Crystal River/Kings Bay Shoreline Mapping



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Why shoreline?

- Wetlands present before development
- Wetlands improve water quality & provide habitat
- Loss of natural treatment



2012



SWIM Plan Quantifiable Objectives

Water Quality	Target
Water clarity - bay wide	>20 feet
Water clarity – spring areas	>60 feet ¹
Total nitrogen concentration in the bay	<0.28 mg/L ²
Total phosphorus concentration in the bay	<0.032 mg/L ²
Chlorophyll concentration in the bay	<2.0 µg/L³
Water Quantity	
Minimum flows for the River and Bay system	TBD in 2017 ⁴
Natural Systems	
Coverage of desirable submerged aquatic vegetation in the bay	>65%5
Coverage of invasive aquatic vegetation in the bay (including filamentous algae)	<10%5
No net loss of shoreline in natural condition along the bay and river	No net loss
Increase of enhancement to disturbed shorelines for the bay and river	>20%



Methodology: Shoreline Mapped (2021)





Methodology overview

- 30 ft segments
- Identified shoreline type, vegetation
- Compared to previous (2010) mapping







Shoreline Types - 2021









Types of Shoreline Change

- Increase in human altered shoreline
- Increase in open water
- Changes in emergent aquatic vegetation



Increase in human altered shoreline





Increase in open water



2010



2021











Changes in EAV: Needle rush



Southwest Florida Water Management District

Changes in EAV: Red mangroves



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Conclusions

- Shoreline types (2021)
 - Crystal River: 81% is natural
 - Kings Bay: 48% is seawall
- Increase in human altered shoreline
- Climate change present in Crystal River/Kings Bay
 - Red mangroves & black needle rush
- Manatee grazing impacts shoreline



Questions?

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