

# ARCHBOLD JUNE

## 2023 NEWS

for curious minds



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### Rediscovering Florida's Endangered Lichen



Florida Perforate Reindeer Lichen (*Cladonia perforata*) by Sterling Herron.

Ground lichens in the genus *Cladonia* are abundant at Archbold, but one species is especially scarce. The [Florida Perforate Reindeer Lichen](#) (*Cladonia perforata*) is a pale green lichen exclusive to Florida's high-elevation scrub. Unattached to anything except its essential algae partner, this lichen prefers open spaces on the sandy ground to prosper. The body is a bonanza of little branches perforated with holes, hence the species name *perforata*. While several other *Cladonia* species grow relatively quickly and reproduce using spores, this one grows slowly and reproduces only by breaking apart and spreading fragment clones of itself. In 1993, the Florida Perforate Reindeer Lichen became the first of only two lichens federally listed as endangered in the United States. Initially, we knew about only a few populations. We know of at least 40 now, thanks to our expanded survey and monitoring efforts. **In Spring 2023, our extraordinary long-time volunteer Linda Gette discovered a new population on state-owned property adjacent to Archbold.** Finding new populations is critical to this rare lichen's long-term preservation and genetic diversity. Archbold work on the Florida Perforate Reindeer Lichen began in the 1990s with [Dr. Rebecca Yahr](#), and systematic monitoring began in 2009, revealing essential land management. Archbold Plant Ecology Director [Dr. Aaron David](#) says, "***Cladonia perforata* is extremely sensitive to fire, and land managers need to know about any populations on their property.**" Archbold Plant Ecology Research Assistant Dr. Sterling Herron adds, "The challenge for land managers is burning the Florida rosemary scrub to keep the habitat suitable for the lichen but to avoid killing the population with fire. The lichen can be picked up, moved, and returned to its habitat after a fire or other disturbance. We still have much to learn about the weird and wonderful Florida Perforate Reindeer Lichen."



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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

## Archbold Reserve Medley



Foggy sunrise on the Archbold Reserve by Kevin Main.

**The Archbold Reserve borders Archbold Biological Station to the west on the Lake Wales Ridge. These 3,716 acres are where Florida Scrub-Jays and Gopher Tortoises living in the sandy scrub meet Crested Caracaras and Florida Burrowing Owls in the open country pastures.** Habitats transition downslope from high-elevation scrub to flatwoods, pastures, cutthroat grass seeps, and bayheads. Frances Creek and Mary's Creek drain water off the ridge into the Fisheating Creek watershed. Frances Creek is in honor of Frances Archbold Hufty, whose gift to Archbold allowed us to purchase the land for the Reserve in 2002. Mary's Creek is in honor of Mary Hufty, Frances's daughter and current Board member. Archbold's Land Manager Kevin Main says, "The Reserve topography is relatively steep for south Florida with a difference of approximately 40 feet in elevation. Previous landowners converted native habitats to Bahia Grass pastures in the 1960s and 1970s, including extensive ditching to increase drainage." Cattle still graze the large pastures today, managed by Archbold's Buck Island Ranch. Archbold began [restoring the wetlands and creeks](#) with the US Department of Agriculture Natural Resources Conservation Service [Wetland Reserve Program](#). Main says, "Restoration includes ditch plugging, installation of weirs, and restructuring of eroded creek sides." Main and his fire management crew conduct extensive prescribed burning in native habitats and pastures, benefitting everybody from grazing cattle to scrub-jays to the open country prairie birds and ground-dwelling Gopher Tortoises. Access to the Reserve is currently limited to research and management staff. However, we offer tours for teaching opportunities and workshops.

### Job Announcements

FL Wildlife Corridor Applied  
Science Fellowship

Ranch Research Assistant

Fish Eco-evolutionary Research  
Internship

Guest Services-  
Cook/Housekeeper

## 11 Years of Conservation & Care



Emily Angell working in the field for Archbold's Predator-Prey Program.

**Emily Angell began her new job leading Archbold's monitoring of endangered Florida Grasshopper Sparrows and assisting with managing threatened Red-cockaded Woodpeckers at Avon Park Air Force Range in October 2012.** By January 2013, her future husband, Dustin Angell, joined her from New York as Archbold's new Education Coordinator. Over the years, her appreciation grew for the quality and rarity of the pinelands, scrub, and dry prairie at the Range. She says, "It's amazing these military lands are refuges for so many threatened and endangered species." In 2013, Emily devoted herself full-time to Red-cockaded Woodpecker work in the pinelands. She recalls, "My job challenged me in many ways. I was scared of heights and struggled climbing the ladders up the trees for the woodpecker nest cavity work." She was well-trained and overcame her anxiety about using chainsaws to build artificial nest cavities in the trees, which became her favorite activity. Working with endangered species is also challenging emotionally. Emily says, "You put a lot of blood, sweat, and tears into protecting these animals, and you feel their wins and losses as your own." After six years working for Archbold, she moved to a position with the US Fish & Wildlife Service as a Biologist on the Range doing acoustic monitoring of migratory birds and endangered Florida Bonneted Bats. In 2022, after reconsidering a relocation to Canada, Emily accepted a new position as Research Assistant for Archbold's Predator-Prey Program. When not in the field maintaining the program's camera trap array, she performs at the Highlands Lakeside Theater and weaves incredible baskets out of pine needles. She reflects, "**The most meaningful thing from my work with Archbold is feeling like I'm impacting conservation.**" Archbold's Executive Director Hilary Swain acknowledged, "Emily's impact is felt at Archbold on many levels. This last year, she volunteered to organize our Holiday Silent Auction and the Lake Placid Christmas Bird Count."

## Public Events

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

## Mosquitofish & Genetic Rescue



Emily Jones at Archbold's Lake Annie. Photo by Dustin Angell.

Exciting experiments with thousands of Eastern Mosquitofish are underway at Archbold thanks to a collaborative team led by [Dr. Sarah Fitzpatrick](#) and [Dr. Jessica Judson](#) from Kellogg Biological Station at Michigan State University and Archbold's [Dr. Betsie Rothermel](#). Their National Science Foundation-funded experiments aim to better understand the consequences of loss of genetic diversity (due to inbreeding within small, isolated fish populations) and subsequent genetic rescue (introducing new fish carrying different genes) in a world with greater climate variability. Genetic rescue is a hotly debated and relevant topic in conservation, with successes in saving many species, like the Florida Panther. But, **little is known about how genetic rescue works or how the recovered population fares in stressful environments.** In April 2022, Emily Jones joined the project as a Research Intern. Jones initiated an independent research project related to this multi-year project. She wondered whether tolerance to heat and cold differ for mosquitofish living in small wetlands compared to larger lakes. She says, "Fish are ectotherms whose physiology and behavior are affected greatly by external water temperatures. Heat or cold stress can impact their survival. Freshwater ponds and lakes are vulnerable to climate variability from increased rain and evaporation, leading to extreme water temperatures. We need to understand how fish will respond going forward." **Jones discovered that mosquitofish from small wetlands at Archbold could tolerate hotter and colder temperatures than their counterparts in Lake Annie and Lake Istokpoga.** Their tolerances changed with the seasons from the warmer Summer to cooler Fall. Watch the May seminar by Jones [here](#) and a 2020 presentation from Fitzpatrick [here](#).



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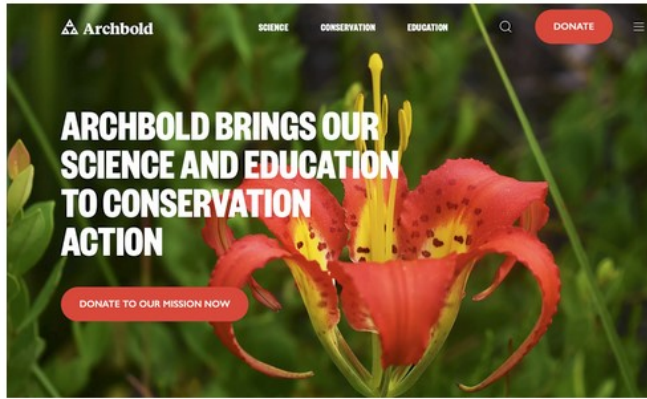


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Videos!



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## Exciting New Website & Revitalized Logo



Check out our new website [here!](#)

**Archbold is excited to announce the launch of our new website at [www.archbold-station.org](http://www.archbold-station.org).** With input from Board members and outside stakeholders, Archbold staff spent nearly a year working with a web design contractor to create a modern, welcoming, and informative portal to Archbold science, conservation, and education. The new website features breathtaking imagery, captivating detail of each scientific program, and descriptions of our mission at work. Please enjoy perusing the new site, share it with your friends, and let Archbold's team know what you think at [philanthropy@archbold-station.org](mailto:philanthropy@archbold-station.org). We are grateful to Vivienne Sclater, Archbold Director of Data and Technology, and former staff Deborah Pollard who navigated this process. Thank you to a generous donor who enabled this new site. **Combined with the launch of the new website, Archbold's leadership carefully took on the task of revitalizing our logo.** For over 80 years, Archbold was identified by its signature blue and red triangular logo, originally adapted for Richard Archbold's third New Guinea expedition in 1938. The symbol is a piece of Archbold's history and represents trust, dependability, and excellence in science. The goal was to modernize the logo for more digital applications while honoring the proud history and continuing to convey Archbold's core values. The new logo draws inspiration from nature, using the blue color from the Florida Scrub-Jay and red from a native Holly Berry. The three stars continue to represent science, conservation, and education.

### The Scrub Blog

Nature and Science from Florida's Heartland

Explore The Scrub Blog by Archbold creative staff.

Archbold Facebook Event Calendar



### Directions to Archbold Biological Station

Eight miles south of Lake Placid.  
Entrance is 1.8 miles south of  
SR 70 on Old SR 8.