



CHNEP Technical Advisory Committee Meeting
Thursday December 2nd, 2021
Hybrid In-person & Virtual Web Meeting

Technical Advisory Committee Meeting (TAC) Draft Minutes
December 2, 2021

Members Present via WebEx:

Devon Moore	City of Winter Haven, TAC Co-Chair
Ernesto Lasso de la Vega	Lee County Hyacinth/Mosquito Control District, TAC Co-Chair
Kevin Kalasz	US Fish and Wildlife Service (USFWS)
Mark Sramek	NOAA National Marine Fisheries Service (NMFS)
Melynda Brown	Florida Dept. of Environmental Protection (FDEP)
Dave Blewett	Florida Fish & Wildlife Conservation Commission (FWC)
Nathan Gavin	South Florida Water Management District (SFWMD)
Mark Walton	Southwest Florida Water Management District (SWFWMD)
Brandon Moody	Charlotte County
Rick Armstrong	Lee County
Greg Blanchard	Manatee County
Gregory Knothe	Polk County
Kraig Hankins	City of Cape Coral
Dana Dettmar	City of Sanibel
Chadd Chustz	Town of Fort Myers Beach
Savannah White	City of North Port
Daniel Roberts	Peace River Manasota Regional Water Supply Authority
David W. Ceilley	Aquatic Ecologist
Mark Barton	South Florida Water Management District (SFWMD)
Rick Armstrong	Lee County
Aaron Zimmermann	Sarasota County
Mary Thornhill	City of Winter Haven
Jeff Devine	West Coast Inland Navigation District (WCIND)
Jessica Frost	South Florida Water Management District (SFWMD)

Others Present:

Jennifer Hecker	CHNEP
Nicole Iadevaia	CHNEP
Andrew Webb	CHNEP
Sarina Weiss	CHNEP
Sophia Brown	CHNEP
John Cassani	Calusa Waterkeeper
Anthony Gillis	Florida Fish and Wildlife Conservation Commission (FWC)
Corey Anderson	Florida Fish and Wildlife Conservation Commission (FWC)
Nicole Burns	Florida Fish and Wildlife Conservation Commission (FWC)
Daniel Smith	Florida Gulf Coast University (FGCU)
Darren Rumbold	Florida Gulf Coast University (FGCU)
Dustin Everitt	Florida Gulf Coast University (FGCU)
Melissa May	Florida Gulf Coast University (FGCU)
Jennifer Thera	Florida Gulf Coast University (FGCU)
John Ryan	Sarasota County
Leslie Haynes	Lee County

Steve Boutelle	Lee County
Kris Kaufman	NOAA Fisheries, Office of Habitat Conservation
Marcelo Lago	Lago Consulting
Meredith Budd	Florida Wildlife Federation
Roger Copp	Water Science Associates (WSA)
Stephanie Erickson	Florida Dept. of Environmental Protection (FDEP)
Kayla Hayes	Florida Dept. of Environmental Protection (FDEP)

Agenda Item #1 – Call to Order and Introductions — Ernesto Lasso de la Vega, Co-Chair

Co-chair Ernesto Lasso de la Vega called the meeting to order at 9:30 am. Introductions were then made.

Agenda Item #2 – Agenda Additions or Deletions — Ernesto Lasso de la Vega, Co-Chair

Agenda Item #12 was postponed on the agenda until the April TAC meeting.

JESSICA FROST MOVED, SECONDED BY DANIEL ROBERTS TO ADOPT THE AGENDA WITH THE CHANGE OF AGENDA ITEM #12 BEING REMOVED. THE MOTION WAS CARRIED UNANIMOUSLY WITH NO FURTHER DISCUSSION.

Agenda Item #3 – Public Comments on Agenda Items – Ernesto Lasso de la Vega, Co-Chair

No public comments on agenda items were made.

Agenda Item #4 – Technical Advisory Committee August 12, 2021 Meeting Minutes — Ernesto Lasso de la Vega, Co-Chair

No edits were made to the August 12th, 2021 Technical Advisory Committee Meeting Minutes.

RICK ARMSTRONG MOVED, SECONDED BY MARK BARTON TO APPROVE THE MINUTES AS PRESENTED. THE MOTION WAS CARRIED UNANIMOUSLY WITH NO FURTHER DISCUSSION.

Agenda Item #5 – CHNEP Update — Jennifer Hecker, CHNEP

CHNEP's Executive Director, Ms. Jennifer Hecker, presented on programmatic activity occurring since the last Technical Advisory Committee meeting.

Financial support continues to be a priority. CHNEP staff prepared customized 2022 invoice letters to all 10 counties and 25 cities in the CHNEP area. These packets included the FY21 invoices, CHNEP CCMP Summary, 2021 Legislative Priorities, and project fact sheets. Additionally, CHNEP received \$493.30 in private donations and three (3) grant applications, completed six (6) grant progress reports, had one (1) grant proposal selected for funding and one (1) grant awarded. Other highlights for this cycle include:

- Invited to and drafted grant proposal with the City of Punta Gorda and The Nature Conservancy to submit to the FDEP for the “Tiki Point Living Shoreline Restoration Project”
- Submitted finalized Quality Assurance Project Plan to EPA for “Cyanobacteria Rapid Response Pilot Project” and was approved
- Reviewed EPA Climate Ready Costs document
- Amended FY21 and finalized FY22 budgets which were approved by the Policy Committee

- CHNEP was awarded EPA FY22 grant funding agreement
- Submitted letters to SWFWMD to define TBD projects in FY19 & FY21 agreements as the Myakka Headwaters Pilot Project
- Submitted FY2021 NEPORT Habitat and Leveraging entries with over 70 submissions
- Input requisitions to the City's procurement process for continuing projects that start October 1st through FY22
- Input requisition for "Updating & Expanding the Functionality of the CHNEP's Water Quality Trend Analysis"
- Closed out FY21 by carrying over purchase orders and re-appropriating funds as necessary for FY22

CHNEP hosted and attended a number of meetings, and staff gave presentations at multiple scientific symposiums and stakeholder meetings as well as to community groups. These partner meetings and presentations have garnered media attention, articles are featured on the CHNEP website.

In regards to public outreach, CHNEP finalized the design and sent the 2022 Nature Calendar to the printer, completed seagrass loss maps for CHNEP basins for the Water Atlas and Fall Harbor Happenings magazine, and designed the CHNEP Kid's Activity Book that features environmental education and activities. In addition, CHNEP updated project factsheets for recently completed projects, created and updated Seagrass Fact Sheets for CHNEP estuaries with 2020 data, and created an FDEO CDBG-MIT Resiliency Funding Fact Sheet. Additionally, CHNEP hosted monthly volunteer events including citizen science training for the "Florida Horseshoe Crab Watch", International Coastal Cleanup Day at Ponce de Leon Park, a Kid's Sustainable Fishing Clinic at the Arcadia Rodeo, and an Earth Echo Water Challenge at Gilchrist Park. CHNEP also had an educational booth at the Wildcat Tailgate in Polk County and at the Miakka Hootenanny in Sarasota County as well as sponsored and hosted a virtual booth at the 16th Annual Sustainable Communities Workshop. Ms. Hecker concluded by thanking the committee members and the CHNEP staff.

TAC Co-Chair Ernesto Lasso de la Vega thanked the Executive Director for being a keynote speaker at the Florida Lake Management Society and also CHNEP staff for their contributions at recent volunteer events.

Agenda Item #6 – CHNEP Habitat Conservation Subcommittee Workshop Update: Place Based Fishery Conservation in Charlotte Harbor, Florida — Corey Anderson, Florida Fish and Wildlife Conservation Commission

Mr. Corey Anderson, with the Florida Fish and Wildlife Conservation Commission (FWC), provided committee members with an update on the initial progress of the Habitat Conservation Subcommittee Workshop following the first workshop on November 19th. Highlights are as follows: The purpose of the project was to extend CHNEP's Habitat Restoration Needs (HRN) Plan into place-based, topic-focused conservation plans and actions. The project focused on discrete Charlotte County sport fish nursery habitats for snook and tarpon, which are ecologically and economically important species. Juvenile Snook and Tarpon nurseries are very far inland, for example in salt marsh ponds and creeks in Cape Haze. Not all important fish habitats, such as nurseries, are protected in public lands. Mr. Anderson explained that these important fish habitats are at risk from changes in land use, increased stormwater runoff, and habitat irrigation due to sea level rise. Mr. Anderson concluded that these threats can be addressed by working with local governments with authority over shorelines, development, stormwater, and land use policies.

The placed-based fisheries partnership includes Charlotte County, CHNEP, FWC, and is continuing to expand in the fall as the project kicks off. A scoping of policy tools and research needs workshop will be held in February 2022.

A committee member asked Mr. Anderson what role mosquito ditches play in the juvenile fish population, to which Mr. Anderson responded that mosquito ditches can be really important habitat for some juvenile fishes and have acted as conduits in areas that have historically been drained to allow fish to come into new habitats. Ms. Hecker commented that she has also noticed sportfish way-up inland in creeks and lakes. Ms. Hecker asked Mr. Anderson if there is a correlation between the time of year/season and how inland these fishes can be found, as well as inquired about how Mr. Anderson was able to identify these inland areas that we need to focus on protecting and if that is something that can be made available to committee members. Mr. Anderson responded that these species have an interesting life history that drives them to get very far into the landscape, places you may not expect them, and even places that are seasonally connected over a marsh where in the winter time they are actually disconnected from the estuary. These inland areas provide the fish with a safe space away from larger predators. Mr. Anderson added that this FWC-FWRI's fisheries research has been going on for the last decade but has intensified in the last few years, and is supported by Charlotte County through a RESTORE grant. Fisheries scientists have been focused on the Cape Haze peninsula. They are going through the preserve, often through very hard-to-access areas, to find these inland ponds and fish nursery areas, and they have found that some of the ponds and high creek habitat areas are not in the Preserve and are also in areas near the Eastern Charlotte Harbor. The information that FWC has collected is publically available and FWC would be happy to share this information to those who reach out about conservation efforts.

Another committee member thanked Mr. Anderson for his great presentation and asked if he saw any Brazilian pepper in those fish habitat areas. The committee member explained that there is not a mandate to control Brazilian pepper, just essential fish habitat. Mr. Anderson replied that he agrees that this is a wide-spread issue in Florida, and that he does see a lot of exotics in these areas. Mr. Anderson added that he has noticed that the snook and tarpon are found higher-up in the watershed than the essential fish habitat (EFH) reaches. Another committee member added that these fish habitats are coastal ponds that are mainly fringed with red mangroves, with black mangrove marsh leading up to the ponds (primarily mangrove). Ms. Hecker commented that she saw adult Snook and Tarpon as well as Brazilian pepper in a relatively fresh lake when paddling up Myrtle Slough. A committee member commented that this is consistent with FWC's findings, which show that adult Snook and Tarpon may be found further-up into the estuary, while the nurseries are located closer to the passes.

Lastly, a committee member asked if the County has been receptive to any of FWC's recommendations in the context of habitat conservation or if any Comprehensive Plan changes have been initiated as a result of Mr. Anderson's research. Mr. Anderson responded that Charlotte County has been exceptionally receptive to engaging and being onboard. Mr. Anderson added that the County Planning and Zoning Manager and the County Water Quality Manager are directly involved in the project as well as one of the assistant county administrators. FWC and Bonefish & Tarpon Trust have provided this habitat information to Charlotte County as well as background information, and the County staff are poised to take recommendations. FWC has not formulated specific recommendations on habitat conservation yet, as they are working through that process with these upcoming workshops and hoping to incorporate recommendations in the 2027 Comprehensive Plan.

Agenda Item #7 – Regional Water Quality Impairment Assessment — John Cassani, Calusa Waterkeeper

Mr. John Cassani, Calusa Waterkeeper, provided a review of the regional impairment assessment by the Calusa Waterkeeper, issued last march. The report summarizes water quality impairments in nine counties using FDEP assessment criteria. Highlights are as follows:

The regional impairment assessment aimed to summarize water quality impairment on a county basis from the FDEP annual comprehensive list of verified impaired waters for 2018, 2019, and 2020 for WBIDS in nine southwest Florida counties. Seven of the nine counties were coastal counties with similar meteorology, significant urban land use, westerly flowing rivers, and FDEP Basin Groups 1-3 where 5-year assessments had been adopted by 2018. The goals of the project are to summarize water quality on a county or geopolitical basis and understand the factors that drive water quality decline specific to local governments in order to prevent impairment or improve planning for restoration.

The study found that urban population growth and associated development are the underlying cause of water quality impairment in most southwest Florida counties. Fecal bacteria was the most frequently occurring impairment parameter in the area. However, nutrients represented the highest proportion of impaired WBIDS in Collier County, Glades County, and Hendry County. Overall the project found that water quality restoration is lagging behind the growing list of impairments, and that OFW represent an increasingly high proportion of impaired waters. Mr. Cassani concluded that there are potential remedies to improve water quality in the region. For example, improved MS4 compliance emphasizing monitoring that defines net change consistent with required BMAP pollutant load reduction with less emphasis on presumed progress from projects. Additionally, increased state and local funding for TMDL development and implementation with BMAPs is needed for successful restoration of impaired waters.

Ms. Hecker thanked Mr. Cassani for his presentation and commented that there is not a separate designated use classification for Outstanding Florida Waters in Florida, although there are for similar exceptional waters in other States. Ms. Hecker added that the Triennial Review Process is when a new designated use classification can be created. Ms. Hecker also commented that OFWs must have monitoring at the time of their designation to establish what the baseline water quality was at the time of designation, and that is important to understand there is a prioritization process that DEP uses to determine priority for establishing TMDLs due to limited staff and resources - involving which USGS HUC unit the waterbody is in. Mr. Cassani responded that OFW criteria is a priority criteria for the prioritization process, but is not sole factor to develop a TMDL. Mr. Cassani added that an impaired WBID is allowed to stay on the list for up to 8-years, but that 35% of currently impaired WBIDs have been on the list for 8 years or longer. Mr. Cassani added that DEP is moving forward with fecal TMDLs on a collective basis (on a basin level). There was discussion that the State Impaired Waters Rule has been modified to where one must prove through sufficient monitoring that a waterbody is continuing to be impaired in order for the waterbody to remain on the verified impaired list, or it can become delisted for insufficient data. A committee member asked what the required sampling schedule is in order for an impaired waterbody to remain on the verified impaired list. Mr. Cassani added that the State has gone from a standard 5-year assessment to a 2-year assessment, which is an improvement that will hopefully result in more Total Maximum Daily Loads (TMDLs). Ms. Hecker added that TMDLs are federally legally required under the Clean Water Act, but BMAPs are not...adding that BMAPs are important for addressing non-point source discharges. A committee member asked if it's correct that there are

not enough impaired waterbodies in our HUC region for the State to prioritize our region. Mr. Cassani replied that the HUC Prioritization process is a 15-step prioritization process. Another committee member asked if RAP is a possible alternative and if this mechanism could be implemented faster, to which Mr. Cassani responded that almost all NPDES and BMAP programs have reasonable assurance as a basis for implementation and it's difficult to quantify what "Reasonable Assurance" is in some examples. Ms. Hecker added that Reasonable Assurance Plans are surrogates for BMAPs, which are voluntarily developed by community stakeholders and as such do not always compel all polluting stakeholders to participate in reductions and may not have the same level of legal enforceability that a BMAP does. However, they probably could be developed faster and be beneficial where no BMAP is proceeding.

Agenda Item #8 – Assessment of Oyster Fitness Relative to Freshwater Inputs — Darren Rumbold, PhD, Florida Gulf Coast University

Dr. Darren Rumbold with the Florida Gulf Coast University (FGCU) presented findings of a recently completed study on the effect of prolonged low-salinity on the Eastern Oyster with short intervals of high salinity to recover. Information from the study could assist resource managers to maximize discharge volume without undermining the sustainability of oyster reefs in the area. Highlights are as follows:

The purpose of the study was to determine if the Eastern Oyster could survive and grow during prolonged exposure below its critical, low-salinity threshold, if given repeated short intervals at higher salinity to recover. The study is sponsored by the South Florida Water Management District (SFWMD) and involves collaborations between the Florida Gulf Coast University (FGCU) and the University of North Carolina-Wilmington (UNCW). The study involved four sets of experiments (trials) with adult oysters exposed to different permutations of low salinity stress condition, stress durations, recovery salinity and duration of recovery period, as well as four sets of experiments or iterative trials for spat comprised of 31 experiments with some lasting 91 days.

The study found that low-salinity stress was exacerbated at higher temperatures for both adults and for spat. Therefore, recommended salinities and durations differ seasonally. The study also found that during less stressful, cooler months adult oysters can tolerate and maintain acceptable survival rates greater than 50% at freshwater inflow rates that would produce a local salinity of 0% (i.e., stress condition) for up to 7 days, if they are allowed at least 3 days at a salinity greater than 5% to recover before repeating. However, because recently settled spat were found to be more sensitive to low salinity, the conditions above would be damaging to spat and could result in a loss of a year-class. Therefore, this should only be considered when the need to release water is great.

If water managers have more flexibility in the amount of time to release water during the relatively cooler months, it is recommended that to maintain survival and growth of spat, in addition to survival of adults, inflow rates should be targeted to produce a local salinity of no less than 5% for a duration of no more than 14 days and allow them 14 days or more at greater than 10% to recover before repeating. Dr. Rumbold concluded that next steps would involve District Scientists, Engineers and water managers with stakeholder input, to select the specific regions within the two estuaries to target for these local salinities.

A committee member thanked Dr. Rumbold for a great presentation and asked if the study is available for committee members to download and read, to which Dr. Rumbold replied that anyone can reach out to him for the report at drumbold@fgcu.edu. Another committee member asked if, with continued sea level rise and some of Florida's freshwater needs being increased being handled

by desalination plants, could the hypersaline brine from those plant be used to mitigate salinity drop in time of high flow and limited tidal flushing. Dr. Rumbold replied that that is an interesting idea and he is not sure, but that it might be difficult to get the mixing right and a mixing zone. Another committee inquired about the publication that is coming out on the 15 years of oyster monitoring and asked if there is any discussion on how freshwater flows may have impacted oyster populations. The committee member also asked if Dr. Rumbold identified certain years in which populations declined that may have been associated with high flow years. Dr. Rumbold responded that the report is focused on wet years versus dry years and the response of oysters at different locations along the gradient.

Agenda Item #9 – Florida Landscape Conservation Project- Florida Ecological Report Card — Nicole Burns and Anthony Gillis, Florida Fish and Wildlife Conservation Commission

Ms. Nicole Burns and Mr. Anthony Gillis from the Florida Fish and Wildlife Conservation Commission (FWC) provided committee members with information about the Florida Ecological Report Cards for Marine and Estuarine as well as Terrestrial and Freshwater Habitat. These provide a habitat-based framework to evaluate the current condition and desired future condition of a set of Conservation ‘Assets’. Highlights are as follows:

The Florida Ecological Report Cards are landscape conservation cooperatives aimed to foster landscape scale conservation to sustain natural and cultural resources for future generations. The Report Cards assess the status, trend, current and emerging threats, and limiting factors for Florida’s natural and cultural resources by setting measurable conservation goals and tracking progress toward meeting those goals. The Florida Ecological Report Cards take a lot of data and convert it into an easily digestible, clear and concise explanation of current ecological natural resource conditions. FWC is collecting available data annually to track the progress of conservation assets. The Florida Ecological Report Card 2.0 will include updated status based on the progress. The Report Card 2.0 will also include additional indicators. The Florida Ecological Report Card and related interactive maps and tools can be found online on the Florida Conservation Planning Atlas (<https://flcpa.databasin.org>).

Mr. Lasso de la Vega thanked Mr. Gillis and Ms. Burns for their excellent presentation and useful Ecological Report Card. Ms. Hecker commented that it could be valuable to create 6 regional factsheets or to divide Florida into 6 regions (Panhandle, Northwest, Southwest, Northeast, Southeast, and Central Florida) in the Report Card 2.0 and aggregating those asset grades into a regional scale. Mr. Gillis replied that that is something that they will certainly consider moving forward in future Report Card versions. Mr. Gillis added that the current Report Card provides a regional break-down in sections where sufficient data for a regional analysis was available. For example, fisheries independent monitoring is broken down into 7 different estuaries and the report card illustrates what the trend is in each of those 7 estuaries. Ms. Burns also commented that the Terrestrial and Freshwater Technical Report breaks down indicators spatially as well. Ms. Burns concluded that it would be very interesting to look at indicators across those 6 regions as Ms. Hecker mentioned and that assessing indicators on a regional scale may change the resulting grading and that is something they will consider for the future Ecological Report Card.

Agenda Item #10 – South Lee County Watershed Hydrological Modeling Tool Report — Marcelo Lago, Lago Consulting

Mr. Marcelo Lago of Lago Consulting provided an overview of the South Lee County Hydrological Modeling Tool that is a science-based, data-driven integrated surface/groundwater hydrologic model that is capable of simulating both dry and wet season water levels and flow. This project aims to restore more natural water flows, improve water quality and environmental conditions, increase natural water storage and moderation of flooding events. Highlights are as follows:

The South Lee County Hydrological Watershed Initiative (SLCWI) Hydrological Modeling project involved the creation of an Existing Conditions (EC) Baseline Model covering the project area. Recent developments, projects detailed in the Lee County Stormwater Master Plan, and other recent/future projects were added to the model to create the Existing Conditions with Projects (ECwP) model. The SLCWI Task 10 Memorandum includes maps displaying the impact from projects on hydroperiods and wet season water depths in the project area, as well as hydroperiod difference maps to highlight these impacts. Additionally, climate change and sea level rise (NOAA Intermediate-High scenario) as well as future potable water supply extraction were incorporated into the model, creating the Future Conditions Model (FCM0). After including the climate change and future pumping scenarios, hydroperiods decrease in up to 1 month and water depths decrease in up to 0.4 feet. Additionally, the 1.64' increase in tidal water levels may result in future vegetation changes along the coastal boundary. Combined with sea level rise, reduced river outflows may have negative impacts on the freshwater resources near the coast. Finally, Task 10 also involved the addition of land use changes and modeling future conditions scenarios. The SLCWI came up with 3 Future Scenarios: 1) Maximum Restoration (FCM1), 2) Maximum Development (FCM2), and 3) Intermediate Restoration and Development (FCM3). The Task 10 Technical Memorandum includes hydroperiod difference maps showing future condition differences after the land use changes in the scenarios are added to the model. The SLCWI Draft Report outlines recommended future projects to help restore the South Lee County Watershed system. The recommended future projects will create additional storage at disturbed and developed areas and at mining pits and restore hydroperiods in existing wetlands. Mr. Lago gave a few examples of “green” and “grey” infrastructure to help offset flooding impacts since extreme wet weather events are predicted to be more frequent due to climate change. Mr. Lago presented a map outlining recommended locations to build structures and berms and explained that gates would be operated with seasonal rules (lower control elevation during most of wet season) and emergency operation before forecasted rainfall storms.

Proposed future modeling will involve evaluating scenarios to enhance flood protection and wetland hydroperiods and updating the climate change scenario when there is more certainty in future rainfall predictions. Nicole Iadevaia, CHNEP Research and Outreach Manager, added that the SLCWI Draft Report and supporting Technical Memorandums are available on the CHNEP website at <https://www.chnep.org/south-lee-co-watershed-initiative>. CHNEP is seeking comments with regards to the conclusions, recommendations, any potential future projects or preservation initiatives that could be identified in this report. CHNEP is asking that comments are submitted in writing to chnep@chnep.org by close of business on December 13th, 2021. The Final Report will be made available in January 2022 with the incorporated comments. Ms. Iadevaia concluded by thanking everyone for their participation as well as thanking the members of the SLCWI, Lago Consulting, and Water Science Associates for their hard work on this project.

Roger Copp, Water Science Associates, commented that the recommendations outlined in Mr. Lago's presentation and in the Report are areas where the SLCWI project team believes that more water can be captured on the landscape, which can serve multiple purposes such as reducing

downstream flooding and augmenting hydroperiods should climate change as indicated in the model. Mr. Copp added that he believes that this can offset impacts such that wetlands don't experience reduced hydroperiods, which would in turn be beneficial for habitat protection, public water supply, and flood control. Mr. Copp concluded that these can be implemented in places where it would not have a substantial negative impact but could actually improve access to some really great natural resource areas.

Agenda Item #11 – CHNEP Water Atlas Enhancements and Technical Projects Update — Nicole Iadevaia, CHNEP

CHNEP's Research and Outreach Manager, Nicole Iadevaia, presented on updates to technical projects that are already underway, in-progress, or have been completed since the last cycle. Highlights are as follows:

CHNEP has closed-out several projects including the Quantifying the Water Quality Benefits of SAV project, the Gateway to Myakka Marsh Restoration, and others. The CHNEP Water Atlas (<https://chnep.wateratlas.usf.edu/>) is an ongoing project which is funded on an annual basis and undergoes annual standard service including data management, site updates, revisions and enhancements. New features on the Water Atlas include the Habitat Restoration Needs page, the Habitat Resiliency to Climate Change Interactive StoryMap, and Seagrass pages. The Habitat Restoration Needs page displays information and findings from the Habitat Restoration Needs project and includes an interactive mapping tool with tabs for each sub-basin for easy-viewing. CHNEP seagrass pages were created to bring together all of the existing seagrass data in the CHNEP area. Seagrass pages are broken up by basin for easy-viewing and provide data and analysis of aerial seagrass data provided by the Water Management Districts as well as field data collected by the Aquatic Preserve, Sarasota County, DEP, and the Districts. Additionally, seagrass pages include an interactive map displaying seagrass monitoring sites as well as seagrass coverage and loss in the CHNEP area. Seagrass pages can be found on the CHNEP Water Atlas at <https://chnep.wateratlas.usf.edu/seagrass>.

The Charlotte Harbor Flatwoods Hydrological Restoration is a modeling project to create integrated surface/groundwater models for hydrological restoration of the Charlotte Harbor Flatwoods area. The goals of this project include sheet flow enhancement, natural flow enhancement, water quality improvement, groundwater recharge, and flooding reduction. Updates to the Charlotte Harbor Flatwoods Hydrological Restoration Modeling Project include: Monitoring station and ecological field work is complete and quarterly data downloads are well underway, and modeling set to commence soon. The contractor will present an update at the April TAC meeting.

The Cyanobacteria Rapid Response Pilot Project is an upcoming project that the CHNEP is funding and working in cooperation with FGCU and AquaFlex to respond to cyanobacteria blooms in the moment. The project will involve conducting research regarding the efficiency of new technologies in removing nutrients, cyanobacteria, and its associated toxins. It will be a large scale assessment of AquaFlex open-cell foam technology on the Caloosahatchee River. An independent study to collect water and air quality data before and after AquaFlex deployment will be conducted by FGCU to test the effectiveness of AquaFlex technology. A committee member asked Ms. Iadevaia what the nature of AquaFlex is, to which Ms. Iadevaia explained that AquaFlex is an open-cell foam technology (almost like a sponge) that is deployed on top of the water and pulls in cyanobacteria while allowing the water to move through it. Ms. Iadevaia added that CHNEP is

testing this product in particular because it's not impactful to the wildlife and the collected cyanobacteria can be brought to a waste disposal site.

CHNEP staff have also created updated Seagrass Fact Sheets with 2020 seagrass acreage and species diversity data for all CHNEP estuaries, as well as a Macroalgae in Charlotte Harbor Fact Sheet with information about macroalgae trends in Charlotte Harbor. Fact Sheets can be found on the CHNEP website at <https://www.chnep.org/chnep-fact-sheets>.

The Wild Turkey Strand Restoration project is another upcoming project in Lee County to restore former agricultural lands and wetlands and upland habitat in the Wild Turkey Strand Preserve, part of the Lee County DRGR area. The project will help restore hydroperiods which will benefit ecosystem function and recharge. Design and permitting are funded by Lee County and CHNEP will hopefully receive RAE RESTORE funds to fund restoration activities.

Finally, the Myakka Headwaters Restoration project is an upcoming project to remove exotic invasive species and re-plant native species on the Myakka Headwaters property. The property is located in the Myakka Watershed and was recently conserved by the Conservation Foundation of the Gulf Coast (CFGC). The project is still in the scoping phase and will be in coordination with the SWFWMD and the CFGC. Ms. Iadevaia concluded by sharing a video created by the CFGC which showed footage and provided background on the Myakka Headwaters property.

A committee member asked Ms. Iadevaia if she could provide more information about the RAE RESTORE grant for the Wild Turkey Strand Project, to which Ms. Hecker responded that the details are not yet public and will become public if/when it is officially announced by RAE. Ms. Hecker concluded by thanking the CHNEP staff for their hard work on all of these projects.

Agenda Item #12 – TAC Membership Project Updates — Ernesto Lasso de la Vega, Co-Chair

Kevin Kalasz, US Fish and Wildlife Service (USFWS), had nothing to report.

Mark Sramek, NOAA National Marine Fisheries Service Habitat Conservation Division (NMFS), commented that he works on Essential Fish Habitat (EFH) consultations on federal regulatory actions. Mr. Sramek added that his territory includes the most of the Gulf Coast of Florida and that Charlotte Harbor is one of his favorite to work. He commented that his job is to provide science-based conservation recommendations on projects and that he is pleased to be a part of the TAC.

Melynda Brown, Florida Dept. of Environmental Protection (FDEP), commented that FDEP has been busy continuing their long term water quality monitoring programs. A monitoring station was added in Charlotte Harbor on the West side in May. That data is available. FDEP finished up the 2021 Colonial and Diving Wading Bird Survey and published the 2020 data in the South Florida Wading Bird Report. FDEP is currently finishing up the seagrass prop scar mapping to update the 2004 map using the latest imagery from the Water Management Districts. FDEP is also working with Janicki Environmental to analyze Charlotte Harbor and Estero Bay seagrass transect monitoring data to get an overview of what's been going on in recent years, and at the transect level, and trying to pair it with water quality data at the WBID level. This report should be coming out early next year. Finally, FDEP is working with Sanibel-Captiva Conservation Foundation on future oyster restoration in Charlotte Harbor.

Dave Blewett, Florida Fish & Wildlife Conservation Commission (FWC), commented that FWC Fisheries Independent Monitoring (FIM) continues to do monthly fish surveys in the Charlotte Harbor Estuary and the lower rivers. FWC-FIM is nearing completion of the Charlotte County RESTORE grant which involved sampling saltmarsh ponds and restored waterways. That will be completed in the beginning of Summer 2022.

Jeff Devine, West Coast Inland Navigation District (WCIND), had nothing to report.

Mark Barton, South Florida Water Management District (SFWMD), commented that he learned a lot from this meeting and is very excited to work with the TAC moving forward.

Mark Walton, Southwest Florida Water Management District (SWFWMD), commented that the acquisition period for the 2022 seagrass maps began yesterday and will continue through February.

Brandon Moody, Charlotte County, commented that Charlotte County is still developing a County-wide water quality monitoring strategy and is still on target to getting that on-the-ground before the 2022 wet season. Mr. Moody thanked those who reviewed the strategy and provided feedback. Mr. Moody concluded that, for those interested, to please reach out to him and he would be more than happy to share the water quality monitoring strategy.

Rick Armstrong, Lee County, commented thanked the TAC and presenters for very interesting presentations. Mr. Armstrong added that Lee County a lot of things going on, but nothing wrapped up to report on.

Ernesto Lasso de la Vega, Lee County Hyacinth/Mosquito Control District, commented that the Lee County Hyacinth/Mosquito Control District has good, successful news regarding mosquito control: the mosquito sterilization project, which involves sterilizing male mosquitos, has been so successful that it is being expanded even further. Captiva and Sanibel islands have been implementing this project and it has been very successful there, the project targets Egyptian Mosquitos. Mr. Lasso de la Vega added that, next year, the Florida Lake Management Society is bringing the meeting to Bonita Springs and committee members are invited to attend. The Meeting is not restricted to just lakes, but can include topics about wetlands and rivers too.

Greg Blanchard, Manatee County, commented that his department recently gave a presentation to Manatee County's Board of Commissioners on Manatee County's Environmental Lands Acquisition Plan. Mr. Blanchard commented that he is not principal in this effort, but that he is aware that staff have been going around the County and engaging with other about potential land acquisitions including several in the Myakka River Watershed. Mr. Blanchard added that, at some point, it may be appropriate for the CHNEP to invite someone from that effort to give a presentation for the CHNEP with their plans and procedures for administrating the referendum bond funding.

Gregory Knothe, Polk County, updated that Polk County has a large planting project on Lake Hancock coming up soon that was CFI funded as well as matched by the County. This project will include planting about 35 acres of emergent and submerged vegetation this coming Spring. Mr. Knothe commented that Polk County also has been working on the ongoing Upper Peace River Restoration study, which involves identifying areas for treatment wetlands, habitat

enhancement, and floodplain restoration. This project is coming to an end in the next month or so, and the next phase of the project will be CFI funded as well. In addition, Polk County has a stream bank restoration project coming up, which looks promising to get funded by the state wildlife grant. Lastly, Polk County has another feasibility study going on in the southeastern portion of the County, looking at the possibility of implementing programs similar to the Dispersed Water Program in the SFWMD.

Aaron Zimmermann, Sarasota County, had nothing to report.

Dana Dettmar, City of Sanibel, commented that the City of Sanibel finally received the last funding that needed to install the 3rd living shoreline which will consist of some hard infrastructure with a planted shoreline as well as the utilization of oyster reefs as an offshore breakwater. The City of Sanibel is also in the process of installing a predictive tide gauge at one of the piers on the island. The predictive tide gauge has an algorithm that can predict tides including king tides and storm surges and that will likely be a link that is publically available. Finally, with the passing of the City of Cape Coral's amendments to their fertilizer ordinance that made it more restrictive, our City Council has also asked us to take a look at our local fertilizer ordinance to see whether or not any revisions can be made to make it more restrictive and more protective of water quality.

Mary Thornhill, City of Winter Haven, had nothing to report.

Daniel Roberts, Peace River Manasota Regional Water Supply Authority (PRMRWSA), commented that PRMRWSA just finalized the Horse Creek Stewardship Program 2020 Annual Report. The Report should be released online in the next 2 weeks. The Horse Creek Stewardship Program is an agreement between the PRMRWSA and Mosaic to monitor Mosaic's activities in the Horse Creek Basin to make sure there are no negative effects to water quality. Mr. Roberts shared that there were not many releases this year and that PRMRWSA found that there were no detrimental effects.

Agenda Item #14 – Public Comment — Ernesto Lasso de la Vega, Co-Chair

There were no comments from the public.

Agenda Item #15 – Future Meeting's Topics, Location and Date – Ernesto Lasso de la Vega, Co-Chair

The next meeting will be held on April 14th, 2022. Upcoming 2022 meeting dates are August 11th, 2022 and December 1st, 2022.

Agenda Item #15 – Adjourn – Ernesto Lasso de la Vega, Co-Chair

Meeting was adjourned at 1:32 pm.