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## Preparing for the future

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Dr. Angela Tringali explains the acorn counting protocol to research interns.  
COURTESY/DR. ZACH FORSBURG

While it may still feel like summer in Highlands County, some of the changes autumn brings are

already underway. You may have noticed the local oak trees, including scrub oaks, are already becoming heavy with acorns. Many animals rely on these acorns as a food source, including bears, deer and birds, particularly during cooler months when other food sources are less abundant. Squirrels are commonly seen gathering acorns to store them to eat later, though many other animals, including Florida scrub-jays, store acorns as well.

Florida scrub-jays eat a diverse diet of insects and small vertebrates but rely on acorns during winter and early spring. To prepare for these cooler months, individual jays will collect and bury between six and eight thousand acorns, a behavior called 'caching,' from September to November. According to Dr. Angela Tringali, research biologist in the Archbold Avian Ecology Program, "The acorns are an important food, especially when other sources of food such as insects and lizards are scarce."

Because acorns are an important resource to Florida scrub-jays, scientists studying the jays at Archbold are interested in the number and distribution of the acorns that are produced each year. Florida scrub-jays defend their home territories and the resources on them. Every year scientists conduct acorn surveys within these territories to see how many acorns are available in a given year and estimate how many acorns each territory holds.

From August through September, when the acorns are mature and still on the oaks, scientists and research interns in the Avian Ecology program don their plant ecologist hats and conduct acorn counts. At each plot, they measure a sample of permanently tagged oaks from five to six species, recording their shrub height of approximately 2 to 10 feet. Scientists also record how many stems the shrubs have, and the number of acorns each stem bears. This provides information about oak shrub survival, growth, and reproduction, as well as estimates of the acorn

resources available to scrub-jays and other animals.

By studying systems like caching, we gain insights into both plants and animals and how the environment influences both, and their interactions. Long-term data are a hallmark of biological field stations like Archbold and provide insights into how relatively small and slow changes affect not only populations, but communities and ecosystems. By studying these interactions, we can help preserve scrub oaks, the jays, and all the other plants and animals in the Florida scrub that interact and rely on both.

One other important aspect of collecting acorn data is that research interns gain valuable field training in ecological surveying methods and data collection. Many of the research interns in Archbold's Avian Ecology Program have not had previous experience with systematic sampling methods. Counting thousands of acorns each season, in some years upwards of 10,000, is no small task. Research interns hone their organizational and data collection skills during the annual acorn count, preparing them for the future.

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