

**UF** UNIVERSITY OF FLORIDA

## Ona Report: Special Edition

John Arthington, Brent Sellers, Raoul Boughton, Chris  
Prevatt, Maria Silveira, Joe Vendramini, and  
Phillipe Moriel

**UF** IFAS Extension  
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## Selenium Fertilization of Forage

John Arthington  
Professor and Center Director  
and  
Juliana Ranches  
MS Graduate Student

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## Selenium Fertilization of Forage

- High-selenium hay was created by sodium selenate fertilization of Jiggs bermudagrass.
- High-selenium hay was fed to weaned calves (Study 1) and prepartum cows (Study 2) and compared to sodium selenite and a No-selenium control.
- Measurements include, selenium status of cows and calves (liver, blood, milk, placenta) and Se-dependent enzyme activity and measures of passive immunity.



Juliana Ranches  
MS Graduate Student

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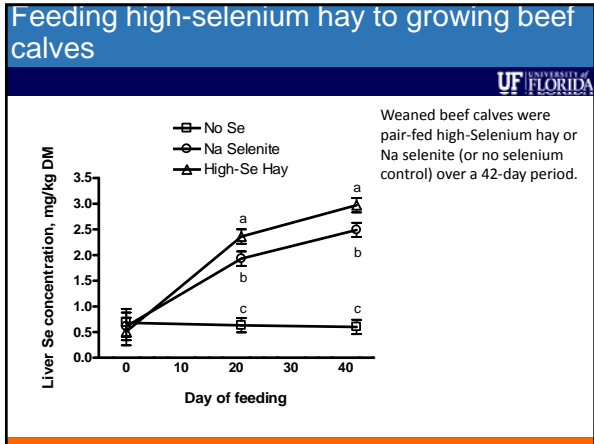
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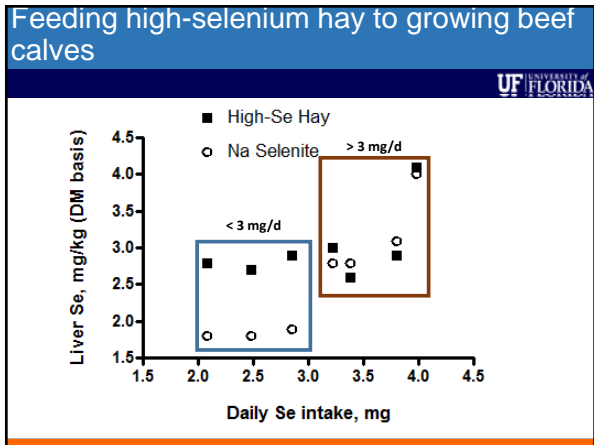
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### Broomsedge Management in Bahiagrass Pastures

Brent A. Sellers and Maria L. Silveira

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## Forage Management

Joe Vendramini  
Associate Professor – Forage Specialist

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## Forage Management

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- Evaluation of perennial peanut cultivars propagated by seed



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## Forage Management

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- Evaluation of perennial peanut cultivars propagated by seed



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## Forage Management



- Evaluation of Sunnhemp (*Crotalaria juncea*) as a warm-season annual legume for early-spring forage production



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## Forage Management



- Identification of superior limpoglass cultivars under low-input systems



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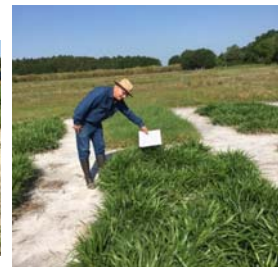
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## Forage Management



- Evaluation of new Brachiaria cultivars under low-input systems



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## The Working Ranch and Wildlife

Raoul Boughton  
Rangeland Wildlife and Ecosystem Program

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**Ranches and Habitat**

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- Ranching has modified and manipulated natural landscapes to support the production of beef
- Detrimental for some species but not others
- Especially important for several Threatened and Endangered Species
- In Florida ranches provide a grassland habitat that is disappearing worldwide and if managed well can provide excellent habitat for many species
- Crested Caracara, Wood Storks, Sandhill Cranes, American Kestrels, Shrikes and Burrowing Owls to name a few

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**Rangeland Wildlife**

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- I work with ranchers on ranches to identify how important ranch habitats are to certain species.
- You may ask *"Why is it so important to know?"*
- The large connected ranch environments of Florida probably provide the core habitat for many species and as ranch habitats are slowly developed, the last bastion for some species will be lost and those species may go extinct.
- Because of this ranches have conservation value and understanding how much ranch habitats are important to a species survival will increase that value.
- A thorough understanding should provide the populace and agencies information that will argue for increased dollar incentives to be provided to ranchers to be both beef producers and best practice wildlife managers.
- From a ranching perspective this can be thought of as diversifying your business.

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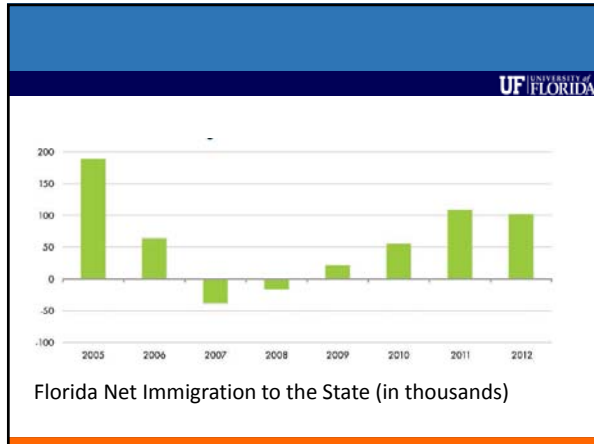
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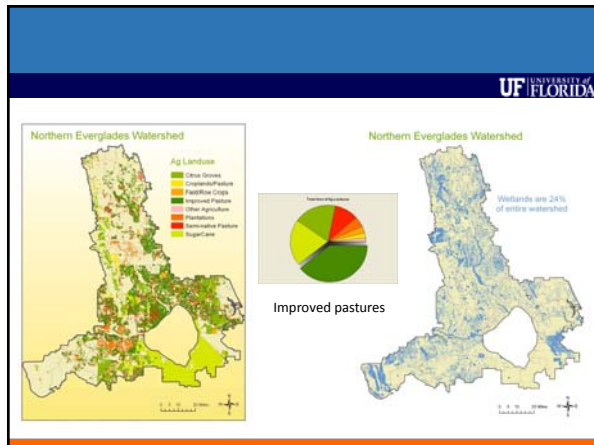
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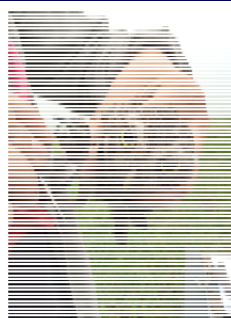
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### Project Highlight - Burrowing Owls



Florida ranchers provide habitat mostly in the form of improved pasture.

Rural Owls are probably an important part of the population of Burrowing Owls

Urban owls especially on the coast of Florida are declining

Ranchers are providing protection for a declining species and should be recognized for that service

Cattle and Owls can co-exist, and rural populations are very important

We are collecting the data to show how important

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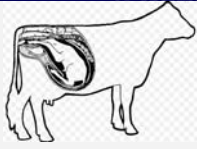





**Research**

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- 1. Pre- and post-weaning calf immunity and growth**
  - Pre-weaning calf management
  - Alternatives to enhance vaccine response
    - Pharmaceutical companies support
- 2. Fetal Programming**
  - Gestational nutritional management vs. postnatal calf performance
    - Frequency and type of supplementation, forage chemical composition, herbage mass, stocking rate, ...
  - Focus on (1) pre- and post-weaning growth (2) immunity following stressful events
- 3. Metabolic Imprinting**
  - Strategies to explore metabolic imprinting effects
  - Alternatives to beef producers in addition to early-weaning


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**Potential Extension Programs**

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- 1. Calf health**
  - Decrease pre-weaning calf loss
  - Improve post-weaning calf immunity
- 2. Winter feed supplementation**
  - Supplementation alternatives
    - Impact on cow and calf postnatal performance
    - Heifer development
- 3. Strategies to increase calf value**
  - Health status, lot size, calf uniformity, castration, growth implant
  - Creep-feeding, preconditioning

Based on 2015 Florida Cattlemen's Association Research Priorities

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**Extension**

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- 1. FL Beef Team of agents, producers and RCREC faculty**
  - Drive research and extension priorities
- 2. Hands-on approach**
  - Multiple rotating stations
  - Live animal demonstration when possible
- 3. Multi-county**
  - Convenient for producers
  - Agent and producers involved
- 4. Video-recorded for later visualization**
  - Increase producer outreach







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## Livestock and Forage Economics Program

Chris Prevatt  
Range Cattle REC

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## Outline

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- Expansion of the U.S. Cattle Herd
- Enterprise Budgets
  - Beef Cow-Calf, Stocker, Replacement Heifer
  - Warm-Season and Cool-Season Forage Budgets
- Cost of Production

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## Expansion of the U.S. Cattle Herd

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Year	Inventory (million head)
1990	95.5
1991	96.5
1992	97.5
1993	98.5
1994	99.5
1995	100.5
1996	101.5
1997	102.5
1998	103.5
1999	104.5
2000	105.5
2001	106.5
2002	107.5
2003	108.5
2004	109.5
2005	110.5
2006	111.5
2007	112.5
2008	113.5
2009	114.5
2010	115.5
2011	116.5
2012	117.5
2013	118.5
2014	119.5
2015	120.5
2016	121.5

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## Enterprise Budgets

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### 2015 UF Beef Cow-Calf Budget

(Assumes Raised Replacement Heifers)

Welcome! These excel spreadsheets contain a budget template for cow-calf enterprises. The purpose of this budget template is to serve as a management and decision-making guide for current and prospective producers of cow-calf enterprises. Every cow-calf operation is unique and has different inputs and outputs. The cow-calf budget template allows individual producers the opportunity to evaluate the costs and returns of their specific operation. The budget template may also be used to evaluate projected production and marketing practices and what if scenarios. It is not intended to replace a producer's own records and estimates.

In order to complete the 2015 UF Beef Cow-Calf Budget producers must enter their expected production and cost estimates into the input cells highlighted in blue. All other cells in the workbook are password protected to protect the formulas and headings. Only the cells highlighted in blue can be altered. Once data are entered into the input cells, formulas throughout the workbook will automatically recalculate. Each worksheet has been pre-set to print in a printer

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## Cost of Production

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**LMIC Estimated Average Cow-Calf Costs**  
Includes Pasture Rent, Annual

Year	Cost (\$/head/cow)
1985	\$318
1986	\$318
1987	\$318
1988	\$318
1989	\$318
1990	\$318
1991	\$318
1992	\$318
1993	\$318
1994	\$318
1995	\$318
1996	\$318
1997	\$318
1998	\$318
1999	\$318
2000	\$318
2001	\$318
2002	\$318
2003	\$318
2004	\$318
2005	\$318
2006	\$318
2007	\$318
2008	\$318
2009	\$318
2010	\$318
2011	\$318
2012	\$318
2013	\$893

Data Source: USDA AMS, NASS, Analysis by LMIC

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## Contact Information

**UF** UNIVERSITY OF FLORIDA

- John Arthington – [jarth@ufl.edu](mailto:jarth@ufl.edu)
- Brent Sellers – [sellersb@ufl.edu](mailto:sellersb@ufl.edu)
- Joe Vendramini – [jv@ufl.edu](mailto:jv@ufl.edu)
- Maria Silveira – [mlas@ufl.edu](mailto:mlas@ufl.edu)
- Raoul Boughton – [rboughton@ufl.edu](mailto:rboughton@ufl.edu)
- Chris Prevatt – [prevacg@ufl.edu](mailto:prevacg@ufl.edu)
- Phillipe Moriel –
- Main Office – 863-735-1314

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## Next Webinar



- Dr. John Arthington
  - July 12, 2016 at Noon

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## Agronomic and Environmental Impacts of Biosolids Application to Bahiagrass Pastures



Maria L. Silveira<sup>1</sup>, George O'Connor<sup>2</sup>, and Joao Vendramini<sup>1</sup>

<sup>1</sup>UF/IFAS Range Cattle REC, <sup>2</sup>Soil & Water Science Department




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## Biosolids "dilemma"



- ❖ Essential nutrients (N, P, C, S, and micronutrients), liming potential, enhancement of soil biological and physical properties
  - ❖ N:P ratio in biosolids vs. crop requirements
    - N-based rates provide excess P
    - P-based rates very low (~1-2
- T/A)
- Impractical
  - Uneconomical
  - Require greater land area
  - Require supplemental N

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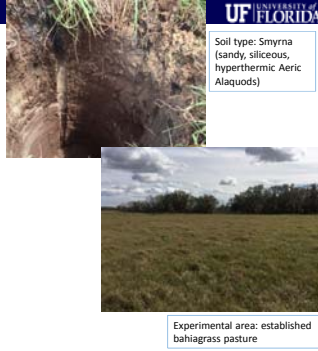
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## Objectives

1. To establish a **long-term, instrumented field trial** designed to evaluate the agronomic benefits of biosolids application on forage production.
2. To evaluate the effects of co-application of biosolids and biochar (also known as "black carbon") on soil chemical (C, N, and P dynamics) and physical properties (water holding capacity, aggregate stability)
3. To monitor N and P losses via leaching and gas emissions



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## Materials and Methods

- ❖ Treatments: 3 Biosolids + commercial fertilizer (N and P) applied either alone or in combination with biochar (1% wt. basis). Biosolids and fertilizer will be applied at a rate of 160 lb plant available N/A.
- ❖ Why biochar?
  - C-rich material that can act as a strong sorbent that can control excess N and P in soil and water
  - Non-hazardous residuals
  - Low cost
  - Improve soil chemical, physical, and biological properties



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