

Biscayne Bay Southeastern Everglades Ecosystem Restoration (WQ Subteam)

DRAFT - Water Quality Evaluation

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Use cursor keys for navigation, press "O" for a slide Overview

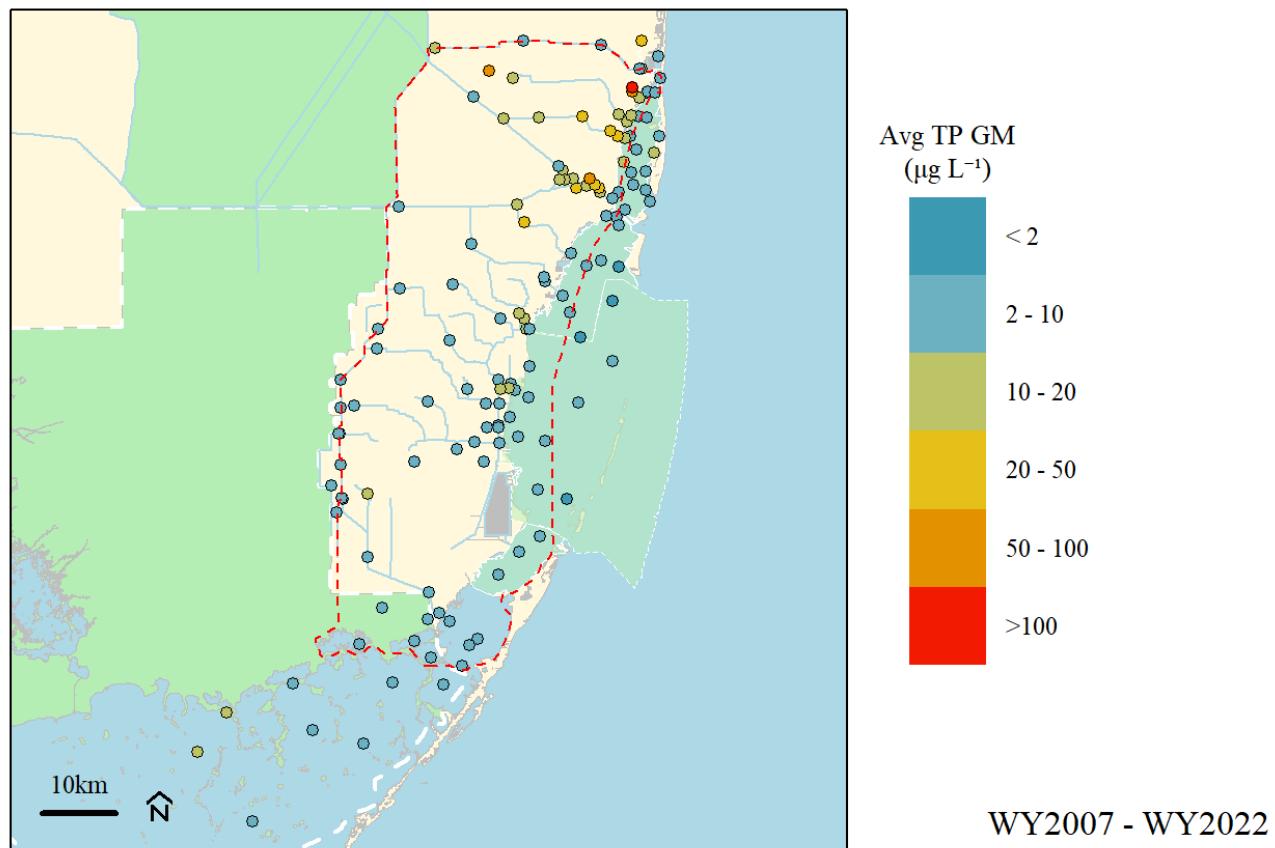
Objective

- Review and evaluate existing surface water quality across the BBSEER project area using available data.

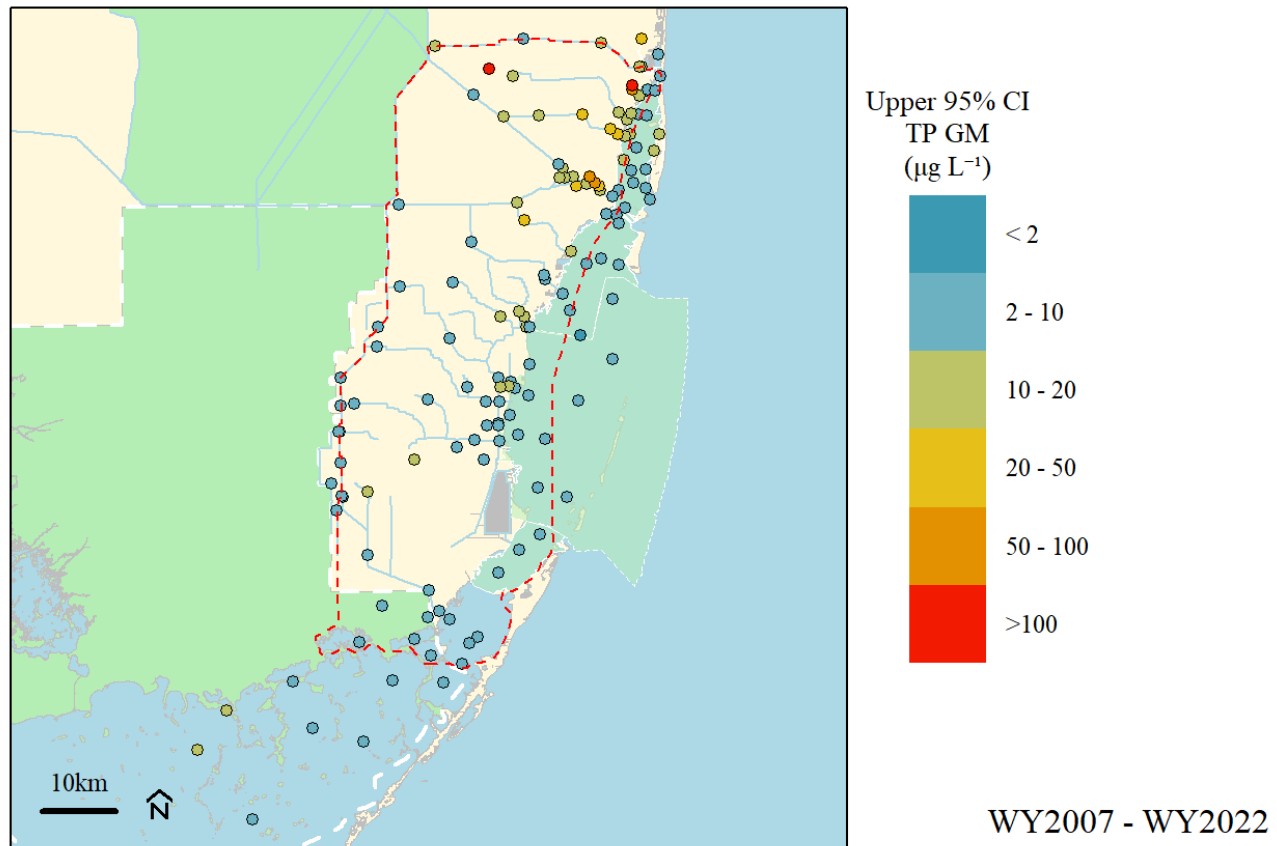
Approach

- Evaluate data from SFWMD (DBHydro) and Miami-Dade County's Division of Environmental Resources Management between May 2006 to April 2022 (WY2007 - 2022).
- Calculate annual geometric mean (AGM) Total Phosphorus (TP) and Total Nitrogen (TN) concentrations
 - Must have at least three years of continuous data, and
 - a minimum of 4 samples per year with at least one sample in wet and dry seasons
 - where possible (for structures) GM were calculated using data on days with observed discharge (some adjustment is possible).
- Average AGM and upper 95% confidence interval values were calculated for each monitoring location
- Mann-Kendall trend and Thiel Sen slope were also evaluated

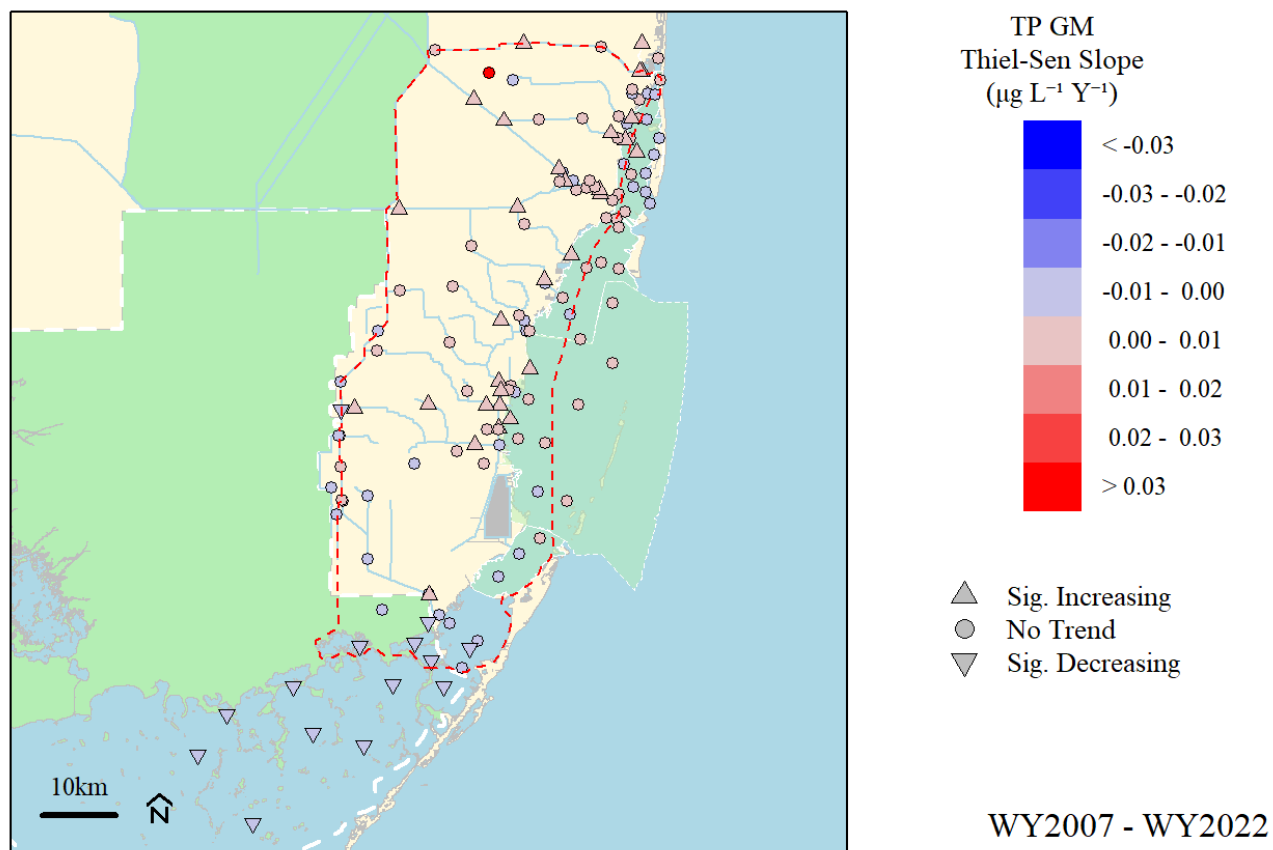
Total Phosphorus - Average AGM



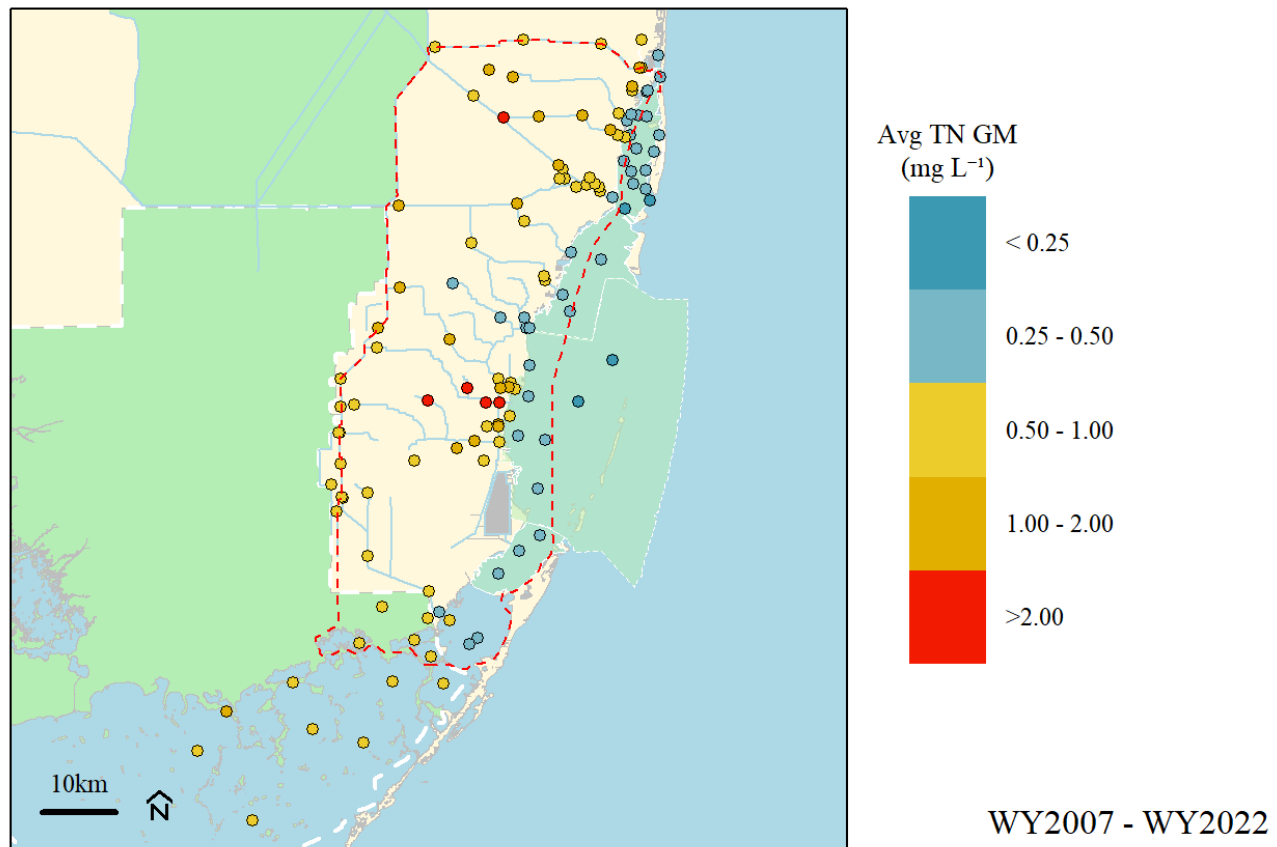
Total Phosphorus - Upper 95% CI of Avg AGM



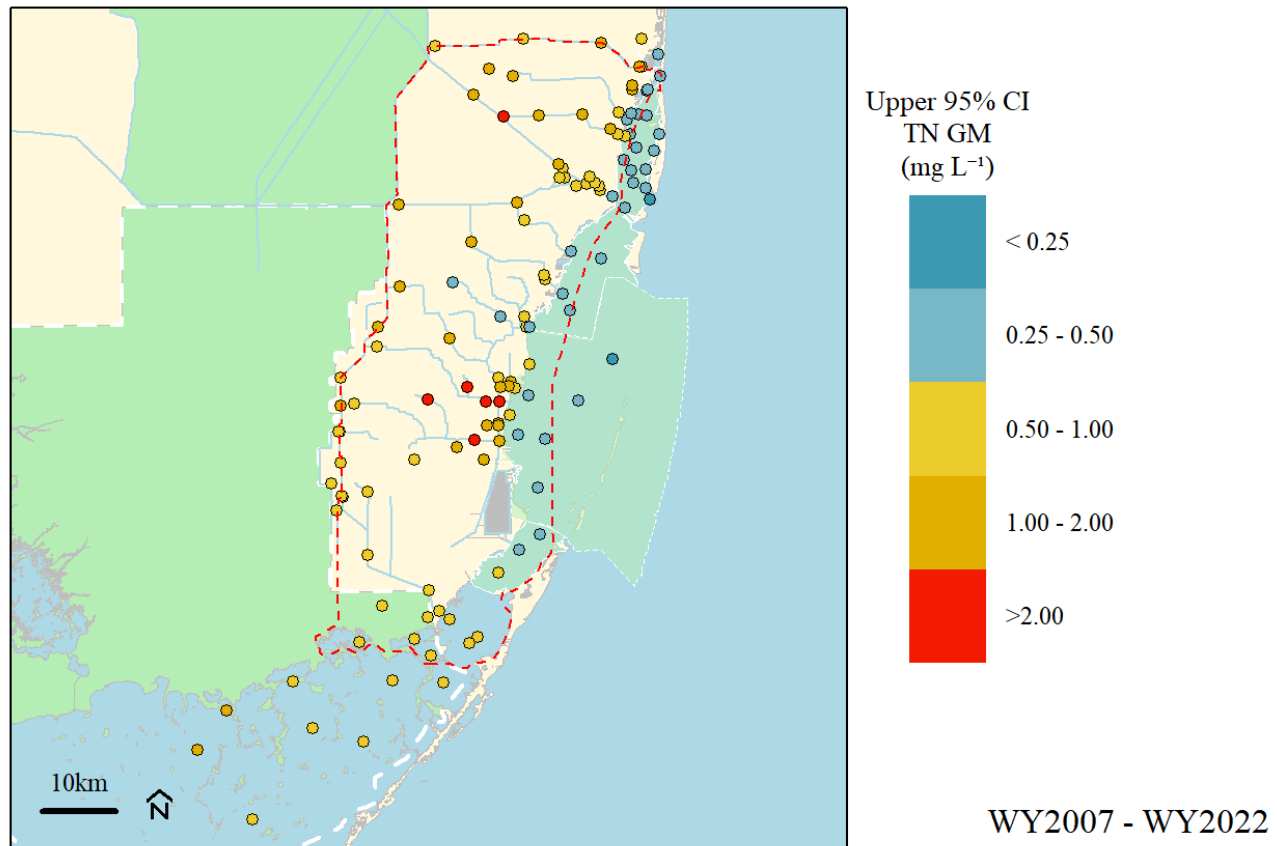
Total Phosphorus - Long Term Trend



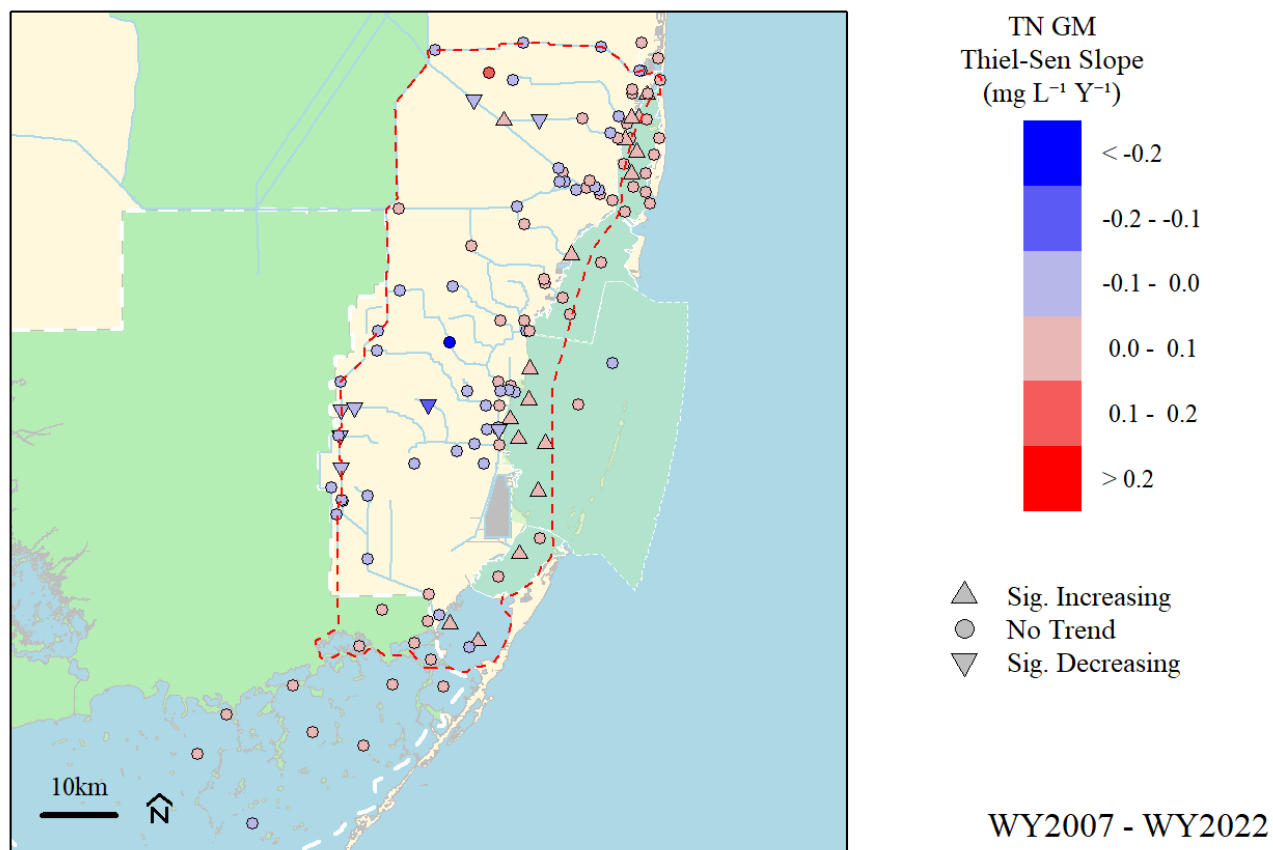
Total Nitrogen - Average AGM



Total Nitrogen - Upper 95% CI of Avg AGM



Total Nitrogen - Long Term Trend



Summary

- High level look at surface water quality by integrating multiple data sets together (>100 monitoring locations used)
- Very little difference in average and upper 95% CI geometric mean TP and TN concentrations (w/ some exceptions)
- Significant monotonic changes in TP and TN concentrations were detected
 - 31 locations significantly increases TP concentration (most in coastal region)
 - 14 locations significantly decreasing TP concentration (S332C & FLAB sites)
 - 17 locations significantly increases TN concentration (most in Biscayne Bay)
 - 8 locations significantly decreasing TN concentration (L31N and Biscayne Bay)
- Some locations did not see statistically significant changes but remarkable change overtime (i.e. BS11)
- Some locations did not see change over time (i.e. near zero slope) but concentrations remain relatively elevated.
- Additional evaluation is needed (including additional data sources if possible)

Acknowledgements

Data



South Florida Water Management District ([DBHYDRO](#))



Miami-Dade Department of Environmental Resources Management via
[FDEP STORET/WIN](#)

Slides

- Slide deck - [HTML](#) | [PDF](#) | © Julian (2023)



- RMarkdown [Source](#)

Draft Work Product
In support of BBSEER planning