

Minimum Flows for the St. Marks River Rise



Rule Development Workshop

December 20, 2018



Statutory Requirements s.373.042, F.S.

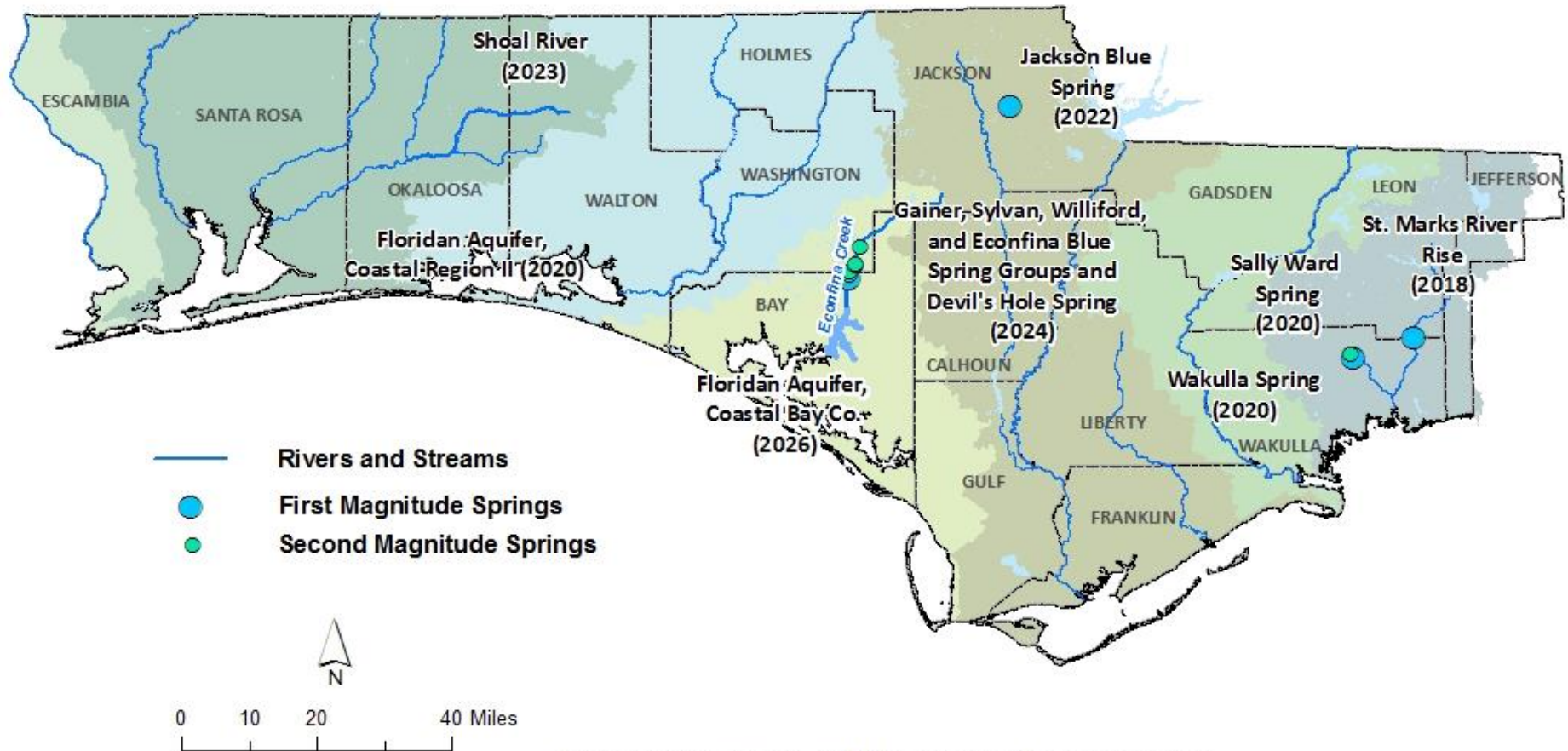
What is an MFL?

Limit at which further withdrawals will cause significant harm to the water resources or ecology of the area.

Purpose:

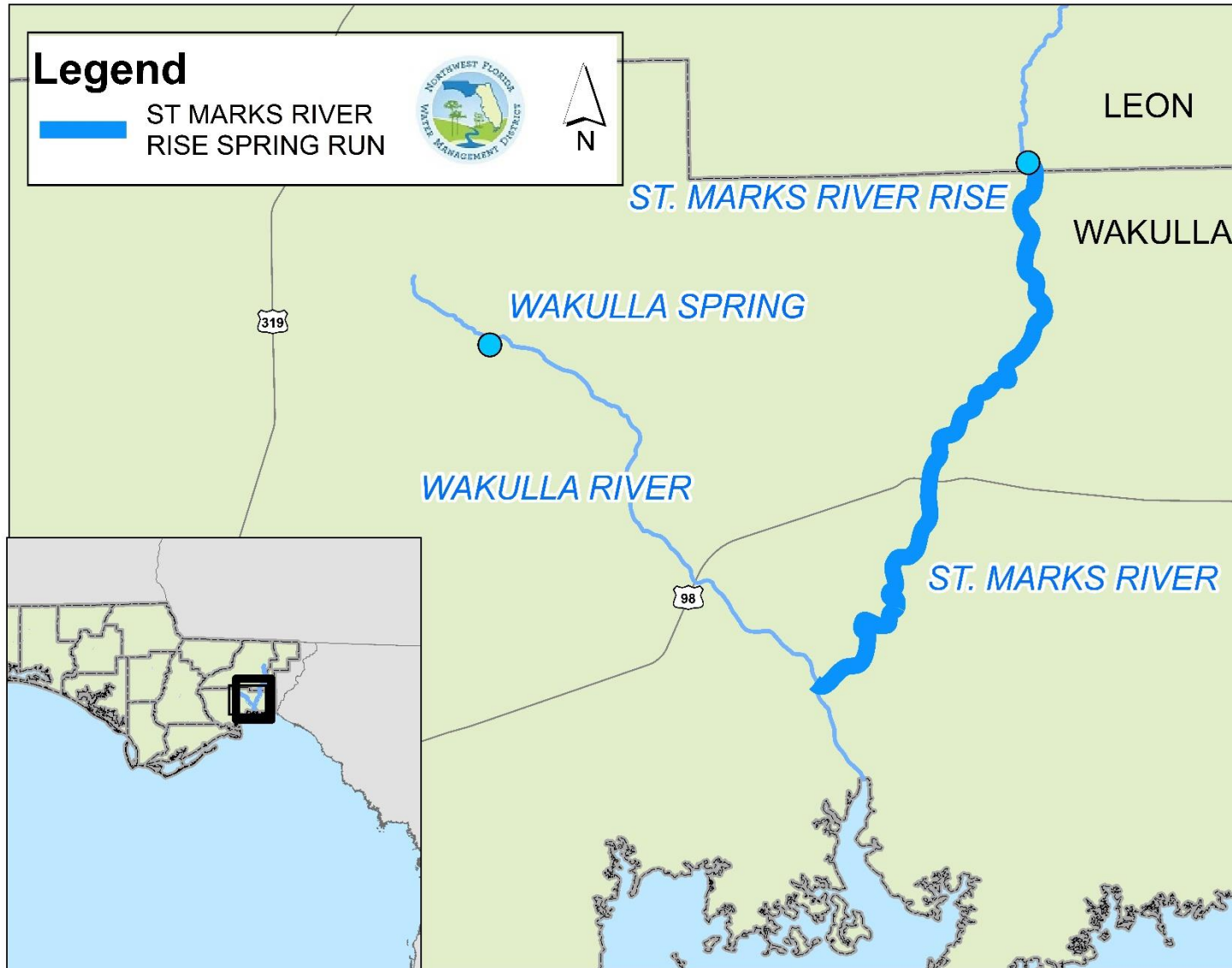
To protect water resources and associated ecology. Provides information to support water supply planning and water use permitting evaluations.

Priority Waterbodies



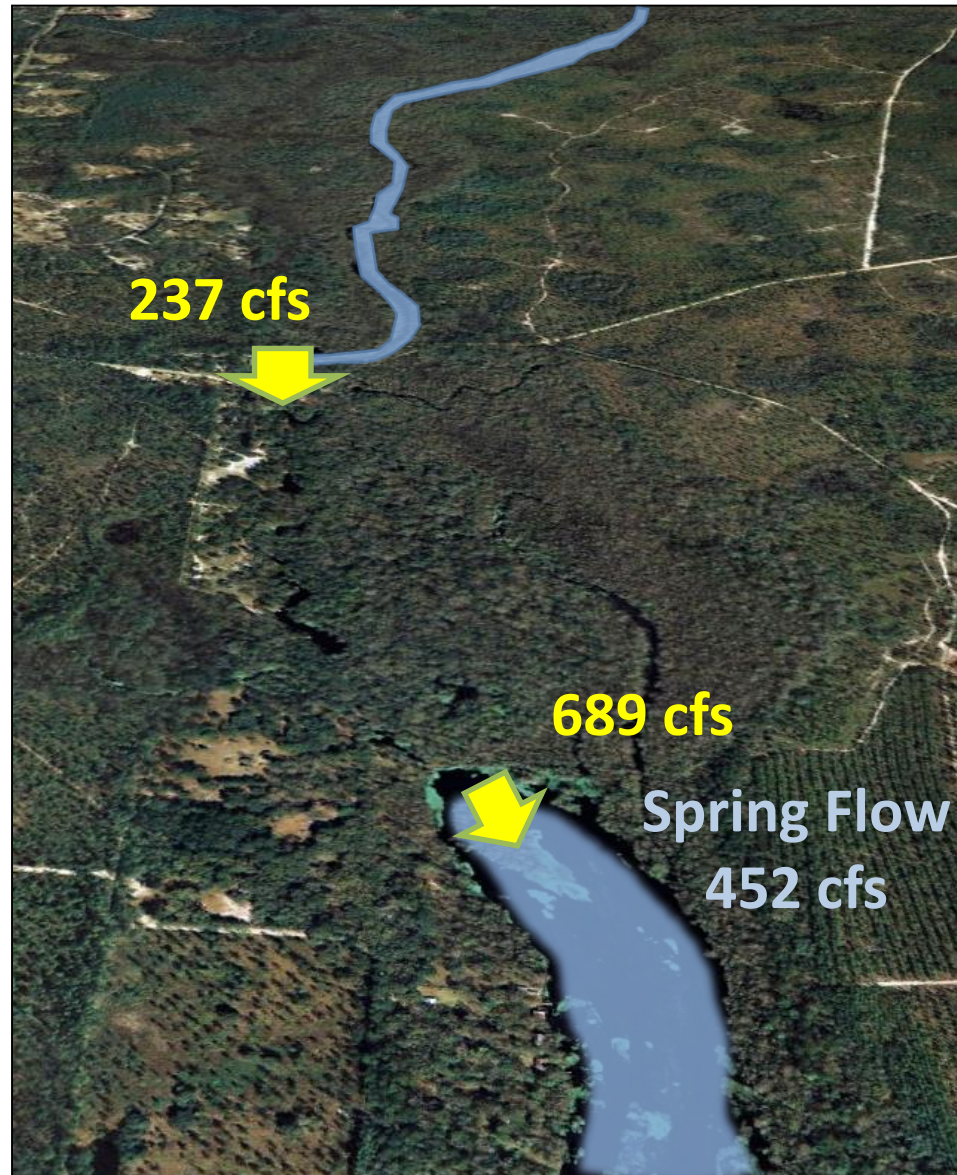
Completion Dates of MFL technical assessments are shown in parentheses.

St. Marks River Rise Study Area





St. Marks River Rise



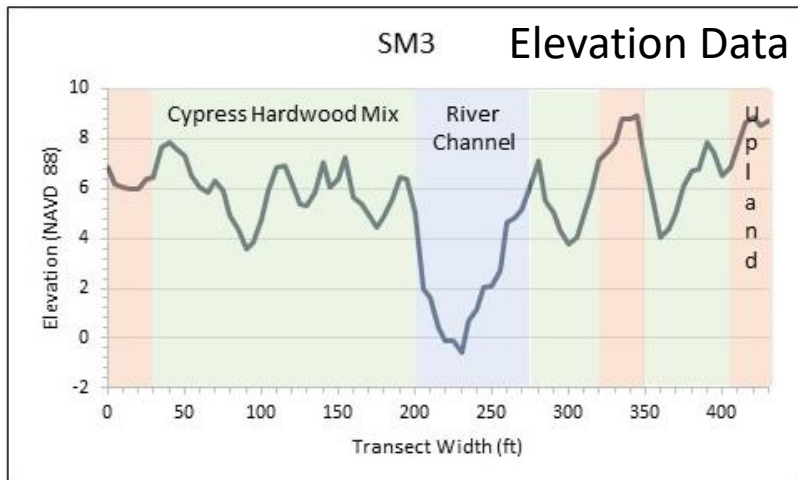
Enhanced Data Collection

- More than 60 sites
- Hydrology
 - Aquifer levels
 - River stage and flow
 - Spring flow
- Water Quality
 - Salinity
 - Temperature



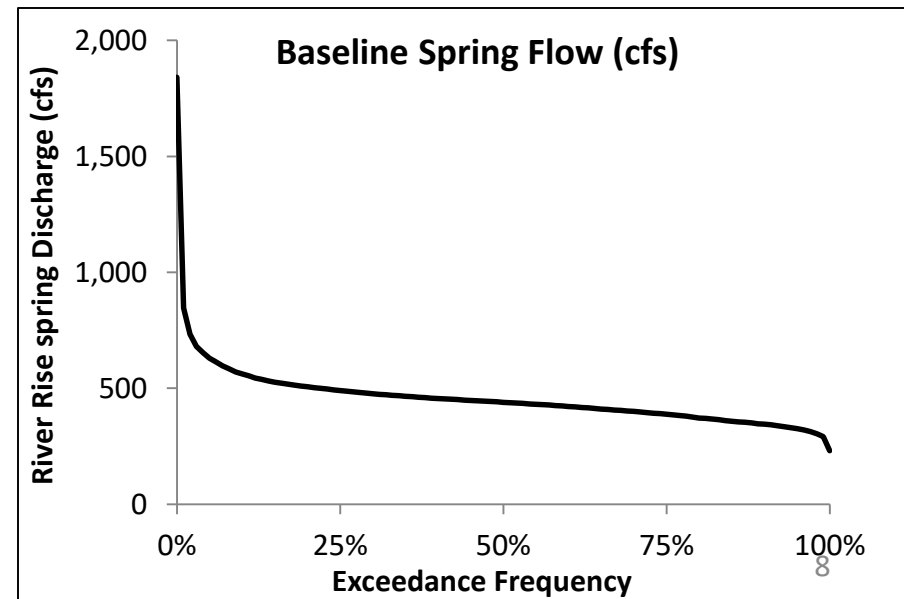
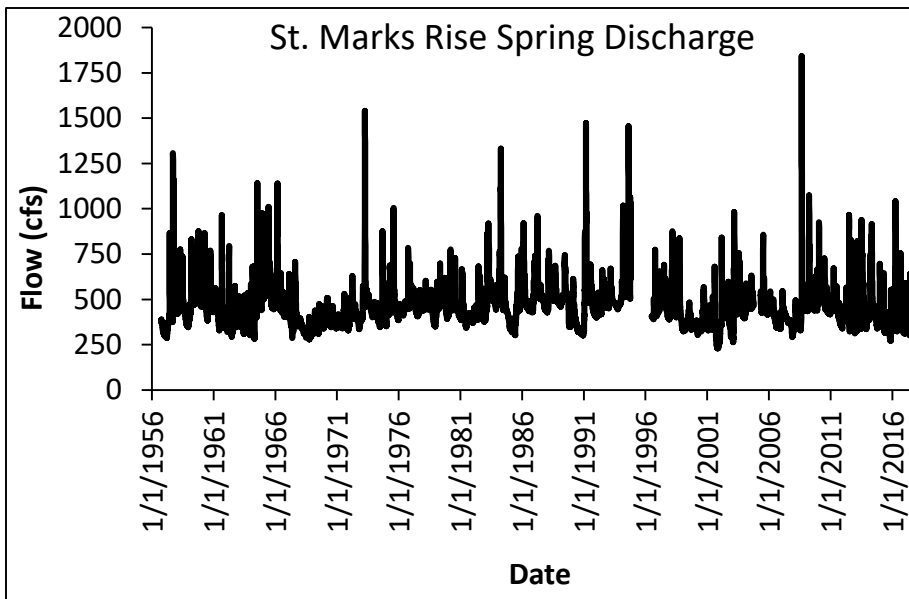
Enhanced Data Collection

- Elevation Data
 - River channel
 - Floodplain
- Ecological Data
 - Vegetation Communities
 - Instream Habitat



Baseline Time Series

- No measurable impacts from withdrawals
- Baseline is period of record:
 - (October 1, 1956 – November 27, 2017)





Florida Administrative Code (F.A.C.) Requirements

Chapter 62-40.473(1), F.A.C.

1. Natural seasonal fluctuations in water flows or levels,
2. Non-consumptive uses, and
3. Environmental values associated with coastal, estuarine, riverine, spring, aquatic, and wetland ecology, including:

- (a) Recreation in and on the water
- (b) Fish and wildlife habitats and the passage of fish
- (c) Estuarine resources
- (d) Transfer of detrital material
- (e) Maintenance of freshwater storage and supply
- (f) Aesthetic and scenic attributes
- (g) Filtration and absorption of nutrients and other pollutants;
- (h) Sediment loads
- (i) Water quality
- (j) Navigation



**“Water
Resource
Values”
(WRVs)**

Water Resource Value Metrics

- **Recreation**
 - Safe Power Boat Passage (2 ft x 30 ft)
 - Safe Canoe/Kayak Passage (1.5 ft Depth)
- **Fish and Wildlife Habitats**
 - Fish Passage (0.6 ft Depth)
 - Manatee Passage (3.8 ft x 3.8 ft)
 - Floodplain Wetland Inundation
 - Instream Woody Habitat Inundation
- **Estuarine Resources**
 - Low Salinity Habitats (Volume, Surface Area, Shoreline Length)



Hydrology Models

- Models used to quantify changes in spring flow and WRV metrics
 - River hydraulic model – spring flow effects on river stage and flow
 - Estuarine Model – spring flow effects on salinity
- Significant harm threshold: 15% reduction in metric

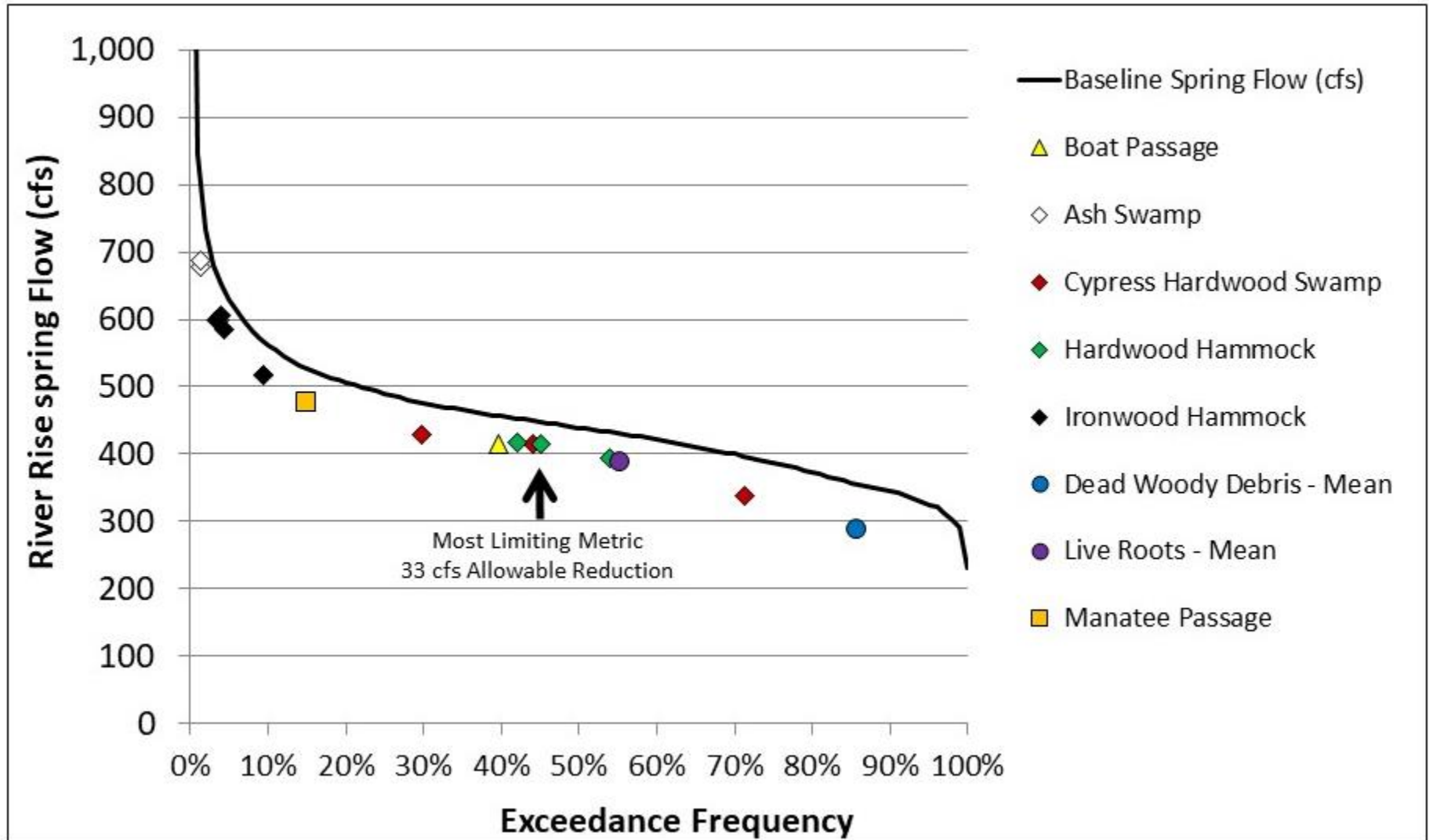




Results

| Spring Flow Range | Limiting Metrics | Allowable Flow Reduction (cfs) |
|------------------------|---------------------------|--------------------------------|
| Low (<400 cfs) | Dead Woody Debris Habitat | 67 |
| Medium (400 - 600 cfs) | Live Roots Habitat | 42 |
| | Hardwood Hammock | 33 |
| | Cypress Hardwood Swamp | 34 |
| | Boat Passage | 40 |
| | Manatee Passage | 50 |
| High (>600 cfs) | Ironwood Hammock | 50 |
| | Ash Swamp | 101 |

Results





Minimum Flow

- Most limiting metric protective of full range of flows
- Hardwood Hammock inundation: 33 cfs reduction when spring flow is 447 cfs
- Applied to long-term average daily spring flow (452 cfs)

| Long-term Daily Average Minimum Spring Flow (cfs) | Allowable Flow Reduction (cfs) | Percent Allowable Flow Reduction (%) |
|--|---|---|
| 419 | 33 | 7.3% |

Peer Review

- Independent experts in Hydrology, Ecology, and Environmental Flows
- Scope of Peer Review
 - Supporting Data and Information
 - Technical assumptions
 - Procedures and Analyses





Peer Review Comments

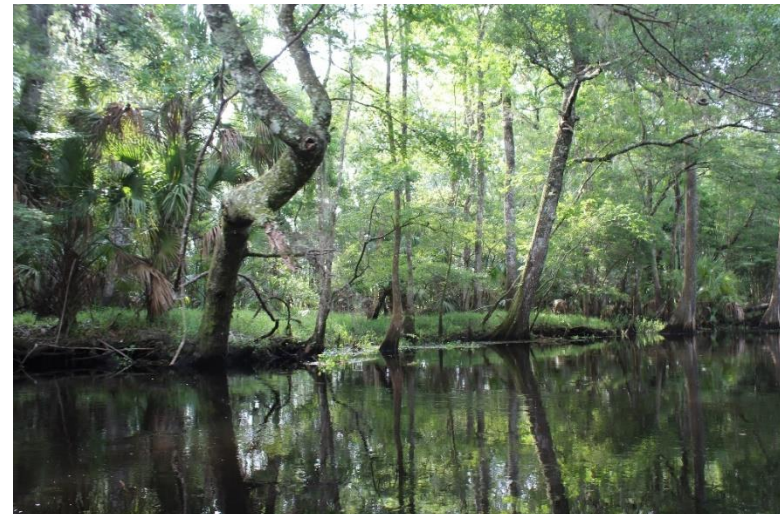
“...The Panel supports and endorses the District’s approach to determining the minimum flow and final selection of the minimum flow for the St. Marks River Rise and Spring Run.”

Key Revisions

- Improved riverine model and provided additional documentation
- Removed boat launching metric
- Reduced boat passage depth

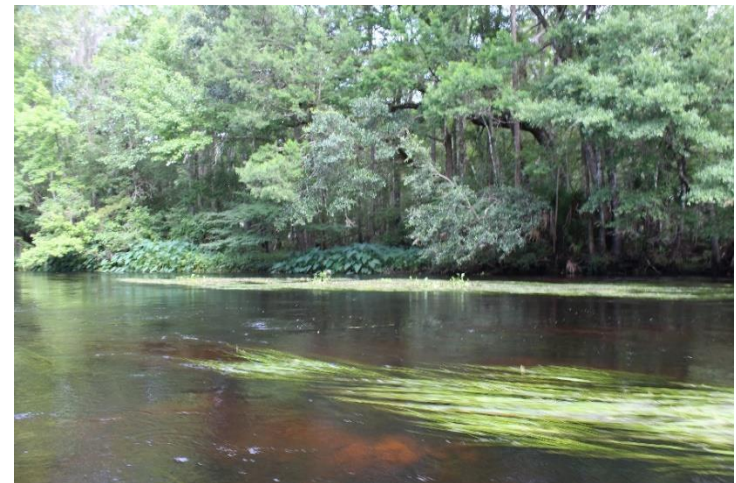
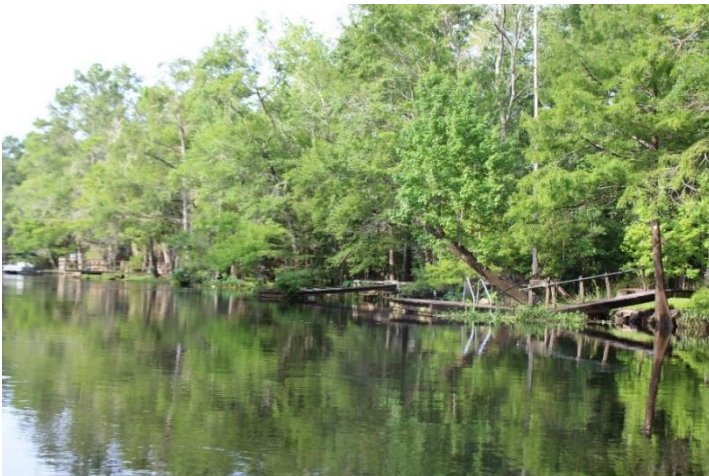
Evaluation of Need for Prevention or Recovery Strategy

- St. Marks River Rise currently meets the proposed minimum flow
 - No recovery strategy needed
- Effects of projected withdrawals through 2040 do not exceed available spring flow of 33 cfs
 - No prevention strategy needed



MFL Assessment

- MFL status anticipated to be assessed every 5 years
- Difference between 30-year average flow and the baseline flow compared to the available water of 33 cfs
- MFL anticipated to be reevaluated in 10 years





Rulemaking Schedule

| | |
|--|---|
| November 1, 2018 | Notice of Rule Development was published |
| December 20, 2018 | Rule Development public workshop followed by 14 day public comment period |
| February 28, 2019 | Anticipated Board review and approval of draft rule language |
| April 1, 2019 | Deadline to publish Notice of Proposed Rule |
| End of May, beginning of June, 2019 | Anticipated effective date of Proposed Rule |

Thank You

