



Florida Department of Environmental Protection
Environmental Assessment and Restoration

DEAR Bioassessment Workgroup

March 30, 2016





History

- 1990-2008: Focus on bioassessment method and biocriteria development
- 2009-Present: Focus on biocriteria implementation, especially with NNC
- There is still a need for method improvements and new biocriteria development
- Workgroup formalized to ensure progress on these needs despite competing priorities
- Workgroup includes staff from various programs within DEAR



Workgroup Priorities

- Data Collection
 - Re-establish reference stream monitoring (underway)
 - Initiate reference lake monitoring (starting 2016)
- Data Analysis
 - SCI - Appropriate use of and expectations for streams of different classifications (per Kiefer)
 - Highlands vs. Flatwoods
 - Large Rivers
 - Non-perennial streams
 - LVS – Determine additional metrics, driving factors (e.g., nutrients, land use, color), and potential new thresholds for impairment
 - RPS - Expectations in streams of different classifications



Reference Lakes

- AEQA sent list to ROCs for review, some comments rec'd, will make changes to list, send updated lake list and analyte list by 5/1
- Goals
 - Represent as many lake regions as possible (from 1997 Lake Region doc)
 - Have ongoing data collection
- Frequency of sampling for each lake (once/year, once/2 years) will depend on ROC workload
- AEQA and Biology may help with sampling statewide if needed, maybe coordinated efforts
- Determine reference lakes being sampled by other agencies



Camel Lake, Liberty Co.



POP QUIZ

1. Genus Name?
2. Native or Not?

- Minimal disturbance
- Natural lake
- Not yet on list!





LVS Analysis

- Current metrics are not the only potential metrics. They do not consider abundance of vegetation.
- Evidentiary thresholds based on very low sample size (n=17 reference sites).
- Data analysis plan under development
- Consider plant metrics and causal variables
- Distinguish uses of LVS as indicator of nutrient imbalance and plant community index
- Contract help with analysis



LVS Analysis, cont'd

Plant Metrics

- Mean CC
- % FLEPPC
- % Cover
- Dom/Codom CC
- % native, exotic, sensitive, tolerant, nuisance
- Proportion floating, submersed, emergent
- Occurrence of indicator taxa

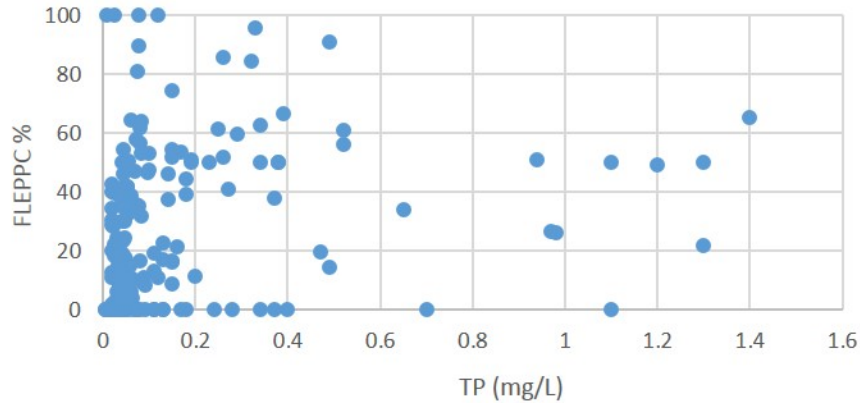
Causal Variables

- LDI
- HA
- Canopy cover
- Width
- Velocity
- Nutrients
- Color
- Conductivity

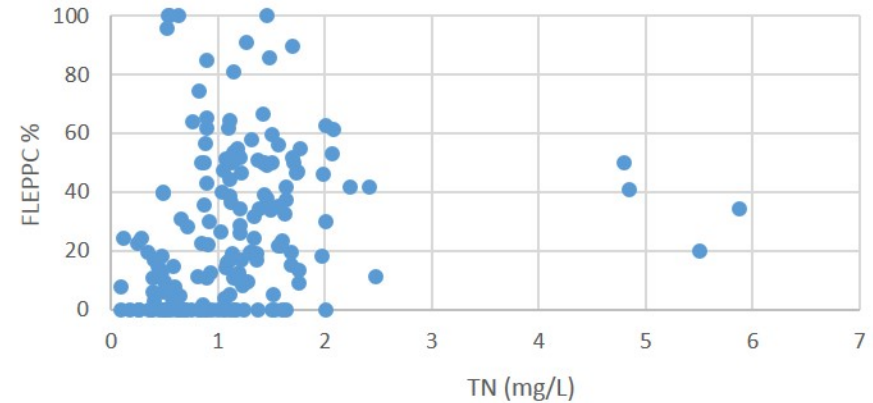


Potential Nutrient Relationship

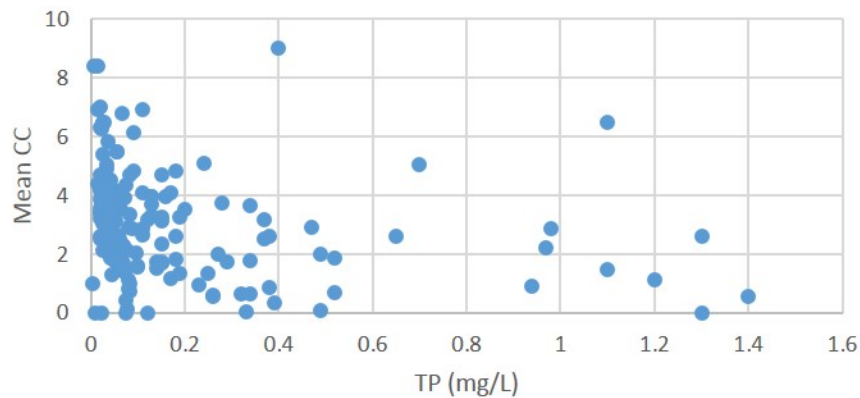
LVS – TP vs. FLEPPC%



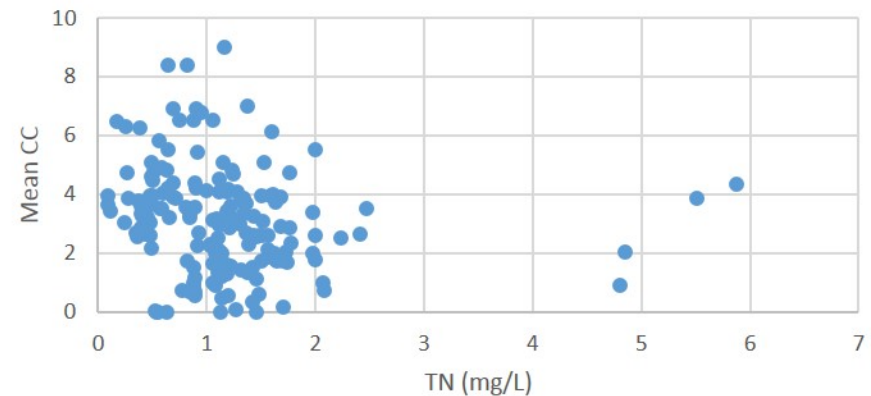
LVS – TN vs. FLEPPC%



LVS – TP vs. Mean CC



LVS – TN vs. Mean CC

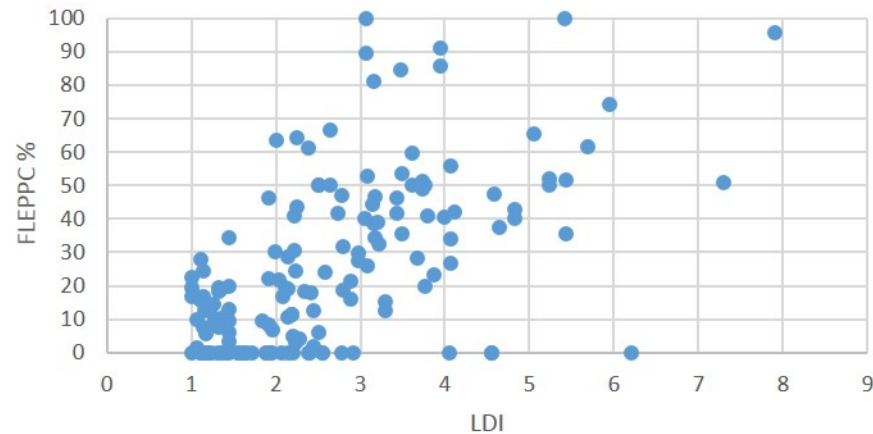


Very preliminary analysis, N=171 samples

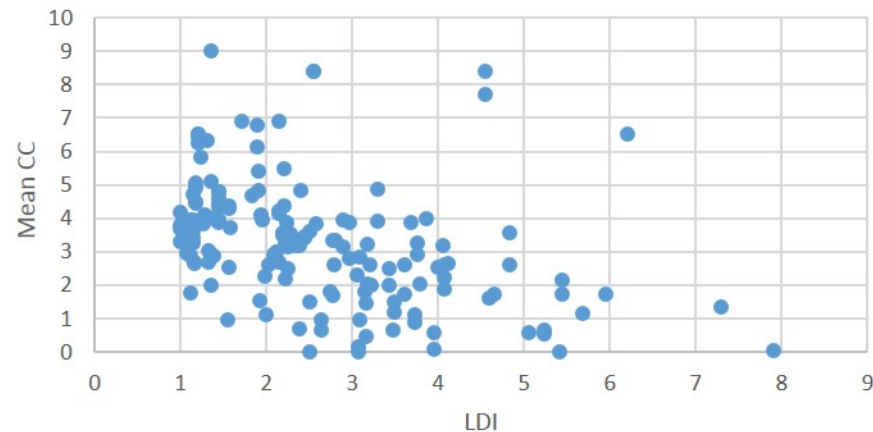


Potential Land Use Relationship

LVS – LDI vs. FLEPPC%



LVS – LDI vs. Mean CC



Very preliminary analysis, N=164 samples



Defining Imbalance for Non-Streams

- LVS and RPS collected at many sites that do not meet stream definition (lake-like or maintained conveyance)
- No thresholds to indicate imbalance
- WAS is using current evidentiary thresholds as screening tools, but not impaired if site exceeds them
- This issue is both a development and implementation question



Lake Vedra Canal