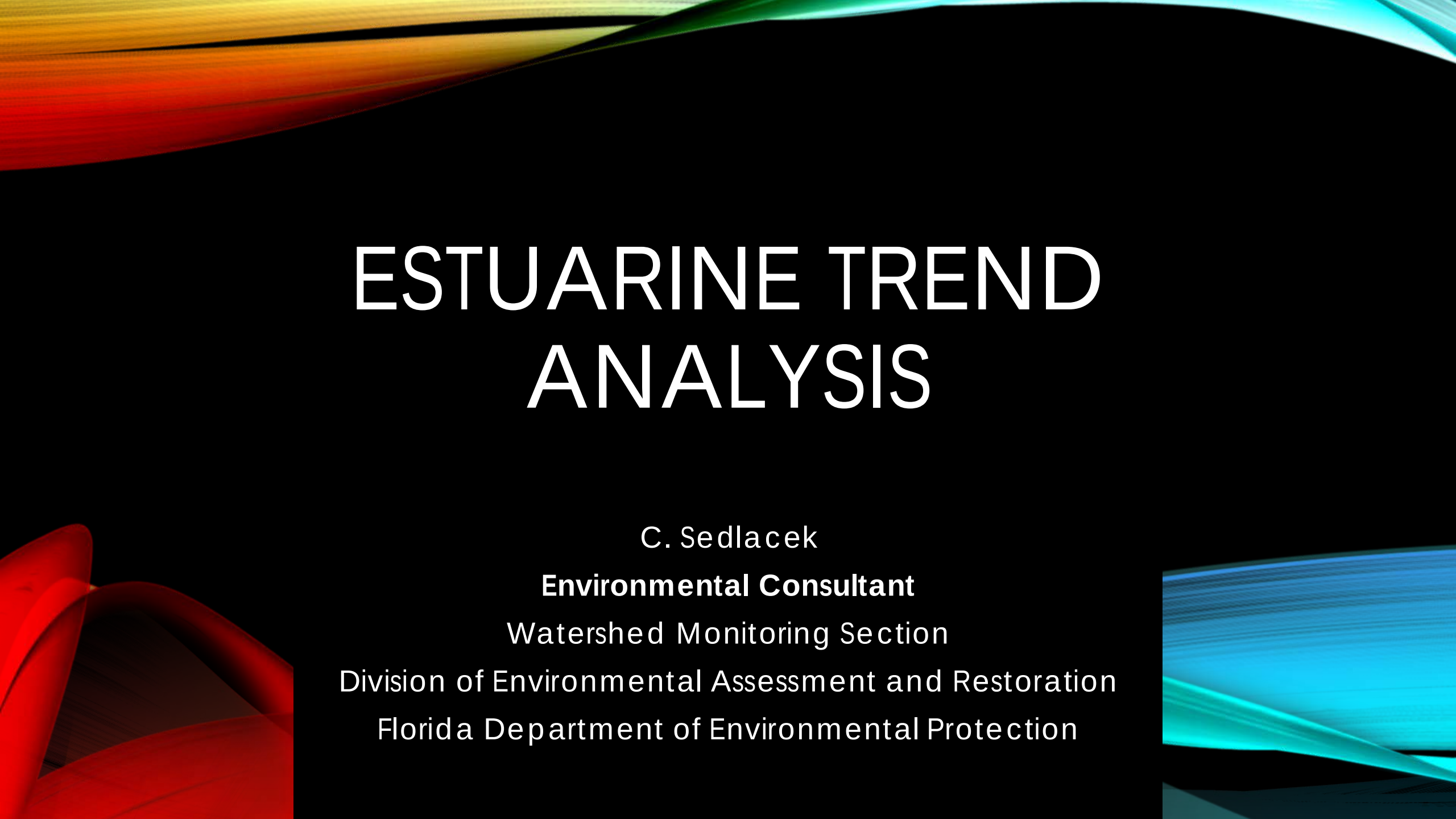




# ESTUARINE TREND ANALYSIS

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Florida Department of Environmental Protection

# OVERVIEW

- ✓ Beginning efforts
- ✓ Refocusing efforts
- ✓ Tampa Bay WBIDs
- ✓ Results
- ✓ Next steps



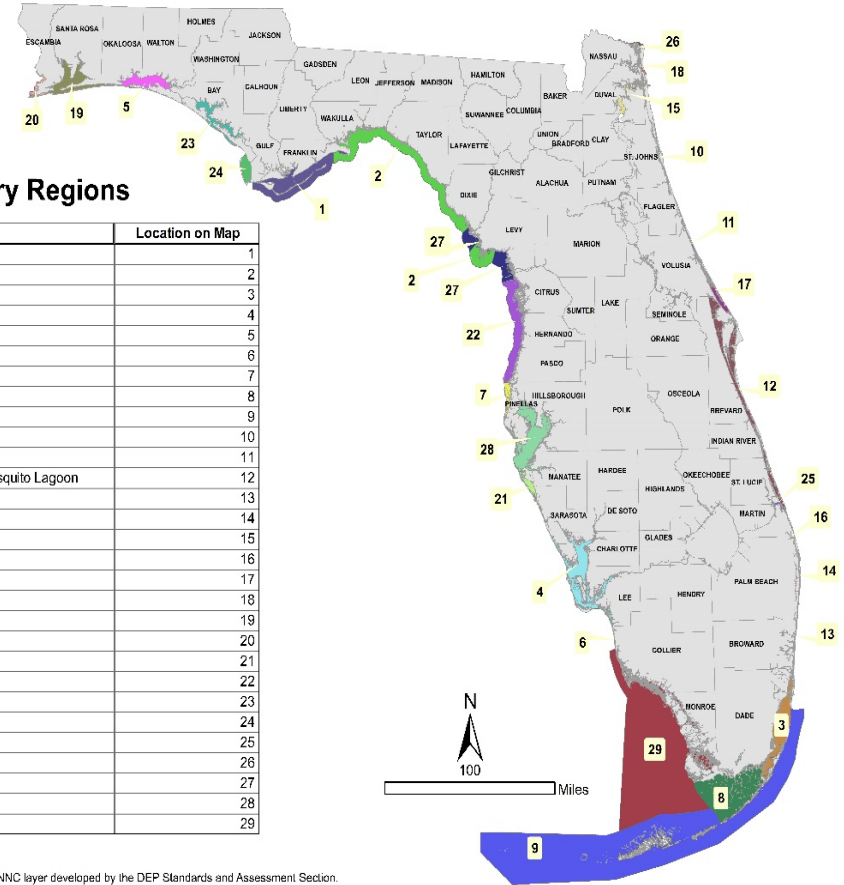
# BEGINNING EFFORTS

- ✓ Try to develop an estuarine sampling program
- ✓ Use the Status Monitoring Network as a template
- ✓ Define Florida's waterways based on estuarine definitions

# BEGINNING EFFORTS

## Numeric Nutrient Criteria Estuary Regions

| ESTUARY                                                                       | Location on Map |
|-------------------------------------------------------------------------------|-----------------|
| Apalachicola Bay and Alligator Harbor                                         | 1               |
| Big Bend and Apalachee Bay                                                    | 2               |
| Biscayne Bay                                                                  | 3               |
| Charlotte Harbor/Estero Bay                                                   | 4               |
| Choctawhatchee Bay                                                            | 5               |
| Ciam Bay (Collier County)                                                     | 6               |
| Clearwater Harbor/St. Joseph Sound                                            | 7               |
| Florida Bay                                                                   | 8               |
| Florida Keys                                                                  | 9               |
| Guana River/Tolomato River/Matanzas River (GTM) Estuary                       | 10              |
| Halifax and Tomoka River Estuaries                                            | 11              |
| Indian River Lagoon System, including Banana River Lagoon and Mosquito Lagoon | 12              |
| Intracoastal Waterway (ICWW)                                                  | 13              |
| Lake Worth Lagoon                                                             | 14              |
| Lower St. Johns River and Tributaries (predominantly marine)                  | 15              |
| Loxahatchee River Estuary                                                     | 16              |
| Mosquito Lagoon                                                               | 17              |
| Nassau River Estuary                                                          | 18              |
| Pensacola Bay                                                                 | 19              |
| Perdido Bay                                                                   | 20              |
| Sarasota Bay                                                                  | 21              |
| Springs Coast (Crystal River to Anclote River)                                | 22              |
| St. Andrew Bay                                                                | 23              |
| St. Joseph Bay                                                                | 24              |
| St. Lucie Estuary                                                             | 25              |
| St. Marys River                                                               | 26              |
| Suwannee, Waccassa, and Withlacoochee River Estuaries                         | 27              |
| Tampa Bay                                                                     | 28              |
| Tidal Coghatchee River/Ten Thousand Islands                                   | 29              |



Map created March 13, 2018 by Andy Woelber, WMS, DEP. Map data credited to the NNC layer developed by the DEP Standards and Assessment Section.

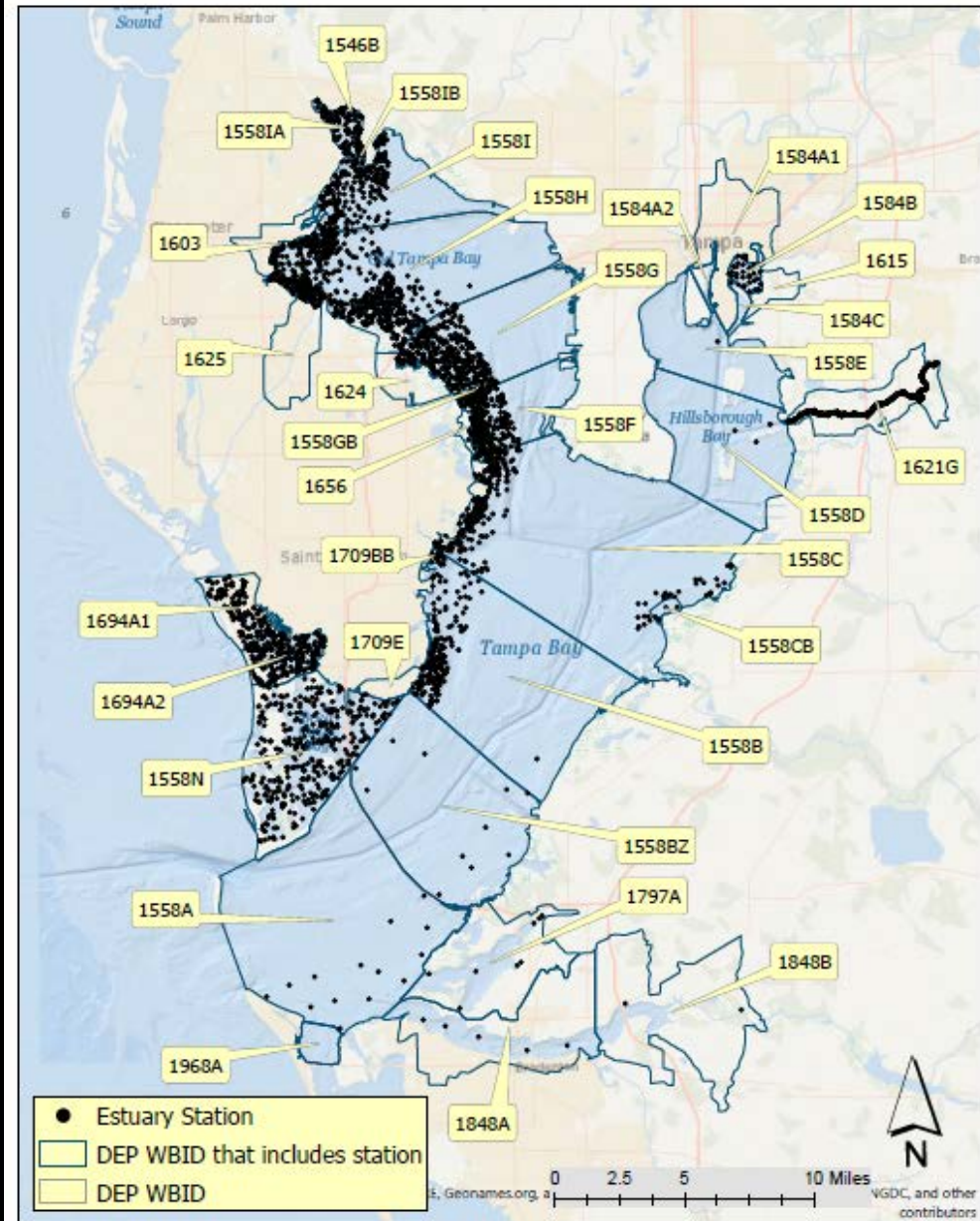


# REFOCUSING EFFORTS

- ✓ Can we determine if BMAP and RA efforts are working
- ✓ Using “found” data conduct trend analyses
- ✓ Determine trends for each WBID and for the entire region

# TAMPA BAY WBIDS

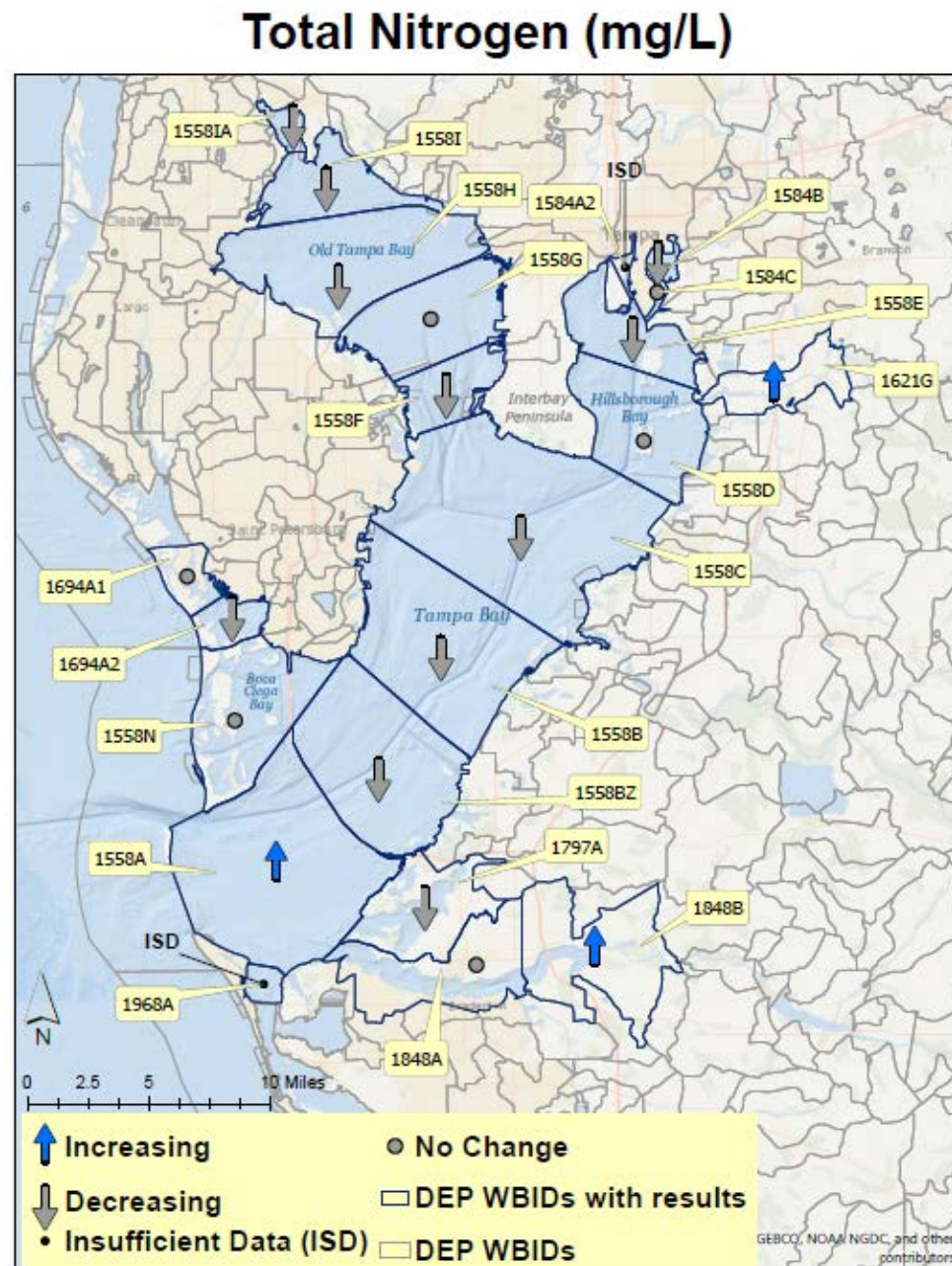
Estuarine Stations (Tampa Bay/St. Petersburg Area)



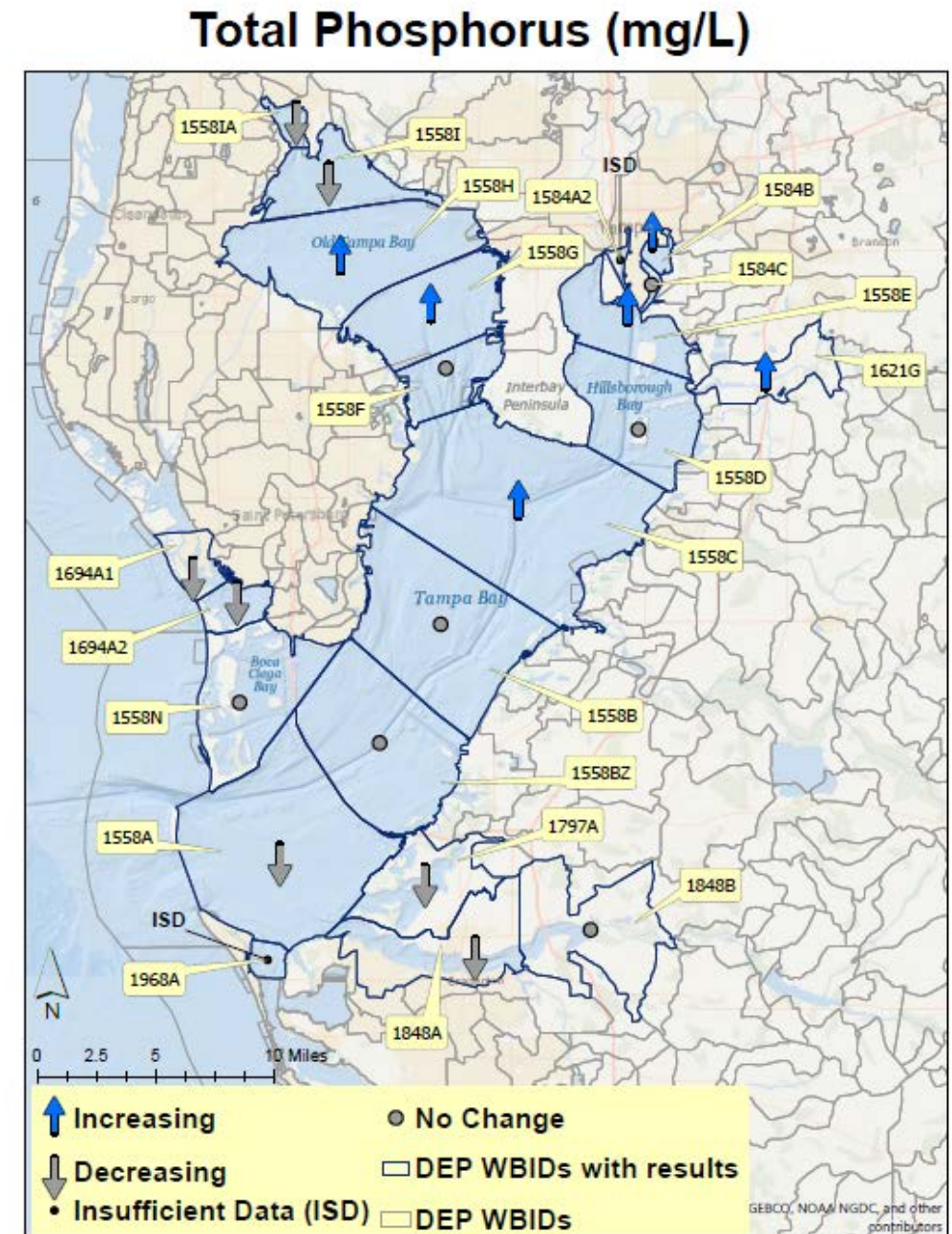
# RESULTS

| WBID         | Planning Unit                            | TN<br>(mg/L) | TP<br>(mg/L) | DO<br>(mg/L) | DOsat<br>(% saturation) | ChlaC<br>(corrected) |
|--------------|------------------------------------------|--------------|--------------|--------------|-------------------------|----------------------|
| 1558A        | Lower Tampa Bay                          | +            | -            | +            | +                       | 0                    |
| 1558B        | Middle Tampa Bay                         | -            | 0            | -            | -                       | -                    |
| 1558BZ       | Middle Tampa Bay                         | -            | 0            | +            | +                       | 0                    |
| 1558C        | Middle Tampa Bay                         | -            | +            | -            | -                       | +                    |
| 1558D        | Hillsborough Bay                         | 0            | 0            | -            | -                       | -                    |
| 1558E        | Hillsborough Bay                         | -            | +            | -            | -                       | 0                    |
| 1558F        | Old Tampa Bay                            | -            | 0            | +            | +                       | +                    |
| 1558G        | Old Tampa Bay                            | 0            | +            | +            | +                       | +                    |
| 1558H        | Old Tampa Bay                            | -            | +            | +            | +                       | +                    |
| 1558I        | Old Tampa Bay                            | -            | -            | +            | +                       | 0                    |
| 1558IA       | Old Tampa Bay                            | -            | -            | +            | +                       | 0                    |
| 1558N        | Lower Tampa Bay                          | 0            | 0            | +            | +                       | 0                    |
| 1584B        | Coastal Hillsborough Bay<br>Tributary    | -            | +            | -            | -                       | 0                    |
| 1584C        | Coastal Hillsborough Bay<br>Tributary    | 0            | 0            | 0            | 0                       | 0                    |
| 1621G        | Alafia River                             | +            | +            | +            | +                       | -                    |
| 1694A1       | Anclote River/Coastal Pinellas<br>County | 0            | -            | +            | +                       | 0                    |
| 1694A2       | Anclote River/Coastal Pinellas<br>County | -            | -            | +            | +                       | -                    |
| 1797A        | Coastal Lower Tampa Bay<br>Tributary     | -            | -            | +            | +                       | 0                    |
| 1848A        | Manatee River                            | 0            | -            | +            | +                       | 0                    |
| 1848B        | Manatee River                            | +            | 0            | +            | +                       | 0                    |
| 1968A        | Sarasota Bay                             | ISD          | ISD          | ISD          | ISD                     | ISD                  |
| 1584A2       | Coastal Hillsborough Bay<br>Tributary    | ISD          | ISD          | ISD          | ISD                     | ISD                  |
|              |                                          |              |              |              |                         |                      |
| All Combined |                                          | 0            | 0            | 0            | 0                       | 0                    |

# RESULTS

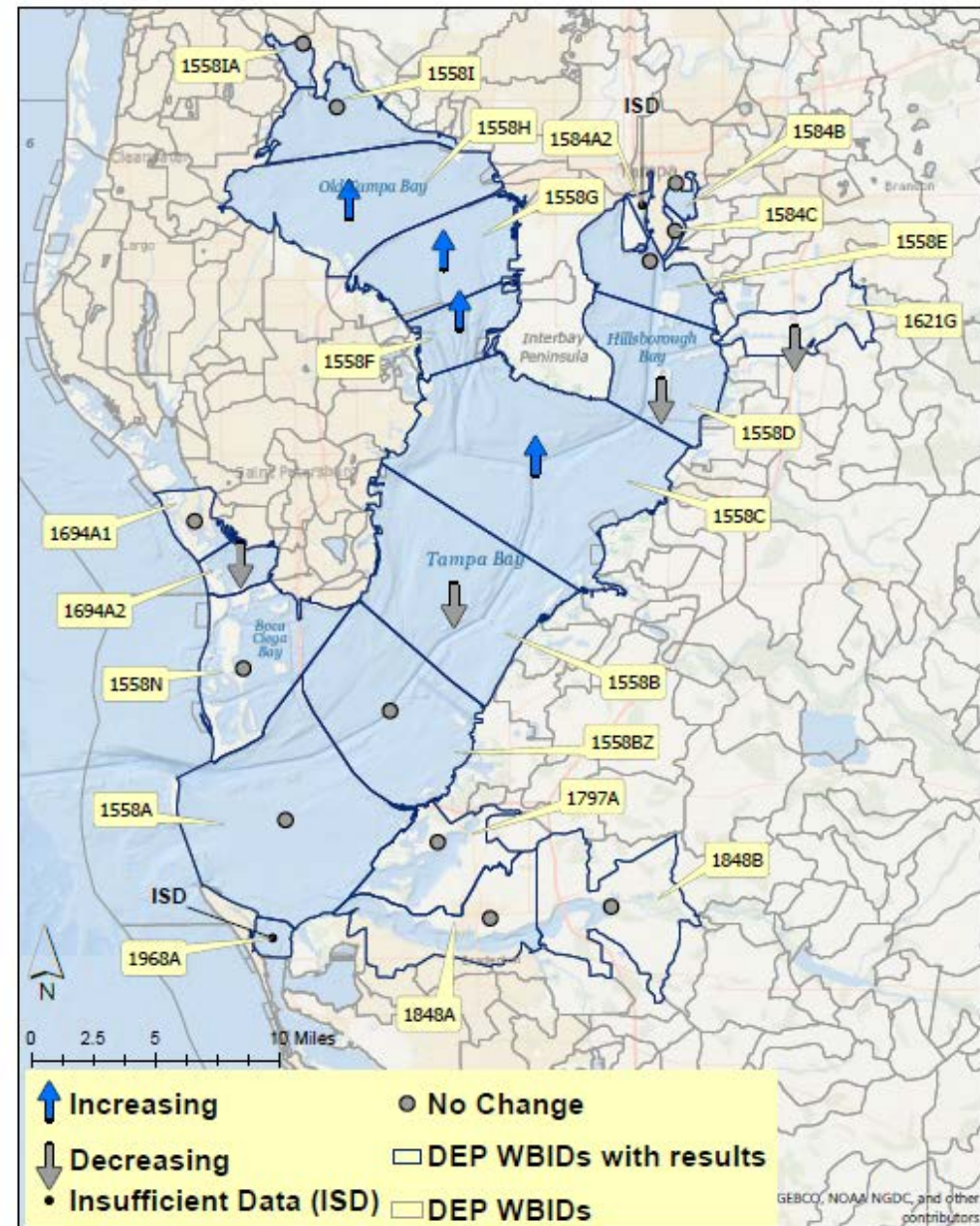


# RESULTS

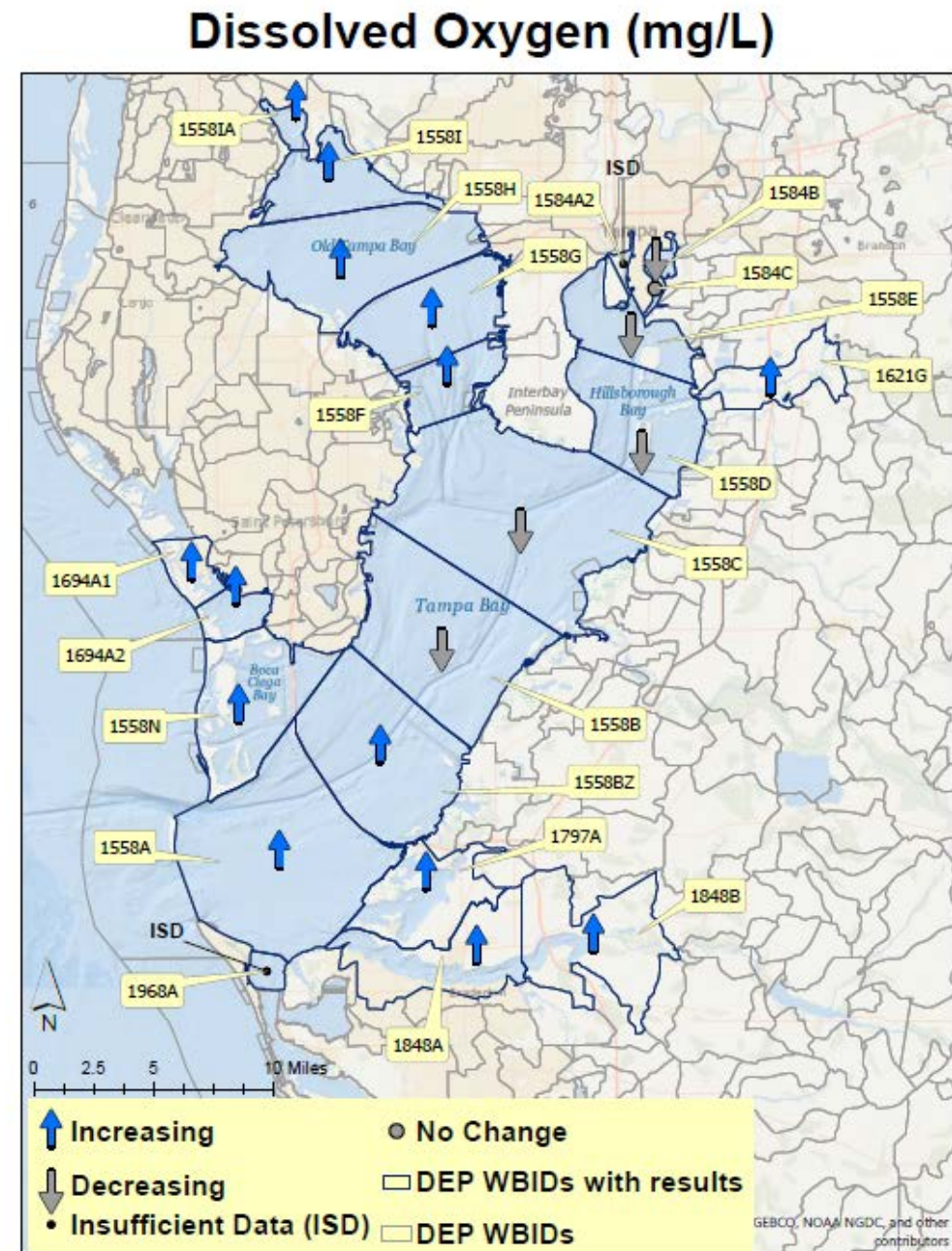


# RESULTS

## Chlorophyll-a (corrected)

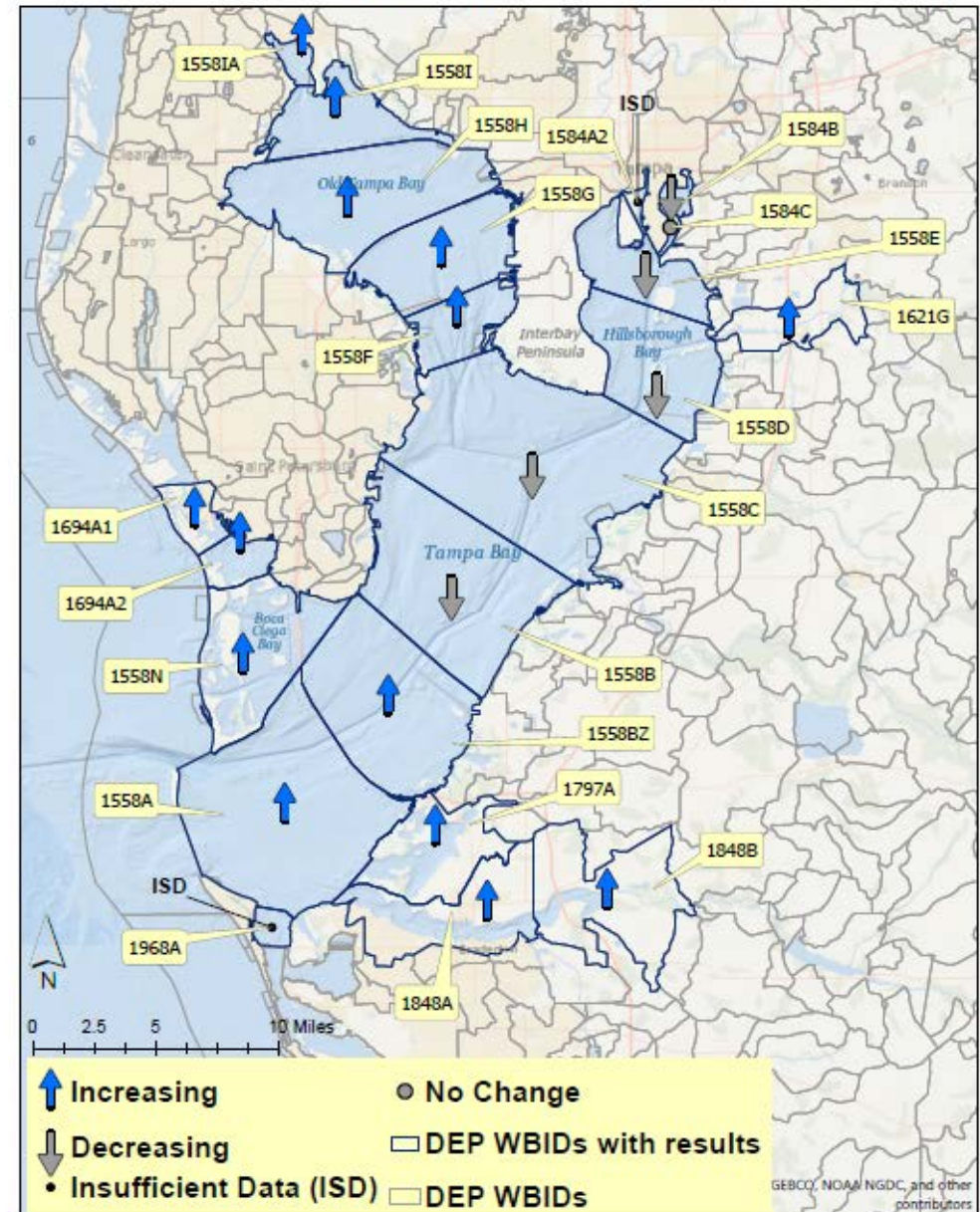


# RESULTS



# RESULTS

## Dissolved Oxygen (Percent Saturation)



# NEXT STEPS

| WBID         | Basin                             | TN<br>(mg/L) | TP<br>(mg/L) | DO<br>(mg/L) | DOsat<br>(% saturation) | ChlaC<br>(corrected) |
|--------------|-----------------------------------|--------------|--------------|--------------|-------------------------|----------------------|
| 3193         | St. Lucie River                   | -            | -            | +            | +                       | -                    |
| 3194         | St. Lucie River (North Fork)      | -            | -            | +            | +                       | -                    |
| 3194B        | St. Lucie River (North Fork A-18) | 0            | +            | +            | +                       | 0                    |
| 3197         | C-24                              | -            | -            | 0            | +                       | 0                    |
| 3200         | C-23                              | +            | +            | -            | -                       | -                    |
| 3210         | St. Lucie River (South Fork)      | 0            | 0            | -            | -                       | 0                    |
| 3210A        | St. Lucie Canal                   | 0            | +            | +            | +                       | +                    |
| 3211         | Bessey Creek                      | -            | -            | +            | 0                       | -                    |
| 3218         | C-44                              | -            | +            | 0            | 0                       | 0                    |
|              |                                   |              |              |              |                         |                      |
|              |                                   |              |              |              |                         |                      |
| All Combined |                                   |              |              |              |                         |                      |

# QUESTIONS



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