

MAY 2023

# SAV FIELD LOG

PREPARED BY  
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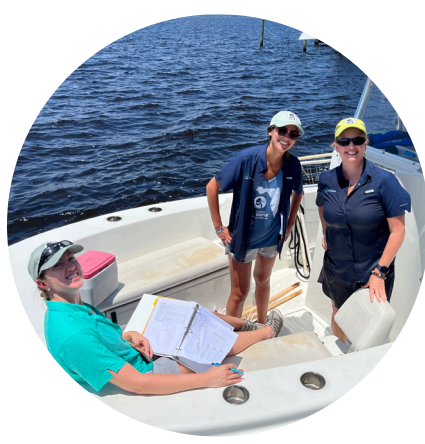


# MAY 2023 *SAVE OUR RIVER'S GRASSES* Background

Submerged aquatic vegetation (SAV) is the foundation of our river's health - providing biofiltration, fish habitat, flood protection and more. Sadly, the St. Johns River is suffering mounting threats resulting in the near demise of our river's SAV.

In May 2023, St. Johns **RIVERKEEPER** (SJRK) launched its first *SAVe our River's Grasses Expedition* seeking answers and solutions to the disappearing SAV of the St. Johns. Over four days, our team surveyed an 80-mile stretch of the river between Doctors Lake and Lake George searching for remaining grass beds, taking measurements, conducting water quality testing, and seeking solutions to restore this vital habitat.

This Field Log captures a summary of our work at each site including conversations and observations with riverfront homeowners and highlights of our SAV Team's data collection in search of solutions to *SAVe our river's grasses*.








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## SITE 1 - DOCTORS LAKE

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Betsy & Tony Sievert's family has owned their Clay County home located on the northbank of Doctors Lake since 1969. Located just west of the HWY 17 Bridge, their property is bulkheaded and historically had lush SAVs and frequent manatee visits. Historically, eelgrass (*Vallisneria americana*, a/k/a "tape grass") used to dominate this area, but has since disappeared. **The Doctors Lake site had higher salinity (6.3 ppt (parts per thousand) than the other sites and no SAV were present at the time of our visit.**

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## SITE 2 - FRUIT COVE

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Ben & LouAnn Williams have lived on the eastbank of the St. Johns just south of Julington Creek for nearly 35 years. Their St. Johns County property has a natural shoreline with mature cypress trees. Once a commercial fisherman and the founder and 35-year owner of Fisherman's Dock, Ben knows and cherishes the St. Johns like an old friend. Ben has fenced off a small portion of river bottom beside his dock to protect fledgling grasses from grazers, a growing problem due to the lack of food for turtles, manatees and fish. He also shared observations from his frequent fishing trips to other areas of the Lower St. Johns. Ben noted that in Lake George, coontail (*Ceratophyllum demersum*), yellow water lily (*Nuphar lutea*), and hydrilla (*Hydrilla verticillata*) all disappeared long before Hurricanes Irma and Matthew. He shared that the southeast corner of Lake George used to be abundant with both eelgrass and coontail. Ben also worries about the decline of alligators in Lake George and Crescent Lake that may be due to the loss of grasses, as the smaller and less mature alligators require the grasses for protection and shelter. **Findings of note at Site 2 include a higher salinity of 5.13 ppt (parts per thousand) and only sparse SAV presence at 28 meters off-shore ([Attachment B](#)).**

On 6/29/2023, the SJRK team returned to the Fruit Cove site to attempt to get a more holistic view of the SAV further offshore. **Findings of note during this visit include a lower salinity of 2.01 and more pronounced SAV presence starting at 19m offshore, continuing more than 40m offshore.** This post-expedition site visit is purely anecdotal and will not be used in any numerical analysis as it relates to water quality parameters or SAV distribution, canopy height, or abundance.





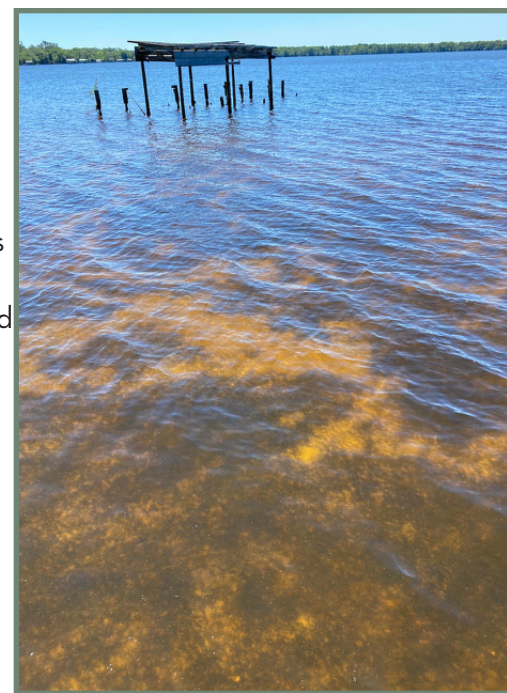
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## SITE 3 - COLEE COVE

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Victor Jackson has lived in Colee Cove for 28 years. His property on the eastside of the St. Johns on Colee Cove has a low wooden bulkhead with several large cypress trees. Victor has witnessed the visible decline of eelgrass behind his home compared to what was once a healthier distribution (see *abundant SAV cover in the April 2020 photo to the right*). The SJRK team found grasses off his shoreline, with an overall canopy height of 1-4 cm.

The SJRK Team also noticed a flailing catfish (approx. 12" in length) in poor health. It has been observed throughout the watershed that catfish populations in particular have been declining at an unusual rate. Following the Spring 2023 tour, the Florida Fish & Wildlife Conservation Commission (FWC) confirmed there had been a fish kill in the area of mostly catfish. Cyanobacteria, or harmful algal blooms, were identified as the cause. **Findings of note for Site 3 include short, stunted grass and a higher pH of 9.29.**



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## SITE 4 - TOCOI

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The Tocoï site was not initially planned as part of SJRK's first expedition, but SJRK visited on 5/31/2023 after determining that the location would provide potentially helpful comparisons due to historical SAV abundance. Ken and Joanne Schultheis live in St. Johns County on the eastbank of the St. Johns in Tocoï, a small community near Tocoï Creek. Ken, along with his neighbors Dan and Jenny Palmer (owners since 2000), have noticed a loss of eelgrass behind their homes. Dan and Jenny's dogs often enjoyed the abundance of grass (*photo, left*), which is evident of ample SAV before Hurricanes Matthew and Irma. No grass was present behind Ken's home at the time of our visit. This post-expedition site visit is purely anecdotal and will not be used in any numerical analysis as it relates to water quality parameters or SAV distribution, canopy height, or abundance.





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## SITE 5 - DANCY POINT

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Ray and Lana Bunton have lived on the eastbank of the St. Johns in East Palatka for 47 years. Additionally, Ray's family has lived at that location since 1970. Ray partnered with his friend David Girardin and FWC to fence off nearly three acres of riverbottom through a public partnership to monitor SAV growth while protected from grazers. The shoreline consists of a wooden bulkhead. The SAV team monitored SAV and water quality inside the fenced area as well as outside of the protected zone. Due to SAV presence, the transects here were the longest of any site, at 32 meters inside the fence and 30 meters outside the fence. **Inside the fence, SAV was more dense and its canopy height was taller. Epiphytes were found growing on the SAV, which can block light and hinder photosynthesis. Eutrophic (higher dissolved nutrient concentration) conditions increase epiphyte abundance (Sagan 2007; Stallings, 2015). SJRK documented SAV outside the fence as well, but the grasses were shorter and less dense ([Attachment B](#)).**



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## SITE 6 - SAN MATEO A

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Tim Houghtaling and Leslie Mullins have lived on the eastbank of the St. Johns River in Putnam County since 2013. Their property has a metal bulkhead. Tim is actively advocating for more protections of our river's grasses. In March of 2022, he installed his first fenced enclosure similar to Site 5 - Dancy Point, but on a smaller scale. Inside the fence the SJRK team identified primarily eelgrass ([Attachment B](#)). Since our visit to his riverfront property, their enclosure was breached and grazers consumed the SAV, demonstrating the current threat of grazers due to lack of food sources. **This site had an average percent cover of 51% and the longest canopy height of all sites at 22.5cm within the protected area.**





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## SITE 7 - SAN MATEO B

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Sam and Lorraine Carr have lived on the eastbank of the St. Johns in Putnam County for 25 years. Their property is bulkheaded and features majestic live oaks that date back to William Bartram days. Sam has witnessed significant loss of eelgrass in his area. The photo to the right is from July 23, 2012 where Sam and Lorraine Carr's dog Trixie can be seen playing in the once-abundant grasses in the sandbar just upstream from Sam's home. An avid fisherman and conservationist, Sam spends ample time on "his river." At the time of the SJRK Team's first site visit, the tide was too high to get an accurate SAV sample.



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## SITE 8 - SAN MATEO C

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The SJRK team returned to the San Mateo area the following day and took intercept and quadrat samples just south of Site 7 - San Mateo B due to better accessibility, lower water level, and less tree canopy cover. This property was also bulkheaded.. **SJRK found sparse amounts of eelgrass at this site, with the average percent cover at 30% ([Attachment B](#)).** Cyanobacteria were observed as our team exited the river. Lab reports identified 5 strains of potentially toxic species, but fortunately the toxicity levels at this particular site were low at the time of exposure ([Attachment G](#)).





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## SITE 9 - SATSUMA SPRING

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Satsuma Spring is a third-magnitude spring (discharge of 1-10 cubic feet per second) with a run that flows a quarter of a mile northwest as it enters the St. Johns River near Acosta Creek (SJRWMD, 2023b). Willam Bartram documented his visit here during the 18<sup>th</sup> Century and it remains a designated Bartram Site on the Bartram Trail of Florida and Putnam County. Water depth and site inaccessibility prevented the team from sampling SAV on this occasion, but the team was able to take water quality measurements. Water quality readings were average for the site location ([Attachment B](#)).

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## SITE 10 - WELAKA

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The Welaka site is located at the home of Jessica and Kevin Finch, who have lived at the property since 2012. The shoreline was natural with cypress trees. The SJRK team only found one species of SAV, *Chara sp.*, which is a type of grass-like algae that is growing where healthy eelgrass once did and is commonly referred to as “musk grass” due to its unpleasant odor. This macroalgae is not new to the St. Johns River, but we have found no evidence of *Chara sp.* being the dominant species. *Chara sp.* has a low biomass and thus does not represent an ideal food source for grazers. It is typically found more frequently in Lake George and Crescent Lake. There is evidence to suggest that *Chara sp.* is an early colonizer that appears prior to other SAV species growth, which could be a positive indicator of more diverse and abundant SAV growth in the future.







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## SITE 11 - BEECHER POINT

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The SJRK team visited the River Bend Condominiums just south of Welaka in Beecher Point. This site was visited on the expedition but was revisited on 6/15/2023, as the SJRK did not measure for grasses on the initial site visit. The site was bulkheaded with cypress trees on the bank. The SAV Team found river grasses dominated by *Chara sp.* like the Welaka Site. The team had to end the transect at 5m due to high waters and the mucky sandy bottom. The site's *Chara sp.* averaged 58% percent cover. Melanie Townsend, a condominium resident, expressed she has seen a dramatic loss in local eelgrass, but noted that she had seen *Chara sp.* there previously. Another condominium resident, Mary Edwards, noted that she has seen *Chara sp.* grow in the area before Hurricanes Matthew and Irma, but not in its current magnitude. This post-expedition site visit is purely anecdotal and will not be used in any numerical analysis as it relates to water quality parameters or SAV distribution, canopy height, or abundance.

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## SITE 12 - DRAYTON ISLAND

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Ken & Jamie Baxley have lived at this property since 2004. The site exhibited a natural shoreline with a gentle slope and cypress trees. The SJRK team took water quality samples and noticed only *Chara sp.* at this site like Sites 10 & 11.. As SJRK exited the water, team members noticed streaks of a potential algal bloom in the vicinity as well as noticeably green sand on the shoreline. Lab reports identified 6 strains of potentially toxic species, but fortunately the toxicity levels at this particular site were low ([Attachment G](#)). It should be noted, however, that toxicity levels can increase drastically in short periods as weather patterns and environmental conditions change. Cyanobacteria can exist both in the sediment and on the surface as a green, filmy substance.





## SITE 13 - LAKE GEORGE

This site is located on the southeast bank near the southern tip of Drayton Island. After getting water quality parameters, the SJRK team submerged into the water in search of grasses, but discovered bright green sand instead. The team took sediment samples from this site, which tested positive for 5 strains of potentially toxic species, but fortunately the toxicity levels at this particular site were low ([Attachment G](#)). No SAV was found.





For more information and updates as the Expedition continues,  
visit [StJohnsRiverkeeper.org](http://StJohnsRiverkeeper.org).

