Seagrass Initiative Technology Advisory Council Meeting Minutes

Mote SEA, February 13, 2026

Attendee List

In Person	Virtual
Abby Steinwachs	Althea Moore
Allison Patranella	Irene Arpayoglou
Beau Williams	Carter Henne
Becky Prado	Christina Richards
Bethany Burns	Danielle Talley
Carla Persckty	Dottie Byron
Cassandra Bernsten	Elizabeth Salewski
Christina Richards	Erin Cox
Dom Gallery	Iris Segura
Eve Iavarone	Jenna Harper; Florida DEP
Iris Segura	Jennifer Hansen
James Douglass	Johannes Krause
James Locascio	Josh Adams
Jennifer M. Bell	Katie Baltzer
Joanna Walczak	Lauren Alvaro
Kari Imhof	Lindsey Smith
Kasey MacLeod	Linda Walter
Kevin Claridge	L Morris
Laura Reynolds	Luciana Banquero
Liz Longstreet	Matt Bernanke, GTM NERR
Mallory Sea	Megan Christopher
Mia Braun	Megan Conkling
Mya Wayne	Melynda Brown DEP
Nathan L'Esperance	Mitch Faloona
Rachel Brewton	Olivia Escandell, FWC
Robert Johnson	Rachel Brewton
Sarah Davis	Ryan Schloesser
Scott Eastman	Ryann Rossi
Susan Bell	Treiana Zuill
Thomas Ries	Tyler Provoncha
Toufiq Reza	Whitney Scheffel | PPBEP

- Welcome to Mote SEA
    - New aquarium welcome, very important science displayed here for public outreach and education
    - Moved around the state and back to where we started in Sarasota
- Logistics and Meeting Overview
    - Kevin reviewed all agenda items

- TAC Roll Call
    - Dr. Michael P. Crosby – Mote, Co-Chair
    - Dr. Laura Reynolds – UF, Co-Chair
    - Beau Williams – Governor Appt
    - Carter Henne – House Speaker Appt
    - Dr. James Douglass– Senate President Appt
    - Dr. Bradley Furman – FWC Appt
    - Scott Eastman – DEP Appt
- Co-Chair opening comments
    - Laura - Really excited about what has happened in the last few weeks, lots of new collaborations, research on *Zostera marina*, GOAA is coming up with a whole session on seagrass
    - Carter - Sorry I couldn't be here in person, feedback made it hard to hear
- Florida Sunshine and Public Records Laws and FAR Notice
    - The Florida Sunshine Law applies to the Seagrass Restoration Technology Development Initiative, Technical Advisory Council.
    - Florida's Sunshine Law was created to protect every Floridian's right to public access to meetings and records concerning government programs, which provides transparency.
    - This applies to any meeting where official acts are to be taken or public business will be discussed.
    - The public must be given reasonable notice of meetings that are to occur.
    - DEP generally recommends notice for public advisory group meetings to be published in the Florida Administrative Register no less than 7 days before the meeting and ensure that it is posted on the Initiative website.
    - Posted on January 30th, 2026
    - Minutes of meetings must be taken and documented, but do not have to be verbatim.
    - This meeting's minutes will be posted on the Mote Seagrass Ecosystem Research & Restoration website with previous meetings' minutes, agenda, and presentation.
    - Advisory Boards are not required to have audio recordings of their meetings; but if a meeting is recorded by a member or staff then it is a public record.
    - Any discussion between two or more members of the Technical Advisory Council discussing a topic which may foreseeably come before their board must occur in the sunshine.
    - You are not restricted from socializing with other members of the Council, but you may not discuss anything that may foreseeably come before the board.
    - Discussion of official matters outside of a public meeting is a violation of the Sunshine Law.
    - This Technical Advisory Council is subject to Florida's Public Records Law (even if you yourself are not a government employee), because records relating to the Seagrass Restoration Technology Development Initiative are made or received in connection with the transaction of the official business of the State.
    - Public Records are ALL documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, etc. regardless of the physical form…or means of transmission made or received in connection with official action of an agency. Sec. 119.011(12), F.S.

    - Public records must be open and available for the public to inspect and copy.
    - This includes emails, text messages, and social media.
- Seagrass Initiative Overview
    - Signed into law by Florida Governor DeSantis in July 2023
        - 403.93344 Florida Statutes
        - Partnership with DEP and UF
    - $10 million over 5 years contracted by DEP to Mote
        - Grant Agreement Executed February 2024
    - Legislative intent:
        - establish a collaborative and coordinated effort among public and private research entities to develop restoration technologies and approaches to address the loss of seagrass and the cascading ecological and economic impacts of that loss to communities in this state
        - department shall award funds specifically appropriated by the Legislature for the initiative to Mote Marine Laboratory, which shall function as the lead administrative component to achieve the goals of the initiative
        - initiative shall leverage state-appropriated funds with additional funds from private and federal sources
        - Mote Marine Laboratory and the University of Florida shall create a 10-year Florida Seagrass Restoration Plan to implement tools and technologies developed under the initiative
- Initiative Partners - DEP, UF, Mote
- Eve Iavarone – DEP Grant Agreement and Reporting Requirements
    - Beginning January 15, 2024, and each January 15 thereafter until its expiration, the initiative shall submit a report that contains an overview of its accomplishments to date and priorities for subsequent years to the Governor, the President of the Senate, the Speaker of the House of Representatives, the Secretary of Environmental Protection, and the executive director of the Fish and Wildlife Conservation Commission.
    - DEP Contract Technical and Financial Reports
    - Public Website
    - TAC Meetings – FAR, Presentations, Public Comments and Minutes
    - Public Records
- Eve Iavarone – Seagrass Initiative Progress Overview
    - Mote Administrative Structure
    - 1st , 2nd , and 3rd Accomplishments and Priorities Report
    - Leveraged Funding
        - NOAA
        - Philanthropic
            - Publix Seagrass Genetics Research Hub
            - Wolf Foundation Biogeochemical Carbon Sequestration Building
    - Initiative Technical and Financial Reports submitted
    - Released competitive 1st RFP

        - Funded 8 projects that are now wrapping up
        - Receiving Final Reports
    - Released 2nd competitive RFP
    - Funded 8 projects (excluding UF)
        - Subcontracts sent and executed
        - Projects underway
    - Funded 6 more utilizing Year 3 funds
        - Subcontracts executed, projects underway
    - Continued work with consulting firm, Moffatt & Nichol, on the 10 Year Seagrass Restoration Plan
        - 122 management documents reviewed
        - Florida Seagrass Restoration Sites website completed
        - Draft Plan Framework
        - Draft habitat suitability model in progress
    - Greenhouse structure operational
        - Projects in progress and completed
        - Working on expansion
    - Outfitting "house" for visiting researchers
- Liz Longstreet – Facility Updates
    - New design of 12 tanks with some sort of ocean acidification control, separate salinity and temp controls, slightly smaller tanks after hearing feedback from researchers and visiting scientists
- Dr. Dom Gallery – Genetic Management Plan update
    - Genetic Lab update expected to be complete 2026, any funded projects can use this space for research during their greenhouse experiments
    - We have received samples from 7 projects so far
    - SOP was sent to Years 1-3 funded projects
        - Approximately 8-12 cm of tissue sample should be collected per individual
        - Place samples into a teabag, place teabags into ziplock bags and add blue-indicator silica gel to the ziplock
        - Mail samples at ambient temperature overnight to Mote
    - SOP was sent to Years 1-3 funded projects
        - Website from Big Sea is now operational
        - Please submit your metadata using the intake form
    - We have contracted BreedBase at the Boyce Thompson Institute located at Cornell University to track genotypes and associated metadata
        - Built the initial accession for individuals we have received so far
        - Began integrating the two platforms
    - Extracted over 800 samples of 4 species of seagrass for the genetic library
    - Optimized the seagrass extraction protocol

    - Library preparations for 400 samples are ready for sequencing (including those with previous microsatellite sequencing)
    - First batch has been sent to UF for sequencing
    - Hoping to have metadata ready for next TAC Meeting
    - Iris - For people that took samples but don't have the full tissue amount left should we still submit them to you for the genetic library?
        - Dom: Yes, we have been optimizing extraction methods to get DNA with even less tissue than suggested. So we can still try to get the DNA even if you send us a small amount of tissue
- 10-Year Seagrass Restoration Plan – Becky Prado, Moffatt & Nichol
    - Review of plan framework
    - Focusing on the Resilient Seagrass Restoration Recommendations for this presentation
    - Chose Florida Bay as the test site
    - Using the following data points to build this
        - Dissolved Oxygen
        - Salinity
        - Water Temperature
        - pH
        - Turbidity
        - Secchi Depth
        - Bathymetry
        - Seagrass Habitat Map
        - Wave energy
        - Proximity to navigation
    - Also looking at species presence in the area, maps are just a snapshot from 2024 for presentation purposes
    - Once built you can test different scenarios and weights of variables
    - Questions open to TAC Members?
        - Scott – Aquaculture side of it, do we hope to have a menu of genetically created genotypes of seagrass?
        - Beau – Who is going to pay for this genetic testing? We don't have the funding to do this genetic testing on our own
        - Becky - Dom's team is working hard to minimize the cost per sample but unknown how we will fully do this
- Funded Project Overview – Year 2 Presentations
    - Continued work from Dr. Laura K. Reynolds, University of Florida
        - Populations of *Halodule* are much more different than population of *Thalassia*, which is important when thinking about the distance we are moving plants
        - Scott – with the insight of genetics, are some differences in genetics based on past restoration?

        - Laura- none of these are past restored sites so I don't think so, but Susan Bell's group is looking at that a bit, as well as Gulf Shellfish Institute. I think it is an important question to look at
- *Comprehensive assessment of the genomic variability in Syrangodium filiforme populations in relation to environmental and stressor heterogeneity across Florida* – Dr. Iris Segura Garcia, Florida Atlantic University Harbor Branch
- *Supporting Seagrass Restoration in Lake Worth Lagoon* –Joanna Walczak, Loggerhead Marinelife Center
    - James– what are proposed remediations to deal with muck?
    - Joanna – taking clean sediment and raising the grade so the muck can't settle, but clean fill is hard to come by so also looking at alternative methodologies
    - Jennifer – is dredging affecting this?
    - Joanna – there is a lot of dredging, but muck is coming mostly from the canal and stormwater runoff
- *Differential gene expression and productivity in response to ocean warming for two Halodule wrightii populations across a latitudinal cline* –Mya Wayne, University of New Orleans
    - Scott – how did you perform site selection?
    - Mya – three sites because of how many replicates we could have during the experiments, sites selected are still pending based on permitting but based on latitudinal cline
    - Laura – how did you select temperatures?
    - Mya – last year we ran a similar experiment with heat stress, noticed that plants did better in heat so wanted to increase heat
    - Jennifer – what type of substrate?
    - Mya – sand and oyster shells in both and substrate from each location
    - Erin – we will take cores with sediment intact, then place in larger container with aragonite mixture and then bring them up to heat temperature for the experiment
- *Seagrass Strikes Back: A new hope for fighting Marine heatwaves (MHWs) with Thermo-Priming* – Carla Perscky, University of Central Florida
    - Laura – did the disease impact just the controls?
    - Carla – it affected all of them, tried to prevent this when collecting but there were no visual cues of disease when collecting, hoping that there is a genetic marker indicated during genetic analysis
    - Scott – is there a level of prevalence at the collection site?
    - Carla – I saw it along the shoreline wrack because the roots become necrotic so it got displaced from sediment, but could not see it when in the water
    - Jennifer – is there anything that can stop it?
    - Carla – some literature that says chlorine can help but that is not a feasible solution
- *Influence of biochar on seagrass growth, health, and ecological interactions* – Dr. Toufiq Reza, Florida Institute of Technology
    - James – interesting to see shoot counts go up and down
    - Tofuiq – could be based on time, so expanding experiment length could help figure that out

        - Scott – the arrows are overlapping a bit, could this have a bell curve of negativity of growth? If you add too much, would the seagrass die off?
        - Tofuiq – yes, adding too much would probably not be good for the seagrass
    - *Investigating the Influence of Ocean Acidification on Seagrass Resilience to Nutrient Loading* – Dr. Robert Johnson, University of Wisconsin-Madison
        - James - When using an adult plant do you collect cores?
        - Robert – Couldn't collect enough cores to grow them in there during the experiment
        - Scott- did you think of doing a range of pH values?
        - Robert – yes, I would have loved to but was not feasible for this experiment
        - Erin – could you speak to other studies as to why there was such variability in these studies and what we think we can say about this for the natural community?
        - Robert – what are you referencing specifically?
        - Erin – for instance, *Halodule* being in a low light and low nutrient environment
        - Robert – multiple stressors are always occurring at once, so it's hard to separate them sometimes in the wild and look at the mechanism in which these stressors operate
    - *The Resiliency of Halodule wrightii to Increased Temperature, Freshwater Discharge, and Light Limitation Florida* — Dr. Megan Conkling, Florida Atlantic University Harbor Branch
        - Laura – when talking about genotypes are you talking about clones or individuals from different populations?
        - Megan – for experimental setup? We are hoping to have different genotypes represented for each treatment, but we don't have a lot of material. So we are going to sequence and try to distribute them throughout treatments
    - James – overall observation is that it is hard to grow seagrass in tanks, are there shareable insights into how to grow it happily?
    - Kevin – That's a good idea to create something like that. Our Bahia Honda partnership is going online, trailer going down for office space and outreach and construction will begin this year
    - Jennifer – confer with tank growth struggles, one suggestion is depth is important for more sunlight
    - *Assisting the role of interspecific competition and sediment quality stressors on shoal grass restoration* – Dr. Jennifer Hansen, Brevard Zoo
- Funded Project Overview – Year 3 Presentations
    - *Information on seagrass genetic diversity (Year 1) in Tampa Bay offers insight into restoration protocols and sets the stage for the next sets of field and mesocosm studies* – Tom Ries/Dr. Christina Richards, Ecosphere Restoration Institute/USF
        - Scott – between the two restoration sites (natural and restored) there was no crossover between the two, is that because of the source site of the plants?
        - Susan – all source plants for restoration were from nearby areas, so it's not surprising that there isn't much crossover
        - Iris – do you know if there has been any *Syngodium* restoration in Tampa Bay?
        - Tom – no, most restoration is *Halodule*
        - Jennifer – what is unique about the local environment that makes restoration successful?

- Christina – that's the million-dollar question
- Susan – different places had different time tables of recovery, if we had more monitoring we might've found the same results at other locations

o *Developing Technology for Kilometer Scale Seagrass Restoration in Florida* – Nate L'Esparance , Ulysses Ecosystem Engineering
- Carla – how shallow can it go?
- Nate – as low as a meter and a half
- Carla – how will the robot be able to determine flowering?
- Nate – it's going to take a lot of data sets to review and run it through software and ai engineering, then extrapolate that across the desired area via video
- Megan - What is the mechanism/how much disturbance is there to the seagrass bed and substrate by the collection process?
- Nate – there will be situations where you don't need to cut the seagrass to collect the flower/seeds, it could just be a comb of collecting seeds, but in some situations it may need to cut just a little off the top to grab flowering shoots

o *Assisting seagrass recovery in Southwest Florida: Examination of transcriptome-wide gene expression variation to identify low-light resilient Halodule wrightii genotypes* – Dr. Mallory Sea, Gulf Shellfish Institute
- James – interesting about winter senescence in murkier waters, I wonder what the context is of different sediments based on where seagrass was taken from
- Scott – what was the sediment ratio?
- Mallory – 1:5 ratio, less live sediment and more aragonite sediment
- Kevin – do we have anyone looking to publish something on best greenhouse practices?
- Allison – we are in the process of working on something for the next SIMM Report

o *Using Long-Term Passive Acoustics to Evaluate Seagrass Restoration Efforts* – Dr. Jim Locascio, Mote
- Laura – how do you deal with more plants causing more air bubbles, is there a lot more attenuation of sound? How do you plan to deal with this?
- Jim – not aware of anything that includes that in acoustic recording, but if it is a big problem we can research that
- Laura – I more so meant how air bubbles make it quieter and harder to pick up on sounds
- Jim – lots of factors can affect how an ecosystem sounds, so there isn't a fix necessarily, but you can understand the factors and physical environment
- Robert – seagrass blades themselves alter sound waves, so will the density of seagrass affect the sound signals?
- Jim – the physical environment will always affect the propagation of sounds, so it seems like we need to map out the array of sounds in a seagrass area. We can map out the active space of each habitat which can give us a frame of reference for how we can sample areas
- Jennifer – lots of studies on how well plants grow with music, have you looked at how well plants grow with lots of sounds?

        - Jim – have not thought of that, but one way to improve recruitment on coral reefs is to add more acoustics, so something similar could be done with seagrass and it could be tested
        - Laura – there is a paper about sounds affecting seagrass specifically
    - *Continued exploration of the potential for seed-based restoration using Manatee Grass* – Treiana Zuill, Florida International University
        - Laura – as you've been out this winter, are you observing any delay in flowering because of how cold it is?
        - Treiana – can't say anything with any statistical certainties, but we are observation fruit development much earlier than last winter
    - *Testing variation in stress tolerance and restoration potential of Florida seagrass subpopulations* – Dr. Althea Moore, Texas A&M University – Corpus Christi
- Scott – how do we capture all of the information we are learning from all of these research projects?
- Kevin – great question, some of it from the 10 year plan will feed into that
- Laura – maybe as a final project someone pulls this all together into a synthesis paper and literature review?
- Becky – we won't know what comes out until we get till the end. The power of the plan is that it is a support tool that will have layers upon layers of information, this final decision plan framework can give recommendations
- Dom – a lot of these experiments are feeding directly into the genetic library, and I see us not only publishing this with each partner individually but also a synthesis of all of the information published together
- Next RFP Discussion
    - Eve – timeline of RFP is a possible release in spring with projects starting in that fall when we get our next year of funds. Any comments or preference for this?
    - Scott – maybe a propagation and growing techniques focus?
    - Beau/Carter – I like that
    - Laura – understanding sex ratios is really important, kind of happening on the side but more focus would be beneficial, and need to understand disease dynamics as we are moving plants around the state
    - Scott – sex ratios of optimal restoration?
    - Laura – and making sure we know that we are not only using female or male plants
    - Scott – also looking up the trophic levels to see restoration success
    - Kevin – need to make sure we have the processes to make sure this rolls out smoothly
- TAC Discussion Topics
    - Kevin – How to codify the 10-yr plan: lots of discussions with Becky and many partners, it will fizzle overtime so how do we keep that alive?
    - Kevin – Any other leveraging opportunities? NOAA and donor funding, TAC members submitting proposals
    - James – one way to think about it is combining active and passive restoration approaches. Maybe couple water quality initiatives with seagrass restoration initiatives?
    - Updates from anyone:

        - Carla – permitting wise, there has been ethical concern about transplanting seagrass to different areas at other seagrass meetings, after this thermo-priming experiment there are there going to be a lot of hurdles permitting wise to move plants for restoration around the state
        - Scott – since we kind of gotten ahead of this with movements of coral, we are optimistic that it can happen
        - Beau – we've been applying to the seagrass general permit and we have gotten 300 acres permitted, but it is not very user friendly and there are lots of disparities between district offices
            - Scott – programmatically we look across APs for consistency, when there is one call in one region its hard to change that in a different region
    - Kevin – Pensacola & Perdido for next meeting location?
- Public Comments – 3 minutes each or via card/email
    - Joanna – I'm coming from the coral reef side of the house, so I want to emphasize how important it is to talk to coral people and how it relates to decision making. Florida Reef Biological Condition Gradient is a decision-making EPA tool that gives you a very specific way to link habitat and water quality