



## CHNEP Policy Committee Meeting

Friday January 27<sup>th</sup>, 2022, 9:00 am – 1:00 pm

*Hybrid In-Person and Virtual Meeting*

Charlotte County Utilities Building, Training Rooms A & B  
25550 Harborview Rd., Punta Gorda, FL 33980

### AGENDA

#### Connect Remotely via Zoom

<https://us06web.zoom.us/j/82518341500?pwd=VnVjQVg3QkVOYVE0eDFjSUhNUnQydz09>

**Meeting ID:** 825 1834 1500 **Passcode:** 266623

+1 929 205 6099 US (New York) or to find your local number:

<https://us06web.zoom.us/j/82518341500?pwd=VnVjQVg3QkVOYVE0eDFjSUhNUnQydz09>

1. Call to Order and Introductions — Jon Iglehart, Co-Chair
2. Agenda Additions or Deletions — Jon Iglehart, Co-Chair
3. Public Comment on Agenda Items — Jon Iglehart, Co-Chair
4. Management Committee Report — Corey Anderson, Management Committee Co-Chair
5. CHNEP Update — Jennifer Hecker, CHNEP
6. Consent Agenda — Jennifer Hecker, Executive Director & Jon Iglehart, Co-Chair
  - A. Policy Committee September 23, 2021 Draft Meeting Minutes
  - B. Amended FY2022 Work Plan & Budget
7. An overview of Red Tide (*Karenia brevis*) bloom dynamics – Dr. Kate Hubbard, Florida Fish and Wildlife Conservation Commission Center for Red Tide Research
8. Land-based Nutrients’ Effect on Duration and Intensity of Red Tide Events – Dr. Miles Medina, University of Florida
9. Steps to Reducing Nutrients to Reduce Red Tide – Dr. Mary Lusk, University of Florida
10. Effect of Decomposing Fish in Prolonging Red Tide Events – Dr. Mike Parsons, Florida Gulf Coast University
11. A Proactive Local Government Red Tide Response Example – Paul Dean, Pinellas County Government
12. Research & Restoration Project Updates— Nicole Iadevaia, CHNEP
13. Policy Committee Member Updates — Jon Iglehart, Co-Chair
14. Public Comment — Jon Iglehart, Co-Chair
15. Future Meeting's Topics and Date — Jon Iglehart, Co-Chair  
*Next meeting date: May 26<sup>th</sup>, 2022*
16. Adjourn — Jon Iglehart, Co-Chair



**1. CALL TO ORDER AND INTRODUCTIONS**

The CHNEP Policy Committee Co-Chair will call the meeting to order and then members will introduce themselves as well as any members of the public who are participating.

**2. AGENDA ADDITIONS OR DELETIONS**

If any Policy Committee member would like to make an addition or deletion to the agenda, this item is the time to suggest such. Any member wishing to discuss a consent agenda item can suggest it to be pulled at this time before the final agenda is adopted.

**3. PUBLIC COMMENT ON AGENDA ITEMS**

Each participating member of the public is afforded up to 3 minutes total to speak on agenda topics only at this point in the meeting.

**4. MANAGEMENT COMMITTEE REPORT**

Corey Anderson, CHNEP Management Committee Co-Chair will present the report of the highlights from the Management Committee held on January 14, 2022. The Management Committee first heard updates from the Co-Chairs of the CHNEP Technical (TAC) and Citizens (CAC) Advisory Committees on their meeting highlights – neither of which directly pertained to agenda items before the CHNEP Management and Policy Committees this cycle. The TAC meeting included many important technical presentations and discussions, including: the CHNEP Habitat Conservation Subcommittee Workshop Update: Place-based Fishery Conservation in Charlotte Harbor, a Regional Water Quality Impairment Assessment, an Assessment of Oyster Fitness Relative to Freshwater Inputs, the Florida Landscape Conservation Report Cards, the South Lee County Watershed Hydrological Modeling Project, and updates on CHNEP projects and CHNEP Water Atlas Enhancements. There were no items for TAC input pertaining to Management Committee agenda items this cycle. The CAC meeting included presentations on many important community outreach and engagement activities and resources, including: an overview of CHNEP Conservation Grant Applications, discussion on a Climate Change Vulnerability Assessment CAC project, a Regional Water Quality Impairment Assessment, updates on CHNEP Seagrass Fact Sheets, Kids Activity Book, and CHNEP projects and Water Atlas Enhancements.

The Management Committee then proceeded to go into its agenda, which included the same agenda items and presentations before the Policy Committee at this agenda. The Management Committee had a lot of questions and discussion on the presentations as follows:

- Dr. Kate Hubbard, from the Florida Fish and Wildlife Commission (FWC) Center for Red Tide Research, provided an overview of the latest Red Tide (*Karenia brevis*) research and a new suite of tools which can be used to better understand bloom dynamics. Discussion was focused on the methods and analyses used to assess the life cycle stage of red tide cells. Management Committee members asked questions to understand what causes cells to become stressed and how it is determined if cells are stressed or in resting stages.
- Dr. Miles Medina, from the University of Florida, briefed the Committee on recent research to identify systematic cause-and-effect relationships between nutrient-enriched Caloosahatchee River discharges and the duration and intensity of red tide events in Charlotte Harbor. Management Committee discussion was focused on why the Caloosahatchee River was chosen for this study and how this analysis would be useful for the Peace and Myakka Rivers.

- Dr. Mary Lusk, from the University of Florida, presented findings from recent research to assess the effectiveness of stormwater control measures in nutrient removal as well as the role of non-fertilizer sources in nitrogen enrichment of surface waters in urban landscapes. Management Committee members inquired about the sources of dissolved inorganic nitrogen and how freshwater discharges effect the availability of nutrients in brackish and saltwater.
- Dr. Mike Parsons, from the Florida Gulf Coast University (FGCU), provided an overview of recent research on the effect of decomposing fish in prolonging red tide events and the cost-effectiveness of fish removal mitigation strategies. This study also looked at composting as a means to repurpose the dead fish that are collected. Management Committee discussion was focused on the logistics of composting the collected fish carcasses, if it could be done locally near fish removal sites and what types of permits would be required.
- Finally, Mr. Paul Dean, from Pinellas County Government, briefed the Management Committee on the Pinellas County Red Tide Emergency Response Program that was developed in response to the 2018 and 2020 red tide events. Management Committee members noted this as a great example of how we can set-up standing emergency response plans and contracts to proactively manage these red tide events.

The Management Committee voted unanimously on forwarding one recommendation to the Policy Committee for its consideration: to approve the Amended FY2022 Work Plan & Budget as drafted.

## 5. **CHNEP UPDATE**

The following represents program activity highlights since the beginning of the last Policy Conference cycle to the beginning of this one.

### Program administration

- Invited to and drafted grant proposal, working together with the City of Punta Gorda Urban Design division and The Nature Conservancy, to submit to the Florida Department of Environmental Protection Resilient Florida Program for the “Tiki Point Living Shoreline Restoration Project” – resulting in full funding of more than a half million (\$590,957)!
- Drafted Letter of Intent and then invited to and drafted a full grant proposal to the national NEP Competitive Grant Program (administered by Restore America’s Estuaries) for the Wild Turkey Strand Preserve Restoration Project in Lee County – resulting in full funding (\$130,000) of the project, one of only 4 projects selected for funding nationally. A video we prepared for the national announcement can be viewed at <https://youtu.be/eShZh1UQk0>.
- Planned and executed both the Policy Committee (9/23), Technical Advisory Committee Meeting (12/2) and Citizen’s Advisory Committee (12/15) Policy Conference meetings; including lining up presenters, drafting agenda packets, create PowerPoints, drafting minutes, etc.
- Submitted finalized Quality Assurance Project Plan (QAPP) to EPA for ‘Cyanobacteria Rapid Response Pilot Project’ and received EPA approval on (9/28) and reviewed EPA Climate Ready Coasts document
- Drafted and sent 14 letters to all cities in CHNEP area that are currently not participating, inviting them to join Policy Committee meeting in January and as a member of CHNEP.

### CHNEP financial contributions

- Sent customized invoice letters and information packets to City & County partners who contribute to the CHNEP, on November 12<sup>th</sup> 2021, providing an overview of what value & projects CHNEP provides to their areas. This is sent during the fall for FY22 CHNEP annual partner contributions that are approved by the Policy Committee.

- FY22 has begun, and partners have started processing annual contributions, As of 1/4/2022 CHNEP has received contributions from: Sarasota County, Charlotte County, Lee County, Polk County, Hardee County, DeSoto County, City of Cape Coral, City of Punta Gorda, City of Sanibel, City of Bonita Springs, Town of Fort Myers Beach, City of Venice, City of North Port, City of Winter Haven, Village of Estero, City of Bartow, and Peace River Manasota Water Supply Authority. Manatee County is in the process of processing their contribution.
- \$3,056 in small individual private donations from private citizens since last cycle to beginning of this.

#### Grants submitted and/or awarded

- 4 Conservation grant applications received that will be presented at the upcoming CAC meeting in December.
- Awarded a Charlotte County Marine Advisory Committee Grant in the amount of \$5,000 for CHNEP Environmental Watershed Education Outreach.
- Updated the conservation grant page of the website to include the upcoming FY22 application (deadline of December 1st for a February 1 award notice if the project is selected).
- Notified that grant proposal for project entitled, "Wild Turkey Strand Habitat and Hydrologic Restoration," has been selected for funding under the 2021 Round of the NEP Coastal Watersheds Program.

#### Grant progress reports submitted

- Final mid-year progress report submitted to the EPA that reports on the period of April 2021-September 2021 in October of 2021.
- Q3 & Q4 Progress Report submitted to FDEP for NRDA grant for the LCHFI project in July and October of 2021
- Final Progress Report submitted to FDEP for salary agreement with CHNEP
- SWFWMD Q3 & Q4 report for FY 19, FY20 & FY21 was submitted July & October of 2021.

#### Other Finance/Admin Items

- Amended FY21 budget was updated and approved by the Policy Committee at the 9/23/2021 meeting.
- Finalized FY22 budget, which was approved by the Policy Committee at the 9/23/2021 meeting.
- CHNEP was awarded the EPA FY22 grant funding agreement, which includes the FY22 budget approved by Policy Committee as well as other forms/metrics required by the EPA.
- CHNEP FY22 budget was approved by the City of Punta Gorda city council
- Submitted letters to the SWFWMD to define the TBD projects that are outlined in the FY19 & FY21 agreements. The letters have been reviewed by the SWFWMD staff and are currently routing through approval processes. The letters will then be returned CHNEP for signature and the TBD project will be changed to the Myakka Headwaters Pilot Project.
- Gathered and submitted FY2021 NEPORT Habitat and Leveraging entries with over 70 submissions and data gathered from several new sources within cities, agencies, and counties. Many partners at smaller capacity found it difficult to contribute to the report, so CHNEP staff helped gather the needed information to complete submissions.
- Input Requisitions into the City's procurement process for continuing projects that start on October 1 until the end of FY2022. These were moved through procurement and official purchase orders have been issued.

- Input the Requisition for “Updating & Expanding the Functionality of the CHNEP’s Water Quality Trend Analysis”. This is a project with the University of Florida to strengthen the CHNEP’s Water Atlas tool.
- Completed closing out FY21 by carrying over purchase orders and re-appropriating funds as necessary for FY22 that began on October 1, 2021

Regional and multi-jurisdictional organizational meetings CHNEP staff participated in

- Hosted CHNEP Fall Policy Committee Mtgs. (4)
- ANEP Board Meeting. (4)
- ANEP Executive Committee Meeting
- ANEP External Affairs Committee Meeting (2)
- Hosted Coastal Charlotte Harbor Monitoring Network Annual Meeting
- Water Quality Audit Fl. Dept. Environmental Protection
- Water Quality Audit Lee County Environmental Laboratory
- Water Quality Audit Fl. Fish & Wildlife Conservation Commission
- Water Quality Audit City of Cape Coral
- Charlotte Harbor Flatwoods Initiative Meeting
- Charlotte Harbor Flatwoods Hydrological Modeling Project Policy Meeting (4)
- South Lee County Hydrological Modeling Project Policy Meeting (4)
- South Lee County Hydrological Modeling Project Stakeholders Meeting
- CHNEP Water Atlas Mtg. with USF (4)
- CHNEP Water Atlas New Features UF
- EJ/DEI Planning Mtg. and Workgroup Mtg. (2)
- EPA Nutrients Working Group Meeting
- EPA Climate Working Groups Meeting
- Hosted CHNEP 2022 Nature Calendar Photo Selection Meeting
- Coastal Acidification Network Meeting (2)
- Myakka Headwaters Restoration Project Site Visit (2)
- University of Florida Center for Coastal Solutions Data Analysis Project Meeting (2)
- Meeting with Village of Estero Mayor and City Manager regarding FDEO CDBG-MIT Resiliency Funding projects
- Everglades Working Group / Science Coordination Group Meeting, attended as SCG appointed voting group member
- Southwest Florida Estuarine Restoration Team (SWERT) Steering Committee
- SWFL Regional Resiliency Compact Meeting
- Living Shoreline Restoration Project Meeting (3)
- Science and Environmental Council Meeting
- Myakka River Policy Coordinating Council Meeting
- Southwest Florida Seagrass Working Group Meeting
- Charlotte Harbor Flatwoods Hydrological Modeling Project Site Visit

CHNEP staff presentations

- Presented to the Southwest Florida Seagrass Working Group regarding current status of Charlotte Harbor area estuaries’ seagrass data, water quality, and macroalgae data.
- Presented at the Coastal & Estuarine Research Federation (CERF) 2021 Conference for the Climate Change Resilience session on “Habitat Shifts and Migration in Response to Climate Change in Central and Southwest Florida”.

- Presented on status of water quality in Charlotte Harbor and Charlotte County as well as ongoing projects to Punta Gorda Isles Civic Association and TEAM Punta Gorda.
- Presented on water quality and habitat resilience work of the Partnership to Peace River Audubon Society and Punta Gorda Garden Clubs.
- Presented at Florida Lake Policy Society state conference, keynote presentation on “Citizen Science to Protect Waterways”
- Prepared Presentation for the Florida Redfish Symposium on Water Quality and Status in CHNEP Region
- Presented to Florida Dept. of Environmental Protection Webinar “Get to know CHNEP and the Sarasota Bay Estuaries”.
- Presented at the Southeast Ocean and Coastal Acidification Network (SOCAN) Virtual Meeting.

#### CHNEP publications and external outreach events

- Completed the 2022 Nature Calendar Photo Contest with over 190 entries. A special CAC Photo Selection Meeting was held for CAC members to evaluate the photos.
- Worked with the City of Punta Gorda’s Procurement staff to get the Request for Proposals (RFP) for the CHNEP 2022 Nature Calendar out to bid, which was awarded in early October.
- Finalized and sent the 2022 CHNEP Calendar to the printer.
- Completed seagrass loss maps for CHNEP basins to be featured in Water Atlas Seagrass Pages and for the Fall Harbor Happenings insert to the CHNEP 2022 Nature Calendar.
- Updated project fact sheets, available on CHNEP [website](#), to reflect recently completed projects including a fact sheet on [Macroalgae in Charlotte Harbor](#).
- Completed the design of the [CHNEP Kid’s Activity Book](#) which features environmental education and activities for Grades 2 – 5. The Activity Book was created in place of the Summer 2021 Harbor Happenings Issue and will be used at outreach events to reach younger generations, specifically the Kid’s Sustainable Fishing Clinic.
- Held an educational booth at the Wildcat Tailgate in Polk County with a kid’s activity about stewardship and fish habitat.
- Staged a booth at the [Miakka Hootenanny](#) in Sarasota County to provide educational resources about how citizens can protect the water and wildlife in their community - including kids’ activities about sustainable fishing practices.
- Sponsored and hosted a booth at the virtual [16<sup>th</sup> Annual Sustainable Communities Workshop](#) in early November. CHNEP staff discussed current and recently completed projects with attendees as well as volunteer opportunities.
- Made a number of social media posts on a variety of topics including project site visits, CHNEP Volunteer events, and a National Estuaries Week [social media](#) campaign that highlighted our resources and encouraged people to explore our estuaries.
- Created and Updated [Seagrass Fact Sheets](#) for CHNEP estuaries including 2020 data gathered by partners.
- Created and posted [FDEO CDBG-MIT Resiliency Funding Fact Sheet](#), as well as sent out to partners who had requested such info (City of Punta Gorda and Village of Estero).
- Hosted the [Responding to Rising Waters: A Climate Resiliency Webinar](#). The webinar proceedings, speaker biographies, webinar recording, and a [Citizen Climate Change Action Guide](#) of organizations and resources for participants can be found on CHNEP website

CHNEP monthly volunteer events

- Hosted citizen science training for the “Florida Horseshoe Crab Watch” program with a guest FWC biologist. Over 40 volunteers learned about the Florida Horseshoe crab as well as how to weigh, measure, identify, and tag them.
- Hosted a Coastal Cleanup at Ponce de Leon Park in Punta Gorda for International Coastal Cleanup Day and to celebrate National Estuaries Week. We partnered with Keep Charlotte Beautiful who provided supplies. 15 volunteers participated by collecting trash and data on what was picked up.
- Hosted a [Kid’s Sustainable Fishing Clinic](#) at the Arcadia Rodeo in DeSoto County. Over 85 kids completed 30-minutes of educational activities to learn how to fish sustainably and received a free rod and reel that were grant-funded by Fish Florida. CHNEP staff was assisted by 7 volunteers that helped to successfully run four stations on knot-tying, casting, rules and regulations, stewardship.
- Hosted an EarthEcho Water Challenge where 15 volunteers learned about the importance of water quality monitoring and how they can contribute to a global effort in water monitoring reporting. Participants received a take-home kit to continue to sample their local waterbodies.

Outreach analytics

- 6,376 subscribers for CHNEP educational mailings
- 1,207 unique visitors and 1,936 page visits to CHNEP website
- 72 new Facebook followers (1,674 followers)
- 21 new Facebook Likes (1,401 total likes)
- Completed a National Estuaries Week [social media](#) campaign that highlighted our resources and encouraged people to explore our estuaries.

Media/Press

- [Seagrass restoration in Caloosahatchee River provides many benefits -News-Press](#)
- [Water Quality - Team Punta Gorda Volunteers For A Better Community](#)

CHNEP Executive Director Jennifer Hecker will be presenting the CHNEP Update.

**Attachment:** Association of National Estuary Programs’ (ANEP)  
Red Tide Fact Sheet  
2022 Southwest Florida Climate Summit Flyer

**6. CONSENT AGENDA****A. POLICY COMMITTEE SEPTEMBER 23, 2021 DRAFT MEETING MINUTES**

If any Policy Committee member would like changes or additions made to the minutes from the last meeting, those can be raised when the consent agenda is under discussion before the final vote and approval of it.

**B. AMENDED FY2022 WORK PLAN & BUDGET**

The initial FY22 Work Plan and Budget was presented and approved by the Policy Conference in the spring 2021 meeting cycle. As is customary, the CHNEP annual Work Plans and Budgets need to be amended as updated information is available and as needed due to funding or project changes. As a result, the FY22 Amended Work Plan is being presented for review with the following amendments since last cycle:

Addition of Federal NEP Competitive Grant Funding

- In Table 1 in the amount of \$129,213.
- This is to reflect the award of the NEP Competitive Funding that is administered by Restore America's Estuaries (RAE)
- In Table 2 Federal funding source section, a line item titled 'NEP Competitive Funding (RAE)' has been added for the amount of \$129,213.

Addition of Federal Infrastructure Funding

- On the Revenue portion of Table 1, a line item was added titled 'Federal (Infrastructure Funding)' for the amount of \$915,000. This is funding to be received from the U.S. EPA after the passing of the Bipartisan Infrastructure Funding bill.
- In Table 2 Federal funding source section, a line item titled 'Federal Infrastructure Funding' has been added for the amount of \$915,000. This and the above change result in the Total Federal funding to increase to \$1,744,213.

Addition of Fish & Wildlife Foundation of Florida Revenue

- On the Revenue portion of Table 1, the Partner Contributions (local) was increased by \$5,000 to reflect the funding that will be received by Fish & Wildlife Foundation of Florida for the Place-based Fisheries Conservation in Charlotte Harbor data that will be added to the Water Atlas.
- In Table 2 Non-Federal funding source section, a line item titled 'Fish & Wildlife Foundation of Florida' has been added for the amount of \$5,000 to reflect the funding for the 'Place-based Fisheries Conservation in Charlotte Harbor Project on the Water Atlas'.

Increase of Research & Restoration Project Funding

- On the Expense portion of Table 1, the Research & Restoration Contracts has been updated to \$1,299,796. This is an increase of \$129,213, \$5,000, and \$915,000 that results from the award of the RAE grant, the funding from Fish & Wildlife Foundation of Florida for the Water Atlas, and the Bipartisan Infrastructure Funding.

Additions and Updates to Existing CHNEP Research & Restoration Technical Project Funding

- Updated the amount of 'LCHF Hydrologic Restoration' that is funded by SWFWMD to \$14,805 in FY20 portion. This is a decrease of \$24,704 and is due to that amount being reimbursed by the SWFWMD for tasks that have been closed out.
- Inserted a line item for 'CHNEP Water Atlas Updating & Expanding Water Quality Analysis Trends' in the amount of \$49,959. This project is with the University of Florida and was funded from our previous EPA 'TBD Project' funds.
- Increased the 'CHNEP Water Atlas Maintenance & Improvements' to \$88,038. This is an increase of \$4,968 and is funded from our previous EPA 'TBD Project' funds.
- Inserted a line item for 'Wild Turkey Strand Habitat & Hydrologic Restoration' project in the amount of \$129,213. This funding is a result of the award of the NEP Competitive Funds that is administered by RAE.
- As a result of the 'CHNEP Water Atlas Updating & Expanding Water Quality Analysis Trends' project and 'CHNEP Water Atlas Maintenance & Improvements' increase the total amount of TBD project funds decreased \$12,346.
- Inserted a line item for 'Place-based Fisheries Conservation in Charlotte Harbor Project on the Water Atlas' in the amount of \$5,000. This is the funding from Fish & Wildlife Foundation of Florida to add additional data to the CHNEP Water Atlas.

- Inserted a line item for ‘Bipartisan Federal Infrastructure Funding TBD Project’ in the amount of \$915,000. This is from the Bipartisan Federal Infrastructure Funding being received through the U.S. EPA.
- The above changes have resulted in the overall FY22 Total to increase to \$1,299,796.

Increased Staffing:

- Inserted a line item on Task 1 ‘Policy Conference: Administration, Finance, Operations’ for the amount of \$75,000 of FY21 Carryover Funds to work with the City of Punta Gorda on increasing our Admin. Fees to fund the hiring of a City Procurement specialist to work on CHNEP projects. This is due to large increases in funding coming to the program and the continuing need for projects to move swiftly through the procurement process.
- Inserted a Program & Grant Specialist in the CHNEP organizational chart to add CHNEP internal staff given additional work load associated with doubling of budget and added related projects, as well as to assist with grant writing to continue to expand and increase funding.

Increased Total CHNEP Budget

- The above changes have increased the total Revenue and Expenditures to \$2,089,713 this is an increase of \$129,213, \$5,000, and \$915,000 which is due to the award of the national NEP Competitive Fund (RAE) grant, funding from FWFF for the Water Atlas, and the Bipartisan Infrastructure Funding.
- In Table 2, the total Cooperative Funding has increased to \$2,089,713 which is a result of the RAE, FWFF, and Bipartisan Infrastructure funding described above.

The Management Committee reviewed these amendments to the FY2022 Amended Work Plan & Budget in depth, and unanimously approved a recommendation to the Policy Committee to approve it. Once the FY2022 Amended Work Plan & Budget is approved, CHNEP staff with work to implement it with associated actions such as beginning discussions with the appropriate City staff on additional City and CHNEP positions, a funding agreement and separated more detailed work plan and budget for the ‘Bipartisan Federal Infrastructure Funding’ (once receive EPA funding guidelines), etc.

<b><u>Action:</u></b>	Vote as to whether to approve the Consent Agenda
<b><u>Attachment:</u></b>	CHNEP FY2022 Amended Work Plan & Budget Policy Committee September 23, 2021 Draft Meeting Minutes

**7. AN OVERVIEW OF RED TIDE (*KARENIA BREVIS*) BLOOM DYNAMICS**

The marine alga *Karenia brevis* blooms along the southwest Florida coast almost every year. Blooms commonly occur along the coast of Mexico, as well, but are less frequently observed along Florida’s Panhandle and east coasts and the Texas coast. Blooms of *K. brevis*, commonly referred to as red tide, vary widely in terms of geographic extent, date of initiation, duration, and severity. This variability can be linked in part to local and regional environmental conditions—including ocean circulation—prior to, during, and following a bloom, yet it is not yet possible to predict exactly when and where a bloom will initiate or terminate. Further complicating longer term predictions is the broad ecological niche that *K. brevis* occupies with respect to temperature, salinity, nutrient utilization, and light, as examined via laboratory and field studies. A suite of tools are now being used to help better understand bloom dynamics and increase relevant observations.

Dr. Kate Hubbard, Ph.D., who is a Research Scientist and Director of the Center for Red Tide Research and the Harmful Algal Bloom Monitoring and Research Program for the Florida Fish and

Wildlife Conservation Commission-Fish and Wildlife Research Institute (FWC-FWRI), will be presenting on this item.

**Attachments:**                    Marine harmful algae blooms (HABs) in the United States: History, Current Status and Future Trends scientific article

**8. LAND-BASED NUTRIENTS' EFFECT ON DURATION AND INTENSITY OF RED TIDE EVENTS**

Red Tide (*Karenia brevis*) blooms on Florida's Gulf Coast have severely impacted regional ecosystems, coastal economies, and public health, and a scientific and policy debate has emerged as to whether these blooms are primarily natural or anthropogenic. Current hypotheses suggest that natural biological and oceanographic processes explain the initiation of blooms in the Gulf of Mexico and their transport toward Florida's coast, while anthropogenic nutrient inputs from urban and agricultural areas may intensify blooms once they arrive on the coast. However, past correlation studies have not found compelling links between coastal blooms and anthropogenic inputs.

There is good reason to suspect that finding a causal link between anthropogenic inputs and coastal *K. brevis* blooms may not be as simple as measuring correlations. Algae blooms represent a culmination of complex interacting processes, and correlation is not a reliable metric for interactions in complex systems. Our work transcends the limitations of traditional correlation analyses, using empirical methods based on signal processing and chaos theory to identify systematic cause-and-effect relationships between *K. brevis* and anthropogenic drivers. Our results indicate that anthropogenic forcing is an essential component of coastal *K. brevis* bloom dynamics between Charlotte Harbor and the Caloosahatchee River estuary. In particular, nitrogen-enriched discharges from the Caloosahatchee River have persistently intensified blooms. Further, this anthropogenic influence can be traced upstream to Lake Okeechobee and the Kissimmee River basin. These results suggest that mitigating bloom intensity and duration may require watershed-scale nutrient Policy and modifications to Lake Okeechobee discharge protocols.

Dr. Miles Medina, at the Center for Coastal Solutions at the University of Florida, will be presenting on this item.

**9. STEPS TO REDUCING NUTRIENTS TO REDUCE RED TIDE**

While we know that multiple sources of land-based nutrients can support Red Tide blooms in nearshore waters, questions remain about the watershed drivers that control the timing, magnitude, variability, and impact of nutrient transport in urban landscapes. We also need new and continued research on the efficacy of Policy practices aimed at reducing nutrient losses from urban watersheds. This presentation discusses current and ongoing research in the University of Florida Urban Soil and Water Quality Lab at the UF Gulf Coast Research and Education Center in Hillsborough County. Specific aims of this research include characterizing the nutrient removal efficacy of stormwater control measures; the role of non-fertilizer sources such as reclaimed water, vegetation, and atmospheric deposition in nitrogen enrichment of surface waters; and the chemical characterization of stormwater and wastewater effluents to identify specific compounds used by *Karenia brevis* for the development of appropriate Policy strategies.

Dr. Mary Lusk, a professor in the Soil and Water Sciences Department at the University of Florida in their Gulf Coast Research and Education Center, will be presenting on this item.

## **10. EFFECT OF DECOMPOSING FISH IN PROLONGING RED TIDE EVENTS**

Florida Gulf Coast University's (FGCU) Water School undertook a research project, led by Dr. Mike Parsons in collaboration with Dr. Cindy Heil from Mote Marine Laboratory, as part of the state-funded Florida Red Tide Mitigation & Technology Development Initiative. The project had three objectives: 1) reassess fish as a source of nutrients fueling red tide blooms; 2) conduct a cost-benefit analysis for a fish removal program to mitigate red tide blooms; and 3) evaluate composting as a means to process and repurpose collected fish carcasses for fertilizer use in the future. Briefly, the results of the study indicated that nitrogen release rates (primarily ammonium) may be higher (48% higher) than previous studies estimated and that elevated ammonium concentrations are present in the vicinity of fish kills. Fish kill clean-up costs ranged from \$2,400 to \$6,000 since 2018, whereas economic impacts were estimated to be nearly \$12 million per month in lost tourist-related revenues in Lee and Collier counties when red tide was at high concentrations ( $>10^5$  cells/L). Removing dead fish therefore, may be an economical and effective means to mitigate red tide impacts in southwest Florida. Lastly, red tide toxins (brevetoxins) were effectively degraded via composting and the resultant fish meal shows promise as a natural (and nitrogen-neutral) fertilizer for our region.

Dr. Mike Parsons, Director of the FGCU Water School and appointed member of the state Blue-Green Algae Task Force, will be presenting on this item.

## **11. A PROACTIVE LOCAL GOVERNMENT RED TIDE RESPONSE EXAMPLE**

Pinellas County developed an emergency operational response to Red Tide algae blooms to address the 2018 and 2021 red tide events it experienced – including to physically remove dead fish from its waters during those events. This presentation will share their approach and lessons they have learned, including with regard to contractor Policy, working with local fisherman, water monitoring, citizen communication, and operational best practices.

Paul Dean, Public Works Division Director for Pinellas County, will be presenting on this item.

**Attachments:** Pinellas County Red Tide Response 2022 Draft RFP  
DRC Emergency Services Red Tide Response Proposal

## **12. RESEARCH & RESTORATION PROJECT UPDATES**

The CHNEP has always made it central to its mission to take the best available science, which includes highly technical information, and accurately and succinctly communicate it to the public so it can be readily understood and utilized. As a result, CHNEP made updates to the CHNEP Water Atlas pages and created Seagrass & Macroalgae Fact Sheets that break down seagrass conditions by basin in the CHNEP area and include recent 2020 data gathered by partners as well as information as to why seagrasses are important indicators of estuarine health and water quality

In addition to the projects featured earlier on the agenda, several other research and/or restoration projects (or phases of projects) are currently being funded and project managed by CHNEP including:

- Water Atlas Improvements & Seagrass and Macroalgae Fact Sheets
- Charlotte Harbor Flatwoods Hydrological Modeling Project
- South Lee County Watershed Initiative Hydrological Modeling Project
- Cyanobacteria Rapid Response Pilot Project
- Wild Turkey Strand Restoration Project
- Myakka Headwaters Preserve Restoration

Nicole Iadevaia, CHNEP Research & Outreach Manager, will be presenting updates of progress made on these projects since the last CHNEP Policy Conference committee meeting cycle.

**Attachments:**

Updated CHNEP Seagrass & Macroalgae Fact Sheets  
Updated Project Fact Sheets

**13. POLICY MEMBER UPDATES**

Each Policy Committee member is encouraged to bring and share an update with the rest of the Committee on their respective natural resource protection and restoration as well as related public education and engagement initiatives. Additionally, other environmental topics of interest can be raised for general discussion amongst the members at this portion of the meeting.

Policy Committee Co-Chair Jon Iglehart will be leading and facilitating this discussion.

**14. PUBLIC COMMENT**

Each participating member of the public is afforded up to 3 minutes total to speak at this point in the meeting.

**15. FUTURE MEETING'S TOPICS, LOCATION AND DATE**

The next Policy Committee meeting will be May 26<sup>th</sup>, 2022, and subsequent scheduled meetings are available on the Policy Committee webpage at <https://www.chnep.org/Policy-committee>. Please contact Jennifer Hecker if you have topics you would like to suggest for the agenda.

**12. ADJOURN**