FLORIDA LAND STEWARD

A Quarterly Newsletter for Florida Landowners and Resource Professionals

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IN THIS ISSUE

Ecosystem Services Provided by Forest Stewardship Lands in Florida

By Dr. Francisco Escobedo, Dr. Damian Adams and Chris Demers, UF/IFAS School of Forest Resources and Conservation

Over the last year many of you receiving the Florida Land Steward Newsletter participated in a survey about ecosystem services. This survey was part of a larger research project, conducted by faculty and grad students at the University of Florida, to quantify the economic values of ecosystem services provided by lands enrolled in Florida's Forest Stewardship Program.

For those who may not be familiar with this program, Florida's Forest Stewardship Program (FSP) is a voluntary program, administered by the Florida Forest Service, which provides technical assistance to private landowners and encourages them to manage their forest land for multiple uses such as timber production, wildlife habitat, soil and water conservation, recreational opportunities, and forage for livestock grazing. By participating in the FSP and implementing recommended forest management practices, many landowners are providing a long-term and consistent supply of ecosystem services, in addition to income from timber production and other enterprises.

The Stewardship Ecosystem Services Survey (SESS) assessed several key ecosystem services provided by lands enrolled in the FSP, economic values of these services, and attitudes and knowledge of forest landowners and land management agency personnel about ecosystem services. The SESS defines ecosystem services as *the components of forests that are directly enjoyed, consumed, or used to produce specific, measurable human benefits*.

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Photo Credit: Chris Demers

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Ecosystem Services...continued from previous page

This project assessed and quantified the economic values of four ecosystem services provided by Florida's forested lands including nutrient retention and water quality, carbon stocks, timber production, and wildlife conservation. The estimates of these values are based on the best available data, current models and geospatial tools, and conservative assumptions.

For wildlife, FSP lands are providing excellent service and values. Landowners managing their forests for multiple values are protecting and/or enhancing habitat for nearly 50 threatened, endangered or otherwise rare species in Florida. In fact, the total economic value of avoided population losses of just 5 key species (bald eagle, red-cockaded woodpecker, Florida black bear, gopher tortoise, and Florida scrub jay) expected to result from forest management practices encouraged by the FSP is approximately $54 million in present value.

An analysis of willingness-to-pay (WTP) studies was used to quantify the economic values of the benefits of proper forest management on nutrient retention and water quality. For conservation programs, such as the FSP, that protect water quality, annual household WTP in Florida ranged from $17 million to $335 million. This WTP depended on specific program characteristics, and was lower for programs that included land acquisitions and conservation easements than for voluntary programs like the FSP. Other studies in Florida have found similarly high values associated with water- and wildlife-related natural resource use. For example, state residents and visitors spend an estimated $7.8 billion per year statewide on fishing, hunting, and wildlife watching and visitors to state parks are estimated to be willing to pay approximately $89 million per year to control invasive plants that negatively impact ecosystem services.

Photo Credit: Chris Demers

Photo Credit: Martha Thomas

The study also compared the ecosystem services provided by FSP lands with those provided by adjacent private and public forest lands. Using comparative analyses of USDA Forest Service inventory data directly from FSP and non-FSP forests, it was found that, in northeastern and central Florida, net timber volume was greater on FSP forests than on adjacent non-FSP forests. In northern Florida, average total carbon stocks on FSP forests were greater than in immediately adjacent forests not enrolled in FSP. In the Lower Suwannee Watershed, nitrogen retention, necessary for maintaining water quality, was generally higher in sub-watersheds with more FSP-enrolled forest area, as compared to sub-watersheds with no FSP forests.

Altogether, a typical acre of forest land enrolled in the FSP provides ecosystem services with an estimated present value of $5,030 per acre. These results are consistent with the findings of a similar study in Georgia, which found that a typical acre of forest land generates ecosystem services (i.e., gas and climate regulation, water regulation/supply, pollination, and habitat/refugia) worth $264 to $13,442 per year. For the 437,800 acres enrolled in FSP during 2010, we estimate that the present value of ecosystem services from these lands is more than $2.07 billion. In relative terms, and based on per acre discounted cash flows, water provides the largest share of the value (66%), followed by carbon stocks (25%), timber production (7%) and wildlife (2%).

The survey of landowners and agency personnel showed that private landowners already appreciate many of the ecosystem services provided by their lands, such as recreation, scenery, water quality, and timber. However, a majority of private landowners surveyed are more likely to manage their lands for timber, wildlife or other objectives and land managers do not explicitly manage for specific ecosystem services.

The ecosystem services and economic values reported in this study are only a part of the valuation picture for FSP lands. These results should be viewed as a conservative estimate of ecosystem provision and economic values from these lands, but they can be used to better inform policymakers, the public, and land managers about the potential value of forest-based ecosystem services in Florida and the economic loss associated with conversion of working forests to other land uses.

Reference
Escobedo, F. and N. Timilsina (ed.). 2012. *Final Report of the Stewardship Ecosystem Services Survey Project.* Gainesville, FL: University of Florida.

Full report available at http://www.sfrc.ufl.edu/CFEOR/

Smartphone Applications for Landowners

By Sam Baraoidan, Extension Assistant, University of Florida

As more land managers and landowners are using tablet computers and smartphones, many organizations and companies are offering applications, or "apps," that provide information about forestry, wildlife, and land management. Some of these have proven to be extremely helpful to forest landowners and managers. The following are some of the most highly rated apps that may assist forest landowners in Florida and throughout the Southeast.

SAF Forestry Mobile App

The Society of American Foresters offers an app to assist with many common forestry calculations, including basal area, relative spacing, acres/hectare conversions, and many others. The app costs $4.99 for SAF members and $9.99 for nonmembers, and is available for both IPhone and Android users. Use this link to learn more: https://www.safnet.org/commerce/f3order.cfm

Tree Mitigation Schedule Mobile App

This application, available for IPad, IPhone, and Android, records information about tree removal and replacement. Details include tree ID numbers, location, species, and diameter, as well as a calculation of both removal and save costs. The app is free, and can be accessed at: http://www.gocanvas.com/mobile-forms-apps/329-Tree-Mitigation-Schedule

Forages of Florida App

UF/IFAS Extension: Solutions for Your Life has developed the Forages of Florida app, which presents information about grasses, legumes, and native forages of Florida. Details available on over 50 species include cultivars, growth habit, and nutritive value, among others. This free app is offered for Android users only, although the Forages of Florida website is accessible from other devices. Download it at: https://play.google.com/store/apps/details?id=com.agronomy.foragesmobile &feature=search_result

Leafsnap

Leafsnap is a collaborative effort between Columbia University, University of Maryland, and the Smithsonian Institution. This free application for IPhone and IPad uses visual recognition software to recognize plant species based on leaf photographs uploaded by users. The app also offers high-resolution pictures of flowers, fruit, petioles, seeds, and bark. While Leafsnap does not have a specialization in the Southeastern United States, it has proven to be quite useful for southeastern plant identification, due to its continually expanding database. For more information, visit: http://leafsnap.com/about/

GeoCam

GeoCam allows users to upload photos from their phone camera and layer them with different geographical information, such as orientation and time. You can also display your pictures on GoogleMaps, and include geographical markers. GeoCam is available for both IPhone and Android, and offers both a free version (GeoCam Free) and a paid version (GeoCam Pro). Check out http://www.androidzoom.com/android_applications/tools/geocam_ozor.html for Android information and http://itunes.apple.com/us/app/geocam-pro/id433127223?mt=8 for the IPhone.

I'veGot1

The "I'veGot1" app uses the EDRR (Early Detection and Rapid Response) strategy to document, manage, and eventually eliminate invasive species in Florida. Developed through a partnership between The University of Georgia Center for Invasive Species and Ecosystem Health, Florida Fish and Wildlife Conservation Commission, and the Florida Natural Areas Inventory, I'veGot1 allows you to instantly report sightings of invasive plant and animal species, along with location information. Free for both IPhone and Android, the app can be downloaded here: http://apps.bugwood.org/

Plants Behaving Badly: Brazilian pepper-tree

By Alicia Campanella

Brazilian pepper-tree or pepper (*Schinus terebinthifolius*) is one of the most common and conspicuous invasive plants in Florida today. You can find it just about everywhere - along roadsides and highways, scattered along old agricultural areas, and in ditches and vacant lots, and in natural areas. Think this is a south Florida problem? Think again. Brazilian pepper-tree is now well into north Florida along the east and west coasts.

Photo Credit: Vic Ramey

Native to South America, Brazilian pepper-tree was likely introduced in Florida before 1900 as an ornamental tree. Its bright red berries, which appear from late October to February, earned it the rather misleading name, "Florida Holly." As is the case with most exotic introductions, by the time land managers discovered its invasive behavior, it was too late. Currently, thousands of dollars and countless man hours are spent every year on control programs, including mechanical removal and herbicide treatments.

A fierce competitor

Brazilian pepper-tree is armed with a host of adaptations that allow it to out-compete native species and dominate the landscape. Unlike many of our sun-loving plants, it is very tolerant of shade and easily establishes under the cover of taller trees and shrubs. It can also grow in waterlogged or saline soils, displacing the unique native plant species that are adapted to those conditions. It produces an abundance of seeds each year, which many animals eat and disperse.

A member of the Anacardiaceae family, Brazilian pepper-tree is a relative of our poison ivy, poison sumac and poison oak. Some people are allergic to its oils and it can cause a similar rash that is produced by the oils of the native members of that family.

Brazilian pepper-tree also emits chemicals from its roots, leaves, and berries that are toxic to some native plants, further compounding its ability to dominate the landscape. It also has the ability to resprout from cut stems and can produce multiple new plants from a single root. These factors create an impressive biological arsenal which gives this woody shrub an exceptionally strong competitive advantage.

Control recommendations

Suggested methods of treatment include cut-stump, basal bark or foliar applications of triclopyr herbicides, or foliar applications of triclopyr, glyphosate or imazapyr herbicides. Please note that when treating plants in aquatic areas you must use only herbicides labeled for aquatic use. Always use personal protective equipment and follow all instructions on the herbicide label.

Biological control prospects

Biological control involves introducing an insect or fungus that would feed on or infect a target invasive exotic plant. This involves a lengthy process of experimenting with various control agents under controlled conditions. In the end the process must demonstrate that the candidate biological control species is effective in controlling the spread of the target species and does not harm non-target species.

In his publication, "Florida's Brazilian Pepper-tree Management Plan," biological weed control expert Dr. James Cuda of The University of Florida discusses some potential biological controls. For example, a South American wasp called the defoliating sawfly (*Heteroperreyia hubrichi*) has shown promising results. In its larval stage, it can completely defoliate the Brazilian pepper-tree, inhibiting its ability to reproduce and thrive. Mandatory impact assessments are still taking place, but if successful, the release of this insect could have an enormous impact on the Brazilian pepper-tree population in Florida. Another potential species is *Pseudophilothrips ichini*. The larvae of this insect will suck the sap from the growing tips of the plant and destroy the flowers, thereby rendering the plant unable to reproduce. The leaf-rolling tortricid moth (*Episimus utilis*) has shown some degree of success. Initial studies done in Hawaii were unsuccessful, partly due to predation by other parasitic insects. Studies are now being undertaken in Florida, as it is believed that Florida's ecosystem would prove more hospitable to this

species. Other species include *Calophya terebinthifolii* and *Typhlocyba karachiensi*, which encourage the growth of mold on the leaves and inhibit photosynthesis, as well as several species of wood boring beetles and pathogenic fungi.

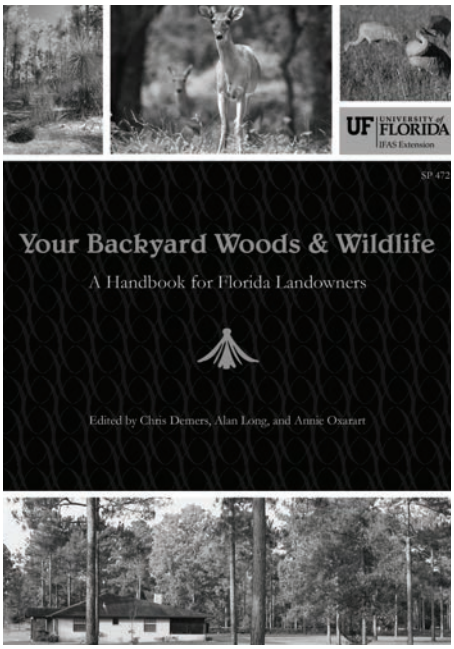
As with any introduction of a non-native organism, this strategy is met with some caution and sometimes skepticism. Arguments against this strategy are analogous to the story of the old woman who swallowed the fly, then the spider to catch the fly, then the mouse to catch the spider and so on. Will the introduced control agents, at some point, cause an unforeseen problem that will need to be addressed by an eradication effort or additional biological controls? We don't really know for sure, but the impact assessments provide a significant screen against unintended outcomes. If proven effective, the potential of these agents is too great to cast aside.

"Your Backyard Woods and Wildlife" Book Now Available at UF/IFAS Bookstore

We are excited to announce the release of "Your Backyard Woods and Wildlife: A Handbook for Florida Landowners". This is the University of Florida's first and only book designed for landowners of small properties of 20 acres or less. The book begins with an introduction to Florida's ecosystems, plants and wildlife, and some basics on how to assess forest health. The second section details some land management strategies, including chapters on protecting water quality; creating and enhancing wildlife habitat; protecting your home from wildfire; maintaining and improving forest health; managing for timber, recreation and other enterprises; and planning for the future.

The third section is an extensive catalog of useful print and online resources. For landowners interested in managing their land, making back a little money, and/or conserving Florida's natural resources for future generations, Your Backyard Woods and Wildlife is a great place to start.

The book is available for sale online and qualifies for quantity discount pricing: http://ifasbooks.ifas.ufl.edu/p-1177-your-backyard-woods-and-wildlife-a-handbook-for-florida-landowners.aspx



Get Email Updates!

Don't miss out on upcoming events and news! Send an email to cdemers@ufl.edu to be added to the Stewardship listserv. Updates are sent weekly and include a link to the current and back issues of the Florida Land Steward.

TIMBER PRICE UPDATE

The timber pricing information below is useful for observing trends over time, but does not reflect current conditions at a particular location. Landowners considering a timber sale are advised to solicit the services of a consulting forester to obtain current local market conditions.

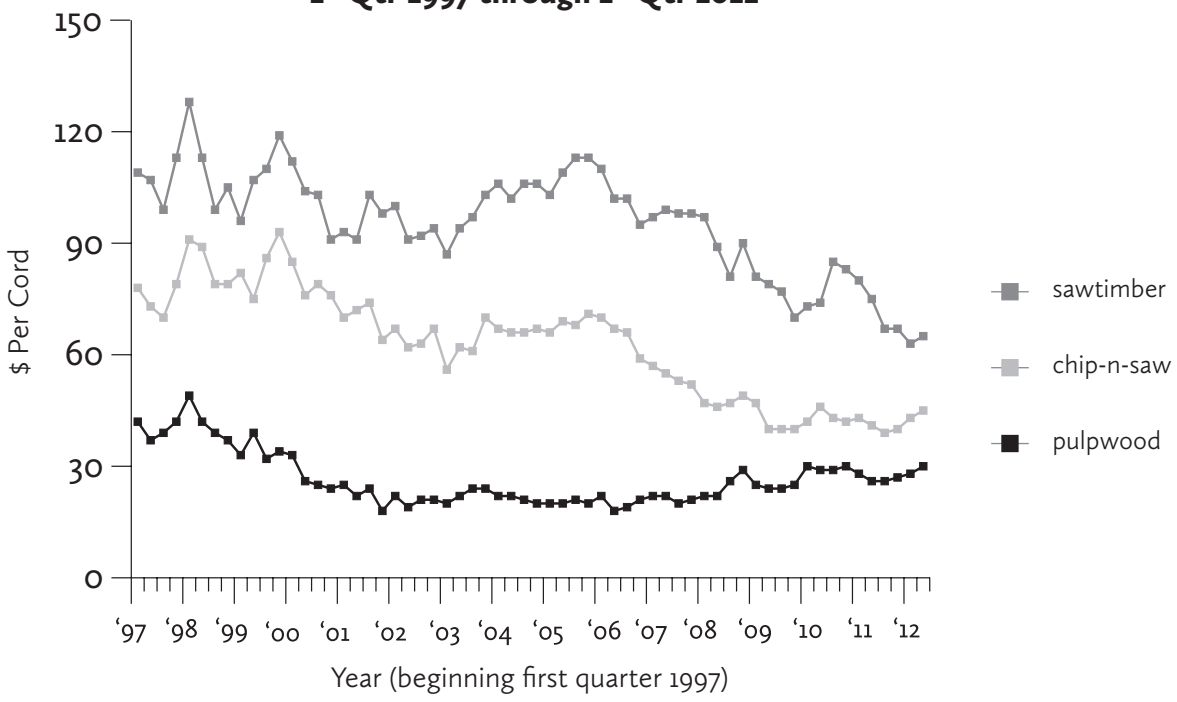
Average stumpage prices for the three major products in Florida, as reported in the **2nd Quarter 2012** Timber Mart-South report were:

Florida Stumpage Prices
Pine pulpwood: $30/cord ($11/ton), ↑ slightly from 1st Qtr 2012
Pine C-N-S: $45/cord ($17/ton), ↑
Pine sawtimber: $65/cord ($25/ton), ↑

Trend Report

While average prices for the 3 major timber products increased in Florida, timber markets remain weak across the south. Dry weather prevailed across much of the region last quarter, keeping wood accessible and stumpage prices in check. While economic distress in Europe has affected global markets, the U.S. housing market continues to show signs of recovery. Historically low natural gas prices, while a boon for energy generators, are not helping biomass energy initiatives make a good economic case for investment.

Average Pine Stumpage Prices for Florida
1st Qtr 1997 through 1st Qtr 2012



Timber Mart-South is compiled and produced at the Center for Forest Business, Warnell School of Forest Resources, University of Georgia, under contract with the Frank W. Norris Foundation, a non-profit corporation serving the forest products industry. See **http://www.tmart-south.com/** for information on subscriptions.

CONGRATULATIONS
CERTIFIED FOREST STEWARDS AND TREE FARMERS

For more information about becoming a Certified Forest Steward or Tree Farmer, call your County Forester or learn about it at:

http://www.fl-dof.com/forest_management/cfa_steward_index.html

or

http://www.floridaforest.org/tree_farm.php

These landowners have a current Forest Stewardship and/or Tree Farm management plan for their property and have demonstrated excellent stewardship of their land resources.

Henry Detert (left of sign), with Steve Lloyd, Chris Otremba and Joe Gocsik, Lake County

Robinson family with Kurt Stoughton (left), Putnam County

Helen Roth (left) with Cathy Hardin, Gadsden County

Ann and William Hosford (right) with Ariel Sewell, Liberty County

Harley Northup (holding sign) with Joe Gocsik, Chris Otremba and Steve Lloyd, Lake County

Wayne Smith (right) with Kurt Stoughton, Putnam County

Not Pictured: Levy County: Ronald Harris, Tree Farmer, Frank Moscato, Tree Farmer, James Akins, Tree Farmer, John Nash, Tree Farmer, Julio & Chris Faes, Tree Farmers, Legacy Timber, Tree Farm
Gilchrist County: Tanya Rood, Forest Steward, G.O. Farms, Forest Stewards, Carole Turner, Forest Steward, Eric Black, Tree Farmer

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Upcoming Stewardship, Small Farm and Other Events

Date	Event, Location, Contact
Aug. 15	**Forest Stewardship/Suncoast CISMA Workshop: Invasive Exotic Species and Their Control,** UF/IFAS Hillsborough County Extension Office, 5339 South CR-579, Seffner, FL 33584-3334. Approved for 4.5 SAF Cat-1 CFEs, Pesticide CEUs TBA.*Details and registration at http://fsp-workshop081512.eventbrite.com/ or contact Chris Demers, (352) 846-2375, cdemers@ufl.edu*
Sept. 5-6	**Florida Forestry Annual Meeting: Pass it Forward,** Sandestin - Baytowne Conference Center, Destin, FL. *For more information visit http://www.floridaforest.org/conference.php or contact Florida Forestry Association at (850) 222-5646.*
Sept. 27	**Forest Stewardship Workshop: Timberland Security for Landowners,** 9 am to 3 pm CT, Okaloosa County. Learn about and minimize risks associated with trespass, timber theft, dumping, drug farming, wildfire or arson. *Details and registration at http://fsp-workshop092712.eventbrite.com/ or contact Okaloosa County Extension Office at (850) 689-5850.*
Sept. 29	**FL-GA Dove & Duck Field Day,** 8 am to 2 pm ET, Beau Turner Youth Conservation Center, 9194 South Jefferson Hwy, Lamont, FL 32344. $20 adult, $10 youth. Lunch included. *See http://flgaextgamemgmt2012.eventbrite.com/ for registration and details.*
Sept. 29	**2012 Wild Game Processing Course: From Field to Table,** 9 am to 3 pm at the University of Florida Meat Laboratory, 2250 Shealy Drive, Room 156, Gainesville, FL 32611. Cost is $30/adult & $20/youth (≤ 18) by September 21, $15 late fee after deadline. *Mail your check (payable to University of Florida) with name(s), email address and phone number by September 21 to: UF Dept. of Animal Sciences, Attn: Rebecca Matta, PO Box 110910, Gainesville, FL 32611*
Oct. 2	**Silviculture Best Management Practices Workshop,** 9:00 am - 2:30 pm, UF/IFAS Columbia County Extension Office, Lake City, FL. Organized and Presented by Florida Forest Service. Free, approved for 4 hours of SAF CAT-1 CFE's. *Register by September 21 by contacting Robin Holland, (352) 732-1273, Robin.Holland@freshfromflorida.com*
Oct. 11	**Forest Stewardship Tree/Plant ID Field Day,** 9 am - 3 pm. Morningside Nature Center, 3540 East University Avenue, Gainesville, FL 32641. Featuring flatwoods and sandhill trees, shrubs and herbaceous plants. *Details and registration online at http://fsp-workshop101112.eventbrite.com/ or contact Chris Demers, (352) 846-2375, cdemers@ufl.edu*
Nov. 7	**2012 Florida Ag Expo,** UF/IFAS Gulf Coast Research & Education Center, Balm, FL. *See http://floridaagexpo.com/ or contact Christine Cooley, (813) 634-0000 x.3101, ccooley@ufl.edu.*
Nov. 10	**Town of Hilliard's Annual Timberfest,** 9 am to 5 pm, at Hilliard Airpark 37776 Eastwood Road, Hilliard, FL 32046. *For more information contact the Hilliard Town Hall at (904) 845-3555 or visit http://www.townofhilliard.com*
Nov. 13	**Silviculture Best Management Practices Workshop,** 9:00 am - 2:30 pm, UF/IFAS Polk County Extension Office, Bartow, FL. Organized and presented by Florida Forest Service. Free, approved for 4 hours of SAF CAT-1 CFE's. *Register by November 2 by contacting Robin Holland, (352) 732-1273, Robin.Holland@freshfromflorida.com*

For many more events and information see: flsteward.org

The Florida Land Steward Newsletter is a University of Florida Cooperative Extension Service, Florida Forest Service, Florida Fish & Wildlife Conservation Commission, USDA Natural Resources Conservation Service and Florida Tree Farm joint project:

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