

Friends of the Randell Research Center

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Shallow Geophysics and Archaeology at Pineland

by Christina Perry Sampson, Randee Hunter,
and Victor D. Thompson

In July, the Ohio State University (OSU) and the Randell Research Center began a pilot project using shallow geophysical survey techniques at the Pineland Site Complex. Victor Thompson of OSU and Karen Walker and William Marquardt of the Florida Museum developed the project to evaluate the potential of geophysical survey to reveal buried archaeological features and help reconstruct past use of the landscape at Pineland. This season's work focused on Surf Clam Ridge and Citrus Ridge near the central portion of the site.

Over five days, the crew covered 18,400 square meters with electrical resistance survey and 5,090 square meters with ground penetrating radar (GPR). Analysis is ongoing, but preliminary results show disparate patterns across the site. On Citrus Ridge, the resistance survey identified underground variations that may indicate midden and redeposited sand. These data could help to answer questions about how human habitation and storm surges contributed to the formation of these landscape features. GPR survey on both ridges complements the resistance survey by providing a three-dimensional subsurface view of these landforms. Additionally, GPR survey around the site



Christina Perry Sampson, Randee Hunter, Matt Millard, Andrew Lee, and Evan Russel operate the resistivity probe. (Photo by Victor Thompson.)

was successful in detecting the location of some of the smaller Calusa canals.

Future work will involve comparing the geophysical results with the previous excavation and coring data from Pineland. Comparing geophysical measurements with excavation data helps archaeologists to understand larger patterns in the distribution of archaeological features. Often, such patterns are revealed only through large-scale excavations, which are costly and destructive to archaeological resources. This research promises to be of interest both methodologically and for understanding the history of human occupation at Pineland.

What is shallow geophysical survey?

Shallow geophysical survey allows archaeologists to map subsurface features without excavation. Survey techniques use electrical currents, radar, or magnetic sensors to identify features that stand out in certain ways from the surrounding area. Underground walls, middens, ditches and other archaeological features may vary physically from the ground around them in various ways, such as reflecting electromagnetic signals, holding more or less moisture (affecting electrical conductivity/resistivity), or altering the natural magnetic field of the soil. Measurements at standard intervals are compiled with computer software to create maps that show patterns over the survey area, which can reveal buried archaeological features.



Christina Perry Sampson, Andrew Lee, Hannah Solomon, and Evan Russel gather data using ground-penetrating radar. (Photo by Victor Thompson.)

Update on Mound 5

by Michael Wylde

Analysis of the BCM5 material excavated in 2009–2010 is underway. The Brown's Mound Complex is seen by visitors adjacent to the teaching pavilion at the Calusa Heritage Trail, and includes the often-climbed, nearly 30-foot-tall Brown's Complex Mound 1 (BCM1). The truncated BCM5 is located between BCM1 and Waterfront Drive. We were able to get two radiocarbon dates from Operation M-3 using fighting conch (*Strombus alatus*) shells from the 50-x-50-cm zooarchaeological sample. Level 91, which is from 80 to 90 centimeters below datum, dated to about A.D. 650. Level 96, from 130 to 140 centimeters below datum, dated to about A.D. 440. Level 96 is at the current intertidal zone, as deep as we can dig without pumping out water. The two dates are in stratigraphic and temporal sequence, which suggests that the mound is mostly undisturbed under a layer of historic debris.

Analysis of animal bones and shells is

nearly complete, and will help us correlate the environmental information from Mound 5 with other contemporary units at Pineland. The two dates bracket the beginning of the Vandal Minimum (ca. A.D. 550), when global climate was in flux. A close analysis of the animal bones and shells could show how these global events affected Pine Island Sound and its residents at this time. It was very helpful to be able to use the comparative faunal collections at the Ruby Gill House lab this summer to continue working on the collection while at Pineland. Also, thanks to UF undergrad Jason Breslin of Naples for his help in the initial faunal analysis.

Illustrator Sue Ellen Hunter is working on professional renderings of the profiles and notable artifacts from the excavation. Readers will be familiar with Sue Ellen's work from the many publications she has assisted with at



Michael Wylde sorts and identifies animal bones from the Operation M excavations on Brown's Complex Mound 5 (BCM5). (Photo by Melissa Ayvaz.)

the Pineland Site.

If all goes well, the excavation report will be completed next spring, and another piece of the Pineland puzzle will fit into place. Many thanks to Drs. Marquardt and Walker for their assistance in this project, and to all the RRC volunteers who were kind enough to participate in the Mound 5 dig. 🏺



Citrus Ridge Dig Enters Analytical Phase

by Melissa Ayvaz

It took one month to carefully dig the 1-x-1-meter test pit, one 5-cm level at a time, and about one hour to fill the hole back in. Archaeological fieldwork at the Citrus Ridge was successfully completed on June 19th and backfilling of the unit occurred (with the aid of Dr. Bill Marquardt, RRC maintenance specialist Gary Vinson, and a tractor) on July 3rd. The Citrus Ridge is traversed by visitors to the Calusa Heritage Trail, and features two interpretive signs, one on Calusa spirituality and one on Pineland since the Calusa.

The excavation was intended to investigate the hypothesis that a major hurricane and associated storm surge impacted the site in the 4th century AD. The excavation unearthed many

interesting artifacts and animal remains, along with sediments and assemblages that support the storm-surge hypothesis. I will be working over the next year to analyze and put the findings into writing. Preliminary results will be presented at the annual meeting of the Southeastern Archaeological Conference, and the complete analysis will be a major portion of my

Master's thesis at the University of Florida. Much appreciation goes out to all who participated in and visited the excavation! 🏺

Melissa Ayvaz (left) confers with Karen Walker during excavations on Citrus Ridge, June, 2011. (Photo by Margi Nanney.)



Boy Scouts Receive Merit Badge Training at Randell Research Center

by Michael Wylde


On June 10th, the RRC participated in a Boy Scout training program organized by Matt Schuld of the Southwest Florida office of the Florida Public Archaeology Network and FGCU student/FPAN intern Dennis Kadera. After a week of classes and activities at FGCU, eleven scouts and two scoutmasters from Fort Myers Troop 1 met at the Calusa Heritage Trail for a Friday night orientation and camp-out. The scouts set up camp and explored the area in the evening, and especially enjoyed our newly completed observation pier on Waterfront Drive.

Saturday morning began with a tour of the Pineland Site Complex; we were lucky that UF grad student Melissa Ayvaz was still on site, working on her Citrus Ridge excavation, and the scouts were able to observe a real archaeological dig in process. Next we toured the labs and facilities at the Ruby Gill House and had a brief training on the archaeological materials from Pineland and the methods we use in collection and identification. Using $\frac{1}{4}$ -inch screens, the scouts helped us sift through material from what we call "Pile T" — a large unprovenienced sample from Brown's Complex Mound 4 — finding and identifying pottery, fish bones, and shell tools.

We explained the importance of bagging and recording information from our finds, and discussed curation procedures at the Florida Museum of Natural History, the eventual permanent home of the material from Pile T.

After lunch, FPAN and RRC hosted Seminole Tribal Archaeologist Vanessa Poling, who gave a great talk on Seminole history and archaeology for the boys in our classroom at the Trail. Lastly, even though it was pretty hot, we had a class on physics and primitive

technology using the atlatl, or spear-thrower. All of the scouts did well throwing the six-foot darts, and we may have inspired an exciting physics project for school in the fall.

The scouts were exemplary guests, leaving nothing but footprints in their wake. We hope that they gained a deeper knowledge of their local history and archaeology as an academic profession while earning a merit badge (and having a good time) at the Calusa Heritage Trail. 



Visiting boy scouts look on as Melissa Ayvaz explains archaeological excavation techniques. (Photo by Margi Nanney.)

New and Renewing Friends of the RRC June 1, 2011 through August 15, 2011

(Please let us know of any errors or omissions. Thank you for your support.)

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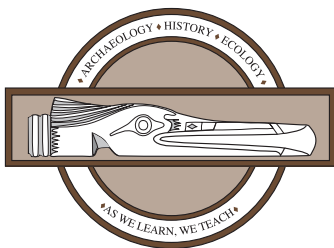
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Coming Events

**Explore the Estuary of
Pine Island Sound
Saturdays, October 8 and
November 5, 9 a.m. — 12 noon**

With the sponsorship of the Charlotte Harbor National Estuary Program, the RRC will again offer our popular "Muck Abouts" — a chance to wade, and learn first-hand about the plants and animals of local estuaries. "Muck Abouts" begin at the Calusa Heritage Trail pavilion and are available to adults and children over 9 years of age by preregistration only (one adult per 4 children maximum). Participants must wear sturdy shoes, clothing to get wet, and expect to encounter mud! Each date is limited to 20 people. Call 239-283-2157 to register.

Captiva Cruises Excursion

Beginning November 4, Captiva Cruises will again offer its special eco-heritage tour featuring RRC and the Tarpon Lodge. Launching from the McCarthy Marina on Captiva Island, the trip includes a cruise by the historic fish houses, to learn about the history of the commercial and sport fishing in the area and to enjoy the marine life encountered along the way. Lunch at the Tarpon Lodge and a guided hike at the Calusa Heritage Trail follow the boat trip, and the cruise back to Captiva offers a chance to reflect and relax. Price is \$45 per person (does not include lunch). For more information, call 239-472-5300.

**Keep up with
upcoming events at the RRC
on our website:**

**[www.flmnh.ufl.edu/RRC/
events.htm](http://www.flmnh.ufl.edu/RRC/events.htm)**

Where Has Your Hat Traveled?

*Cindy's RRC Hat Goes to
Panama*

by Cindy Bear

The RRC hat of Program Coordinator Cindy Bear was seen this summer in Panama, an enigmatic country of dynamic coastlines, cloud forests, unique wildlife, and the engineering marvel, the Panama Canal.

Cindy and her husband Charles joined three researchers from the University of Maryland studying frogs in streams of Chucantí as part of their work on the loss of frogs, due to a fungal disease, throughout Central and South America.

Cindy and Charles also spent two weeks volunteering with the Panama Canal Project, a joint effort between the Florida Museum of Natural History and Panamanian scientists. The widening of the canal has created an unprecedented opportunity for study of Neogene (23



Cindy Bear waterscreens sediment containing fossil shark teeth. (Photo by Charles O'Connor.)

million years ago to present) fossil deposits. Cindy wore her hat during days spent screening rock and soil matrix that was next dried and examined, by stereomicroscope, to locate tiny 10–20 million-year-old shark teeth. The teeth she sorted will be used by paleontologists to help establish climatic conditions, species diversity, and paleo sharks' migratory patterns. All in all, quite an unconventional and interesting journey for one hat!

RRC News

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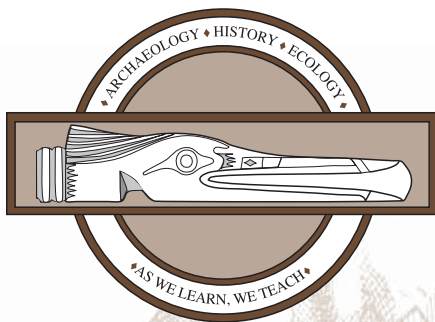


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Friends of the Randell Research Center

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Dear Friend,

You are cordially invited to join, or renew your membership in, the RRC's support society, *Friends of the Randell Research Center*. All Friends of the RRC receive a quarterly newsletter and free admission to the Calusa Heritage Trail at Pineland. Supporters at higher levels are entitled to discounts on our books and merchandise, advance notice of programs, and special recognition. Your continuing support is vital to our mission. It means more research, more education, and continued site improvements at the Randell Research Center. Thank you.

Sincerely,

William H. Marquardt
Director
Randell Research Center



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Photo by A. Bell



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