this disease.

Multiple-use management

Longleaf pine is an excellent species for multiple-use forest management.
• It provides a good mix of wood products.
• It is the most insect and disease resistant pine species in the South.
• The canopy develops slowly, so understory plants that benefit wildlife can be maintained for relatively long periods.
• Fire can be introduced early in stand development, maintaining wildlife values.
• The open, park-like nature of well-managed longleaf stands is aesthetically pleasing, and provides many opportunities for recreational activities.

Timber and Pine Straw

Because of its excellent form, longleaf pine yields a higher proportion of pole and piling material than other southern pines. Historically, stumpage prices for these products have been 30% to 50% higher than sawlog prices. On average sites, even-aged stands can be managed for poles on a 40- to 60-year rotation. Frequent, light thinnings which retain the best pole candidates and leave a residual stand basal area of 60 to 90 square feet per acre are recommended. Poles are best grown in relatively dense stands in order to produce straight stems with minimal taper.

Pine straw, which is in high demand as a landscaping material, can be produced at the same time as poles and piling material. Highest pine straw yields consistently come from well-stocked longleaf stands on old fields with little or no understory. Straw can first be raked in plantations between ages 8 and 12, and then every other year until age 20, or when stands are thinned.

With pine straw management there are several considerations to bear in mind. Most of a pine forest's nutrients are contained in the pine needles, so frequent removal of needles can reduce site fertility. Nutrient levels in the needles and soil should be periodically tested, and fertilizer applied as needed. High, sandy sites with low fertility are not recommended for pine straw harvesting. Also, wildlife habitat may be degraded because understory vegetation must be eliminated.

Timber and Wildlife

To accommodate both timber and wildlife, longleaf forests can be managed as even- or uneven-aged stands on rotations ranging from 40 to 100 years or longer. In even-aged management, the goal is to develop a structurally diverse forest, composed of a number of irregularly shaped timber stands of a variety of ages. A patchwork of different-aged stands can provide the habitat diversity that benefits many wildlife species. Thinnings every six to ten years, and retention of streamside vegetation and pockets of hardwoods are also beneficial practices.

With uneven-aged management, trees of various ages are mixed together in the same forest stand. A typical mixture includes many young trees, some middle-aged trees, and a scattering of mature and old trees. A percentage of stems in each size class are harvested at regular intervals, and openings are created where natural regeneration can occur. Trees are selected for harvest on an individual or small group basis.

Uneven-aged management produces a patchy forest with a great deal of small-scale habitat diversity. The main benefits are habitat diversity, periodic income from the high-value timber products harvested during each cutting cycle, and the aesthetic appeal of managing without clearcuts. The main disadvantages are the increased complexity of regulating timber harvest, lower volume growth than would be produced by even-aged stands on the same site, and more frequent entries into the stand for timber harvest (which increases the risk of damaging valuable trees).

Livestock grazing

The following discussion of livestock grazing applies only to cattle; hogs should be excluded from longleaf range because they root-up and eat young pine seedlings.

To improve grazing conditions in longleaf pine forests, thin stands early and often, and use prescribed burns. Thinning should start as soon as practical and every six to ten years thereafter. This will reduce shading and maintain forage production throughout the rotation. Prescribed burns—considered by many land managers to be the most effective grazing management tool in southern pine forests—improve the quality of forage and can be used to concentrate and rotate grazing. For the longleaf-wiregrass communities, which are typical of Florida's longleaf forests, the best burning schedule for grazing is a late winter or early spring prescribed burn every two years, beginning after pine seedlings have developed fire tolerance.

When regenerating harvested longleaf stands, use minimal levels of site preparation so that valuable forage plants are not eliminated. Stands with a history of prescribed fire will not require intensive site preparation to control competing vegetation. Exclude livestock until adequate pine regeneration is achieved

The key to compatible management of cattle and wildlife is to reserve a portion of the available forage for wildlife, and adjust cattle stocking accordingly. On Louisiana ranges managed for deer and cattle, 15% of the total livestock carrying capacity is reserved for deer. Failure to consider the forage requirements of wildlife can lead to overgrazing and soil erosion.

Prescribed fire

Whether managing for timber, wildlife, livestock, recreation, pine straw, aesthetics, biodiversity, or a combination of these objectives, there is one management tool that is always recommended for longleaf pine stands—prescribed fire. Depending on vegetation conditions and ground fuels, winter or early spring burns every two to three years are the norm in most longleaf pine ecosystems. This fire regime top-kills woody brush, stimulates the production of nutritious browse, prevents the buildup of woody fuels, and maintains the open, park-like environment on which many plants and animals of the longleaf pine community depend. Keep in mind, however, that "longleaf pine is not asbestos" (Dr. Bob Farrar). In spite of its fire tolerance, fire intensity still needs to be carefully regulated to avoid tree injury or mortality.

References consulted for this article

- Stewardship of Longleaf Pine Forests: A Guide for Landowners. 1997. Robert M. Franklin. 44 Pages. $8 plus shipping and handling.
- Proceedings of the First Longleaf Alliance Conference—Longleaf Pine: A Regional Perspective of Challenges and Opportunities. 1996. 178 pages. $6 plus shipping and handling.

Both of these references are available from: Longleaf Alliance, Route 7, Box 131, Andalusia, AL 36420.

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Looking for Stewardship Forest Landowner of the Year

Eight years after its initiation, over 1000 Florida landowners are enrolled in the Forest Stewardship Program. Over 100 of these landowners have attained Stewardship Forest certification, a designation that recognizes their commitment of time, effort, and funds to implementing their plans and improving the resources on their properties.

For the past two years, we have recognized a landowner as Florida's Stewardship Forest Landowner of the Year, for making the extra effort above and beyond what is needed for certification. Paul Bielling of Marion County received this award for 1996, and Terry and Barbara Glancy of Dade County received the 1997 award.

These award recipients "stood out from the rest" in a number of ways, including the following:

- They implemented management activities, as outlined in their forest stewardship plan, to improve timber growth, wildlife habitat, conservation of soil and water, recreational opportunities, aesthetics, and (as an option) grazing forage.
- They made significant improvements to their forestlands since beginning their management program.
- They personally performed much of the work on their property.
- They demonstrated a land ethic integral to the stewardship concept, as indicated by the management and condition of the property, and the way in which each landowner expressed themselves.
- They actively promoted the Forest Stewardship Program and recruited other landowners.
- They actively promoted conservation and

responsible land management in their area.

- In the case of the Glancys, they recovered from a catastrophic hurricane, and continued their management activities.

At this time, we are looking for landowners who would make good candidates for the 1998 award. If you or someone you know has received Stewardship Forest certification, and would like to be considered for this award, contact your County Forester, Game Commission Biologist, or forestry or wildlife consultant as soon as possible. They will visit the property and complete the nomination form. Completed applications need to be submitted to this office by October 31.

A total of five Regional Stewardship Landowners of the Year will first be selected. A committee, with representatives from each of the administering agencies, will then select the Florida Stewardship Landowner of the Year from among the regional winners.

For more information, contact one of the individuals listed above, or call (850)414-9907.

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Timber Price Update

The 2nd quarter, Timber-Mart South report for Florida, listed average stumpage prices in April to June, 1998 as $42/cord for pine pulpwood, $89/cord for pine C-N-S and $123/cord for pine plylogs. Prices were $8, $1 and $15 per cord, respectively, lower than in the first quarter, but were at about the same level as in the last three months of 1997. Hardwood pulpwood prices dropped about 25% between quarters, but hardwood timber prices were slightly higher than last quarter. As previous newsletters have pointed out, stumpage prices are highly variable and the actual price for a particular timber sale can be affected by characteristics such as tract size, timber density, access, proximity to mills, and weather. We have seen some extremes this year. For example, prices were relatively high in January to March because of the long periods of rain. In a dramatic turnaround, because of the fires and large amounts of dead timber on the market, prices are now considerably lower for some product classes than earlier in the year. A more complete summary of second quarter stumpage prices is available at your County Extension Office. To determine current prices in your area, your best source of information will be forestry consultants and timber companies that conduct timber sales in your area.

Florida Forestry Website

Since January of this year, Chris Demers, a Masters degree candidate in forestry, has worked with the Forest Stewardship Program to produce an internet web site that provides landowners with a comprehensive source of forestry information. Although still "under construction," the web site already covers a variety of topics: timber management, non-timber management opportunities, forest inventories, financial planning, forestry opportunities, cost-share programs, land-use regulations, contacts for information, BMPs, forest ecosystems, Florida's trees and shrubs, and soils. More information is being added all the time.

Chris is always looking for ways to improve the website, and welcomes and encourages comments and suggestions. Please check out the website and let him know what you think.

The web site can be visited at:
http://www.sfrc.ufl.edu/Extension/ffws/ffwshome.htm

Chris' e-mail address is:
cdemers@gnv.ifas.ufl.edu

Stewardship Landowner Survey

Within the next couple of weeks, we will be mailing a survey to all participants in the Forest Stewardship Program. The objective of the survey is to evaluate the past performance of the Program and determine ways in which it can be improved. Participation in the survey is completely voluntary, but we encourage you to respond. Your opinions will help us to make the Program as productive and useful as possible. Be assured—your privacy will be strictly protected. Your name does not need to be written anywhere on the survey form. .

Pine Straw Workshops

Two workshops on pine straw management are scheduled for October, 1998:
• October 29 in Green Cove Springs
• October 30 in Live Oak.
You will receive announcements in the mail.

CRP Sign-up

The USDA will be scheduling a sign-up period for the Conservation Reserve Program (CRP), probably in mid-to-late fall. As with the 1997 eligibility requirements, applications will be ranked according to an Environmental Benefits Index (EBI). [Note: Longleaf pine plantings are considered a Conservation Priority Area, so receive a higher EBI score.] Approved applicants will receive cost-shares and technical assistance for establishing approved practices, as well as an annual rental payment for 10 to 15 years. This may be one of the last opportunities for significant acres to be enrolled in the program, so if you are interested, be sure to contact your local County Forester, Cooperative Extension Service, or Natural Resources Conservation Service.