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Long Live the Florida Rosemary

Archbold Biological Station

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A large Florida Rosemary patch.

SETH RAYNOR PHOTO

Scientists at Archbold Biological Station work in some of Florida's unique habitats. One of these interesting habitats is known as 'Rosemary Scrub' or, more informally, a 'rosemary bald.'

You may have walked through a rosemary bald before without even knowing it. A rosemary bald is a relatively open landscape characterized by large Florida Rosemary shrubs (*Ceratiola ericoides*), and a few other dominant plants. Not many other plant species can grow in this habitat. This is partly due to allelopathy, which is when plants release chemicals that inhibit the growth of other plants.

In particular, Florida Rosemary plants secrete a chemical known as ceratiolin, which prevents most other plants from germinating in the area surrounding the rosemary shrubs. Allelopathic interference, droughty soils, and other environmental limitations, result in patches of bare sand forming between rosemary shrubs, hence the name 'Rosemary Bald.'

Since there is not much competition from other plants, rosemary shrubs can grow in large clusters, often with 100's of individual plants in a small area. Florida Rosemary is also a long-lived perennial shrub with a steady growth rate, meaning it can often grow taller and wider than the scientists at Archbold!

The scientists at Archbold Biological Station have been studying populations of Florida Rosemary since 1996, in hopes of learning more about the plant's natural history. Despite this, there is still much we don't know about one of the most iconic Florida scrub plants. Long term studies can help provide answers about the plant's lifespan, reproduction, and growing cycle. Populations consist of a mixture of male and female plants, often in nearly a 1:1 ratio. One interesting fact discovered thus far is that, unlike many plants adapted to scrub habitat, Florida rosemary does not resprout after a fire.

Lexi Siegle-Bates, a Research Assistant at Archbold, elaborates, "Individual plants are killed by fire, however between fires they build up massive seed banks over time. A seed bank is a collection of dormant seeds belowground that await a catalyst event (typically a fire) in order to germinate. Although the rosemary shrubs are killed by fire, their seeds survive underground and germinate in the years following the burn." For this reason, the rosemary shrubs often form 'cohorts,' where individuals in the same area tend to be of similar age and size.

Despite the allelopathic chemicals that Florida Rosemary plants secrete, certain species known as 'gap specialists' can be found growing in the open spaces among rosemary shrubs. These include two very rare species: Highlands Scrub St. John's Wort (*Hypericum cumulicola*) and the Wedge-Leaved-Button-Snakeroot (*Eryngium cuneifolium*), which are herbaceous plants that grow only on the Lake Wales Ridge in Florida. Dr. Eric Menges, program director of Archbold's Plant Ecology Program explains: "Because the open spaces these plants require gradually shrink between fires, both species specialize in rosemary scrub that has been burned in the last few decades."

While it is locally common in Highlands County and a few other regions of Florida, Florida Rosemary is still under threat from habitat destruction and degradation. As we lose more natural areas, we may be losing valuable knowledge. In order to unravel the mysteries of rosemary scrub, we must first protect the natural areas supporting these interesting plants.

