

FLORIDA LAND STEWARD



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IN THIS ISSUE

Association of Consulting Foresters Consultants Corner: Wetland Mitigation & Conservation Banking - An Overview	3
Timber Price Update	6
Certified Landowners	7

Forest Carbon: A Potential Source of Income for Forest Owners, Part 1

By Natalia Medina-Irizarry and Dr. Michael Andreu

Currently, landowners generate income from their forests by participating in markets that have long existed in the U.S. These include solid wood products, pulpwood, biomass, pine straw, and other types of nontimber products, leases, and mitigation banks (see the next article). The forest carbon market is a fairly new and emerging market with recent expansion into the U.S. southeast. Such opportunities are evolving as part of the solution to address climate change, particularly the release of greenhouse gases (GHGs).

the removal of carbon from the atmosphere as *carbon sequestration*. Essentially, the carbon accumulates in biomass, i.e. the *carbon pool*, and as more carbon is sequestered, carbon storage increases. So the question is, how exactly does increasing *carbon storage* generate income for landowners? Answer: by selling (or trading) the carbon their trees have sequestered, i.e. carbon trading. Simply put, forest landowners can initiate a carbon project on their property which generates carbon credits that are then sold in the forest carbon market.

The primary GHG of concern is carbon dioxide (CO₂). Through the process of photosynthesis, trees utilize CO₂, thereby removing it from the atmosphere and storing it for an extended period of time. We refer to

The ins-and-outs of the forest carbon market become quite convoluted as you learn more about it; there are many moving parts. The

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Through the process of photosynthesis, trees utilize CO₂, thereby removing it from the atmosphere and storing it for an extended period of time. Forest landowners have some opportunities to earn some income for providing this environmental service.

goal here is to familiarize Florida Land Steward readers with some of the terminology commonly used in the forest carbon market and how the carbon credit process works.

What is carbon trading?

Carbon trading is a market-based approach for reducing the release of greenhouse gas (GHG) emissions to mitigate climate change. In forestry-based carbon trading, the forest landowner receives payment for the *additional* carbon sequestered in their forest. Additional carbon can be thought of as the carbon that was grown with intention to be converted to some forest product, but is instead retained. Retaining this carbon pool and increasing carbon storage requires a forest to function below the *business-as-usual* (BAU) scenario or *baseline activity*. For instance, a forest managed with a 35-year pine rotation (BAU), would accumulate additional carbon if a 45-year rotation (below BAU) was implemented instead. Essentially, carbon trading provides landowners a monetary incentive to defer or avoid harvesting trees.

What is a carbon project?

A *carbon project* encompasses the collection of activities associated with increasing carbon storage on a property. Carbon projects are also sometimes referred to as *carbon reduction projects*, *carbon offset projects*, and *carbon offset schemes*. There are a few elements that comprise a carbon project. Generally, carbon projects are initiated with the creation of Project Design Documents (PDD); a sort of “carbon management plan” or proposal. Formulating the PDDs involves developing the project concept, detailing project activities, specifying stakeholders, determining baselines, choosing standards and methodologies, and so on. There are three primary carbon project types: afforestation/ reforestation, avoided conversion, or Improved Forest Management (IFM). Each

carbon project type has a specific set of actions required. Therefore, the type of carbon project a landowner may participate in depends on their eligibility for each project and the landowner’s management objectives.

What are carbon credits?

Carbon credits aka: carbon offsets, are tradable certificates that represent a reduction in atmospheric CO₂ or an increase in carbon storage. One carbon credit indicates one metric ton of CO₂. There are two types of carbon credits that supply different markets within the forest carbon market. The two types of carbon credits are Voluntary Emission Reductions (VERs)- sold in the voluntary market, and Certified Emission Reductions (CERs)- sold in the compliance market. There are further nuances between the creation of VERs and CERs. Projects that generate CERs are typically longer, have more restrictions, require additional certifications, and more frequent verification. That said, the amount received for each CER is higher than VERs.

Here’s how they work: Carbon credits can be purchased by industries, corporations, and businesses to compensate the release of carbon emissions created during the process of producing goods and services. For instance, if a forest increases carbon storage by 50 metric tons above BAU projections, they will be issued 50 carbon credits. Furthermore, if a small business discovers they emit 20 metric tons of CO₂ per year in travel alone, and decide to offset it by 50%, they may do so by purchasing 10 carbon credits. Individuals may also purchase carbon credits to offset emissions associated with everyday life. These are examples of voluntary carbon offset transactions.

What are the foundational principles?

To ensure the integrity of carbon credits, three foundational principles were established for forest carbon projects. The principles are *additionality*, *permanence*, and *leakage*.

For *additionality*, one must demonstrate that, without the commitment to the carbon project, the carbon capture would not have occurred. *Permanence* denotes the longevity of the carbon benefits resulting from a project, in other words, the length of time carbon is sequestered. Lastly, *leakage* is carbon released unintentionally, as a result of the carbon project. For instance, leakage may occur when the reduction in harvesting in one forest results in an increase of harvesting in a neighboring forest.

Each principle is accounted for differently across forest carbon programs, which impacts the relative value of the carbon credits generated. How the foundational principles are accounted for help determine the credibility of the carbon credit to the buyer.

Registries, Carbon Standards, Methodologies (aka Protocols), and Project Developers

Registries are responsible for tracking, validating, and verifying carbon projects against carbon standards and methodologies. *Carbon standards* are criterion created by registries for the purpose of certifying a project’s contribution to the reduction of carbon emissions. Methodologies, or protocols, are also created and approved by registries. *Methodologies* define how carbon credits are quantified for each type of carbon project. After certifying carbon projects, registries issue and register the carbon credits so they may be sold. If a landowner works with a *project developing* organization, rather than the

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landowner stepping in as the project developer, much of the responsibility of creating and managing a carbon project falls upon the project developing organization.

What is the process of enrollment like?

The creation of carbon projects differs broadly across registries and project development organizations. But generally, landowners must provide information which may include property maps, deeds showing ownership, management history, management plans, etc., to determine eligibility. If eligibility requirements are met, PDDs are

developed by the landowner and a project developer and then submitted to a registry for validation. Once a project is validated it is registered and monitoring then begins. Monitoring may involve remote sensing or plots set within the property. When monitoring begins the *crediting period* also begins, which is the period when emission reductions are to be verified and are eligible for issuance as carbon credits. The length of this crediting period varies from 20 to 40 years. After the crediting period there is additional verification to ensure the reductions of carbon emissions or increase in carbon storage has occurred.

Having covered the surface layer of the forest carbon market, the next newsletter will include Part 2 of this topic which will discuss ‘who’s who?’ within the forest carbon market and their major differences.

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Association of Consulting Foresters Consultants Corner: Wetland Mitigation & Conservation Banking - An Overview

By John H. Holzaepfel and John T. “Jay” Vogel

Privately owned forestland in the United States contains a great deal of critical habitat and rare species and provides innumerable ecosystem services that benefit all of us. Understanding this, conservation champion Aldo Leopold wrote “Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest.” Thankfully, a myriad of market-based opportunities already exist, with more being considered, for forest landowners to be compensated for long-term conservation of their lands and the benefits they provide to society. This article will provide a brief overview of two such opportunities: wetland and conservation mitigation banking.

Private forest and agricultural landowners are often well-served to look at a diverse stream of potential revenue sources to ensure financial sustainability. This is especially true in circumstances where traditional commodity production may deliver a lower return on investment, while at the same time,

development is not an acceptable change in land use due to ecological concerns or the desired long-term legacy of the property. Under the right circumstances, wetland and water resources can be protected and landowners compensated through a process known as wetland mitigation banking. The concept of conservation banking has similarities, albeit with significant differences, with the intent of enhancing habitat and increasing populations of threatened wildlife species. Both wetland and conservation mitigation banking are relatively simple in concept but permitting a mitigation bank is a significant and complicated multi-year endeavor. Private environmental consulting firms can shepherd the process of obtaining the necessary permits, establishing the requisite conservation easements, protecting and enhancing the land, and positioning the “banks” to sell credits. The establishment of a wetland or conservation mitigation bank will require encumbering the property with a

perpetual conservation easement and a significant upfront financial investment (can sometimes be shared by investors), so this is not a venture taken lightly nor suitable for the goals of all landowners.

Due to the cost of permitting, economies of scale tend to rule out smaller tracts less than 500 acres unless exceptional potential exists to create and market credits. To be economically viable, the investment in the mitigation bank must have the potential to yield enough credits for sale with adequate demand in the open market to offset the cost of permitting and managing the bank, while producing a financial rate of return attractive to the landowner and/or bank investors. For the right landowner, tract, and circumstances, however, the wetland or conservation mitigation bank will provide a significant financial opportunity, while conserving the land for future generations. If your consultant deems the tract has potential, the

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first step is typically a feasibility study to analyze potential costs and revenue within the context of a conceptual restoration plan and credit analysis on a particular tract of land. In some cases, particularly in very rural areas without much threat of development, it is advisable to also have a market analysis report that focuses more deeply into the potential demand and absorption of credits.

Wetland and conservation mitigation banking are relatively new industries in Florida, especially when juxtaposed against traditional agricultural industries such as forestry and cattle ranching. These

conservation approaches have matured over just the past couple decades rather than centuries. Wetland mitigation banking focuses on preserving, enhancing, restoring, and in exceptional circumstances, creating herbaceous and forested wetlands for the purpose of satisfying regulatory compliance under Section 404 of the federal Clean Water Act. Wetland mitigation banking can also satisfy other state and local regulations, for unavoidable wetland losses resulting from development activities such as the expansion of infrastructure. The wetland mitigation banks create and store "credits" which may subsequently be withdrawn and sold to offset "debts"

incurred at a project development site, typically within the same water basin. The number of wetland credits in a bank is loosely related to acres and based upon a scoring system. Wetland credits awarded by the federal and state agencies depend on the amount of restoration undertaken, often referred to as "lift", and the ultimate quality of the restored wetland as scored by a uniform assessment methodology. Not uncommonly, some lift can be realized by improving adjoining uplands as well.

Conservation mitigation banks are intended to satisfy regulatory compliance of the federal Endangered



(R) Prescribed burning improves upland vegetation composition on a mitigation bank. (L) Cypress sapling one year after planting on a 63-Acre forested wetlands creation project in Pasco County, Florida. Photos by John T. Vogel.

Species Act - Sections 7 & 10. In Florida, conservation banks have been established for panthers, Florida scrub jays, and sand and blue-tailed skinks. Projects that have unavoidable impacts to occupied habitat are required to obtain an Incidental Take Permit from the U.S. Fish and Wildlife Service (USFWS). Projects can utilize conservation banks to mitigate their impacts. As an example, if a highway is built through sand skink habitat, the developer (e.g., FDOT) would be required to purchase two skink credits for every acre disturbed. These can be purchased on the open market from competing sand skink conservation mitigation banks. A ledger of credits approved by the USFWS can be held until sold by the bank.

As you might guess, this article only scratches the surface on explaining wetland and conservation mitigation banking. Despite the complexities inherent in the process, this market-based concept is working very successfully for many landowners in Florida that desire an economically and environmentally attractive solution to preserving the legacy of their forest and range lands. These conservation opportunities are especially relevant in portions of the country that are experiencing habitat fragmentation and land parcelization on a massive scale. Consulting foresters are well positioned to advise landowners who are interested in pursuing these opportunities.

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Don't miss out on news and events!

Sign up for the regular updates! Send an email to cdemers@ufl.edu to be added to the email listserv. Florida Land Steward email updates are sent once a week or every other week and include the latest calendar of workshops, tours and other events; a link to the current issue of this quarterly newsletter; updates on cost-share and other assistance programs, opportunities, and resources; and other stewardship related news and information.

All the latest news and events are online at the new UF/IFAS Florida Land Steward Program web site: <https://programs.ifas.ufl.edu/florida-land-steward/>

TIMBER PRICE UPDATE

The timber price 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.

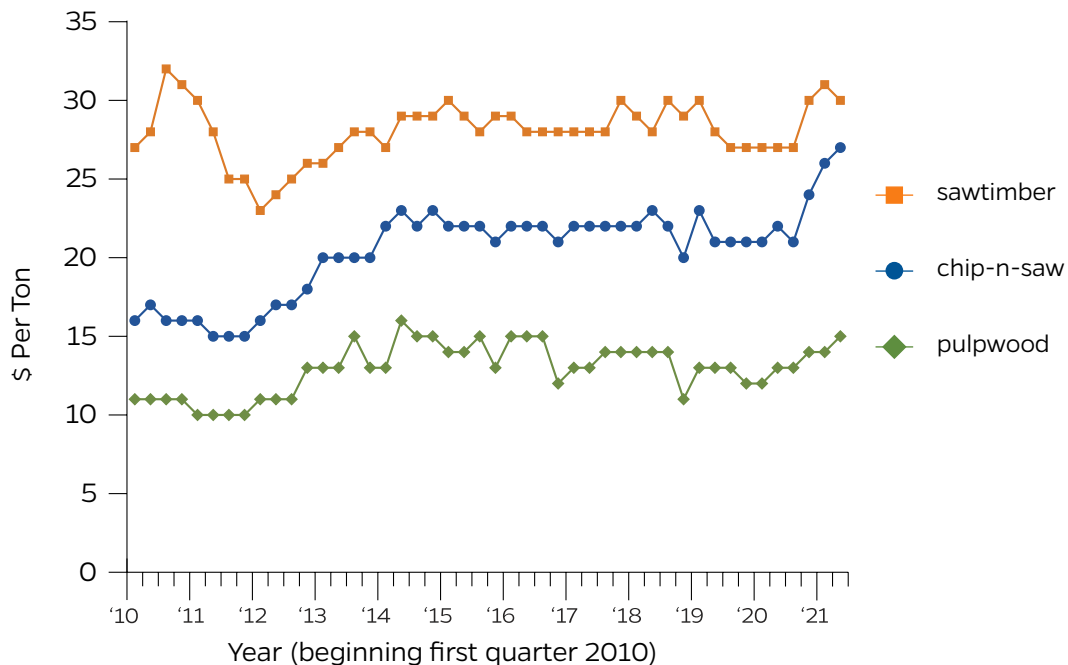
Average stumpage prices for the three major products in Florida, as reported in the **2nd Quarter 2021** Timber Mart-South report were:

Florida Stumpage Prices	
Pine pulpwood:	\$15/ton, ↑ from 1 st Qtr. 2021
Pine C-N-S:	\$27/ton, ↑
Pine sawtimber:	\$30/ton, ↓

Trend Report

Average stumpage prices continued their modest increase across the region in the second quarter of 2021. Steady demand, constrained supplies, and wet weather continue to give timber stumpage prices a boost. Wood and paper products industries both experienced growth in this quarter, with prices for many products reaching record highs. Residential construction holds strong with improvements and remodeling activity at their highest levels since 2006. As always, email updates are the best way to stay current on news, opportunities, webinars, and events. Send an email to cdemers@ufl.edu to be added to this service if you do not receive the email updates.

Average Pine Stumpage Prices for Florida (\$/Ton)
1st Qtr 2010 through 2nd Qtr 2021



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 LANDOWNERS

More information about certification in these programs is available at:

<https://www.fdacs.gov/Divisions-Offices/Florida-Forest-Service/For-Landowners/Programs/Forest-Stewardship-Program>

<https://www.treefarmssystem.org/florida>

<https://myfwc.com/lap>

These landowners have achieved certification in the Tree Farm, Forest Stewardship, Forces Forest, and/or Wildlife Habitat Recognition Program and demonstrate excellent stewardship of their land resources.



Brad and Stephanie Hudson with Cathy Hardin (R), Escambia County



John Russell, Escambia County



Tom Burns with Bill Korn (L), St. Johns County



Logan and Jennifer Bryce with James Tootle (L), Nassau County



Jim and Alison Browne, Calhoun County



Eric and Michele Malnove with children Charlotte and Nash, Putnam County



Tracy Clark, Gilchrist County



Kent Simmons, Escambia County



Charles and Cheryl Kelly, Escambia County

Upcoming Events

Date	Event, Location, Contact
Aug. 31 - Sept. 2	Florida Forestry Association Annual Meeting & Trade Show. Panama City Golf and Spa Resort, Panama City Beach, FL. <i>Details to be posted at http://www.flforestry.org/annual-meeting/</i>
Sept. 1-2	Florida Invasive Species Virtual Symposium. Provided by The Florida Invasive Species Council (FISC, formerly FLEPPC) and the Florida Invasive Species Partnership (FISP) This 2 day virtual event will bring you up to speed on the most recent news and research on herbicides, cutting edge horizon scanning and prevention work, and the latest on biological control. CEUs pending approval. \$50 general registration fee, \$25 for students. <i>Details and registration at https://www.eventbrite.com/e/florida-invasive-species-virtual-symposium-tickets-154301386601</i>
Oct. 12-13	SAF/FFGS Fall Symposium: Southern Pine Update. Stern Learning Center, Austin Cary Forest near Gainesville, FL. Provided by the Florida Division Society of American Foresters and the UF/IFAS School of Forest, Fisheries, and Geomatics Sciences. Join us for a broad array of topics related to Southern pines. We'll dive into the latest on genetics, forest health, management, and markets. <i>Details and registration at https://2021-saf-sffgs-fall-symposium.eventbrite.com/</i>
Oct. 28	Florida Land Steward Tour at Blackbeard's Ranch. Manatee County, FL. 9:00 am to 2:00 pm ET, Blackbeard's Ranch near Myakka City, FL. Mr. Jim Strickland, managing partner of Blackbeard's Ranch, is the 2021 Florida Land Steward of the Year. Blackbeard's Ranch relies on agricultural production and is committed to long term sustainability in ranch operations, and good stewardship of the natural resources on the property. Join us for a tour. <i>Details and registration available at https://fls-tour102821.eventbrite.com</i>
Nov. 18	Florida Land Steward Webinar: Gopher Tortoise Recipient Sites - Conservation and Financial Benefits. 2:00 to 3:30 pm ET. Provided by the UF/IFAS Florida Land Steward Program and Florida Fish and Wildlife Conservation Commission. <i>Details and registration at: https://ufl.zoom.us/webinar/register/WN_NZFTntLWSsCh2018ZCO_Qw</i>

More events, news, and information can be found at programs.ifas.ufl.edu/florida-land-steward

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