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SPRING 2022



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2022 Technical Seminar Recap | 24

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**Cover Photo:** Marker for the Paris Meridian (see page 9).  
Submitted by Pete Sanchez.



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IRON MOUNTAIN, MI

Special Bulletin for: Safety Directors and Managers of Outdoor Workers.

January 2021

Purpose: Safety Reference Guide on ticks and tick borne disease **Prevention**.

Overview: Where to find ticks, how they act, best repellants, best prevention, how to handle their bites, and what makes them tick.

### Tick Habitat

Ticks are generally found in tall grasses and low lying shrubs, preferring shaded moist areas. They do not jump, fly, or drop out of trees. Instead, they wait patiently on a piece of vegetation to sense the CO<sub>2</sub> or the smell of an animal or human walking by. They then latch on and start their search for a nice place to have a 2-4 day blood meal. They are out in varying numbers in most all of the 48 contiguous states when temps are above 32 degrees or warmer. Also note that they do not die off in the winter. The small younger nymph ticks (the size of a poppy seed) are actually responsible for most of the lyme disease cases because at their size they can easily go unnoticed until it is too late. The adults are easier to see, but like all ticks, they are very stealthy and their bites are painless when they start their feeding.

### Tick States and Diseases

The upper east coast along with New York and Pennsylvania have the most tick and Lyme disease cases in the country. The entire eastern time zone can also be considered tick areas with the warmer states having year round problems. Lyme disease was first given its name in the mid-seventies after a strange mysterious arthritic condition was found in several young teens in the town of Lyme, CT. The second-most tick and Lyme disease cases are found in the upper midwestern states of Wisconsin, Minnesota, Michigan, and surrounding states. The central time zone could also claim that most of the states have some degree of tick problems. It is important to know that while Lyme disease

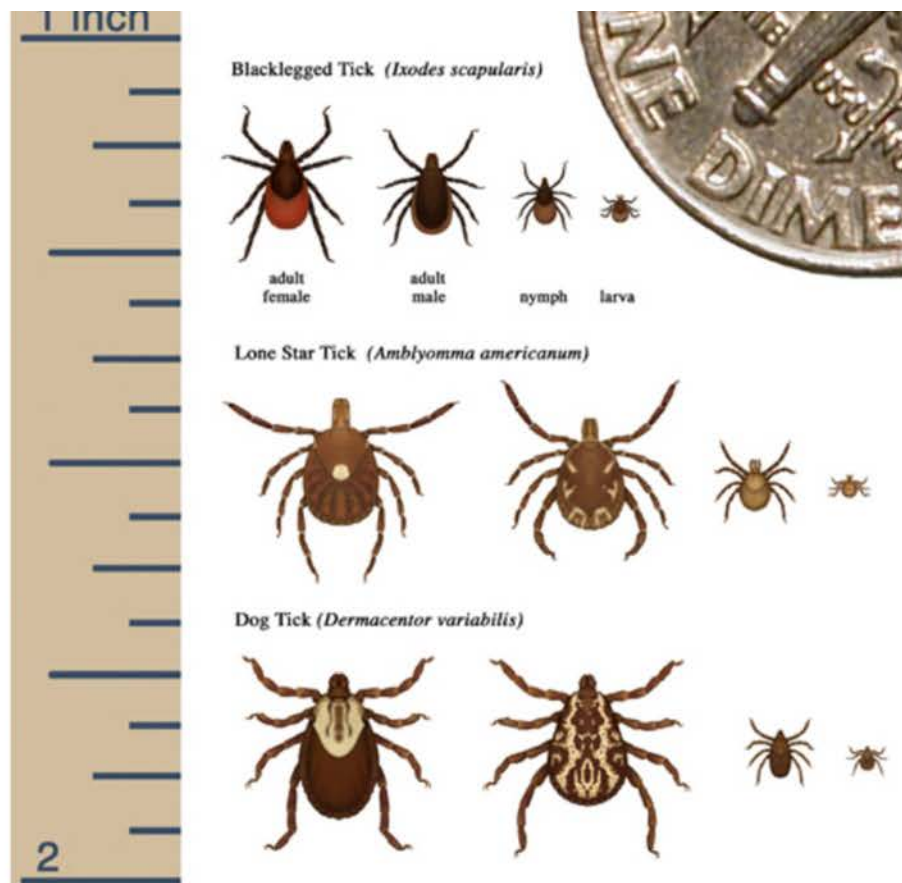
rightfully gets a lot of the attention, ticks can also carry more than one disease at a time. Other diseases are Rocky Mountain Spotted Fever, Anaplasmosis, Alpha-gal syndrome (causes a red meat allergy), Babesiosis, and Ehrlichiosis to name a few. Anyone of these diseases could be very serious or possibly life threatening.

### Tick Species

Around the world there are about 900 species of ticks. Here in the United States we have 10-15 or so. The most popular ticks are the three in the following CDC diagram (see next page) and are all hard body ticks as opposed to some western soft body ticks. The Blacklegged Tick, nicknamed the Deer Tick, is the only one known to carry Lyme. The Lone Star tick has the white dot on the female only, and the Dog Tick is also called the Woodtick. The females are usually bigger and most apt to be found on humans.

### Prevention

The best way to protect yourself from ticks is to never go outdoors and live in a plastic bubble. Since that is not possible, the next best defense against ticks can be summed up in just two words "**Permethrin & Deet.**" They are by far and without question the most effective, most recommended, and the most used on the market today. Both have been safely used for several decades and have been the "go to" products for the outdoor worker industry for a very long time. See following information on each, and remember to always use products that are EPA approved and use as directed.



### Deet

- Best skin repellant for mosquitos, small flying insects, chiggers, and ticks etc.
- 20-30% Deet is plenty for normal usage.
- Never use on FR clothes because it could flame up in certain circumstances.
- Most Deet aerosols, pump sprays, and wipes (towelettes) are effective for up to 8 hours.
- Some Deet lotions are effective for up to 12 hours.

### Picaridin (Non-Deet)

- Number #2 skin repellant for mosquitos, small flying insects, chiggers, and ticks etc.
- 20% is the standard for normal usage.
- Most Picaridin wipes (towelettes) and pump sprays are effective for up to 8 hours.
- Most Picaridin aerosols are effective for up to 12 hours.

### Permethrin

- The best lethal repellant against ticks, chiggers, mosquitos, and mites on the market.
- It is an odorless "contact" repellant that affects the nervous system of ticks and insects and feels like an electric grid when they crawl on it or

when they land on it. Insects will fly off and ticks will end up being less productive and eventually dead.

- It is safe for clothes (FR clothes), socks, shoes, hats, gear, tents, and any kind of fabric.
- One of the great benefits is the lasting power. Once applied it can last for weeks and months without having to reapply while still remaining effective after multiple launderings.
- Most aerosols are effective for up to 2 weeks and 2 launderings.
- Most water based pump sprays are effective for up to 6 weeks and 6 launderings.
- One very economical brand of concentrate can be easily mixed by the user (it turns milky white), and they can choose how long it will be effective. It can range from 3 weeks and 3 launderings, 6 weeks and 6 launderings, up to 24 weeks and 24 launderings.
- In some cases clothes can be sent in to be treated or bought pretreated with claims they will remain effective for 50+ weeks and 50+ launderings.
- The Military has been using it for decades.
- It is not to be used on skin.
- For best results, just spray on the fabric until



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visibly damp (even though it is effective when wet) then let dry for 3-4 hours or overnight.

### Other Miscellaneous Tick Deterrents & Ideas

- Permethrin treated gaiters are worn like soccer shin guards to repel ticks below the knees.
- Wearing light colored clothing helps to better see ticks.
- Tucking pants in socks makes unwanted ticks more visible.
- Using lint rollers on clothes for removal of ticks.
- Using soaps and shampoos with scents that ticks and bugs don't like. Examples are lavender, cedar, lemon, peppermint, geranium, citronella, etc.

### End of Day Tick Checks and Tick Removal

- Even with the best preparation and best repellants sometimes a tick can still get through.
- Always do some kind of a tick check.
- Some companies offer private rooms with full length mirrors for personal tick checks.
- Most common places to check are behind the knees, groin area, waist line, the edge of hair line, and behind the ears.
- If you are not wearing permethrin treated clothes, you can throw them in the dryer at the end of your day for about 15-20 minutes on high, and the dry heat will kill any ticks. After that, you can put them in the washer and then take a shower to find any more stray ticks.
- If you find a tick attached, don't panic and realize proper removal is advised because the more a tick is touched, grabbed, and disturbed the more apt it is to regurgitate bad stuff into you

before it is removed.

- The best way to remove a tick is to grab it at the skin level with a fine tip tweezers or use a "Tick Key." These two devices work well because they do not squeeze the tick body but just touch the head thus causing the least amount of irritation.
- Once the tick is removed, clean the area with rubbing alcohol. If some of the tick is left in the skin, don't be alarmed as it will go away in a few days on its own. If needed, save the tick for possible testing and then report the incident to the proper people.
- If an infected tick is attached for 24 hours or more, it becomes more likely that it will transmit some bad stuff. This is why daily thorough tick checks are so important.

### After the Bite

- This is the most important info of this entire Bulletin.
- Quick medical attention is needed by a physician who knows about tick borne diseases if someone develops any kind of the following flu like symptoms, aching joints, fever, chills, muscle aches, joint pain, a bad reaction to the bite, or some kind of a bulls eye rash.
- Most physicians will treat these symptoms with an antibiotic, and the person will be fine, rather than waiting months for positive test results.
- The last thing anyone wants to do is ignore any symptoms because tick borne illnesses do not go away on their own, and they only get worse with time.
- Early detection and treatment cannot be stressed enough!!!

Use this information to brief your crews at the beginning and throughout your tick season.

**For further information and the best repellants on the market see our contact info below and call today to help keep your crews as tick free as possible.**

### Stay Safe Out There !!!



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IRON MOUNTAIN, MI

This bulletin may be copied and redistributed in its entirety as needed.



## Timothy W. Burch Appointed New Executive Director of NSPS

The Board of Directors of the National Society of Professional Surveyors (NSPS) is pleased to announce the appointment of Timothy W. Burch, PLS, as its new Executive Director. Mr. Burch is the current President-Elect of NSPS and is a Professional Land Surveyor licensed in the States of Illinois and Wisconsin. Tim has been involved with the organization for more than 20 years as Secretary of the Board of Governors as well as the Board of Directors, NSPS Vice President, a member of the Certified Survey Technician Board, Joint Government Affairs, and ALTA/NSPS Land Title Survey committees. Along with content contributor for NSPS social media, he is creator and producer of the NSPS podcast "Surveyor Says!" and a contributing writer to the NSPS newsletter "News and Views."



Tim has been involved with the land surveying profession for more than 30 years and has represented NSPS at numerous functions and conferences. He has provided testimony on behalf of the profession at both the State and Federal levels, as well as having established a partnership with "Get Kids into Surveying." Tim is currently the Chair of the FIG Working Group 1.1 (Professional Ethics) and is Chair-Elect for FIG Commission 1 (Professional Standards). He is also a contributing editor for the GPS World Magazine "Survey Scene" column.

Mr. Burch will succeed Mr. Curt Sumner, who has been the Executive Director for the past 23 years, on January 3, 2022.

## Equipment Theft Is Still A Big Problem!

You can report information about your stolen equipment by emailing [info@nsp.us.com](mailto:info@nsp.us.com). You can view information on the NSPS website using the link: <https://www.nsp.us.com/page/StolenEquipment>.



# 2022 National Surveyors Week





**Global Surveyor of the Year 2022**  
Benjamin Banneker

March 20-26  
[nsp.us.com](https://nsp.us.com)  
Global Surveyors' Day: March 21




# “As I was walking through the Louvre...”

...admiring the art and of course, all things related to surveying, I ran across the brass monument shown in the photo set in one of the lower floors of the Louvre. Thinking that this might be a surveyor's monument, I took the photo and went home to look it up (because what else do you do in Paris?). Turns out this is part of an art installation that marks the Paris Meridian once used for navigation and eventually replaced by the Greenwich Meridian, which we use today. There is an excellent 2-part article about the Arago monuments and the establishment of the French Meridian found at the links below. The author adds in quite a few facts and historical events that make me very happy to live in today's modern world.”

*Submitted by Pete Sanchez*

## 2-Part Article Links:

<https://www.guernicamag.com/carol-spindel-a-line-through-the-heart-of-paris-the-original-prime-meridian/>

<https://www.guernicamag.com/carol-spindel-a-line-through-the-heart-of-paris-the-original-prime-meridian-2/>



# WHAT TO DO WHEN YOUR GPS STOPS WORKING BECAUSE OF INTERFERENCE FROM LIGADO

*Just follow a few simple steps!*

**SO YOUR GPS JUST STOPPED WORKING. FIRST, DO YOU  
HAVE A PH.D. IN RADIO FREQUENCY ENGINEERING?**

**Yes**

GREAT! THIS IS PROBABLY THE ONLY  
WAY YOU'LL KNOW IF YOUR GPS  
LINK IS EXPERIENCING  
INTERFERENCE DUE TO LIGADO'S  
OPERATIONS!

**No, that's  
ridiculous.**

**Yes**

**NOW. DID YOU MEMORIZE LIGADO'S 1-800  
NUMBER YOU'RE SUPPOSED TO CALL?**

FANTASTIC. IN THE LIGADO  
ORDER, THE FCC ANTICIPATES  
USERS WILL EXPERIENCE  
INTERFERENCE. BUT ALL YOU  
HAVE TO DO IS KNOW TO CALL  
LIGADO'S 800 NUMBER FOR  
INTERFERENCE.

**Seriously.  
Are you  
joking?**

**THE PROTECTION MEASURES IN THE FCC'S LIGADO ORDER ARE  
*TOO LITTLE, WAY TOO LATE.***

This plan also threatens critical services like those that private satellite  
providers use to help planes navigate, keep America's warfighters connected  
and support supply chains worldwide. #RethinkLigado

# Thoughts on Professional Practice and Education

## Article 1: Faculty Licensure

by Knud E. Hermansen  
P.L.S., P.E., Ph.D., Esq.

This will be the first of several articles giving thought to the topic of professional practice and education.

I have reached the age where I have a great many opinions and have no fear of sharing them. I have no employers that would take umbrage of my opinion. Perhaps some current or past clients might object, but they are free to seek others to perform their services should they wish.

If this is the first of several articles I plan to write, I can introduce myself thoroughly in this article and be reticent about an introduction in later articles.

I am retired after 30 years of teaching though I still do contract teaching for surveying and engineering programs. I have also retired from the military where I was a surveyor and engineer for over twenty years. I have been licensed in several states as a surveyor, engineer, and attorney. I still have an active license for each profession in at least one state. I have consulted in a wide variety of roles offering surveying, engineering, and legal services. I have surveyed many miles of boundaries. I was a member of a licensing board at one time. On numerous occasions I have served as an expert witness, trial attorney, appeals attorney, arbitrator, mediator, boundary commissioner, and, of course, a professor and instructor. Old age, experience, and my varied and unique practice I hope gives me a perspective that will generate some thought, no doubt some controversy, and perhaps some changes.

In this missive, I will focus on surveying faculty qualifications. I will not and never claim to be among the best faculty. I am sure there are some former students that will claim I am not even a satisfactory faculty for I had hard standards and high expectations that left some students disgruntled and unhappy that I chose to apply these standards to them. As I said, I am too old to change or even give much care to what a young student, lacking experience, may believe. To put it simply, their opinion is seldom my reality. After the graduate has practiced in the surveying profession for fifty years and still wishes to

maintain a low opinion of my instruction, I will welcome their thoughts and give them worthy consideration.

The point I wish to make in this missive is to give my opinion on faculty licensing. I do not believe a quality surveying program must require every faculty to be licensed to practice the profession of surveying. However, I do believe a majority of faculty should be licensed to practice the profession. I will offer three reasons for my opinion.

First and most importantly, I am of the firm opinion that no amount of education and research in surveying or 'geomatics' (as some programs prefer to use), allows a faculty to provide the impactful presentation experience allows. Of course, any person wishing to become faculty and claim they have experience outside of academics should have enough experience to be able to qualify and sit for professional exams in at least one state.

I am mindful that some faculty may have experience in areas of surveying practice that their state of residency will not accept toward licensure. Yet, that person will not be prevented from applying and being licensed in some other state that does accept their experience for licensure. (There is no state, by law, that can demand residency in the state before being licensed.) By way of example, I would refer the reader to some states that require a license for and therefore must accept experience in areas of remote sensing and GIS when applying for professional licensing.

Second, I believe it important that faculty set an example that will encourage students to seek professional licensing in the surveying field. This is done most effectively by the faculty themselves being licensed to practice the profession of surveying. I have seen numerous articles in professional magazines that lament the aging of the licensed surveyor population and how few young persons are entering the profession. Many employers lament the difficulty of finding young persons interested in filling employment openings. Young adults are not given a good

example by allowing surveying instructors to be unlicensed.

Third, I believe faculty are much more inclined to have been or become active in their state and national professional societies when licensed. I am of the very firm belief that a successful college surveying program must enjoy the support of state surveying societies. To enjoy that support, there must be continuous interaction and familiarity between the academic program and the professional society. The interaction and familiarity are often absent or tenuous at best when faculty are not licensed. Lacking a license, the faculty can't be a full member of the professional society.

I have such a firm opinion on the importance of requiring licensed faculty, that I would demand licensing as a prerequisite for a faculty member even at the sake of academic qualifications. If the only choice to fill a faculty position was between a licensed individual and one with a Ph.D. of similar temperament, I would opt to always take the licensed individual.

Many universities that host surveying programs require a Ph.D. These same surveying programs do not require

professional licensing of faculty. For some reason which I cannot comprehend, even after 30 years in college teaching, university administrators think it much more important to hire a Ph.D., without practical experience, often without experience as a resident, to teach surveying topics. The administrator will not accept someone without the Ph.D. that would have many years of relevant experience, relevant license, and familiarity with the residency where a graduate is likely to seek employment.

Having given my opinion, I now offer advice by suggesting ABET and professional societies make strenuous and consistent requests of administrators of surveying programs to demand current faculty become licensed and new faculty to be licensed prior to employment. The line is very clear. If a person wishes to teach in a surveying or geomatics program, they should have a professional license.

† Other books and articles by Knud can be found at <https://umaine.edu/svt/faculty/hermansen-articles/>

*Editor's Note: Look for Knud Hermansen's second article in the Summer 2022 GLS.*



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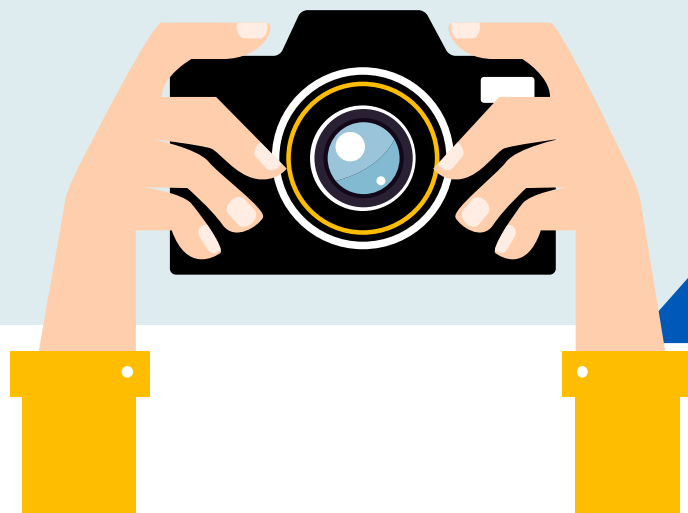
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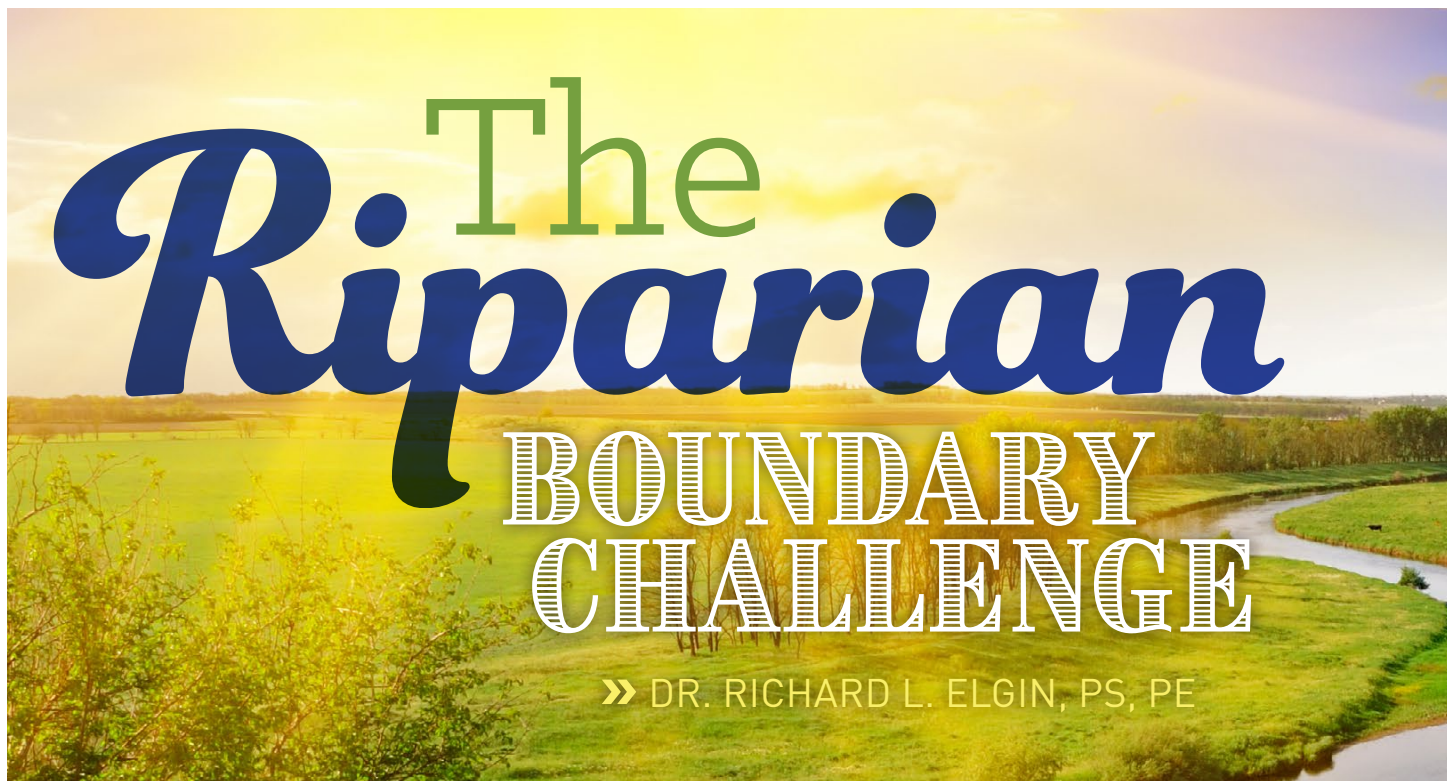
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- The location
- Photographer's name
- A brief description, if applicable

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### **The Riparian Boundary - Not Your Usual Boundary**

In the United States, rivers, streams and lakes provide a natural boundary for millions of parcels along thousands of miles of boundary line. As boundaries, rivers are a natural monument, holding the highest priority in the order of conflicting title elements. Visible, their identity certain, they have been used by man as boundaries for millennia. However convenient, and as natural, visible, substantial and inviting as they are for governments, treaties, and owners, they have one huge, troublesome characteristic: They move! There are many other issues related to using waterbodies as boundaries, but their ambulatory nature is what makes riparian boundaries different from all others. This boundary movement, influenced by the whims and vicissitudes of Mother

Nature and the designs and construction of man, brings uncertainty. With movement, the extent of title and tract acreage changes; even small differences in fluvial processes can result in large differences in ownership. Landowners face uncertainty in something they desire to be firm and absolute: The location of the boundaries of their real property. Generally, owners do not like their boundaries to change, their acreages decreasing or increasing, their lands perhaps vanishing altogether. These boundaries can change by forces of nature that are not within the riparian's control. Or one's riparian boundary may be changed by others without the riparian owner's knowledge or permission, such as by artificially-induced river movements. Riparian boundaries frequently bring conjecture to the landowner,

consternation to the surveyor, confusion to attorneys, confoundment to the courts and they have conflated commentators.

Additionally troublesome is that riparian boundaries can be four-dimensional: In a plane, their North/East horizontal position can be affected by vertical movement of the waterbody. And time can affect the riparian/littoral boundary location. (If the river moved slowly or quickly can have an effect.) Four dimensions, very unlike its usual two dimensional boundary brethren.

**Question: Where's the boundary?**

**Answer: It can depend on many factors, some unknown and unknowable to the surveyor.**

And most boundary disputes between adjoining owners are personal and are based on emotions. The cost of litigating a boundary almost always far exceeds the value of the land in dispute. Not so in some riparian boundary disputes. At stake can be thousands of acres of land or issues worth tens of millions of dollars. The most epic boundary litigation matter in United States history was a riparian boundary dispute: The famous “Red River Litigation” between Oklahoma and Texas. That litigation spent the 1920s in and out of the U.S. Supreme Court and even at this date there remains an ongoing kerfuffle concerning the boundary. Another example is the current “Is it a river or is it a lake” question in Lake Catahoula in Louisiana (with huge ownership and other consequences).

### Lex Aquae

With its foundation in English Common Law, courts and legislatures (both state and federal) have proclaimed “lex aquae,” the law of the water. Riparian (river) and littoral (lake or seashore) boundaries are part of that law. Riparian boundary law is complex, largely buried in court decisions that set precedents, and, like the shifting sands in a river, it has and will continue to evolve. But it establishes the rules and principles to be followed by the Professional Surveyor when determining the location of a riparian boundary.

Boundary control legal principles are fairly uniform nationwide, hence there are books by Skelton, Clark, Brown, Robillard, Wilson and others that do a good job of stating and explaining them. Some legal principles are broadly applicable nationwide. The general riparian rules for erosion, accretion and avulsion are examples and they are adequately covered by the authors listed above. Under the Equal Footing

Doctrine, the federal government left most riparian issues to the states (while reserving federal interests). Because states can (and have) developed their own law and rules relative to water law and riparian boundaries, there are differences. Some riparian boundary issues are very state-specific. One doesn’t have to dig too deeply into riparian boundary subjects to find rules that are very different state-to-state: If a state owns the bed of a river that is navigable for title (not all states do), what is the title boundary between the state and the upland owner? If you said Ordinary High Water Line, you’d be correct for less than half the states. So, books by the authors listed above don’t delve too deeply into riparian boundaries... as they shouldn’t.

### Some Examples

To illustrate how state-specific some riparian/littoral boundary issues can be, here are some questions or hypothetical situations. For your jurisdiction, state the applicable legal principle, along with any qualifying statements or explanations necessary.

No answers are supplied with this quiz because there is not one answer that will be correct for all 50 states and federal lands. One or two will be close to the same nationwide, but even they will need a qualifying note or two.

If you’ve not accomplished many surveys of riparian tracts, you may not have thought of or encountered

some of these circumstances. All of these issues have been before the courts. It is likely these issues are settled for your state. (Perhaps not to the specificity desired by the Professional Surveyor, but the general principle can be stated.)

1. For a non-navigable stream, what line is the boundary between opposite landowners? Define, exactly, that line and how it is located.
2. Who owns the bed of a waterbody that is navigable for title? Is it the State in trust for the public? Is it the upland landowner but subject to an easement in the public for commerce and recreation? Or is it in some other entity?
3. Suppose the bed of a river is navigable for title and is owned by the State. Where is the boundary between the State and the upland owner? Define, exactly, that line and how is it located.
4. Who owns an island that forms in a navigable river?

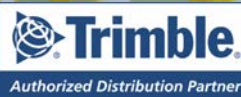
Photo illustrates past complex river movements. Today’s boundary position will depend on the area’s fluvial and title history.





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5. On a navigable river that has barge and commercial traffic, for the states on opposite sides of the river, where is the state boundary? Define, exactly, that line, and how is it located.
6. Suppose a non-navigable lake that was meandered by the GLO slowly goes dry. The littoral owners hire you to survey their lakebed ownership. First,

do these upland littoral owners have any rights in the now dry lakebed? Describe how you proceed.

7. Suppose that post-avulsion on a navigable river, there's a cutoff lake, formed from the abandoned channel. The cutoff lake partially fills in. Who owns the bed of this cutoff lake?

8. Owner A conveys to B "all lands north of the river," then Owner A conveys to C, "all lands south of the north bank of the river." Based on those facts what is C's northerly title line?

9. For your state, are the legal principles different for a river as compared to a lake? If so, define or distinguish the difference between a river and a lake.

10. The GLO meander line is practically never the upland owner's boundary. As the successor to the patentee, the patent being a lot made fractional by a waterbody, the waterbody is the boundary, not the meander line. Can there be an exception, the meander line being the boundary?

11. Suppose in the deed of a riparian tract, its acreage is given. A current survey shows that the acreage mentioned does not include the accretions to the tract that have been added since the deed was written (but has been used in subsequent conveyances for many years). Are the accretions conveyed by the later deeds?

12. Does your jurisdiction embrace or reject re-emergence? That is, suppose that by erosion an advancing river completely erodes and washes away a parcel. The river then retreats, accretions forming where the parcel formerly was located. Who gets title to the "re-emerged" parcel? Does the original owner's title "re-emerge," or, does title accrete and inure to the benefit of the owner of the last mainland the river touched (who could have been previously non-riparian)?

13. On a stream that is non-navigable for title (the upland owner(s) holding title to the bed) does the public have the right to float-fish or canoe through the property? Camp on its banks?



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14. Suppose artificial improvements to the banks or in the channel of a river create changes downstream by erosion and accretion. Do the usual legal principles of riparian boundaries still apply?
15. When does the apportionment of an accretion stop, the apportionment becoming fixed? That is, as an accretion grows and changes shape its apportioned lines move as well. When do those lines become fixed?

navigability for title and regulatory navigability? The answer is yes. I know of no state where they are identical. But, in riparian boundaries, statements such as this are dangerous. It seems there is always an exception.]

Note that these questions/situations are focused on inland, nontidal rivers and lakes. Just as many questions could be posed for tidal boundaries.

“Because states can develop their own law relative to riparian and littoral boundaries, some riparian boundary issues are very state-specific.”

16. Is there a difference between navigability for title and regulatory navigability? Is there a nexus between the two? Who decides if a river is navigable for title? Who decides regulatory navigability?
17. Is, or can there be a difference between federal navigability and state navigability? Can a river be navigable for title under the state test, but non-navigable under the federal test? Can the state test and federal test be different?
18. Is the river adjoining the tract you are surveying navigable or non-navigable for title? How do you know? Will it make a difference in the survey? Yes! For your state, who determines if a river is navigable for title? [By the way, is there a difference between

### The Challenge

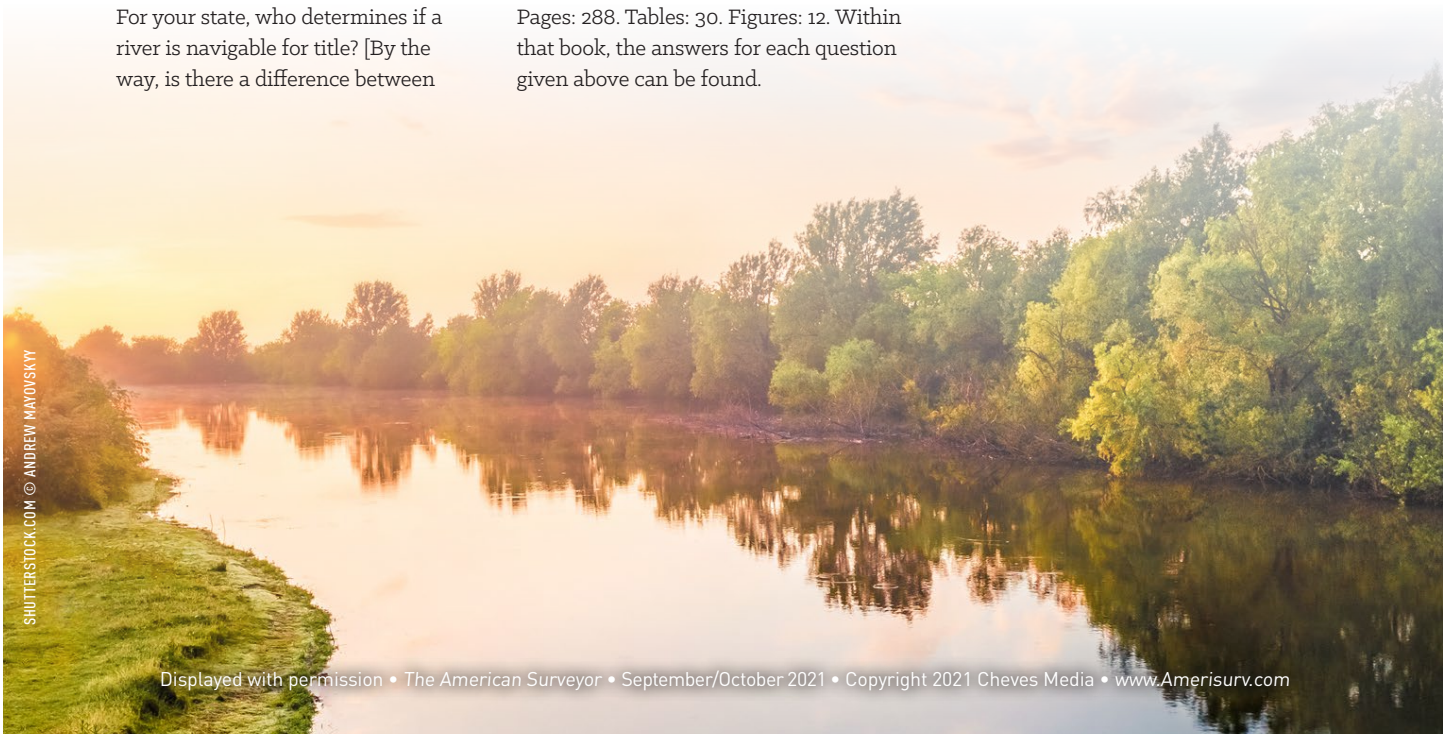
Each state needs its own manual that addresses its riparian and littoral boundary location principles. Coastal states should include its tidal boundaries. To accomplish this, all riparian/littoral decisions related to boundaries need to be discovered, indexed by topic, read, abstracted, then summarized. With these summaries and aided by learned articles on the subjects, publications and statutes, the legal principles can be stated. The product will be a book on riparian/littoral boundaries specific to the jurisdiction. This has been done for only one state, Arkansas. See “Riparian Boundaries for Arkansas” by the author of this article. Pages: 288. Tables: 30. Figures: 12. Within that book, the answers for each question given above can be found.

To start your state's manual, for the questions/circumstances in the examples given above, do the case law and statute law research necessary to state the legal principle or provide guidance on the matter, specific for your jurisdiction. Cite the applicable decisions and summarize them. Once this is accomplished for each state and the federal lands, someone with high professional knowledge of and experience with riparian/littoral boundaries and who is an excellent writer with lots of energy and unlimited time and resources can edit the resulting tome about inland, nontidal riparian and littoral boundaries and coastal tidal boundaries. It would be a herculean task. That's why no one has done this to date.

This “challenge” is made somewhat in jest, but posing the questions/situations is not. They illustrate how complex riparian boundaries can be, and how statespecific they can be. ■

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**Dr. Richard Elgin, PS, PE** is a surveying practitioner, educator, researcher, collector and author. He codeveloped the “ASTRO” software products and coauthored the Lietz/Sokkia ephemeris. He wrote *The U.S. Public Land Survey System for Missouri and Riparian Boundaries for Arkansas and Shoulda Played the Flute* (a memoir of his year flying helicopters in Vietnam) and *Riparian Boundaries for Missouri* (in press). He owns a large collection of early American surveying equipment, rides a Moots bicycle and drives an Alfa Romeo 1600 GT Junior. Dick's articles have appeared in “American Surveyor” for many years. He may be reached at: [elgin1682@gmail.com](mailto:elgin1682@gmail.com)



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# NGS GPS on Bench Marks

Welcome to the 2022 kick-off edition of GPS on Bench Marks Update. Now that NGS has officially extended the GPSONBM Campaign's cut-off date until December 31, 2022, there's time to get out there to fill remaining data gaps. Partners are encouraged to collect and submit GPS data to NGS for use in developing products to be launched with the Modernized National Spatial Reference System.

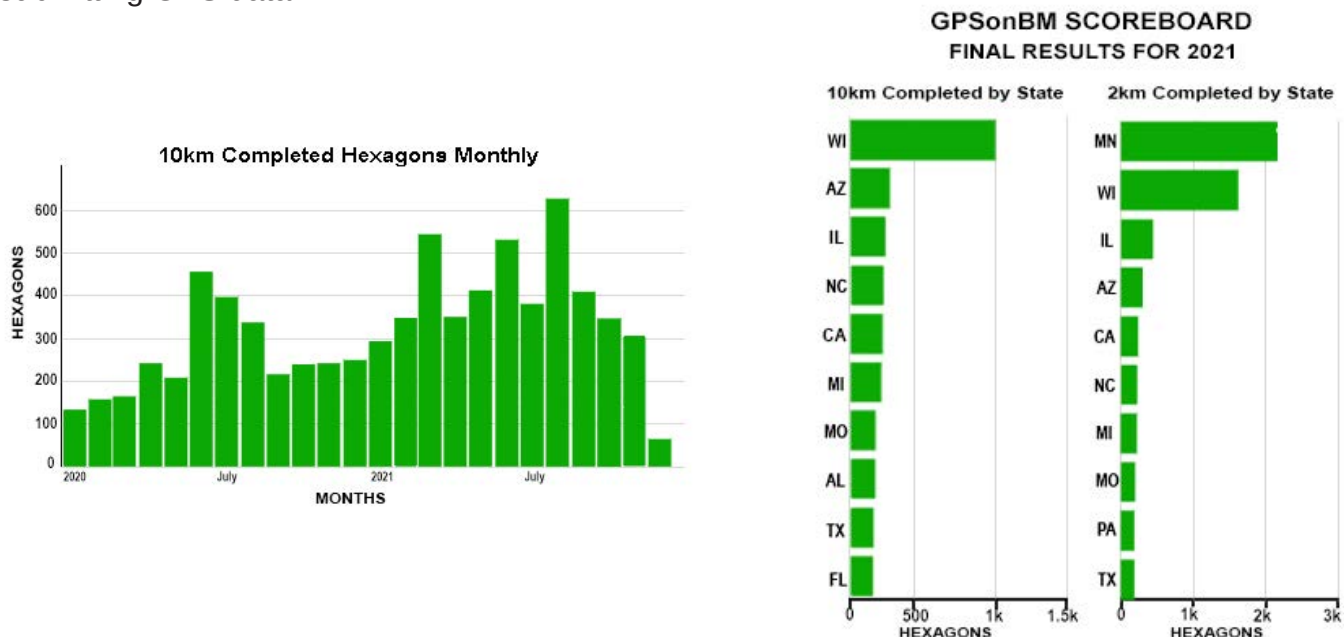
## Campaign Countdown

We now have another 11 months until the December 31st, 2022 cut-off date to collect and submit GPS data to NGS for use in products to be launched with the Modernized National Spatial Reference System. NGS will use the GPSONBM data received by the cut-off date to compute the initial set of 2020.00 Reference Epoch Coordinates (REC) that will be released with the modernized system. This initial set of RECs will be used to build the 2022 Transformation Tool. By getting your data to NGS before the cut-off, you can help us improve the transformation tool in your area and be ready with updated coordinates on the marks you use when the Modernized NSRS is released.



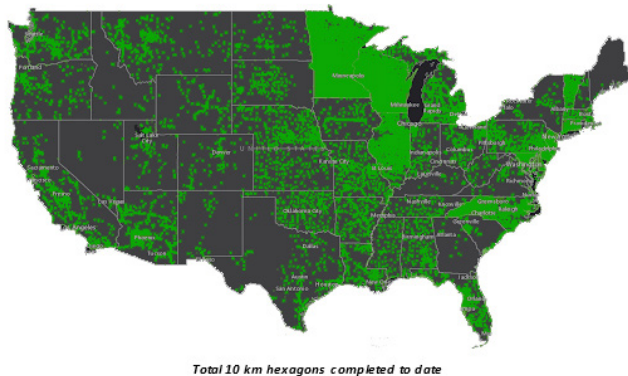
## Recent Progress

Thanks to the enthusiasm and dedication of people around the country, record amounts of valuable geospatial data were submitted to NGS every month throughout 2021! The graph illustrates that the momentum we generated in 2020 increased significantly in 2021. The map shows that data came in from all over the country last year. While Minnesota and Wisconsin have led the pack for the last two years, many other states made great strides toward their data coverage goals in 2021. Check out the GPSONBM [Progress Dashboard](#) to see how your state is doing. If you are up for a little competition (or collaboration), check the [OPUS Shared Solutions Dashboard](#) to see who in your state is submitting GPS data.

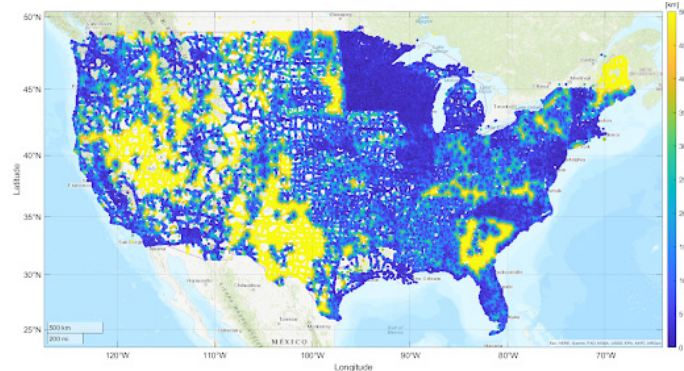


## Opportunities in 2022

All of the green hexagons in the first map below show where we now have data for the transformation tool. Despite all of this progress around the country, there are still areas with large data gaps. By necessity, NGS will interpolate over areas without GPSONBM data, meaning that the transformations will be less accurate in those areas. The final map below shows remaining data gaps of 50km or more in yellow.



Total 10 km hexagons completed to date



Remaining Data Gaps: Yellow areas are data gaps of 50 km or more

## Partners Helping to Get the Word Out

We've hit the ground running in 2022 with an outreach blitz that has been greatly amplified by our partners across the country. First, I had a great discussion about the value of collaboration on mutually beneficial efforts with Tim Burch, the new Executive Director of the National Society of Professional Surveyors, on his podcast "Surveyor Says!" Check out our episode (#111) here at [surveyorsays.podbean.com](https://surveyorsays.podbean.com). NGS looks forward to working closely with Tim and the team at NSPS on getting our community ready for the Modernized NSRS. Please consider getting your state surveying society and/or your local chapter involved in a GPS on Bench Marks project (again) this year. If you get started now, you could be ready to hold an event during Surveyor's Week March 20-26. You can also use such events to highlight the crucial role that surveyors play in all of the infrastructure projects getting underway around the country.

Next out of the gate was Gavin Schrock's excellent article in xyHt "[GNSS on Bench Marks?](#)" Gavin expertly describes the value of the program, some of the challenges we face in carrying it out, and the exciting developments that NGS is working on to improve productivity. I was hooked by his epic opening line, "The GPS on Bench Marks campaign of the National Geodetic Survey is a triumph of constituency participation to improve the nation's geodetic infrastructure."

Finally, we were honored to kick off this year's [NGS Monthly Webinar Series](#) with a webinar titled [GPSonBM: NSRS Modernization Campaign Continues through 2022](#), featuring two inspiring guest stars, Mick Heberlein from Wisconsin DOT, and Jacob Heck, the NGS Great Lakes Regional Geodetic Advisor. Mick and Jacob described how they teamed up to encourage participants across the state to complete observations on nearly all of the priority bench marks in Wisconsin in 2021. Follow their example and take advantage of this extra year of data collection to prepare your communities to derive the full suite of benefits from the Modernized NSRS to come!

NGS tracks participation in this campaign, but we rely on partner participation to be successful. If you have an accomplishment you want to highlight, email [NGS.GPSonBM@noaa.gov](mailto:NGS.GPSonBM@noaa.gov).

# GSCA Conference Update!



SAMSOG has been investing in the future of the Land Surveying profession for many years, and in 2017, we began fostering a relationship with the Georgia School Counselors (High, Middle, and Elementary) through the Georgia School Counselors Association (GSCA). Research indicates exposing students to careers as early as elementary school has benefits and should be done by Middle School at the latest. SAMSOG also began working with Get Kids Into Surveying sponsoring posters and our own character "Sammy" the robotic brown thrasher. Ginger Jones, Executive Director of SAMSOG, attended the GSCA conference November 2021 and received this feedback. We are committed to preserving the Land Survey profession; however, it's nice to know some our work is yielding results.

Good afternoon!

I just wanted to drop you a quick note of thanks for exhibiting at this year's Georgia School Counselor Association Conference earlier this month! It was great being back in person full-swing, and I'm glad you were a part of making that possible and in making it an informative experience for practicing school counselors like me. Despite all the giveaways and flyers that I walk away from your exhibit booth, I know it can take some time to see the return on investment. To support the school counselor-and-industry partnership, I wanted to let you know specifically one of the ways I'm integrating what you offered into practice at my high school.

Of course, as a result of the conversation we had in the conference exhibit hall, I will have more info fresh in mind for when students want to discuss more career field-specific interests. But in addition, I'm expanding the career exploration resources we have on our department website to include a page cataloging career-specific resources--including your website and/or special feature for high schoolers (Career-Specific Resources - NMHS Counseling & Postgraduate Planning (weebly.com)).

I felt inspired to do this because (a) you have rich, GA-specific info to offer for students seeking a career that doesn't necessarily require a four-year degree, (b) this more static resource page won't get buried in our social media/blog/announcement feed over time, and (c) I believe a page like this fills a need for those students who prefer to explore careers more topically rather than through more robust (read: overwhelming) exploration tools.

This may not instantly convert a contact to a student joining your ranks, but it means we'll more consistently direct students and parents to your info. It hopefully also can add to suggestions you can make to other school counselors and educators you interact with. That much is a tangible, direct output of your time and resources invested with us school counselors at GSCA. Thanks again for being a part of that!

Stay well,

**Kevin S. Young, M.A.**

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# FROM EXECUTIVE DIRECTOR

*Ginger Jones*

## THANK YOU ATTENDEES, GUESTS, SPONSORS, AND SPEAKERS FOR MAKING THE 2022 TECHNICAL SEMINAR A SUCCESS.

Attendance was much higher than last year but still not up to pre-COVID numbers. I am happy to report more than 180 land surveyors, sustaining members, guests, and students attended all or part of the two-day program.

Thank you SPONSORS [Allen Precision Equipment](#), [Leica Geosystems](#), [eGPS Solutions](#) and [GPS Geospatial](#). Your support made the seminar enjoyable and continued traditions established LONG ago! Thank you SUPPLIERS/VENDORS for purchasing a booth: [Allen Precision Equipment](#), [Better Communities Collaborative](#), [Carlson Equipment & Software](#), [Construction Laser](#), [Deaton's Geotronics](#), [Duncan-Parnell](#), [Earl Dudley, Inc.](#), [eGPS Solutions](#), [GPI Geospatial](#), [Hayes Instrument](#), [Kucera International](#), [JAVAD GNSS](#), [Leica Geosystems Solutions Center](#), [Remote Mapping Group](#), [RHD](#), [SAM Companies](#), [Smart Drone](#), and [Topo DOT](#). And thank you Georgia Southern University students, staff, and Roger Purcell, PhD for coordinating the Quiz Bowl. I would like to express sincere appreciation to Teeple Hill for planning the program and Dean Olson, Josh Stice, and Joe Jones for assisting with registration.

The Surveying and Mapping Political Action Committee (SAMPAC) "rifle raffle" was a huge success raising more than \$4,000 thanks to Robert Armstrong who won the raffle then gave it back to be auctioned. Thank you, Robert!

The Surveying and Mapping Education Foundation (SAMSEF) equipment raffle will be held at the Summer Meeting in Savannah. Carlson Equipment and Platinum Geotronics have partnered to raffle a Dell 15" laptop with 6 Core 10th Generation, Nvidia GTX 4GB, 265 GB NVMe WITH Carlson Civil Suite installed: a total value of \$6,000+. Tickets are \$50 each and can be purchased at [samsog.org](#) in the "Store".

**REMINDER: ALL SAMSOG BOARD AND MEMBERSHIP MEETINGS ARE OPEN TO MEMBERS!** Go to [samsog.org](#), select the meeting you want to attend, and follow the Go-to-Meeting links to join. It's that simple.

Membership dues expire 6/30/2022. I know it's early, but June will be here before we know it!

Please note the 2022 Annual Meeting and Summer Convention information below, and **remember, Chapter Representatives are voting positions.**

## THURSDAY, 7/21/2022 THRU SATURDAY, 7/23/2022

Hyatt Regency Savannah

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Golf Tournament – Spouse/Guest/Companion Program – Silent Auction – Installation of Officers & Directors are all part of the agenda, and you don't want to miss it!

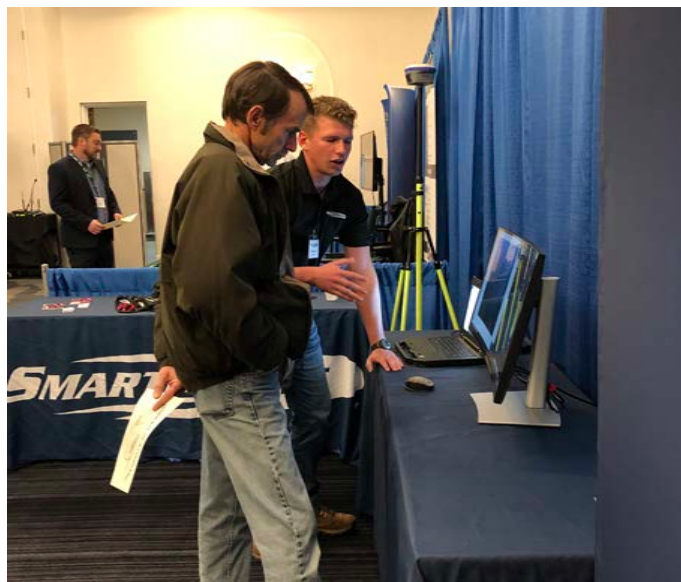
King & Double = \$215+tax+parking. Make your reservation TODAY to guarantee your room type. A link to the reservation website is located at [www.samsog.org](#), select Summer Meeting under the Calendar. Reservation cutoff 6/29/2022.

On a personal note, I am now a member of the grandparent's club! My daughter and her husband welcomed baby Daniel Nolan Willis on March 1, 2022.

If you have any questions, please do not hesitate to ask.

*Ginger Jones*

## 2022 TECHNICAL SEMINAR RECAP!





Pictured left to right: Lauren Hughes, PLS; Dusty Knight, PLS; David Anderson, PLS; Chayce Bell, PLS; Skyler Willis; and Jeremy Witherington.

### SAMSOG's Young Surveyors

met in conjunction with the 2022 Technical Seminar to discuss attracting more people to the Land Survey profession. They also appointed Chayce Bell, PLS as Chairman to take over for David Anderson. David has led the YS for more than four years and was recently elected to the SAMSOG Board of Directors. He and Chayce are planning to attend the National Association of Professional Surveyors meeting in April. Thank you David for a job well done!





Spencer Johnson, Legislative Committee Chairman (left) and Mark Chastain, former Chairman of the Georgia Professional Engineers and Land Surveyors Licensing Board.

## SAMSOG LIFE MEMBERSHIP AWARD

On January 13, 2022, Spencer Johnson, PLS presented Mark E. Chastain, PLS with the Life Membership award. Mark served 18 years with the Professional Engineers and Land Surveyors Board of License and Registration and has assisted the Legislative Committee with numerous issues relative to Georgia Law and Technical Standards. SAMSOG Life Membership is defined in the Constitution as:

*"Any member who has rendered acknowledged eminent service, and who has made valuable and outstanding contributions to the profession."*



# 2022 SAMSOG / NSPS PLAT CONTEST



*GSU Student judging for the 2022 Plat Contest.*

This year, Georgia Southern Civil Engineering students from the Georgia Southern SAMSOG Student Chapter were utilized as Judges for the 2022 SAMSOG/NSPS Plat Contest. These students were trained in the judging requirements by Dr. Roger C. Purcell, P.E., R.L.S.

The student judging requirements included:

- Checking the plat entries for compliance with Georgia Technical Standards for surveys.
- Grading the plats according to Neatness, Legibility, Originality, Form, Consistency, and Composition.

This year's Plat Contest Winners for the state competition are listed below. Thank you to all who participated. Please continue to send in those great plats.

Thanks, and congratulations to all participants:  
Dr. Roger C. Purcell, P.E., R.L.S. (Plat Contest Committee, Chairman)

Retired Chair & Currently, Part-time Instructor  
Surveying-Geomatics Program Coordinator  
Civil Engineering & Construction Department  
Allen E. Paulson College of Engineering and Computing

## 2022 SAMSOG PLAT CONTEST WINNERS

### ALTA Plats

**1st Place: Adam Baxley**  
Land Engineering, Inc.  
McDonough, GA

**2nd Place: Jason Woods**  
Harris Gray, LLC  
West Point, GA

### Boundary Plats

**1st Place: Ryan Martin Roberts**  
Land Engineering, Inc.  
McDonough, GA

**2nd Place: Robyn G. White**  
Patton Land Surveying, LLC  
Gainesville, GA

### Topographical Plats

**1st Place: Robyn G. White**  
Patton Land Surveying  
Gainesville, GA

**2nd Place: Deborah McKinney**  
Land Engineering, Inc.  
McDonough, GA

### Subdivision Plats

**1st Place: Shane Rousey**  
Donaldson Garrett & Assoc.  
Macon, GA

**2nd Place: Bradley Markham**  
Seiler & Assoc, Inc.  
Stockbridge, GA

### Miscellaneous Maps

**1st Place: Jason Woods**  
Harris Gray, LLC  
West Point, GA

**2nd Place: Frank Gaddy**  
Gaddy Surveying & Design, Inc.  
Lawrenceville, GA

### GIS Maps

**1st Place: Samantha Strang**  
Chatham County Engineering Dept.  
Savannah, GA



*SAMSOG Plat Contest Winners at the 2022 Technical Seminar.*





## SAMSEF Equipment Donation

by Mary Von Strasser and her sons Kris and Jon



Josef (Joe) Karl Strasser, PLS January 31, 1939 - October 14, 2003. Joe worked for Crowe, Pope, and Land which later became Crowe, Pope, and Carter in Marietta and around Atlanta. Later in his career, he worked as a Construction Engineer contractor. Joe's family donated his Vintage Transit and Survey to the SAMSOG Education Foundation. SAMSEF successfully auctioned the equipment at the Annual Scholarship luncheon held in conjunction with the Technical Seminar in January. Spencer Johnson with [Wellston and Associates](#) of Warner Robins won the equipment with a bid of \$1,000. Funds raised will be used to financially assist Georgia students studying Land Surveying.

As a 501(c)3 corporation, SAMSEF is able to receive tax deductible items such as property, equipment, and money to fund Land Survey education in Georgia. If you would like to help, contact Ginger Jones at [ginger\\_samsog@att.net](mailto:ginger_samsog@att.net).





# 2022 SURVEYING-GEOMATICS QUIZ BOWL

Article by: Dr. Roger C. Purcell, Georgia Southern University

SAMSOG held the 2022 Surveying-Geomatics Bowl at the 2022 SAMSOG Technical Seminar. The objectives of the SAMSOG Surveying-Geomatics Bowl are to encourage students to become more active members in the SAMSOG Society, to enhance the student's knowledge of the Surveying-Geomatics profession and of the society itself, to strengthen the programs of the SAMSOG student chapters, and to foster a collegial spirit amongst the students and professionals. (The Bowl is a game like Jeopardy®.)

In this year's competition, there were five categories and twenty-five questions. Utilizing their extensive knowledge of Surveying-Geomatics, the Older + Wiser Team was this year's winner, although the Young Surveyors Team and the Collegiate Student Team exhibited a valiant effort.

## Team Contestants:

**The Collegiate Student Team:** Zenan Merritt (GSU), Shane Rousey (GSU), and Burton Blackmar (KSU)

**The Young Surveyor Team:** Dusty Knight, Lauren Hughes, and Jeremy Witherington

**The Older + Wiser Team:** Chris Young, Deal Olson, and Mitch Paulk

## Special Thanks to the S-G Bowl Facilitators:

**Game Developer & Timekeeper:** Dr. Roger Purcell

**Emcee:** Teeple Hill (for Robert Armstrong)

**Competition Coordinator:** Joe Jones

**Judges:** Dr. Gustavo Maldonado (GSU) & Dr. Marcel Maghiar (GSU)

**Offline Scorekeeper:** Dr. Soonkie Nam (GSU)



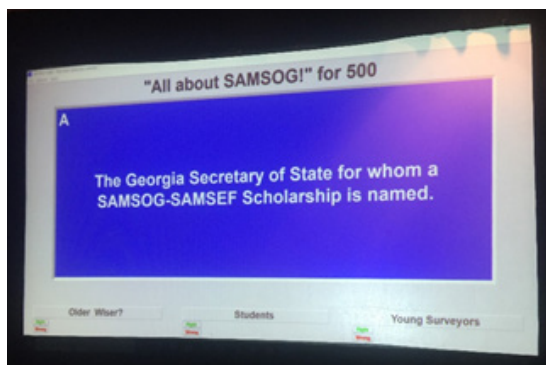
**The Collegiate Student Team:**  
Georgia Southern University +  
Kennesaw State University



**The Young Surveyors Team**



**The Older + Wiser Team**



**Typical S-G Bowl Question**



**The Winners: The Older + Wiser Team  
+ Teeple Hill (Emcee)**



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## *In Memoriam...*

### **S. Marcus Calloway**

S. Marcus Calloway passed away after a bravely fought battle with pancreatic cancer. Marcus founded Calloway Title and Escrow, LLC in 1996 and under his benevolent leadership, has shaped Calloway Title into one of the most highly esteemed title insurance agencies in the Southeast.



Marcus spent his entire career mentoring his employees at Calloway Title, and his legacy will live on through their remarkable efforts to continue to provide excellence in the title industry.

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