ARCHBOLD MAY 2017 NEWS

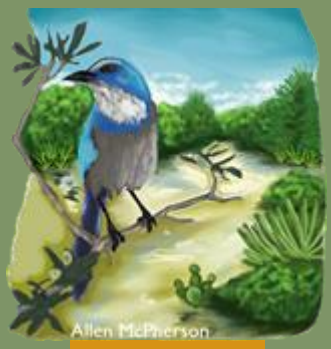
for curious minds

In This Issue:

Oak Gall Wasp Evolution

Pea shaped leaf galls induced by the gall wasp, Belonocnema treatae, on Scrub Live Oak (Quercus geminata).

In February, Dr. Scott Egan, Dr. Glen Hood and Linyi Zhang of Rice University left their Houston home for a trek to Archbold towing 160 six-foot-tall oak trees. For a gall wasp, these oak trees are future homes. **Female gall wasps lay their eggs inside oak leaves** (and other plants and plant parts including buds, branches, roots, stems, and flowers) inducing nutrient-rich plant tissue to form around the egg. This induced 'gall' provides a 'safe' haven and food source for the developing wasps. The team is deploying oak trees in south Florida for colonization by local gall wasps while experimentally transplanting gall wasps onto caged oak trees at Archbold. Seventy percent of known gall wasps rely on an oak as a host. Now, two months into their stay at Archbold, Hood said, '**Our goal is to understand phenotypic and genotypic evolution of gall wasps living on different oak species**, and illuminate the roles of natural selection and reproductive isolation during host plant adaptation and the evolution of new insect species'.



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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."

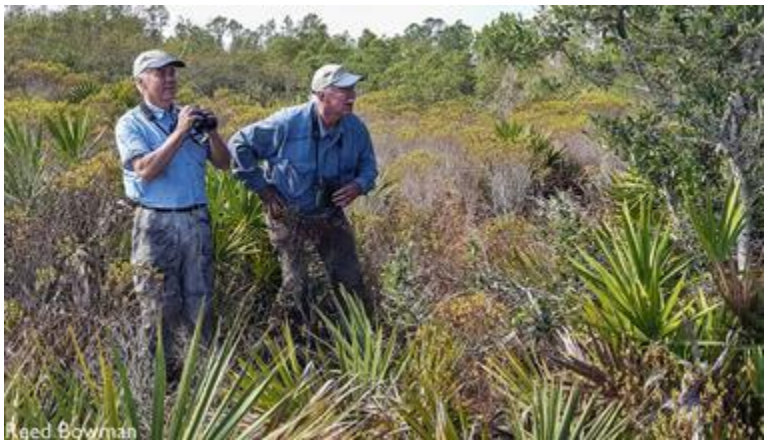
— Edward O. Wilson

Greater Everglades Gathering

Cattle graze under Cabbage Palms near an American Alligator at Buck Island Ranch in the Northern Everglades.

Drs. Betsey Boughton and Hilary Swain presented research findings from the Buck Island Ranch (MAERC) of the Northern Everglades at the **Greater Everglades Ecosystem Restoration meeting in late April**. Organized by the U.S. Geological Survey and Florida Atlantic University, the workshop focused on the historic, present and future state of water, energy and carbon cycles within the Greater Everglades. Swain said, 'We summarized our carbon cycling studies in conjunction with University of Illinois, Cornell University and the US Department of Agriculture on the impact of grazing on fluxes of CO2, methane, and water on working ranchlands. Other speakers addressed atmospheric exchanges of greenhouse gases, oxidation of peat soils, the role of hydrology on movement of dissolved and particulate carbon, and the effects of fires, hydrology, and hurricanes. Workshop participants expressed interest in perspectives from the Northern Everglades headwaters. **Before the meeting and our presentation, many were unfamiliar with ranch ecosystem science and management within the Northern Everglades headwaters region**.'

Scrub-Jays Never Have Weekends Off



Public Events

May 6: 9:00 am-11:00 am

Scrub Bugs

Public Walking Tour

Mark Deyrup, Archbold

May 11: 3:30 pm-4:30 pm

Predictions and Projections of Future Precipitation in South Florida

Distinguished Speaker Seminar

Johnna Infanti, University of Miami

June 3: 3:00 pm-4:00 pm

'50 Years of Field Research at the Archbold Biological Station:

How I Fell in Love with Florida Scrub'

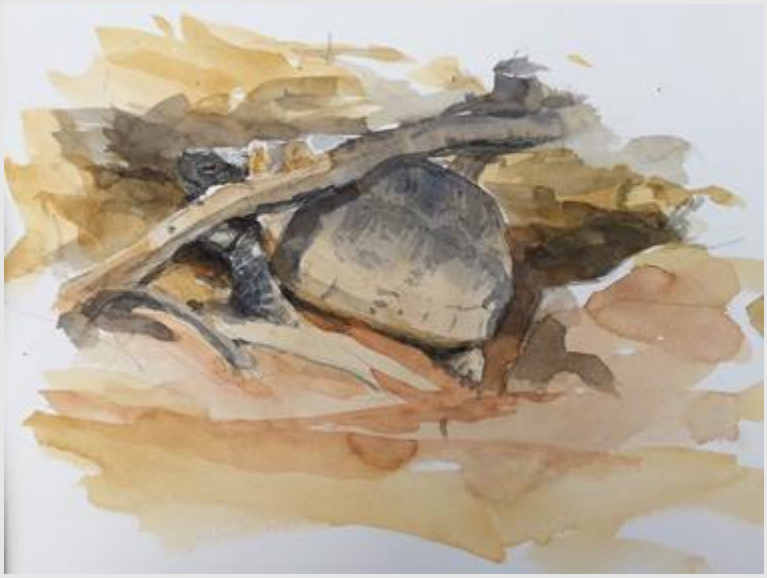
Jim Carrel, University of Missouri

Archbold Facebook Event Calendar

Tony DeGange and John Fitzpatrick mapping Florida Scrub-Jay territories at Archbold.

Most Archbold alumni are familiar with field work in the scrub. In the summer, the sun is relentless and temperatures rarely vary from hot hot hot. And although few appreciate it, winter mornings can be frosty with a biting wind. **In 1975, Tony DeGange was collecting his Master's thesis data quantifying how Florida Scrub-Jays budget their time throughout their day over an entire year**. A graduate student at University of South Florida, Tony was supervised by Dr. Glen Woolfenden who famously said to all of his tired students "scrub-jays never have weekends off!" As Tony noted in his thesis, he observed jays "for a full day, from first light to dark". Tony published his work in the journal Ecology and went on to a long and productive career with the USFWS in Alaska retiring last year. Despite his 'hardships' in the 70's, **Tony returned to Archbold this April** assisting Avian Ecology Program Director Dr. Reed Bowman and Research Associate Dr. John Fitzpatrick in mapping scrub-jay territories. Tony hopes to continue volunteering with the scrub-jay project, which will enter its 50th season in 2018.

Scrub Plein Air



Watercolor painting of a Gopher Tortoise at Red Hill by Debby Kaspari.

'**Archbold is a great place for an artist to work**. The habitat and wildlife are wonderful and the light is spectacular'. Artist Debby Kaspari knows this first-hand. Arriving in mid-April with her husband Michael Kaspari, University of Oklahoma Evolutionary Ecologist, the intrepid artist wanders the scrublands and ranchlands with her backpack 'loaded with pastels, watercolors, and an easel for plein air painting'. Debby said, 'I usually end up walking around and looking at what's there until something grabs me. **In painting, I'm mostly trying to capture a sense of place. With birds or other wildlife sketching I'm going for gesture, trying to get a sense of the animal**.'

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JOBS

Development Assistant

Archbold seeks a person enthusiastic about nature and people to support the Development Director in a part-time position. Click here for full description.

Watch 'Spring in Florida's Heart' timelapse video from Archbold Facebook featuring Eastern Prickly Pear (Opuntia humifusa)!

Her plein air watercolors of a Gopher Tortoise on Red Hill and Florida Scrub-Jays perched on a mossy, gnarly oak capture a fantastic sense of place and animal. While her husband Michael studies the local ant fauna, Debby sees convergence between their art and science pursuits saying, 'I'd guess we're pretty much firing up the same synapses.' See Debby's website 'Drawing The Motmot' here. Learn more about the Kaspari Lab here.

Scrub to Web

A drawer with hundreds of specimens of metallic green bees. A red dot on a specimen means it has been digitized.

Nineteen tall cabinets with hundreds of drawers protect more than **250,000 pinned insect specimens at Archbold**. Dr. Mark Deyrup, Archbold's Entomologist, said, 'If you are out in the field, and observe a particular bug, there is a great chance a specimen of that species is in our collection, and researchers here can refer to it for identification.' **Now, they can refer to the collection from anywhere in the world, thanks to a National Science Foundation grant**. Assistant Curator Stephanie Leon said, 'For the rest of this year, we plan to finish digitizing label information and uploading data for the ants of Florida (12,000 records, 239 species), flower-visiting butterflies and moths, and we want to start work on the beetles. These data are not just for scientists. Everyone can access our data to become familiar with the beautiful and unique insects that live in the Florida scrub.' Dr. Hilary Swain, Executive Director, added, '**After decades of work building the collection, it now represents one of the most important records of biodiversity, all the plants and animals, of this region**.' Click here to view Archbold insects already online (select the 'Archbold collection').

Directions to Archbold Biological Station

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

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