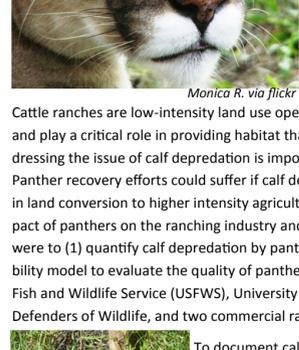


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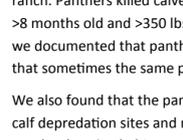
Florida Panther—Calf Interactions: A UF Master’s Student’s Findings



Monica R. via Flickr

The Florida panther (*Puma concolor coryi*) is protected under the Endangered Species Act (Federal Register 1967) because there is only one known breeding population of puma in the eastern United States. Habitat loss, fragmentation and land conversion associated with human population growth are considered major threats to this species’ survival. It now is restricted to less than 5% of its historical range and isolated to one population in south Florida (USFWS 2008). In the 1980’s, the panther population was thought to be as low as 20-30 animals of breeding age. Recent recovery efforts have led to a population that may range from 100-180 panthers of breeding age (FWC 2014). This population growth has increased the number of panthers on private lands, resulting in an increase of verified calf (*Bos Taurus*) depredations by panthers on south Florida ranchlands.

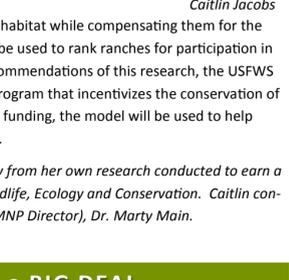
Cattle ranches are low-intensity land use operations that typically support a mosaic of different natural land cover types and play a critical role in providing habitat that is needed for the conservation and recovery of the Florida panther. Addressing the issue of calf depredation is important to both ranchers and the successful recovery of Florida panthers. Panther recovery efforts could suffer if calf depredation dissuaded ranchers from maintaining natural areas or resulted in land conversion to higher intensity agricultural production or urban/suburban development. To understand the impact of panthers on the ranching industry and to help inform potential mitigation strategies, the objectives of this study were to (1) quantify calf depredation by panthers on two ranches in southwest Florida, and (2) develop a habitat suitability model to evaluate the quality of panther hunting habitat on private lands. This study was supported by the U.S. Fish and Wildlife Service (USFWS), University of Florida/IFAS, Florida Fish and Wildlife Conservation Commission (FWC), Defenders of Wildlife, and two commercial ranching operations in south Florida.



Caitlin Jacobs

To document calf mortality, we ear-tagged 409 calves with VHF transmitters on two ranches (~100 / ranch / yr.) during 2011-2013. All calves were evaluated for cause of death and all panther depredations were verified by the FWC. We placed cameras at depredation sites to collect predator information. We developed a habitat suitability model using nocturnal panther GPS locations and environmental variables to evaluate the quality of panther hunting habitat on private lands in southwest Florida. We then tested whether the model could predict the location of calf depredation sites.

Calf loss to panthers varied between the two ranches (0.5%/yr to 5.3%/yr) and may be influenced by the amount of panther hunting habitat on each ranch. Panthers killed calves that ranged from <1 week old and <50 lbs. to >8 months old and >350 lbs., but tended to select for smaller calves. Finally, we documented that panthers of different ages and sexes killed calves and that sometimes the same panther made multiple kills.



Caitlin Jacobs

We also found that the panther hunting habitat model did indeed predict calf depredation sites and may therefore be used to evaluate the quality of panther hunting habitat and the corresponding risk of depredation to live-stock across the landscape. We suggest that the model could be incorporated into a Payment for Ecosystem Services (PES) program that pays land-owners for the amount of high quality hunting habitat that they maintain. The model is an ideal measure because it rewards ranches with high quality habitat while compensating them for the risk associated with maintaining that habitat. Additionally, the model could be used to rank ranches for participation in compensation programs or eligibility for mitigation funds. Following the recommendations of this research, the USFWS is planning to use the hunting habitat model developed in a proposed PES program that incentivizes the conservation of panther habitat on private lands. Because the PES program will have limited funding, the model will be used to help identify those ranch landscapes most important to Florida panther recovery.

This article was submitted by Caitlin Jacobs, who cited findings taken directly from her own research conducted to earn a Master of Science degree from the University of Florida’s Department of Wildlife, Ecology and Conservation. Caitlin conducted her research under the guidance of her advisor (and FMNP Director), Dr. Marty Main. Congratulations Caitlin!!

Why Bark and Ambrosia Beetles are Such a BIG DEAL

As a Florida Master Naturalist you have probably heard the term “bark beetle” or “ambrosia beetle” in connection with bad news for our forests, such as tree deaths, destruction of forest, or invasive species. Indeed, bark and ambrosia beetles are small wood-boring beetles that include some of the most destructive pests of forests, nurseries and fruit trees. They are distributed worldwide and bore into trees, shrubs and vines of all vegetation types, from desert to rain forest. They are also very diverse in terms of their life cycles, host plants, interaction and behaviors. In fact, they live intriguing lifestyles, and resemble human societies in several ways, including collaboration with each other and the practice of agriculture.

Ambrosia and bark beetles belong to a taxonomic group called Scolytinae which includes more than 6,000 species. The difference between ambrosia and bark beetles depends on what they eat. Bark beetles live in bark and eat the tissue of the dead tree, specifically the phloem, where sugar was transported. Ambrosia beetles, on the other hand, create tunnels deep into the xylem, where water is transported, but they don’t eat the tree tissue. Instead, they plant gardens of fungi. The symbiotic fungi grow throughout the wood and delivers nutrients to the beetle progeny. This is one of the most sophisticated and successful examples of animal-fungus symbioses in the world, and it is all around us, in everyone’s backyard, right now.

Native species are important to forest decomposition and nutrient recycling. The natural habitat of the majority of bark and ambrosia beetles are freshly dead trees, not live trees, thus under normal circumstances, these beetles very rarely kill trees. In fact ninety nine percent of trees that suddenly die, and that contain beetle colonies, have not actually been killed by these beetles but were already stressed by a pre-existing condition, such as drought, a fungus root infection, or a mechanical injury.

A few species however can be scary pests. This is due, at least in part, to their unique ability to collaborate with other beetles to kill the tree they are using. Killing a tree is a process called “mass attack”, a highly coordinated effort of many, often hundreds, of individuals that communicate with each other using pheromones. An example of this collaboration is an outbreak of Southern Pine Beetle, in which a beetle population can overcome a pine tree in a matter of days.

Sometimes, the fungi that beetles carry around act not only as food for the beetle, but also as a pathogen of the tree host. This only happens when the beetle-fungus pair is introduced to an area where the local trees are not adapted to the fungus. Laurel wilt diseases is one striking example. The redbay ambrosia beetle, originally from Asia, carries a fungus that is well adapted to growing in dead redbay relatives in Asia. However, the redbays and avocados in the U.S., until now, had not been exposed to such a fungus that is capable of living in their tissues. As a result, the trees developed a massive immune reaction that is so over the top that the trees essentially kill themselves.

The tiny size and wood boring habit of these animals means that they are both easy to transport and hard to find! They are a growing problem as invasive species and are the most commonly intercepted insect at U.S. ports-of-entry. Once they get here, they’re very hard to get rid of, making early detection really important.

Want to help?

The citizen science project **Backyard Bark Beetles** is seeking participants for their research on bark and ambrosia beetles in Florida. This **fun and exciting** project offers a hands-on way to learn about some of these cool critters around us and participants will **contribute to serious scientific research**.

These beetles are especially important in Florida as the state holds the greatest diversity of ambrosia beetles in the country and, at the same time, is the recipient of the greatest number of introduced species. Not only have these introduced species become a threat to our environment, especially our forests, but they are also a growing threat to our economy as they attack crops and fruit trees.

Contribute to science

Backyard Bark Beetles provides a rare opportunity for the public to participate in real-world scientific research.

Participants will help to advance our understanding of the tiny, hidden world of bark and ambrosia beetles, which will help us to protect trees and forests.

Learn what lives in your back yard

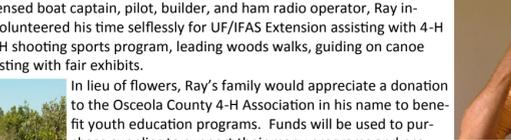
Backyard Bark Beetles provides a free identification service for some of the coolest, but least well known insects that live all around. You catch and send in beetles, then we identify them and tell you what you caught! We even have an interactive map on our website so you can see pictures of the species you caught and see what others have caught too!

This project is great for Florida Naturalists wanting to learn more about Florida’s biodiversity, native and invasive species, and want to help protect our forest and crops.

Have fun!

This project is great for youth groups especially. Anyone can do it! It’s easy, inexpensive, and fun.

See www.backyardbarkbeetles.org to learn more!



Bark and ambrosia beetles are **really** tiny, some are smaller than a sesame seed, but when you look up close, they look really cool! Like this...

This article was submitted by Jiri Hulcr, Sedonia Steininger and Paloma Carton de Grammont of the Emerging Threats to Forest Research Team, UF/IFAS

This is a great Final Project idea!!!

Florida’s Natural Legacy State-wide Photo Contest 2015

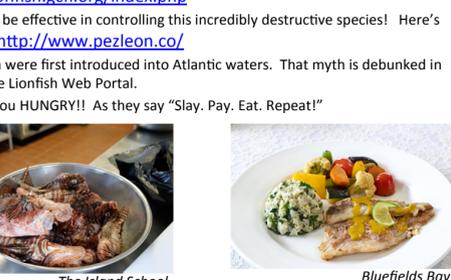


Frank Delargy with his award

The Florida Master Naturalists and Port St Lucie Botanical Gardens announce the awards for their 2015 Juried Florida’s Natural Legacy photography competition recently. Over 200 entries from 58 photographers depicting our beautiful state’s native landscape habitats, flora and fauna were submitted and included entries from around the state, and as far away as California. A special Youth category received entries from local children under the age of 18, including 4-H members. Judges for the event were Roger Gordon of Gordon Photography in Stuart, John Nelson, President of Audubon of Martin County, videography contributor to NatGeo and producer of “The Audubon Moment” radio program, and Mary White, award-winning photographer and President of the Florida Master Naturalists St. Lucie Chapter.

A reception was held at Port St Lucie Botanical Gardens to open the photography exhibit. Awards were then presented by Florida Master Naturalist St. Lucie Chapter President, Mary White and Vice President Iliona Christie.

BEST IN SHOW: “Myakka River Dawn” by Frank Delargy



Florida’s Natural Landscape: First Place, “Gleaming Interlude,” Elsa Millard; Second Place, “Milky Way Over Shired Island,” Frank Delargy; Honorable Mention, Arlene Willnow, “After The Burn,” Crystal Samuel, “Singing in the Fog,” Ivan Green, “Fort De Soto Beach,” Dan Brien, “Peaceful Afternoon.”

Florida’s Native Flora: First Place, “Tranquillity,” Cindy Christie; Second Place, “Forgotten Native,” Pat Faehnle; Honorable Mention, “Lilly Pond,” Bruce Olson and “Pine Lily,” Timothy Grogan.

Florida’s Native Fauna: First Place, “Spoonbill,” Elsa Millard; Second Place, “Osprey,” Krystal Comins; Honorable Mention, “Pink Pulchritude,” Larry Nieland, “Ursula Jay,” Pat Faehnle, “Dinner!”, Cindy Christie, “Waiting,” Anjula Sention, “Kiss on the Cheek – Burrowing Owls,” Scrub Dubrick.

Youth: First Place, “Sailboat at Sunset,” Jack Hamilton, Second Place; “Gopher Tortoise,” Jack Hamilton; Honorable Mention, “Tradition Sunset,” Nicholas Scerbo, “Violet Sea Snail with Bubble Raft,” Riley Hamilton, “Gopher Tortoise,” Madison Adkins, “Raindrop Flowers,” Jacqueline Williams.

In Memory of “Capt Ray” Robida, FMNP Instructor

“Captain Ray” Robida was a dedicated Extension volunteer throughout the years. Ray was certified Assistant Instructor for the Florida Master Naturalist Program since its inception in 2001 and an active 4-H volunteer sharing his skills and knowledge in a multitude of areas. A licensed boat captain, pilot, builder, and ham radio operator, Ray inspired many as he volunteered his time selflessly for UF/IFAS Extension assisting with 4-H camping outings, 4-H shooting sports program, leading woods walks, guiding on canoe excursions, and assisting with fair exhibits.

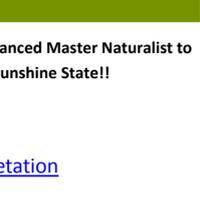


Photo of Ray Robida

In lieu of flowers, Ray’s family would appreciate a donation to the Osceola County 4-H Association in his name to benefit youth education programs. Funds will be used to purchase supplies to support their many programs and provide camp sponsorships, among other needs.

To donate, please go to the following link:
[Ray Robida Youth Education Programs](http://RayRobidaYouthEducationPrograms)

If you’d prefer, a check made payable to “Osceola County 4-H Association” can be mailed to 1921 Kissimmee Valley Lane, Kissimmee, FL 34744. Please put “Capt Ray” in the memo field to ensure it is tracked correctly. And remember, your donation is tax deductible.

The Charlie Awards (Honoring Master Naturalist Charlie Corbeil)

More than 150 persons attended the 2nd Annual Charlie Corbeil Conservation Awards banquet which honors outstanding conservationists in the Brevard County area in the memory of Florida Master Naturalist Charlie Corbeil. Vince Lamb, co-founder of Preserve Brevard and fellow Florida Master Naturalist, reflected on Charlie Corbeil saying, “There wasn’t anybody who knew more about finding great photographic subjects in the Viera Wetlands, or from the St. Johns River to the beaches and beyond. He was always happy to teach anyone who wanted to learn more about nature or photography, for as long as they wanted.”

Photo of Charlie Corbeil

Brandon Smith, FMNP Instructor for more than 20 years, was honored for his local impact through the Florida Master Naturalist Program in addition to his work with sea turtle programs. Brandon wrote, “I have been selected to receive this award in part for my work influencing citizens through my FMNP classes... Charlie Corbeil was an FMNP graduate of mine and someone who exemplified the ideals of the FMNP through his volunteerism and selfless sharing of his knowledge on natural resources.” Dr. Marty Main, founder and director of the Florida Master Naturalist Program, attended the banquet and shared his views on the importance of people becoming involved in conservation.

Brandon Smith receives his Award

This banquet was hosted by Viera Voice, a community publishing organization, and Preserve Brevard, a non-profit focused on conservation. Ten local organizations and the Corbeil family served as co-sponsors.

When Dining In or Out, Eat Lionfish

The FMNP Winter Newsletter contained the link to the recently-launched Lionfish Web Portal:

<http://lionfish.gcfi.org/index.php>

Now check out a strategy that, if embraced, could be effective in controlling this incredibly destructive species! Here’s the link: <http://www.pezeleon.co/>

The video contains a myth concerning how lionfish were first introduced into Atlantic waters. That myth is debunked in the Lionfish Web Portal.

Watch the video! It will make you HUNGRY!! As they say “Slay. Pay. Eat. Repeat!”

Michael Bentley

The Island School

Bluefields Bay

Savor Shrimp’s Flavor (While You Can!)

Here’s an article out of Sweden’s University of Gothenburg that will go straight to your senses!

[Ocean Acidification Can Alter the Taste of Shrimps](http://OceanAcidificationCanAltertheTasteofShrimps)

Jeffrey W.

Founding Farmers

Mike McCune

New Southeast Region FMNP Chapters

Four new FMNP Chapters have been formed in the Southeast Region! Check out their Facebook pages and if you are an FMNP Graduate, join the fun!!!

- Southeast Florida FMNP Chapter - <https://www.facebook.com/groups/457766781037867>
- Broward County FMNP Chapter - <https://www.facebook.com/groups/1583608105210794>
- Miami-Dade County FMNP Chapter - <https://www.facebook.com/groups/806673222714539>
- Monroe County FMNP Chapter - <https://www.facebook.com/groups/1529913673940809>

Upcoming Core and Special Topics Courses

Registration deadlines are fast approaching for several courses! Become an Advanced Master Naturalist to help maximize your ability to connect the citizenry of Florida to the Sunshine State!!

- [Coastal Systems](#)
- [Conservation Science](#)
- [Freshwater Systems](#)
- [Environmental Interpretation](#)
- [Upland Systems](#)
- [Habitat Evaluation](#)
- [Wildlife Monitoring](#)

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