

UF/IFAS

Range Cattle Research & Education Center NEWS

3401 Experiment Station • Ona, FL 33865
863.735.1314 • rrec-ona.ifas.ufl.edu

winter 2023

IN THIS ISSUE

Soil Carbon Sequestration in Grazing Land Ecosystems

by Dr. Maria L. Silveira, Professor



The term 'climate change' refers to the long-term changes in the average weather patterns (temperature, precipitation, wind patterns) that occur over several decades or longer. These shifts are driven mainly by human activities, particularly fossil fuel burning; however, natural processes (e.g., cycling ocean patterns such as El Niño and La Niña) can also contribute to climate change. Climate change continues to be a topic of debate and societal and scientific interest. There is substantial evidence that increased atmospheric concentrations of greenhouse gases (mainly carbon dioxide, methane, and nitrous oxide) are affecting global climate. Although the impacts of these increased levels of greenhouse gas concentrations on local, regional, and global scales are still uncertain, there is a general consensus that extreme weather events such as heat waves and strong storms will likely become

more frequent and more intense in the future. Approaches to mitigate climate change often involve either reducing or preventing emission of greenhouse gases to the atmosphere.

What is soil carbon sequestration and why is it important?

In simple terms, soil carbon sequestration refers to the process of transferring CO₂ from the atmosphere into the soil. This process is mediated primarily by plants through photosynthesis. Soil carbon represents the largest pool in the Earth's terrestrial system, accounting for nearly five times that of the atmospheric carbon pool. Carbon stored in soils is stable for decades or longer and can help offset emissions from combustion of fossil fuels and other human-induced activities.

Soils can also act as a source of carbon and other greenhouse gas to the atmosphere. Whether a soil acts as a source or sink of carbon is determined by the balance between the amount of carbon added to the soil (mainly from plant residues) and the rate of carbon losses (decomposition, soil erosion, etc). The extent that carbon can be sequestered in soils vary by climate, topography, and soil type; however, there is strong evidence that adoption of conservation management practices can

Center News	3
Student & Faculty News	4
Connect With Us	5
Upcoming Events	6
UF News	7

Click on the images below to check us out on:



Follow @UF_IFAS_RCREC



UF UNIVERSITY of
FLORIDA
IFAS

increase soil carbon sequestration. Despite the uncertainties about whether soil carbon sequestration can achieve large-scale emissions reductions, there is compelling evidence for continuing to promote soil carbon sequestration. Increasing carbon storage in agricultural soils, for instance, offers significant accompanying benefits such as improved soil and water quality, reduced soil erosion, increased water conservation and crop productivity.

Potential for soil carbon sequestration in grazing lands

Native and improved pastures are two types of land use that retain substantial amounts of carbon in the soil. These land uses usually cause little soil disturbance, which reduces the carbon loss from organic matter decomposition and allows fresh plant materials from the grasses to become part of the soil organic matter over time.

Pasture management has a major role on soil carbon sequestration potential. Management practices that increase plant production (e.g., nitrogen fertilization, proper grazing management, use of legumes) often result in greater carbon inputs to the soil and, consequently, an increase in soil carbon sequestration. These conservation practices can also have other beneficial environmental and economic effects such as increased productivity and resilience. However, our understanding of the complex factors affecting soil carbon responses to pasture management is limited, particularly within subtropical and tropical climates. One of the main constraints is the lack of long-term studies to inform management strategies that can potentially increase soil carbon sequestration in these regions. Most of the cultivated pastures in Southeastern US that receive adequate rainfall and, consequently, have greater potential to respond to management than arid regions. However, the warm and moist conditions

can also favor carbon decomposition.

Measuring soil carbon sequestration

From a practical perspective, direct measurement of the rate of carbon accumulation is often difficult and, in many circumstances, unrealistic. The effect of management on soil carbon sequestration is the subject of much current research but there is still a major gap in our knowledge. One of the reasons for that is management-induced changes in soil carbon typically take many decades to occur, making actual measurements of changes in soil carbon stocks difficult. In addition, the high spatial variability of soil and vegetation, extensive land area, and heterogeneous distribution of nutrients by grazing animals also complicate accurate quantification of soil carbon sequestration in grazing lands. Development of reliable measurement tools and models are critical to design and validate the benefits of adopting conservation practices at different spatial scales and to inform land managers and policy makers. Although voluntary markets are pay-

ing farmers or ranchers for carbon sequestration, the prices are often too low to cover the cost of adoption. Other social and political factors also represent major barriers to adoption of carbon conservation practices. Another important consideration is the potential impacts of management on greenhouse gas emissions. A life cycle analysis approach is required to understand the net benefit of management practices on the carbon cycle.

There is no doubt that the soil carbon sequestration and the role of grazinglands in climate change mitigation should and will continue to be relevant topic of research in years to come, particularly in subtropical and tropical regions. Furthermore, carbon trading-related markets and the growing interest in carbon sequestration as mechanisms for environmental protection are also expected to enhance the economic value of carbon sequestered in grazing land soils.

Questions, contact Dr. Silveira at mlas@ufl.edu.

These photos feature a typical Florida pasture soil profile.



Center News

Help with Wild Pig Management - Take this survey!

Researchers at the UF/IFAS Range Cattle Research and Education Center want to improve extension programming to help Florida livestock producers better manage wild pigs (feral swine, wild boar, etc.). To help achieve this goal we have produced an online survey for Florida livestock producers so we can better understand your thoughts and opinions on wild pig management in Florida. A link to the survey is below. The survey should take less than 20 minutes to complete and can be completed on a phone or a computer.

Take the survey:
tinyurl.com/2ezwsyju

If you would prefer a paper copy of the survey, please send us an email, flwildpigsurvey@gmail.com.

We appreciate your time. Your participation will help us provide better and more informative extension materials in the future.

Thank you,

Hance Ellington, Asst Prof
 and Grazinglands Wildlife Specialist
 UF/IFAS Range Cattle REC



Hurricane Ian Recovery

Six months after Ian’s damaging flood, recovery efforts continue. In addition to the grad student house and the education building, the soil and water and agronomy labs, along with the cattlemen’s conference room are now restored. Structurally, the administration building is nearly complete, but it is being used for temporary offices by all the faculty, staff, and students waiting on their buildings to be finished. The wildlife lab, the animal science lab, the LTAR lab, and the weed science lab are still works in progress.



Farm side - new roof on the right

Professional Development Tour



Seven from the center took part in an informative tour of United States Sugar Corporation and C & B Farms in Clewiston. This photo was taken at Dunwody Lodge where the tour began. Left to right Edison Vargas, Dr. Abmael Cardoso, Dr. Hiran Da Silva, Leandro Vieira-Filho, Dr. Brent Sellers, Steve Schwartz, and Andrea Dunlap.

A huge THANK YOU to the folks with U. S. Sugar Corp., C & B Farms, and the UF Agronomy Graduate Student Association for all they did to make the tour a success.

Groups Visits -



2/7, The Research Center Administrators Society (RCAS)



2/27, UF/IFAS AI External Advisory Board



3/14, Links 2 Success, DeSoto Co. teen group



Grad student collaboration room



LTAR lab building with flooring done

Student News



Leandro Vieira-Filho received the 2022 Victor W. Carlisle Scholarship Award from the Soil, Water, and Ecosystem Sciences Department at the University of Florida. This award is given to outstanding graduate students whose dissertation will contribute to advancements in the field of soil science with particular emphasis on Florida soils.

He is a PhD candidate under the supervision of Dr. Maria Silveira (Soil and Water Science Program at the UF/IFAS Range Cattle REC).

Leandro is pictured here with Mike Sisk, academic advisor in the department.



Vinicius Izquierdo received the American Society of Animal Science Southern Section Joseph P. Fontenot Graduate Student Travel Scholarship at the Southern Section Annual Meeting in Raleigh, North Carolina.

Recently he was selected for the 'Top-up Award' by the UF Animal Science Department.

Vinicius is a PhD student under the advisement of Dr. Philippe Moriel.

(image) Vinicius presents at the Florida Ruminant Nutrition Symposium in Gainesville.

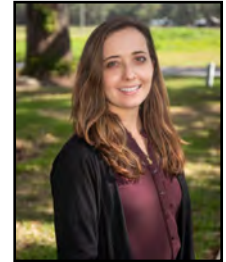
Alumni News



Jaime Eduardo Garzon Alfonso

Dr. Jaime Eduardo Garzon Alfonso graduated in the fall with his PhD in Agronomy. As a student, he was advised by Dr. Joao Vendramini and his dissertation topic was "Forage Characteristics and Ecosystem Services Provided by Aeschynomene and Sunn Hemp Legumes in South Florida."

Prior to graduation he began as an Assistant Extension Professor and Forage Educator in the Cooperative Extension Department at the University of Maine, in Orono.



In December, **Dr. Marta Kohmann** completed a 3-year 8-month term as a Postdoctoral Associate working with Dr. Maria Silveira and the Soil and Water Science program at the center. Dr. Kohmann's efforts were mainly focused on the Long-Term Agroecosystem Research (LTAR) project but she also collaborated in numerous other research and extension activities. In January 2023, she began her new role as an Assistant Professor in Forage Systems/Agroecology in the Department of Agronomy at the University of Wisconsin-Madison.

Faculty News

Meet Hannah Baker, State Specialized Extension Agent II - Beef Cattle and Forage Economics



We are excited to announce the upcoming arrival of our newest faculty member, Hannah Baker. Please introduce yourself to Han-

nah when you get a chance! You can reach her at h.baker@ufl.edu.

Hello,

Originally from Adel, Georgia, I am excited to be returning to the southeast to join the team at the UF/IFAS Range Cattle Research and Education Center in Ona, Florida. I'll be joining the team in June 2023.

I attended Abraham Baldwin Agricultural College where I obtained a dual degree in Agribusiness and Agriculture with an emphasis in Livestock Production. I interned on cattle ranches in Kansas and Georgia and worked for the UGA Experiment Station as a student research assistant during my time at ABAC. I earned my Master's degree at Oklahoma State University in Agricultural Economics where I developed an economic analysis of rangeland management alternatives. In this role, I plan to continuously build on relationships with Florida cattle producers, county agents, and research faculty to efficiently address current issues affecting the Florida beef cattle industry.



Congratulations Dr. Philippe Moriel!

Recipient of the 2023 American Society of Animal Science

2023 Southern Section - Extension Award.

Dr. Philippe Moriel holds a 60% Research and 40% Extension Associate Professor position at the University of Florida-Range Cattle Research & Education Center.

[Click here](#) to read the full award post on the asas.org website.

Annual Recognition Ceremony & Christmas Party

On December 9 the Center’s faculty, staff, students, family, and friends gathered in the Grazinglands Education Building to recognize individuals receiving honors in 2022 and to enjoy some good food and fellowship.



Corn hole tournament participants: – Makayla Wiggins, Sam Nunn, Cody Wiggins, Rocky Parks, Michael Gause, Brent Sellers, Vinicius Izquierdo, Hiran da Silva, Marta Kohmann, Tom Fussell, John and Andrea Dunlap, Leandro Vieira-Filho, and Edison Vargas. The winning team (at the right) were Hiran and Leandro.



Lauria Gause, 2022 UF/IFAS Range Cattle REC Superior Accomplishment Award.

Lauria always goes out of her way to help the research programs and students at the UF/IFAS Range Cattle Research and Education Center. For her outstanding support services, she was recognized.



Westway Feed Products was recognized with the ‘Friend of Ona’ award for their outstanding support of the Center and it’s programs through 30+ years of molasses donations. Terry Weaver was in attendance to receive the award on their behalf.



CONNECT WITH US

Articles published in the Florida Cattleman & Livestock Journal:

View these on our website at: <https://rcrec-ona.ifas.ufl.edu/news-and-publications/>

Ona Reports

Dec. 2022 - ‘Stair-step strategy for yearling beef heifers in Florida’ by Dr. Philippe Moriel, Associate Professor - Beef Cattle Nutrition and Management

Jan. 2023 - ‘The State of Ona’ by Dr. Brent Sellers, Professor & Center Director - Pasture and Rangeland Weed Management

Feb. 2023 - ‘Can we decrease frequency of concentrate supplementation for young growing beef calves?’ by Dr. Philippe Moriel, Associate Professor - Beef Cattle Nutrition and Management



The folks below are from the UF/IFAS Plant Science Research and Education Unit, they received Certificates of Appreciation for their immediate response and support after Hurricane Ian.



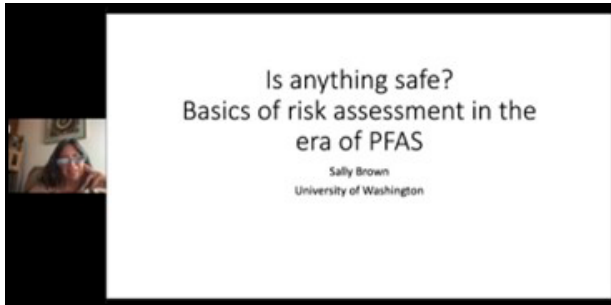
Pictured above, on site just after the storm are Jerry Fankhauser, assistant director of the Florida Agricultural Experiment Station, and staff from the UF/IFAS PSREU in Citra: Erick Pires, Danny Christmas, Matt Suggs, Jim Boyer, Peter Dubose, and Kyle Durden. Standing with our farm manager, Dennis Kalich.

New Videos

Ona Highlight Webinars

Save the date and join us for an upcoming Ona Highlight webinar. These informative presentations are held each month. They begin at 11:00 a.m. and last about 45 minutes. See our online calendar for upcoming webinars, [here](#).

Recordings of recent webinars:



[‘Is Anything Safe? Basics of risk assessment in the era of PFAS’](#) with guest presenter Dr. Sally Brown, a research professor of environmental and forest sciences with University of Washington College of the Environment in Seattle, WA
12/13/2022 - Run time: 38.18 minutes



[‘Market Outlook & Managing Production Costs in a Volatile Economic Environment’](#) with Chris Prevatt, Alabama Farmers Federation Commodity Director
1/20/2023 - Run time: 56.17 minutes



[‘Habitat fragmentation and landscape change: Using experiments to investigate processes occurring at large spatial scales’](#) with Dr. Thomas Smith, a postdoctoral researcher with the UF Wildlife Ecology and Conservation Department in Gainesville
2/14/2023 - Run time: 27.29 minutes

Upcoming Events

View our online calendar for more info on events and links to register:
<http://rcrec-ona.ifas.ufl.edu/calendar-of-events/>

Pasture & Grazing Management Seminar
– April 6, 6:00 - 8:00 PM
W.H. Stuart Center, Bartow, \$10 fee to attend.

Ona Highlight featuring the SFBFP Extension Group
– April 11, 11:00 - 11:45 AM
Laura Bennett and Kalan Royal will present “South Florida Beef Forage Program Opportunities.”

Environmental Lands Management & Tour
– April 13, 9:00 AM - 4:00 PM
Circle B Bar Reserve meeting room, Lakeland
Cost: \$50, includes handbook and lunch.

UF/IFAS Range Cattle REC Field Day
– April 20, 8:00 AM - 3:00 PM
3401 Experiment Station Rd., Ona
Cost: \$30, includes booklet and a steak lunch.

Ona Agronomy Program Highlight with Dr. Joao Vendramini
– May 9, 11:00 - 11:45 AM
Dr. Joao Vendramini, will present, “The Importance of Forage Testing to Design a Supplementation Program.”

72st Annual UF Beef Cattle Short Course
– May 10 - 12
UF/IFAS Extension Professional Development Center in Gainesville. Visit the [UF Animal Science Department website](#) for more details.

Ona Rangeland Wildlife Program Highlight with Dr. Hance Ellington
– June 13, 11:00 - 11:45 AM
Dr. Ellington will present, “Invasive Species in Rangeland.”

14th Annual Youth Field Day
– June 29, 8:30 AM - 2:00 PM
UF/IFAS Range Cattle REC, Ona
7:00 - 8:45 a.m. - birding tour (optional)
8:30 - 10:00 a.m. - educational learning expo
10:00 a.m. - 1:20 p.m. - class & lunch rotations
1:20 - 1:45 p.m. - closing assembly
Registration information coming in April!

UF News

2023 Sale in the Swamp



The University of Florida, Animal Science Department's Equine Program holds its performance horse sale each spring. Proceeds to benefit the program.

For details visit:

<https://animal.ifas.ufl.edu/equine/breeding-sales/sale-in-the-swamp/>

E NEWS AVAILABLE

Help us protect the environment and reduce expenses by receiving this and other publications from us by e-mail. Give us a call (863-735-1314) or click the link below to let us know you would like to receive electronic mailings.

[Subscribe to E News via ona@ifas.ufl.edu](mailto:ona@ifas.ufl.edu)

ABOUT THIS NEWSLETTER

This newsletter is a publication of the UF/IFAS Range Cattle Research and Education Center (RCREC) located in South Central Florida in the heart of Florida's cattle country. Our goal is to keep you up to date on RCREC happenings, publications, research, faculty & student news, upcoming events and bring you beneficial information you can use in your beef cattle or forage operation.

CONTACT INFORMATION

UF/IFAS Range Cattle Research and Education Center
3401 Experiment Station, Ona, FL 33865
Phone: 863-735-1314
Fax: 863-735-1930
E-Mail: ona@ifas.ufl.edu
Website: <http://rcrec-ona.ifas.ufl.edu>
Newsletter Contact: Andrea Dunlap

UF Brahman Bull and Heifer Sale



The sale will be conducted by the UF Animal Sciences Seedstock class and all proceeds support the Beef Teaching Unit and UF Brahman Project. Fifteen 2-year-old bulls and fifteen yearling heifers will be available for viewing at the [72nd Annual Florida Beef Cattle Short Course](#).

The sale opens May 10, 2023, and closes May 12, 2023 at 6 PM.

For details visit: <https://animal.ifas.ufl.edu/events/brahman-bull-and-heifer-sale/>

UF/IFAS Range Cattle REC Faculty -

Dr. Brent Sellers, sellersb@ufl.edu - Pasture and Rangeland Weed Management

Dr. Maria Silveira, mlas@ufl.edu - Soil and Water Science

Dr. Joao Vendramini, jv@ufl.edu - Forage Management

Dr. Philippe Moriel, pmoriel@ufl.edu - Beef Cattle Nutrition & Management

Dr. Hance Ellington, e.ellington@ufl.edu - Grazinglands Wildlife Specialist

Dr. Golmar Golmohammadi, g.golmohammadi@ufl.edu - Watershed Hydrology and Biogeochemistry



UF UNIVERSITY of
FLORIDA
IFAS



Field Day

Join us on April 20!

CHECK-IN - 8:00 a.m.

Visit sponsor booths, student poster displays, and enjoy light refreshments

OPENING ASSEMBLY - 9:30 a.m.

Dr. Brent Sellers, Center Director - Welcome
Dr. Scott Angle, Senior VP, Agriculture & Natural Resources
Wes Carlton, President – FCA Update

MORNING PRESENTATIONS - 10:00 a.m.

Dr. Philippe Moriel
- Heat Mitigation During Gestation: What do we know so far?
Dr. Golmar Golmohammadi
- Updates on Groundwater Level and Quality
Dr. Hance Ellington
- Invasive Animal Species in Florida's Rangelands

STEAK LUNCH - 12:00 p.m. / FIELD TOUR - 1:00 p.m.

Dr. Joao Vendramini
- Updates on Limpgrass Management in South Florida
Dr. Brent Sellers
- Broomsedge Management in Bahiagrass Pastures
Dr. Maria Silveira
- The Role of Pastures in Soil C Sequestration

Thursday, April 20, 2023

8:00 a.m. - 3:00 p.m.

UF/IFAS Range Cattle REC

3401 Experiment Station
Ona, FL, 33865

Registration required by 4/18

General: \$30
Student: \$20
Day of event: \$50

For more information:

Email ona@ifas.ufl.edu

Register:



<https://rcrec-2023-fd.eventbrite.com>