SEACAR Frontiers: Supporting Data-Driven Management Planning

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STATEWIDE ECOSYSTEM ASSESSMENT OF COASTAL AND AQUATIC RESOURCES

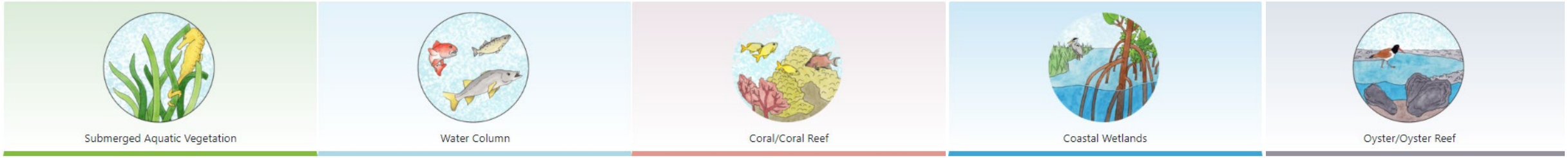
ONE DATABASE

- Standardized
- Well-documented
- Multiple locations
- Multiple sources

STATEWIDE ECOSYSTEM ASSESSMENT OF COASTAL AND AQUATIC RESOURCES

FIVE HABITATS

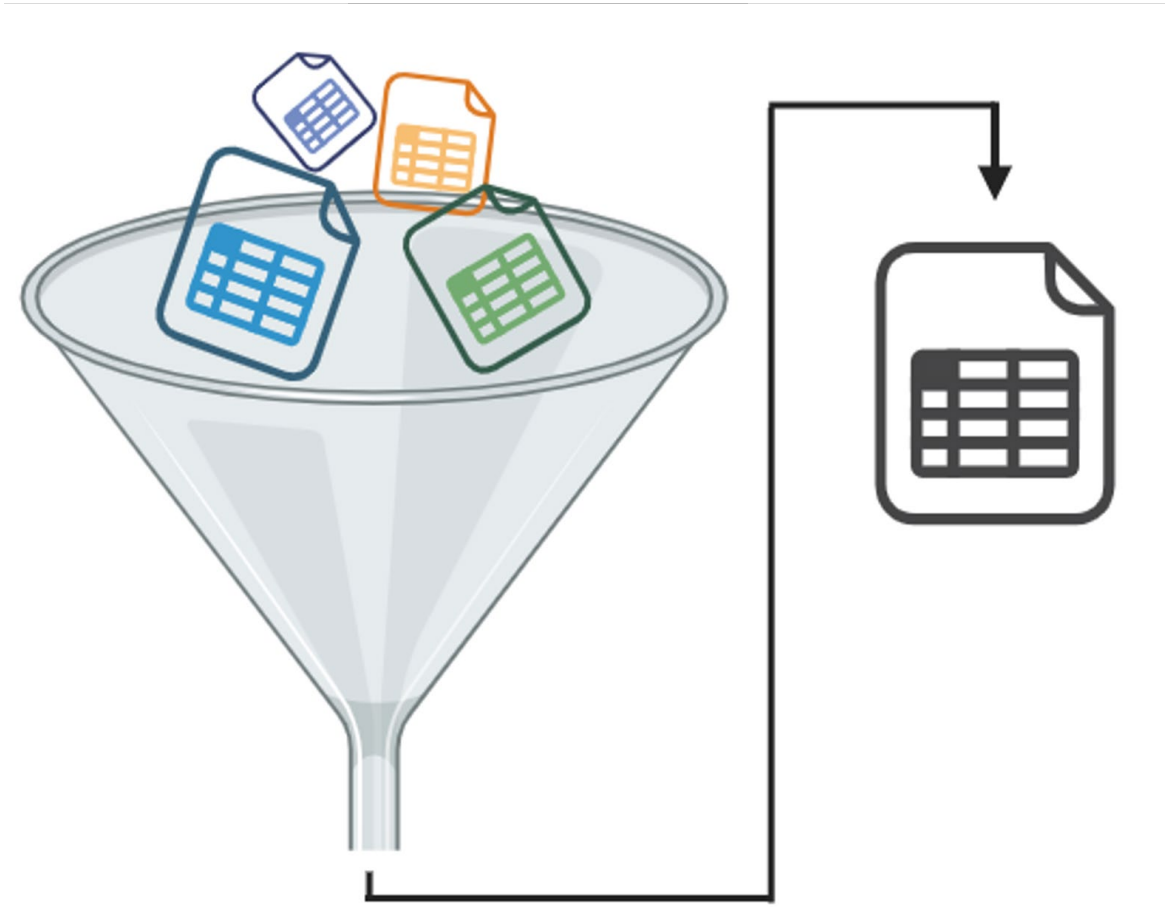
- Submerged Aquatic Vegetation
- Water Column
- Coral Reef
- Coastal Wetlands
- Oyster Reef



STATEWIDE ECOSYSTEM ASSESSMENT OF COASTAL AND AQUATIC RESOURCES

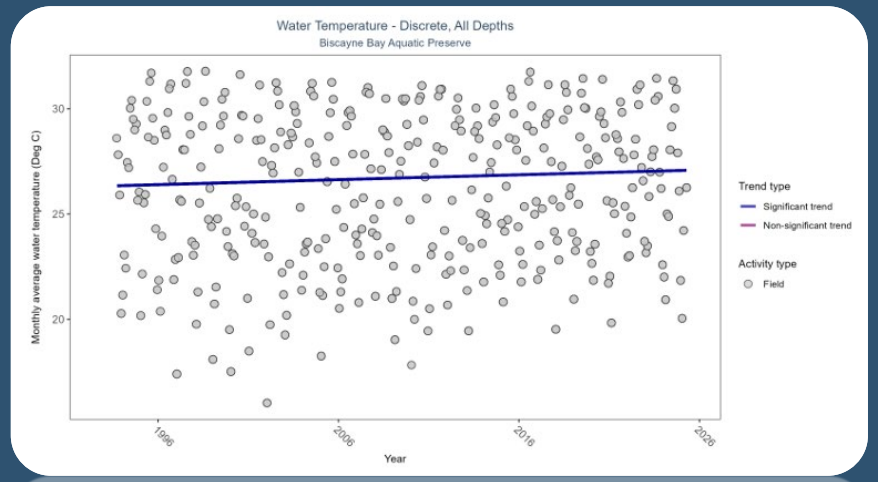
Bringing data together:
- Scientists and researchers
- Policymakers
- General public

Accessibility is crucial:
- Trend analysis
- Data visualization

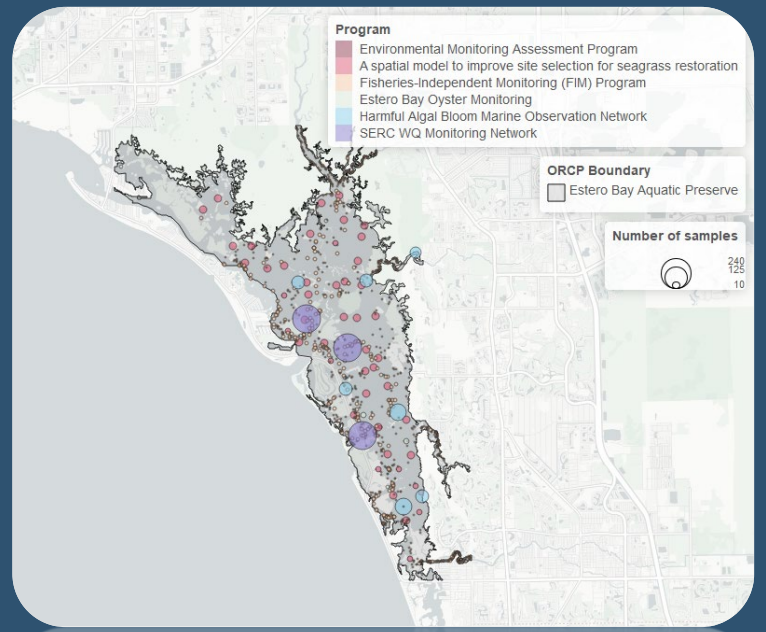


INFORMING MANAGEMENT PLANNING

Trend analysis

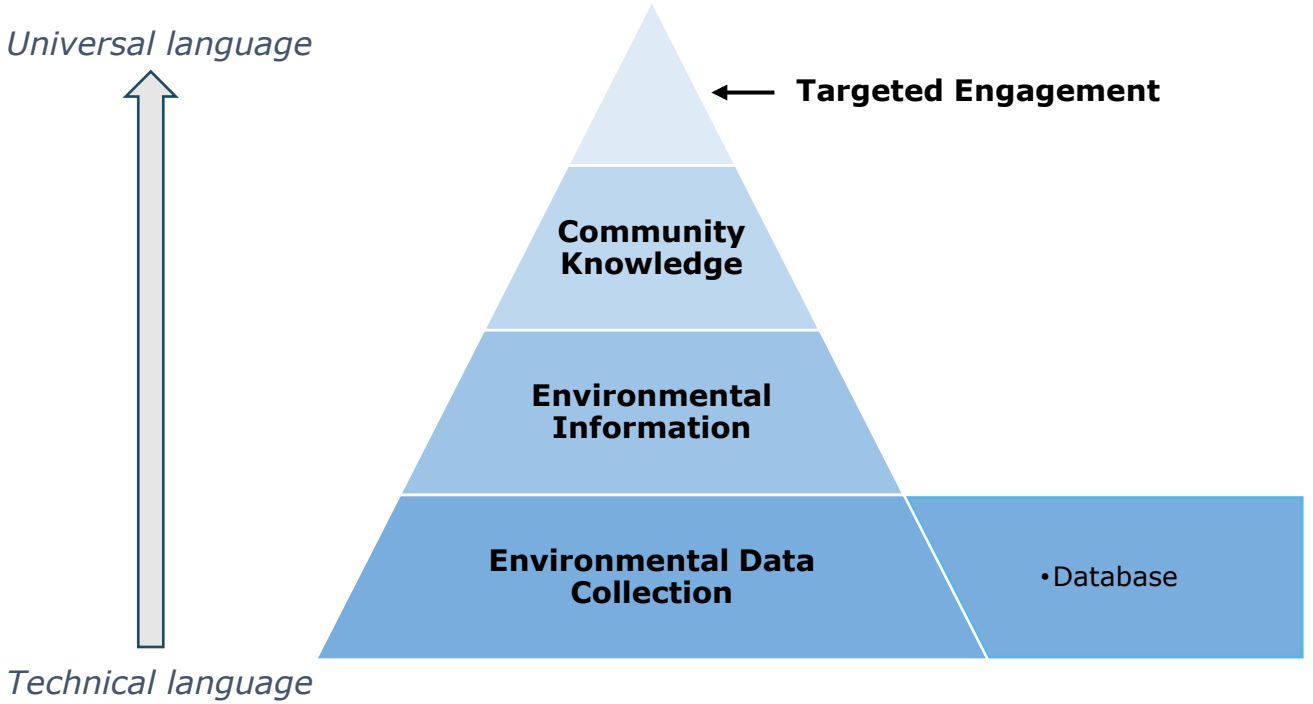


Data visualization



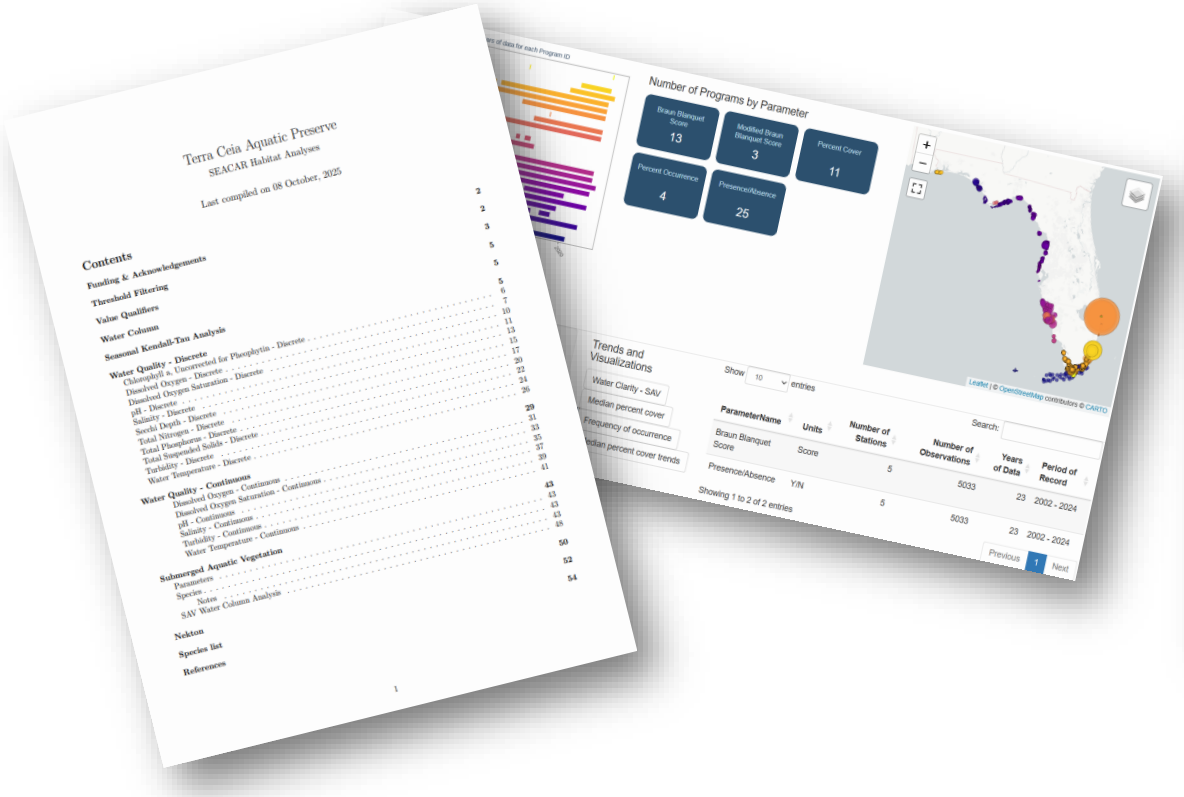
- Increase efficiency
- Save time and money
- Create opportunities for further collaboration

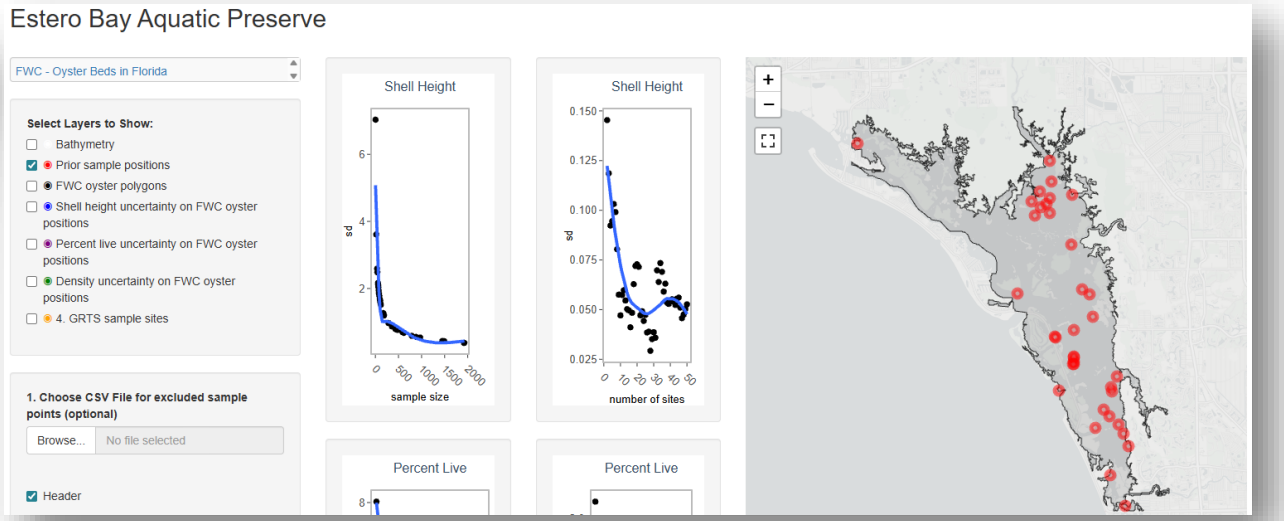
DATA IS NOT INFORMATION



- Requires interpretation to be used
- Requires statistical expertise to analyze
- Proprietary tools are not publicly accessible

MOVING FROM DATA TO INFORMATION





Visualization and analysis

- Dashboards
- Reports

Site selection optimization

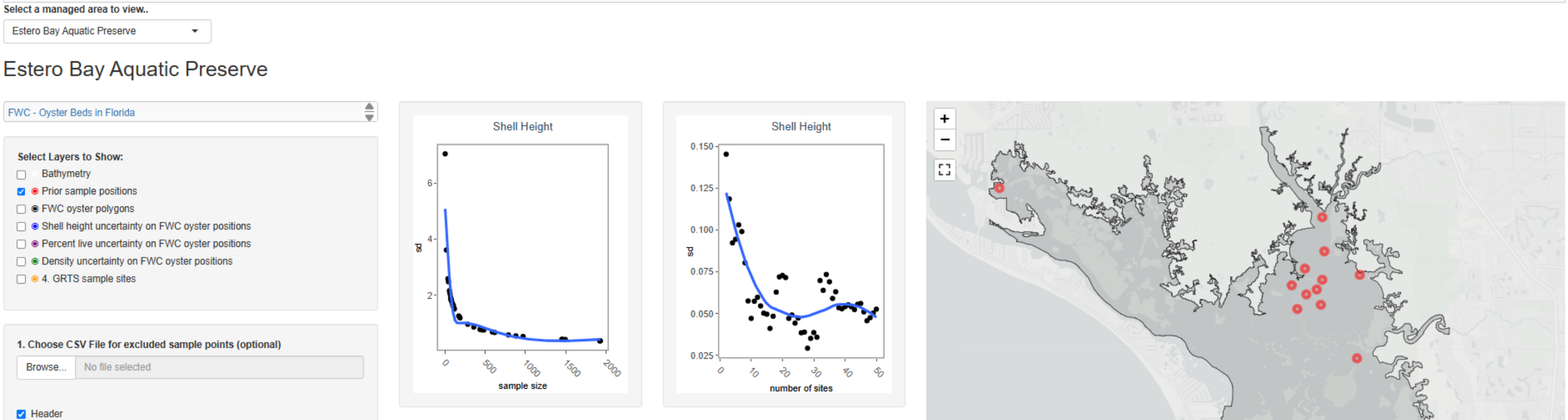
- Water Quality Optimization
- Oyster Sample Size and Site Selection

MONITORING OPTIMIZATION

Oyster Sample Size and Site Selection Tool

- Collaboration with Paleontological Research Institution

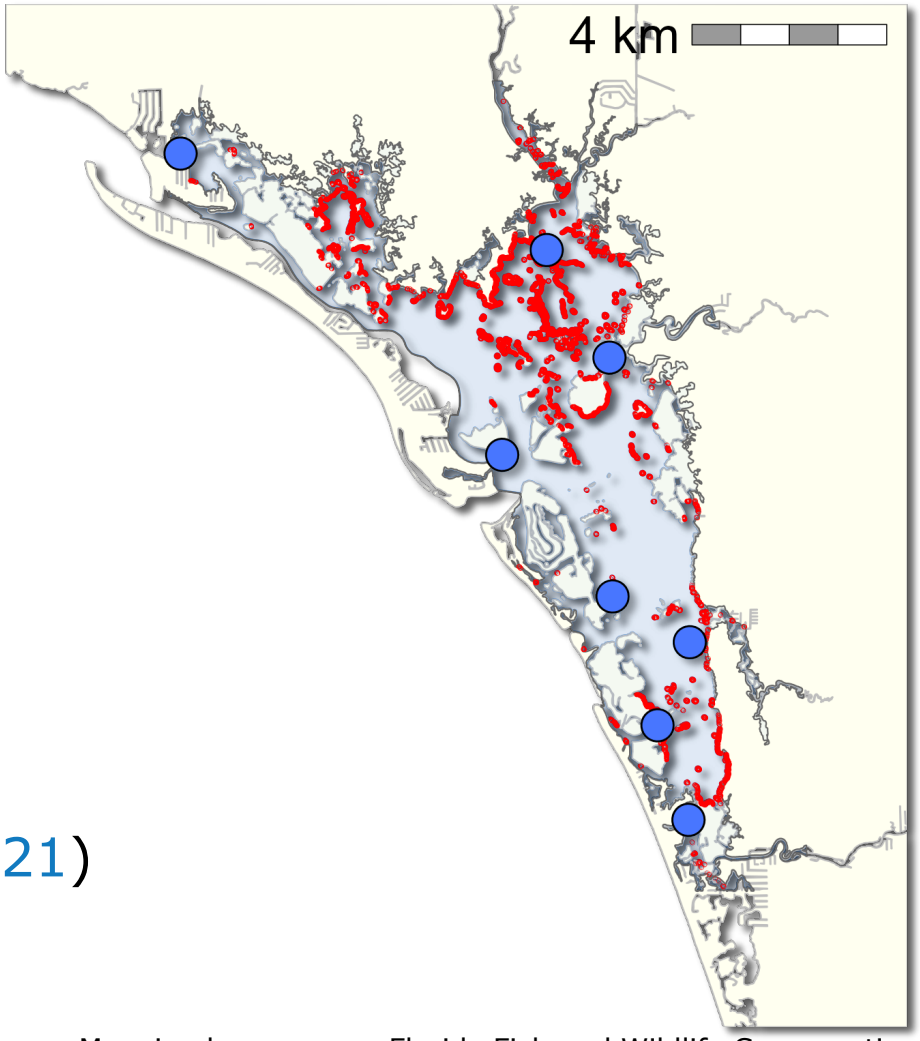
PALEONTOLOGICAL RESEARCH INSTITUTION



MONITORING OPTIMIZATION

Oyster Sample Size and Site Selection Tool

1. How many reefs?
2. Which reefs?



Mapping layer source Florida Fish and Wildlife Conservation Commission (https://data.florida-seacar.org/programs/details/5059)

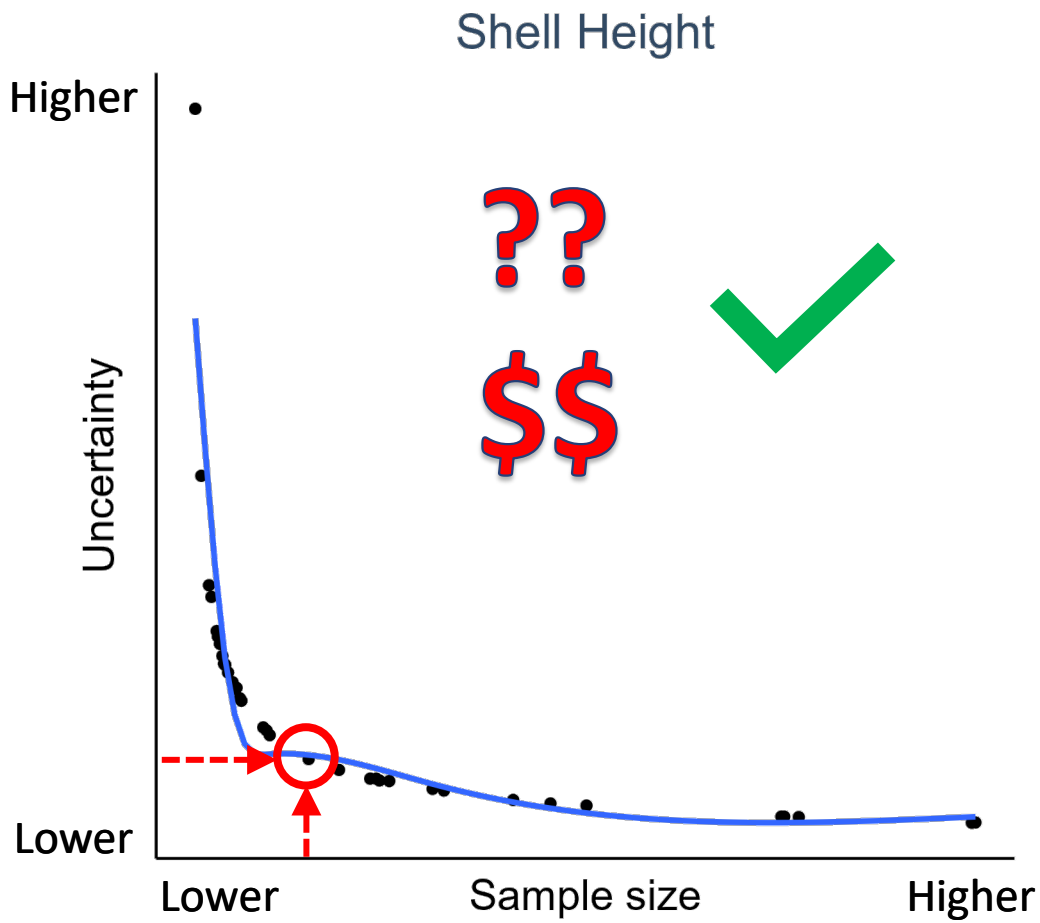
Estero Bay Aquatic Preserve

- 549 mapped oyster reefs (red)
- 13,829 acres
- 1-15 reefs sampled in any given year (8 sites in 2021)

MONITORING OPTIMIZATION: HOW MANY SAMPLES?

Oyster Sample Size and Site Selection Tool

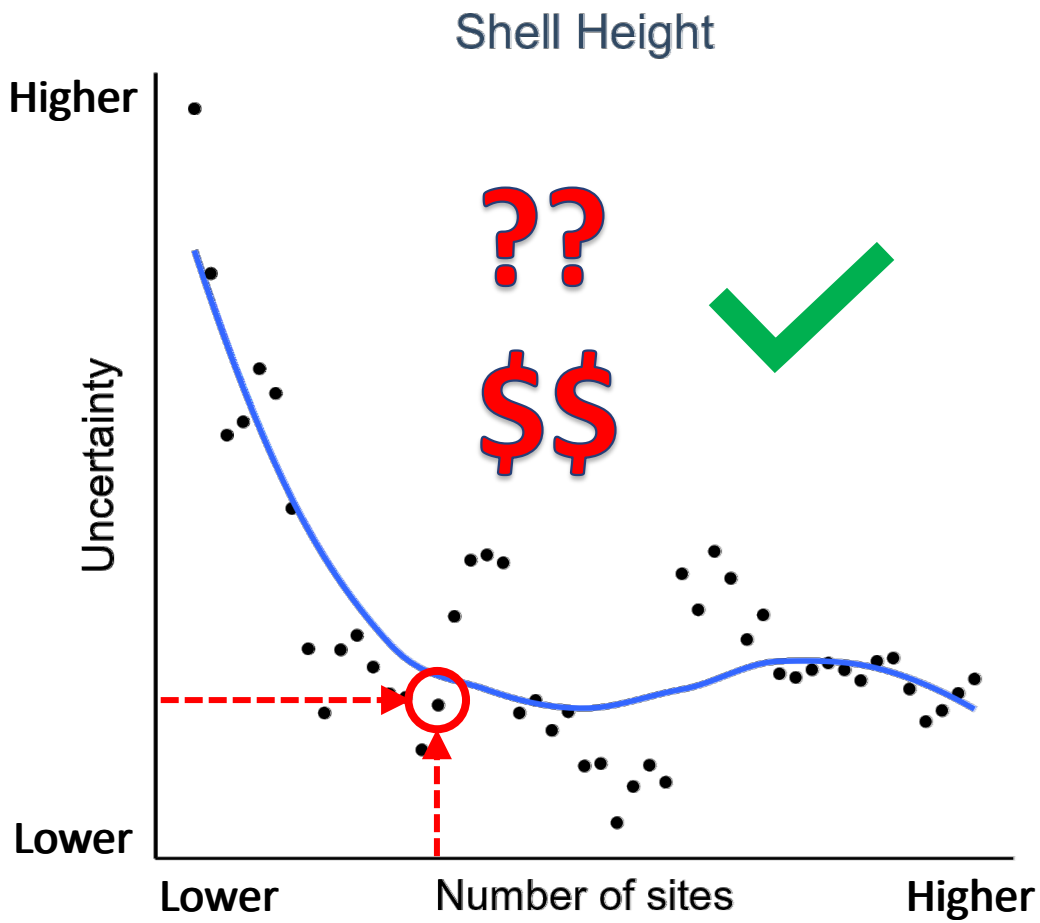
1. **How many samples?**
   - Too few samples
   - Too many samples
   - ✓ Balancing effort and precision



MONITORING OPTIMIZATION: HOW MANY REEFS?

Oyster Sample Size and Site Selection Tool

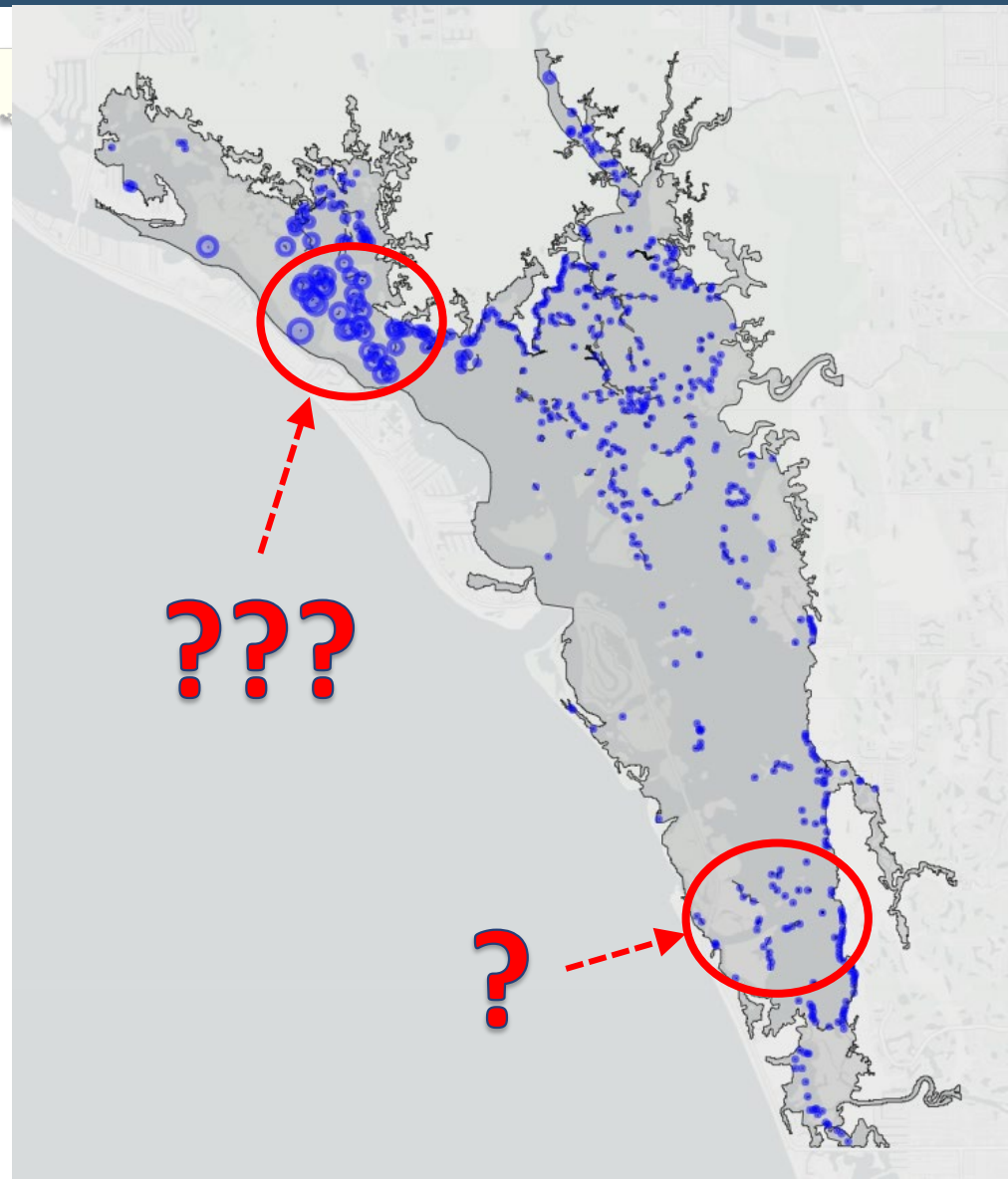
1. **How many reefs?**
   - The same principle applies.



MONITORING OPTIMIZATION: WHICH REEFS?

Oyster Sample Size and Site Selection Tool

2. **Which reefs?**
   - Spatial extent
   - How uncertain are our estimates?
     - Modeled uncertainty for each reef.

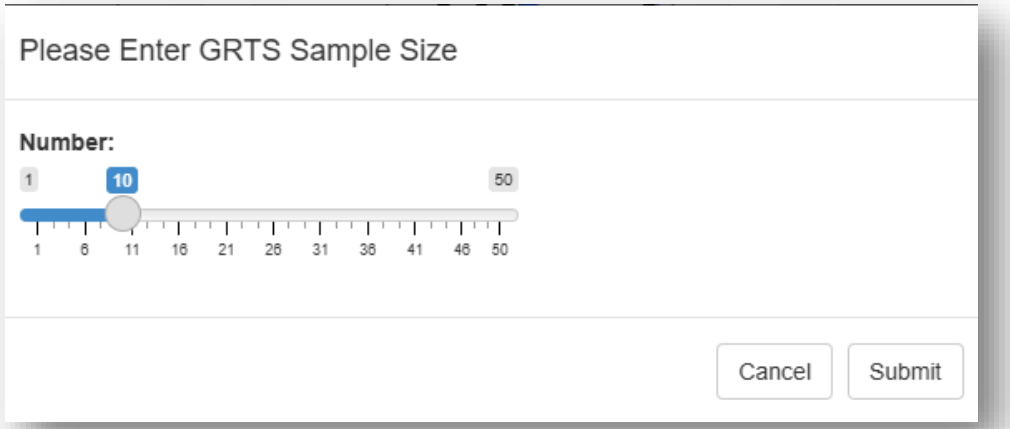


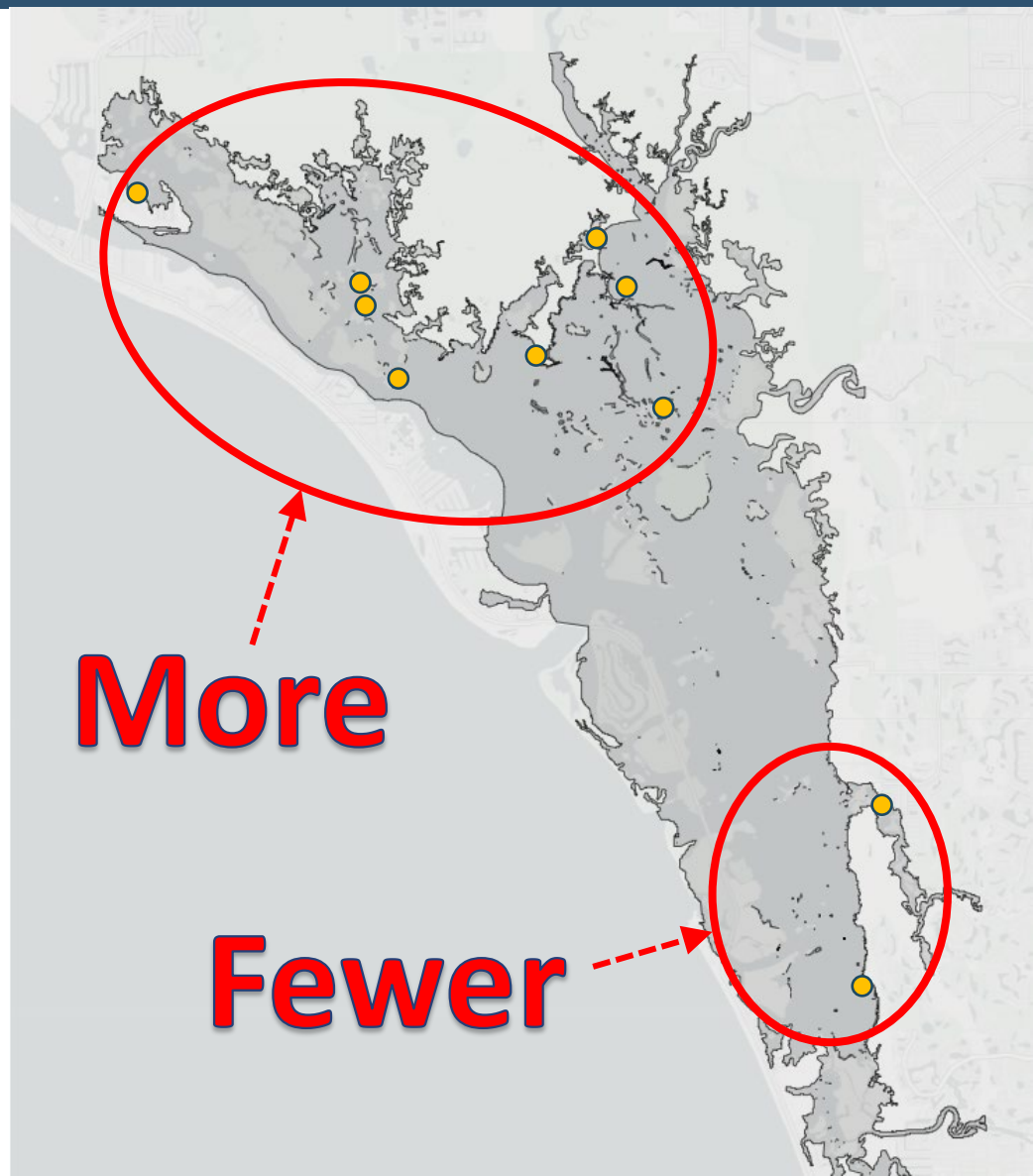
MONITORING OPTIMIZATION: IMPLEMENTATION

Oyster Sample Size and Site Selection Tool

2. Which reefs?

- Select number of reefs (e.g., 10)
- Prospective locations



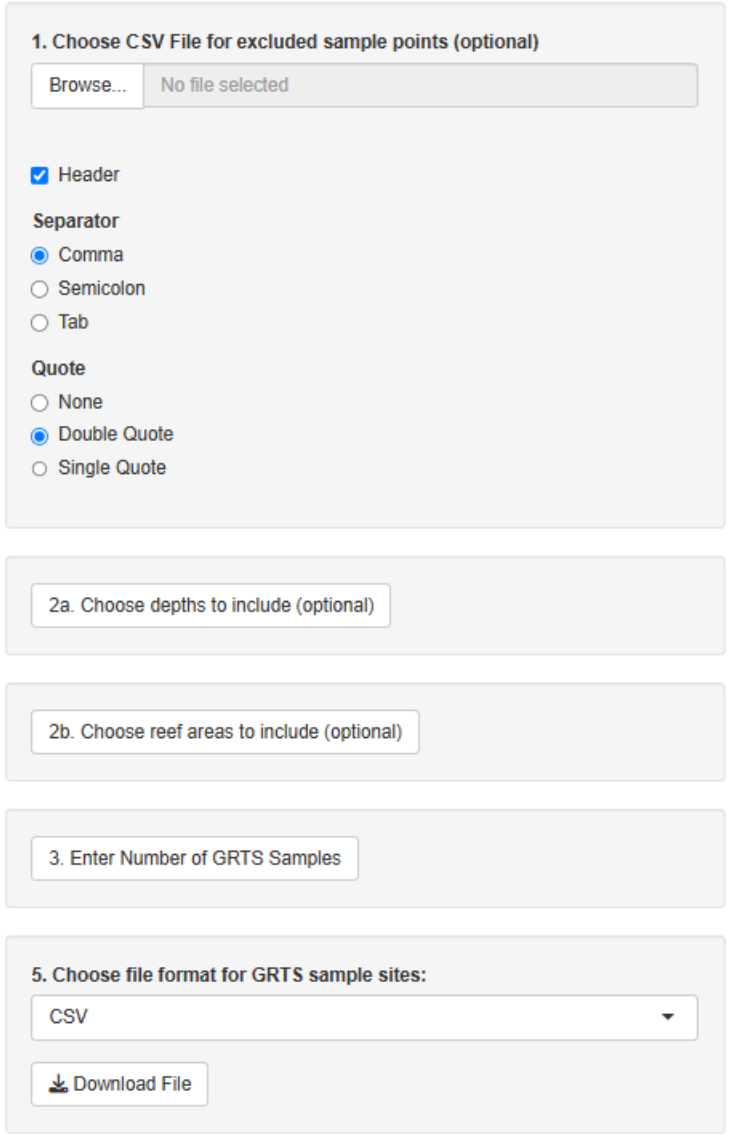


MONITORING OPTIMIZATION: FEATURES

Oyster Sample Size and Site Selection Tool

Convenience features

- Upload a list of reef IDs to exclude
- Restrict by water depth
  - Bathymetry
- Restrict by reef area
- Export the coordinates



MONITORING OPTIMIZATION

Oyster Sample Size and Site Selection Tool

- Identify monitoring locations
- Determine sampling frequency
- More efficient monitoring programs
- Better ecological outcomes

CONCLUSION

SEACAR: data accessibility and collaboration

We look forward to sharing additional resources and tools in the coming years.

We also welcome and appreciate community feedback, please get in touch with us!

THANK YOU

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https://FloridaSEACAR.github.io/