



# Friends of the Randell Research Center

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## Mute Witnesses to Pineland's Past *Living saw palmettos witnessed Calusa heyday*

by Cindy Bear

**A** *paradox presents itself* frequently at the Calusa Heritage Trail as visitors gripping the newest smart phones express pleasure that pieces of the past are preserved and valued. They ponder shells comprising the bulk of mounds that stood through centuries of human experiences and view illustrated portals to the past created by our signage. At the Trail, they perceive the eternal and perpetual as possible.

Now visitors can also visit with living beings that witnessed Calusa children, women, and men years before Europeans first set foot on Florida's shores. We have determined that saw palmetto plants growing on the Smith Mound parcel are, at a minimum, 500 years old.

To establish an age for our palmettos, we used methods developed by Dr. Warren Abrahamson working at Archbold Biological Station on the Lake Wales Ridge near Sebring, Florida. His methods take into account the fact that, like many plants, saw palmettos reproduce in two distinct ways, through seeds and by vegetative sprouting.

Seed production begins with flowering in May followed in September to October by oval, yellow-green fruit which turn black when mature. Astonishingly, other scientists at Archbold recorded over 300 "flower visitors" powering up on saw palmetto nectar. Although many of the butterflies, moths, beetles, flies, wasps, and bees are pollinators, there are even more roles these visitors



*Branching ramets of saw palmetto (Serenia repens) growing on the Smith Mound. (Photo by Charles O'Connor.)*

play in Florida's ecology, including serving as decomposers, which recycle biological matter in the environment. Wildlife biologists note that the ripe fruit is eaten by gopher tortoises, wild turkey, white-tailed deer, Florida black bear, and raccoons, and the tangled thickets of trunks are den sites for the Florida panther. Yet, according to Dr. Abrahamson, it may take a palmetto sprout one hundred years to become an adult.

Vegetative sprouting is the primary method for saw palmetto propagation. What we see as a long, pithy stem with fan-shaped leaves on one end is known to botanists as a ramet. If the leaves are the head and you follow a ramet toward the tail you often find places of branching. Frequently, the tail becomes disconnected and grows independently. Measuring ramets, Dr. Abrahamson and his team found stunningly slow growth rates of only .6 to 2.2 cm per year (.24 to .86 inches).

True to everything about palmettos, ramet longevity is just one part of a much more complex story. Although ramets function as distinct organisms, they are actually part of clonal colonies, called genet, facilitated by branching, breaking, and growing. On a 60 x 60 meter plot (197 x 197 feet), using genetic analysis Dr. Abrahamson and his team found that over 250 saw palmettos were "clone sisters" of only five genets. Knowing that the age of a genet depends on the number of and distances between ramets, they applied



*Measuring saw palmettos on the Smith Mound parcel reveals that they are over 500 years old. (Photo by Laura Coglani.)*

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modeling and mapping techniques to establish minimum, maximum, and average ages for each of the five clonal colonies (genets).

Remarkably, their data revealed estimated ages ranging from 1,227 to 5,215 years, and these estimates are thought to be conservative because there may have been ramets outside their plot not included in the measurements and they assumed an average steady growth rate in their calculations. Further, they note that their model did not account for the “conservative estimate” of 100 years for a sprout to become an adult, leaving Dr. Abrahamson to suspect that there are “10,000-year-old saw palmetto clones” in habitats at Archbold Biological Station.

Here at Pineland, saw palmettos were not evident on our grounds until we acquired and restored the Smith Mound parcel. Then, as the dense overstory of invasive Java Plum, Ear-leaf Acacia and Brazilian Pepper was removed, many of the native plants responded with bursts of showy flowers and plump fruit, and the palmettos responded with new leaf growth. Many palmettos we freed had grown tall and upright reaching for sun rather than growing horizontally along the ground where not obscured by overgrowth.

Now that restoration is well underway, we took time to measure palmetto ramets, finding many over 18 feet long and one

beauty that is 20 feet, 10 inches in length. We chose to be conservative and use ½ inch per year of growth to obtain an estimated age of 500 years; however, if we use Abrahamson’s choice of a 4-year average of .88 cm (.346 inch) per year, the age estimate for the Pineland ramet is about 720 years old. In other words, the plant was growing at Pineland about 1300 AD – more than 200 years before the first Europeans arrived in Florida! Without genetic testing, we will not be able to determine the relationships of ramet to ramet, nonetheless it is easy to imagine where one was once part of another as we trace ramet locations on the site and imagine the network created through time.

Preserved saw palmetto parts and pieces have been found by archaeologists in excavations representing all time periods of Pineland’s past dating from about 100 AD



*The length of the saw palmetto trunk, or ramet, is related to its age. (Photo by Charles O'Connor.)*

to the 1600s. They have been used by people in many ways. The Calusa used their tough leaves for fiber and twine and likely knew of their medicinal properties and the nutritious value of the fruits. They range widely across the southeastern United States, overlooked by many and eliminated by others. Yet, they have stood as silent witnesses to centuries of human drama at Pineland.

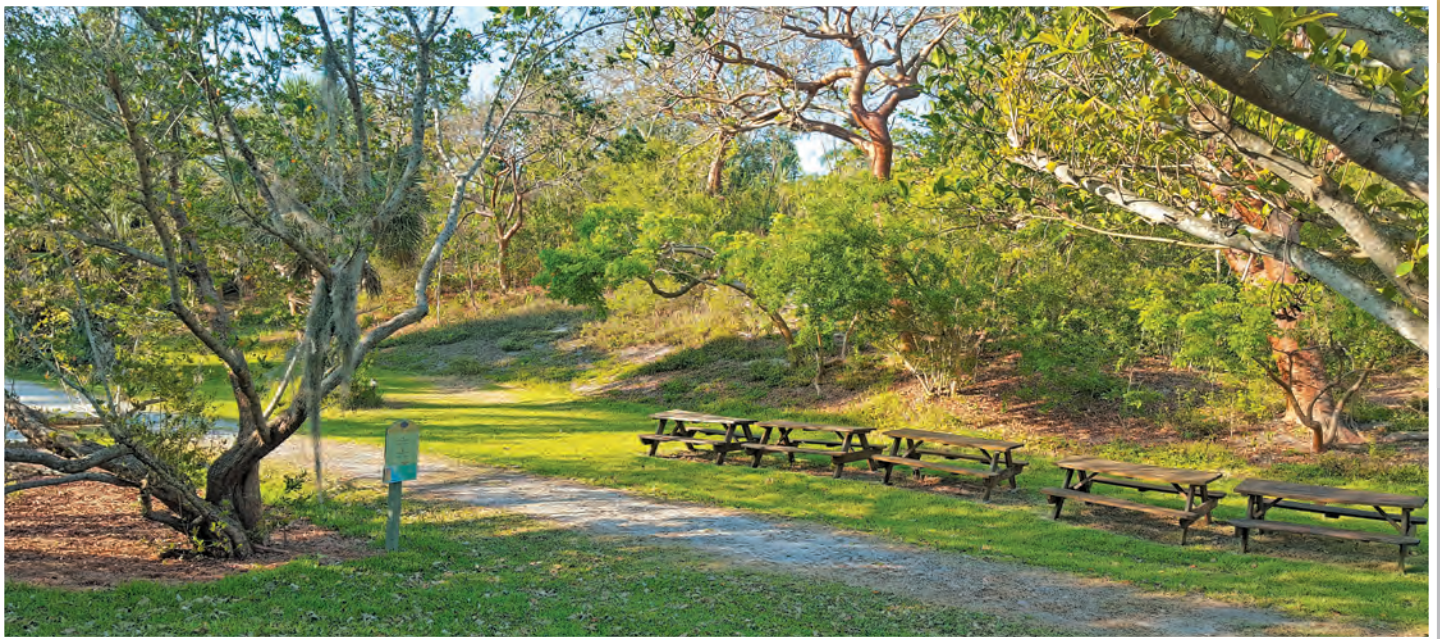
Many thanks to volunteer Laura Coglean for helping to free the palmettos from invasive plants and measuring ramets. To learn more, see: Warren G. Abrahamson (2016) “Age-old Palms on Florida’s Ancient Ridges,” *The Palmetto*, Vol. 33, No. 3, Florida Native Plant Society. For a summary of historical and medicinal uses for saw palmettos, see page 25 of Martha Kendall’s *The Plant World of the Calusa: A View from Pineland*, 2015, RRC Popular series no. 1.



*Saw palmetto flowers fuel hundreds of forest dwellers. (Photo by Charles O'Connor.)*







*View from the RRC classroom, May 2018.  
(Photo by Bill Marquardt.)*



## State of the Center, 2018

### *A look back, a look forward, and farewell*

*by Bill Marquardt*

***T****his is the last article* I will write for the *Friends of the Randell Research Center Newsletter* in my role as Director of the RRC. I will be retiring from the Florida Museum of Natural History on August 15, 2018.

For 21 years, the Museum's Director Doug Jones and departmental chairs Keegan, Robinson, Steadman, and Reed have supported the growth of the RRC as I have spent a significant amount of my professional time working on its behalf. We have benefited from other aspects of the University of Florida, including the University of Florida Foundation. UF students have enriched the program by doing original research at Pineland and participating in public events. The Museum has pledged to hire a replacement for me as Curator of South Florida Archaeology and Director of the RRC. I plan to continue to be involved as a volunteer and to step aside and let some else have a turn working with the very best contingent of supporters I can imagine.

March, 2018 marked the 30th anniversary of our first archaeological research at the Pineland site, hosted and supported by Donald and Patricia Randell. This July, the Randell Research Center begins its 22nd year. The past year was our most successful ever in terms of visitation, donations, giftshop sales, and school programs. We instituted new tours and continued our great partnership with Captiva Cruises and the Tarpon Lodge. We hosted a popular speaker series that brought three scientists from the Florida Museum to speak. We installed three new interpretive signs on the Smith Mound parcel. We survived a near-miss by Hurricane Irma with only minor damages.

We have been thinking a lot lately about resilience – the ability to bounce back from challenges and keep moving ahead. The resilience of the Calusa people who lived at Pineland and elsewhere in this area has been an inspiration. People first started living at Pineland about 2,000 years ago, and occupied this place almost continuously



*Pat and Don Randell (standing) check out the excavation on Brown's Complex Mound 2, 1990; seated: Corbett Torrence. (Photo by Bill Marquardt.)*

for 1700 years. To put this in perspective, our own country is only 242 years old; the Calusa lived at Pineland for seven times that number.

The Calusa withstood serious challenges, including a devastating hurricane that destroyed their village about 300 AD. They adapted to global climate changes, including an episode between 550 and 850 AD that lowered water levels in the inshore bays and adjacent estuarine waters, driving

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Visitors watch excavations at Brown's Complex, 1990. (Photo by Bill Marquardt.)

fish to deeper waters. They withstood the European invasion by refusing to abandon their beliefs and their way of life. The Calusa thrived as recently as the late 1600s, when most Native societies in the southeastern US had been displaced or destroyed. In short, for more than 15 centuries the Calusa were resilient. Through challenges—environmental, political, and economic—they persevered.

The Randell Research Center has also been resilient. Don and Pat Randell's gift of land valued at over \$1.3 million established the Center in 1997, but there was nothing here except the land—no buildings, no

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The Florida Museum's big tent served as our field laboratory in 1990 and 1992, as well as a place to teach school children that archaeology is more than excavations. (Photo by Bill Marquardt.)



Graduate student Jenna Wallace supervises excavations, 1995. (Photo by Bill Marquardt.)

## Gift to Endowment Insures Sustainability

In 2012, we began a five-year endowment campaign to raise a minimum of \$850,000 in new money, calculating that the yearly interest generated from that amount would guarantee we could sustain basic operations into the future. We are pleased to announce that a significant gift from the estate of Joseph T. Brinton III, who passed away a year ago, has put us over the top. Jody was a quiet, modest, unpretentious man who loved Florida history and prehistory. He was an amateur historian who did original research, some in Spanish archives. Jody saw the promise and potential of the Randell Research Center. He also hoped his gift might inspire others to contribute to the endowment, to help the RRC continue to expand research and teaching and maintain our grounds and buildings. We look forward to making good on Jody's trust in our mission.





# Friends of the Randell Research Center

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Sincerely,

William H. Marquardt  
Director  
Randell Research Center



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Photo by A. Bell.





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staff, no budget. Fortunately we had some friends who were willing to help, and volunteers who rolled up their sleeves and got involved. On April 3, 2018 we hosted our annual Volunteer Appreciation Day, and I was able to thank personally many of our more than 75 volunteers who literally make the RRC work: docents, greeters, store operators, office assistants, and those who help maintain the grounds by keeping



*Restored parcel of land acquired in 2015 and opened to the public in 2017. View is toward Calusa Heritage Trail extension and Calusa Canal around the Smith Mound. (Photo by Charles O'Connor.)*



*School tour gathers in the shade while Cindy Bear teaches about the Calusa. (Photo by Jeff Gage.)*



*Visitors on the Calusa Heritage Trail, base of Brown's Complex Mound 1. (Photo by Bill Marquardt.)*

the invasive plants under control. Some who can't volunteer at the site help in other ways, by making generous financial gifts to the Center. Annual memberships and donations we receive at the site help us pay for our staff, supplies, and maintenance. Some supporters have literally been donating for 10, 15, even 20 or more years. Being able to count on such loyal support year after year helps us immensely.

The first-time visitor sees the place today and imagines that it was always like this. If you are one of those friends who has followed us for a long time, perhaps even before there was an RRC, you know how far we have come. You remember when there was no headquarters house, no classroom, no Calusa Heritage Trail, no school programs. None of this could have been accomplished without the kind of support that you have given through the years. Each project we tackled seemed like a dream at the time, but with perseverance and your encouragement, these milestones were achieved.

Just like the Calusa, we have had setbacks. Hurricane Charley in 2004, for example, devastated our facilities and seriously tested our commitment. But like the Calusa, we came together and rebuilt, and now the Center is stronger than ever. Like the Calusa, we will need to adjust to global climate change in order to survive. Like the Calusa, we must refuse to



*Volunteer Kendra Pinsker stands in Operation C, Brown's Mound Complex, 1992. (Photo by John Griffin.)*

abandon what we believe – that this is a special place for learning and teaching, and it must survive into the future.

What makes an organization last? Why do some institutions and programs adapt and respond to challenges, while others fall by the wayside? I think a big part of the answer is that resilient programs have people who believe in them, who find meaning in what they do, who take pleasure in seeing the program succeed. There is much, much more to accomplish, and I hope you will all continue to be involved, as I plan to be in my retirement. Thank you all again for what you have done to help make this dream a reality.



*Watching the sun set over Pine Island Sound from the RRC's observation pier. (Photo by Karen Walker.)*





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## RRC News

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and Cindy Bear

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