



Elan Tran

ARCHBOLD AUGUST 2022 NEWS for curious minds



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The Science of Fungi



Exobasidium gall infection on Coastal Plain Staggerbush (*Lyonia fruticosa*). Photo by Elan Tran.

Summer wet season drops more than rain in the Florida scrub. Mushrooms of all shapes, sizes, colors and functions reveal themselves. According to Dr. Aaron



Allen McPherson

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David, Archbold Plant Ecology Director, "**The fungi are largely unknown and undocumented here on the Lake Wales Ridge.**" David initiated some exciting new fungal research projects to address this black hole. For starters, **he is expanding our fungal collection, known as a [fungarium](#).** Elan Tran, Archbold Plant Ecology Intern, spent eight months collecting fungi on the ridge. To confirm the species' identity, she sequenced their DNA with collaborator Dr. Matthew Smith, University of Florida. She said, "We found edible Honey Mushrooms, toxic species of *Amanita*, orangish-red Chanterelles, puffballs, jelly fungi, and Southern Jack O'lanterns, which have luminescent gills. We are just scratching the surface of what's here." Another **new Plant Ecology project explores the beneficial ectomycorrhizal fungi that associate with the fine roots of many shrubs and trees**, particularly oaks and hickory in the Florida scrub. These mutualistic fungi are likely major contributors to plant growth and nutrient and carbon cycles deep in the sandy nutrient-poor soil. Finally, with the help of Tran, the Plant Ecology Program began investigating pathogens of scrub plants. In particular, the brightly colored gall on Coastal Plain Staggerbush (*Lyonia fruticosa*) during Fall captured Tran's curiosity. Galls are infected plant cells that grow large and change color. **While some galls, like those on oaks, arise from gall wasps, galls on staggerbush come from a pathogenic fungus called *Exobasidium*.** Before her work, this fungus was only known to infect Rusty Staggerbush (*L. ferruginea*). Tran discovered higher *Exobasidium* infections on *L. fruticosa* in more recently burned scrub. She said, "Time since fire is the strongest predictor of infection severity due to *Exobasidium's* preference for infecting young, tender plant tissue. Infected plants flowered less compared to uninfected plants." Watch Tran's fantastic seminar [here](#) to learn more. This work is only the beginning of fun with fungi at Archbold.

Wild Space Gallery

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"Archbold Biological Station is one of America's iconic centers of continuous research and education in field biology. It is a prototype of what we need all across America."

— Edward O. Wilson

Job Announcements



A selection of portraits from Dustin Angell's Florida Stewards Project on display at the Wild Space gallery. Photo by Laura Reed.

The [Florida Wildlife Corridor Foundation](#) hosted an exhibit in their new Wild Space gallery from artists depicting the wonders of Archbold. The inaugural exhibition featured stunning woodcut prints of scrub plants by former Artist-in-Residence, Mollie Doctrow, and beautiful portraits by Archbold's Director of Education, Dustin Angell. Inspired by Archbold's scientists, Angell began photographing researchers, professionals and volunteers in 2014 for his ongoing [Florida Stewards Project](#). According to the Corridor Foundation, "**Wild Space is dedicated to showing visual art that focuses on Florida's rich and diverse natural environments and the people who caretake its lands and waters.** Exhibitions will feature artists whose work addresses the conservation of species and habitat, the understanding and promotion of the importance of nature, and its connections to our collective wellbeing." Archbold staff attended the first Wild Space gallery reception on June 9 featuring a screening of the newest Florida Wildlife Corridor film, [Home Waters](#). The office and gallery space at The Factory in St. Petersburg are still under construction. The official opening between late 2022 to early 2023 will display a larger selection of Archbold artworks. Wild Space is a project of the Florida Wildlife Corridor Foundation in collaboration with Genevieve Lykes Dimmitt, Archbold Board Member, and curated by Noel Smith.

[Annual Giving Manager](#)

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A True Cowgirl



Mary Margaret Hardee on her horse at Buck Island Ranch. Photo by Haoyu Li.

Mary Margaret Hardee earned her Bachelor's degree in Agriculture with a concentration in livestock production from Abraham Baldwin Agricultural College in Georgia in December 2018. She said, "It did not take long for Buck Island Ranch to come across my radar." She visited Buck Island in February 2019. By March 2019, she moved in to begin work as the Ranch Operations Assistant. Hardee became an integral part of Ranch operations, from tracking the location and health of all the cattle to driving the swamp buggy for school group tours. **She greeted most days on her horse to gather cattle as the sun rose.** For this cowgirl raised on a ranch in Chiefland, Florida, this is the best way to see the Ranch. She reflected, "I enjoyed working closely

Online Events

Sept 15: 3:30 PM-4:30 PM

'Embracing the noise: The value of individual behavioral variation for wildlife ecology and conservation'

Justine Becker, Princeton University

[Register here](#)

Sept 29: 3:30 PM-4:30 PM

Luca Kuziel, Archbold Ranch Intern

[Register here](#)

Watch all past virtual events [here](#).

with the ranch operations and agroecology staff. Each department plays a vital role in running Buck Island Ranch as a real-world laboratory and full-scale working cattle ranch. And, I valued knowing my work tracking ranch operations contributed to many different projects and collaborations, both within Archbold and nationwide. **I will forever treasure getting to know and learn from Mr. Gene Lollis, Ranch Operations Manager.** He taught me much about the cattle industry, but he also taught me a lot about life. I am a better person both professionally and personally because of him." **Hardee said a bittersweet goodbye to Buck Island in early July for her new job at the Quincey Cattle Company in Chiefland.** She said, "When I arrived at Archbold 3 1/2 years ago, I was eager to learn. But I never expected that the Ranch and people there would forever hold a big place in my heart." Good luck, Mary Margaret! You will be missed.

Creatures of the Night



Bobcat at Buck Island Ranch captured on camera courtesy of Dr. Raoul Boughton and supported by the USDA.

Two interns from Archbold's Predator-Prey Program completed independent research projects demonstrating how non-invasive camera traps can help us better understand wildlife communities. **Steven Blaine investigated the small mammal community in the Florida scrub. Gabriel Batista explored the habitat preferences of Bobcats (*Lynx rufus*) and their interactions with cattle (*Bos taurus*) at Buck Island Ranch.** Blaine built a novel camera trap consisting of a five gallon bucket with a game camera affixed to the lid with a close focus filter facing inside the bucket. Small animals passed through openings in the bottom of the bucket triggering the camera. Nocturnal creatures rarely seen made appearances like the Long-tailed Weasel (*Neogale frenata*) and Sherman's Short-Tailed Shrew (*Blarina carolinensis shermani*). The Golden Mouse (*Ochrotomys nuttalli*), which has not been observed in recent decades, was most common in the Sand Pine scrub. Oldfield Mice (*Peromyscus polionotus*) were common in all sites, except the seasonal ponds. Batista analyzed a subset of data from the long-term grid of 44 camera traps at Buck Island Ranch. These data, collected by Archbold Research Affiliate Dr. Raoul Boughton since 2015, give insight into the interactions of wildlife and livestock. Batista's analysis suggests Bobcats prefer semi-native pasture habitat over improved pasture habitat at Buck Island Ranch. Cattle spend summers in the improved pastures with more time in semi-native pastures during winter, a reflection of their

management by ranch operations staff. Bobcats were generally active at night, while cattle were active during the day. Batista's analysis revealed Bobcats became more nocturnal when comingling with cattle during winter. Being less active during daylight hours may minimize the Bobcat's interactions with cows. The title of his recent seminar captures the relationship well: "When the cows sleep, the cats come out to play". **Watch the excellent seminar for Blaine [here](#) and Batista [here](#)**

Together We Will Protect Wild Florida



Baby Gopher Tortoise at Archbold. Photo by Tori Bakley.

Friends like you are vital to Archbold's mission to build and share the scientific knowledge needed to protect Florida's plants, animals, lands, and waters. With your help, Archbold's

sound science continues to generate conservation action, bringing new hope to Florida's threatened or species. Together, we advance critical work to understand, interpret, protect, and manage wild places here in Florida and around the World.

This vital work includes managing our nearly 20,000-acre natural laboratory within the Florida Wildlife Corridor, home to endangered plants and animals found nowhere else in the world. Careful land management is key to protecting these precious lands and the native flora and fauna living here. Effectively managed lands are more resilient, which means the ecosystems of today have a better chance

to thrive in the future. **Wild Florida is a beautiful legacy – one worth leaving to future generations. SUPPORT ARCHBOLD!** [Give now](#) to support our work: keep our lands resilient, protect native plants and animals, and invest in this magical landscape full of abundance and beauty. Give [here](#) or see our summer report recently sent to your mailbox. As always, thank you for your support.

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