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The Florida Forest Steward

A Quarterly Newsletter for Florida Landowners and Resource Professionals



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Opening Words

Springtime in Florida is splashed with color as our flowering plants – dogwoods, redbuds, azaleas – burst into bloom. But springtime also harkens the arrival of a not-so-welcome guest: the wildfire season. Hence, the three main articles in this issue of The Florida Forest Steward all deal with wildfire topics. The first provides some indication of what we can expect during the coming months. The second provides guidelines for protecting your home from wildfires. And the third recommends actions you can take to minimize damage from insect outbreaks in burned-over stands.

I would like to draw your attention to the fact that all three of these articles are based fairly closely on publications I downloaded from the internet. I decided to reprint the information here because it is important and relevant at this time of year, but also because I want to demonstrate how valuable a tool the internet can be and, hopefully, whet your curiosity. No matter what interests you, you can investigate it on the internet. It's not difficult. In fact once you get the hang of it, exploring the internet is easy, perhaps even addictive. Our recent survey of participants in the Florida Stewardship Program showed that the majority of you have access to the internet. Yet, relatively few respondents had used it to obtain forestry information. I encourage you to give it a try.

On the topic of the Forest Stewardship survey, our sincere thanks go out to everyone who responded. We haven't finished tabulating the results yet but from what I've seen, we're getting very useful information. In the next issue of the newsletter, we will share the results with you, and address some of the issues you've raised. Thanks again.



For each quarter of the year, the Fire Protection Bureau of the Division of Forestry produces a wildfire forecast that provides information on current conditions, the long-range outlook, and expectations for wildfire activity. The forecast for March-May 1999 is given below.

First, some background information. The Keetch-Byram Drought Index (KBDI) is a mathematical system that relates current and recent weather conditions to potential or expected fire behavior. It is widely used by fire managers in the South to evaluate the risk of wildfires, so they can prepare and respond accordingly. Higher drought index values indicate drier conditions and higher wildfire risk. Values from 0 to 400 indicate normal or near-normal risk; values from 400 to 600 indicate an increasing risk of wildfires and increasing difficulty in controlling fires that ignite; and values from 600 to 800 indicate a high risk of wildfire and high difficulty of control. When the drought index reaches 800, "desert-like" conditions prevail. During last year's spring and summer fires, the drought index ranged between 730 and 798.

Current Conditions Around Florida

In the panhandle (as of the end of February), KBDI values were near normal for this time of year, while values for areas in the peninsula were 100 points above normal. Because of our mild winter and the above-normal temperatures across much of the state, the drought index has climbed more rapidly than normal. Rain in the northern part of the state has offset rising KBDI values (due to warm temperatures), but rainfall in the southern half of the state has been slightly below normal, providing no relief from drought conditions.

Long-Range Outlook

You've heard of El Niño. Well now it's his sister, La Niña, that we have to worry about. La Niña occurs when below-normal sea surface temperatures occur in the equatorial Pacific, affecting weather around the world. The dry, warm conditions experienced in Florida this winter are closely tied to this phenomenon. During the spring, La Niña typically brings warm dry conditions to the northern half of the peninsula, with dry conditions moving southward as summer approaches. Although Florida's normal seasonal weather is expected to return for the March-May period, this may or may not be enough to improve the wildfire outlook. Even if average temperatures and rainfall return, drought index values will be well above normal during the forecast period because of the current drought conditions. This is especially important south of the Orlando area where KBDI values already exceed 500 in many locations.

Fire Season Expectations

There is a strong potential for above-normal wildfire activity during the March-May period. Early in the period, the central part of the state (Gainesville to Orlando approximately) has the strongest potential for above-normal fire activity. As May approaches, the area of concern should shift towards the southern portion of the peninsula.

For Additional Information and Updates

An amazing wealth of fire-related information – everything in this article, for instance – is readily available from the Forest Protection Bureau website. To get to their main page, simply enter this address – flame.doacs.state.fl.us – into your internet browser. After reaching the main page, click on the subject heading that interests you. A good place to start is the rectangular brown box on the left side of the screen, from which you can obtain information under the following headings: general information, fire weather, fire laws, prescribed fire, wildfire statistics, and wildfire forecast (the source of this article).

Do you want to see an up-to-date map of fire conditions throughout Florida? On the Forest Protection Bureau main page, click on "Fire Weather/Danger Maps." Under the "Current and Forecast Maps" heading, click on "National Fire Danger Rating System." You will see a table with dates along the left side and headings across the top: KBDI, FM (fuel moisture), etc. To get a drought index map for March 25, follow the row for March 25 from left to right until you intersect the column under KBDI...click on that cell, and up comes the map.



Protecting Your Home From Forest Fire

Since many of you live on your forest property, your homes, as well as your forests, are threatened by the wildfires that occur in Florida each year when rainfall decreases during the spring and fall. The following guidelines will help you protect your home during the next fire season.

Fireproofing Your Home

Homes built with brick, masonry or metal walls, and asphalt, tile or metal roofs are less flammable than homes built with wood. If your home is built of wood or other flammable materials, you can reduce, but not eliminate, the threat of ignition by treating these materials with UL-approved fire-retardant chemicals. Tempered glass will help prevent window shattering. Other precautions to take:

- Remove pine needles and other debris from roofs and gutters, and from under decks and floors.
- Maintain clear space around your home (see below).
- Stack firewood at least 50 feet from your home.
- Safely store flammable materials and liquids at least 30 to 50 feet from your home or be prepared to move them should a wildfire threaten your home.
- Try to provide a clearly marked water source of at least 2,500 gallons for firefighters. For example, catch rainwater from your roof in a cistern or share a storage tank with neighbors.

Swimming pools are even better as long as fire trucks can access them without crossing septic systems or drain fields.

Preventing Fires From Starting

- Burn trash only by methods, and at times, approved by state regulations. Contact the Division of Forestry in your county for information.
- Clean a 10-foot area around propane tanks and barbeques.
- Bury "cold" ashes from fireplaces and grills in mineral soil.
- Annually inspect chimneys, cover them with approved spark-arresting screens, and remove branches and shrubs within 15 feet of the top of the chimney.
- Quickly report any fire you see start.

Creating A Fire-Resistant Landscape

Fires cannot burn without fuel. If you create and maintain an open space—defensible space—around your home, fires probably will not get close enough to set it ablaze. Tall grass and shrub fuels within the defensible space are often the major route by which fires reach homes.

Within 50 feet of your home:

- Remove dead vegetation and rake pine needles immediately adjacent to the house. Consider placing landscaping gravel on walkways and in the spaces between flower beds.
- Use patios, walkways, driveways, stone walls and pools as fuel breaks.
- Thin existing trees so there is at least 15 feet of open space between the crowns of adjacent trees, and trim lower branches to at least 15 feet above the ground for trees that are more than 30 feet tall.
- Clear trees and large shrubs from within 20 feet of your home, except as noted in the next item. Replace with grass, flowers and small shrubs that grow and remain green during the fire season.
- When you remove trees from around your home, unfortunately, you remove their shade as well. To preserve shade, consider retaining hardwoods and some tall pines or planting oaks or other broadleaf trees within your 50-foot safety zone. Older trees are less likely to burn in a ground fire, and dropped oak leaves may even reduce the rate of spread of a wildfire.
- Remove small pines that are growing under larger trees or clumped together. Also remove all ladder fuel: limbs, vines, and conical shrubs that can channel fire from the ground to the tree canopy or roof of your home.
- Irrigate during the dry season to keep groundcover green.

From 50 feet to at least 150 feet from your home:

The goal is to reduce fuel loads in order to slow the fire and keep it on the ground.

- Thin existing trees so adjacent crowns don't touch. Remove small pines first and retain as many hardwoods as possible.
- Remove dead and dying branches, and all branches within 15 feet of the ground.
- Clear at least 10 feet around wood piles.

- If you plant additional hardwoods or shrubs, keep at least 10 feet between the crowns, or maintain small clumps of more closely spaced trees and shrubs, with open space between the clumps.
- Remove saw palmetto, juniper, wax myrtle, and small pines. They burn easily and can throw off sparks.

Prescribed Burns

Prescribed burns—fires purposefully ignited under carefully controlled conditions—reduce fuel loads and thereby reduce the intensity of wildfires. As an additional benefit, they improve habitat for some wildlife species. Repeated controlled burns may be our most efficient and effective tool against devastating, widespread wildfires. Controlled burns are usually conducted in winter and early spring when the ground is moist. Division of Forestry burning permits are required, and only experienced personnel should participate in the burn.

Even if your property is too small for a prescribed burn, your support for this practice is critical. Controlled burns reduce the amount of fuel in forest stands, so decrease the risk of runaway wildfires. Everyone is safer, including folks who live in towns or have no forestland. Development and population growth are making it increasingly difficult to conduct controlled burns in Florida. Let public officials know that you support controlled burns, and tell your neighbors how this practice can reduce wildfire risk.

Recommendations given in this article were taken from the publication, *Protecting Your Home From Forest Fire*, by Martha Monroe and Alan Long, assistant professors in the University of Florida's School of Forest Resources and Conservation. To read or download this publication, visit the SFRC web site: www.sfrc.ufl.edu/Extension/ or contact your county extension office.



This article is based primarily on the publication, *Insects and the Wildfires of 1998*, produced by the Southern Pine Beetle Working Group, a committee of State, Federal, university, private and industrial forestry workers appointed by the Florida Department of Agriculture and Consumer Services, Division of Forestry. To read or download this publication, visit the Pest Alert website at:

<http://extlab1.entnem.ufl.edu/PestAlert/>

The wildfires of 1998 killed millions of trees, causing significant losses for many forest landowners. Unfortunately, the damage caused by last year's fires may continue into 1999. Insect attacks may pick up where the wildfires left off. The information contained in this article will help you to evaluate and minimize your risk. Some of the advice (for example, the prompt removal of fire-damaged trees) may come too late to help victims of last year's fires, but other recommendations can be applied now. Even if you weren't affected by the fires of 1998, remember: wildfires occur every year. If your timberland is damaged by wildfire (or another type of disaster) sometime in the future, the information provided here can help you reduce tree deaths and economic loss.

Trees damaged and stressed by the wildfires, as well as apparently healthy trees, are at high risk of attack by different insects. Several factors influence the buildup of pest insect populations after wildfires:

- the severity of fire damage to trees
- the rate at which trees recover their health
- the removal of fire-damaged trees.

The timely removal of fire-damaged trees, and trees that are already infested by insects, is an important step in reducing the threat of insect outbreaks. Quick recovery of tree health also reduces the risk. On the other hand, the likelihood of insect outbreaks increases if fire-damaged trees suffer additional stress in the months following the fires. Drought, poor soil fertility, severe storms, and other disturbances can further weaken a tree, increasing the amount of time it requires to regain its resistance to insect attack. Many parts of Florida experienced extended drought towards the end of 1998, so trees in these areas may be particularly vulnerable to insect outbreaks. Severe weather, such as tornadoes and hurricanes, can also stress trees, by weakening root systems and breaking branches.

Recommendations

The best way to reduce the risk of insect attacks and additional tree deaths is to remove all dead, dying, severely damaged and stressed trees as soon as possible. Removal of these trees lowers populations of the pest insects which often increase in fire-damaged stands, and reduces the number of highly susceptible host trees which pest insects require to reproduce. The important concept here is that stressed trees are much more vulnerable to insect attacks than are healthy, vigorous trees.

Harvest larger and more severely damaged areas of sawtimber first, then work towards removal

of smaller patches of smaller trees. In forest settings, it is advisable to leave scattered, individual, fire-damaged trees if they are located in areas that were not seriously damaged by fire. Removing trees from these stands may stress and injure surrounding trees, aggravating the pest problem. However, in harvested areas, don't be tempted to retain isolated trees as potential survivors. These trees were probably stressed or injured during harvesting and may provide a foci for future pest activity.

Frequently revisit all remaining areas of burned residual forest and investigate any new or enlarging pockets of pine mortality. If bark beetles are present, try to identify the species, so you can determine the appropriate response. Southern pine beetles should be given high priority for control because of their potentially aggressive nature. Your County Forester can assist you in evaluating possible insect problems.

Delay planting pine seedlings within or adjacent to burned areas for one planting season (until the winter of 1999-2000) because seedlings planted earlier may be killed by debarking weevils. If you can't delay planting, seedlings should be treated with an approved insecticide labeled for use against regeneration weevils.

Lastly, during 1999, avoid any type of forest disturbance (e.g., thinning, burning) within one-half mile of significant wildfire activity because such disturbances can greatly increase the risk of pest outbreaks and associated tree deaths.

Evaluation of Tree Damage

Due to the variable nature of forests, fires, and weather, wildfires have a variety of effects on individual trees and stands. The direct results range from harmless to tree death. Sublethal and delayed fire effects can increase the risk of insect attacks and tree deaths during the year following the fire or even longer.

Correct identification of dead, dying and soon-to-be-killed trees is essential when evaluating risk, but be aware that readily visible fire damage may be misleading. Pines often recover from 100% crown scorch if the roots, trunk, and buds in the crown were uninjured. In contrast, pines with full, green crowns will die if significant portions of their roots and basal cambium were destroyed by fire. Cambium is the layer of cells, located between a tree's bark and wood, which gives rise to both the inner bark and wood. When the cambium is destroyed, a tree cannot produce the vascular tissue it needs to transport food, water, and nutrients from one part of the tree to another. In effect, the tree has been girdled.

Significant destruction of vascular tissue in any one of a tree's three main parts—roots, stem, or crown—will be lethal even if the other two parts appear uninjured. The following criteria are guidelines for assessing fire effects on pine trees.

Evidence of any one of the following factors indicates a dead, dying, or soon-to-be-killed pine tree:

- Bark is charred on more than 75% of stem height.
- No green needles are present in the crown two months following the fire.
- Resin "weeping" or "bleeding" occurs around the entire circumference of the tree.
- Any sign of ambrosia, wood-boring or bark beetles is observed on or around the trunk.

Any combination of two or more of the following factors indicates a dead, dying, or soon-to-be-killed pine tree:

- Bark is charred on more than 50% of stem height.
- Resin "weeping" or "bleeding" occurs on more than 25% of trunk circumference.
- All organic matter (needles, duff, humus) is absent at the tree's base, creating a sunken ring around the tree.
- Large lateral roots are exposed and charred in two or more quadrants around the tree.

Insects After the Fire

Wood-boring Beetles

Many wood-boring beetles infest fire-killed timber. Signs of infestation include oval niches chewed into the bark by females; fine, curled shavings under the bark; and the crunch-crunch sound of feeding larvae. The pine sawyers (long-horned beetles with antennae about as long as their bodies) are of particular concern because they breed in logs or killed trees and, as adults, feed on green twigs of healthy pines. These insects generally don't kill trees, but while feeding on pine trees may infect them with the pinewood nematode. The nematodes (tiny round-worms) move through the host tree and often rapidly kill it.

Bark Beetles

Ips engraver beetles bore through the bark of dead and severely stressed pines to feed on and develop in the inner bark. Signs of infestation include fading foliage, shotholes in the bark, and pitch masses (usually less than 1/2 inch wide) that may occur anywhere on the trunk, from base to crown. On severely weakened trees, the only visible sign of attack may be the presence of brown, boring dust in bark crevices. The three species of Ips engraver beetles that attack pines in Florida vary in length from 1/8 to 1/4 inch. Adults are cylindrical in shape, usually dark brown-to-black, and are distinguished from other bark beetles by having a depressed rear end (chopped off in appearance) with four to six stout spines along each side of the sunken area.

The black turpentine beetle colonizes large roots and the lower trunk of dead and dying pines. It

is the largest bark beetle (about 1/4 to 1/3 inch long), cylindrical in shape, dark brown-to-black, and has a rounded, spineless rear end. Infested trees are often scattered throughout a stand and may be difficult to detect. Signs of infestation include fading foliage, round holes (1/8 to 1/4 inch wide) in the bark, and large pitch masses (about 1 inch wide) on the lower 3 to 8 feet of the trunk.

The southern pine beetle resembles the black turpentine beetle but is much smaller (about 1/8 inch long). Signs of infestation are similar to *Ips* engraver beetles. Outbreaks of southern pine beetle are usually associated with large areas of stressed loblolly pine, so little activity is expected in the slash and longleaf stands damaged in 1998.

The easiest way to identify the species of bark beetle infesting your trees is to remove some bark and look at the size and shape of the beetles and their associated egg galleries (the tunnels the insects make under the bark). All five species of bark beetle may occur on the same tree.

- Southern pine beetles make winding, S-shaped galleries that intersect and cross like strands of spaghetti.
- *Ips* engraver beetles make galleries that are roughly I-, Y-, or H-shaped, with two to four relatively straight galleries extending out from a central chamber. For example, an H-shaped gallery complex would have four galleries extending out from the 4 "corners" of a central chamber located on the cross-bar of the H.
- Black turpentine beetles infest the lower 8 feet of the trunk. They make a short horizontal gallery, then turn and tunnel downward towards the ground, so their galleries are mostly vertical.

Debarking Weevils

Seedling debarking weevils are oblong, reddish brown-to-black, and about 1/2 inch long. They breed in the roots of dead pines and cause problems after fires because the long-lived adults feed on the tender bark of nearby young pines. Seedlings planted too soon following a fire are likely to be debarked and killed. Insecticides are available to treat and protect seedlings but it is preferable to postpone planting until all weevils have developed and dispersed.



SIP Cost Shares

As many of you are aware, the 1999 Federal budget contained no money for Stewardship Incentive Program (SIP) cost shares. Things should be better next year because the Administration will propose \$15 million for the SIP in the fiscal year 2000 budget. If you want to be considered for cost shares next year, contact your local Natural Resources Conservation Service office for information.



Timber Price Update

The 4th quarter, Timber-Mart South report for Florida, listed average stumpage prices in October to December, 1998 as \$37/cord for pine pulpwood, \$79/cord for pine C-N-S and \$114/cord for pine plylogs. Prices were down slightly, the same, and up slightly for the three products, respectively, compared to third quarter prices, and were very close to fourth quarter, 1997 prices. Hardwood pulpwood averaged \$12/cord, also down from the previous quarter. 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 operating mills, and weather. Specific recent examples of factors affecting prices are the very low pulpwood prices in areas of the state where fires and/or mill closings occurred during the last 6 to 8 months. A more complete summary of fourth 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.



Upcoming Workshops

A one-day dendrology/plant identification course for natural resource professionals will be held on April 27 in Gainesville. Please note that this date is a correction of the date mistakenly given in our last issue. If landowners and professionals express enough interest, a modified and shortened version may be developed to "take on the road." If you are interested, call or email Alan Long:

Phone: (352) 846-0891

Email: ajl@gnv.ifas.ufl.edu

Forest Fertilization

September 28 in Gainesville

September 30 in Chipley

Details on these workshops will be provided as the dates draw closer. For more information, contact Alan Long at the above numbers.

Upcoming Conference

Fire: Friend and Foe!

1999 Florida SAF/SFRC Spring Symposium

April 20-21, 1999

Sheraton Hotel, Gainesville, Florida

Registration fee: \$60 SAF members

\$80 non-SAF

\$25 students/spouse

\$8 alumni breakfast

Last summer 500,000 acres of Florida's lands were devastated by wildfires. This symposium will bring together forestry professionals and fire management specialists to discuss what happened, why it happened, and what can be done in the future to prevent losses from wildfires.

Bruce Babbitt, Secretary of the U.S. Department of Interior, is the 1999 John Gray Distinguished Lecturer and will deliver the conference's keynote address on April 20.

For more information contact Mike Jacobson:

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