

# PINEY POINT: HOW LOCAL ENTITIES HAVE STEPPED UP TO ADDRESS THE INSULT

## FLORIDA STORMWATER ASSOCIATION 2021 WINTER CONFERENCE

Tony Janicki, PhD



Ed Sherwood  
Marcus Beck, PhD



# PINEY POINT HISTORY

- ▶ 1966: Borden Chemical Company builds the Piney Point phosphate processing plant.



# PINEY POINT HISTORY

- ▶ 1998: Piney Point persuades the State to allow emergency dumping of wastewater into Bishop Harbor after period of high rainfall.
- ▶ Jan. 2001: Piney Point owners abandons their plants and files for bankruptcy
- ▶ Feb. 2001: EPA takes over the Piney Point and Polk County plants, replaced two weeks later by FDEP
- ▶ Sept. - Oct 2001: Tropical Storm Gabrielle dumps more than 18 inches of rain
- ▶ Oct. 16, 2001: DEP issues emergency order allowing dumping of Piney Point water into Bishop Harbor.
- ▶ Nov. 2001: FDEP halts pumping after a 10-million gallon release when Tampa Bay area officials question water quality effects

# PINEY POINT HISTORY

- ▶ July 2002: FDEP begins RO and aeration treatment of stack contents without adequate success. Cargill takes over cleanup at the former Mulberry plant
- ▶ Nov, 2002: FDEP begins to close the Piney Point ponds permanently.
- ▶ Dec. 2002: A New Year's Eve storm drops 16.5 inches of rain on the area. The State suspends the closure effort and the ponds fill back up.
- ▶ 2003: FDEP asks EPA for emergency permission to discharge stack water into the Gulf of Mexico; EPA approves discharge in April; macroalgal blooms in Bishop Harbor

# PINEY POINT HISTORY

- ▶ Jun. 2003: FDEP contracts company of New York to carry stack water to the gulf.
- ▶ 2006: HRK Holdings LLC purchased Piney Point phosphate complex; pays the state toward cleanup and took on long-term maintenance for the next 50 years
- ▶ 2007: FDEP halts discharges from Piney Point stacks. Estimate of 1.1 billion gallons of water had been discharged
- ▶ April 2011: HRK begins storing 1.5 million cubic yards of dredge material in stacks
- ▶ May 2011: A tear in the liner on a gypsum stack led FDEP to issue emergency order allowing discharge of 170 million gallons of water from the site

# PINEY POINT HISTORY

- ▶ February 2021: HRK officials brief Manatee commissioners about rising water levels at Piney Point
- ▶ March 25, 2021: Site operators spot a leak in the southeast corner of the largest pond at Piney Point (480 million gallons)
- ▶ March 29, 2021: FDEP authorizes release of more than 400 million gallons of water from the pond to prevent “a containment failure and catastrophic release”.



# PINEY POINT HISTORY

- ▶ Discharge from Piney Point followed ditch to Port Manatee



# PINEY POINT HISTORY

- ▶ April 2, 2021: Fearing a collapse of the pond walls, Manatee County issues an evacuation order.
- ▶ April 3, 2021: Gov. Ron DeSantis declares a state of emergency for Manatee, Hillsborough and Pinellas counties.



**MARCH 30TH**  
PINEY POINT  
DISCHARGE BEGINS

**APRIL 9TH**  
DISCHARGE CEASES

**APRIL 20TH**  
KARENIA BREVIS FIRST  
OBSERVED NEAR  
ANNA MARIA ISLAND

**APRIL 15TH**  
LOCALIZED DIATOM  
BLOOM OBSERVED

**MAY 23RD**  
KARENIA BREVIS  
REACHES BLOOM  
LEVELS IN MIDDLE  
TAMPA BAY

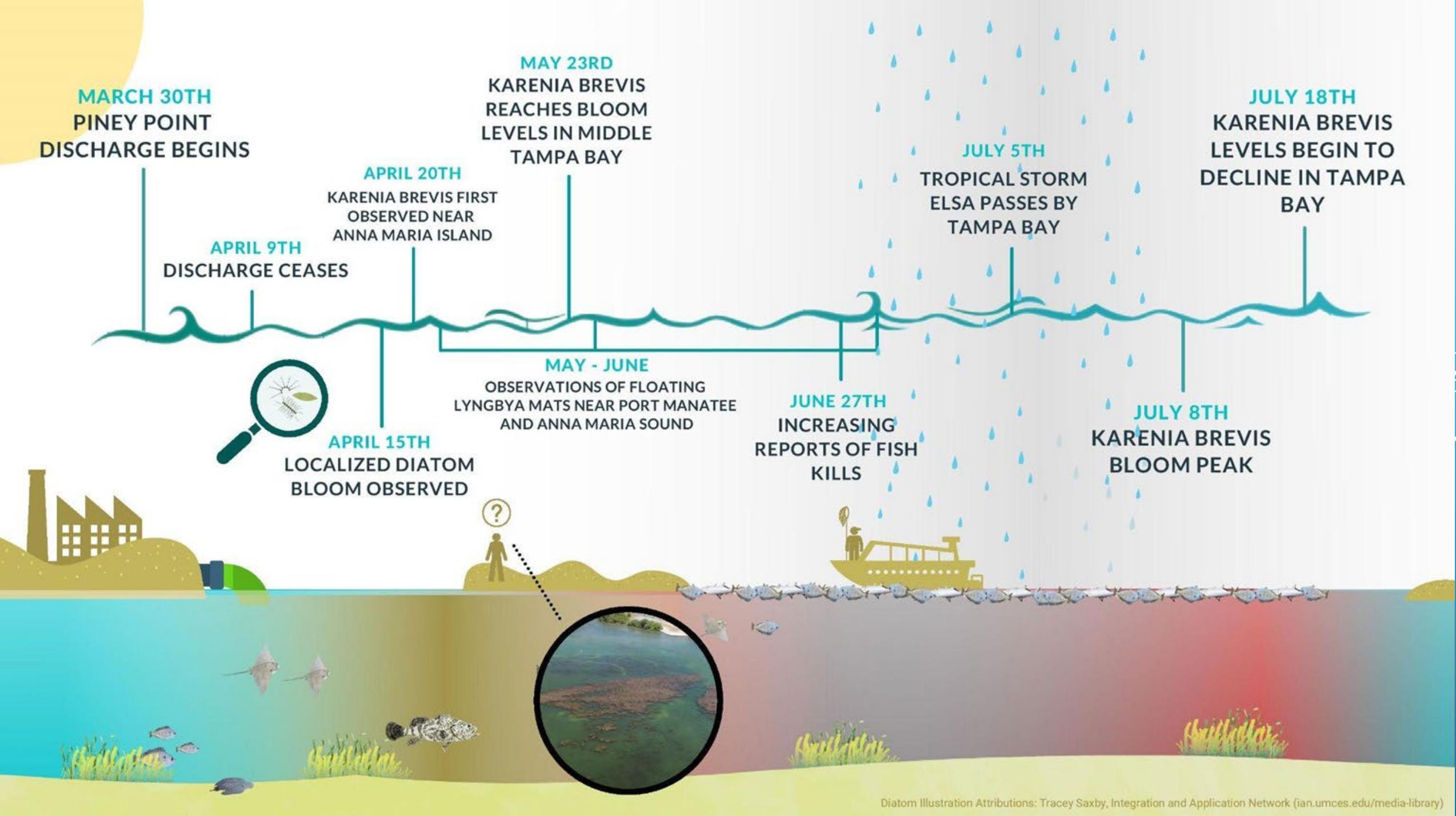
**MAY - JUNE**  
OBSERVATIONS OF FLOATING  
LYNGBYA MATS NEAR PORT MANATEE  
AND ANNA MARIA SOUND

**JUNE 27TH**  
INCREASING  
REPORTS OF FISH  
KILLS

**JULY 5TH**  
TROPICAL STORM  
ELSA PASSES BY  
TAMPA BAY

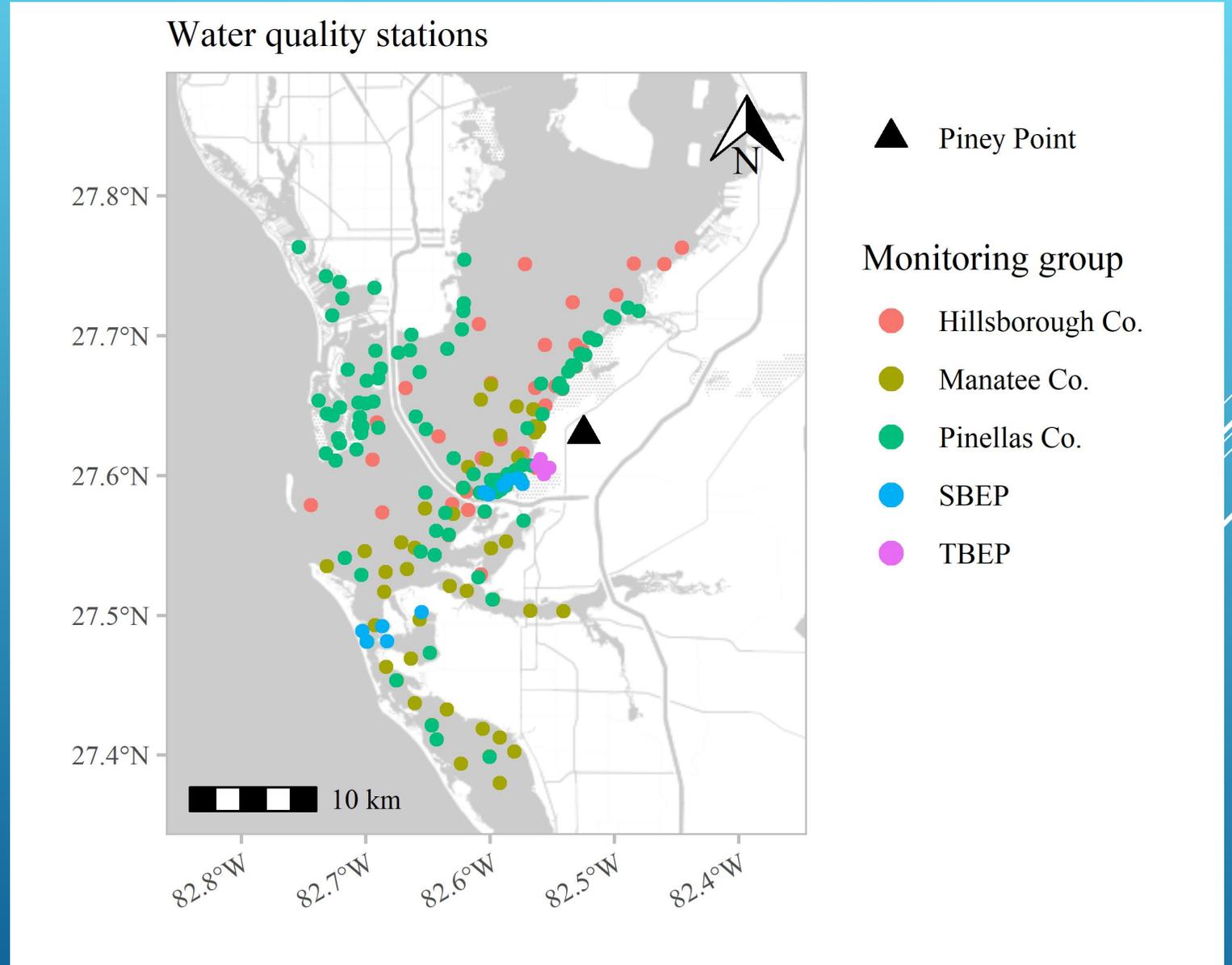
**JULY 8TH**  
KARENIA BREVIS  
BLOOM PEAK

**JULY 18TH**  
KARENIA BREVIS  
LEVELS BEGIN TO  
DECLINE IN TAMPA  
BAY



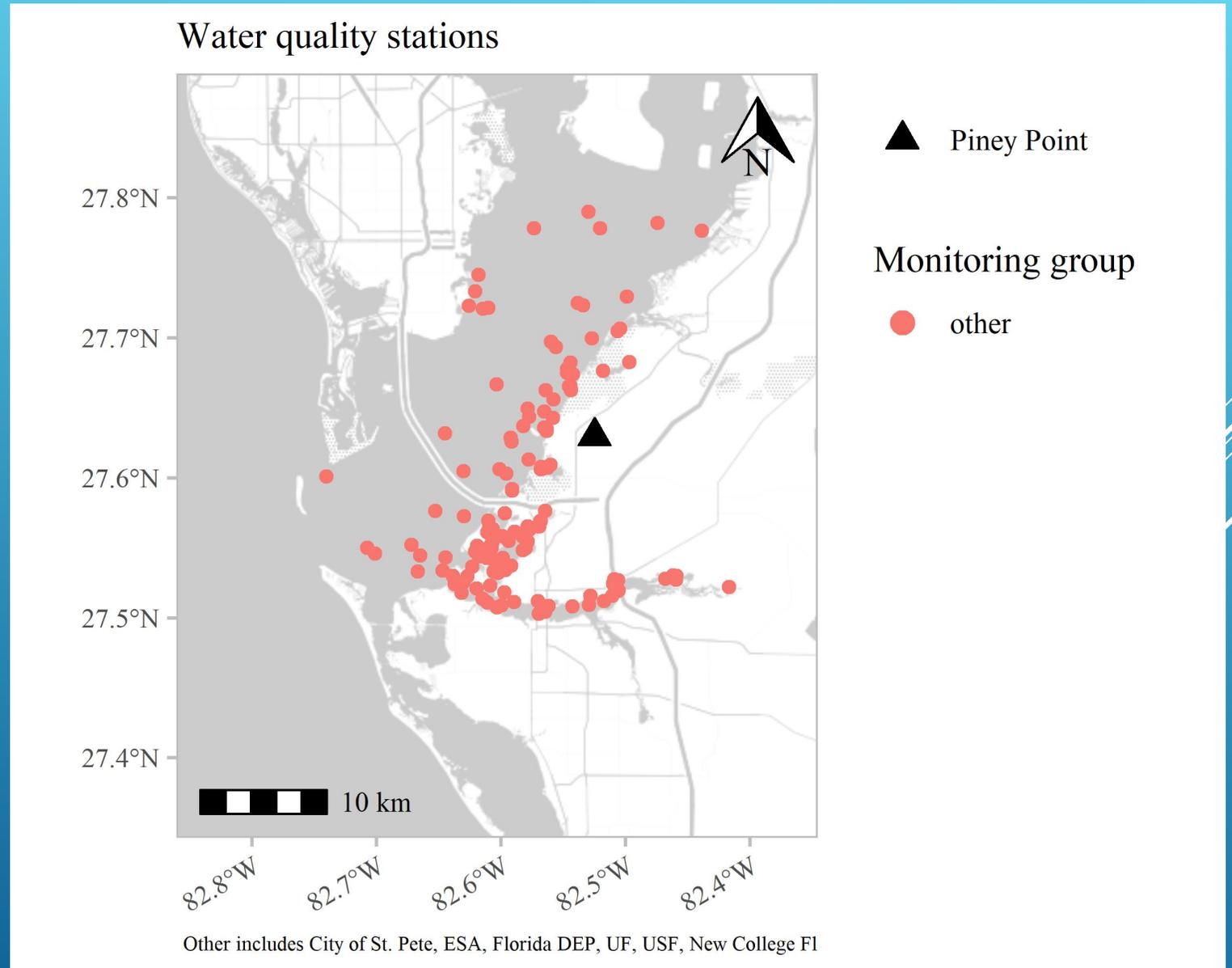
# RESPONSES TO PINEY POINT DISCHARGES

- ▶ With direction from TBEP, local government agencies began water quality sampling within several days of the initiation of the Piney Point discharges
- ▶ SBEP also contributed to the effort



# RESPONSES TO PINEY POINT DISCHARGES

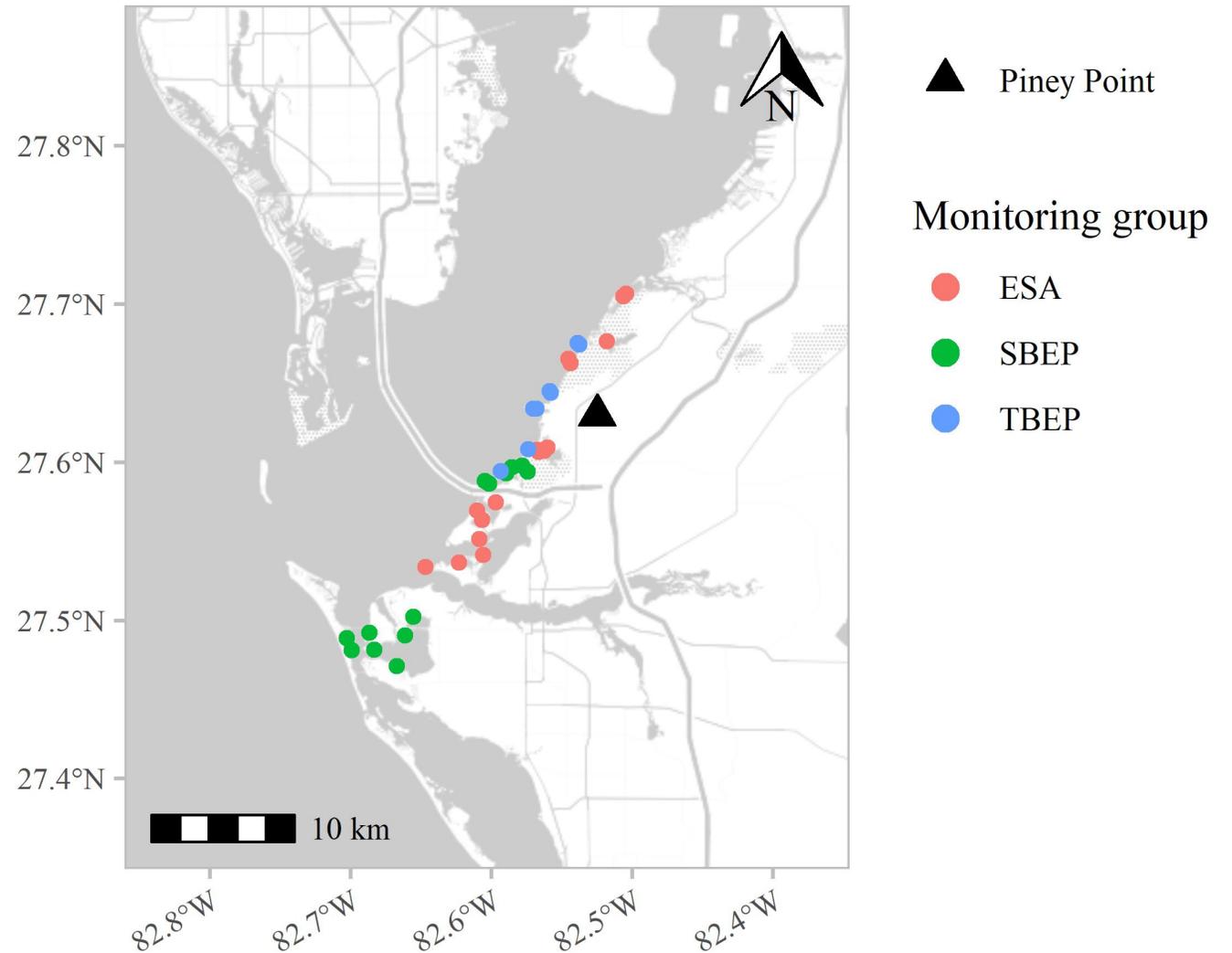
- ▶ Other groups
  - ▶ FDEP
  - ▶ St. Pete
  - ▶ USF
  - ▶ UF
  - ▶ New College
  - ▶ ESA
- ▶ began sampling shortly after the discharge



# RESPONSES TO PINEY POINT DISCHARGES

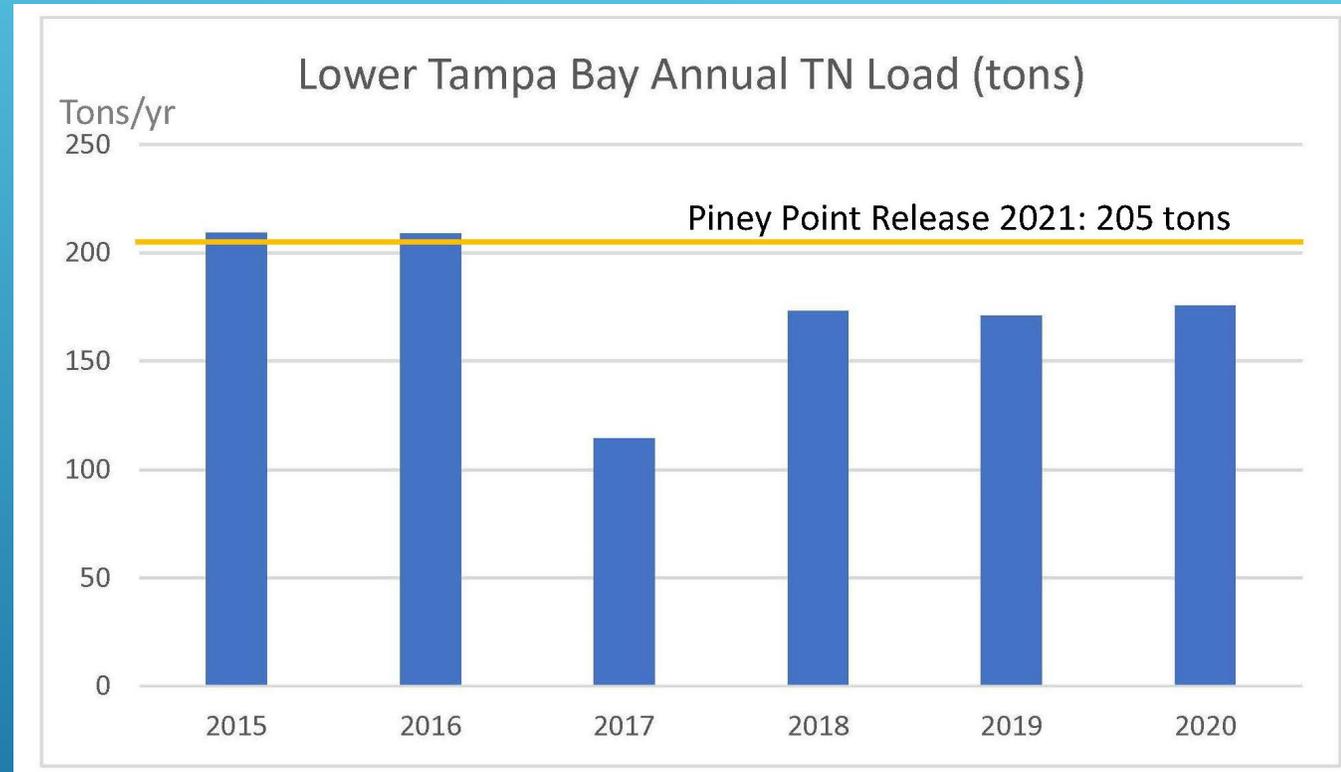
- ▶ Given its importance, seagrass monitoring was also established by TBEP, SBEP and ESA

Seagrass and macroalgae transects



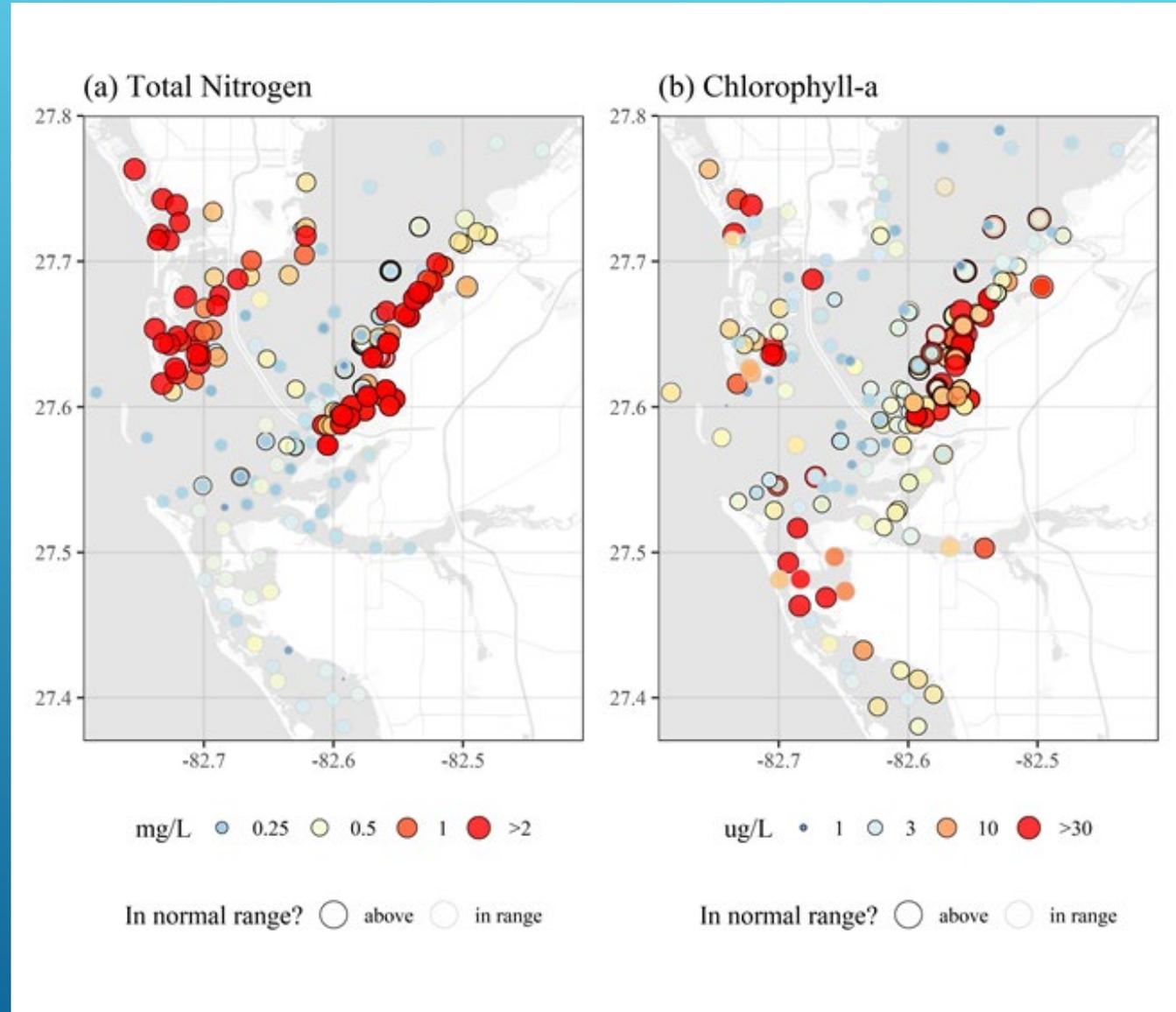
# RESPONSES TO PINEY POINT DISCHARGES

- ▶ From March 30th to April 9th, 2021, 814 million liters of legacy phosphate mining wastewater from the Piney Point facility were released into Tampa Bay.
- ▶ The estimated TN load was 186 metric tons exceeding typical annual external nitrogen load estimates in a matter of days.



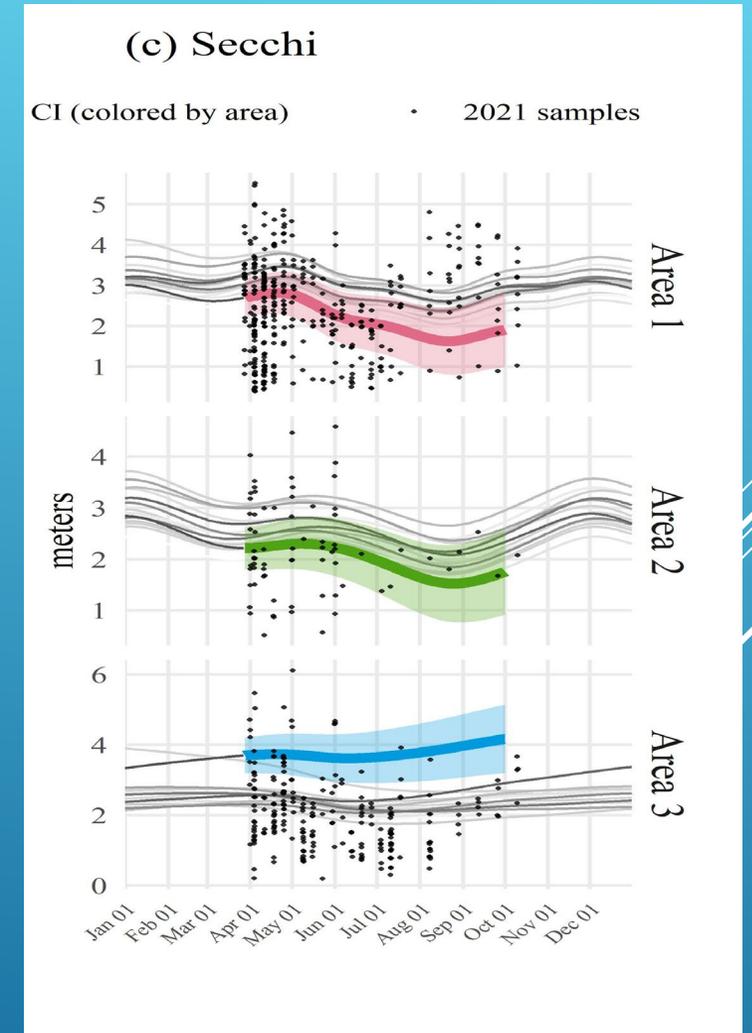
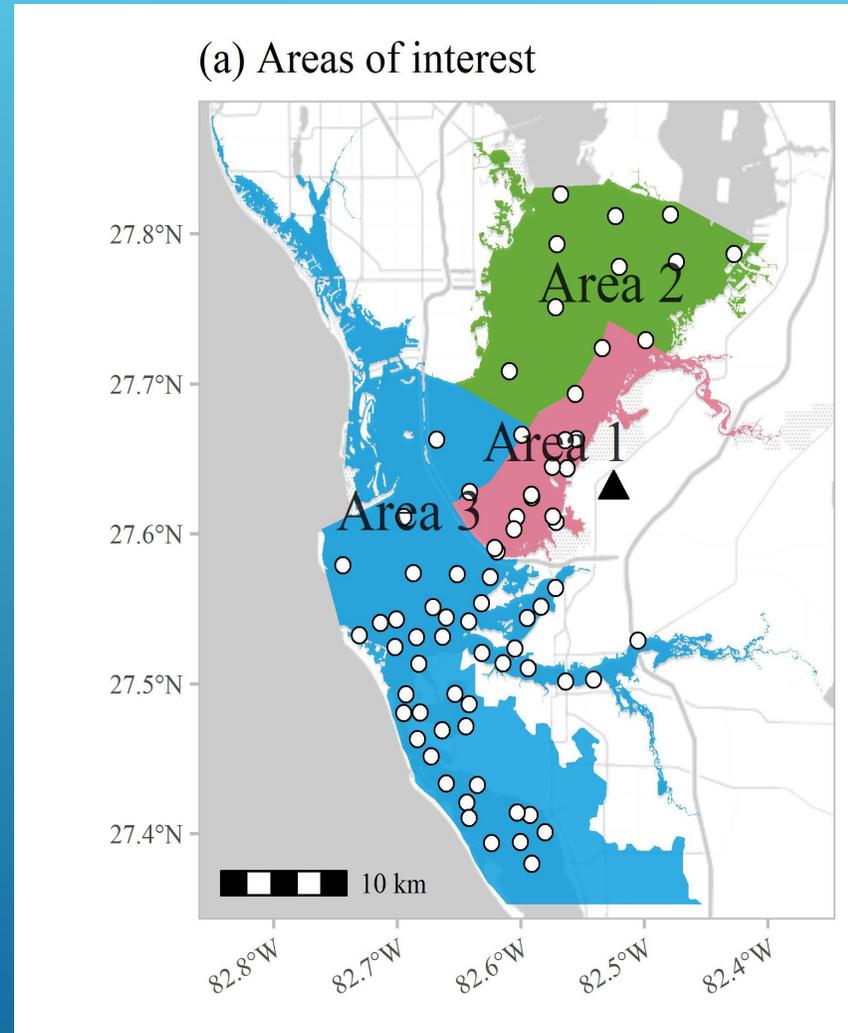
# RESPONSES TO PINEY POINT DISCHARGES

- ▶ TN concentrations rapidly reflected the increase in loads from Piney Point
- ▶ Given the increase in nutrient supply, there was an immediate response was observed in samples closest to the discharge site, with chlorophyll concentrations exceeding  $50 \mu\text{g/L}$ .



# RESPONSES TO PINEY POINT DISCHARGES

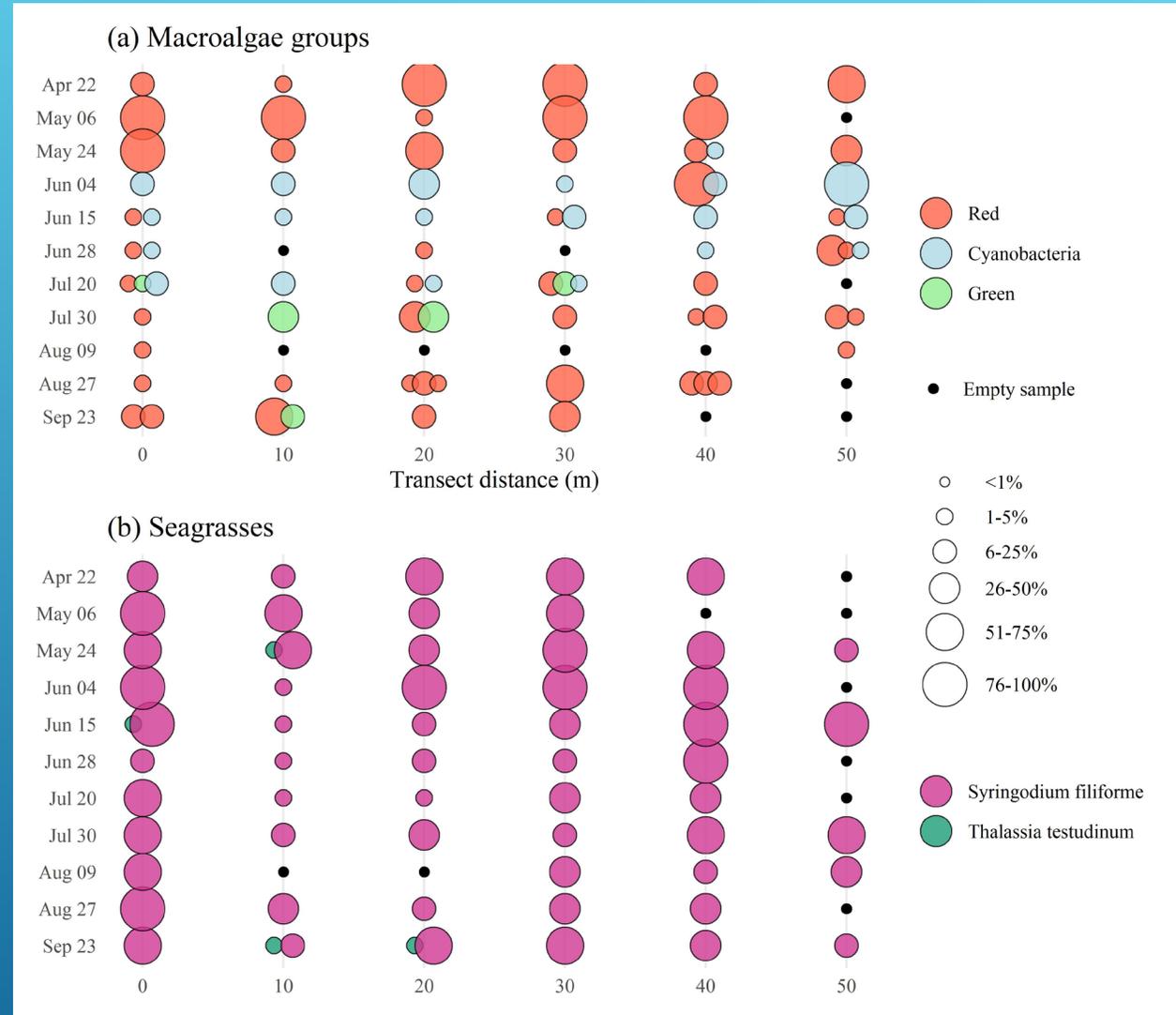
- ▶ Secchi disc transparency also further reflected the impact of the loads from Piney Point



# RESPONSES TO PINEY POINT DISCHARGES

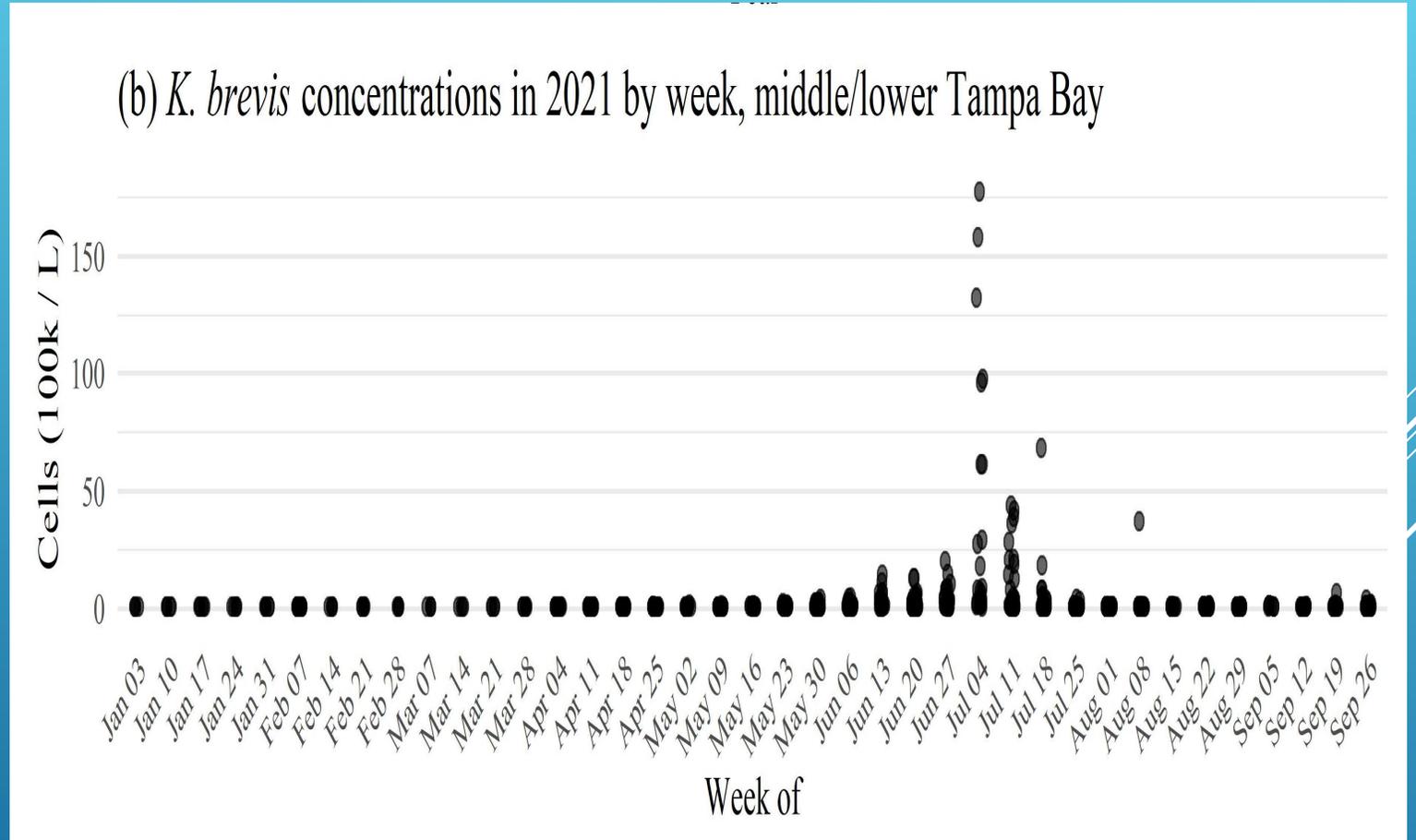
► Macroalgae blooms were observed relatively quickly

► Seagrass losses were also observed.



# RESPONSES TO PINEY POINT DISCHARGES

- ▶ Cyanobacteria blooms (*Dapis* spp.) peaked in June, followed by *Karenia brevis* blooms in Tampa Bay proper in July.



# RESPONSES TO PINEY POINT DISCHARGES

- ▶ Reported fish kills tracked red tide concentrations, prompting local cleanup efforts to remove over 1600 metric tons of dead fish.



# Status Updates & Briefs

Primary Referrer: [tbec.org/piney-point](https://tbec.org/piney-point) ; Open Science Portal: [shiny.tbec.org/piney-point](https://shiny.tbec.org/piney-point)

Since April 12th, 2021, regional partners involved in the environmental monitoring of Piney Point have met regularly to share information and plan their monitoring efforts. The TBEP has been using this information to publish the monthly monitoring updates available below.

**Piney Point Monitoring Summary**  
April 2021

**Background**  
On March 24th, 2021, H&E Holdings, LLC reported a pipeline water leak located approximately 1/2 mile from the Point Canal. By the following Monday, March 29th, TBEP issued an [Emergency Order \(EO 2021-001\)](#) allowing for immediate release of the released pipeline water from the one-gallon storage tank (POT) to prevent potential contamination of the surrounding water. Approximately 4000 gallons of stored pipeline water was contained in the falling stock tank at the end of the canal. On March 30th, April 1st, and April 2nd, TBEP conducted a risk assessment and issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico. TBEP issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico. TBEP issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico.

**Key Observations**  
No additional direct discharges from the Piney Point facility to Tampa Bay occurred in May. No direct discharges were observed in May. No direct discharges were observed in May. No direct discharges were observed in May.

**Future Efforts**  
TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay.

**Piney Point Monitoring Results**  
End of April 2021

**Background**  
On March 24th, 2021, H&E Holdings, LLC reported a pipeline water leak located approximately 1/2 mile from the Point Canal. By the following Monday, March 29th, TBEP issued an [Emergency Order \(EO 2021-001\)](#) allowing for immediate release of the released pipeline water from the one-gallon storage tank (POT) to prevent potential contamination of the surrounding water. Approximately 4000 gallons of stored pipeline water was contained in the falling stock tank at the end of the canal. On March 30th, April 1st, and April 2nd, TBEP conducted a risk assessment and issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico. TBEP issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico.

**Key Observations**  
No additional direct discharges from the Piney Point facility to Tampa Bay occurred in April. No direct discharges were observed in April. No direct discharges were observed in April. No direct discharges were observed in April.

**Future Efforts**  
TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay.

**Piney Point Monitoring Results**  
End of May 2021

**Background**  
On March 24th, 2021, H&E Holdings, LLC reported a pipeline water leak located approximately 1/2 mile from the Point Canal. By the following Monday, March 29th, TBEP issued an [Emergency Order \(EO 2021-001\)](#) allowing for immediate release of the released pipeline water from the one-gallon storage tank (POT) to prevent potential contamination of the surrounding water. Approximately 4000 gallons of stored pipeline water was contained in the falling stock tank at the end of the canal. On March 30th, April 1st, and April 2nd, TBEP conducted a risk assessment and issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico. TBEP issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico.

**Key Observations**  
No additional direct discharges from the Piney Point facility to Tampa Bay occurred in May. No direct discharges were observed in May. No direct discharges were observed in May. No direct discharges were observed in May.

**Future Efforts**  
TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay.

**Piney Point Monitoring Results**  
End of June 2021

**Background**  
On March 24th, 2021, H&E Holdings, LLC reported a pipeline water leak located approximately 1/2 mile from the Point Canal. By the following Monday, March 29th, TBEP issued an [Emergency Order \(EO 2021-001\)](#) allowing for immediate release of the released pipeline water from the one-gallon storage tank (POT) to prevent potential contamination of the surrounding water. Approximately 4000 gallons of stored pipeline water was contained in the falling stock tank at the end of the canal. On March 30th, April 1st, and April 2nd, TBEP conducted a risk assessment and issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico. TBEP issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico.

**Key Observations**  
No additional direct discharges from the Piney Point facility to Tampa Bay occurred in June. No direct discharges were observed in June. No direct discharges were observed in June. No direct discharges were observed in June.

**Future Efforts**  
TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay.

**Piney Point Monitoring Results**  
End of July 2021

**Background**  
On March 24th, 2021, H&E Holdings, LLC reported a pipeline water leak located approximately 1/2 mile from the Point Canal. By the following Monday, March 29th, TBEP issued an [Emergency Order \(EO 2021-001\)](#) allowing for immediate release of the released pipeline water from the one-gallon storage tank (POT) to prevent potential contamination of the surrounding water. Approximately 4000 gallons of stored pipeline water was contained in the falling stock tank at the end of the canal. On March 30th, April 1st, and April 2nd, TBEP conducted a risk assessment and issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico. TBEP issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico.

**Key Observations**  
No additional direct discharges from the Piney Point facility to Tampa Bay occurred in July. No direct discharges were observed in July. No direct discharges were observed in July. No direct discharges were observed in July.

**Future Efforts**  
TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay.

**Piney Point Monitoring Results**  
End of August 2021

**Background**  
On March 24th, 2021, H&E Holdings, LLC reported a pipeline water leak located approximately 1/2 mile from the Point Canal. By the following Monday, March 29th, TBEP issued an [Emergency Order \(EO 2021-001\)](#) allowing for immediate release of the released pipeline water from the one-gallon storage tank (POT) to prevent potential contamination of the surrounding water. Approximately 4000 gallons of stored pipeline water was contained in the falling stock tank at the end of the canal. On March 30th, April 1st, and April 2nd, TBEP conducted a risk assessment and issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico. TBEP issued an order for water discharge to a ditch serving agricultural and urban areas discharging to the Gulf of Mexico.

**Key Observations**  
No additional direct discharges from the Piney Point facility to Tampa Bay occurred in August. No direct discharges were observed in August. No direct discharges were observed in August. No direct discharges were observed in August.

**Future Efforts**  
TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay. TBEP will continue to monitor the receiving water quality in Tampa Bay.

Onset:  
Monitoring  
Summary

End of April

End of May

End of June

End of July

End of August



THANK YOU

QUESTIONS

