The Florida Surveyor

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May 2018

The Lone Cypress

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President's Message

The month of May seems to come faster and faster every year, especially when we are all very busy with our respective jobs and working on behalf of the profession through FSMS.

The Florida BPSM will have its May meeting in Tampa on May 2nd – 4th, and will hopefully work out the final details of the proposed revisions for 5J-17. This has been a long time in the works, but at last they are working through the final transition to the "Standards of Practice". I truly understand that some are frustrated with the elimination of MTS - as we have known them for so many years - and now feel as if our guide, instructions and requirements for surveys in Florida has been stripped away. But, as professional surveyors and mappers it is to the contrary. We are now being given much more flexibility, in terms of the surveys which we are licensed to produce and certify, and we are held to a more prudent professional approach in how we provide those products in accordance with our governing statute and rule.

One of the questions that I hear is: what happened to "Specific Purpose Survey" as a type of survey defined in 5J-17.050(12)? It certainly would not hurt to add that to the list, but regardless, we surely will provide that type going forward in our practices for certain agencies and purposes. It is possible this can still be one of the final revisions to be added.

Our annual conference preparation is well under way and part of our Saturday seminar offerings will be a 6-hour panel discussion on all the recent changes to 472 and 5J-17. Make sure to sign up early, as that seminar will sell out. Speaking of conference this year - our conference edition of The Florida Surveyor will be rolled out in June, since conference is not until August 13th this year. This year's conference will basically be the same four-day format as last year - starting on Wednesday and finishing with a day of seminars and technical sessions on Saturday. You are now able to reserve a hotel room at the TradeWinds Grand Resort, so please make your reservation early as our discount group rate of $135/night will sell out. This year's conference, seminars, tradeshow and banquets are looking to be better than ever. Be sure to check out next month's publication to learn about all these events!

On May 1st, our new FSMS database and website were put online. It was a lot of work, but as mobile devices continue to play a bigger and bigger role in our daily transactions, it will be a blessing that we built a new website now, and not several more years down the road. Please take the time to look at the new website and update your profiles and give us feedback to make it the best it can be for every member.

And finally, I'd like to mention recent changes to our FSMPAC. We are spending some time talking with the administrators of our PAC and coming to an understanding of the best ways in which we can raise the necessary money for it in the future. We will have a further discussion at our FSMS Board meeting in May to clarify what our requirements will be for local fundraising activities. So for the time being, please direct any of your questions or concerns to your area directors or myself.

In closing, I'd like to encourage all of our members to bring in a new member or bring back an old one, because it is not FSMS that benefits from their support, it is the surveying profession in Florida which we serve and protect each and every day for them.

"When you're finished changing, you're finished." -Benjamin Franklin

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Surveyors in Government

Richard Allen, PSM, CFM

What is a government surveyor? One may ask! I have been asked more times than I can count. Most of our residents think we just do everyone's surveys, and then keep all of the records waiting for someone's beckoning call! They are often disheartened when I proceed to tell them we only perform surveys in the interest of the municipality for which I work.

I know each of us have a wide-range of different duties and responsibilities. I know Water Management District surveyors who are responsible for managing continuing service contracts for the surveys of management land and other water management activities. I know County Surveyors who each have different tasks, ranging from plat reviews and right-of-way jobs, to managing survey interests of utility ownership, and deployment and maintenance of those services.

We all know a government surveyor who has many duties or has to perform wide-ranging aspects of land surveying. I mention this because many of us never get the opportunity to network beyond our local confines or our local FSMS chapters. I often find that few government surveyors attend local chapter meetings. It's unfortunate because government surveyors are the foundation of guidance for regulatory requirements for procedures of surveys on local, state wide and federal levels. We provide feedback that not only aids in protecting the profession of surveying, but helps establish fundamental accuracies that ensure tasks are performed correctly so they fulfill the needs of a project.

The topic of next month's Florida Surveyor is the 63rd Annual FSMS Conference in St. Pete Beach, which will be held on August 15-18th. I thought this would be a great opportunity to get the message out about the conference to as many government surveyors as I can in an effort to bring

"The benefits of conference include continuing education and invaluable networking, as meeting with other professionals will send you back home energized and will often give you new ideas and approaches to various situations."

government surveyors together. I know that I am very fortunate that my organization pays for me to attend the annual conference. I know many must foot this bill on their own dime, and I know that it is a bit much for many government surveyors to pay for this expense, considering that the pay for government surveyors is generally well below the rate of private land surveyors. I understand and hope your agencies will one day offer to pay for this expense. The benefits of conference include continuing education and invaluable networking, as meeting with other professionals will send you back home energized and will often give you new ideas and approaches to various situations.

Conference is a great time for fellow surveyors to come together. I love attending the FDOT Townhall Meeting and the Survey and Mapping Council Meeting. Additionally, there is always the Surveyors in Government meeting that government surveyors can attend. These meetings are a great place to discuss what each of us may be going through or changes we are seeing. In some form or another, we all face the same professional challenges.

One upcoming change includes rule changes and datum changes. Speaking of which - we are

excited to have Denis Riordian, the NGS Gulf Region Geodetic Advisor, coming to speak to the Geospatial Users Group at conference to provide information on the pending datum conversion from NAD 83 and NAVD 88 to the 2022 Referential Frames. Hopefully I will see some of you at these meetings and we can have further discussions on how to better address the needs of government surveyors.

Finally, an email came from NSPS yesterday from the News and Views section detailing House Resolution (H.R.) 5559, the "Scientific Flood Mapping Act of 2018", which removes the responsibility of mapping from FEMA, but not the National Flood Insurance Program itself. The legislation is being introduced by Congressional Representative Rick Crawford, a republican from Arkansas. The bill is co-sponsored by Rep. Jason Smith (R, MO). The bill was introduced on April 18th, 2018. This is something that bears watching, as on paper it seems logical for the mapping side of the Department of Commerce to take over the mapping for FEMA, which is the emergency management side of the Department of Homeland Security. What remains to be identified is the intent of the move, and if it is indeed for better data collection and mapping of said data. This will need to be watched closely!

Until next month my friends…

You can reach Richard at Richard.Allen@cityoforlando.net or 407.246.2788

Reminiscences of an Old Surveyor

Measuring Angles & Directions

Part I

Knud E. Hermansen, PLS, PE, PhD, Esq.

I have been surveying for around half a century. When I started surveying, the equipment used was little different from the equipment used by surveyors for over 200 years. In fact, many surveyors used the equipment left to them by their grandfathers and fathers. In these present times, I believe most surveyors replace their equipment every ten years or less.

This is the second article on surveying equipment and procedures that are now relegated to history. I believe I am the last generation of surveyors to have practiced the profession using what is now historical equipment and procedures. I believe it helpful for the modern surveyor, when retracing boundaries, to know what the previous surveyor used. Perhaps it will provide a better explanation for the precision of the record measurements and how far to look 'afield' for the monuments after applying the record measurements to the site.

I will say that my first experience measuring directions and angles was as a Marine with the 2nd Topographic Platoon. We used Wild T-2s and even T-3s most of the time. Occasionally, we had to use Wild T16s or transits when doing some construction layout. Once I departed from the Marines and went into private practice, my employers mostly used compasses and transits. One employer did have a theodolite.

Wild T-2s and T-3s were very rare among private surveyors, so I will not take up much space on paper discussing these remarkable instruments. The T-2s could measure an angle to the nearest second of arc using a micrometer. The T-3 could measure to the nearest tenth of a second of arc. With the T-3s I have sighted targets almost 30 miles distant. While the T-2s had optical plummets, the T-3s that we used did not. The T-3s required a plumb bob suspended under the instrument in order to put the instrument over the control station. Many of these instruments had an inverted image. What I mean is that the object viewed was upside down when looking through the scope optics. Setting the zero on the instrument required some finesse that I will not describe for the reason I have previously stated.

The common instrument to measure angles and directions at the time I began surveying in private practice was the transit. All surveyors, even the modern surveyor, has probably seen a transit - usually on the table at the historical equipment booth found at the annual professional meeting. Transits can be very handsome with their shined brass or the black and brass contrast.

I did use the compass often, though not the large compass employed by Washington, Lincoln, Jefferson and the other surveyors in the 1700 and 1800s. The compass I employed in years past was a smaller version compass. They were known as the Sipe's compass, named after F. Henry Sipe. Henry was licensed surveyor #1 in West Virginia. He was a fine gentlemen that I had the pleasure to know and had many conversations with before his departure from the living.

The compass was used during my early years to perform a reconnaissance to set up the boundary survey and look for

evidence in the field. At the time it was thought the best way to follow in the footsteps of the original surveyor is to use the equipment employed by the original surveyor. I still think this to be true but time constraints of the modern survey practice have curtailed or eliminated much of the reconnaissance practiced in the past using the compass. Of course, using a compass for reconnaissance work was often coupled with a tape that was dragged along making no effort to correct for slope and such. I suppose many of the original surveyors did not concern themselves with slope corrections either. It is through this effort that original corner monuments were found along with old blazes and wire remnants on the ground and in trees. Resting stones for split rail fences could often be found by the diligent surveyor. These objects and discoveries were all marked for inclusion in the traverse that followed the reconnaissance.

The compass I used was mounted on a wooden pole known as a Jacob's staff. The end of the pole was metal. This end was pushed into the ground. The vanes or pointing columns of the compass were raised to reveal the face of the compass. The top of the Jacob's staff was swayed until the bubbles on the compass indicated the compass was level. At this point the needle was released to float and point toward the magnetic north or the machete, tape, pocket pen, or other metal held too close to the compass needle as so often occurred.

Speaking of local attractions to the compass needle, I will state that more than a few times, I used the compass to locate a buried pin under the ground by slowly moving the compass across the ground surface and looking for a twitch in the compass needle. I will remind my younger colleagues that metal detectors were not available when I first began practicing surveying. I will elucidate in some later article on the dip needle that preceded the metal detector.

Having released the compass needle from its mechanical constraints, the surveyor would wait for the needle to settle down. The compass needle was a contrary pointer much like a five year old with too much energy. I often voiced my thoughts to the needle in order to hurry the needle toward a decision. The needle always ignored my advice.

Once the needle decided to rest without skittering, the compass could then be rotated to read the bearing that was desired. At some point during a survey-apprentice's first acquaintance with a surveyor's compass the user realizes that east and west are reversed on the face of the compass - the east mark being to the left of north and west being to the right of north. This is not a design flaw. This allows the compass reading to be made directly off the pointing of the compass. I suppose I can try to explain how this works but I believe an explanation would be better understood if left to the person that is at the historical survey equipment display to explain this layout by actually showing the results using an actual compass.

The direction was then set on the compass. The vanes of the compass were sighted through in order to spy some object to align with and the measurements made with the tape to reach the object selected. Once the far object was reached, the compass was uprooted from the ground and the surveyor headed for the object to repeat the process. Woe be to the compass operator who did not collapse the vanes and did not fasten down the needle or brake the needle before uprooting the compass. Failure to fasten the needle would cause the pivot or spindle to be bent and the compass to err in its next pointing or perhaps not to point at all.

It is my experience and observation to state that the very best compass could measure the arc to the nearest quarter of a degree. The compass I used for reconnaissance would measure to the nearest degree. I will speak no more on the vagrancies of the compass and the magnetic needle since those probably deserve their own article. It is worth mentioning that many compasses had a personality of their own such that two compasses placed over the same point and pointed toward the same object could vary in their direction by as much as a degree or so. In early texts explaining the subject of surveying with the compass, the surveyor was cautioned to know the temperament of their compass. Many states had laws requiring the surveyor to set their compass over a designated stone and point to another stone in order to check the peculiarity of their compass.

Family Photos

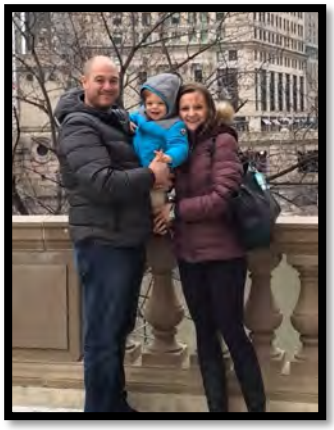
Charlie Arnett and his family in Snowshoe, WV. From left: Brooke, Raegan, Karen, Brynlee, and Kamryn.

From left: Douglas, James, and Leigh Anne Stoner out for a day of family fishing.

Shane Christy with daughters Harper and Emerson, wife Kristin, and his parents.

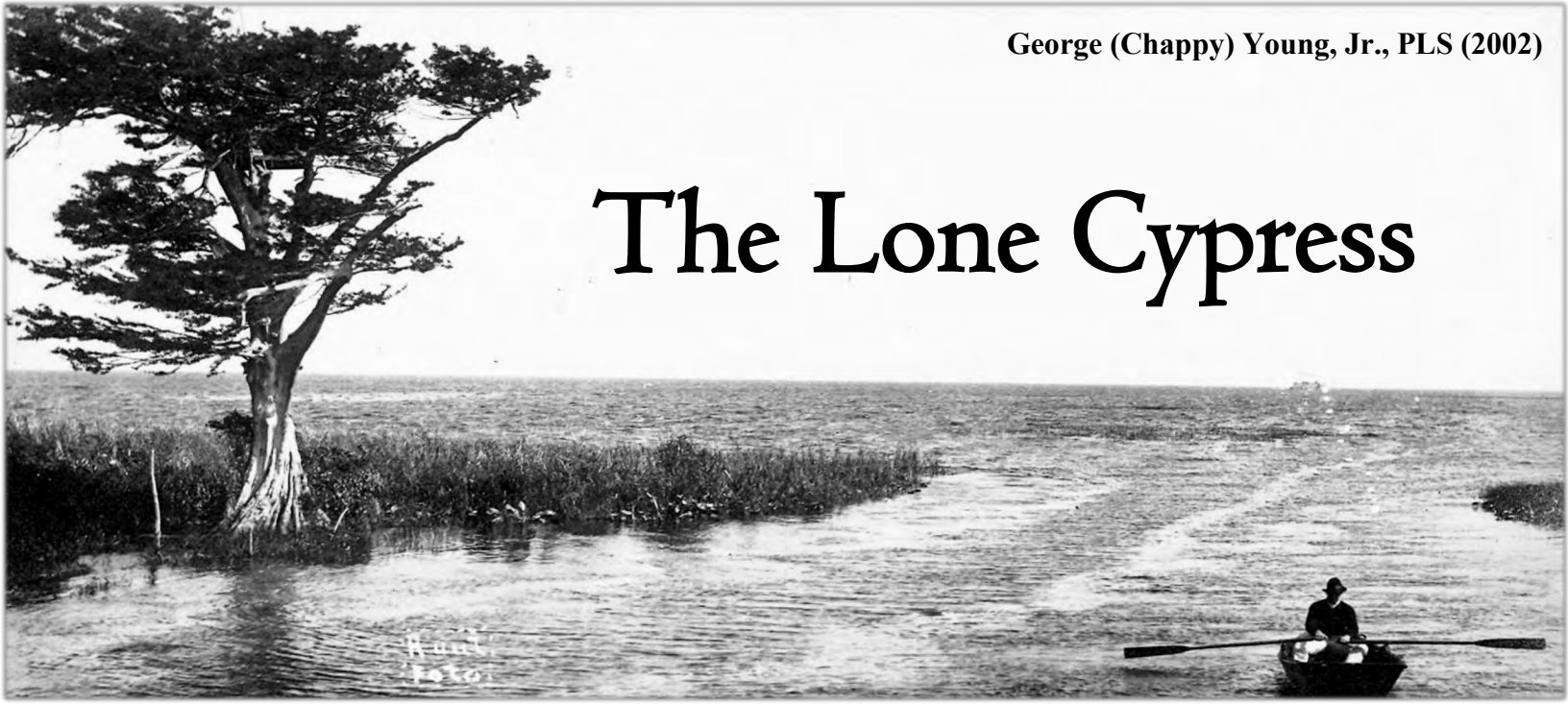
Rick and Millie Pryce at Abram Falls in Smokey Mountain National Park in Tennessee.

Students in the UF Geomatics program participating in a retracement lab.



Matt LaLuzerne with son Luka and wife Korina at the Michigan Avenue Bridge in Chicago.

George (Chappy) Young, Jr., PLS (2002)



The Lone Cypress

Author's Note: *Many of the statements made in my paper are my opinion alone and are not approved by the BPSM when delivered. This document should be considered a "draft document"!*

A study to understand the physical conditions along the shore of Lake Okeechobee from statehood to 1925 in order to better relate to the testimony and rulings of the FLORIDA SUPREME COURT, Division B, March 15, 1927 in the case of MARTIN v. BUSCH.

Martin v. Busch is important to today's establishment of OHWL throughout Florida because it is a central case law on the methods used to establish OHWL. Martin v. Busch speaks to the use of *marks on the ground or upon local objects* to determine OHWL.

"Marks upon the ground or upon local objects that are more or less permanent may be considered in connection with competent testimony and other evidence in determining the true line of ordinary high water mark." (Justice P. J. Whitfield, writing for the majority).

Relevant Facts:

At Statehood (1845), the northwestern, northern and northeastern shores of Lake Okeechobee were generally considered uplands and surveyed by the General Land Office (GLO). The southeastern, southern and southwestern shores of the lake were Swamp and Overflowed lands; the Everglades.

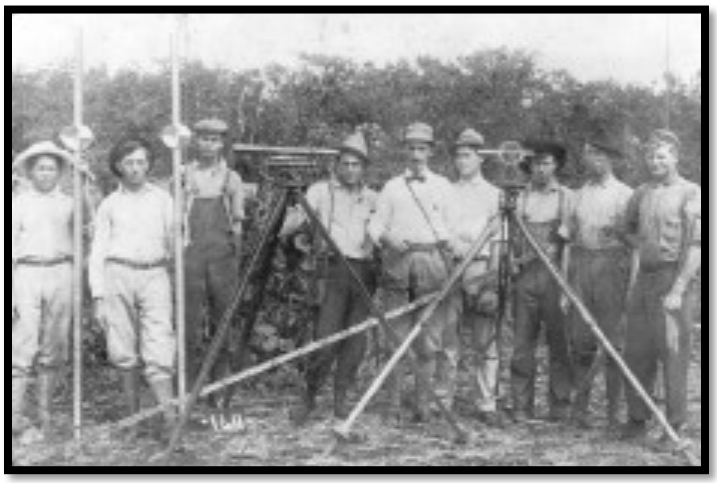
"Pond apple" vegetation along the natural southern shore of Lake Okeechobee, prior to drainage of the lake.

The General Land Office (GLO) from 1853 to 1881 conducted the first Meander Line surveys on the northern (upland) shores of Lake Okeechobee.

Additional Meander Line surveys along the north side of Lake Okeechobee were conducted by the GLO from 1871-1908.

The southern shore of the Lake (the Everglades Patent) was meandered from 1914-1918 by the state surveyors under the direction of F.C. Elliott, Chief Drainage Engineer of the Everglades Drainage District (in effect, Elliott was the first State Cadastral Surveyor). The meanders of contour elevation 17 (Okeechobee Datum or O.D.) were surveyed by the State from 1926-1927.

The Everglades Drainage District was established to drain the Everglades on behalf of the trustees of the Internal Improvement Fund (Florida's Governor and his Cabinet). The plan was to drain the Everglades for the purpose of improving the land for the use of agriculture and other private development. Once improved, the land value would be increased and the State of Florida, through the Trustees of the Internal Improvement Fund, would offer the land for sale.



F.C. Elliot (in bowtie) and crew in 1915. Lonnie Howard (far left) was the father of Orvell and Merton Howard, and the grandfather of Matthew Howard, all registered PSM's.

One must remember that during the early days of the federal and state government, the revenue to sustain the government was primarily derived from the sale of its public lands. Generally, the feds sold the uplands and the state sold lands that it owned. In the early days, the state had title to the sovereign submerged lands of navigable waters (gained at statehood in 1845), the Swamp and Overflowed Lands (by act of Congress in 1850), and Reclaimed Lands. Reclaimed Lands are those sovereignly owned (formerly submerged lands under navigable waters) that were exposed as a result of lowering the water level of navigable water bodies.

The lands between the original OHWL of the lake and the new and lower OHWL (a difference of 3.5 +/- feet by Elliott's testimony) of the lake were considered Reclaimed Lands with the title still vested in the state by virtue of its sovereignty. The state surveyed the meanders of Lake Okeechobee after the lowering of the water level by joint federal and state approval of the drainage efforts.

The State of Florida established by survey the meander lines of the GLO and the new OHWL of Lake Okeechobee. The authority to validate all land surveys and establish the boundaries of state ownership of Sovereign Lands and Swamp and Overflowed Lands was given to the Chief Drainage Engineer of the Everglades Drainage District, Mr. F. C. Elliott. (Chapter 7892, Acts of 1919).

The State of Florida's new Meander Line of Lake Okeechobee is the Ordinary High Water Line of the lake, thereby the boundary between the sovereign and the lands within the Everglades Patent. This meander was run under state authority for the purpose of identifying, locating and establishing the true line of ordinary high water mark. *(Martin v. Busch, Judge P. J. Whitfield, writing for the majority, paragraph12).*

The Swamp and Overflowed Act of Congress dated September 28, 1850, provided for the states, including Florida, to reclaim the "Swamp Lands" within their limits. It is provided that all the "Swamp and Overflowed Lands," made unfit for cultivation, within the State of Florida, which remain unsold at the passage of said act, shall be granted to the state. United States Patent Number 137 (The Everglades Patent) dated April 29, 1903, conveyed The Everglades (estimated at 2,862,080 acres) to the State of Florida. Approximately one half of the shores of Lake Okeechobee were bounded by the Everglades Patent.

Central to Martin v. Busch was Elliott's testimony whereby he stated that he utilized a staff gauge mounted on a cypress tree at the mouth of the Three Mile Canal on Lake Okeechobee. This cypress tree was one of the "marks on local objects" utilized by Elliot in determining the OHWL of the lake. He began his occasional observations at this cypress tree from 1911 and continued through the date of the Circuit Court trial (Glades County, Florida between 1924 & 1927) that ended by the appeal to the Florida Supreme Court with a ruling dated March 15, 1927.

The Three Mile Canal passed through the Everglades Patent to enter Lake Okeechobee at the present location of Moore Haven, Florida. The Three Mile Canal is now a part of the Caloosahatchee Canal. It is known that the Three Mile Canal connecting Lake Okeechobee to Lake Hicpochee and an unnamed canal from Lake Hicpo-

Several surveyors crossing the Everglades, probably working for Elliot while performing state surveys on the Everglades Patent.

The "Lone Cypress Tree" Elliott used as a "mark on local object" and as a structure to attach a tide gauge. Photo found in Moore Haven City Hall, circa 1887-1908).

The "Lone Cypress Tree" just 200 feet from Moore Haven City Hall in 2002.

The historic marker located near the Lone Cypress Tree.

chee to the headwaters of the Caloosahatchee River existed in 1887. This is documented by a map entitled "Map of Caloosahatchee River, Fla. 1887" which was surveyed in March, April and May of 1887. Said survey and map were conducted and prepared under the direction of Captain W. M. Black, of the U.S. Army Corps of Engineers, to accompany the Annual Report of 1889 (presumably for Congress).

It is said (according to the historic marker "Lone Cypress and Everglades Drainage" located next to the Lone Cypress Tree at Lock No. 1 in Moore Haven, Florida) that in 1881, Hamilton Diston was convinced to drain the Everglades in return for half of the acreage he could reclaim. One of his early efforts was to excavate the Three Mile Canal in an effort to connect the Caloosahatchee River to Lake Okeechobee. This excavation must have occurred between 1881 and 1887 and was one of the first projects that began draining Lake Okeechobee and the Everglades.

Subsequent to the connection of the Caloosahatchee River, other canals were excavated from Lake Okeechobee to the Atlantic Ocean in order to drain the Everglades. These canals were the West Palm Beach Canal, Hillsborough Canal, North New River Canal and the Miami Canal, all of which were first dug prior to 1917. The St. Lucie Canal began construction in 1916. The connection of these canals to the ocean resulted in the lowering of Lake Okeechobee. One should understanding that Lake Okeechobee fills primarily from rain, tributaries (Kissimmee River, Fisheating Creek, Taylor Creek, many other smaller unnamed creeks) and sheet flow from the prairies to the north. Knowing that, the discharge from the lake mainly was the sheet flow over the south rim of the lake and through the Everglades to the south.

The Everglades terra firma is made of peat, commonly referred to as muck. The lowering of the waters of the lake exposes the south shore of the lake and the Everglades to the air and to farming. Muck exposed to air and acts of farmers first shrinks, then compacts and finally oxidizes (disappears) at an alarming rate. The first year subsides roughly a foot. Compaction plays a decreasing role but oxidation marches on at the rate of 1 inch a year until the muck is gone. If that is not enough destruction, muck will also burn. Elliott testifies (Martin v. Busch) in 1927 that the south shore of the lake has lost 3 to 4 feet in elevation from his earliest measurements in approximately 1911 as a result of such exposure. We call this subsidence!

Effects of Subsidence

Think of the south shore of Lake Okeechobee as a weir holding back the normal water levels of Lake Okeechobee. When the rainy season floods it, the lake's water sheet flows south across the Everglades, re-hydrating the Glades and flowing toward Florida Bay.

A subsidence post set in 1924 at the Everglades Experiment Station in Belle Glade, Florida. The post is 9 ft. tall and is driven into rock. When set, the surface of the muck was at the 9 ft. level, in 2002, it is at the 3.2 ft level. This indicates 5.8 feet of subsidence from 1924.)

Naturally, when the south shore subsided, the natural weir became permanently broken, thus permanently lowering the level of water in Lake Okeechobee.

The submerged land exposed below the lake's original ordinary high water elevation of 20.4 to 20.6 feet (O.D.) and above the controlled OHWL (17.0 O.D.) is Reclaimed Bottom Lands (Sovereign Lands) and not a part of the Swamp and Overflowed Lands (Everglades Patent). Because the federal and state governments approved the plan to lower Lake Okeechobee, the private owners of the adjacent Everglades Patent did not gain title to the Reclaimed Bottom Lands by the doctrine of reliction (Martin v. Busch, Judge P. J. Whitfield, writing for the majority).

The new meander line surveyed by the state was contour elevation 17.0 (O.D.). This is evident from several supplemental township plats on the northern shore of the lake as well as the township plats for the Everglades Patent on the southern shore of the Lake. This fact is also demonstrated by "Memorandum A" described below.

"Memorandum A", written by F.C. Elliott (October 25, 1927) to accompany the letter from Hon. John W. Martin, Gov. to Hon. Frank R. Reid, Member of Congress, Chairman of Committee on Flood Control. This letter asked for federal assistance in the cost of improving the Caloosahatchee River downstream of Ft. Thompson for the purpose of navigation. The state acknowledges responsibility for managing Flood and Drainage Control elements within

This early photo of a cypress tree shows the effects of muck subsidence. Note the exposed root system after the muck has subsided.

the lake and St. Lucie and Caloosahatchee Canals and the Everglades Drainage District, however clearly does not accept responsibility for any improvements that would go beyond flood/drainage to assist navigation. Projects to improve navigation are the responsibility of the federal government. The state suggested that it is willing to share in the cost of common projects to the extent that the state would not pay for the cost of improvements associated with navigation. The state's option was to discharge the lake water through the St. Lucie Canal and the other aforementioned canals, not the Caloosahatchee, which was not cost effective to improve without the aid of federal monies.

Many details are described in this Memorandum. Pages 5 and 6 speak directly to managing the water elevations of the Lake Okeechobee between the elevations of 17.0 and 14.0 (O.D.). The higher elevation was considered the highest lake level safely managed by levees, etc. and the lower elevation being the lowest level of the lake to accommodate navigation.

Memorandum A is evidence as to why the limits of the sovereign (ordinary high water line) were ultimately determined to be elevation 17.0 (O.D.) and why the state considered it the new OHWL and why the state meandered the lake along that contour.

Due to the date of the report, and its explicit mention of the elevation datum being "M.L.W., Gulf of Mexico, Punta Rasa, to which datum elevations on and about the lake are referred" (page 3) it is obvious that they are referring to the datum we now know as "Okeechobee Datum".

Another interesting and revealing source of information regarding the drainage of Lake Okeechobee was written by John Kunkel Small.

Narrative of a Cruise to Lake Okeechobee, by John Kunkel Small, the Head Curator of the Museums and Herbarium of the New York Botanical Gardens. Small commenced his second botanical exploration of southern Florida on May 5, 1917. Small writes of his first exploration:

"When cruising in Okeechobee in 1913 we spent an afternoon and a bright moonlight night in Pelican Lake (Bay). Then it was filled with floating Islands of the water hyacinth and water lettuce. It was surrounded by beautiful pond apple hammocks which were fringed with a growth of water hyacinth and water lettuce made up of plants more robust and larger than had previously been recorded. The hammock islands served as immense heron rookeries and the waters abounded in alligators of all sizes. Today (1917) it is a waste. The lowering of the waters of Okeechobee has changed these conditions and, instead of the paradise described, the exposed bottom of the lake as far as the eye could see support a dense growth of large pigweed "careless" (Acnida). The site was dishearting." (From article in the American Museum Journal, Vol. 18, 1919.)

Note: The Small article does not document the elevation of the lake at the time of his trip. He does say that the water "was exceptionally low owing to the prolonged drought". John Kunkel Small took many of the historic photos we now have of Lake Okeechobee and the region.

I have studied seven locations around the shores of Lake Okeechobee in anticipation of field exploration to see first hand evidence that may still remain from the era of the Martin v. Busch rulings. These specific study areas have utilized digital aerial photography, the survey records of GCY, Inc., Professional Surveyors and Mappers, other local surveyor's records and the Public Records of the SFWMD and FDOT. Four of the seven fall within the limits of the Everglades Patent. The field review of the assembled data will allow further understanding of the conditions that existed from the time of statehood (1845) to current times.

The Three Mile Canal entrance to Lake Okeechobee, circa 1908. Note the "Lone Cypress".

Everglades muck on fire (1943).

Everglades transportation (early 1900s).

Everglades surveyors on a flooded road (1926).

Everglades Survey Party, 1913. No doubt one of the crews surveying sections for Elliot in the Everglades Patent.

Did you Ever WONDER Why?

Michael Whitling, PSM

Why is someone being absurd or foolish said to be acting "silly?"
"Silly" is a word that has gone through quite a transformation. "Silly" started out in the 1100's as an old English word meaning happy, blissful, lucky or blessed. "Silly" shifted meaning in the 1200's to mean innocent (I'm guessing if your happy and feeling lucky, you are not realizing the world around you), then pitiable and weak, and then in the 1500's, to "feeble in mind, lacking in reason, foolish" which stands today. In the late 1800's, "stunned, dazed as a blow" came to be known as "knocked silly." And then there's "silly putty…"

Why is something pleasant and agreeable said to be "nice?"
"Nice" began as a negative term derived from the Latin *nescius* meaning "ignorant." This sense of ignorant was carried over into English, and for almost a century, "nice" was used to refer to a stupid, ignorant, or foolish person. Starting in the late 1300's, "nice" began to refer to a person, or clothing that was considered excessively luxurious or lascivious, however, by the year 1400 a new, more neutral sense of nice emerged. At this time, nice could be used to refer to a person who was finely dressed, someone who was shy or reserved, or something that was precise. It was society's admiration of such qualities in the eighteenth century that brought on the more positively charged meanings of "nice" that had been vying for a place for much of the word's history, and the values of respectability and virtue began to take over. Such positive associations remain today.

Why is an unpleasant experience such a "bummer?"
The word "bummer" originates from the 17th century German word *bummler*, which first meant to oscillate back and forth, getting nowhere, and eventually evolved to mean "loafer," as in a lazy person. "Bummer" first appears in a German-American context during the American Civil War (as many as 216,000 German immigrants in the ranks) and referred to someone who would "loaf and beg." After the war "bummer" was shortened to "bum" and referred to a trump or hobo. In the early 1900's "bum" also began to refer to something of poor quality as in a "bum steer." In the 1960's slang phrases like "bum deal" or "bum rap" lent themselves back to the elongated "bummer," referring to something that was disheartening or disappointing.

Why does a sudden fright sometimes cure hiccups?
Nobody likes hiccups, and pretty much everyone has their own set of homemade remedies for curing them. There are two groups of methods used to try to stop hiccups. The first group are the methods used to raise levels of carbon dioxide in the blood, inhibiting spasms of the diaphragm, like holding your breath or breathing into a paper bag. The second group, of which sudden fright falls into, stimulate the vagus nerve that runs from the brain to the stomach coordinating breathing and swallowing. Disrupting this nerve can cause the brain to switch to the new sensation, thus stopping the hiccups. These include, gulping water, biting a lemon, or eating crushed ice. Similarly, pulling the tip of your tongue, putting your fingers in your ears or gently pressing on your eyeballs can stimulate the vagus nerve. Think of it as distracting the body from your hiccups by making something else dramatic happen to it. The same logic applies to giving someone a fright.

Quick Facts:

⇒The English dictionary word with the most consecutive vowels (six) is euouae. Words with five consecutive vowels include queueing, aieee, cooeeing, miaoued, zaouia, jussieuean, zooeae, zoaeae.

⇒Honorificabilitudinitatibus ("the state of being able to achieve honors") is the longest word consisting entirely of alternating vowels and consonants.

⇒Ouenouaou (a stream in the Philippines) has nine letters but only one consonant. It is the longest known place name with only a single consonant.

⇒M&M's actually stands for "Mars & Murrie's," the last names of the candy's founders.

⇒Carly Simon's dad is the Simon of Simon and Schuster. He co-founded the company.

⇒In 1999, Furbies were banned from the National Security Agency's Maryland headquarters because it was feared the toys might repeat national security secrets.

⇒Kool-Aid was originally marketed as "Fruit Smack."

⇒Omphaloskepsis or navel-gazing is contemplation of one's navel as an aid to meditation.

⇒Like most other birds, parrots have four toes per foot. But instead of the usual three-in-front-one-behind arrangement, parrot toes are configured for maximum grip: two in front and two behind, like two pairs of opposable thumbs. Also with a couple of exceptions, males and females of most parrot species look virtually identical. It takes a keen eye-and usually a lab test-to tell a boy bird from a girl bird.

⇒John F. Kennedy was the last president to attend his inauguration ceremony in a stovepipe hat.

⇒During his Inaugural Parade, President Eisenhower was lassoed by a cowboy

⇒The Constitution does not require the president to swear on a bible at the inaguration, but it's been tradition from the beginning, thanks to George Washington.

⇒After ancient Persians debated ideas, they liked to get drunk and debate them again. Just to make sure they were right.

⇒The earliest hockey games were played with chunks of frozen cow dung. This dates back to the game's outdoor roots. For understandable reasons, modern athletes prefer the vulcanized rubber disc we all know today.

⇒An Olympic rower named Henry Pearce once won a race even though he stopped to let some ducks pass by.

⇒Japanese trains are so punctual that a delay over five minutes usually gets an apology and a "delay certificate" for passengers heading to work. Delays over an hour might even make the news.

⇒When Michael Foot was put in charge of a Nuclear disarmament committee, The Times' headline read: Foot Heads Arms Body.

Send your thoughts to drmjw@aol.com

From the Archives

"Swamp buggies are floated to job site on a barge pulled by one boat and guided in the stern by another."

"Fun, Fun, Fun trying to anchor cable in 6' of mud in order to extract a machine."

"Setting a corner in the marsh."

"The only shade is beside the equipment."

"This is what it looks like where you have been. Not much fun to walk out of."

"Surveying in difficult terrain has its good moments."

From August 1980: Robert "Buddy" Bannerman sent these pictures of a survey job in an unidentified marsh to FSMS Executive Director Henry Vinson. Bannerman later served as FSMS President in 1983.

Annual Collier-Lee Golf Tournament

When: Saturday, July 21st at 8:30am (sign in at 7:30am)

Where: Bonita National Golf & Country Club (17001 Bonita Beach Road SE, Bonita Springs, FL 34135)

Cost: $85 per person; $340 per foursome

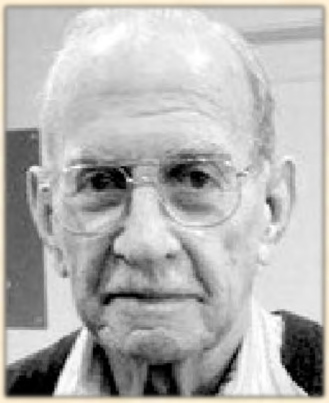
Click here to download the registration form. Entries must be received by July 13th.

For more information, contact Jennifer Sheppard (jsheppard@bankseng.com) or Curtis Marshall (cmarshall@bwlk.net).

IN MEMORIAM

Raymond Durrell Mercer

December 30, 1935 - April 1, 2018



Raymond Durrell "Pecos" Mercer of Plant City, Florida, passed away on April 1, 2018 on Easter Sunday at the age of 82.

Raymond was the brother and life time fishing partner of our friend and past FSMS president, Loren E. Mercer. Raymond was also a surveyor, retiring from the Florida Department of Transportation after more than 30 years of service before opening and operating his own successful land surveying company.

He graduated from Turkey Creek High School and was very proud of his time as Master of the Olin S. Write Masonic Lodge #79 in Plant City.

Raymond was a very devoted family man who impacted the lives of all he met. He could fix, grow and figure out anything and was known as a phenomenal problem solver. He enjoyed bowling, golfing, fishing and crossword puzzles. He was a loving member of the Midway Baptist Church in Plant City.

Raymond was preceded in death by his wife of 59 years, Mary "Lucille" Mercer; parents, Ezra and Laura Mercer; and sister, Marie McLawhorn. He is survived by his children, Ray, Jr. (Teresa), Sharon (Mary), and Steve (Diana); grandchildren, Wesley (Crystal), Justin, Mindy, Brent, Mallory and Hali (Brandon); great-grandchildren, Alex, Landon and Hudson; and siblings, Loren "Murgatroyd" Mercer and Joyce Sullivan (Billy), all of Central Florida.

Raymond Durrell Mercer was laid to rest on April 7, 2018 at Hopewell Memorial Gardens in Plant City, Florida.

IN MEMORIAM

Barbara Foley-Bergstrom

May 21, 1961 - February 12, 2018

TALLAHASSEE - Barbara left us in sadness on February 12th, 2018 in Jacksonville, FL, but is in the peace that is heaven now. She resided in Tallahassee for the last 22 years and was a Professional Land Surveyor and Mapper. Barbara was born May 21st, 1961 in Washington D.C., the youngest of seven children to William Henry Atwood, Jr. and Thelma (Barbara) O'Claire.

She is preceded in death by her parents and two older brothers, William Wayne and Bruce Alan Atwood. Barbara is survived by her son, Steven Foley, one brother, Barry (Gloria) Atwood of Tampa, three sisters: Betty Atwood of Brandon, Beverly Speer of Las Vegas, NV, Bonita (Stan) Jordan of Jacksonville, Florida, a sister-in-law Bonnie Atwood of Tampa, and by many nieces and nephews.

After high school in Tampa, she was mentored by her dad in a career of land surveying and mapping. She worked with Atwood and Associates in Brooksville, Florida until her dad's death, and then went on to work for several other engineering and surveying firms in Brooksville, Tampa, Port Charlotte and Tallahassee.

In Tallahassee, she made her name and had a successful career as a principal Professional Surveyor and Mapper. Barbara was passionate about the profession, serving as an officer and member of the Florida Surveying and Mapping Society in the late 1990's to early 2000's, and as an officer and board member of the National Association of Women in Construction (Southeast Region).

She loved rock and roll music, a whiz on both the bass guitar and drums, her son, her family, and her beloved dachshunds, Vena and Hercules. Barbara was well known about town for her kindness, generosity, laughter and jokes. She could always put a smile on your face and lived to laugh. She will be dearly missed and will live forever in the hearts of all who loved her.

Florida Surveying and Mapping Society

2017 eLearning Courses

Basics of Real Property Course #8360 (3 General CEC)

$ 70.00

Boundaries in Florida Course #8255 (6 SOP/L&R CEC)

$ 120.00

Contracts for the Professional Course #8412 (3 General CEC)

$ 70.00

Elevation Certificates and the Community Rating System Course #8256 (3 General CEC)

$ 70.00

Ethics for the Design Professional Course #8621 (6 General CEC)

$ 120.00

Florida Laws Course #7149 (6 SOP/L&R CEC)

$ 120.00

Professional Ethics and Professional Courtesy FULL Video Course #8363 (6 General CEC)

$ 120.00

Georgia Technical Standards for Property Surveys Course #8554 (6 General CEC)

$ 120.00

History of Surveying Course #7140 (6 General CEC)

$ 120.00

Identification of Native and Non-Native Trees in Florida Course #8132 (6 General CEC)

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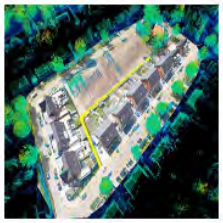

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$ 70.00

Land Tenure and Cadastral Systems Course #8260 (6 General CEC)

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Map Projections and Plane Coordinate Systems Course #8261 (6 General CEC)

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Mean High Water Observations & Computations Course #8262 (6 General CEC)

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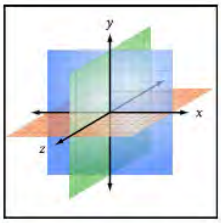

Practical Geometry for Surveyors Course #7141 (6 General CEC)

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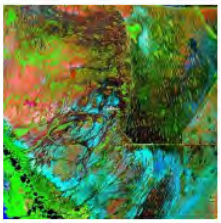

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$ 120.00

Writing Boundary Descriptions Course #8362 (3 General CEC)

$ 70.00

Correspondence Courses

Step 1: Choose Course(s)

☐ **5J-17 Standards of Practice (SOP)**, #6962, 6 SOP/L&R CEC

☐ **A History of the Prime Meridian Marker**, #8403, 3 General CEC

☐ **Basics of Real Property**, #8359, 3 General CEC

☐ **Boundaries in Florida**, #7667, 6 SOP/L&R CEC

☐ **Chapter 177, Platting (Plat Law)**, #6970, 6 SOP/L&R CEC

☐ **Client Satisfaction Excellence for Surveying and Mapping Professionals**, #7229, 6 General CEC (*Only available by mail)*

☐ **Contracts for the Professional**, #8411, 3 General CEC

☐ **Critical Communication for Surveying & Mapping Professionals**, #7228, 6 General CEC (*Only available by mail)*

☐ **Digital Signatures for Surveyors**, #8491, 3 General CEC

☐ **Elevation Certificates and the Community Rating System**, #8257, 3 General CEC

☐ **Ethics for the Design Professional**, #8620, 6 General CEC

☐ **Florida Laws**, #6966, 6 SOP/L&R CEC

☐ **Georgia Technical Standards for Property Surveys,** #8553, 6 General CEC

☐ **Geographic Information Systems (GIS)**, #7107, 6 General CEC

☐ **History of Surveying**, #7108, 6 General CEC

☐ **Identification of Native and Non-Native Trees in Florida**, #7874, 6 General CEC

☐ **Introduction to Photogrammetry**, #7887, 3 General CEC

☐ **Land Tenure and Cadastral Systems**, #7829, 6 General CEC

☐ **Map Projections and Plane Coordinate Systems**, #7669, 6 General CEC

☐ **Mean High Water Observations and Computations**, #8220, 6 General CEC

☐ **Practical Geometry for Surveyors**, #7109, 6 General CEC

☐ **Public Land Survey System**, #6979, 6 General CEC

☐ **Remote Sensing Applications to Surveying & Mapping**, #6972, 6 General CEC

☐ **Stress Management for Surveyors & Mappers: How to be Productive Under Pressure**, #6902, 6 General CEC (*Only available by mail)*

☐ **Time Management for Surveyors & Mappers: How to be Productive & Exercise Time Mastery in A Hectic World**, #6901, 6 General CEC (*Only available by mail)*

☐ **Writing Boundary Descriptions**, #8361, 3 General CEC

Correspondence Courses Order Form

Step 2: Choose Member Type

☐ **FSMS Member**

EMAILED			**Quantity**		
6 CEC	$115 Per Course	x	_____	=	$ _____
3 CEC	$58 Per Course	x	_____	=	$ _____
MAILED					
6 CEC	$125 Per Course	x	_____	=	$ _____
3 CEC	$68 Per Course	x	_____	=	$ _____
	TOTAL		_____		$ _____

☐ **Non-Member**

EMAILED	**Fee**		**Quantity**		**Amount**
6 CEC	$135 Per Course	x	_____	=	$ _____
3 CEC	$78 Per Course	x	_____	=	$ _____
MAILED					
6 CEC	$145 Per Course	x	_____	=	$ _____
3 CEC	$88 Per Course	x	_____	=	$ _____
	TOTAL		_____		$ _____

☐ **Non-Licensed in ANY State**

EMAILED	**Fee**		**Quantity**		**Amount**
6 CEC	$100 Per Course	x	_____	=	$ _____
3 CEC	$60 Per Course	x	_____	=	$ _____
MAILED					
6 CEC	$110 Per Course	x	_____	=	$ _____
3 CEC	$70 Per Course	x	_____	=	$ _____
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Name: _____ PSM#: _____ State: ____ FSMS Member: ___ YES ___ NO

Firm: _____ Sustaining Firm: ___ YES ___ NO

Address: _____

City/State: _____ Zip Code: _____

Email Address: _____ Work Phone: _____

Payment Information: _____ Check Enclosed (Payable to FSMS) _____ VISA/MasterCard/American Express

Card #: _____ Exp. Date: _____ Card CVV Number (3 or 4 Digits) _____

Billing Address for Credit Card: _____

Signature: _____

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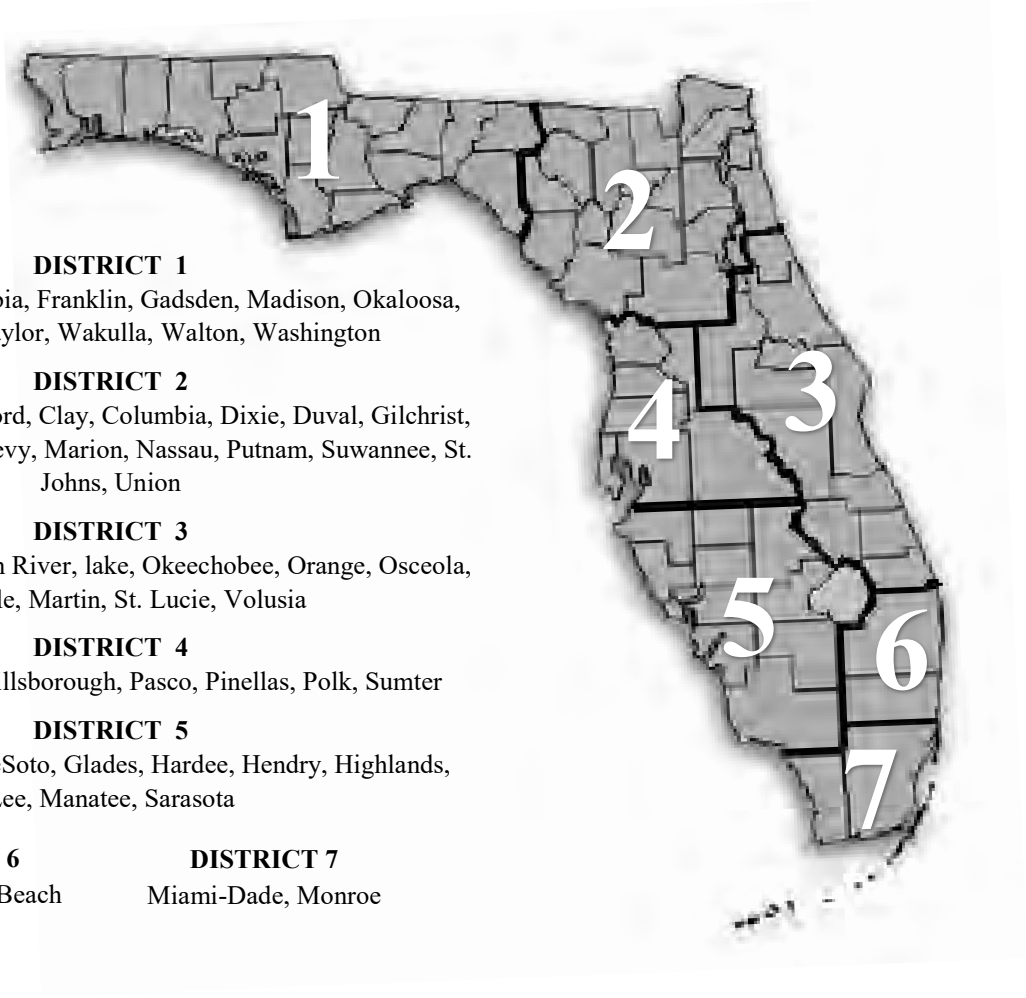

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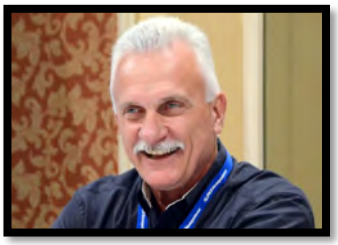

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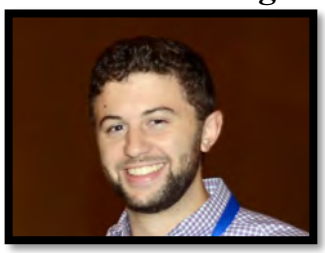

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Tom's Tip of the Month

11 Ways to Stay Motivated

Click on the picture below to view the video!

The Florida Surveyor is the official publication of the Florida Surveying and Mapping Society, Inc. (FSMS). It is published monthly for the purpose of communicating with the professional surveying community and related professions who are members of FSMS. Our award winning publication informs members eleven months of the year of national, state, and district events and accomplishments as well as articles relevant to the surveying profession. The latest educational offerings are also included.

2017-2018 Sustaining Firms

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Aerial Cartographics Of America, Inc.	407-851-7880
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Amerritt, Inc.	813-221-5200
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Associated Land Surveying & Mapping, Inc.	407-869-5002
ATS Land Surveying, LLC	386-264-8490
Avirom & Associates, Inc.	561-392-2594
Bannerman Surveyors, Inc.	850-526-4460
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Bello & Bello Land Surveying Corporation	305-251-9606
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Calvin, Giordano & Associates, Inc.	954-921-7781
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Carter Associates, Inc.	772-562-4191
Caulfield & Wheeler, Inc.	561-392-1991
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Clary & Associates, Inc.	904-260-2703
Clements Surveying, Inc.	941-729-6690
Coffin & Mclean Associates, Inc.	352-683-5993
Collins Survey Consulting LLC	863-937-9052
Compass Engineering & Surveying, Inc.	727-822-4151
Compass Point Surveyors PL	954-332-8181
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Controlcam, LLC	904-758-2601
Countywide Surveying, Inc.	850-769-0345
Cousins Surveyors & Associates, Inc.	954-689-7766
CPH, Inc.	407-322-6841
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Culpepper & Terpening, Inc.	772-464-3537
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Deal Land Surveying LLC	407-878-3796
Degrove Surveyors, Inc.	604-722-0400
Dennis J. Leavy & Associates	561-753-0650
Deren Land Surveying LLC	352-331-0010
Diversified Design & Drafting Services, Inc.	850-385-1133
DMK Associates, Inc.	941-475-6596
Donald F. Lee & Associates, Inc.	386-755-6166
Donald W. Mcintosh Associates, Inc.	407-644-4068
Donoghue Construction Layout LLC	321-248-7979
Douglass Leavy & Associates, Inc.	954-344-7994
DRMP, Inc.	407-896-0594
DSW Surveying and Mapping, PLC	352-735-3796
E.R. Brownell & Associates, Inc.	305-860-3866
Echezabal & Associates, Inc.	813-933-2505
Eda Engineers-Surveyors-Planners, Inc.	352-373-3541
Edwin G. Brown & Associates, Inc.	850-926-3016
E.F. Gaines Surveying Services, Inc.	239-418-0126
Eiland & Associates, Inc.	904-272-1000
Element Engineering Group, LLC	813-386-2101
Engenuity Group, Inc.	561-655-1151
Engineering Design & Construction, Inc.	772-462-2455
England, Thims & Miller, Inc.	904-652-8990
ESP Associates PA	803-802-2440
Evans Land Surveying, Inc.	727-734-3821
Exacta Land Surveyors, Inc.	305-668-6169
F. R. Aleman & Associates, Inc.	305-591-8777
Fabre Engineering, Inc.	850-433-6438
Ferguson Land Surveyors, PLC	727-230-9606
First Choice Surveying, Inc.	407-951-8655

2017-2018 Sustaining Firms

Flanary Surveying and Mapping, Inc.	941-915-8655
Florida Engineering and Surveying, LLC.	941-485-3100
Foley/Koloarik, Inc.	941-722-4561
Fortin, Leavy, Skiles, Inc.	305-653-4493
Franklin Surveying & Mapping, Inc.	407-846-1216
Ganung-Belton Associates, Inc.	407-894-6656
Gary G. Allen, Regis Land Surveying, Inc.	850-877-0541
Geodata Consultants, Inc.	407-732-6965
Geoline Surveying, Inc.	386-418-0500
Geomatics Corp.	904-824-3086
GeoPoint Surveying, Inc.	813-248-8888
George F. Young, Inc.	727-822-4317
GeoSurv LLC	877-407-3734
Germain Surveying, Inc.	863-385-6856
Global One Survey, LLC	786-486-8088
GPI Geospatial, Inc.	407-851-7880
GPServ, Inc.	407-601-5816
Greenman-Pedersen, Inc.	352-547-3080
GRW Engineers, Inc.	859-223-3999
Gustin, Cothern & Tucker, Inc.	850-678-5141
H. L. Bennett & Associates	863-675-8882
Hamilton Engineering & Surveying	813-250-3535
Hanson Professional Services, Inc.	217-788-2450
Hanson, Walter & Associates, Inc.	407-847-9433
Hayhurst Land Surveying, Inc.	772-569-6680
HLSM LLC	407-647-7346
Hole Montes, Inc.	239-254-2000
Honeycutt & Associates, Inc.	321-267-6233
HSA Consulting Group, Inc.	850-934-0828
Hutchinson, Moore & Rauch	251-626-2626
Hyatt Survey Services, Inc.	941-748-4693
I.F. Rooks & Associates, Inc.	813-752-2113
Inframap Corp.	804-550-2937
John Ibarra & Associates, Inc.	305-262-0400
John Mella & Associates, Inc.	813-232-9441
Johnson, Mirmiran & Thompson, Inc.	813-314-0314
Johnston's Surveying, Inc.	407-847-2179
Jones, Wood & Gentry, Inc.	407-898-7780
Keith & Associates, Inc.	954-788-3400
Keith & Schnars, P.A.	954-776-1616
Kendrick Land Surveying	863-533-4874
King Engineering Associates, Inc.	813-880-8881
Kugelmann Land Surveying, Inc.	321-459-0930
Kuhar Surveying & Mappin LLC	386-295-8051
L&S Diversified, LLC	407-681-3836
Landmark Engineering & Surveying Corporation	813-621-7841
Leading Edge Land Services, Inc.	407-351-6730
Leiter Perez & Associates, Inc.	305-652-5133
Leo Mills & Associates	941-722-2460
Littlejohn Engineering Associates, Inc.	407-975-1273
Lochrane Engineering, Inc.	407-896-3317
Long Surveying, Inc.	407-330-9717
Ludovici & Orange Consulting Engineers, Inc.	305-448-1600
Manuel G. Vera & Associates, Inc.	305-221-6210
Mapping Resource Group, Inc.	386-439-4848
Marco Surveying & Mapping, Inc.	239-389-0026
Mark Dowst & Associates, Inc.	386-258-7999
Maser Consulting P.A.	813-207-1061
Massey-Richards Surveying & Mapping LLC	305-853-0066
Masteller, Moler & Taylor, Inc.	772-564-8050
McKim & Creed, Inc.	919-233-8091
McLaughlin Engineering, Co.	954-763-7611
Mehta & Associates, Inc.	407-657-6662
Metron Surveying And Mapping LLC	239-275-8575
Millman Surveying, Inc.	330-342-0723
Mock Roos & Associates, Inc.	561-683-3113
Moore Bass Consulting, Inc.	850-222-5678
Morgan & Eklund, Inc.	772-388-5364
Morris-Depew Associates, Inc.	239-337-3993
Murphy's Land Surveying, Inc.	727-347-8740
Northstar Geomatics, Inc.	772-781-6400
Northwest Surveying, Inc.	813-889-9236
O'Brien Suiter & O'Brien, Inc.	561-276-4501
Oceanside Land Surveying LLC	386-763-4130
Omni Communications LLC	813-852-1888
On The Mark Surveying LLC	321-626-6376
Peavey & Associates Surveying & Mapping, PA	863-738-4960
Pec - Survey & Mapping LLC	407- 542-4967
Pennoni Associates, Inc.	215-222-3000
Pickett & Associates, Inc.	863-533-9095
Pittman, Glaze & Associates, Inc.	850-434-6666
Platinum Surveying & Mapping LLC	863-904-4699
Point To Point Land Surveyors, Inc.	678-565-4440
Polaris Associates, Inc.	727-461-6113
Porter Geographical Positioning & Surveying, Inc.	863-853-1496
Precision Surveying & Mapping, Inc.	727-841-8414
Pulice Land Surveyors, Inc.	954-572-1777
Q Grady Minor And Associates, PA	239-947-1144
Robayna & Associates, Inc.	305-823-9316
Reece & White Land Surveying, Inc.	305-872-1348
Rhodes & Rhodes Land Surveying, Inc.	239-405-8166
Richard P. Clarson & Associates, Inc.	904-936-2623
Riegl USA	407-248-9927
Ritchie & Associates, Inc.	850-914-2774
RJ Rhodes Engineering, Inc.	941-924-1600
Robert A. Stevens & Associates	863-559-1216
Robert M. Angas Associates, Inc.	904-642-8550
Rogers Engineering LLC	352-622-9214
Rogers, Gunter, Vaughn Insurance, Inc.	850-396-1111
S&ME, Inc.	407--975-1273

SCR & Associates NWFL, Inc.	850-265-6979
Sergio Redondo & Associates, Inc.	305-378-4443
Shah Drotos & Associates, Inc.	954-943-9433
Shannon Surveying, Inc.	407-774-8372
Sherco, Inc.	863-453-4113
Sliger & Associates, Inc.	386-761-5385
Southeastern Surveying And Mapping Corporation	407-292-8580
Spalding DeDecker Associates Inc	248-844-5404
Stephen H Gibbs Land Surveyors, Inc.	954-923-7666
Stephen J. Brown, Inc.	772-288-7176
Strayer Surveying & Mapping, Inc.	941-497-1290
Suarez Surveying & Mapping	305-596-1799
Survtech Solutions, Inc.	813-621-4929
Tetra Tech, Inc.	407-839-3955
Thurman Roddenberry & Associates, Inc.	850-962-2538
Tradewinds Surveying Services, LLC	863-763-2887
Tuck Mapping Solutions, Inc.	276-523-4669
Upham, Inc.	386-672-9515
Wade Surveying, Inc.	352-753-6511
Wallace Surveying Corporation	561-640-4551
Wantman Group, Inc.	561-687-2220
WBQ Design & Engineering, Inc.	407-839-4300
Winningham & Fradley, Inc.	954-771-7440
Woolpert, Inc.	937-461-5660
York & Associates Engineering, Inc.	229-248-0141
ZNS Engineering LLC	941-748-8080

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Upcoming Events

May 17-18, 2018
Board of Directors Meeting
Tallahassee

August 15-18, 2018
63rd Annual FSMS Conference
St. Petersburg

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H.O. Peters	Paul T. O'Hargan	Dennis E. Blankenship
Harry C. Schwebke	William G. Wallace, Jr.	W. Lanier Mathews, II
John P. Goggin	Robert W. Wigglesworth	Jack Breed
R.H. Jones	**1980**	**2000**
1960	Ben P. Blackburn	Arthur A. Mastronicola
Hugh A. Binyon	William B. Thompson, II	Michael H. Maxwell
Russell H. DeGrove	John R. Gargis	John M. Clyatt
Perry C. McGriff	Robert A. Bannerman	David W. Schryver
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Shields E. Clark	Steven M. Woods	Robert W. Jackson, Jr.
Maurice E. Berry II	Stephen G. Vrabel	Pablo Ferrari
William C. Hart	W. Lamar Evers	Steve Stinson
Frank R. Schilling, Jr.	**1990**	**2010**
1970	Joseph S. Boggs	Dan Ferrans
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James M. King	Nicholas D. Miller	Ken Glass
Broward P. Davis	Loren E. Mercer	Russell Hyatt
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