



Florida Department of Environmental Protection

Nutrient Assessment in Streams

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Nutrient Assessment in Streams

- **Evaluate the following:**
 - Total nitrogen concentration
 - Total phosphorus concentration
 - Phytoplankton (chlorophyll-a)
 - Periphyton (attached algae)
 - Macrophytes
 - Stream Condition Index (macroinvertebrates)



Numeric Nutrient Criteria in Streams

- Information on chlorophyll *a* levels, algal mats or blooms, nuisance macrophyte growth, or changes in algal species composition indicate an imbalance

OR

- The TN or TP Thresholds (expressed as annual geometric means) are exceeded more than once in a three year period

AND

- The average score of at least two temporally independent SCIs is <40 , with neither of the two most recent SCI scores less than 35



Floral Tools in Streams

- **Linear Vegetation Survey**
 - Coefficient of Conservatism, invasive exotics
- **Rapid Periphyton Survey**
 - Thickness and extent, autecology (interpreting species information)
- **Phytoplankton**
 - chlorophyll a



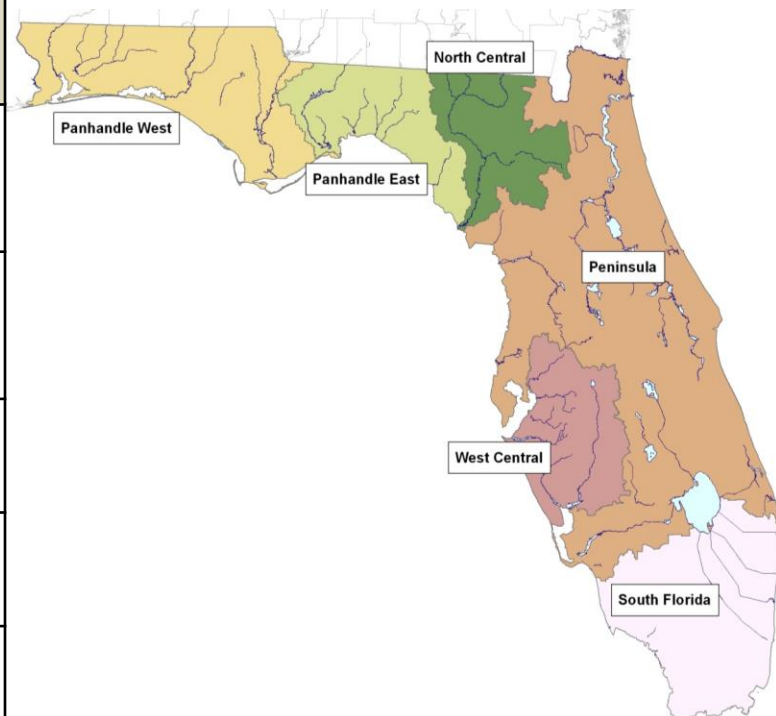
Floral Metrics Summary

Floral Metric	Threshold	Indicate Balance?
LVS Coefficient of Conservatism	> 2.5 average score for plants present at site	Yes, No, Inconclusive?
LVS FL Exotic Plants Pests Council	< 25% of plants present at site on FLEPPC list	Yes, No, Inconclusive?
RPS	< 25% rank 4-6 coverage	Yes, No, Inconclusive?
Chlorophyll-a	< 20 ug/L; 3.2 to 20 ug/L = site specific	Yes, No, Inconclusive?
Community Composition	No adverse shifts	Yes, No, Inconclusive?



Streams Thresholds and Regions

Nutrient Region	Total Phosphorus (TP) Threshold	Total Nitrogen (TN) Threshold
Panhandle West	0.06 mg/L	0.67 mg/L
Panhandle East	0.18 mg/L	1.03 mg/L
North Central	0.30 mg/L	1.87 mg/L
Peninsula	0.12 mg/L	1.54 mg/L
West Central	0.49 mg/L	1.65 mg/L
South Florida	No numeric nutrient threshold. The narrative criterion in paragraph 62-302.530(47)(b), F.A.C., applies.	





Multiple Lines of Competing Evidence

- Low nutrient concentrations with excess algae
- Coverage of exotic plants just above threshold, low nutrient concentrations
- High nutrient concentrations with passing SCI, no plants or algae present