COORDINATED MONITORING OF THE PINEY POINT WASTEWATER DISCHARGE INTO TAMPA BAY

DATA SYNTHESIS AND REPORTING

TBEP
TAMPA BAY ESTUARY PROGRAM
PARTNERSHIP FOR A HEALTHY BAY

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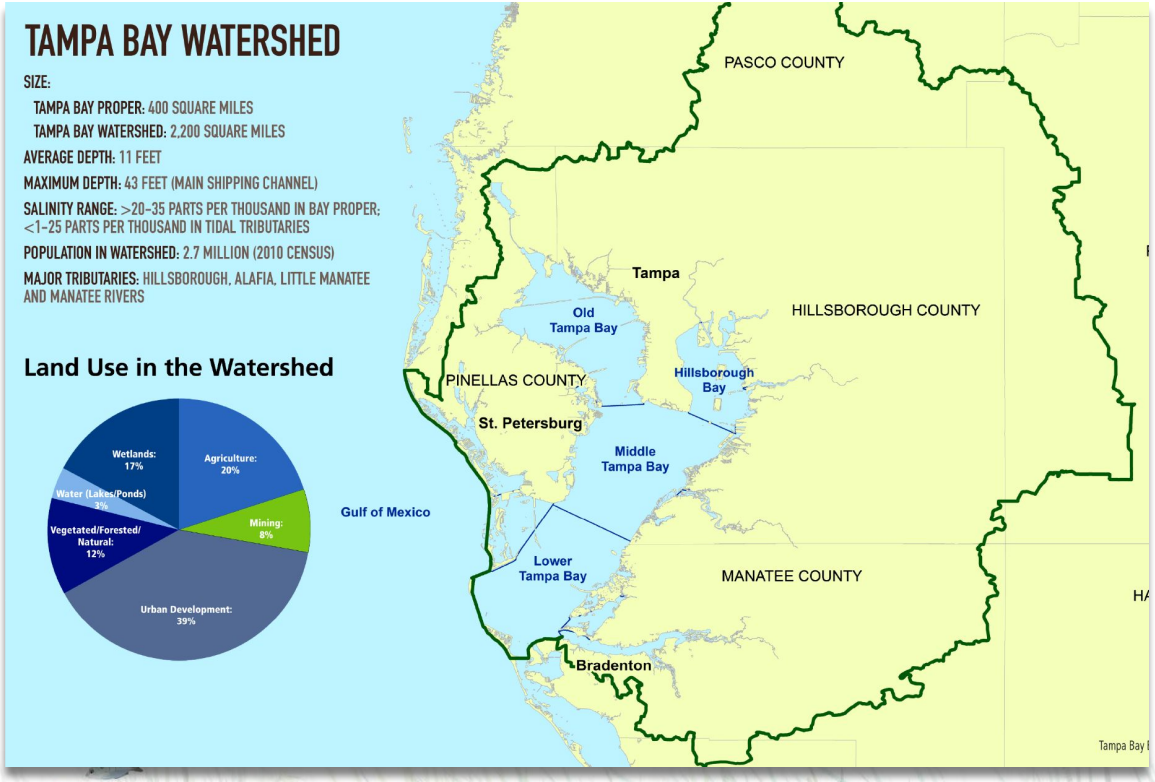
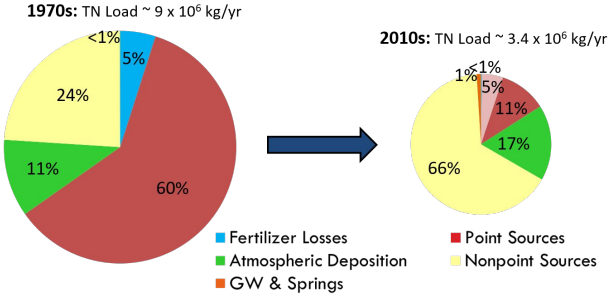
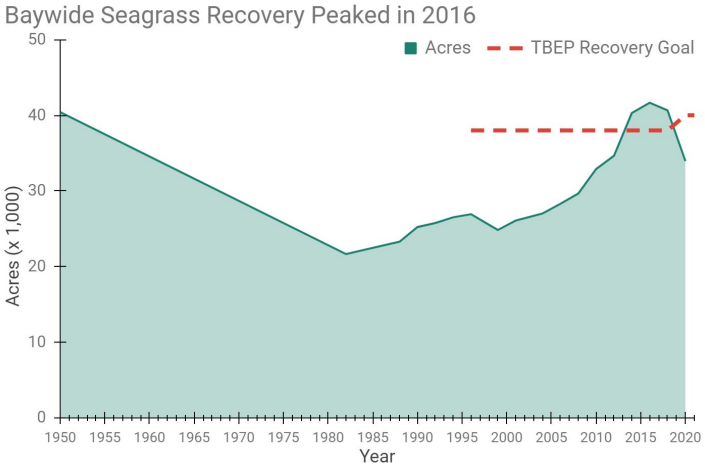
TAMPA BAY



Nitrogen reductions

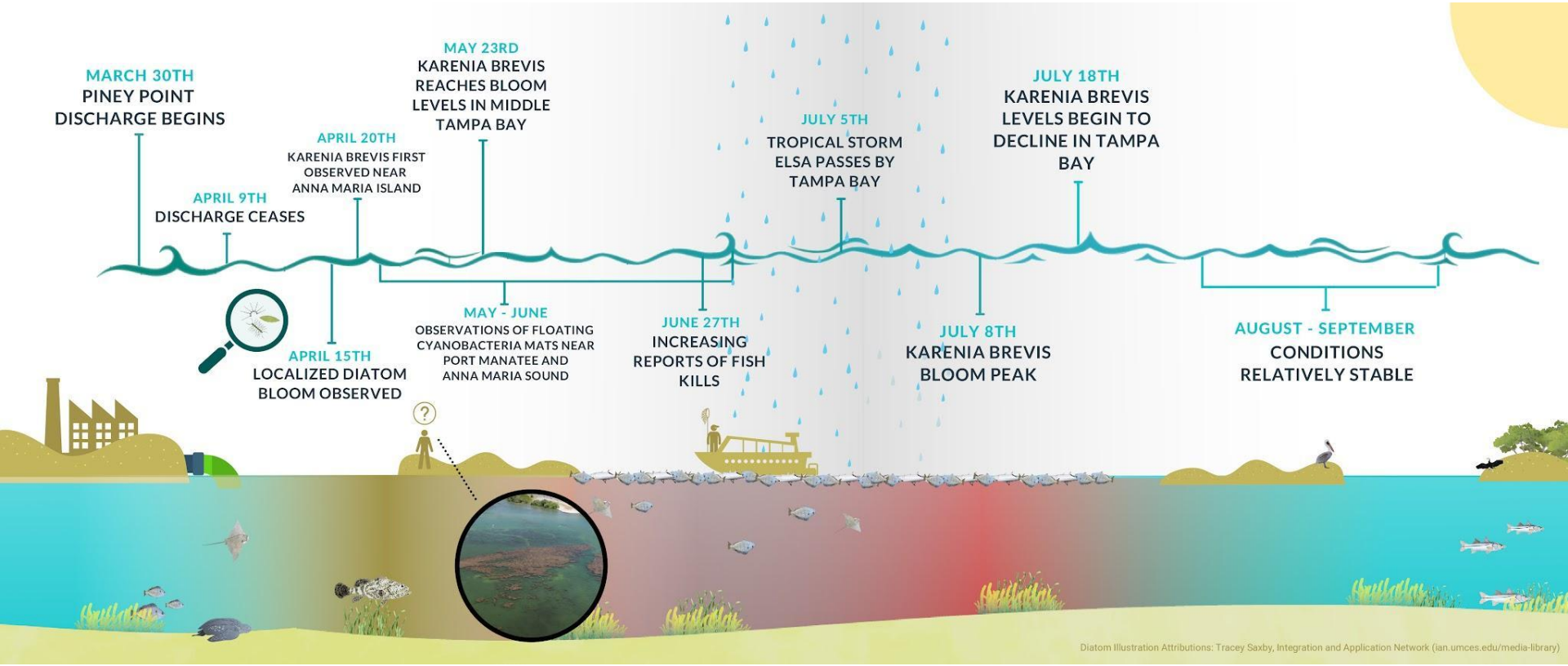


Seagrass recovery



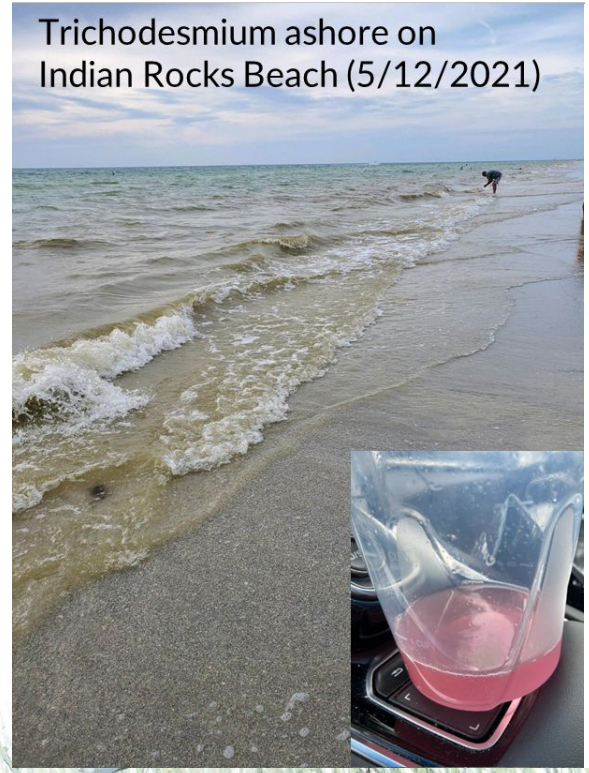
PINEY POINT

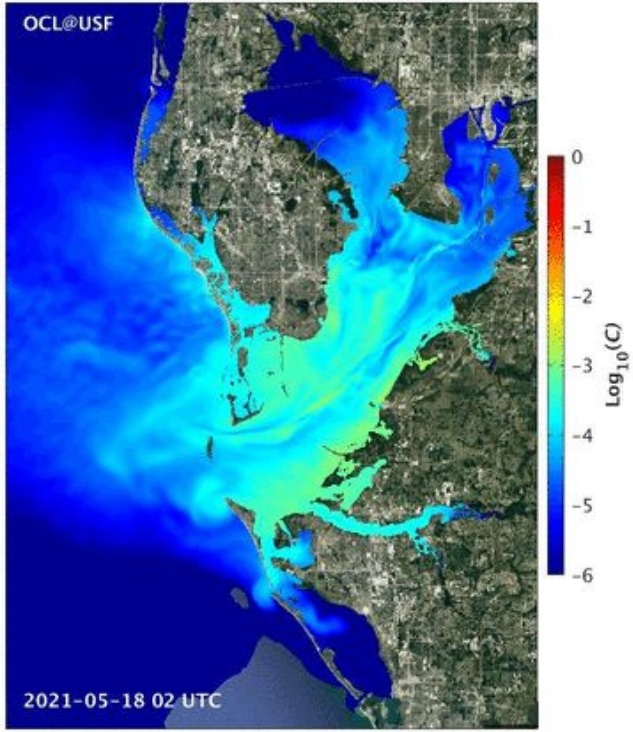
- Legacy phosphate mining facility, inactive since the 1990s
- Storage of mining wastewater and other dredged materials in “gypstacks”
- History of discharge events surrounding closure of the facility
- 2021 Event = 205 Tons TN

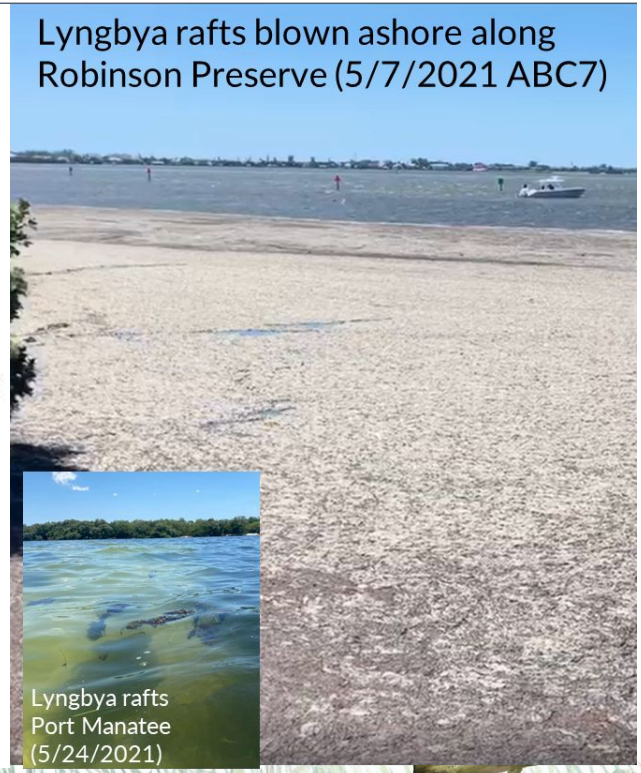


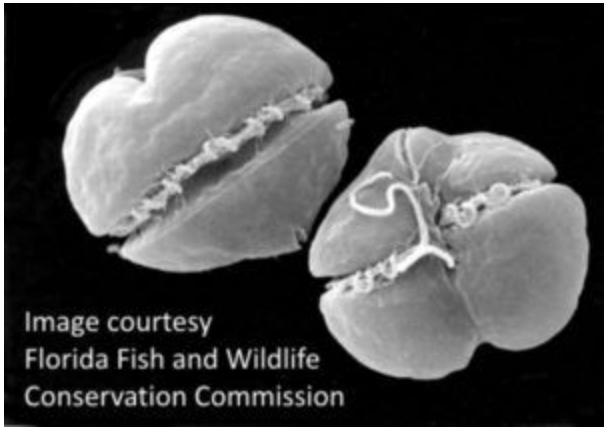
Diatom Illustration Attributions: Tracey Saxby, Integration and Application Network (ian.umces.edu/media-library)

Algal & Macroalgal (Seaweed) Blooms



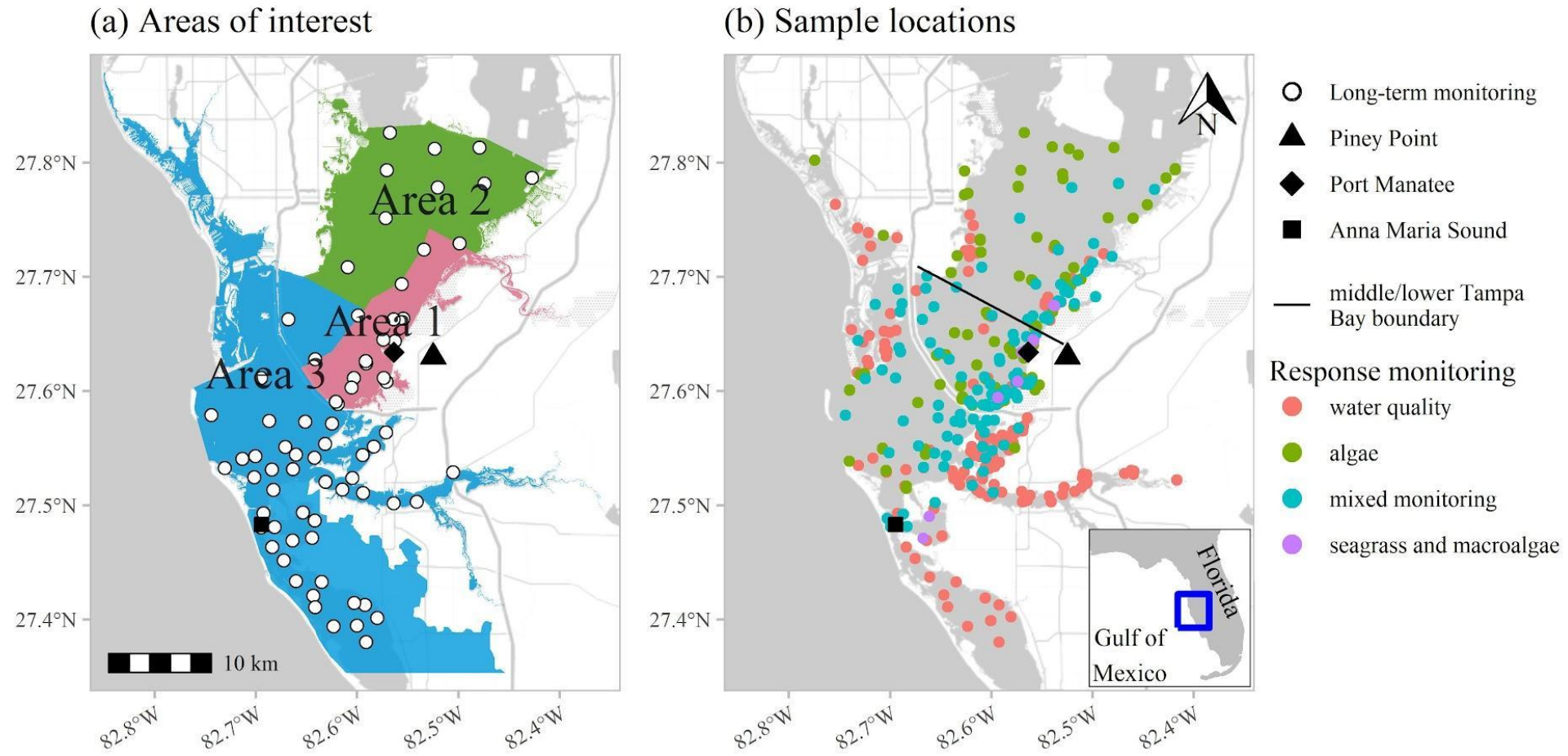






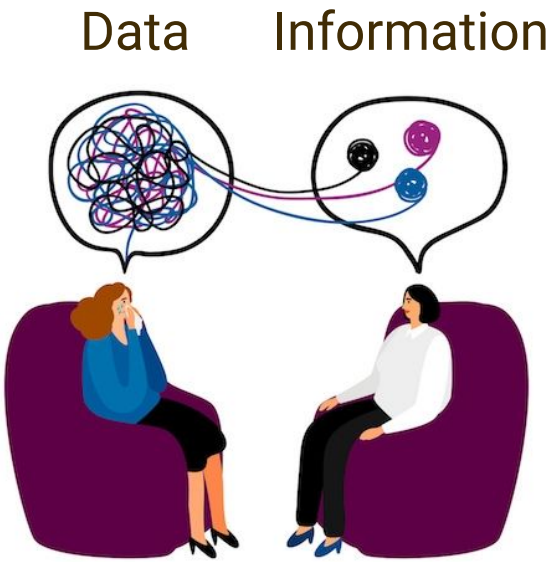
Red Tide (*Karenia brevis*)

COORDINATED MONITORING



DATA NEEDS

- Can we ***organize*** data from dozens of partners, locations, types in a timely manner?
- How do we ***contextualize*** this data as information?
- What venue can we use to rapidly ***communicate*** environmental impacts?



Credit: ssstocker - stock.adobe.com

Credit: https://beyondplm.com/

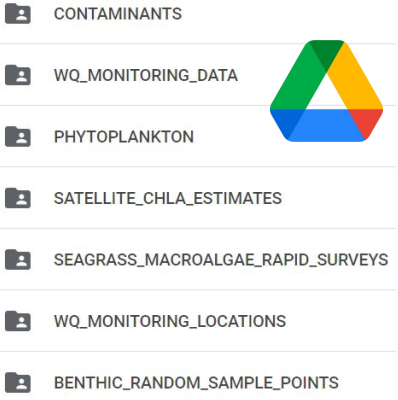
SOLUTION 1: OPEN SOURCE AND TIDY DATA

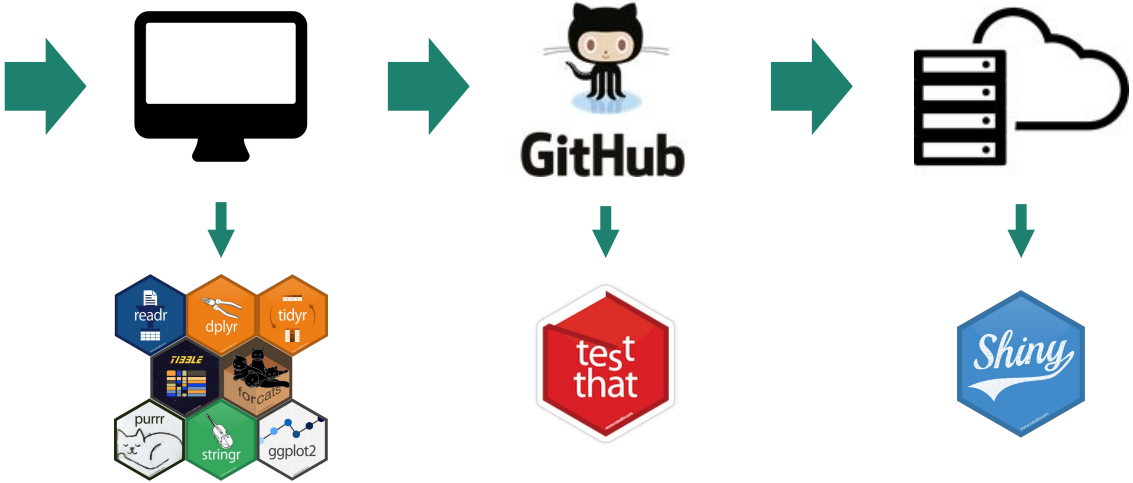
File drops

Data synthesis

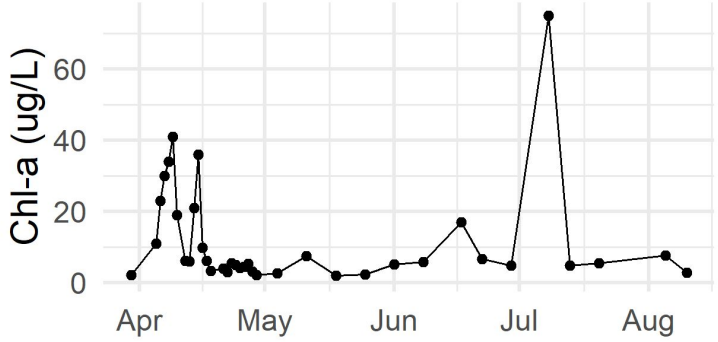
Testing and sharing

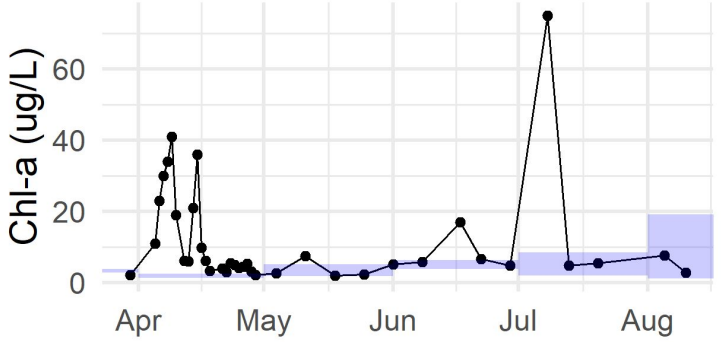
App deployment





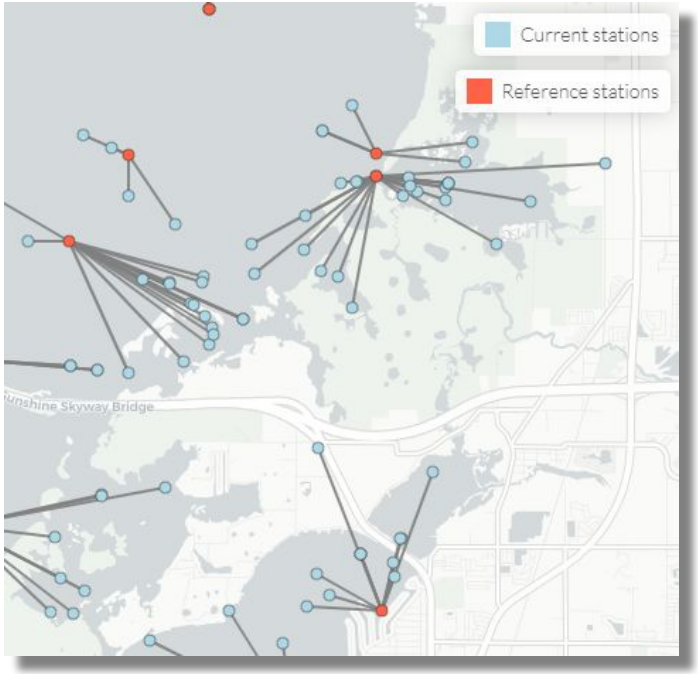
PROBLEM 2: CONTEXT

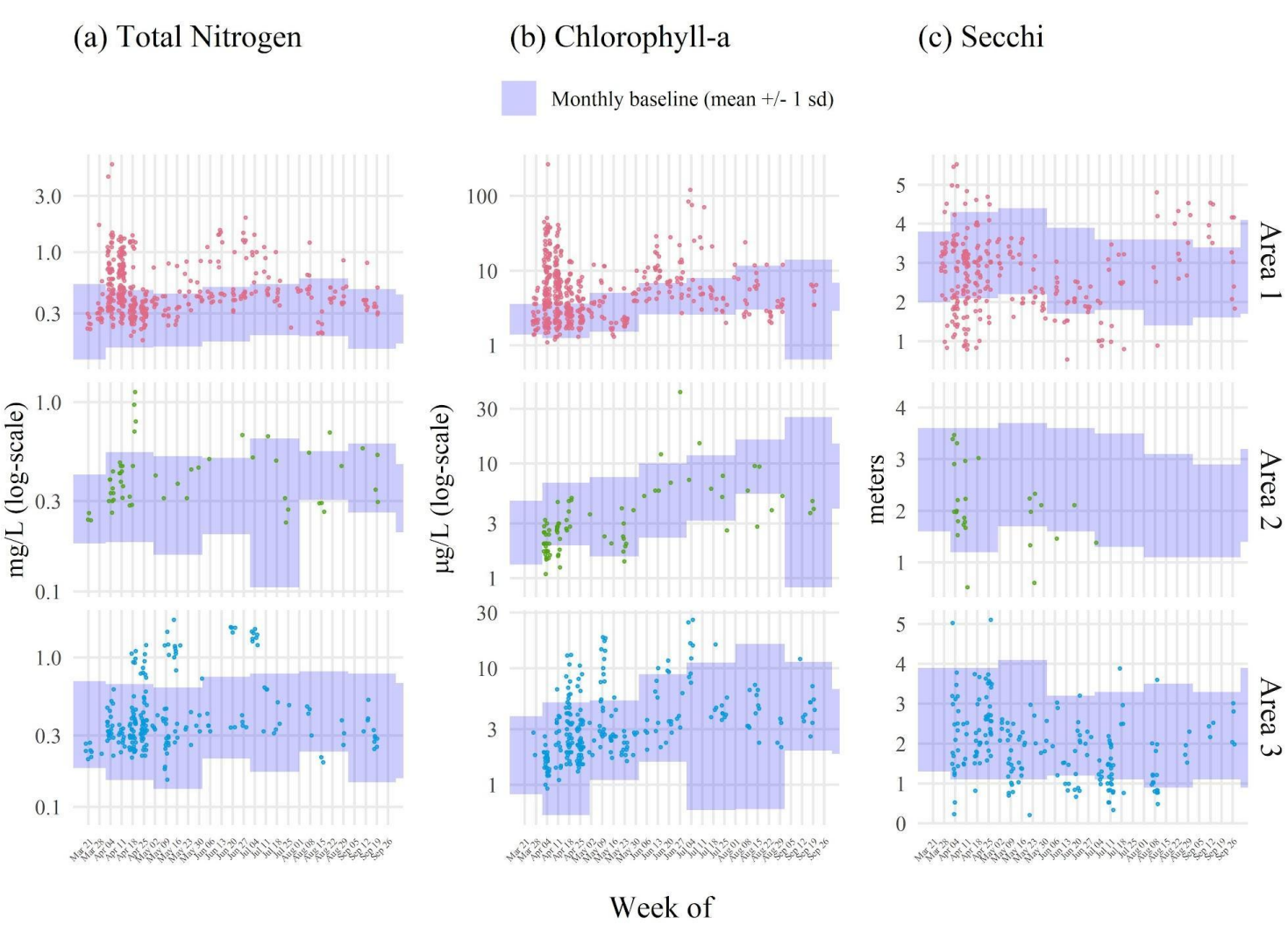




SOLUTION 2: LONG-TERM MONITORING

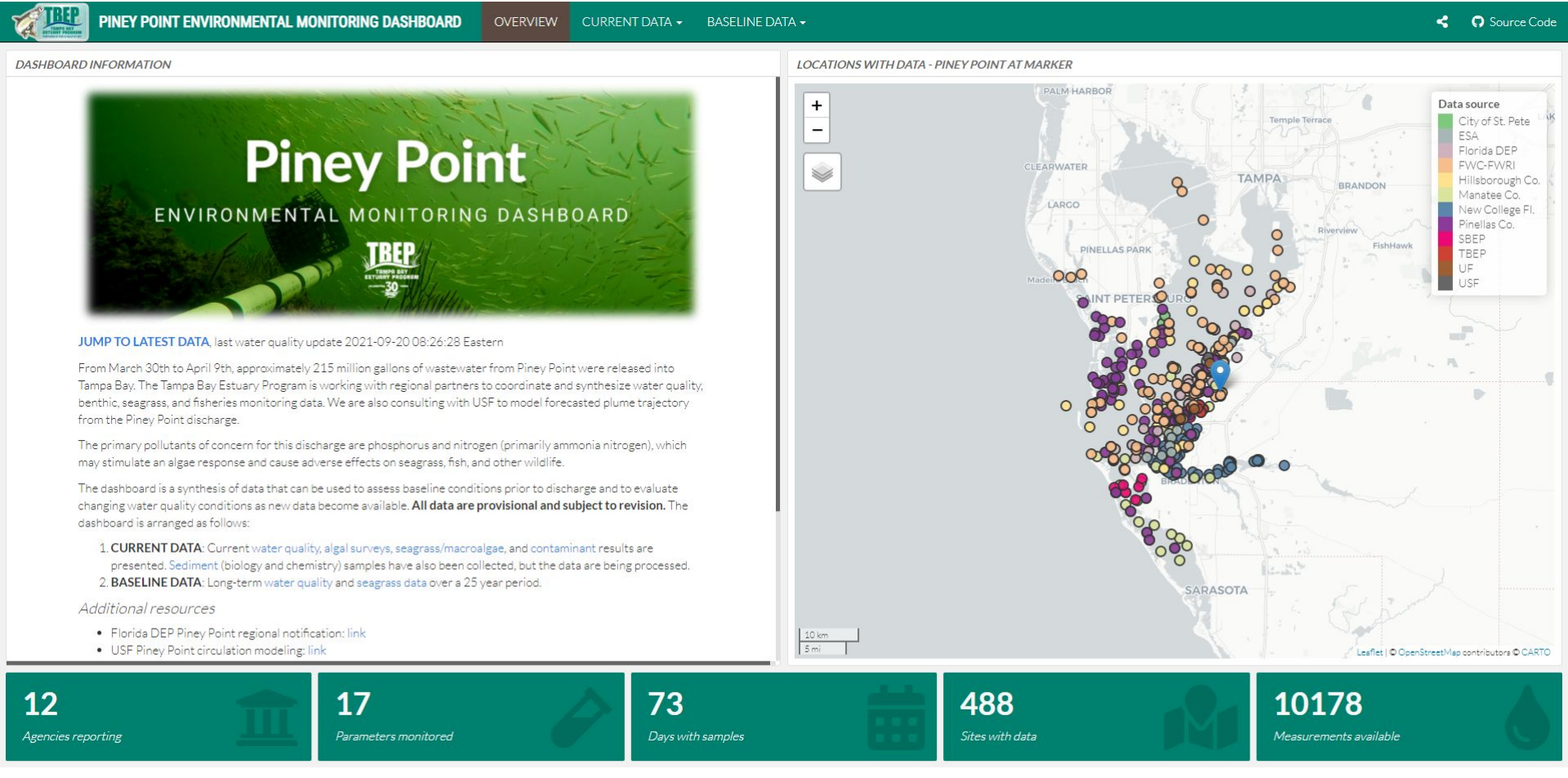
- Nearly 50 years of long-term monitoring data
- Find nearest reference station
- Calculate mean +/- 1 SD
- Compare current to reference




(a) Total Nitrogen
(b) Chlorophyll-a
(c) Secchi
Monthly baseline (mean +/- 1 sd)
mg/L (log-scale)
µg/L (log-scale)
meters
Area 1
Area 2
Area 3
Week of

PROBLEM 3: COMMUNICATION

SOLUTION 3: shiny.tbep.org/piney-point



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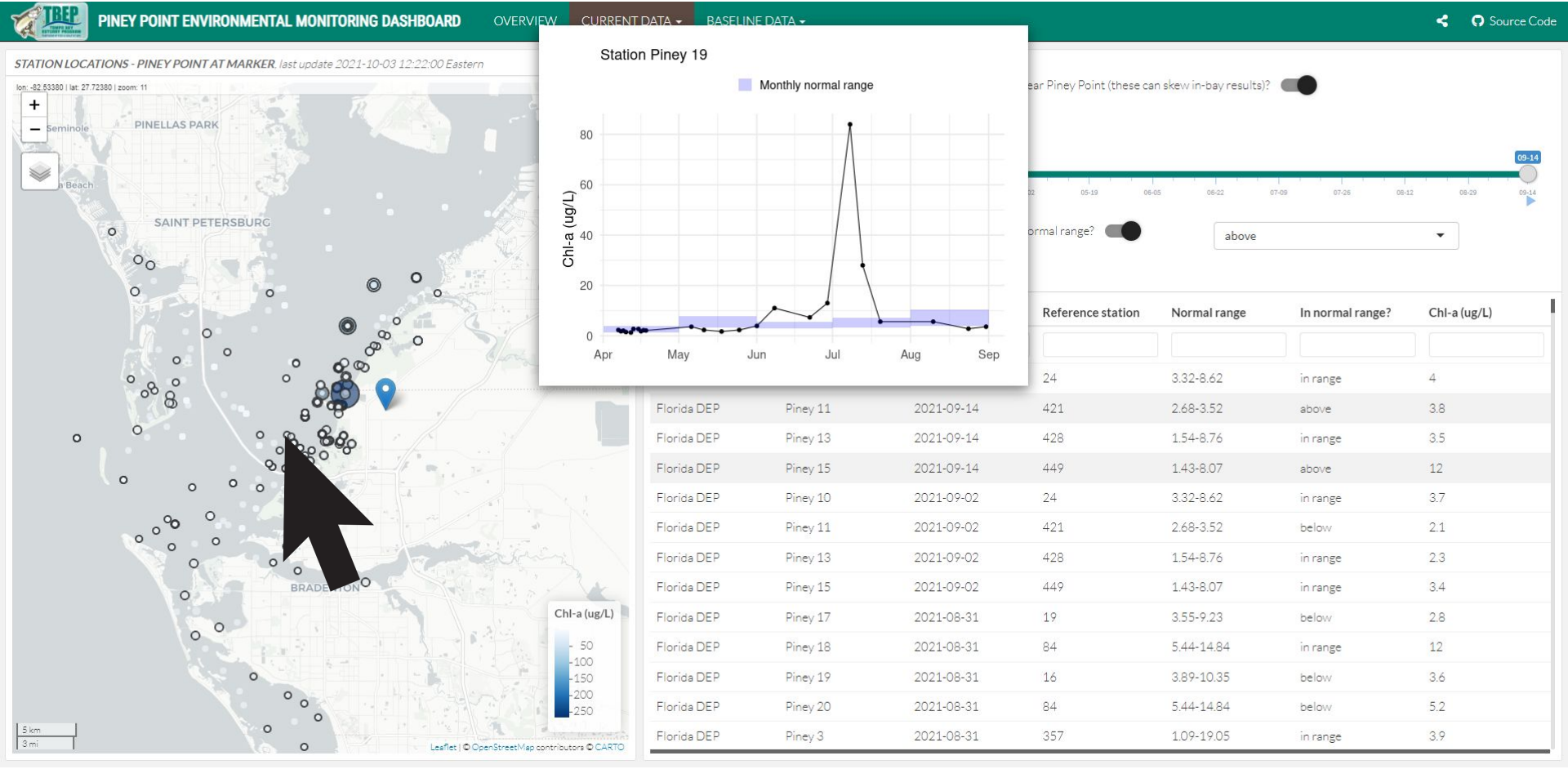
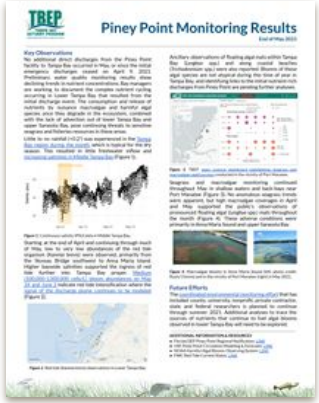
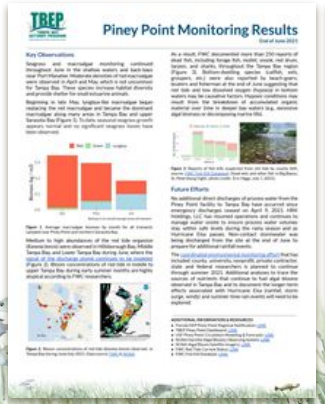
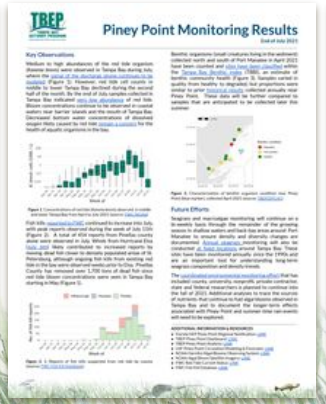
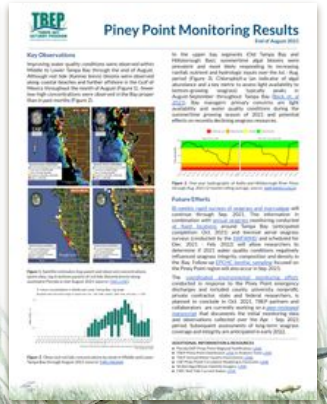


Monthly Monitoring Briefs + Social Media









LESSONS LEARNED

- Response-based monitoring requires an ***open tools*** for rapid synthesis
- Make full use of ***historical data*** to inform context
- Use appropriate ***web-based platforms*** to share widely

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github.com/tbep-tech/piney-point

shiny.tbep.org/piney-point

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