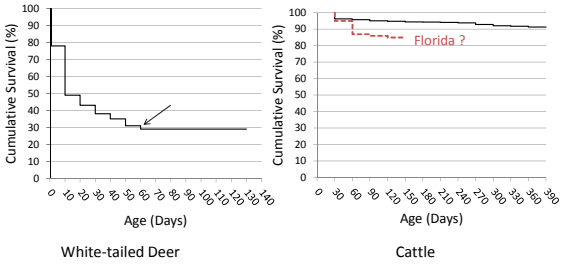
Typical calf survivorship



Why is calf loss important to characterize?

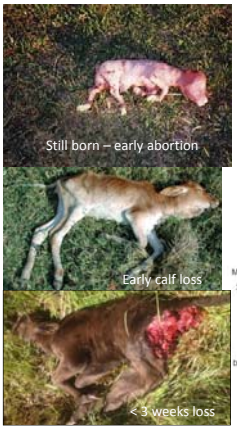
- Producing and raising healthy calves is integral to profitability and success of cow-calf operations
- It has been one of the hardest areas to conduct good research in because of high logistical issues
- Identifying the causes that most affect calf loss in Florida, *will focus our resources and research* to provide the greatest economic return to producers
- An increase in 1% survival of the Florida state calf herd is equivalent to 6900 calves (What is this worth?)

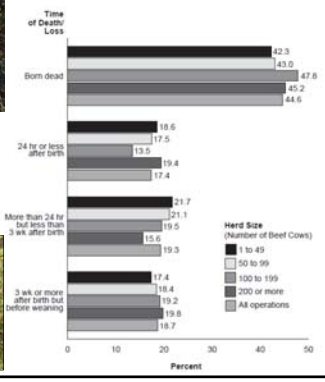
National Calf Loss (USDA 2007)

Herd Size (Number of Beef Cows)

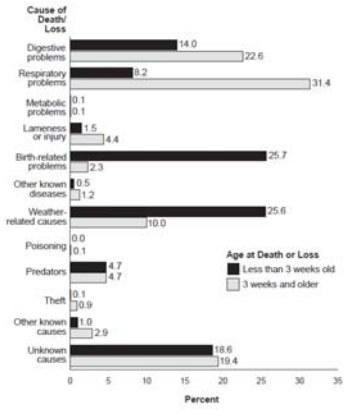
Outcome	1-49	50-99	100-199	200 or More	All Ops.
Born alive and survived to weaning	93.1	93.0	93.3	94.5	93.6
Born alive but died/ were lost before weaning	4.0	4.0	3.5	3.0	3.5
Born dead	2.9	3.0	3.2	2.5	2.9
Total	100.0	100.0	100.0	100.0	100.0

National Loss Periods





National causes of calf loss



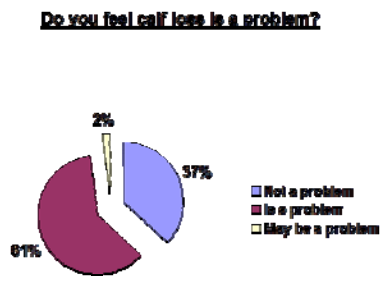
Florida UF Research Center Losses

- UF research center herds 20 year summary
  - 6% average loss (similar to National average)
  - 12% in first and second time breeders
  - cause of calf loss not recorded
- Less than many operations in Florida
- Can management of UF herds be replicated in an industry setting?
- What is being done differently at UF?
  - High management level
  - High inputs
  - Lots of activity

Florida Ranch Reported Losses

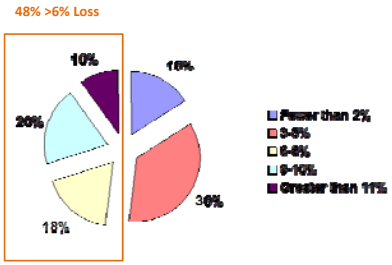
- 2008 directed calf loss survey
- 46 responses (encompassing 144,000 breeding animals included cows/heifers)
- 28 ranches run over 1,000 cows
- 9 ranches run between 500-1,000 cows
- 9 ranches run between 0-500 cows
- Conducted by Jodie Termine (2007 and 2008)

Florida Ranch Reported Losses



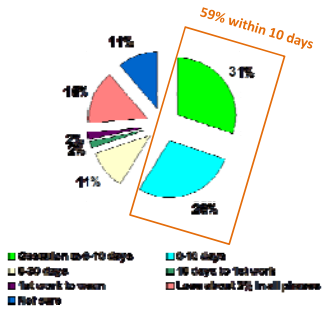
Florida Ranch Reported Losses

What do you feel your average calf loss is in a year?



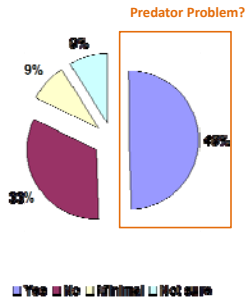
Florida Ranch Reported Losses

When are you losing calves?



Florida Ranch Reported Losses

Are Predators a Problem?



Objectives of 2017-2019 study

1. Undertake the most thorough peri- and post-partum calf loss study ever conducted
2. Quantify cause of calf loss from late gestation to weaning
3. Establish the most common causes of calf loss
4. Based on quantified causes of calf loss provide sound advice on how to reduce calf loss to Florida cattleman
5. Define the most important data gaps needed to fix the causes of calf loss in Florida

How can we do it?

- We have to track calf loss from palpation, including birthing events, to weaning
- Using vaginal birthing inserts on known pregnant cows we can track calving time and ascertain survival and allow recording of ***early calf loss***.
- Using VHF ear tags after initial birthing event we can monitor for mortality events and investigate up until weaning
- Logistics and sample size greatest hurdles

Sensor Trial 2016

- The company Medria and John Balbion (US distributor) provided sensors, base station, and network access *in kind* for a trial study
- 22 sensors deployed 13th September 2016

Expulsion Event

After Birth VHF transmitter attached to ear tried and true method

Data Logger and Antenna Receivers

Fixed Towers and data loggers in the field to follow cattle birthing sensors and VHF mortality signals, to allow for early responders and establishment of calf loss

Recommendation of panel tests to be conducted on both cows, and calf after calf death. Will be compared to successful cows-calf pairs

Test	Cow	Calf
Necropsy		X
Histopathology		X
IBR	X	X
BVD	X	X
Neospora	X	X
Chlamydia	X	X
Coxiella	X	X
Actinomyces	X	X
Ureaplasm/Mycoplasma	X	X
Aspergillus	X	X
Haemophilus	X	X
Leptospirosis	X	X
Listeria	X	X
Salmonella	X	X
Anaplasma	X	X
Vibrio & Trichomonas	X	X
Sarcosystis (microscope analysis)	X	X
Micro and micronutrients analysis (selenium, vitamin A, and minerals (blood and or liver)	X	X
Colostrum and milk	X	

*Necropsies will be undertaken at Bronson Animal Diagnostic laboratory under coordination with collaborating veterinarians and researchers.

Current Activities

- Equipment acquired for three full set-ups to each monitor 110 cow/calf pairs from late pregnancy to weaning
- First set of inserts applied at Big Cypress August 2017
  - 1st calves mid to late October
  - Herd health sampled on random 25 cows
    - Blood and chemistry panel
    - Vaginal Swabs
    - Anaplasmosis test
- Second set to be applied at preg check Longino Ranch October 2017
- Third set to be applied December 2017 at Buck Island Ranch

Collaborative Research and Extension

Team Member	Role	Affiliation
Dr Raoul Boughton	PI	UF/IFAS – Range Cattle REC
Gene Lollis	Co-PI/Rancher	MAERC/Buck Island Ranch
Dr Liz Steele	Co-PI	Ridge Large Animal Veterinary Services
Dr John Yelvington	Co-PI	Ridge Large Animal Veterinary Services
Alex Johns	Rancher	Seminole Beef / Seminole Tribe of Florida
Cliff Coddington	Rancher	Longino Ranch
Wes Carlton	Rancher	Fish Branch Ranch
Dr Short & Dr Reddi	Diagnostics	FDACS Bronson Animal Disease Diagnostic Laboratory
South Florida Beef Forage Program - Extension agents	Logistics Support	IFAS
Dr Dave Onorato	Supporting agency	Florida Wildlife Commission
David Shindle	Supporting agency	US FWS

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