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winter 2025

IN THIS ISSUE

A snapshot of the Rangeland Wildlife Ecology Lab's research across Florida

by M. Khalil Meliane and Hance Ellington

As the Rangeland Wildlife Ecology Lab at the Range Cattle Research and Education Center continues to grow, we're expanding our research to cover more species and ecosystems across Florida, from working rangelands to forests, cities and sugarcane fields! Here, we aim to highlight our main ongoing projects aimed at studying Florida's biodiversity and ecosystems.

Wildlife monitoring in the Deluca preserve and the Range Cattle Research and Education Center

The DeLuca Preserve offers UF/IFAS researchers and partners a unique opportunity to study the state's rangelands, which include pastures, prairies, citrus groves, oak hammocks, pine stands, and wetlands. Our lab is conducting multiple research projects at the DeLuca Preserve, many tied to the Florida Wildlife Corridor Observatory, a collaboration with Archbold Biological Station's Predator-Prey Program. This initiative aims to establish a scalable wildlife monitoring system, integrate imagery, acoustic data, and machine learning for effective data management and processing, and foster innovative research on rangeland wildlife. Forty-eight monitoring stations (trail cameras and acoustic

Figure 1. Trail camera photo of a Florida panther in the Deluca Preserve

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units) are deployed and regularly maintained to better understand cattle grazing impacts, coyote behavior, and wild pig management. In addition to these main objectives, trail cameras allow the monitoring of the full mid- to large-sized animal community, documenting even the more cryptic species that might otherwise go unnoticed (Figure 1). Acoustic recording units play a critical role in monitoring bird and frog species, capturing their calls and contributing to a comprehensive understanding of biodiversity. A similar monitoring protocol is implemented at the Range Cattle Research and Education Center, ensuring consistency and comparability across study sites. Both projects contribute to Snapshot USA, a nationwide collaborative project aiming at enhancing our understanding of animal distribution at a wider scale. We are also trialing innovative new processes, mainly a distance sampling adaptation to trail camera data, to estimate species abundance across our sites.

Figure 2. Trail camera photo of a collared coyote in the Deluca Preserve.

Figure 3. Trail camera photo caught in the Everglades Agricultural Area illustrating rat damage to sugarcane.

Coyote space use in the Deluca Preserve

Coyotes are highly adaptable generalist predators. They exhibit complex behaviors and resource selection patterns that are central to understanding their ecology. In Florida, where coyotes have grown more prevalent since the mid-1990s, their behavior is poorly understood, prompting our use of advanced GPS technology and accelerometers to monitor their movements and resource use at a fine scale (Figure 2). Often perceived as a threat by livestock producers, coyotes are blamed for an estimated 25% of calf losses in the state, though field studies on their direct impacts remain inconclusive; their presence in pastures may indirectly affect calves through stress and reduced growth rates. Our project at the DeLuca Preserve integrates ongoing research to explore how coyote behavior and resource selection are influenced by factors such as grazing management, cow presence, and prey availability, using camera and acoustic data to map prey on the landscape.

Rats in Florida's sugarcane fields

In South Florida's expansive sugarcane fields, farmers face an ongoing challenge from three rodent species, the hispid cotton rat, black rat, and marsh rice rat, which damage sugarcane and reduce production (Figure 3). To combat these pests, the industry employs a range of strategies, including toxicants, trapping, biocontrol using barn owls, and landscape modifications. However, rodent ecology in sugarcane and how it relates to the effectiveness of the different pest management strategies remains uncertain. Understanding the impact of these strategies is critical, as it could lead to improved practices that mitigate rodent damage and reduce the impact on the environment. The science behind rat management in sugarcane fields draws on ecological principles like ideal free distribution and predator-prey dynamics, with the relatively homogeneous landscape of the sugarcane fields providing an ideal setting for robust experimental studies. Findings from these studies could have broad applicability, informing pest management across the region's approximately 400,000 acres of sugarcane farmland.

Urban coyote resource use in Broward County

In the last 50 years, coyotes have

expanded their range across all of Florida. In fact, it wasn't until the mid-1990s that coyotes became well established in central and southern Florida. Despite the new and growing coyote population in the state, there have been relatively few studies of coyote behavior in Florida, and what we do know comes from studies in Florida's rangelands. In addition to rangelands, coyotes successfully occupy urban landscapes across the state, including Pinellas County and the Tampa Bay area, the Orlando metropolitan area, and the Miami metropolitan area. As the apex terrestrial predator in these urban Florida landscapes, coyotes likely play key roles in the ecological community dynamics of urban systems. Interactions between humans and coyotes are becoming increasingly common in these urban landscapes, including instances of coyote exploitation of human-related food sources, pet loss, general fear of coyotes, and interactions with locally favored wildlife (e.g., cat colonies and peacocks). Yet, our general understanding of coyote ecology in urban landscapes is mostly restricted to northern cities in the United States. Coyotes in southern cities face different limitations that are driven by fundamentally different natural landscapes and climate. Coyotes are a highly adaptable species and their ecology in Florida's urban areas is likely different than in more temperate and seasonally variable cities. Knowledge of coyote ecology in Florida's urban landscapes will allow us to better respond to human wildlife conflict issues and enhance outreach about urban coyotes. We aim to use GPS telemetry to answer key questions about space use, habitat use, and movement behavior.

* * *

Questions?
Contact the Rangeland Wildlife Ecology Lab at the UF/IFAS Range Cattle Research and Education Center in Ona, FL:

Dr. Hance Ellington
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M. Khalil Meliane
biological scientist II
melianem@ufl.edu or 863-374-7057

Center News

Visitors

On January 27, we welcomed visitors from the University of Calgary Faculty of Veterinary Medicine, W. A. Ranches: Dr. Robert McCorkell, Associate Dean of Admissions and Outreach, Madeline Kapiczowski, Manager, Community Partnerships and Clinical Affairs, Operations - Vet Med, and Heather Mitchell-Matheson, Community Engagement and Outreach Coordinator. They met with our faculty to learn about their work and to share about their ranch, research, and teaching activities in Canada. Afterwards they enjoyed a tour of the Center. You can learn more about them at https://vet.ucalgary.ca/wa-ranches/home.

Weather Notes - little rainfall, one freeze

Month	Total rainfall	Maximum temperature (F°)	Minimum temperature (F°)
January 2024	5.54"	85	38
February 2024	2.75"	85	41
March 2024	1.44"	87	47
April 2024	0.58"	91	47
May 2024	0.05"	100	56
June 2024	9.55"	99	65
July 2024	5.98"	98	70
August 2024	12.27"	97	71
September 2024	6.58"	96	70
October 2024	4.13"	93	55
November 2024	0.25"	90	40
December 2024	0.12"	85	36

2024 Summary in table above.
Rainfall: From 11/01/24 to 2/21/25, the Center received only 2.08" of rain.
Freeze: On January 25, from 3:15 a.m. until 6:45 a.m. (3 hr. 30 min.) the temperature was at or below 32 degrees.

Center News (continued)

Community Engagement

On February 5, Andrea Dunlap and Tenzy Mncube enjoyed serving as judges at the Regional Science Fair held at South Florida State College in Avon Park.

* * *

On February 13, Andrea Dunlap joined Tammy Watts and Laina Durrance volunteering as judges for the Citrus Sales Marketing Competition at the Hardee County Fair, in Wauchula.

Faculty News

Drs. Joao Vendramini and Maria Silveira to leave UF later this year

Joao Vendramini began his career as a forage specialist at Texas A&M University before transitioning to the UF/IFAS Range Cattle Research and Education Center (REC) in 2006. In May 2025, Joao will return to Texas A&M AgriLife Research as a Professor and Center Director at the Texas A&M AgriLife Research and Education Center in Stephenville, TX. In this new role, he will work with a multidisciplinary team of faculty members, focusing on research and extension projects aimed at improving the quality of life for agricultural producers in Texas. Additionally, Joao's responsibilities will include stakeholder engagement and fundraising, which will be key components of his position at Texas A&M AgriLife Research.

After 19 years working at UF/IFAS Range Cattle REC, Maria Silveira, Professor, tenured in the Soil, Water, and Ecosystem Sciences Department will be leaving us in June 2025 to pursue a new opportunity. She recently accepted a position of Director of Research with Noble Research Institute in Ardmore, OK. In her new role, Maria will be responsible for developing and leading a research strategy focused on grazing land conservation, soil health, and rancher profitability. She will also work closely with farmers and ranchers to ensure the research aligns with both current and emerging challenges they face. Noble Research Institute, the largest nonprofit organization in the US., manages 13,500 acres of working ranch lands, which serves as a living laboratory to evaluate the benefits of regenerative agriculture.

* * *

Cattlemen's Roundtable

Nineteen people attended the Cattlemen's Roundtable event on Feb. 12 at the Okeechobee Livestock Market. Dr. Philipe Moriel spoke to attendees about the benefits of early weaning.

* * *

Hannah Baker featured in *In the Field Magazine*

From twin calves in Georgia to revolutionizing Florida's beef industry, Hannah Baker's journey is as inspiring as it is impactful. View the full article online, page 28-29: https://inthefieldmagazine.com/polk/polk-january-2025-february-2025/

* * *

Special Recognition

In February, Dr. Philipe Moriel was recognized for his time as American Society of Animal Science, *Translational Animal Science Journal*, Associate Editor. He has served as Associate Editor for 6 years with 517 manuscripts reviewed! View online: https://academic.oup.com/tas

Staff News

2024 Annual Awards & Recognitions Ceremony

On December 20, faculty, staff, students, family, and friends gathered in the Grazinglands Education Building for this annual time of celebration.

Those with service anniversaries in 2024, pictured below with Dr. Sellers, are Ryan Nevling, 15 years, Andrea Dunlap, 25 years, and Christina Markham, 40 years.

Christina Markham was awarded the 2024 UF/IFAS Range Cattle REC Superior Accomplishment Award for her outstanding support services (below).

On February 12, a special service recognition reception was held in Gainesville for staff with 25, 30, 35, and more years of service. At right, Andrea Dunlap receives her 25 year service recognition plaque from Melissa Curry, UF VP Human Resources and Dr. Kent Fuchs, UF Interim President. Christina Markham, who celebrated her 40 year anniversary in 2024, was unable to attend.

Student News

CONGRATULATIONS!

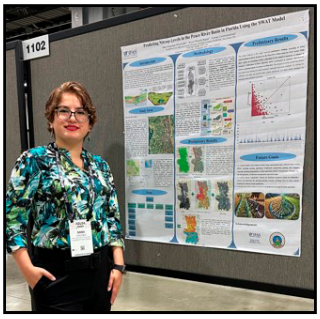
In January, Vinicius Izquierdo was awarded the UF 2024 Katherine Harms Graduate Publication Award. This prestigious award honors graduate students whose impactful publications showcase the highest standards of research in biotechnology applied to the animal sciences.

Vinicius is a PhD student advised by Dr. Philipe Moriel.

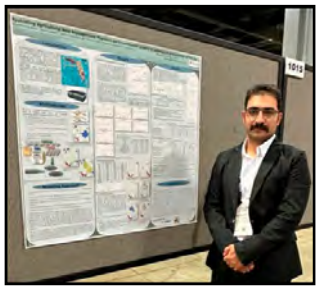
Publication: Vinicius S Izquierdo, Bruno I Cappellozza, João V L Silva, Giovanna C M Santos, André Miranda, João H J Bittar, Autumn Pickett, Shea Mackey, Reinaldo F Cooke, João M B Vendramini, & Philipe Moriel. (2024) Maternal pre- and postpartum supplementation of a Bacillus-based DFM enhanced cow and calf performance. *Journal of Animal Science*, 102, skae110.
View online, click here.

STUDENT ACTIVITIES

In December two of our students attended the AGU (American Geophysical Union) 2024 Annual Meeting in Washington, DC, 'Advancing Space and Earth Sciences.'



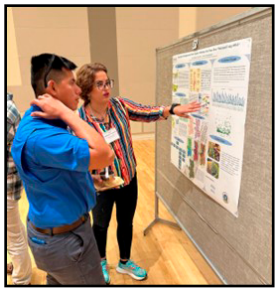
Saba Shaghaghi, a Ph.D. student and research assistant presented about the prediction of nitrate concentrations in the Peace River watershed.



Seyed Mostafa Biazar Seighalani, a Ph.D. student and research assistant presented about optimizing agricultural best management practices in Florida: a multi-criteria approach to reducing nutrient runoff.

On Feb. 10, Saba Shaghaghi participated in the 21st Annual Department of Soil, Water, and Ecosystem Sciences (SWES) Research Forum in Gainesville with her poster 'Integrated Hydrological and Water Quality Modeling of the Peace River Watershed Using SWAT+.'

Both Saba and Seyed are advised by Dr. Golmar Golmohammadi.



Upcoming Events

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

Ona Highlight - 'Controlling Australian Beardgrass in Florida Pastures'
with Dr. Brent Sellers & Dr. Tenzy Mncube
- Mar. 11, 11:00 - 11:45 AM

Ona Highlight - 'Heat Stress in Pregnant Beef Cows'
with Dr. Philipe Moriel
- Apr. 15, 11:00 - 11:45 AM

Field Day - UF/IFAS RCREC
- April 17, 8:00 AM - 3:00 PM
Research presentations, field tour, learn about student research, and enjoy a steak lunch.
https://rcrec-2025-fd.eventbrite.com

Early registration - now until Mar. 14 - $20
General registration - Mar. 15 - Apr. 15 - $30

Questions, contact us at 863-735-1001 or ona@ifas.ufl.edu

Ona Highlight - 'AI Application in Water Resources Management'
with Dr. Golmar Golmohammadi
- May 13, 11:00 - 11:45 AM

16th Annual Youth Field Day - UF/IFAS RCREC
- June 5, 8:00 AM - 2:00 PM
This year, students ages 8 - 18 will receive Beef Quality Assurance (BQA) certification for completing our field day classes, which will include: Biosecurity - Lowering the Exposure, Nutrition and Body Condition Scoring, Newborn Calf Health Management, Low-Stress Cattle Handling, and Best Practices using Injectables.
https://rcrec-2025-yfd.eventbrite.com

Early registration - April 1 - May 15 - $20
General registration - May 16 - Jun. 3 - $25

Questions, contact us at 863-735-1001 or ona@ifas.ufl.edu

CONNECT WITH US

Ona Highlight Recordings

Save the date and join us for an upcoming Ona Highlight Zoom broadcast. 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:

November 2024
'UF Long-Term Agroecosystem Research (LTAR) Update'
- Dr. Maria Silveira

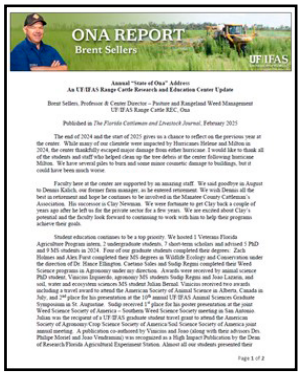
December 2024
'Groundwater Quantity & Quality Modeling Updates'
- Dr. Golmar Golmohammadi

January 2025
'What's a PULA and is a BLT More Than a Sandwich?'
- Dr. Brett Bultemeier

February 2025
'A Regional Dairy Agent Update'
- Colleen Larson

Ona Reports - published in the Florida Cattleman & Livestock Journal:

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



December 2024
'Applications of Artificial Intelligence in Water Resources Forecasting'
- Dr. Golmar Golmohammadi

January 2025
'Controlling Australian Beardgrass in Florida Pastures'
- Dr. Tenzy Mncube and Dr. Brent Sellers

February 2025
'Annual 'State of Ona' Address: An UF/IFAS Range Cattle Research and Education Center Update'
- Dr. Brent Sellers

Caught on Camera:

This feature is assembled by the UF/IFAS RCREC Rangeland Wildlife Ecology Program with images collected from RCREC game cameras mounted throughout the property near Ona, FL.

View this and all previous editions on our website: click here.

Florida Cattle Market Update - published in the Florida Cattleman & Livestock Journal:

View these on Hannah's webpage:
https://rcrec-ona.ifas.ufl.edu/about/directory/staff/hannah-baker/

This is a new monthly feature provided by Hannah Baker, state specialized extension agent II in beef and forage economics. At the link above see 'Florida Cattle Market Update' dropdown menu. Questions? Contact Hannah at h.baker@ufl.edu or 863-374-7051.

November 2024
'Cattle on Feed Placements & Marketing'

December 2024
'A Recap of 2024'

January 2025
'A Snapshot of the January 2025 Annual Cattle Market Report'

Recent Presentation available for viewing on Hannah's page:

'Managing Input Costs: The importance of recordkeeping' - presented at the FCIATS in Okeechobee, 1/23/25

Refereed Publication

Brewer M., Strauss S. L., Chase C., Sellers B., Kadyampakeni D. M., van Santen E., & Kanissery R. (2025). Effects of cover crops on weed suppression in the interrow spaces of citrus orchards. *Weed Science*. 73(e15), 1–11. doi: 10.1017/wsc.2024.72

University of Florida News

Recent UF news you may find interesting. Click the title to view the full article or visit https://news.ufl.edu/ to learn about all the latest happenings.

UF's online degree programs achieve top rankings - 01/21/2025
by Brittany Sylvestri
"For the third year in a row, U.S. News & World Report has ranked University of Florida as the top institution in the country to offer an online bachelor's degree for veterans and active-duty service members. The rankings organization also named UF as No. 2 overall for its online degree programs and No. 1 for its online bachelor's degree in business and master's degree in special education."

From problem to on-farm solution: The jouney fo one UF/IFAS AI technology - 02/11/2025
by Brad Buck
Researchers at UF/IFAS SWREC develop AI to assess crop damage after Hurricane Irma; reducing the assessment time by 90%.

AI technology uses less herbicide to kill weeds - 02/18/2025
by Brad Buck
Development of an AI-powered herbicide application unti underway at UF/IFAS GCREC, that drasticly reduces herbicide used.

UF/IFAS Range Cattle Research and Education Center 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. Philipe 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 - Hydrology and Water Quality

Hannah Baker, h.baker@ufl.edu - Beef Cattle and Forage Economics

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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.

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