
Forest Resiliency Field Day at Blackwater River State Forest

Santa Rosa County, Florida



Thursday, March 9, 2023

Meet at 8:30 AM Central Time

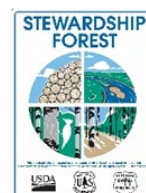
Lunch provided, adjourn at 2:00 PM



A well-managed forest is a resilient forest!

Forest management topics we'll explore today:

- Selecting the right tree species and planting stock
- Improving the stand to enhance forest health and wildlife habitat
- Strategies for selling timber
- Preparing for hurricanes and other natural disasters
- Cost-share and recovery assistance programs and contacts
- and more



Support for this event is provided by University of Florida IFAS, the Florida Department of Agriculture and Consumer Service's Florida Forest Service, the Florida Sustainable Forestry Initiative Implementation Committee, and Florida Tree Farm Program.

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<p>We appreciate our Florida Land Steward Program Supporters - on the back cover -</p>		

Blackwater River State Forest Tour

Forest Resiliency Field Day

March 9, 2023

Agenda

8:30 am Registration and Meet ‘n Greet

Welcome – Ashlee White, Santa Rosa County Senior Forester, Florida Forest Service (FFS)

Chris Demers, UF Extension Program Manager – Florida Land Steward

9:00 Tour Begins:

Stop 1 – “New” Seed Orchard

Lessons Learned from Hurricane Ivan, Advancing Genetics, TSI

Eric Howell, Forestry Resource Administrator, FFS

Stop 2 – Munson Seed Orchard (Seed Processing Facility)

Ethan Darnell, Environmental Specialist II, FFS

Restroom break

Stop 3 – Timber Sale, Red-Cockaded Woodpecker Cluster, Invasive Species

Julie Wood, Forestry Supervisor II, FFS

Liz Langston, Biological Scientist II, FFS

Craig Iversen, Forestry Supervisor II, FFS

Stop 4 – Prescribed Burn

Gary Holley, Forest Area Supervisor, FFS

Stop 5 – Road Maintenance, Low-Water Crossings, Best Management Practices

Dan Hayes, Forestry Maintenance Administrator, FFS

12:20 pm Arrive Back at Bear Lake and Enjoy Lunch!

Blackwater River State Forest Resiliency Field Day Map



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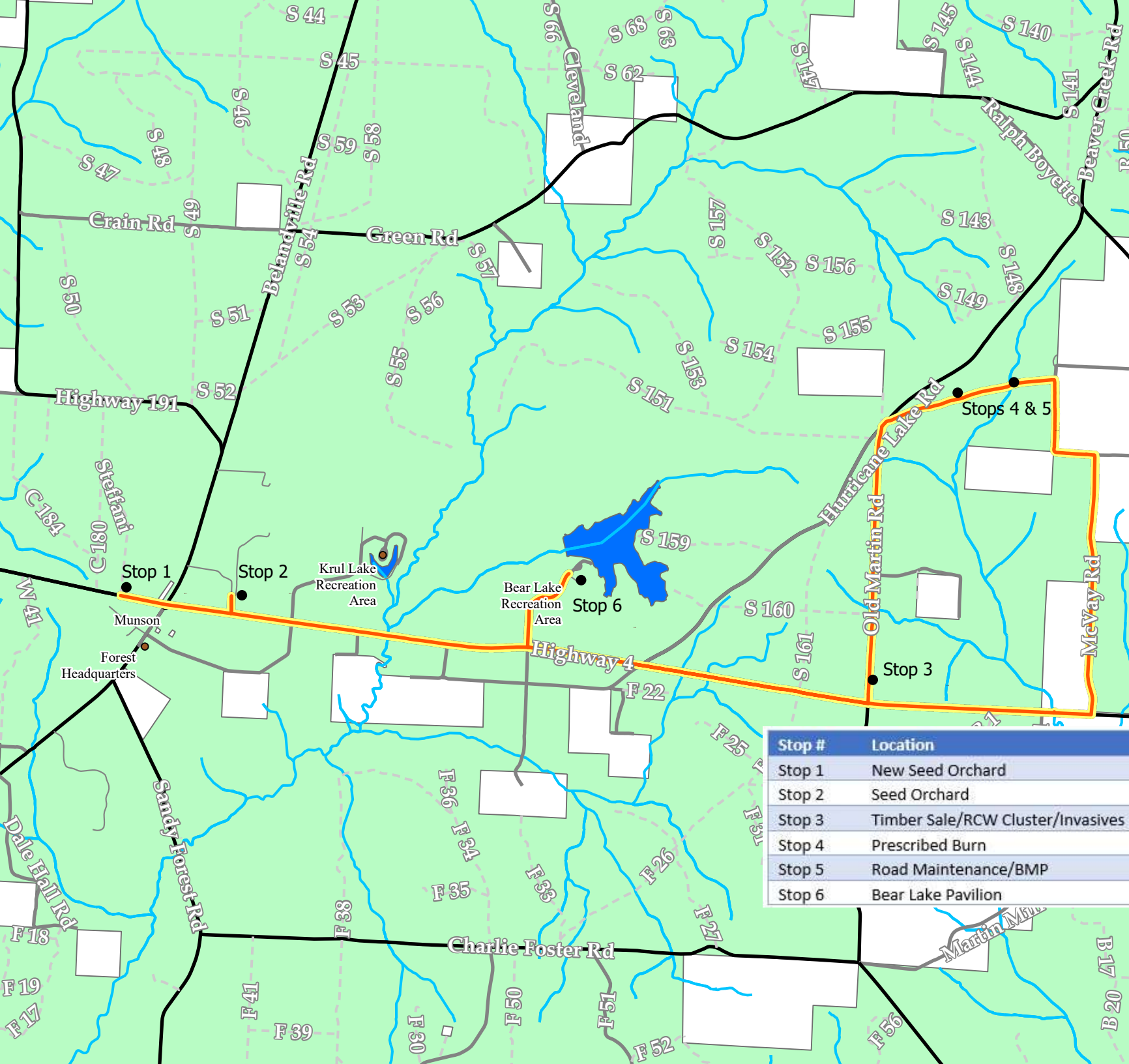
- BRSF Tour Route
- Places
- Secondary Roads
- Service Roads
- Tertiary Roads
- Primary Roads
- Streams
- Lakes
- Blackwater Boundary

0 0.23 0.45 0.9 Miles

Stop #	Location
Stop 1	New Seed Orchard
Stop 2	Seed Orchard
Stop 3	Timber Sale/RCW Cluster/Invasives
Stop 4	Prescribed Burn
Stop 5	Road Maintenance/BMP
Stop 6	Bear Lake Pavilion

DISCLAIMER
 This map is the product of the Florida Forest Service. There are no warranties made as to the fitness of this map for any unlisted purpose. Furthermore, no warranties are provided for data therein, its use, or its interpretation.

Created By: Felix A. Eligio



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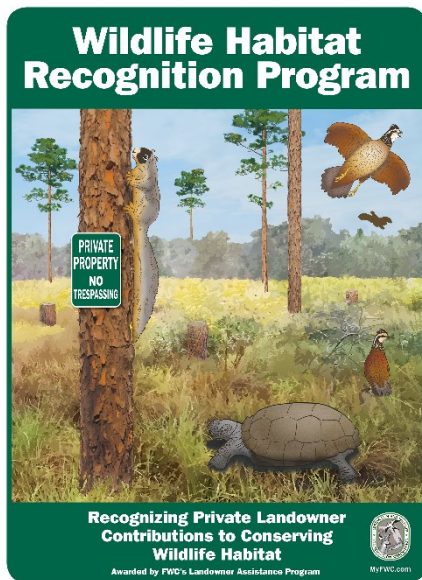
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Ad Platt

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Assistance and Recognition Programs for Landowners



Private lands play a critically important role in the fate of Florida's vast wildlife resources. The efforts of private landowners to manage their land to benefit wildlife by providing food, water, shelter, and space will help ensure that future generations have the opportunity to experience and enjoy wildlife as much as, or even more than, we do today. To show appreciation for the accomplishments by landowners to conserve our state's wildlife, FWC's Landowner Assistance Program (LAP) created the **Wildlife Habitat Recognition Program**. This program honors landowners who have satisfactorily completed habitat management practices that benefit wildlife and/or their habitat by awarding them with a sign to display on their property and a certificate recognizing their habitat restoration efforts. For more information, please contact your region's FWC LAP Coordinator on the contact page.



The **Forest Stewardship Program**, developed by state forestry agencies, like the Florida Forest Service, provides educational and technical assistance for private landowners. Forestry and natural resource professionals cooperate to help private forest landowners develop and implement a plan designed to increase the economic value of their forestland while maintaining its wildlife habitat value and environmental integrity for future generations. Landowners who demonstrate good forest stewardship are recognized with a Stewardship Forest sign. For more information, please contact your Florida Forest Service county forester, consultant, or FWC LAP biologist. See the contact page.

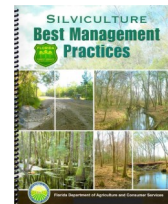


The **American Tree Farm System (ATFS)** Standards of Sustainability guide and ensure that forest benefits are enhanced and available for future generations. Landowners can enroll and be certified in the ATFS to improve access to sustainable forest product markets and educational opportunities. The Florida Tree Farm Program is a nonprofit organization and state affiliate of the ATFS that promotes sustainable forest management and educational outreach to private forest landowners. For more information, please contact your Florida Forest Service county forester, consultant, or FWC LAP biologist. See the contact page.



Florida Forest Service

Silviculture Best Management Practices



SILVICULTURE BEST MANAGEMENT PRACTICES (BMPs)

Silviculture BMPs are the minimum standards necessary to protect our state's waterbodies and wetlands from the degradation and sedimentation that can sometimes occur because of erosion during and immediately following recent forestry operations. Silviculture BMPs should be applied on all bonafide ongoing forestry operations, especially those adjacent to waterbodies and wetlands, and may be enforced by federal, state, and local authorities through reference of regulatory statute or rule.

SILVICULTURE BMP COURTESY CHECKS

Silviculture BMP courtesy checks are available to give landowners, land managers, and loggers a "report card" on Silviculture BMP implementation for recent or ongoing forestry operations. This helps with future management planning as well as evaluating the performance of contractors on your property.

SILVICULTURE BMP SITE ASSESSMENTS

On-the-ground Silviculture BMP site assessments are available to discuss which Silviculture BMPs will apply to planned operations on a specific site. This helps with harvest plan development, road layout, mitigation of existing problem areas, etc.

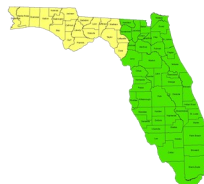
SILVICULTURE BMP NOTICE OF INTENT

The Silviculture BMP Notice of Intent (Rule 5I-6 F.A.C.) is a voluntary one-time pledge that a landowner signs to indicate his or her intention to follow Silviculture BMPs on their property. Once a landowner has signed the Notice of Intent, he or she will become eligible to receive a *presumption of compliance* with state water quality standards during future bonafide ongoing forestry operations. This is very important if the landowner's property falls within an area covered by a Florida Department of Environmental Protection Basin Management Action Plan for impaired waters.

ADDITIONAL SERVICES

For information on the services listed above or any other services provided by the Florida Forest Service's Hydrology Section please contact your local BMP Forester or visit www.fdacs.gov/bmps.

Vacant
Panhandle Area
Contact Robin Holland



Robin Holland
Peninsula Area
Robin.Holland@FDACS.gov
(352) 732-1781



Florida Department of Agriculture and Consumer Services



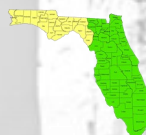
Forestry Wildlife Best Management Practices



- Forestry Wildlife Best Management Practices for State Imperiled Species (WBMPs) were adopted into Florida Administrative Code (Rule 5I-8) on October 21, 2014.
- WBMPs were developed through a partnership between the Florida Department of Agriculture and Consumer Services' Florida Forest Service and the Florida Fish and Wildlife Conservation Commission (FWC).
- WBMPs are **voluntary** practices designed as a practical approach for avoiding and minimizing the loss of **State Imperiled Species** due to silviculture operations.
- WBMP practices address the 16 State Imperiled Species which are considered to be potentially vulnerable to silviculture operations including ten aquatic species, two burrowing animals, and four nesting birds.
- WBMPs are designed to supplement the existing water quality-based Silviculture BMPs which already provide many valuable benefits to the conservation and management of fish and wildlife in Florida.
- Landowners and other forestry resource professionals can enroll in the voluntary program by completing a WBMP Notice of Intent. Those who do not wish to enroll will continue to be subject to all current laws and regulations regarding State Imperiled Species.
- Once enrolled, applicants who **properly implement** WBMPs will no longer be required to obtain a permit authorizing the incidental take of State Imperiled Species during bonafide ongoing forestry operations. In addition, they will not be subject to any fines or penalties associated with an incidental take of the State Imperiled Species covered by the WBMP Manual.
- WBMPs are not designed to facilitate wildlife habitat restoration or species recovery and expansion. Also, they do not address any Federally Listed Species. For information on Federally Listed Species, refer to FWC's online "Florida Wildlife Conservation Guide."
- To obtain more information or a copy of the WBMP Manual and Notice of Intent, contact your local Florida Forest Service BMP Forester or visit www.fdacs.gov/bmps.

Florida Forest Service BMP Foresters

Vacant
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Got Invasives? Get Assistance.

**Invasive species problem?
Find assistance at FloridalInvasives.org.**

Have an invasive species problem on your property? Use FloridalInvasives.org to find private land owner assistance programs and connect with your local Cooperative Invasive Species Management Area (CISMA).

FloridalInvasives.org is hosted by the Florida Invasive Species Partnership (FISP) with the goal of connecting landowners with information and resources to help in their fight against problematic species. This resource takes the guesswork out of finding the agencies or organizations offering assistance and will direct you to available programs.

Why was FloridalInvasives.org developed?

Public and private land managers have identified the high ecological and economic cost of invasive species as a statewide problem in Florida. FISP is a collaboration of federal, state, and local agencies, along with nongovernment organizations, formed to link efforts at preventing and controlling infestations of invasive species across agency and property boundaries. FISP has developed and maintains an online Landowner Assistance page of available programs to make it easier for landowners and land managers to find them.

How does FloridalInvasives.org help you?

Each year, multiple agencies and organizations provide cost-share programs, grants, and/or technical assistance to help landowners and land managers with various agriculture or natural resource management practices. Invasive species management is an important practice covered within many of these programs.

[The Landowner Assistance page](http://FloridalInvasives.org) at FloridalInvasives.org provides the information to connect you directly with available assistance programs all in one location for your convenience.

FloridalInvasives.org also serves to connect you with your regional CISMA, a local network of agency, non-profit, and private land managers actively working on invasive species issues. CISMAs address prevention, early detection and rapid response, monitoring, management, and education and awareness on the local level and are a great resource for information and technical assistance.

Go to FloridalInvasives.org to find out more.

Species Shown from top to bottom:

Mexican Petunia, mimosa, Boston Fern, cogongrass, camphor



Think Locally. Act Neighborly
invasive species know no boundaries!



Type here!

5

Steps to Assistance

How to Get Assistance from NRCS for Farms, Ranches and Forests

1 PLANNING

Visit your local NRCS field office to discuss your goals and work with staff on a conservation plan.

2 APPLICATION

With the help of NRCS, complete an application for financial assistance programs.

3 ELIGIBILITY

Find out if you're eligible for NRCS' variety of financial assistance programs.

4 RANKING

NRCS ranks applications according to local resource concerns.

5 IMPLEMENTING

Put conservation to work by signing a contract and implementing conservation practices.

Get Started with NRCS

Do you farm or ranch and want to make improvements to the land that you own or lease?

Natural Resources Conservation Service offers technical and financial assistance to help farmers, ranchers and forest landowners.

1 Planning

To get started with NRCS, we recommend you stop by your local NRCS field office.

We'll discuss your vision for your land.

NRCS provides landowners with free technical assistance, or advice, for their land. Common technical assistance includes: resource assessment, practice design and resource monitoring. Your conservation planner will help you determine if financial assistance is right for you.

2 Application

We'll walk you through the application process. To get started on applying for financial assistance, we'll work with you:

- To fill out an AD 1026, which ensures a conservation plan is in place before lands with highly erodible soils are farmed. It also ensures that identified wetland areas are protected.
- To meet other eligibility certifications.

Once complete, we'll work with you on the application, or CPA 1200.

Applications for most programs are accepted on a continuous basis, but they're considered for funding in different ranking periods. Be sure to ask your local NRCS district conservationist about the deadline for the ranking period to ensure you turn in your application in time.

3 Eligibility

As part of the application process, we'll check to see if you are eligible.

To do this, you'll need to bring:

- An official tax ID (Social Security number or an employer ID)
- A property deed or lease agreement to show you have control of the property; and
- A farm tract number.

If you don't have a farm tract number, you can get one from USDA's Farm Service Agency. Typically, the local FSA office is located in the same building as the local NRCS office. You only need a farm tract number if you're interested in financial assistance.

4 Ranking

NRCS will take a look at the applications and rank them

according to local resource concerns, the amount of conservation benefits the work will provide and the needs of applicants.

5 Implementing

If you're selected, you can choose whether to sign the contract for the work to be done.

Once you sign the contract, you'll be provided standards and specifications for completing the practice or practices, and then you will have a specified amount of time to implement. Once the work is implemented and inspected, you'll be paid the rate of compensation for the work if it meets NRCS standards and specifications.

USDA is an equal opportunity provider and employer.

To find out more, go to: www.nrcs.usda.gov/GetStarted

FSA DOCUMENTS NEEDED FOR CUSTOMERS APPLYING FOR NRCS PROGRAMS

If you have not worked with the USDA before you will need to make an appointment with the Farm Service Agency (FSA) at your local USDA Service Center. To find your local office, visit www.farmers.gov/working-with-us/service-center-locator.

What to bring with you

Bring the following documentation:

- Proof of your control of the land you wish to enroll by providing a lease or a copy of the deed to the property.
- Parcel ID number from the County Property Appraiser site for locating the farm.
- Provide your Social Security or Employer Identification Number and contact information.
- For entities, partnerships, or joint operations you will need to provide information documenting those individuals with authority to represent the business.

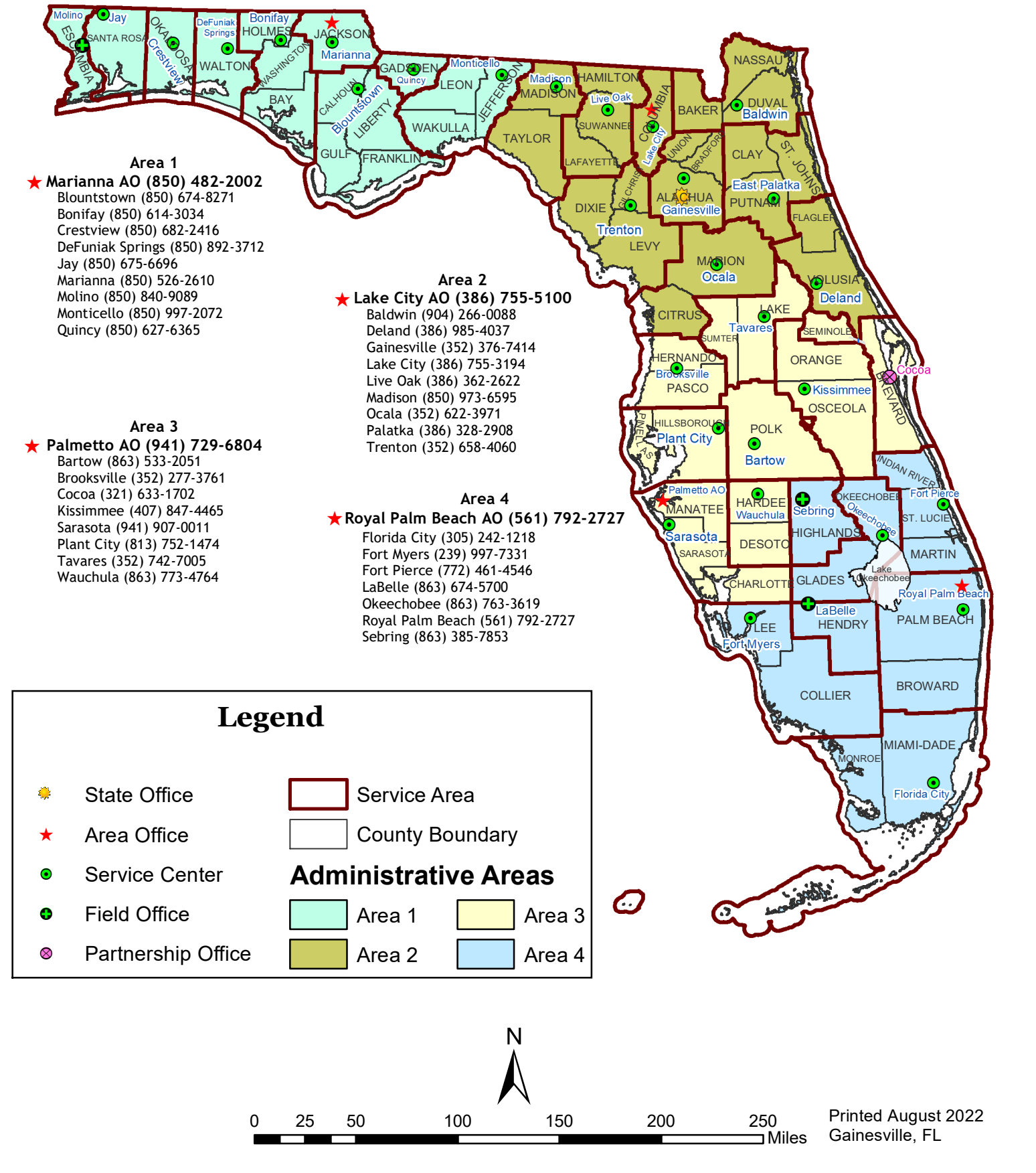
What you will need to complete for the Farm Service Agency

- **AD-2047 For Individuals and Entities – Form is required for all members of the entity.**
- **CCC-941 - Adjusted Gross Income (AGI) – Form is required for entity and all members of the entity.**
- **CCC-901 and CCC- 902 - Members' Information for entities and joint operations.**
- **AD-1026 - Highly Erodible Land Conservation (HELC) and Wetland Conservation (WC) Certification – Form is required for all individuals, LLC and all its members, corporations and all its members with more than 20% shares.**

It takes time for the paperwork to be processed and additional information may be needed. Please start this process early in order to insure you are eligible prior to any program sign-up cut-off dates. If you apply for a USDA program and the system does not show you or your entity as eligible, your application will not be processed or funded.

USDA-NRCS ADMINISTRATIVE AREAS & LOCAL OFFICES

FLORIDA



Prepare Your Forest Property for Hurricane Season¹

Chris Demers and Michael Andreu²

Hurricane season is June 1 through November 30. As we have learned in recent years, powerful hurricanes can make their way inland and do considerable damage to forest lands and agricultural enterprises. It's never too early to start planning for a hurricane that could negatively impact your forest land. While there is no way to fully prepare in advance for a direct hit from a Category 4 or 5 hurricane, there are some strategies to make your property resilient and steps you can take to recover from a storm more quickly.

Connect with Professionals

Don't go it alone. There are resources and services available to help with your land management activities, and these connections can give you a leg up in the event of a hurricane or other natural disaster. Assistance is available from professional foresters, The University of Florida Land Steward Program, Florida Forest Service, USDA Natural Resources Conservation Service and Farm Service Agency.

In particular, get to know your UF/IFAS county Extension agent (<https://ifas.ufl.edu/maps/>) and Florida Forest Service county forester (<https://www.fdacs.gov/Forest-Wildfire/Our-Forests/Field-Operations/County-Foresters/Find-a-County-Forester>). They can provide valuable management assistance and will be knowledgeable about local recovery efforts, workshops, and available assistance after a hurricane. The University of Florida's Land Steward Program website maintains an updated calendar with educational programs for individuals interested in learning

about a wide range of topics associated with land ownership and management. (<https://programs.ifas.ufl.edu/florida-land-steward/>)

Consider enrolling in assistance programs through USDA Natural Resources Conservation Service, <https://www.nrcs.usda.gov/wps/portal/nrcs/site/fl/home/> (e.g., Environmental Quality Incentives Program [EQIP]), and/or Farm Service Agency, <https://www.fsa.usda.gov/state-offices/Florida/index> (e.g., Conservation Reserve Program [CRP]) to help you reach your land management goals. Having your land or farm enrolled in such a program may help you get connected to recovery assistance programs if they are available after a natural disaster.

Work with a Professional Forester and Get a Forest Inventory

Consulting foresters provide technical assistance in all phases of forest management for a fee. Their services include management plan preparation, forest inventory, timber sales, thinning, tree planting, herbicide and fertilizer application, prescribed burning, and more. The expertise, guidance, and connections of a forester can be invaluable in the recovery process after the storm. An inventory completed within the last 5 years will provide an estimate of the number and types of trees, their size, and an estimate of the value of the standing timber. This information may be important documentation if financial assistance is available after a hurricane or other natural disaster. Note that the casualty loss deduction for tax purposes is limited to the

1. This document is FOR367, one of a series of the School of Forest, Fisheries, and Geomatics Sciences, UF/IFAS Extension. Original publication date May 2021. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication.
2. Chris Demers, Extension program manager, UF/IFAS School of Forest, Fisheries, and Geomatics Sciences; and Michael Andreu, associate professor, UF/IFAS School of Forest, Fisheries, and Geomatics Sciences

lesser of the basis (basically, the amount invested in the stand) or the fair market value (Wang 2018). To learn more about timber inventory review this document:

Timber Inventory: A Primer for Landowners <https://edis.ifas.ufl.edu/fr426>.

For tips on selecting a consulting forester, see <https://edis.ifas.ufl.edu/fr125>.

Review Your Road Network with a Forester and Road Construction Contractor

Intense rainfall and flooding during storms can wash out poorly constructed roads and blow out culverts. Florida Forest Service foresters are available at no cost to review your roads, stream crosses, and fire plow lines before a storm hits to ensure soil and water protection and compliance with Florida's Silviculture Best Management Practices (BMPs). For more information on forestry BMPs, see <https://www.fdacs.gov/Forest-Wildfire/Silviculture-Best-Management-Practices>.

Also consider surveying your roadside and right-of-way for hazard trees or those likely to fall across your roads. Ensuring you have access to all parts of your property will increase the likelihood that salvage operations can take place on your property after a storm. While canopy-covered roads can be aesthetically pleasing, consider “daylighting” your roadbeds to help them dry quickly after heavy rain. Daylighting refers to removing some trees along the sides of roads to allow more sunlight to dry the roadbed.

Become Familiar with the Local Timber Industry

After a storm that causes widespread damage in an area, everyone is trying to line up salvage crews. It is during these times of crisis that personal relationships will help get your calls answered and logging crews deployed quickly. The Florida Forestry Association provides opportunities to meet consultants, loggers, contractors, agency representatives, and others involved in the timber industry in Florida. See <http://floridaforest.org/> to learn more and get involved.

Connect with Other Landowners

Knowing your fellow landowners and neighbors is always helpful, but in the event of a disaster being connected can really help. It is easier to get salvage done on smaller

properties or those with less timber if there are groups of landowners near each other to attract timber buyers. Having a network can also help with other management activities after the salvage harvest has been completed. Consider joining a landowner cooperative or a local Rotary club, or just get to know people who live around your property.

Pre-Storm Preparation Tips

Shut down thinning operations that are underway, or scheduled to begin, when a hurricane is projected to make landfall in your area—Thinning operations that open the stand structure can leave the stand more vulnerable to windthrow and damage if the trees have not had time to respond to the new open conditions.

Do some pruning—Prune trees regularly, especially those over structures and fences, to reduce broken or dead limbs that could cause damage.

Fill the tanks—Top off tanks and containers containing drinking water, gas, diesel, propane, chain saw fuel, and other materials to ensure availability during post-storm recovery.

Keep culverts and ditches clean—Open drainages ensure excess storm water doesn't back up and cause flooding.

Check emergency equipment—Make sure that all emergency equipment, including generators, chain saws, air compressors, and other tools, is on hand and in good working condition.

Check communications equipment—Have cell phone chargers in all vehicles and charged backup cell phone batteries. If you have them, ensure that hand-held radios are charged and in good working order.

Secure hazardous materials—Ensure that hazardous materials are stored safely and shut down gasoline pumps before the storm.

Lock your gates—Keeping your gates locked will prevent unauthorized individuals from damaging wet roads and reduce liability.

Take photos—Take photos of your stands and/or fields before the storm so you can have a record of the condition of these areas before damage occurs. This could help with records needed for insurance claims and/or government assistance programs.

Time for harvest?—If in line with your management plan and objectives, consider selling your mature timber stands in a lump sum sale (vs. pay as cut) before hurricane season to capture the full market value of the products you have. A salvage sale of a storm-damaged stand will only yield 10% to 15% of the normal market value. See “Steps to Marketing Timber,” <https://edis.ifas.ufl.edu/fr130>, for important considerations for selling your timber. Whether you are working with a consultant to market your timber or doing it yourself, we recommend doing business with qualified, trained loggers that are certified in the Master Logger Program. The Florida Forestry Association provides an online tool to help you find a certified Master Logger in your county at <http://floridaforest.org/programs/master-logger/>.

Zekri, M., R. Rouse, and J. Crane. 2017. “Hurricane Preparedness for Citrus Groves.” HS-804. Gainesville: University of Florida Institute of Food and Agricultural Sciences. Available online: <https://edis.ifas.ufl.edu/ch178>

References

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Barlow, B., M. Andreu, C. Asaro, A. Maggard, and J. Auel. [In review]. Pine Forest Landowners Guide. In “Hurricane Preparation and Recovery in the Southeastern United States.” Gen. Tech. Rep. SRS-xxx. Edited by S. McNulty, M. Gavazzi, and K. Matchett. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station.

Demers, C., and A. Long. 2019. “Selecting a Consulting Forester.” SS-FOR-16. Gainesville: University of Florida Institute of Food and Agricultural Sciences. Available online: <https://edis.ifas.ufl.edu/fr125>

Demers, C., and A. Long. 2019. “Steps to Marketing Timber.” SS-FOR-17. Gainesville: University of Florida Institute of Food and Agricultural Sciences. Available online: <https://edis.ifas.ufl.edu/fr130>

Dooner, J., and M. Andreu. 2020. “Timber Inventory: a Primer for Landowners.” FOR 357. Gainesville: University of Florida Institute of Food and Agricultural Sciences. Available online: <https://edis.ifas.ufl.edu/fr426>

Wang, L. 2018. “Income Tax Deduction on Timber and Landscape Tree Loss from Casualty.” USDA Forest Service. Available online: https://www.fs.fed.us/spf/coop/library/tax_deduction_loss_casualty.pdf

Planting Southern Pines in Florida

Florida landowners have contributed vastly to the Southeast's planting of pines over many decades. Understanding the factors that affect pine seedling quality and survival will assure a more successful forest plantation, whether objectives focus on timber production, recreation, wildlife habitat, water quality protection, etc.

Seven pine species (*Pinus* spp.) are considered to be native to Florida. These species are loblolly pine (*P. taeda*), longleaf pine (*P. palustris*), shortleaf pine (*P. echinata*), slash pine (*P. elliottii*), sand pine (*P. clausa*), spruce pine (*P. glabra*), and pond pine (*P. serotina*), and each varies in the site conditions where it grows as well as in its commercial utility and availability.

The publication below discusses the importance of site selection and soils as they relate to each species, the landowners' objectives, and their target markets. This publication is to be used as a guide to facilitate selection of appropriate pine species and offers guidance on best practices for handling seedlings throughout all stages of tree planting.

Planting Southern Pines in Florida:

<https://edis.ifas.ufl.edu/publication/FR456>

Longleaf pine is a great choice for landowners interested in using prescribed fire to manage forests to accommodate multiple benefits such as wildlife habitat and timber. It's also a great choice for pine straw production on upland sites.

Longleaf Pine Regeneration: <https://edis.ifas.ufl.edu/fr064>

Landowners have many options in regenerating forest stands with genetically improved pine stock. Learn about genetically improved pines and see if they might be a good fit for your site and objectives.

Genetically Improved Pines for Reforesting Florida's Timberlands:

<https://edis.ifas.ufl.edu/fr007>

Bark Beetles affecting Southern Pines

The **black turpentine beetle**, *Dendroctonus terebrans* (Olivier), or BTB, is one of five common species of pine bark beetles in the southeastern United States. Black turpentine beetles bore into the inner bark of stressed or injured pines (*Pinus* spp.), where they breed and feed on phloem tissue. Adults are strongly attracted to volatile pine odors and readily breed in fresh stumps. Attacks on standing trees usually occur on the lower 1 to 2 m of the trunk or on large roots. Light attacks may kill only localized sections of phloem tissue, but numerous attacks per stem result in tree mortality. Infestations commonly occur in pine stands affected by recent logging activity (e.g., thinning), fire, mechanical injury, storm damage, climatic stress, or competition

Ips engraver beetles: Like other pine bark beetles, Ips pine engravers live predominantly in the inner bark, where they breed and feed on phloem tissue. Pines colonized by Ips engravers, if not already dead, are killed by adult and larval feeding in the phloem (which can girdle the tree) and by colonization of the sapwood with blue-stain fungi that the beetles introduce. The blue-stain fungi spread into the xylem and block water flow, serving to hasten tree mortality.

The **southern pine beetle (SPB)**, *Dendroctonus frontalis* Zimmermann, has been the most economically important forest insect in the pine timber industry in the southern United States. While the spectacular outbreaks have captured attention, equally interesting are the long periods of beetle absence between outbreaks, and the factors that maintain its low population.

Recent observations suggest that in natural conditions the beetle is a rare insect and rarely responds with an outbreak unless silvicultural practices create a suitable environment: overstocked, even-aged, large pine stands. Fortunately, **silvicultural practices leading to resistant stands are now commonplace and principally include thinning (either mechanical or by fire) and rapid detection and removal of infestations.**

See these UF/IFAS Extension publications for more information on these insects:

Black turpentine beetle: <https://edis.ifas.ufl.edu/publication/IN636>

Ips engraver beetles: <https://edis.ifas.ufl.edu/publication/IN701>

Southern pine beetle: <https://edis.ifas.ufl.edu/publication/IN333>

Thinning Southern Pines

Many landowners plant pines with the intention of harvesting them at some point in the future. When pulpwood markets are favorable, a complete stand harvest within 15 to 20 years is possible and may bring an acceptable return. However, longer rotations can bring higher financial returns on larger diameter trees if landowners are willing to begin thinning their pine stands when trees are 10 to 15 years old. Pine sawtimber, poles, and/or plylogs are most often the forest products with the highest value and, if economic returns are a priority, the most desirable products to come out of a timber stand. Thinning is a partial tree harvest in an immature stand to maintain or accelerate diameter growth of the remaining trees. If it is done properly, thinning can bring substantially higher revenues when trees are harvested at 25 to 40 or more years of age. Trees will respond to thinning best if they are thinned before 16 or 17 years of age.

The increased diameter growth after thinning results from the greater availability of light, water, and nutrients to the remaining trees. Ideally, the best and biggest trees should be retained to assure the most rapid increase in timber value. For best results, thinning should favor the tallest, best-formed trees over those that are overtopped, crooked, forked, diseased or otherwise undesirable. Timberland owners who wish to harvest high-value sawtimber-, plylog-, or pole-sized products at the end of the rotation should consider thinning a necessity.

For the landowner, thinning can bring

1. increased return on investment from the sale of higher-value forest products;
2. periodic income from the multiple harvests that lead to those higher-value forest products;
3. improved access for equipment, people, and wildlife;
4. a healthy, vigorous forest with less risk of insect infestation, destructive fire, and wind damage; and
5. enhanced wildlife habitat with increased herbaceous ground cover

Thinning Southern Pines - A Key to Greater Returns

<http://edis.ifas.ufl.edu/fr159>

Marking First Thinnings in Pine Plantations: Potential for Increased Economic Returns

<http://edis.ifas.ufl.edu/fr410>

Prescribed Fire

Prescribed burning is the carefully planned and directed use of fire to achieve land-management goals. This tool is used for to achieve a variety of objectives, including restoring fire-dependent ecosystems, enhancing forage for cattle, improving wildlife habitat, preparing sites for reforestation, and reducing hazardous fuel loads. Prescribed burns achieve many benefits for the environment and for people, but they have the potential to impact the public via smoke. Smoke is a mixture of water vapor, carbon dioxide and combustion products, including tiny particles of organic matter.

The potential for harm from smoke can be reduced with the use of smoke-management techniques. The movement of smoke plumes can be modeled with maps or computer programs long before anyone strikes a match. This allows land managers to avoid impacts on smoke-sensitive areas by burning under weather conditions that minimize smoke problems. As a result of pre-planning and careful smoke management, smoke impacts from prescribed fires are generally far less detrimental than smoke impacts from a wildfire burning over the same area.

Intended for land managers and prescribed burners, this publication provides some background information on air quality, effect of smoke on human health and safety, and strategies that can be used to protect air quality while still gleaning the benefits of prescribed burning.

Where there's Fire there's Smoke: Air Quality and Prescribed Fire in Florida:
<https://edis.ifas.ufl.edu/publication/FR058>

Marketing Your Timber

Marketing timber involves selling forest products in a competitive market to get the best return on your investment or to meet other objectives. This process requires some planning and pre-sale preparation before you advertise or talk to prospective buyers. Timber sales should be approached in a business-like manner to ensure that both the seller and buyer are satisfied with the results. Following are some important guidelines to follow when planning and conducting a timber sale.

Start with Your Objectives and Financial Situation

Timber is sold for many reasons. The most obvious reason is to convert the timber asset into money. However, the decision to sell timber should be based on the objectives you have for your land. You may harvest trees in order to regenerate or improve the future value of a stand, reduce stand density (thinning), salvage damaged timber, maximize profits, improve wildlife habitat, or develop recreational opportunities. These types of management decisions should start with a written management plan, which outlines your objectives, identifies the steps necessary to achieve them, provides a timetable to guide management activities, and is the first step to a successful harvest.

Work with a Forester

A forester can accurately estimate the number and volume of trees by product class and then appraise the current market value of the timber you want to sell. This is extremely important because the price of different product classes can vary significantly and will dictate in part how much the buyer will pay for the timber. This information will be worth the price of the inventory when it is time to sell.

Steps to Marketing Timber: <https://edis.ifas.ufl.edu/fr130>

Selecting a Consulting Forester: <http://edis.ifas.ufl.edu/fr125>

Enhancing Habitat for Wildlife

Southern forests and ranges have the potential to provide productive wildlife habitat for a variety of species. Landowners interested in promoting wildlife must recognize that each wildlife species requires a specific set of habitat conditions. Animals will frequent your property depending on the condition, type, and variety of food and cover that are present.

Timber, livestock, and crop production objectives can be compatible with enhancement of wildlife habitat and diversity. However, some tradeoffs may be necessary because strategies that maximize commodity outputs are typically not the same as strategies that will provide habitat for a wide variety of wildlife species. For this reason, it is important to prioritize your objectives and decide where wildlife ranks relative to the commodities you produce in your land use planning.

Establishing and Maintaining Wildlife Food Sources:

<http://edis.ifas.ufl.edu/fr062>

Making the Most of Your Mast: <https://edis.ifas.ufl.edu/fr036>

Managing Oaks to Produce Food for Wildlife: <http://edis.ifas.ufl.edu/uw293>

Providing Wildlife Cover: <https://edis.ifas.ufl.edu/fr124>

Cogongrass Control

Cogongrass (*Imperata cylindrical*) is a warm-season perennial grass species found throughout tropical and sub-tropical regions of the world. Native to Southeast Asia, cogongrass is an aggressive invasive plant that has spread to all continents except Antarctica and is considered among the worst problematic weeds in the world. In the United States, it is naturalized in Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, and Oregon. It was first accidentally introduced in the United States near Mobile Alabama in 1912 and subsequently intentionally introduced from the Philippines into Mississippi as a forage crop in 1921. Early regional introductions contributed to the establishment of cogongrass in the Southeast. Cogongrass is regulated as a federal noxious weed.

Control of cogongrass is difficult because it spreads in two ways: by extensive rhizome systems and by seeds. Cogongrass rhizomes can comprise more than 60% of the total plant biomass. The rhizomes support rapid re-growth following mowing or burning.

Control in Pine Forests

Chemical control is required. Glyphosate, imazapyr, and combinations of the two herbicides are most effective. Eradication requires multiple applications. In many instances, selective control of cogongrass without damage to desired vegetation is not possible, but where the canopy of shrubs and trees is above that of cogongrass, glyphosate sprays may be directed to cogongrass in the understory with fair selectivity to the taller vegetation. Imazapyr, however, used in the quantities and at the application frequencies necessary to eradicate cogongrass, will kill hardwood trees and shrubs.

Control in Hardwood Forests

To avoid injury to hardwood trees or shrubs in mixed pine-hardwood stands, glyphosate alone is commonly used at 3 to 4 lb ai/acre (3 to 4 quarts per acre for many common 4 lb ai/gallon product formulations), and selectivity is obtained by spraying cogongrass in the understory and avoiding any spray contact near the crowns of trees and shrubs. Imazapyr will kill hardwood trees and shrubs.

Controlling Invasive Plants in North Florida Forests (various species including cogongrass): <https://edis.ifas.ufl.edu/FR133>

Biology and Control of Cogongrass in Southern Forests: <https://edis.ifas.ufl.edu/fr411>

Cogongrass Biology, Ecology, and Management in Florida Grazing Lands:
<https://edis.ifas.ufl.edu/WG202>

- [Planting Southern Pines in Florida](#)
- [Assessment and Management of Hurricane Damaged Timberland](#)
- [Florida's Forest Stewardship Program: An Opportunity to Manage Your Land for Now and the Future](#)
- [Forest Resource Information on the Internet: Connecting to Today's Online Resources](#)
- [Genetically Improved Pines for Reforesting Florida's Timberlands](#)
- [Improving, Restoring, and Managing Natural Resources on Rural Properties in Florida: Sources of Financial Assistance](#)
- [Improving, Restoring, and Managing Wildlife Habitat in Florida: Sources of Technical Assistance for Rural Landowners](#)
- [Longleaf Pine Regeneration](#)
- [Making the Most of Your Mast](#)
- [Marking First Thinnings in Pine Plantations: Potential for Increased Economic Returns](#)
- [Opportunities for Uneven-Aged Management in Second Growth Longleaf Pine Stands in Florida](#)
- [The Optimal Forest Management of an Even-Aged Stand: The Biological Rotation versus the Land Expectation Value](#)
- [Ownership Succession: Plan Now for the Future of Your Land](#)
- [Prepare Your Forest Property for Hurricane Season](#)
- [Selecting a Consulting Forester](#)
- [Steps to Marketing Timber](#)
- [Stewardship Ecosystem Services Study Series: Assessing Forest Water Yield and Regulation Ecosystem Services in the Lower Suwannee River Watershed, Florida](#)
- [Thinning Southern Pines—A Key to Greater Returns](#)
- [What Is in a Natural Resource Management Plan?](#)
- [What to Expect in a Forest Inventory](#)

THANKS

2023 Florida Land Steward Program Supporters

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Florida Tree Farm Program



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