



**WMS/LSS ARCHAEOLOGICAL SOCIETY NEWSLETTER**

**Vol. 26, No. 1, January/February 2015**

*A 501(c)3 Corporation and Chapter of the Florida Anthropological Society*

The Warm Mineral Springs/Little Salt Spring Archaeological Society meets the second Tuesday of the month (except June through August) at 7:00 PM, at the North Port Community United Church of Christ located at 3450 Biscayne Blvd. Meetings are free and open to the public.

**HAPPY NEW YEAR 2015!**

**January 13, 2015, is our Annual Meeting when our 2015 slate of Officers and Directors will be voted into office.**

**FOUNTAIN OF YOUTH PARK IN ST. AUGUSTINE TOPIC OF JANUARY 13 MEETING**

New College of Florida graduate Arielle Bernhardt will be the speaker at our January 13 meeting, with a presentation titled "Public Archaeology on Private Property: A Heritage Study of Ponce de Leon's Fountain of Youth Archaeological Park in St. Augustine, Florida."

As Florida commemorates the 500th anniversary of Spanish explorer Ponce de Leon, several locations memorialize his path. As with Warm Mineral Springs, Ponce de Leon is reputed to have visited Ponce de Leon's Fountain of Youth Archaeological Park in St. Augustine, Florida. Through observations and interviews, Ms. Bernhardt examined how patrons use the Fountain of Youth Park and what the park has to offer in the form of archaeology and education. Furthermore, she applied these findings to a discussion about the Fountain of Youth myth in Florida history, themed space in St. Augustine, and the value of archaeology to the public.



*January Speaker Arielle Bernhardt*

**"UTILIZING GEOREFERENCING IN ARCHAEOLOGY: A QUEST TO FIND THE SEMINOLE VILLAGE OF CHOCACHATTI" TOPIC OF FEBRUARY 10 MEETING**

Over the past decade, georeferencing has become an imperative prospection tool in connecting past and present landscapes within archaeological contexts. In 1823, Horatio S. Dexter produced a sketch map plotting the location of Seminole villages scattered across the Florida landscape. This presentation will detail the research process involved in utilizing GIS to locate one of these villages, the site of Chocachatti, by georeferencing specific areas of Dexter's map. In addition, the presentation will advocate using caution when moving from historic maps and GIS to the ground, as archaeological and historical records are operating in two separate frames of temporal reference.

*Editors note: Both January and February speakers were in the student-paper competition and presented their research at the May 2014 Annual Meeting of the Florida Anthropological Society at the Charlotte Harbor Event and Conference Center in Punta Gorda.*



*February speaker Meg Stack*

## DECEMBER PRESENTATION ON STONE-TOOL TECHNOLOGY OUTSTANDING

*By Judi and John Crescenzo*

On December 9, 2014, Board Member Roger Hostetler treated us to a fascinating demonstration of stone-tool manufacturing technology, which was used at various periods of time in the United States. He brought cases of his stone-tool work and displayed them on tables in the front of the room for everyone to examine before and after the meeting. He also brought elaborate pine-needle baskets that he made, and he makes bows as well.

Roger learned his skills by observing some of the best knappers, including Claude Van Order, Roy Miller, and Randy Beach. Over time, he learned to "read the stone" and reproduce various types of points. Roger uses flint, chert, obsidian, jasper, chalcedony, glass, and silicified coral to create stone tools. Obsidian is volcanic glass; glass makes the cleanest fractures with edges sharper than steel.

In Florida, the available stone for the production of chipped tools is chert, a silicified limestone or coral. Silica (silicon dioxide, SiO<sub>2</sub>) is a chemical compound that is an oxide of silicon. Quartz is almost pure silica and quartz sand is used to make glass. It is abundant in sea water and when limestone or coral is saturated for thousands of years, silica replaces the calcium carbonate to form chert, a silicified limestone. Chert is found in limestone outcroppings along river beds such as the upper Peace, Alafia, and Hillsborough Rivers, as well as other rivers in central and northern Florida and the southeast coastal plain. It is scarce to non-existent in south Florida; hence all chert found in south Florida has been imported from northern counties. They are locations where Indian quarry sites are found. On the upper Peace River, opalite chert outcroppings used in tool making are found. Roger had chert from as far as Texas and said true flint comes from England and Denmark.

Manufacture techniques include direct and indirect percussion flaking and pressure flaking. Direct percussion occurs when a hammer stone or bone hammer is struck directly to the edge of the stone being worked to knock off flakes. Indirect percussion happens when something is put between the hammer and stone being worked, such as wood or bone. Pressure flaking is when pressure is applied to the stone at a steep angle with an antler tip or wood point with a copper tip to control the direction of the flake.

Uniface technology, the earliest technique known, is when only one side of the tool is worked. Any flake off a chert or flint cobble will produce a sharp edge that can be used as a tool. Bifacial technology is when both sides of the stone are worked to form an adz, chopper, spear point, knife, or arrowhead.

There is a great deal of diversity and variability in stone tools geographically and through time. The Aztecs made elaborate tools from wood with pieces of obsidian inserted along the whole length. The Danes made three-faced arrowheads shaped like triangles. These arrow-heads could pierce armor and were used until the advent of metals. About 8000 years ago, it was discovered that when coral and other cherts were heated they were easier to work, obtained a luster, and changed color.



*Roger Hostetler received our World famous Tee-shirt from Vice President Jodi Johnson while displaying the fluted Clovis point he made during the presentation.*

Roger used a river-cobble and elk-antler billet for his demonstration and we watched in amazement as he chipped off thin razor-like flakes which could be used to cut cordage or leather. While he knapped, he explained that flakes follow ridges and don't travel uphill. As he works, he looks for platforms or makes a striking platform to work with. Clovis people set up a series of platforms, then chipped along the length of the tool. They would go to a rock source, work cobbles into smaller pieces or "blanks," then take the pieces to trade or to further work at the camp or village. Sometimes caches of bifaces were buried for later use, and large caches have been found thousands of years after being buried.

During the presentation, Roger chipped a chert cobble and made a Clovis point while describing his techniques. The highlight came when he wrapped the finished point in leather and percussion-flaked the flute by striking the base at a steep angle with an elk-antler billet. You have one shot to make it right or the point will shatter. Then came the drum roll and the strike; it sounded good. When Roger unrolled the point from the leather, it was whole, with a 1.25" flute and the loose flake; it was a good shot.

Roger was kind enough to donate two more projectile points and a necklace for our raffle. It was a very engaging and interactive meeting, and everyone enjoyed themselves and left informed about stone-tool manufacturing techniques, and a few were quite happy with their donated raffle prizes.

We thank Roger for coming and demonstrating his craft to us. Go and see him at one of the upcoming Knapp-ins. February is knap-in month, with knapping events held in several locations. People come from all over the country to attend knap-ins in Dade City, Silver Springs Park, and other locations throughout the southeast. See the next brief for dates, times and locations.

### FEBRUARY 2015 IS THE MONTH FOR KNAP-INS

Here is the February Knap-In schedule from the last newsletter! If you attended Roger Hostetler's December presentation and are interested in seeing more, go to one of the Knap-

ins! These will be go-on-your-own events, but sign-up sheets will be available for possible car pooling.

**February 13–15, 2014:** Withlacoochee Primitive Arts Festival; Dade City, Florida. Contact Sam Scarborough at [sscarborough@pascocountyfl.net](mailto:sscarborough@pascocountyfl.net), 352.567.0264.

**February 20–22, 2015:** (Friday student-only day) Silver River Knap-In and Primitive Arts Festival; Ocala, Florida. Contact Scott Mitchell at [Scott.mitchell@marion.12k.fl.us](mailto:Scott.mitchell@marion.12k.fl.us); 352.236.5501.

**February 27 – March 1, 2015:** Ochlocknee River Primitive and Stone Age Arts Festival; Sopchoppy, Florida. Contact Jason Vickery at [Jason.vickery@dep.fl.us](mailto:Jason.vickery@dep.fl.us).

## **NOVEMBER MEETING FEATURED EUGENIE CLARK VIDEO INTERVIEW ON EARLY DIVES AT WMS AND LSS**

*By Judi and John Crescenzo*

Those who attended our November 11, 2014, meeting had the pleasure of viewing *The Shark Lady*, a videotaped interview with Dr. Eugenie Clark filmed in 2013 on her early years of diving at Warm Mineral Springs and Little Salt Spring in the late 1950s and early 1960s. The video was produced by Curt Bowen of *Advanced Diver Magazine*, with assistance from the “Shark Brothers,” Sean and Brooks Paxton of Think Out Loud Productions.

During the introduction, WMS/LSSAS Board Member Betty Nugent of Englewood gave a brief on Eugenie Clark’s history in the area. She is a biologist who spent her life studying fish and sharks, and her connection to the Englewood area is with her founding of Cape Haze Marine Laboratory and later Mote Marine Laboratory.

After Betty’s introduction, we also had the pleasure of hearing from Sean and Brooks Paxton, co-producers of the video interview, who also had great tales to tell prior to the showing.

In the interview, Dr. Clark explained her involvement from the 1950s when she came to Englewood to talk about red fishes. Shortly thereafter she was asked to teach about fish. Six months later she set up Cape Haze Marine Laboratory and later Mote Marine. While Dr. Clark was studying sharks in Englewood, she met an early explorer of Warm Mineral Springs (WMS), the late Colonel William Royal. Upon an invitation from Royal, she had the opportunity to dive the springs and her descriptions of those early dives were most interesting and entertaining.

In one scene, Clark described her experience with nitrogen narcosis at a 200-foot depth in total darkness at Little Salt Spring when she hallucinated that she was in a hospital giving birth. She remembered thinking how strange that was. She could not see those who were with her; she saw only one hand and body sinking into the sediment below and had difficulty figuring out what was going on. She thought Royal had been buried alive, but he was only trying to find artifacts at the bottom of the spring.

Bill once told her if she ever got confused about which way was up, she should remove her weight belt and hang it so she could see which way was up or down; she thought watching the direction of her bubbles was easier. She described many experiences. She said Royal was an explorer, not a scientist, and he had a wonderful sense of direction underwater in total

darkness and never got nitrogen narcosis.

Many underwater caves and caverns were once dry land and were places people visited for resources and in some cases, burying their dead. In one of the early dives at Warm Mineral Springs, Royal and Clark found human bones. One skull appeared to contain the remains of a human brain. Royal believed them to be up to 10,000 years old. He tried to get professional archaeologists to look at the site, but no one would believe him.

When Jacques Cousteau radiocarbon-dated some of the bones Royal found at WMS, they were, indeed, determined to be thousands of years old; Royal was finally vindicated. Clark contacted brain experts at Harvard and a British museum who explained that brains can be preserved. In ancient Egypt, bodies were embalmed, but brains were not; yet, they remained intact. Likewise, in Scottish peat bogs, bones disintegrated but tissue and brains did not. Royal and Clark’s work at WMS led to the first peer-reviewed professional publication in *American Antiquity* in 1960, entitled “Natural Preservation of Human Brain, Warm Mineral Springs, Florida.” It was first rejected by *Science* magazine as too unbelievable.

Dr. Clark said there is much to be learned if properly investigated, but this takes money and specialists. It would be a bad idea to close the springs, which should instead be studied. Both springs are remarkable pieces of ecology and can provide pleasure, too. Unfortunately, the future of WMS is uncertain. People should realize that the two springs, WMS and LSS, are unique in North and South America, and that people lived here much earlier than was once believed.

Dr. Clark is glad to have been part of these early dives and the founding of Mote Marine in 1955. Today she is over 90 years old, but she still maintains an office at Mote Marine Laboratory and is actively involved in research; an amazing woman.

## **2015 WMS/LSSAS SLATE OF OFFICERS AND DIRECTORS**

The 2015 WMS/LSSAS Officers and Directors will be voted in at the January 13 Annual Meeting. Elections will be held just prior to the speaker’s presentation. We want to thank our Nominating Committee, comprising Hilda Boron and Linda Massey, for providing the slate at our January 3 Board Meeting.

The 2015 Slate includes Officers: President Steve Koski (serving second year of two-year term), Vice President Jodi Johnson (serving second year of two year-term); Secretary Hilda Boron (re-elect); Treasurer Kate Cattran (re-elect); and Membership Secretary, Linda Massey (re-elect). Directors: Keith Buchanan (serving second year of two year-term), Rita Buchanan (serving second year of two year-term), Lorraine Hawkins (re-elect), Sandra Heacock (re-elect), George Haag (second year of two-year term), Roger Hostetler (second year of two-year term), Carol Myers (re-elect), Betty Nugent (second year of two-year term), and Tena Docter (re-elect).

Thanks to all 2014 Officers and Directors for making this past year one of our best. We look forward to 2015!

## QUIGLEY PAINTING DONATED TO NORTH PORT LIBRARY BY FRIENDS OF NPL

*By Steve Koski*

At the December 8 Board Meeting of the Friends of the North Port Library, Steve Koski, President of the Warm Mineral Springs/Little Salt Spring Archaeological Society, presented "The Tortoise and the Ledge," a painting by notable Florida artist Dean Quigley, to the Friends of the North Port Library Vice President Sherry Berry and President Mary Byrd. They donated it to the North Port Library for display.

"The Tortoise and the Ledge" was commissioned by the Friends of the North Port Library in 2007 as a concept design for a possible mural for the Children's Room at the North Port Library. A draft concept was submitted in 2008, comments were made for modification, but shortly thereafter the artist moved from St. Petersburg to Pensacola for a large commission; he then moved to St. Augustine for a series of large commissions, where contact with him was lost. Contact was re-established in 2012 and he indicated that he, indeed, planned to complete the painting and provide it to the FNPL as intended.



*WMS/LSSAS President Steve Koski delivers "The Tortoise and the Ledge" painting to Friends of NPL Vice President Sherry Berry and President Mary Byrd.*

That day happened on Sunday, May 11, 2014, during a field trip to Warm Mineral Springs and Little Salt Spring for an event for the Annual Meeting of the Florida Anthropological Society held at the Charlotte Harbor Event and Conference Center, hosted by the Warm Mineral Springs/Little Salt Spring Archaeological Society. There, at Little Salt Spring, Dean completed the painting and turned it over to Steve Koski to give to the Friends of the North Port Library.

"The Tortoise and the Ledge" is an artistic representation based on an archaeological interpretation of an event that may have happened at Little Salt Spring more than 12,000 years ago. In 1975, on the 27 m (90-foot) ledge, the remains of an extinct giant tortoise were found with a sharpened wood stake wedged between the plastron and carapace. That presumed artifact dated to 12,030 radiocarbon years before present, nearly 14,000 calendar years ago. Based on the archaeological evidence, the archaeologist who excavated the tortoise and stake, Carl

Clausen, believed the tortoise had been killed and cooked in place during a visit by Paleoindians, Florida's first known inhabitants. The interpretation of the event resulted in several representations by artists over the years. The depiction by Dean Quigley is the most recent.

## FIELD TRIP TO THE LAMPP HOUSE SCHEDULED FOR JANUARY 17

On January 17, we are planning a field trip to Englewood to see a few of the historic sites. Our first stop will be at the historic Lampp House, located at 604 Perry Street, Englewood, owned by WMS/LSSAS board member Betty Nugent. The house was built in 1929 by Pat Lampp for him and his wife Edith Ainger Lampp. Betty purchased the house in 1995, the second owner, and restored it to its historic context.

After a visit to the Lampp House, we will make a brief stop at the historic Green Street Church, also built in 1929 by Pat Lampp. It, too, has been restored to its original historic design.

Following the visit to the Green Street Church, we will travel down the road to Indian Mound Park to see the remaining portion of what was once a large Indian shell mound on Lemon Bay. At Indian Mound Park, archaeologist Steve Koski will give a brief overview of the site. Betty indicated she will make veggie sandwiches for lunch! You are welcome to bring water, snacks, and something to drink for lunch. A sign-up sheet will be available at the January meeting.

The morning of the field trip we will meet at the North Port Public Library at 9:15 AM for a 9:30 departure. You are also welcome to meet us at the Lampp House at 10:00 AM. A \$5 donation is suggested to benefit the Southwest Historic Organization of Resource and Education (SHORE). Hope you can make it!

## ANNUAL YARD SALE TO BE HELD FEBRUARY 21

It's the time of year that we have all been waiting for (I know I have); our annual yard sale! The sale will be held Saturday, February 21, at 8:00 AM – 1:00 PM at the Warm Mineral Springs Motel at the corner of US 41 and Ortiz Blvd. (come early and get a room at the motel!).

The WMS Motel is a local landmark in itself, a historic building designed by famous architect Jack West, a student of Frank Lloyd Wright. It's where all our monthly speakers and research associates stay who come from out of town. Please help support the Society by donating your good, but no-longer-needed, items to a good cause. Our funds support our monthly speaker series; bi-monthly newsletter; event costs; memberships to historic preservation organizations such as Historic Spanish Point in Sarasota County, the Florida Humanities Council, the Florida Anthropological Society, History and Preservation Coalition of Sarasota County, and Randell Research Center in Lee County; and archaeological research projects through volunteer assistance and analysis funding.

Volunteers are needed! We welcome any member who would like to help out in preparation, pickup, pricing, loading Friday afternoon, setup the morning of and with the sale itself, and finally breaking down. It takes about 10 dedicated people

the day of the event. Please bring your items to the January 13 and February 10 meetings! To drop off items or for pick up of items (if you are unable to drop them off), please call Hilda Boron at 941.426.1719. Help make this our best sale ever!

Thank you for your support!

## 2015 FAS ANNUAL MEETING TO BE HELD IN SARASOTA

*From the November/December WMS/LSSAS NL*

Time Sifters Archaeological Society of Sarasota will host the 2015 Florida Anthropological Society Annual Meeting to be held in Sarasota May 29-31. We are fortunate to have this event and conference once again in our area after hosting it ourselves in Punta Gorda in 2014. That was a great meeting!

They are excited to announce that Dr. Jerald Milanich will be the Keynote Speaker at the Saturday-evening banquet. In 1969, Milanich (still in his doctoral program) led the excavation of the Yellow Bluffs Mound in Sarasota, so it is fitting that he return here to talk about his 50 years in Florida archaeology.

New College and the New College Public Archaeology Lab have graciously agreed to host the Friday-evening welcoming reception. Those attending will enjoy drinks and hors d'oeuvres on the exquisite Sarasota bayfront. Reservations are already coming in at the conference hotel (which is also the conference venue). There is a negotiated rate of \$129/night at the beautiful Hyatt Regency, which is half off their standard rate and a really great deal for this AAA Four Diamond Hotel and 2013 TripAdvisor Certificate of Excellence Winner.

Visit <https://resweb.passkey.com/go/TSAS> to book your room. The TSAS conference committee is working out the details of the call for papers, registration, and field trips, so stay tuned for more news in the next newsletter.

Information on registration, call for papers and posters, student-paper competition, student grants, etc. will be available shortly at: [www.FASweb.org](http://www.FASweb.org).

## WMS/LSSAS TO SUPPORT ANTHROPOLOGY STUDENT TRAVEL GRANTS FOR FAS 2015

The WMS/LSSAS is pleased to offer three \$200 supplemental travel grants to eligible students who present a paper or poster at the FAS 2015 Annual Meeting in Sarasota.

With the \$600 we raised from the raffle at the 2014 FAS Annual Meeting held in Punta Gorda at the registration table hosted by the WMS/LSSAS, the Board decided to use the money to encourage student participation. The money can be used for expenses pertaining to the meeting: hotel, registration, and travel.

How to apply: Students enrolled full-time in an undergraduate or graduate program and first-time FAS presenters are eligible and invited to apply. For consideration, send a letter of request for a FAS 2015 Travel Grant with your paper or poster abstract, copy of student ID, and proof of registration to Jodi Johnson at: [jjohnson@ncf.edu](mailto:jjohnson@ncf.edu) no later than March 25. Selection of awards will be based on a review of the letter application, abstract, and proof of conference registration and university enrollment.

## WMS/LSSAS MEMBERS RECEIVED CERTIFICATES OF APPRECIATION AT FAS 2014 .

During the Awards Ceremony at the 2015 FAS Annual Meeting Jeff Moates presented three Certificates of Appreciation to three WMS/LSSAS members; past President George Haag, Secretary Hilda Boron, and Membership Secretary Linda Massey for their dedicated service to the Society and promotion of Florida's heritage. Steve read the nominations.



WMS/LSSAS Secretary Hilda Boron accepted three FAS Certificates of Appreciation for herself, past President George Haag, and Membership Secretary Linda Massey

Nomination: Dr. George Haag, immediate past President of the WMS/LSSAS and continuing elected board member served as President of the WMS/LSSAS from 2003 - 2013, the longest running president in the history of the organization. George presided over every board and general meeting through his tenure when he was not at his summer home in Colorado, where he is tonight. He was the face of the Society and participated in most events and field trips and is the Chapter representative for the History and Preservation Coalition of Sarasota County. He could be counted on to help with all aspects of the needs of the Society. Through this leadership role, he helped guide the course of the Society in the earlier years, helped set policy, increase membership, and with his friendly and calm demeanor helped make the Society what it is today, an active, vibrant, and well respected organization committed to the support and promotion of archaeological research, historic preservation, and education.

Nomination: Hilda Boron, currently serving as Secretary of the WMS/LSSAS, was elected 1995 and continues in that position to this day, for nineteen years, now in her 90th year. She was 71 years young at the time, and has witnessed and recorded many changes in the Society, too numerous to summarize. She has been the welcoming face at the registration table for every meeting throughout those years, and attended and recorded the minutes at every board meeting, made all phone calls, participated in nearly all field trips, events, and workshops along with her sister Ann Hansen, a former board member and media correspondent. She was a founding member of our annual yard sale, initiated by former board member and past president Vela Eisele, which *doubled* our treasury that first year in one day (of course there was only \$850 in the treasury),

and which continues to be our biggest annual fundraiser. In summary, Hilda has been indispensable.

**Nomination:** Linda Massey, currently serving as Membership Secretary of the WMS/LSSAS, accepted the (my) nomination in 1992 and has continued to serve in that position to this day. Linda is a Charter Member of the Society, who first volunteered as field specimen recorder at the Manasota Key site in January of 1989. The founding concept of the Society originated from the Manasota Key Site project, when the director of the project, the late Sonny Cockrell (also director of the Florida State University administered Warm Mineral Springs Archaeological Research Project at the time), wondered what to do with the more than 100 volunteers that had been assisting for more than four months. After the project ended he organized a meeting and WMSAS was born in 1990 as a public archaeology interest group and support organization for the WMSARP. More than 300 people attended the first meeting. Linda was one of them. She was the most dedicated volunteer in her role as the specimen recording secretary. She was the keeper of the log. All FS bags gravitated to Linda for recording and boxing. Every day, all day, for more than four months; all as a volunteer. I have a picture of Linda with her leg actually chained to the table while recording specimen bags. You couldn't get away with that today. But times were different then. After the Manasota dig, Linda continued to volunteer in the lab, recording data for the shell analysis and updating the FS log. When I was asked to take over the presidency when the WMSAP's funding was discontinued and Sonny headed back to Tallahassee, Linda was the first person I asked to come on the board as membership secretary, and she continues to serve today; keeper of the log.

## LSS NEWS

**Conveyance:** We are continuing to stand by to hear word on the conveyance of LSS to Sarasota County under their Environmental Sensitive Lands Program. Details of the transfer are still being worked out and we expect to hear news soon. Information will be made available as soon as more is known.

The WMS/LSSAS and Friends of LSS support the transfer and stand ready to assist with volunteers for educational programs, public outreach, site tours, fundraising, and land management if needed.

**Publication:** Dr. Gifford and Steve Koski recently completed a chapter on the 27-m Ledge at LSS with PSU co-authors Dr. Lee Newsom and Lauren Miledo for inclusion in a book titled *Archaeology of Underwater Caves*. The 16-chapter book begins with a chapter by editor Peter Campbell, "Introduction and History of Underwater Cave Research in Archaeology," followed by chapters by authors on research in the US, France, Caribbean, Mexico, Philippines, Belize, and Italy. *Archaeology of Underwater Caves* is scheduled to be published early-to-mid 2015. More details will be available after publication.

## UM TECHNICAL SCIENCE DIVING CLASSES VISIT LSS IN OCTOBER AND NOVEMBER

One weekend in October and November, student science divers from the University of Miami visited LSS for advanced

technical science diver training. The visits give students an opportunity to experience the spring environment, which prepares them for their career research endeavors. While research had been temporarily suspended due to the retirement of Dr. Gifford, limited diving is still conducted by UM Dive Safety Officer Rick Gomez and his students for science-diver certification. The class teaches proficiency and exposes them to a variety of marine and freshwater environments they may encounter in their research.



UM science divers also learned techniques involved with mammoth hunting at LSS with the atlatl during their October 2014 visit.



UM science divers pose for a group photo at the historic marker at LSS in November 2014.

## PSU CONTINUED STUDY OF EARLY MICROBIAL LIFE ON EARTH AT LSS IN NOVEMBER 2014

By Dr. Trinity Hamilton

Little Salt Spring in southwest Florida, a cover-collapse sinkhole, remains concealed by native vegetation, an oasis within the burgeoning city of North Port. A team of astrobiologists, led by geobiologist Dr. Jenn Macalady from Penn State University, has been examining the funnel-shaped karst lake for several years, including annual trips to the sinkhole since 2012. An annual bloom of phototrophic microorganisms in the upper basin of the sinkhole offers a window into what conditions may have been like on ancient Earth 2–3 billion years ago. The water chemistry of the sinkhole is characterized by the



International researchers Dr. Dirk de Beer, Camilla Loporoni, Dr. Christian Lott, Dr. Miriam Weber, Dr. Anthony Dron, Christian Clark, Dr. Trinity Hamilton, and Dr. Jenn Macalady at LSS in November 2014.

presence of both low levels of oxygen and hydrogen sulfide—conditions which may have been similar to those of early Earth oceans. The purple veil of phototrophs that carpets the upper basin serves as a model system for researchers on Macalady's team, including Dr. Trinity Hamilton and Ph.D. student Christian Clark, to examine how these bacteria utilize light and under which conditions oxygen is produced. The goals of this research include a better understanding of the role of phototrophs in the dramatic increase in atmospheric oxygen concentration about 2.5 billion years ago and what processes may have delayed the rise to current day levels for another 0.5 billion years.

In November of 2014, an international team of scientists including Macalady's group, Dr. Dirk de Beer and Dr. Anthony Dron from the microsensor group of the Max-Planck-Institute for Marine Microbiology in Germany, and Dr. Miriam Weber and Christian Lott from the HYDRA Institute for Marine Sciences in Italy, examined the phototrophic biofilm for two weeks. Scientific divers Clark, Lott and Dr. Weber performed multiple experiments at the biofilm-water interface, including recording light quality and quantity and deploying diver-operated microsensors (DOMS) to monitor pH and oxygen and sulfide concentrations in the biofilm over daily cycles. Dr. Weber invented the DOMS system, which provides unprecedented real-time measurements of water chemistry and light underwater at very high resolution.

In collaboration with Dr. Hamilton at the surface, productivity of the mat was monitored and water chemistry throughout the sinkhole was examined. Drs. de Beer and Dron performed multiple experiments on mat samples, employing a microsensor setup in the lab to mimic conditions at the mat. Data from the two-week expedition will provide a better understanding of early Earth microbial life and how these organisms impacted Earth's surface chemistry. Little Salt Spring offers a unique environment similar to ancient Earth conditions suitable for examining these exciting and poorly understood aspects of Earth's history. More information will be provided when analysis of the data recovered is completed.

## FRIENDS OF LSS TO MEET JANUARY 26, 2015

The Friends of Little Salt Spring will hold their Annual

Meeting Monday, January 26, 2015, at 7:00 PM at the Jockey Club Clubhouse at 3050 Pan American Blvd. (corner of Pan American and Appomattox Drive).

November's presentation by special guest John McCarthy, Executive Director of SCOPE (Sarasota County Openly Plans for Excellence), former County Historian, and former Director of Sarasota County Parks and Recreation, was an exceptional and inspirational experience. If you missed it, his presentation can be viewed at: [www.facebook.com/FriendsOfLittleSaltSpring](http://www.facebook.com/FriendsOfLittleSaltSpring).

Also present at the meeting was Associate Professor Emeritus Dr. John Gifford, LSS Director of Research, who was presented with a Lifetime Achievement Certificate for his years of dedicated research at Little Salt Spring. North Port Commissioner Linda Yates also attended and contributed in the discussion.



FLSS President Lawry Reid, Recording Secretary Linda Reid, Dr. John Gifford, November speaker John McCarthy, Vice-President Bill Goetz, NP Commissioner Linda Yates, members Steve Koski and Jill Luke

As a result of the inspirational November meeting, an FLSS task-force committee was formed to address how FLSS might assist the needs of Sarasota County after the conveyance.

The progress of the Committee will be part of a presentation at the January 26 Annual Meeting, and 2015 elections for office will be held. A short presentation on recent research on the 27-m ledge at LSS is also being planned. There is still much to learn about LSS.

## PRESIDENT'S NOTE: 2014 ACKNOWLEDGEMENTS

**Thanks to our Officers and Directors!** I would first like to thank the Officers and Directors of 2014 for their dedicated service. 2014 was a great year with a volume of accomplishments: the hosting of the 2014 Annual Meeting of the Florida Anthropological Meeting, our biggest accomplishment to date, in addition to our monthly meetings, annual yard sale, field trips, and events. All took considerable efforts to organize and implement. Great job!

**Second, our members deserve thanks** for their support through membership and participation at our monthly meetings, field trips, and events. Membership dues and donations support a percentage of our operating expenses. We could not do what we do without your support!

**Thanks to our raffle donors!** I would like to thank all those who have donated to our raffle! Proceeds from donations help

fund our monthly-meeting expenses, such as the speaker's dinner, world famous T-shirt, honorarium, and motel (if needed). Those alone can run over \$200, so our raffle has been a huge help. Gary Rowe, an avid diver and employee at **Florida West Scuba of Venice**, has donated numerous sharks' teeth found off Venice Beach (shark's tooth capital of the universe). Visit Gary at Florida West for all your SCUBA diving needs. Steve Ameer recently donated a nice Venice shark's tooth we will raffle in January (another incentive to come to the meeting); Lithic technologist Roger Hostetler has donated numerous projectile points and necklaces he has made for our raffle; Tena Docter has donated garnet and amethyst gemstones from her collections that can be made into jewelry, and last month we raffled a beautiful hand-carved black-jade Maori Hook (a \$160 value) donated by Tena's employer, **Coffrin Jewelers of Sarasota**; Secretary Hilda Boron has donated of numerous tickets to **Historic Spanish Point**, Judith Ribarick donated tickets to the **South Florida Museum** in Bradenton, and Kate Cattren has offered tickets to **Selby Gardens in Sarasota** that we have raffled. I know there are other donors I missed (my apologies). Those who help with raffle tickets and collecting donations are also thanked; Board Member Carol Myers comes to mind and former Board Member Ann Hansen preceded her with the job.

**Thanks to our Librarian** and Board Member Lorraine Hawkins for setting up the mobile library at our monthly meeting that facilitates membership access to some great resources regarding history and archaeology. No small task to lug two-wheeled travel carriers full of books and set up and break down at each meeting. All for you. Someday we will have a facility that houses our library, research projects, and meetings. Book donations for our library and raffle are also a great asset to the Society. Many folks have also donated books over the years for our expanding library; most recently Vice President Jodi Johnson donated three of her New College anthropology and archaeology books, a great addition. One I am reading now, *Public Benefits of Archaeology*, edited by Barbara J. Little, is a series of essays on the value and benefits of public involvement in archaeological research, historic preservation, and cultural heritage.

**Thanks to our many volunteers** who participated at our monthly meetings (you see them), events, field trips, FAS 2014 committee, yard sale (too many to acknowledge). Many thanks; you provide great value to the organization.

**Thanks to those who assist the WMS/LSSAS Newsletter.** Valerie Grey has been proofreading and assisting with the traditional formatting style of the newsletter with Editor

Steve Koski since 1992! (Gee, it seems like only yesterday.) Recently, Judi Crescenzo had been assisting with final editing (but I'm still responsible for all post-proof typos, thank you). Judi and John Crescenzo also write articles on our monthly speakers, a huge help! Secretary Hilda Boron picks up the newsletter from Staples, folds, readies the envelopes, applies the address labels and stamps, and mails. No small task.

**Thanks to Staples of Venice** for printing our newsletter in priority fashion. Of course, when I bring it to them it has to be in the mail that day; because I'm a last-minute kind of guy—from one critical deadline to another. Michelle at Staple's understands and cheerfully gets to it, printing on recycled paper. With our corporate discount and coupons Hilda acquires, we get exceptional service and value.

I know there are many more deserving of recognition, my apology; thanks to all those I may have missed.

### 2015 ANNUAL MEMBERSHIP DRIVE IS ON!

Help keep up the momentum and please renew your membership today! We're on a roll and we need your continued support. Thanks to all our 2014 members and donors, we couldn't do it without you. It is our intent to continue to provide informative and educational programs at our monthly meetings, field trips to exiting places, and participation at local events that will be published in our by-monthly newsletter. Join the fun!

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