



ARCHBOLD NOVEMBER 2021 NEWS for curious minds



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The Science of Acorns



A Florida Scrub-Jay collects a Sand Live Oak (*Quercus geminata*) acorn to cache. Photo by Jennifer Brown.

Acorns of Chapman's Oak (*Quercus chapmanii*), Sand Live Oak (*Quercus geminata*), and Archbold Oak (*Quercus inopina*) are ready for harvest in the Florida scrub. **Acorns are a critical winter food for wildlife like Florida Scrub-Jays who cache thousands of acorns every Fall** in sites that increase preservation by



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detering germination or rotting. [Studies](#) by Dr. Reed Bowman, Director of Archbold's Avian Ecology Program, and previous interns Matt Toomey and Ipek Kulahci show scrub-jays are careful to protect this valuable resource. Throughout the winter, jays revisit their stash and test the acorns, sometimes moving them to higher and drier sites where they will persist. Intern Matt Furst found young jays learn which cache sites are best and improve their choices the following year. Because of the importance of acorns to the lives of Florida Scrub-Jays, Archbold conducted annual acorn counts for the last 33 years. **New research published in [The Royal Society](#) reveals a slow, steady decline in the annual acorn crop at Archbold, especially for *Q. geminata*. The research analyzed Archbold's acorn, fire history, and weather data to explore the interrelationships affecting acorn seed production for the three oaks described above.** Authors Dr. Mario Pesendorfer, Dr. Georg Gratzner, Dr. Reed Bowman, Dr. Shane Pruett, Dr. Angela Tringali, and Dr. John Fitzpatrick write, "all three [oak] species returned to average pre-fire seed production levels per stem within 3–5 years following high-severity fires as ramets quickly grow and flower within months." They found precipitation during flowering (Spring) or acorn production (Summer and early Fall) best predicted acorn production among the three species. Spring drought can increase the time for oaks to resume acorn production following fire. Climate predictions of increased length and severity of droughts along with an increasing number of fires, both wild and prescribed, could reduce acorn production in the future.

Archbold Press

"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

Visiting Scholars at
Archbold

Knock Knock



A juvenile Gopher Tortoise greets Chelsea Moore who was peering inside the burrow with a customized camera scope. Photo by Dustin Angell.

Hundreds of species take refuge inside Gopher Tortoise burrows. In a game of Knock Knock, Who's There, Archbold biologists rely on keen observation skills and a camera scope to understand the variety of wildlife utilizing burrows on Red Hill. Alonso Reyes, Archbold Research Assistant, says, "Some of the coolest animals we have seen in burrows this year are the Gopher Frog, Whip Scorpion, Eastern Coral Snake, and Florida Scarlet Snake. The number of insects coming out of the burrows at night is amazing." The Florida Mouse digs a secondary burrow in the walls of the primary burrow. While many animals live alongside the tortoises, like snakes, rabbits, and lizards, others use the burrows as occasional refuges from predators or fires. **Chelsea Moore, Archbold Tortoise Conservation Intern, is tracking juvenile tortoises for a project supported by the Disney Conservation Fund.** She said, "On tracking days, I visit close to 30 burrows. I decide if a burrow is active by looking for tortoise tracks or slide marks made by their shell. It's always fun seeing other animal signs, too, like opossum tail drags or snake trails! The sand keeps a good record of visitors." **Moore studied movements and site fidelity of female tortoises over time based on six years of radio telemetry data on Red Hill. [Watch her research presentation here.](#)** Moore's work adds to our understanding of how

Archbold will award two grants-in-aid of research by visiting scholars for the 2022 field season.

Applications are due November 15th and awarded by December 14th.

[Learn more here!](#)

Gopher Tortoises, a state-threatened species, use their burrows and habitat over multiple years.

Heart of a Botanist



Scott Ward in the field at Royce Ranch on the Lake Wales Ridge.

Scott Ward first visited Archbold and the Florida scrub in 2009 on a field trip. He said, "Back then, I had no idea there were so many species unique to the area and that I would eventually work here." Ward worked as an Archbold Plant Ecology Research Assistant for over two years on long-term monitoring projects for rare plants, botanical inventories, and collaborations with other conservation organizations on the Lake Wales Ridge. Ward has the heart of a true botanist. He said, "**Plants are endlessly fascinating. And they're so diverse! Take, for instance, birds. We have only one truly endemic species in Florida, the Florida Scrub-Jay. But, there are over 200 endemic plant species in the state, and the list continues to grow as we discover more details about different taxonomic relationships.**" Beyond his interest in plant taxonomy, he appreciates the ecology as well: "Based upon a handful of the dominant species present in one scrub area, I can infer some understanding about the soils, hydrology, fire history, possible species I might expect, and the overall general interaction of organisms." Ward left Archbold in October for a new job as a Research

Online Events

Nov 18: 3:30 PM

'The Watershed Approach: A Hydrologist's View of the Upper Mississippi River Basin'

Eileen McLellan, U.S. Environmental Defense Fund

[Join Zoom](#)

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

Botanist at the North Carolina Botanical Garden where he will work with Alan Weakley on the flora of the Southeastern United States. "It will be a very challenging but rewarding position. I'm grateful for the applied skills I acquired and professional and personal relationships I developed while at Archbold."

Nature Wonder Alive



Dustin Angell live-streaming a virtual tour in the Florida scrub.

Join Dustin Angell, Archbold Director of Education, for live-streamed outdoor nature tours on the second Tuesday of every month from 9:30 AM- 10:15 AM (Eastern Time) from November through April. **Angell will teach audiences of all ages about the wonders alive on Archbold's 20,000 acres of wild Florida in the Headwaters of the Florida Everglades.** The show also features guest research scientists. Audience members can interact during the live show via Zoom and Facebook through the chat window. Angell recently presented his work on virtual education initiatives at Archbold and other field stations across North America at the Florida Association of Science Teachers' annual conference. He highlighted Archbold's private classroom zooms, live-stream nature tours, and upcoming immersive 360 habitat tour website. Three teachers signed up to beta test the habitat tour website with wonderful feedback. Katherine Caldwell, Archbold Education Intern, joined Angell at the conference thanks to the Jill Abrahamson Memorial Environmental



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Education

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Help Save this Rare Florida Bird from Extinction



Florida Grasshopper Sparrow adult feeds a fledgling at White Oak Conservation captive breeding facility. Photo by Dustin Angell.

The Florida Grasshopper Sparrow, found only in Florida, is on the verge of becoming extinct, as fewer than 200 individuals are left in the wild. Archbold scientists, supported by generous donors, have been working with trusted partners and agencies for nearly 20 years to prevent this rare bird from disappearing. **By understanding the sparrow's ecology, protecting populations from threats like fire ants and extreme weather, and introducing captive-bred birds into the wild, we are helping to prevent its further decline. Your support makes all the difference in preventing precious birds like the Florida Grasshopper Sparrow, and so many other species, from disappearing forever.** Most recently, we celebrated a major win in protecting the grasslands that these sparrows rely on and countless other species with the passage of the new Florida Wildlife Corridor Act. This success shows how Archbold's science is put into conservation action —and made possible by supporters like you! Please [give today](#) to help save precious species like the Florida Grasshopper Sparrow from extinction. And now, your gift will be DOUBLED, thanks to a generous board member who has agreed to

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.

match all gifts through December 31st, up to \$250,000. That's right, [your gift will have twice the impact](#). So please, give your most generous gift today, and help us save threatened birds, such as the Florida Grasshopper Sparrow.

If you enjoy these stories from Archbold, please consider a gift to support our research and education programs. [Donate now](#). Your gift really makes a difference.

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