

Refining Techniques for High-Frequency Monitoring of Chlorophyll *a* in the NERRS

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OBJECTIVES

1. Assess sensor reliability across a range of conditions
2. Identify sensor interferences & develop empirical corrections
3. Develop recommendations for the NERRS regarding SWMP

Recent sensor technology development allows high-frequency measurement of *in situ* chlorophyll *a* fluorescence, however environmental variations can potentially cause inconsistencies.

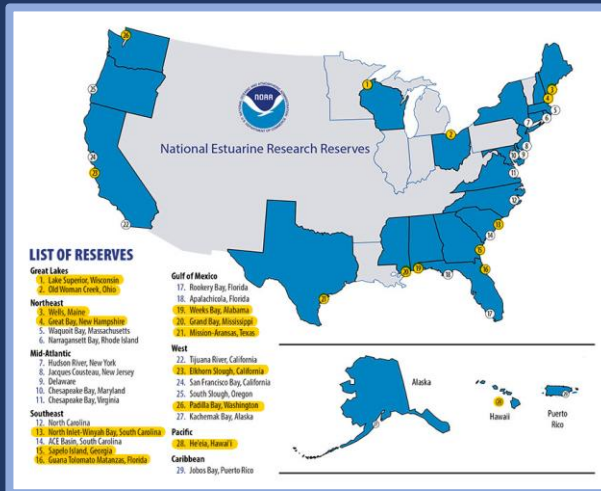


Table 1. Data collection commitments by reserve.

Reserve	Field-Based Comparisons	Lab-Based Comparisons	Interference Tests
GTM	X	X	X
NI-WB	X	X	X
Sapelo	X	X	
Weeks Bay	X	X	X
Elkhorn Slough	X		
Great Bay	X	X	
Wells	X		
Grand Bay	X	X	
OWC	X		X
Padilla	X	X	X
He'eia	X	X	X
Mis-Ara		X	
Lake Superior	X	X	

METHODOLOGY

Sample → Concentrate → Extract → Analyze

- Two data collection methods
 - Field-based & Lab-based
- CHLa extractions per EPA 445.0
- Three interference tests
 - Temperature, turbidity & fDOM

SIGNIFICANCE

- Early detection of HABs
- No existing correction factors
- EXOs at all NERRS
 - Detects variability with good temporal resolution
- Long-term continuous baseline dataset of phytoplankton abundance
 - In vitro: 2 grab samples / month
 - In vivo: 2920 monitoring timestamps / month

PRELIMINARY RESULTS

