



Volusia County
FLORIDA

Surface Water Monitoring in Volusia County

Kelly Young

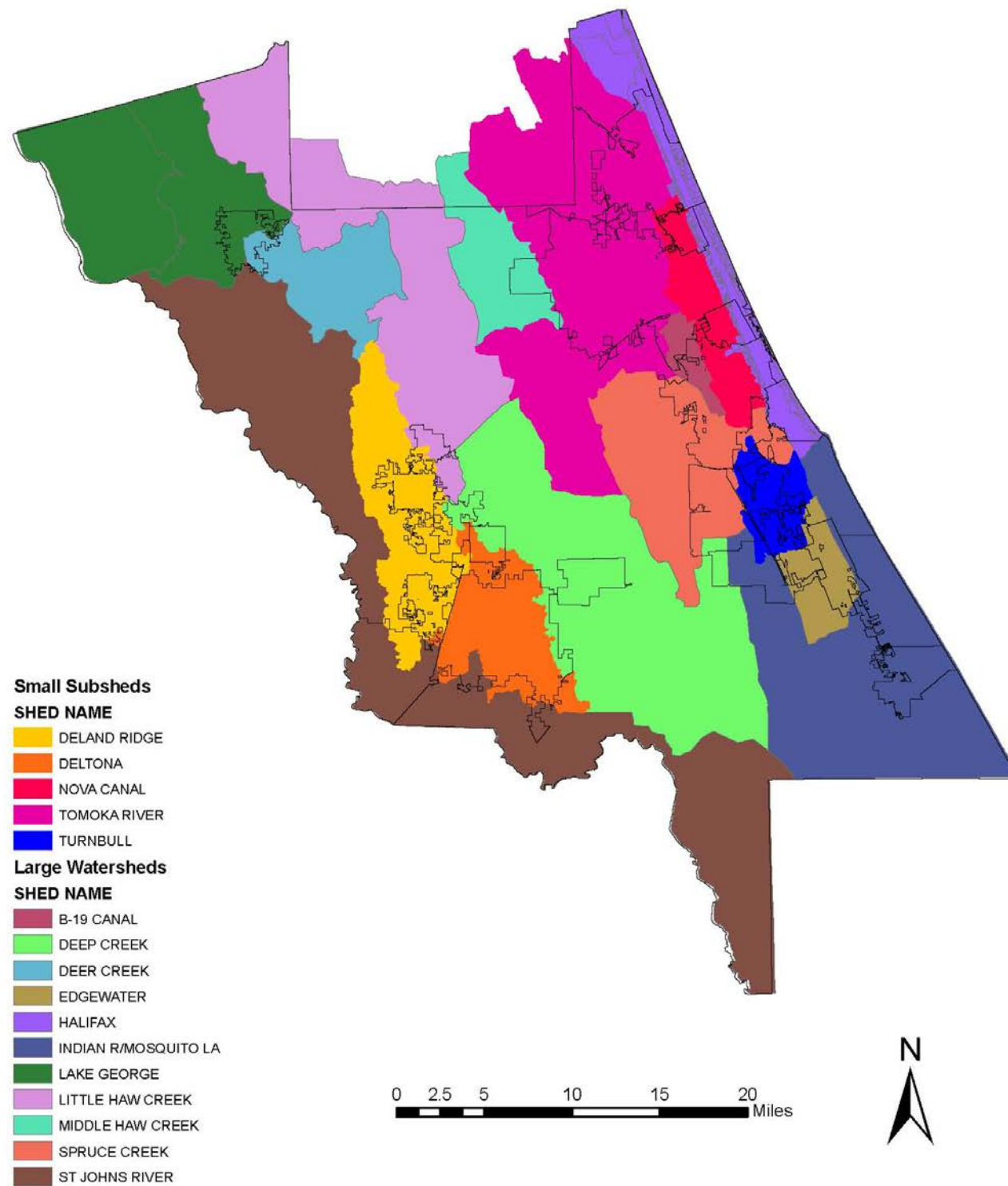
Environmental Specialist

Volusia County Environmental Management

Goals and Objectives

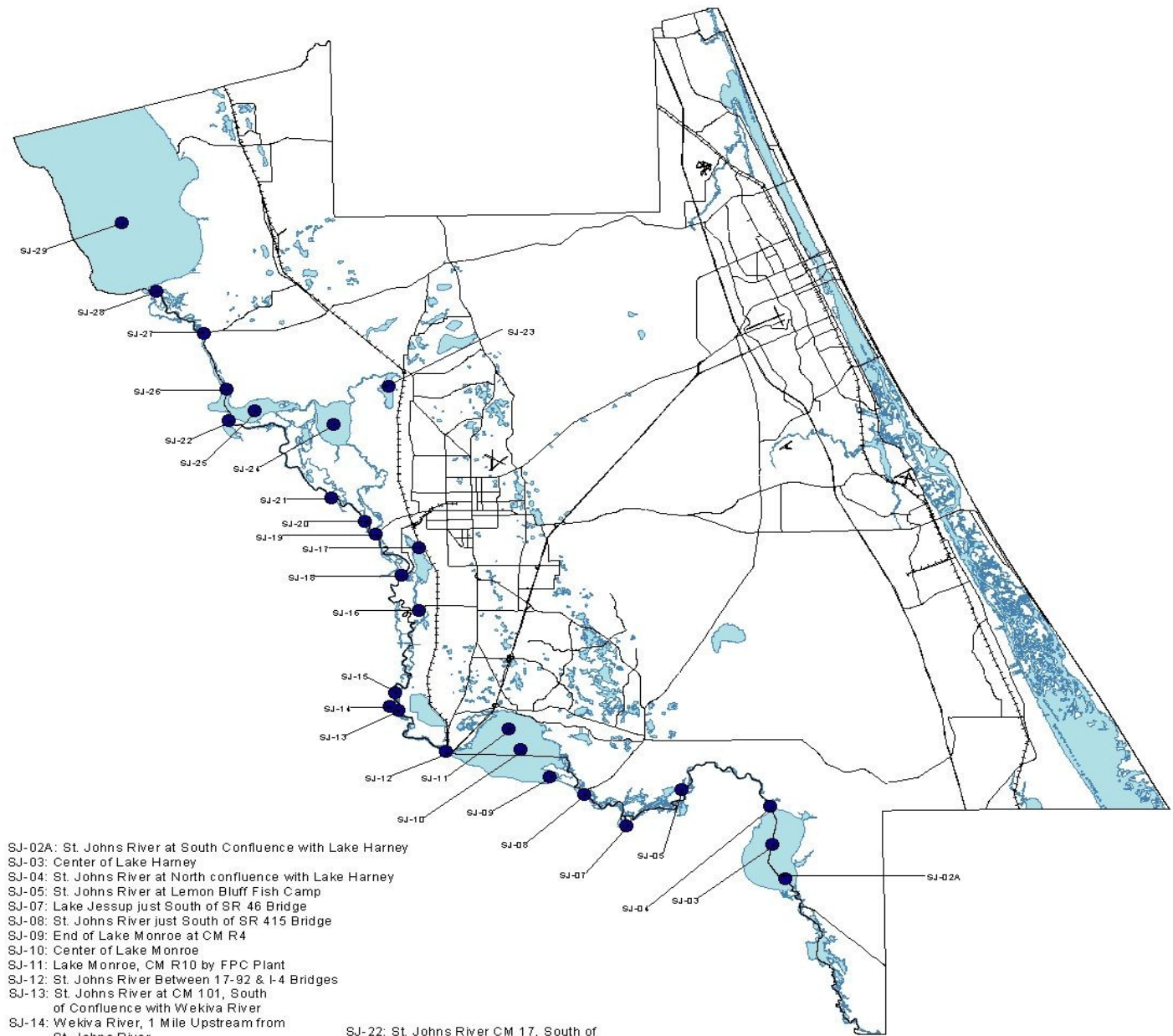
- Identify water quality trends
- Provide data to STORET and share/compare data with other agencies and organizations
- Provide information for TMDL and BMAP development and monitoring
- Identify areas potentially harmful to public health (in conjunction with Dept. of Health)
- Inform public of water quality issues
- Teach local students about water quality

Volusia County Watersheds



St. Johns River Water Sampling Locations

Sections of the SJR are sampled over a 3 day period covering ~ 100 miles of river.



SJ-02A: St. Johns River at South Confluence with Lake Harney
SJ-03: Center of Lake Harney
SJ-04: St. Johns River at North confluence with Lake Harney
SJ-05: St. Johns River at Lemon Bluff Fish Camp
SJ-07: Lake Jessup just South of SR 46 Bridge
SJ-08: St. Johns River just South of SR 415 Bridge
SJ-09: End of Lake Monroe at CM R4
SJ-10: Center of Lake Monroe
SJ-11: Lake Monroe, CM R10 by FPC Plant
SJ-12: St. Johns River Between 17-92 & I-4 Bridges
SJ-13: St. Johns River at CM 101, South of Confluence with Wekiva River
SJ-14: Wekiva River, 1 Mile Upstream from St. Johns River
SJ-15: St. Johns River at CM 93, North of Wekiva/St. Johns River Confluence
SJ-16: St. Johns River at CM 69, North of Blue Spring
SJ-17: Center of Lake Beresford
SJ-18: St. Johns River at CM 53, near Hontoon Marina
SJ-19: St. Johns River, 50 Yards South of SR 44 Bridge
SJ-20: St. Johns River at CM 39
SJ-21: St. Johns River CM 26, North of St. Frances Dead River

SJ-22: St. Johns River CM 17, South of Lake Dexter
SJ-23: Center of Spring Garden Lake
SJ-24: Center of Lake Woodruff
SJ-25: Center of Lake Dexter
SJ-26: St. Johns River at CM 8, North of Dexter Point
SJ-27: St. Johns River at Astor, 0.50 miles South of SR 40 Bridge
SJ-28: St. Johns River at CM 19, 0.50 Miles South of Lake George
SJ-29: Lake George at CM 9, 3 Miles North of Confluence with St. Johns River



**What do we want to know about the
water at each station?**

**There are physical, chemical, and
biological components . . .**



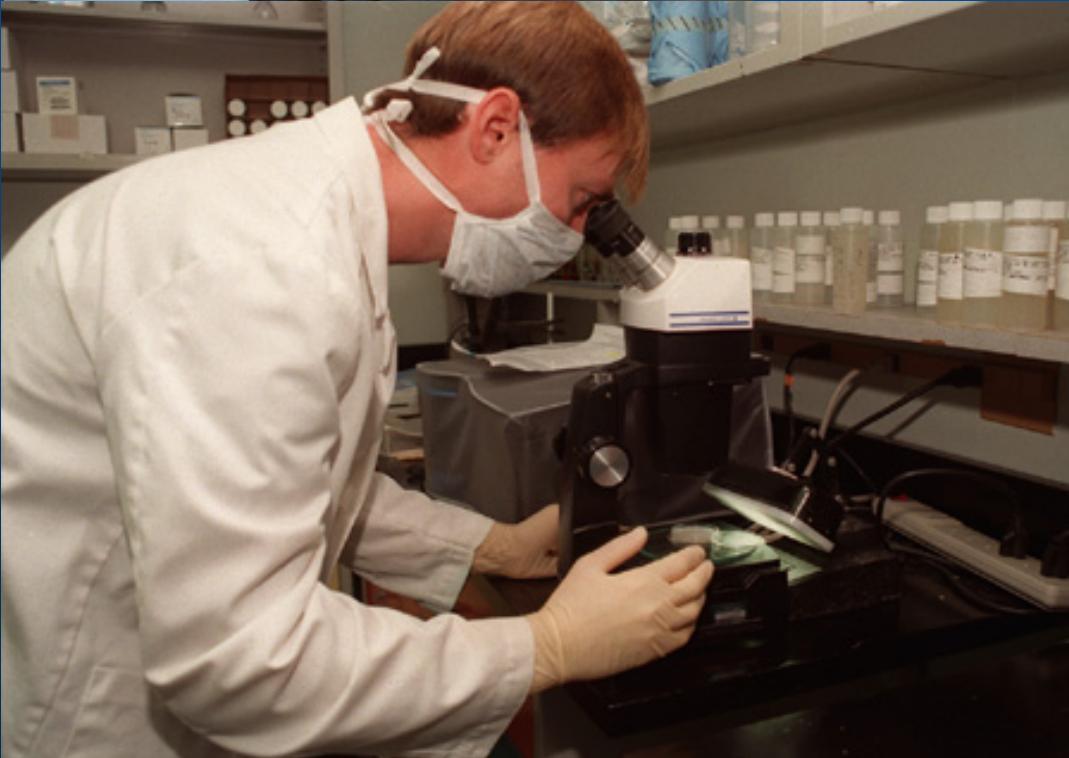


Collecting samples for analyses



and recording data

Field and Lab Analyses



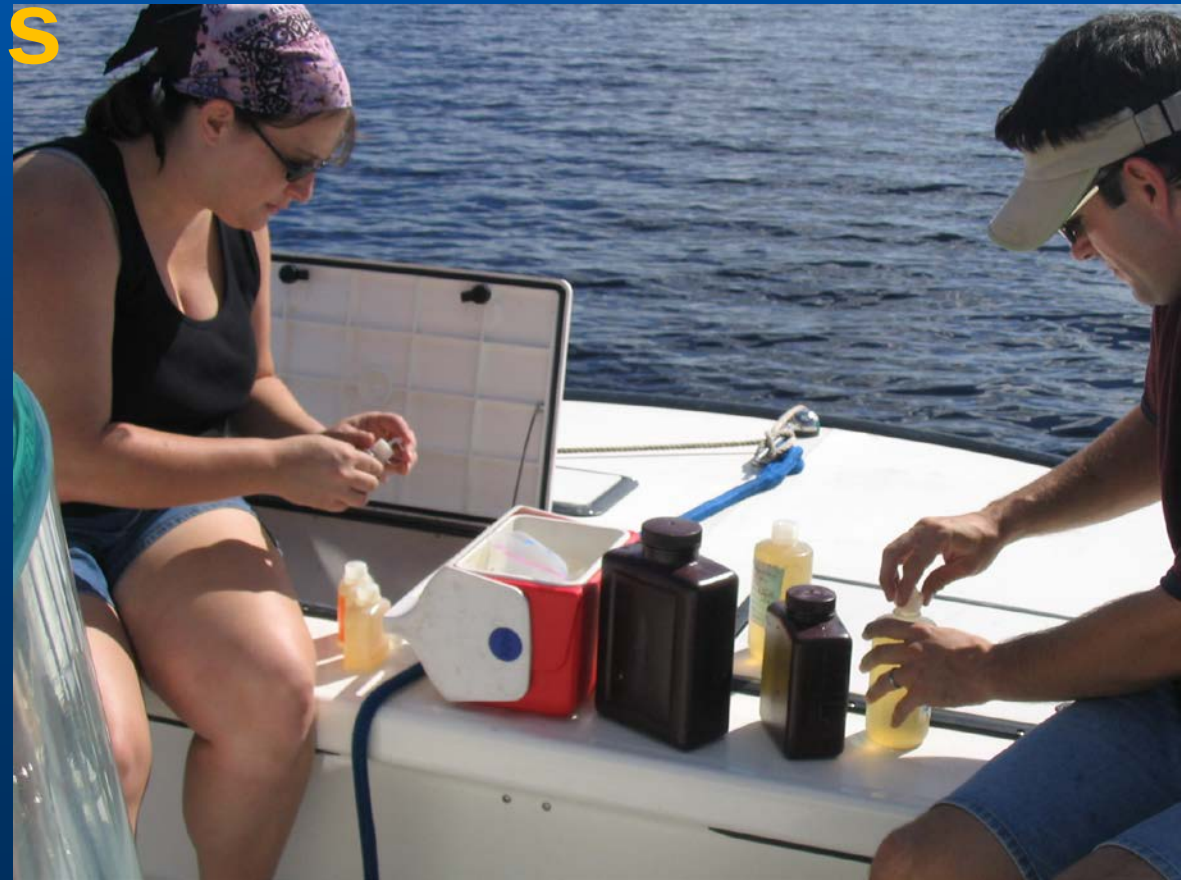
Field Data Collected:

- Air Temperature
- Water Temperature
- Wind Speed
- Wind Direction
- Cloud Cover
- pH
- Conductivity
- Dissolved Oxygen
- Secchi depth
- Total depth



Physical lab tests:

- Color
- Turbidity
- Suspended Solids



Chemical lab tests:

- Total Phosphorous
- Ortho-Phosphate
- Nitrite/Nitrate
- Total Kjeldahl Nitrogen (TKN)
- Ammonia

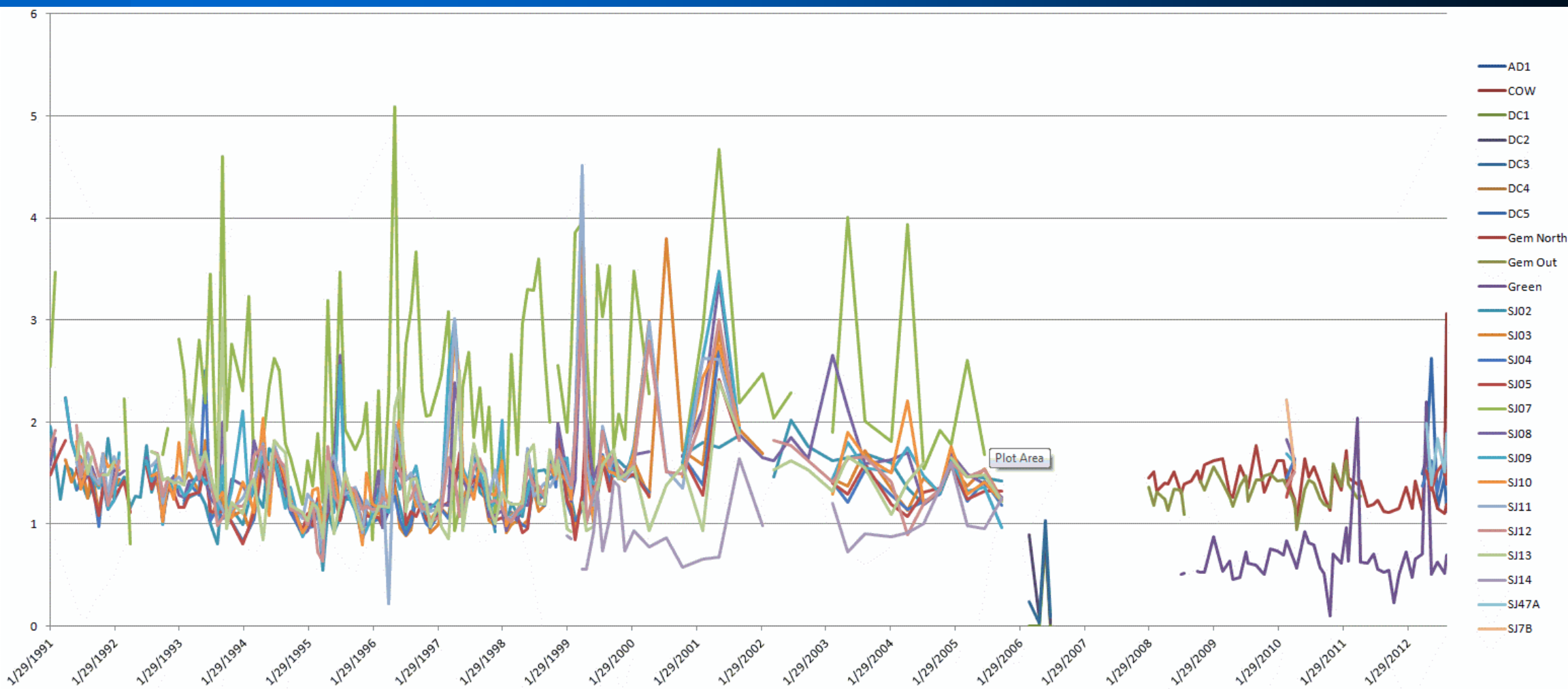
Biological Data:

- Chlorophyll a, b, c and pheophytin
- Fecal coliform
- Enterococci





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STORET

(short for STOrage and RETrieval Data Warehouse)

Results of lab tests and field data are entered into STORET systems of both the USEPA and Florida Department of Environmental Protection, making the data available online for public access.

Map Focus: Beaches and Coastal Systems

Map Legend

NPDES Stormwater Facilities

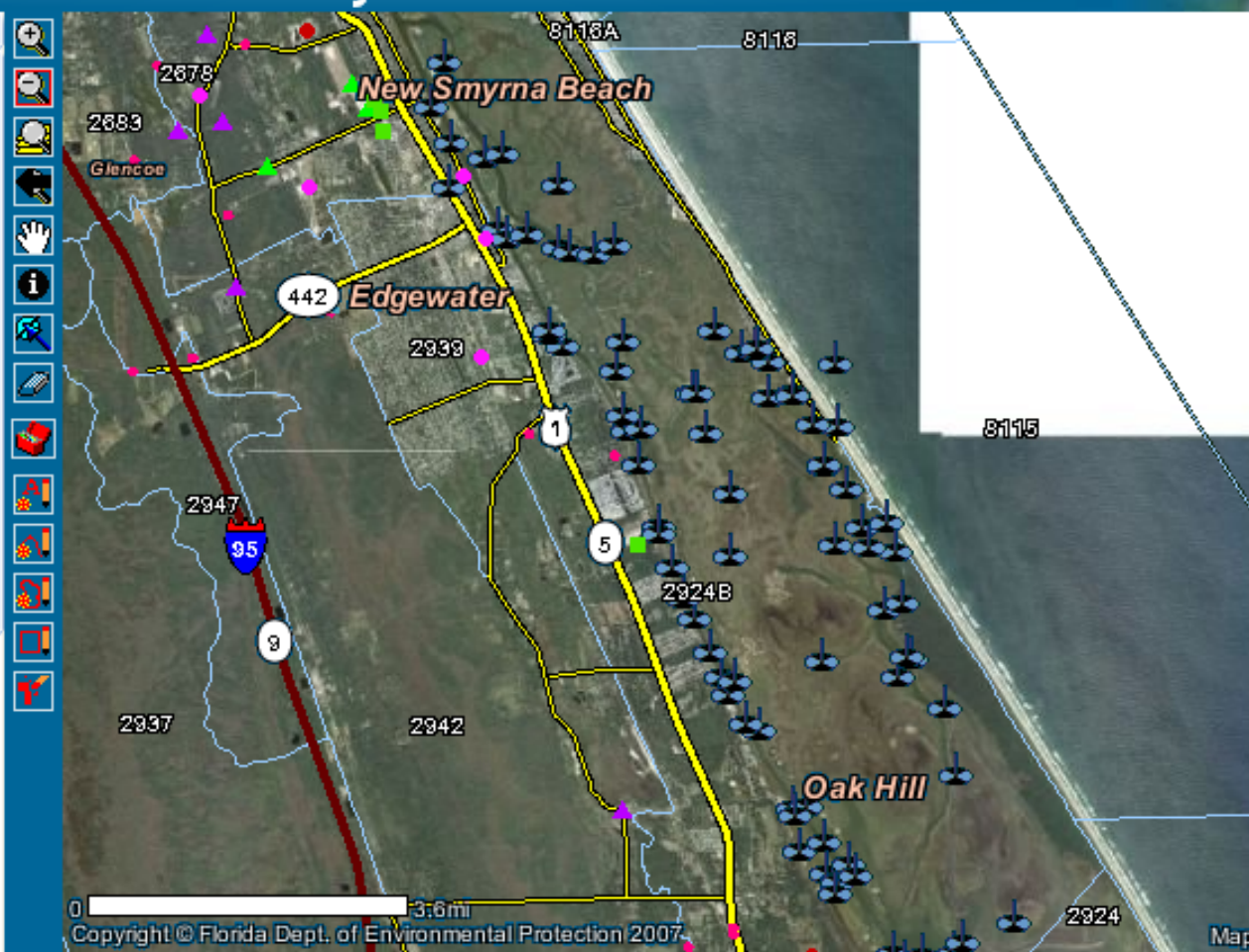
- Large CGP (≥ 5 Acres)
- Small CGP (1-5 Acres)
- Multisector Generic Permit (MSP)
- No Exposure Certification (NEX)
- ◆ Phase I MS4
- ◆ Phase II MS4
- Sampled Stations (Status Network)
- Sampled Stations (GWIS)

STORET Stations

- Canal
- Estuary
- Facility
- Lake
- Ocean
- River/Stream
- Spring
- Well
- Wetland
- Other

Wastewater Facilities (WAFR)

- ▲ NPDES (National) Facility
- ▲ State or Local Facility
- Interstates
- US Highways
- State Highways



Active Tool: **Zoom Out**

Scale = 1: **150,000** (39.6875 meters per pixel)

Selection Results

This frame is used to display results for the current Selection Set. The Selected features will be highlighted on the map image. There is currently no selection set. Use the controls in the Find Tab to select features using focused input forms. Use the Select map tool from the toolbar to manually select features using the mouse.



Department of
Environmental
Protection



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Internet

Nutrient levels fluctuate based on changes in:

- amounts of precipitation and runoff
- fertilizer application rates
- water flow/flushing rates
- water temperature
- biological activity
- the status of other parameters

Trophic State Index (TSI)

- Chlorophyll
- Nutrients (phosphorus and nitrogen)

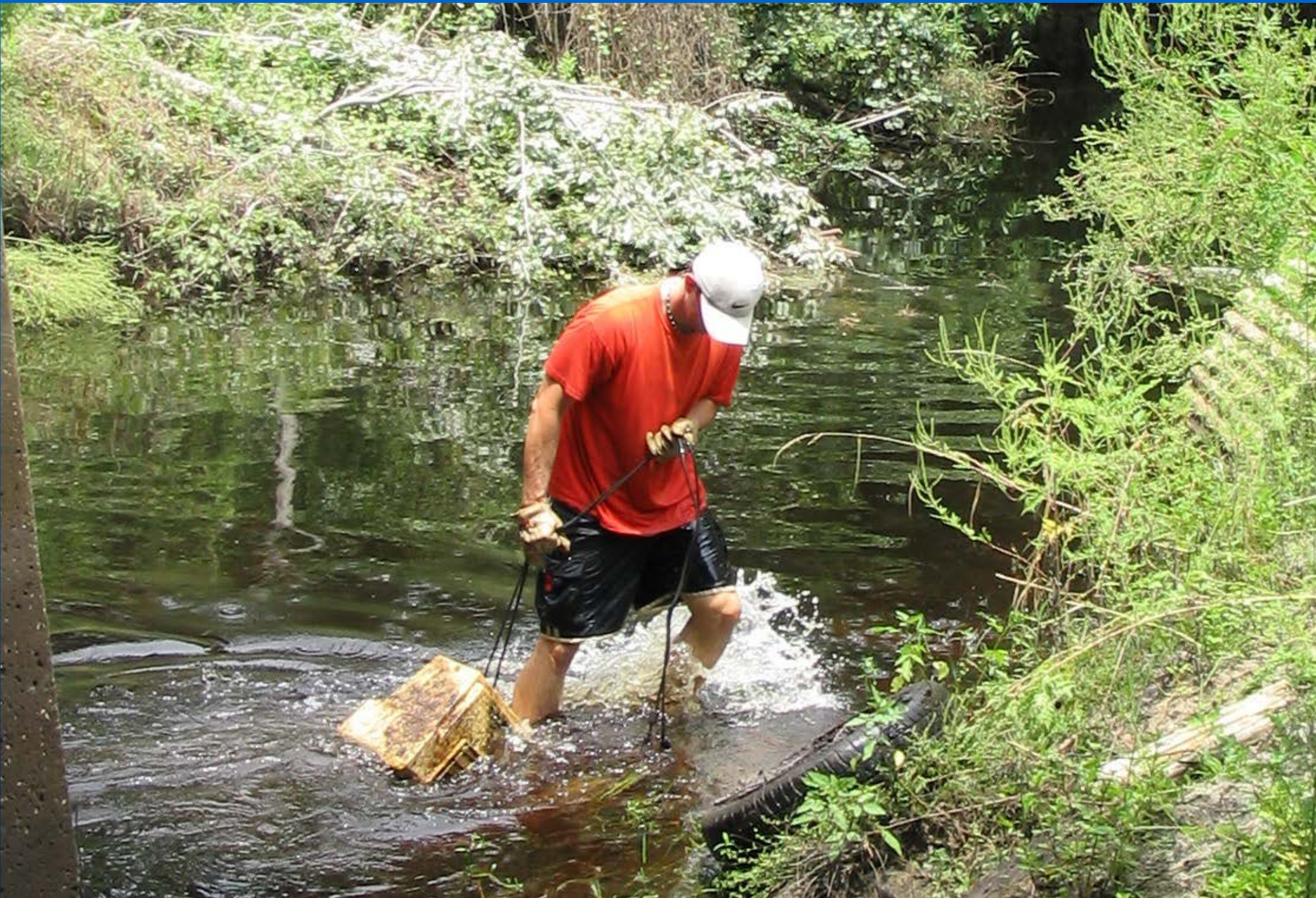
Water Quality Index (WQI)

- Nutrients (Total Nitrogen/Total Phosphorus)
- Turbidity
- Tss
- Fecal coliforms



**Total
Maximum
Daily
Load**

Other challenges to our surface waters







**SLOW
SPEED**

MINIMUM WAKE
ENTIRE CREEK AND
CANAL SYSTEM

PERMIT NO.: 92-089 TO REPORT DAMAGED MARKINGS CALL 405-BUOY 68C-22.012 FAC











Questions ?