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IN THIS ISSUE

Burrowing Owls: A rangeland mascot

Raoul Boughton, Elizabeth Rose and Allison Smith



Adult female with juveniles. (Photo by Jean Hall)

The bold and curious 9 inch Burrowing Owls are often seen in suburban and agricultural settings in Florida. In fact they are almost always found in suburban green space or on improved pasture. A species that may in fact have benefited because of these human modified landscapes. This amazing small burrow living owl is being studied by the Rangeland Wildlife and Ecosystems Program. Graduate students, Elizabeth Rose and Allison Smith have teamed up with Dr Boughton and Audubon of the Western Everglades to understand how owls live in these two different environments (the city versus country owl) and what the threats to their continued existence are.

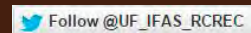
Across the nation burrowing owl

numbers are decreasing (~33% since 1966). Out west, landscape alteration and changes in agriculture have rendered lands incompatible with burrowing species such as badgers and prairie dogs-leaving western burrowing owls without burrows and the means to reproduce. But, the Florida burrowing owl, a subspecies unique to Florida will dig its own burrow. The western owls also migrate, whereas Florida Burrowing owls seem to stay all year round, although what they do over winter is still a mystery.

Audubon of the Western Everglades funds the Owl Watch program and over 45 volunteers monitor every one of the 325+ burrowing owl burrows on Marco Island during the nesting season, allowing us to assess their nesting success and track changes in their population over time. The funding allows Boughton to support a graduate to run the program and provide the fundamental research to study owls in this anthropogenic landscape. Interestingly, monitoring for the owls began in 2001, when Nancy Richie, the city's environmental specialist started a yearly count. That first year only 6 burrows were counted, today 193 pairs burrow on the island who have successfully reared 418 chicks. The question remains "How long can they survive with continued development? Is it possible to continue to co-exist with this amazing tiny owl and maintain

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Click on the images below to check us out on:



their populations”

Allison Smith, partially funded by Audubon of the Western Everglades is an MS student in Boughton’s lab at the University of Florida. Her research is focused on the long-term sustainability of the burrowing owl population on Marco Island. Since the owls are totally dependent on open space for nesting, in cities, this means vacant lots and parks and ball fields. This open space is rapidly disappearing as Marco Island careens towards complete development. Smith is measuring burrow site aspects to see how much open space owls require to nest, and is also trying to determine if they’re willing to nest in smaller than “usual” open spaces if encouraged to do so through the use of starter burrows. So far 58 homeowners on Marco Island have agreed to starter burrows on their property in the attempt to attract owls to nest. Last breeding season (Feb-June) 10 of these starter burrows have been excavated into full burrows.

Liz Rose, a PhD candidate under Boughton, is also studying burrowing owls in two cities and five cattle ranches in Southwest Florida. Liz and Raoul began the rural urban comparison project in 2016. The rural owls are also using a human modified landscape and most populations are found on grasslands that are grazed and managed. The most comprehensive study done in Florida was over 15 years ago in another suburban city, Cape Coral. Since there is almost no information about burrowing owls in rural lands Rose and Smith are collecting basic baseline information: when is the breeding season, how many chicks fledge, do adults return to the same burrows and mates each year, how many young return to their natal population, what is the survival of adults? Importantly, how much area is required for each breeding pair during nesting? To answer these questions

owls are color banded (Figure 1) at all sites to better keep track of individuals and monitor their productivity. A subset of male owls has also carried backpack GPS units to measure the area and landscape features they use when they have young.

Through this study we have found that urban and rural breeding pairs that are successful in fledging at least one juvenile are equally productive (they fledge about three juveniles each year). However, close to 90% of urban pairs were successful, compared to less than 60% of rural. We do not know how many of these fledglings survive to breed themselves, and how this differs among sites.

High rainfall events during critical times can flood burrows and cause large losses of eggs and nestlings, which we have seen multiple times in just a few years. After an unusually wet dry season, an extreme rain event led to the complete or partial failure of more than half (at least 54%) of active nests at one ranch site in May 2016. In 2018, close to 75% of all known territories across five ranch study sites flooded at some point in the breeding season, but whether or



Figure 2. Juvenile with metal band only. (Photo by Jean Hall)

not these flooded burrows failed depended on the timing of this flooding (how old the brood of owls was). We continue to learn more every year of the study. In fact we just found out the burrowing owls will disperse from their natal territories and cross the peninsula. A young owl marked with just numbered metal band (Figure 2, only adults get colors in our study) flew from Cape Coral all the way to the Miami Airport (Figure 3). The national wild bird banding program run by USGS reported



Figure 1. Adult burrowing owl with color and metal bands. (Photo by Jean Hall)

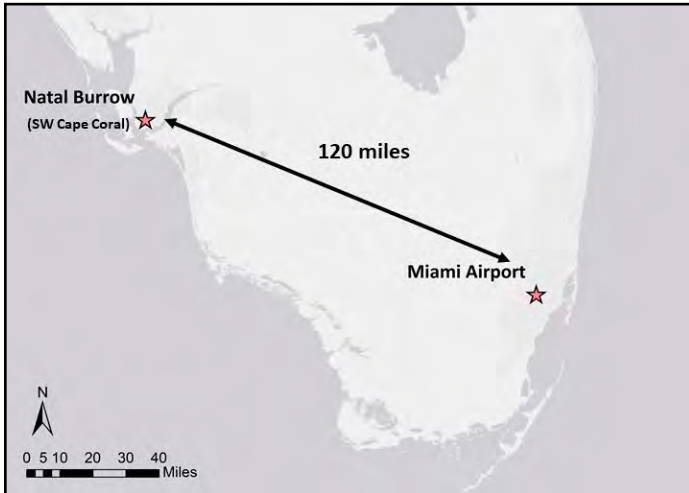


Figure 3. Young owl flew from Cape Coral all the way to the Miami Airport.

the recapture to us. All wild birds captured for research and released back into the wild are required to be banded with an appropriately sized number metal band.

We have found that males will travel up to 1 km in urban habitat, but one rural male traveled nearly 5 km on multiple occasions. Despite this, there is no consistent difference in the amount of space that males use while hunting in urban versus rural areas, even though the average urban male used 0.4 km² while rural males used 0.6 km². While we can't say that they aggressively defend these hunting grounds, we found a surprising lack of overlap in the areas that adjacent males—even those nesting just a few dozen meters apart—use. Overall, we're finding that even though urban owls seem to prefer hunting in people's yards they still prefer to nest on vacant lots or other open areas. So, it seems that there is this really interesting tension that arises as the development of vacant land simultaneously increases preferred hunting grounds but reduces nesting habitat. Alli's work with urban burrow site selection and the use of starter burrows will see how much development Burrowing Owls will tolerate.

Dry prairie, which is the original habitat for Florida burrowing owls, has

been all but lost in Florida (and across the country). However, some grassland bird species, like the burrowing owl, have been able to take advantage of the various habitats provided by cattle ranches. Liz laments below

"I think burrowing owls are an ideal species for getting non-scientists involved and

engaged with wildlife research and conservation (as demonstrated with the success of Owl Watch), but from a more philosophical perspective, they are an example—even a mascot of sorts—for how we can coexist with wildlife, and that the places where we live and grow our food can also provide habitat for some plant and animals species, if we put resources into research and planning.

They also expand our view of what "green space" and wildlife habitat can be; in addition to burrowing

owls, I've observed other species of conservation concern or importance such as Loggerhead Shrikes, Northern Bobwhite, and Eastern Meadowlarks in and around the larger vacant parcels of land in Cape Coral. Owls in cities and ranches are living in highly-modified landscapes, and from my perspective, the overarching goal of our research program described above is to figure out how we can maintain this coexistence into the future and increase awareness of the importance of these less than pristine landscapes for birds and other wildlife.

They are a highly flexible species, but they are still threatened by land-use change and climate change in multiple ways. The conversion of cattle ranches in Florida to housing or other developments, and the loss of open space for nesting in urban areas are major threats. As far as climate change, sea-level rise and storm surge in urban coastal populations outside of the breeding season, and extreme precipitation events and flooding of burrows on ranches and even some urban burrows are threats during the breeding season."

Congratulations to Allison Smith! Allison won 2nd place with her presentation, "Conserving suburban Burrowing Owls by engaging residents" at the fall meeting of the Florida Ornithological Society. She was recognized for her collaborative efforts with Audubon and the UF owl watch on Marco Island. The Owl Watch program was awarded the Outstanding Conservation Project Award.

Audubon raises funds for the program through donations and the Audubon adopt an owl program. <https://audubonwe.org/adopt-an-owl/#>

Allison is a UF masters student advised by Raoul Boughton.



Allison (holding certificate) is pictured here surrounded by owl watch volunteers.

Connect with us

Listen or download the latest **Joe What? Podcasts:**



- Dr. Roger West, former Florida Cattlemen's Association president and retired faculty from the University of Florida – Animal Sciences Department. Dr. West talks about the changes in carcass quality parameters in the beef cattle industry. (Run time: 14.58 min.)



- Matt Pearce, the incoming Florida Cattlemen Association President. Matt discusses heifer development options in Florida. Matt is a Purina representative with 20 years of service in Florida and the owner of Pearce Cattle Company in Okeechobee. (Run time: 21.28 min.)



- Clifton Chapman, of Double C Bar Ranch in Kennansville. Clifton discusses purebred, commercial, and pasture finished cattle production in Florida. (Run time: 14.11 min.)

These monthly podcasts can be found on:

[Podbean](#) [YouTube](#) [UF/IFAS Range Cattle REC Website](#)



Jim and Jan Beckley, pictured here with students and visiting scholars at the 2018 Christmas party, are local retirees who volunteer their time to share American culture with RCREC students and help them with their English. We are very grateful for their friendship.

Upcoming Events

Florida Agricultural Policy Outlook Conference
- Feb. 26, 9:00 a.m. - 4:00 p.m.
UF-IFAS Gulf Coast REC, 14625 Co Rd 672, Wimauma. \$50 for guests, \$35 for UF faculty, staff, students – [Click here to register](#). Questions, call Alan Hodges, 352-294-7674.

Prescribed Fire for Wildlife Workshop
- Feb. 26-28
North Florida REC, 155 Research Rd, Quincy. [Click here to register](#), \$25 per person

Cool-Season Forage Field Day
- March 1, 8:00 a.m. – 2:00 p.m.
Program will begin in Arcadia, include a field site visit, and end in Wauchula. [Click here to register](#).

Managing Florida's Natural Resources IST
- March 4 - 6
Managing Florida's Natural Resources: Fireescaping, Invasive Species, Native Habitat, and Water Resources (IST #31661) at the FDACS DPI Office (1911 SW 34th St., Gainesville). [Click here to register](#).

On a Long Term Agroecosystem Research (LTAR) Project Highlight with Britt Smith
- March 12, 11:00 a.m.
Presenting, "Effects of prescribed fire on cattle use and foraging behavior in subtropical grasslands." [Click here to register](#).

Private Landowner Workshop
- March 21, 9:00 a.m. – 1:00 p.m.
Tenoroc Shooting Range Hunter Safety Classroom in Lakeland. Offered by Florida Fish and Wildlife Conservation Commission and UF/IFAS. There is no fee to attend and pre-registration is not required. Questions, contact Luis Gozalez (863) 648-3826.

On a Soil and Water Science Highlight with Maria Silveira
- April 9, 11:00 a.m.
Maria will be presenting an update on biosolids research and regulations. [Click here to register](#).

Quail Field Day
- April 26, 7:00 a.m. - 4:00 p.m.
Come join us to learn more about Bobwhite Quail. The day will include a walking tour of Sharp Ranch. Registration fee, \$50. [Click here for more information](#).

Ona Highlights

Save the date and join us for an upcoming Ona Highlight webinar. You can view the webinar from any device with internet or come to the Center and join us in person!

[Click here to watch a short video](#) to learn more about using GoToWebinar.

These informative presentations are held in the Grazinglands Education Building. They begin at 11:00 a.m. and last about 45 minutes.

To attend a future event in person call 863-735-1314 to register or register for a webinar. Access the registration links on our online calendar [here](#).

Past webinars (video recordings and a PDF of the slides) are available on the RCREC website, in the [Virtual Classroom](#).

Recent recordings:

“Troubleshooting Mineral Supplementation of Florida Beef Cow/Calf Herds” - John Arthington, 2/12/19

“Management of Brunswickgrass in Bahiagrass Seed Production Fields” – Brent Sellers, 1/8/2019

“Wild Hogs and Big Data: How to deal with 7 million game camera images to answer questions on hog biology and management.” - Raoul Boughton, 12/11/18

“Archbold-UF LTAR project - Manipulating fire and grazing to enhance the delivery of ecosystem services from subtropical humid grasslands” - Betsey Boughton, 11/13/18



NEW VIDEO: Influence of herbage mass on cattle production and behavior

– [Click here](#) to watch (3.58 min.)

Joao Vendramini, a forage specialist, provides a grazing demonstration focusing on the importance of herbage mass to beef cattle production and behavior.

Blog Posts



Will Hexazinone Work for Brunswickgrass Management?

by Brent Sellers, Professor and Associate Center Director, Pasture and Rangeland Weed Management



Computers Identify Wildlife in Game Picture Images

by Raoul Boughton, Assistant Professor, Rangeland Wildlife and Ecosystems

[Click here](#) to visit our blog page to access this and all past blog posts.

Job Opening

Must be at least 18 to apply.

Pay: \$13.50 per hour, 20+ hours a week (flexible)
Tasks to include: pressure washing, landscaping, and exterior building cleaning.

Call 863-735-1314 for more information.

Training Available

Beef Cattle Body Condition Scoring (BCS) Tutorial

What are the body condition scores (BCS) of these cows? How do you determine BCS? Why is it important to know your cattle's BCS?

Take this tutorial (part 1 and 2) and learn how body condition affects fertility and ultimately the profitability of your cow-calf operation. Learn how to properly score cattle and access handy resources to help you score your cattle.

[Click here](#) to take this training (recommended browsers: Google Chrome or Firefox).

The training will take 30 minutes to an hour to complete.



Staff News

Staff and Friends of Ona Recognized in December:



Service Pins awarded: 5 years: Lauria Gause, Julie Warren, and Bethany Wight, 15 years: Kim Parks, 35 years: Christina Markham (back row) John Arthington with 10 year pin recipient: Ryan Nevling



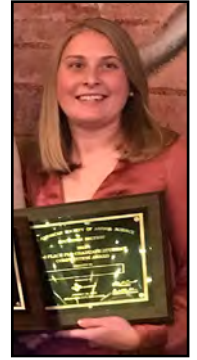
In December, Dennis Kalich, a farm manager/ research coordinator, received our in-house 2018 Superior Accomplishment Award. He was then nominated for same award at the UF/IFAS level. There he was selected as one of 8 chosen from throughout the state for the UF/IFAS 2019 Superior Accomplishment Award, in the administrative/supervisory category. He is now being considered for the University of Florida campus wide honor which will be announced in April or May.

Dennis has served as the Center's farm manager/ research coordinator for the last 26 years. Born in Schulenburg, Texas, Dennis attended college at Texas A & M University and earned a bachelor's of science degree in agricultural economics - farm and ranch management. Prior to his career here, Dennis worked at a similar research facility for Texas A & M.

Dennis was nominated for the award for his dedication to the research center. Serving as a research coordinator on a working cattle ranch means he often works more than 40 hours a week. This is especially true when our climate doesn't always cooperate, and hay has to be baled on weekends. This occurred a lot in 2017-2018 due to an extended drought period in early 2017 followed by hurricane Irma that the fall. Dennis is often "on-call" to help with student housing issues on weekends and holidays. Power outages and water pump failures seemed to be quite common in 2017-2018. Dennis was able to communicate with the students to quickly mitigate the problem or, most often, he would drive nearly an hour to fix the problem for the students. He takes time on the weekends to help faculty with tours and extension activities at the center. Perhaps most importantly, Dennis serves as an ambassador for our center as he is an active member of the Manatee County Cattlemen's Association. Since faculty do not regularly attend those meetings, Dennis often provides updates on RCREC activities to keep them informed. This is extremely important as many of our cattlemen do not use email or use social media.

Student News

Congratulations Elizabeth Palmer! Elizabeth earned 3rd place in the graduate student PhD 3 minute thesis competition at the 2019 American Society of Animal Sciences Southern Section Meeting in Oklahoma City, Ok. Elizabeth is a UF Animal Science student, advised by Philippe Moriel.



"Friend of Ona" Award

in sincere appreciation for many years of committed support and friendship -

Chuck Syfrett



"Certificate of Appreciation"

for outstanding volunteer services -

Margaret Hodges Blanco

Faculty News



Congratulations Philippe Moriel!

In January, Philippe received the 2019 American Society of Animal Sciences Southern Section Meeting Outstanding Young Animal Scientist - Research Award in Oklahoma City, Ok.

(right) Philippe receives award from Nicolas DiLorenzo.

High Impact Research Publications

In 2018, UF/IFAS Range Cattle REC faculty published 31 peer-reviewed articles in scientific literature. Each year faculty may select 1 to 2 articles they consider to have high impact in science, agricultural production, human welfare, the environment, communities and the economy, etc. These high impact publications are recognized on the Dean of Research website and at the annual UF/IFAS Dean of Research Awards Ceremony. At this ceremony a handful of publications, submitted from across all of IFAS, will receive special recognition.

We would like to recognize the 2 articles being submitted as High Impact Research Publications and a third article, which tied for 2nd place.

1st place

Xu, S., Silveira, M. L., Sollenberger, L. E., Viegas, P., Lacerda, J. J. J., & Azenha, M. V. (2018). Conversion of native rangelands into cultivated pastures in subtropical ecosystems - Impacts on aggregate-associated

carbon and nitrogen. *Journal of Soil and Water Conservation*, 73, 156-163. [Click here to view the abstract.](#)

2nd place

Piccolo, M. B., Arthington, J.D., Silva, G. M., Lamb, G. C., Cooke, R. F., and Moriel, P. (2018). Pre-weaning injections of bovine ST enhanced reproductive performance of *Bos indicus*-influenced replacement beef heifers. *Journal of Animal Science*, 96,

618-631.

[Click here to view the abstract.](#)

Honorable Mention (tied for 2nd place)

Dias, J. L. C. S., Sellers, B. A., Ferrell, J. A., Silveira, M. L. A., & Vendramini, J. M. B. (2018). Herbage response to dogfennel cover and limited nitrogen fertilization in bahiagrass pastures. *Agronomy Journal*, 110, 2507-2512. [Click here to view the abstract.](#)

Not our typical dry season

Similar to many locations around the state, conditions here are WET.

What is normal for this time of year? The 76-year total rainfall averages for Dec. and Jan. are 1.9" and 2.14" respectively. This past Dec. we received 6.42" and Jan. brought 3.72"; that's 6.1" above normal.

Visit our website to view annual climatological reports. <http://rcrec-ona.ifas.ufl.edu/publications/>

Access weather data on FAWN. <https://fawn.ifas.ufl.edu/>



Conditions have made field work and daily feeding of cattle extra challenging lately. Here are a few photos of some of the animal science crew making their routine feed delivery. (photos by Julie Warren)



Recent Refereed Publications

De Oliveira, F. C. Leite, J. M. D. Sanchez, J. M. B. Vendramini, C. G. Lima, P. H. C. Luz, C. O. Rocha, L. E. T. Pereira, and V. R. Herling. (2018) Diurnal Vertical and Seasonal Changes in Non-structural Carbohydrates in Marandu Palisade Grass. *The Journal of Agricultural Science* 156: 457-64.

Dias, J. L. C.S., B. A. Sellers, J. A. Ferrell, M. L. Silveira, and J. M.B. Vendramini. (2018) Herbage Responses to Dogfennel Cover and Limited Nitrogen Fertilization in Bahiagrass Pastures. *Agronomy Journal* 110:2507-2512.

Michael A. Tabak, Mohammad S. Norouzzadeh, David W. Wolfson, Steven J. Sweeney, Kurt C. Vercauteren, Nathan P. Snow, Joseph M. Halseth, Paul A. Di Salvo, Jesse S. Lewis, Michael D. White, Ben Teton, James C. Beasley, Peter E. Schlichting, Raoul K. Boughton, Bethany Wight, Eric S. Newkirk, Jacob S. Ivan, Eric A. Odell, Ryan K. Brook, Paul M. Lukacs, Anna K. Moeller, Elizabeth G. Mandeville, Jeff Clune, and Ryan S. Miller (2018) Machine learning to classify animal species in camera trap images: Applications in ecology. *Methods in Ecology and Evolution*, <https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/2041-210X.13120>

Joao M B Vendramini, Philippe Moriel, Reinaldo F Cooke, John D Arthington, Hiran Marcelo da Silva, Matheus B Piccolo, Joao Marcelo D Sanchez, Vinicius Gomes, Pedro A Mamede; Effects of monensin inclusion into increasing amount of concentrate on growth and physiological parameters of early-weaned beef calves consuming warm-season grasses, *Journal of Animal Science*, Volume 96, Issue 12, 3 December 2018, Pages 5112–5123, <https://doi.org/10.1093/jas/sky374>

Published in The Florida Cattleman & Livestock Journal:

Ona Reports

“Have you ever wondered what those wild hogs root for?”

by Raoul Boughton, February 2019

“Management of Brunswickgrass in Bahiagrass Seed Production Fields”

by Brent Sellers, January 2019

“Bobwhite Quail in Florida – Declines and Opportunities”

by Raoul Boughton, December 2018

View these and other publications on our website at

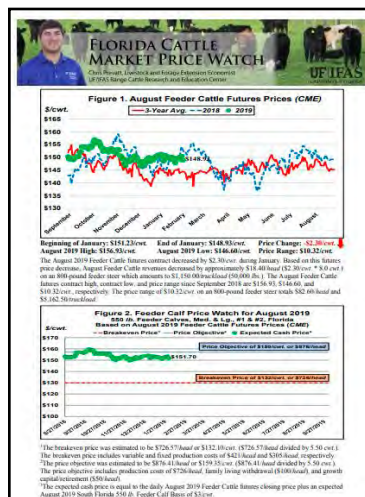
<http://rcrec-ona.ifas.ufl.edu/publications/>

Florida Cattle Market Price Watch

This helpful resource is provided monthly by Chris Prevatt, State Specialized Agent II, Beef Cattle and Forage Economics.

View a complete listing of past reports on our website at:

<http://rcrec-ona.ifas.ufl.edu/florida-cattle-market-price-watch/>



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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.

CONTACT INFORMATION

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Florida Youth Institute

University of Florida College of Agricultural and Life Sciences
Florida Department of Agriculture and Consumer Services



The Florida Youth Institute (FYI) is a one-week residential summer program for rising high school juniors and seniors interested in learning more about college majors and career opportunities pertaining to the life sciences, natural resources, or Florida agriculture.

Application Deadline: February 28, 2019

Online Application:
www.cpet.ufl.edu/students

Session Dates Available:
July 14-19, 2019 | July 21-26, 2019

- Meet with UF College of Agricultural and Life Sciences Dean Dr. Elaine Turner and representatives from the Florida Department of Agriculture and Consumer Services.
- Experience indoor and outdoor laboratories and campus facilities.
- Reflect on worldwide challenges such as food security.
- Students may attend only one session. Applicants must be a **rising** high school junior or senior during the 2019-2020 academic year. Cost is \$350.

