Springs Minimum Flows and Levels (MFLs)

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SCMC
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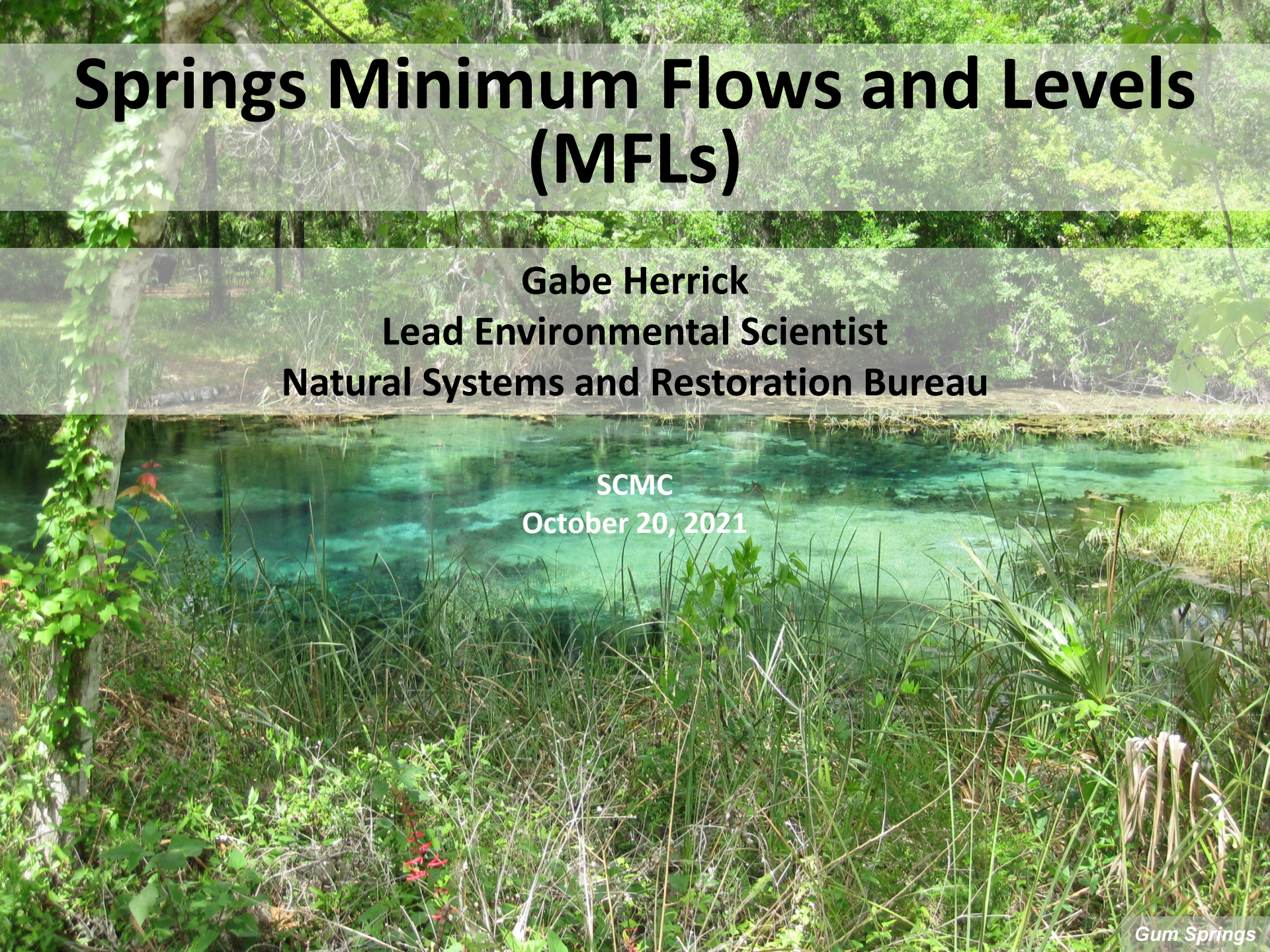
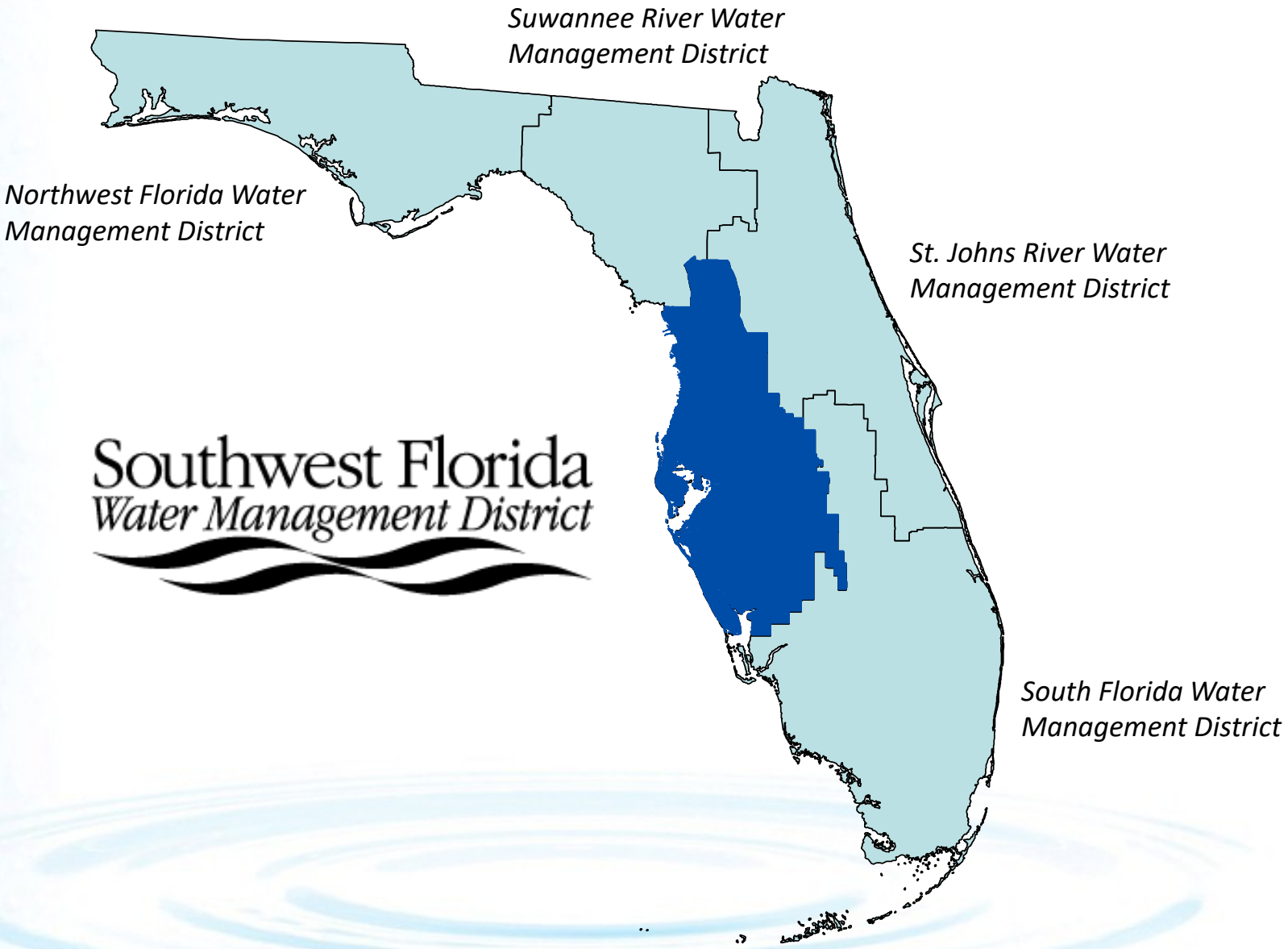


Gum Springs

Florida Water Resources Act

- All water in Florida is a public resource
- Managed by the DEP and the five water management districts
- Florida's water supply comes from rivers, streams, wetlands, lakes, springs, aquifers and estuaries across the state.
- Florida's natural environment needs sufficient water supply to function properly.
- Balancing water supply and natural systems

Water Management Districts of Florida



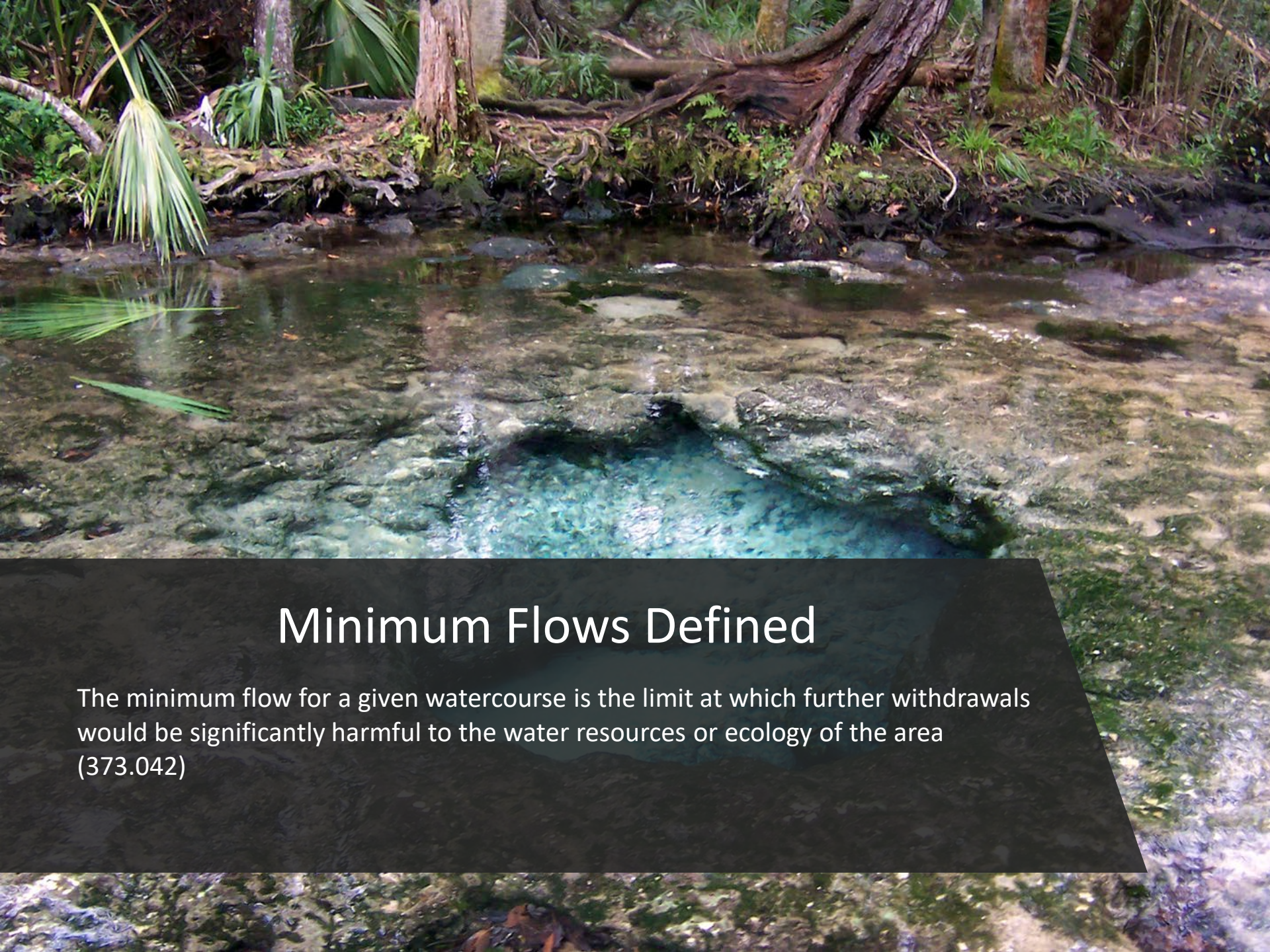
SWFWMD MFLs

- 202 total
- 126 lakes, 34 wetlands, 12 freshwater river segments, 11 estuarine river segments, 10 springs/spring groups, 9 aquifers.
- Reevaluations have been completed for 95 MFLs.
- Many more in the works.

Minimum Flows are Required

- Districts are required to set minimum flows for all surface watercourses.
- A priority list and schedule provides a timeline.

Charlie Creek



Minimum Flows Defined

The minimum flow for a given watercourse is the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area (373.042)

Significant Harm

- "…limit at which further withdrawals would be *significantly harmful…"*
- Statute leaves it to water management districts
- Evaluated independently for each river, spring, estuary or other flowing water system
- For example:
  - Habitat availability
  - Wetland vegetation
  - Salinity of estuaries

Some Specific Legal Directives

Summarized from Sections 373.042 and 373.0421, Florida Statutes

- Use best information available
- Consider changes and structural alterations to waters and watersheds and their effects on hydrology
- If MFLs are currently not met: Recovery Strategy
- IF MFLs are expected to not be met within 20 years: Prevention Strategy

MFLs Considerations

Water Resource Implementation Rule (62-40.473, F.A.C.)

Address natural seasonal fluctuations, non-consumptive uses, and environmental values, including:

- Recreation in and on the water
- Fish and wildlife habitats and the passage of fish
- Estuarine resources
- Transfer of detrital material
- Maintenance of freshwater storage and supply
- Aesthetic and scenic attributes
- Filtration/absorption of nutrients and other pollutants
- Sediment loads
- Water quality
- Navigation

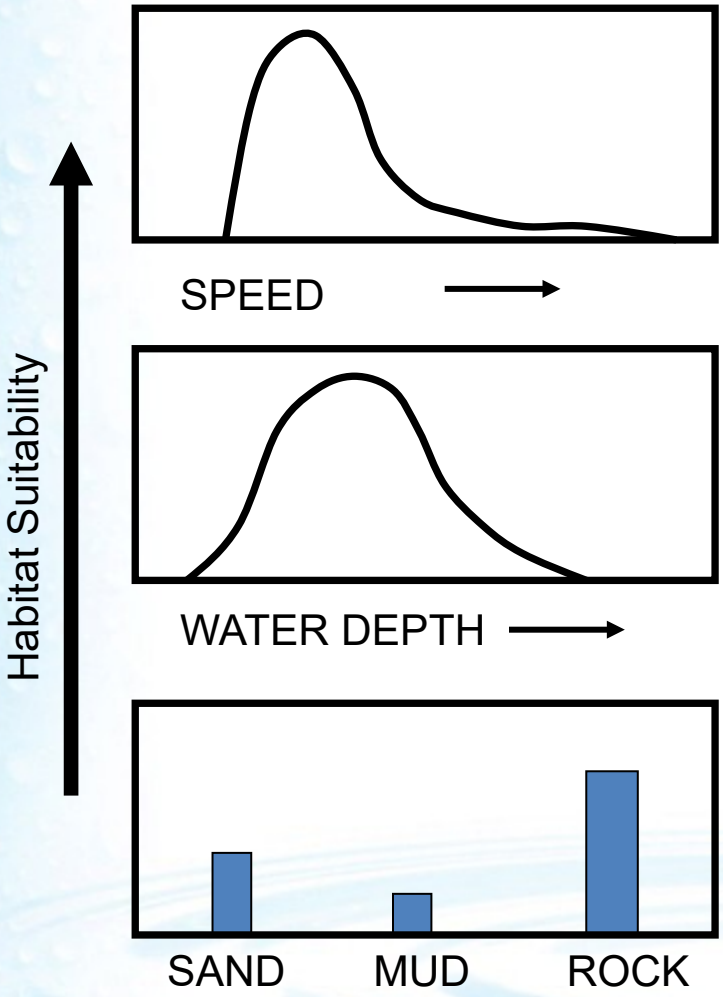
Process for Establishing MFLs

- Priority List and Schedule developed and updated annually
- Methods, flows or levels are developed and peer-reviewed
- Workshops held for public/stakeholder input on proposed MFLs
- Recovery or prevention strategies developed, as necessary
- MFLs reevaluated periodically and revised as needed
- District Governing Board or DEP adopts MFLs into rule (e.g., Chapter 40D-8, F.A.C.)

General Approach for Setting Minimum Flows

- Develop **unimpacted flow record** that accounts for natural flow variation, structural alterations and as necessary, corrects for withdrawal impacts
- Identify **seasonal or flow-based blocks** to account for annual variation in flow
- Develop **models for evaluating** flows at locations other than long-term streamflow gaging stations
- Develop **models/data for assessing environmental values** affected by flows
- Identify **significant harm thresholds** to set minimum flows

Fish and Invertebrate Habitat Suitability Modeling with SEFA



Woody Habitats and Floodplain Inundation

Salinity-Based Habitat Modeling

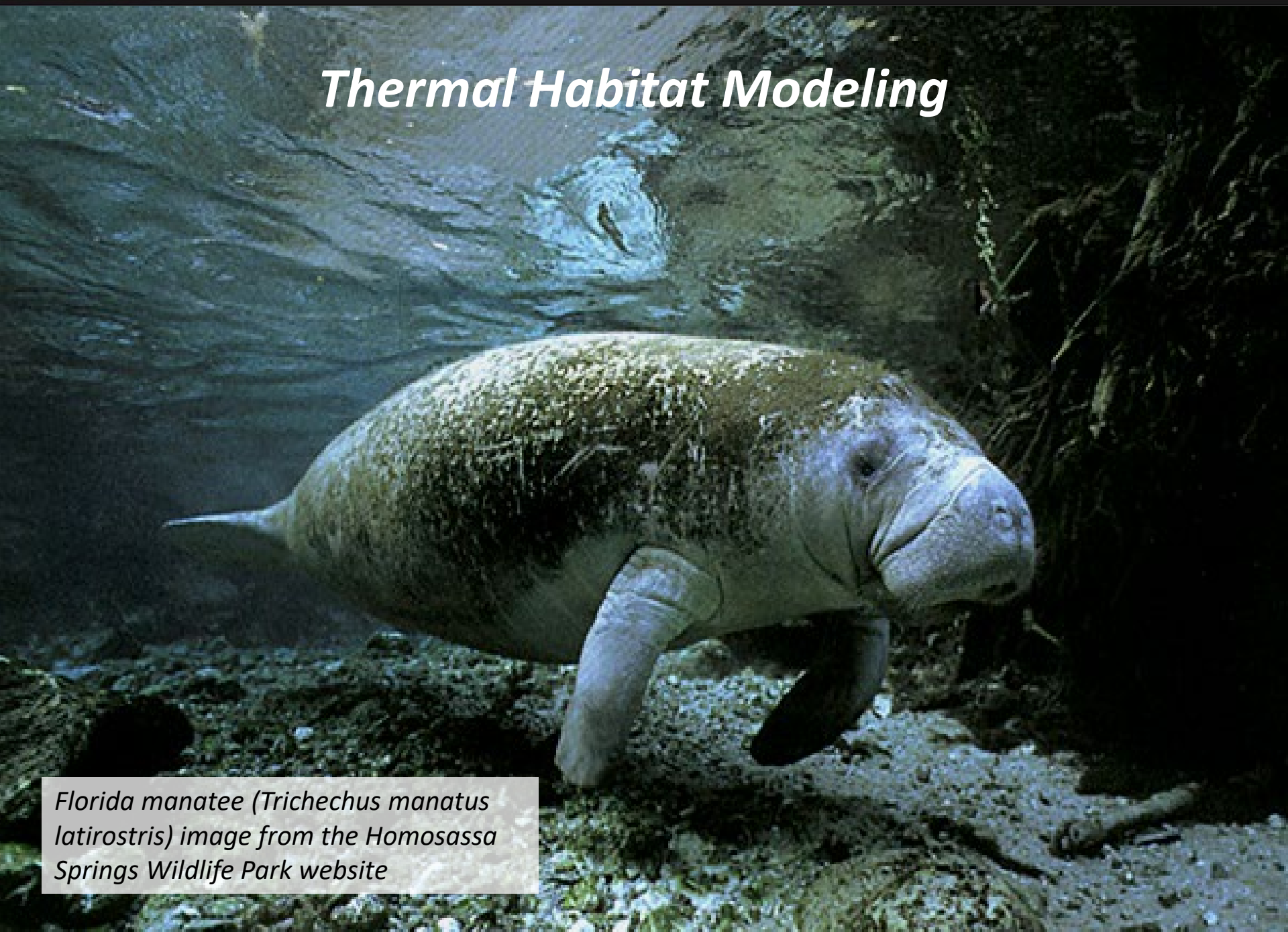
- Biologically Relevant Salinity Criteria -

Open water, bottom surface and shoreline salinities

- availability of fish habitat
- availability of invertebrate habitat
- the extent and/or type of aquatic and shoreline vegetation

Fish image source:
D. Rome Peebles; MyFWC.com

Thermal Habitat Modeling



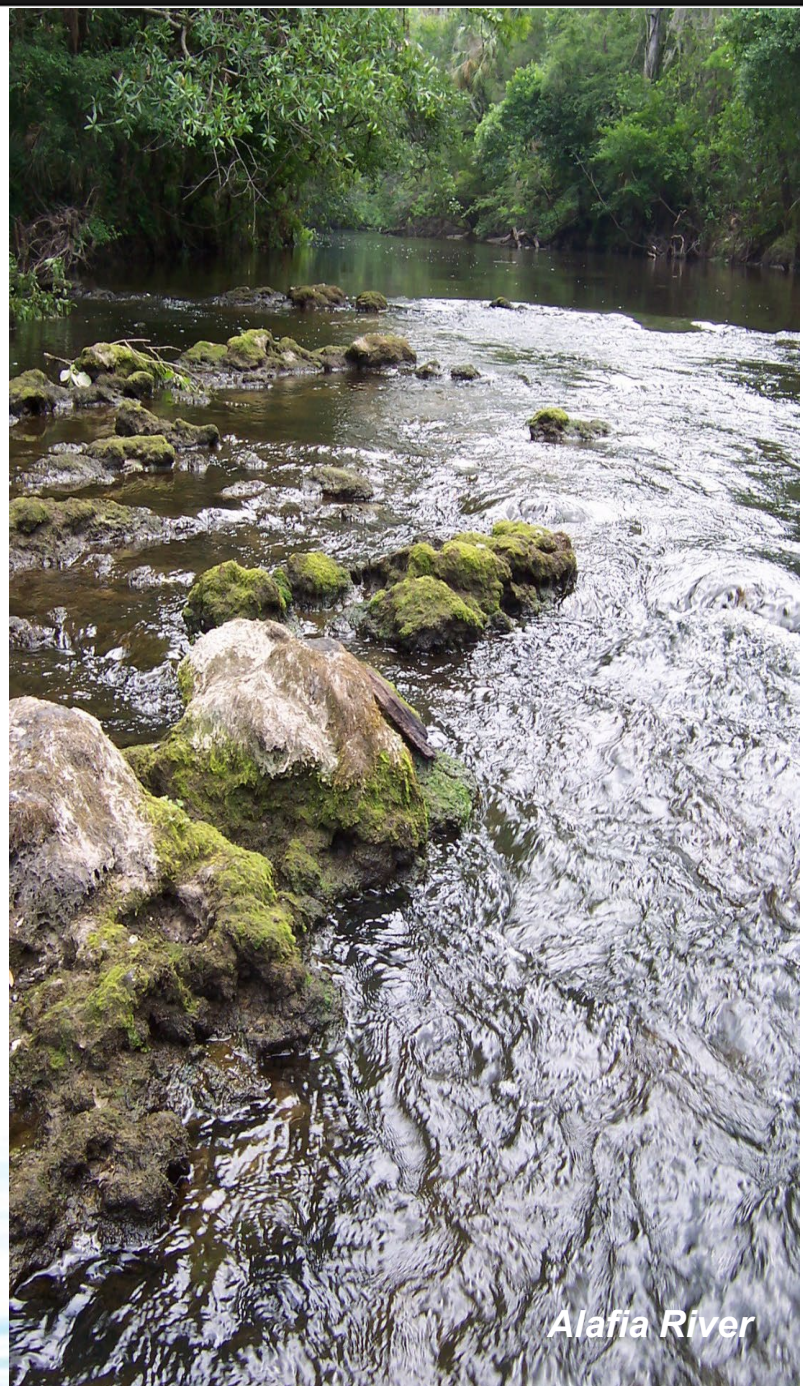
Florida manatee (Trichechus manatus latirostris) image from the Homosassa Springs Wildlife Park website

First Magnitude Springs MFLs

Spring	MFLs Year	Existing Withdrawal Impacts	Allowable Withdrawal Impact	2021 Status	Criteria
Chassahowitzka Spring Group and Blind Spring	2020	1.4%	8%	Met	Snook, 1 psu
Homosassa Spring Group	2020	1.9%	5%	Met	Snook
Weeki Wachee Spring Group	2009	4.9%	10%	Met	Average
Kings Bay Spring Group	2018	1.5%	11%	Met	0.5 psu
Rainbow Spring Group	2020	0.9%	5%	Met	Floodplain

Summary

- Setting MFLs is required by Florida law
- MFLs prevent significant harm associated with water withdrawals
- Multiple environmental values and criteria are assessed for MFLs
- Criteria vary by water body
- As needed prevention/recovery strategies implemented




Questions?
Spring in the Chassahowitzka River

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