

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Technical Working Group Update

Crystal River/Kings Bay



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Springs Scientist

Natural Systems and Restoration

SWIM Plans

- Surface Water Improvement & Management (SWIM) Plans
 - Issues & Drivers
 - Management actions
 - Quantifiable objectives
 - Projects and Initiatives

Crystal River/Kings Bay Surface Water Improvement and Management (SWIM) Plan

A Comprehensive Conservation and Management Plan

December 2015



Quantifiable Objectives



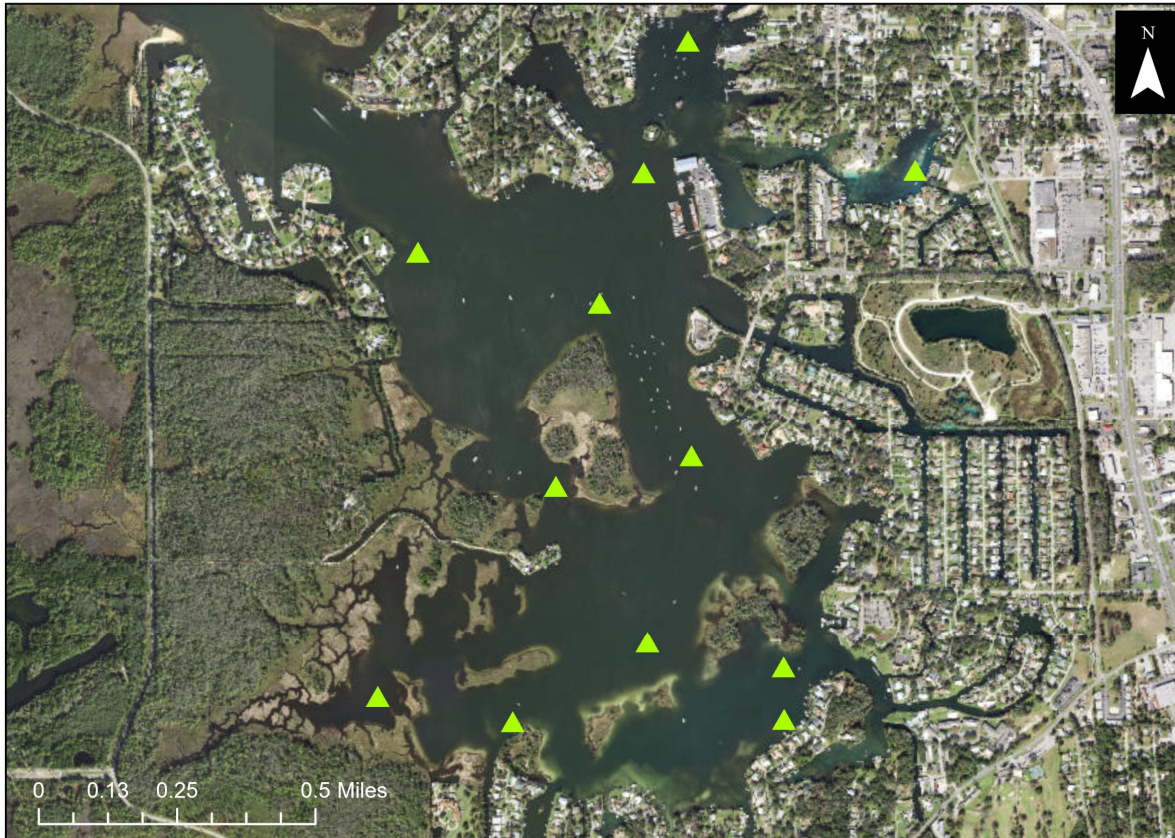
Quantifiable Objectives: Order of Systems

- Oldest to newest:
 - Rainbow (Nov 2015)
 - Crystal River/Kings Bay (Dec 2015)
 - Weeki Wachee (Mar 2017)
 - Chassahowitzka (Aug 2017)
 - Homosassa (Aug 2017)

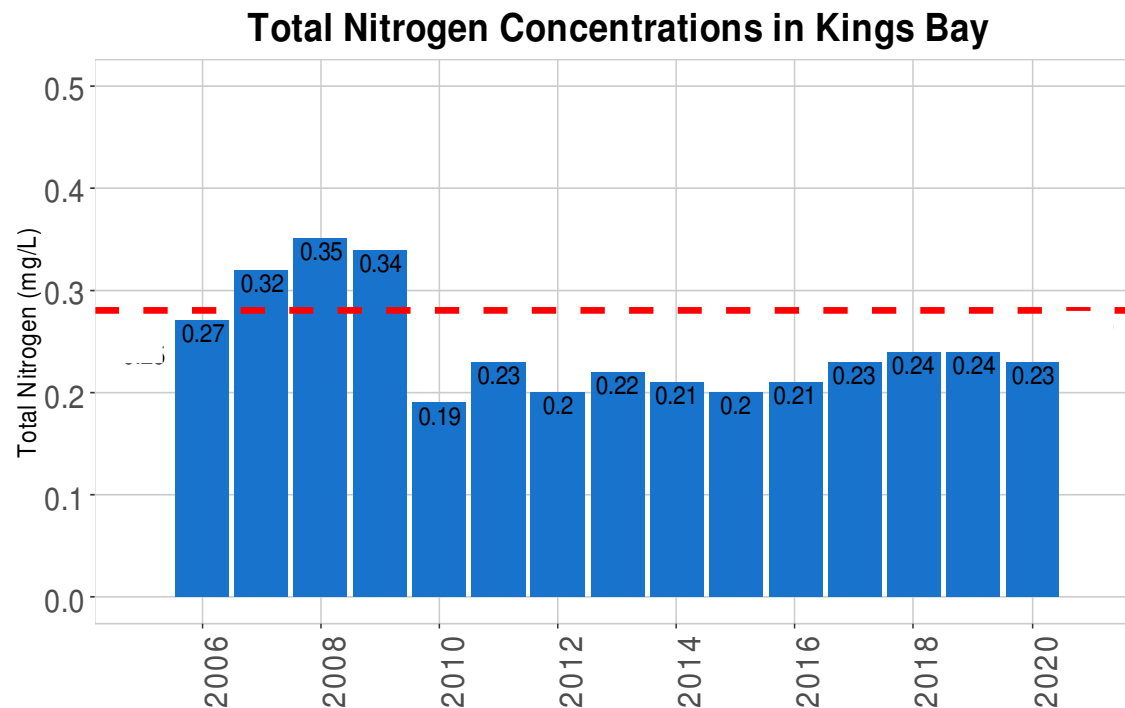
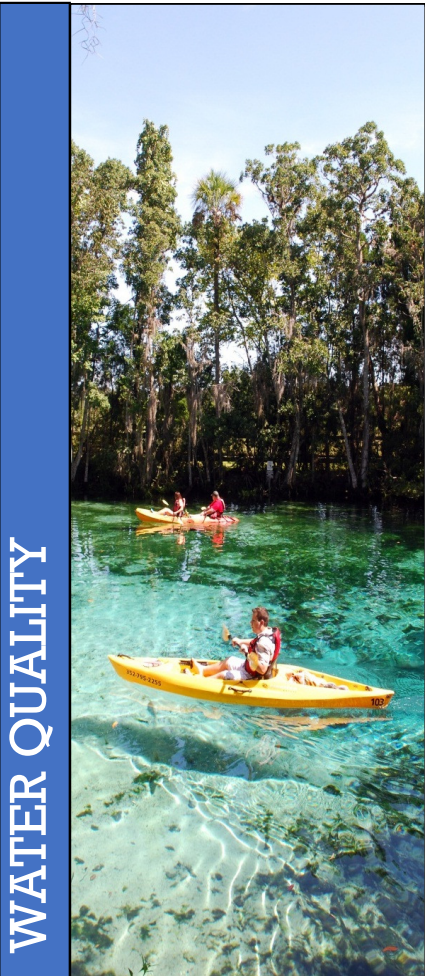
Crystal River - Current Quantifiable Objectives

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/L ³
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%

Crystal River QO: Water Quality

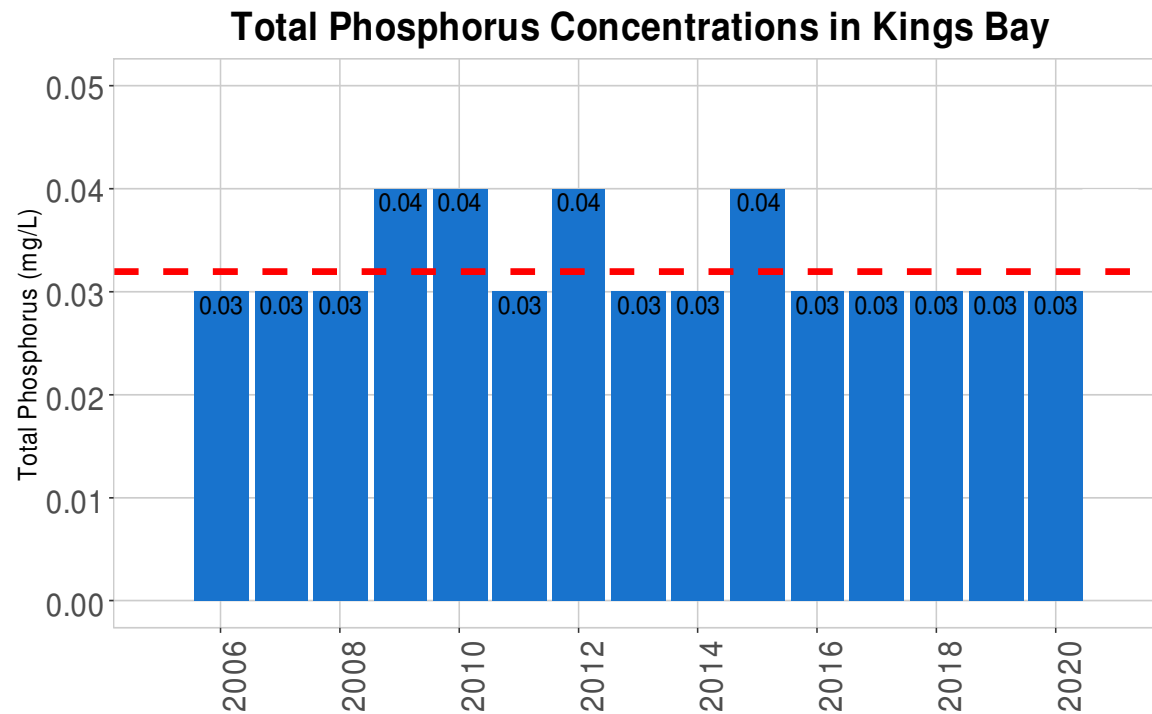
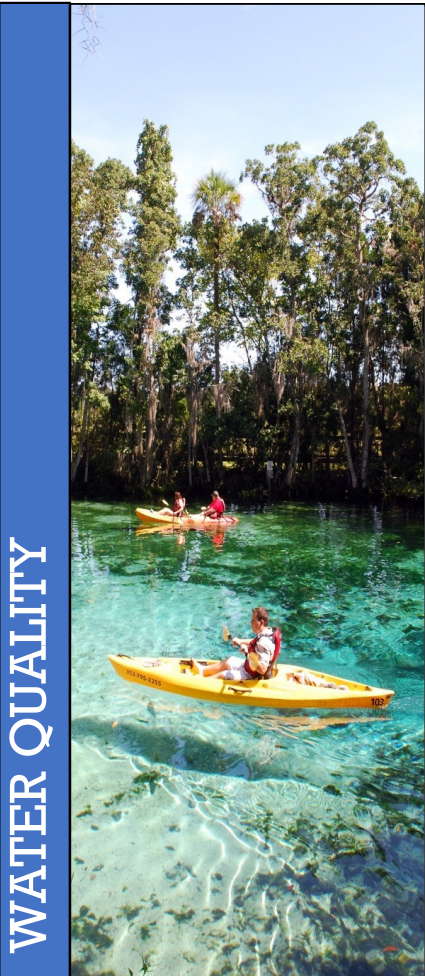


Crystal River QO: Water Quality



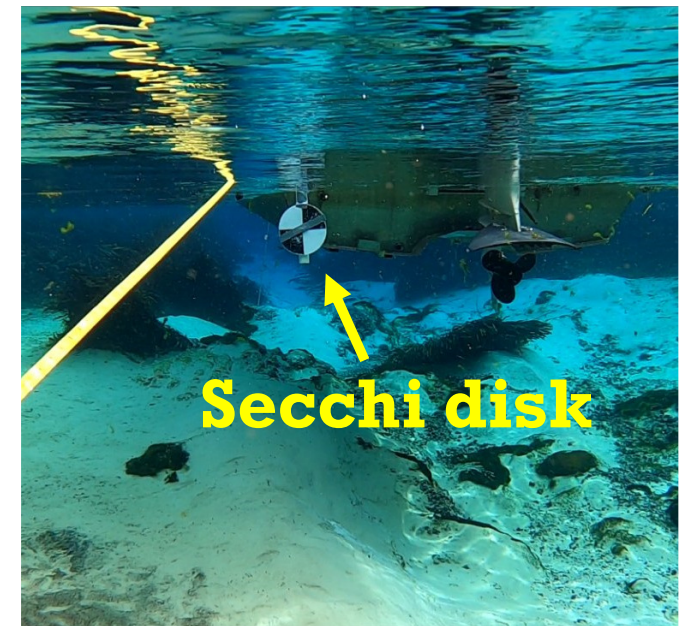
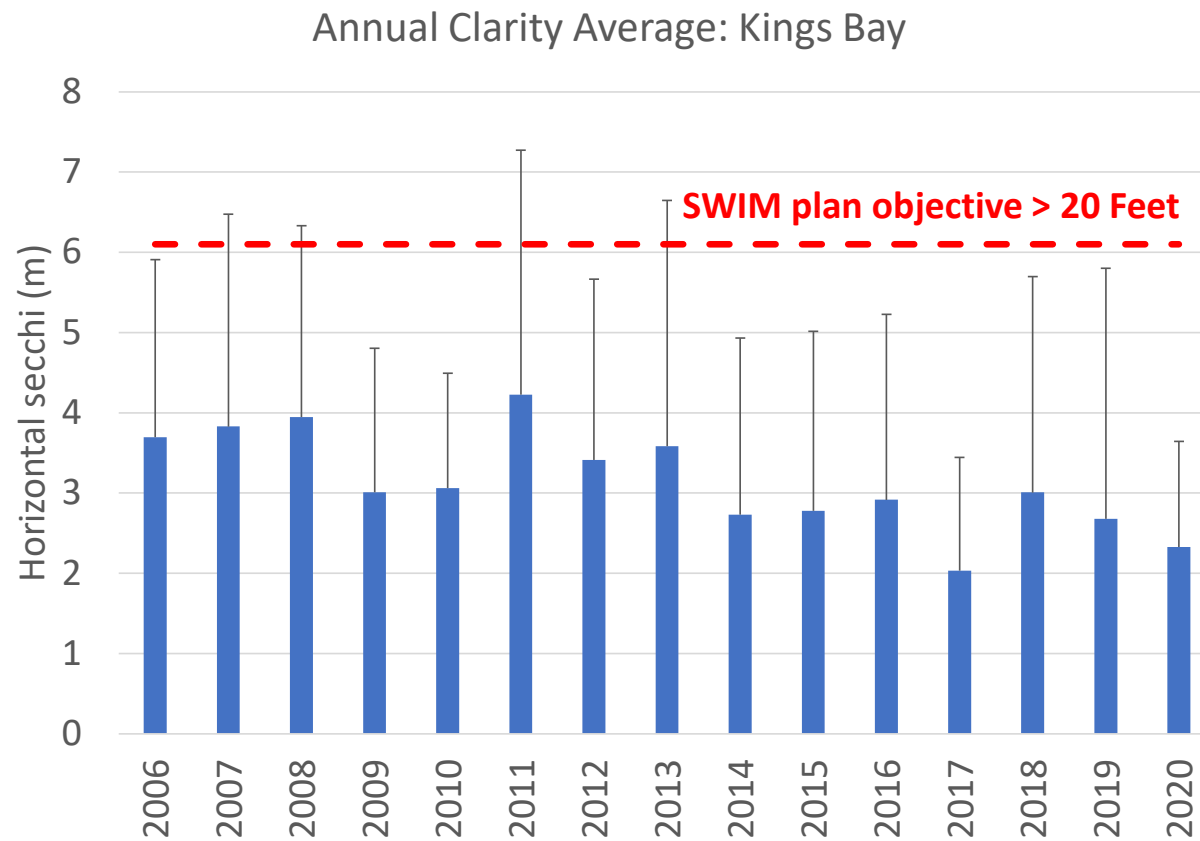
**SWIM plan
objective
< 0.28 mg/L**

Crystal River QO: Water Quality

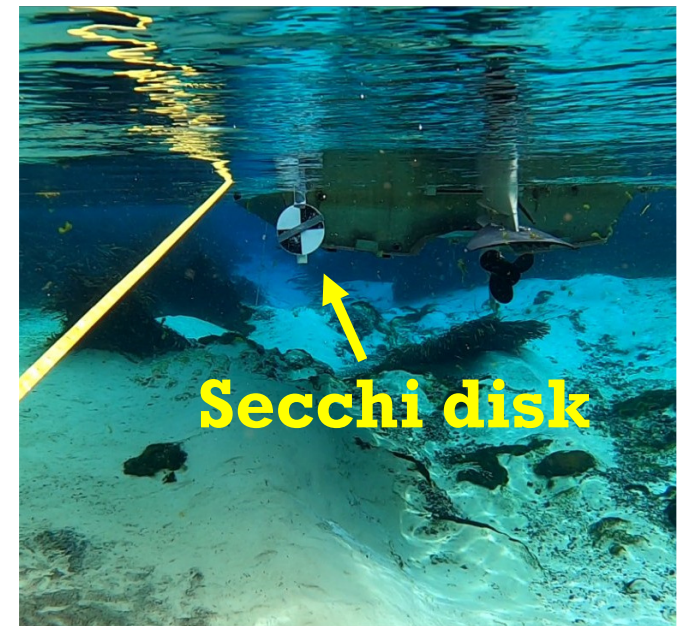
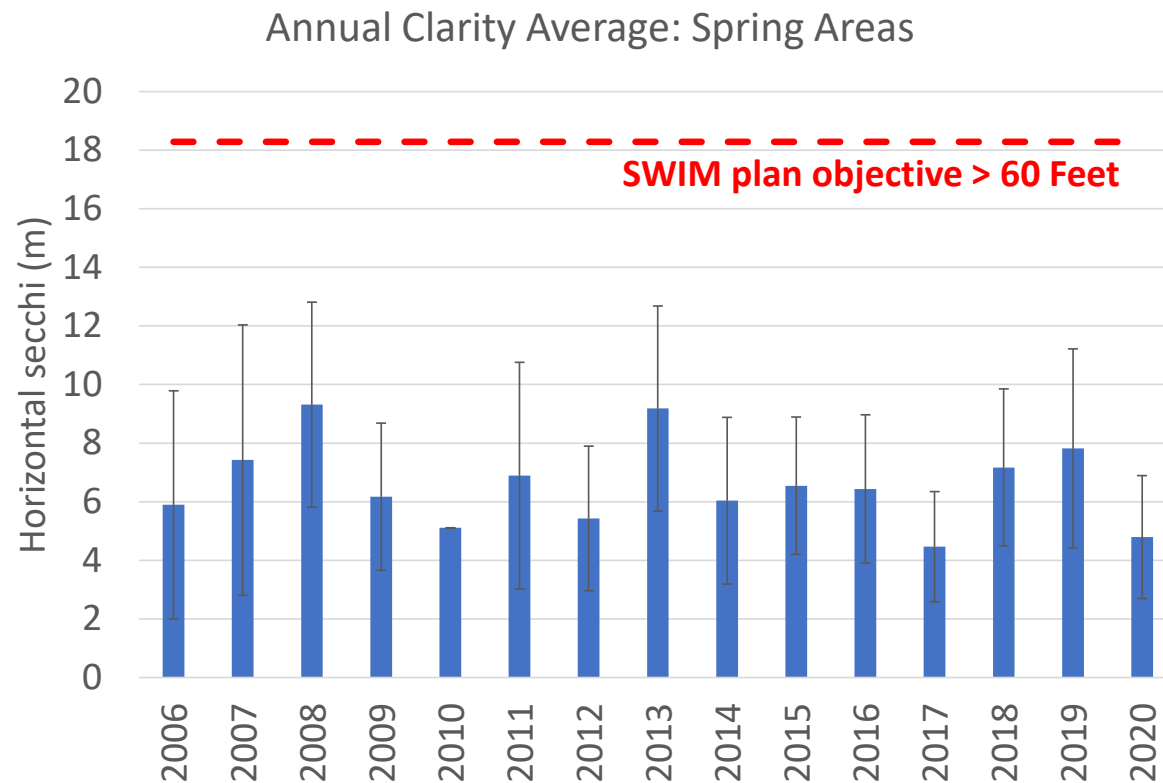


**SWIM plan
objective
< 0.032 mg/L**

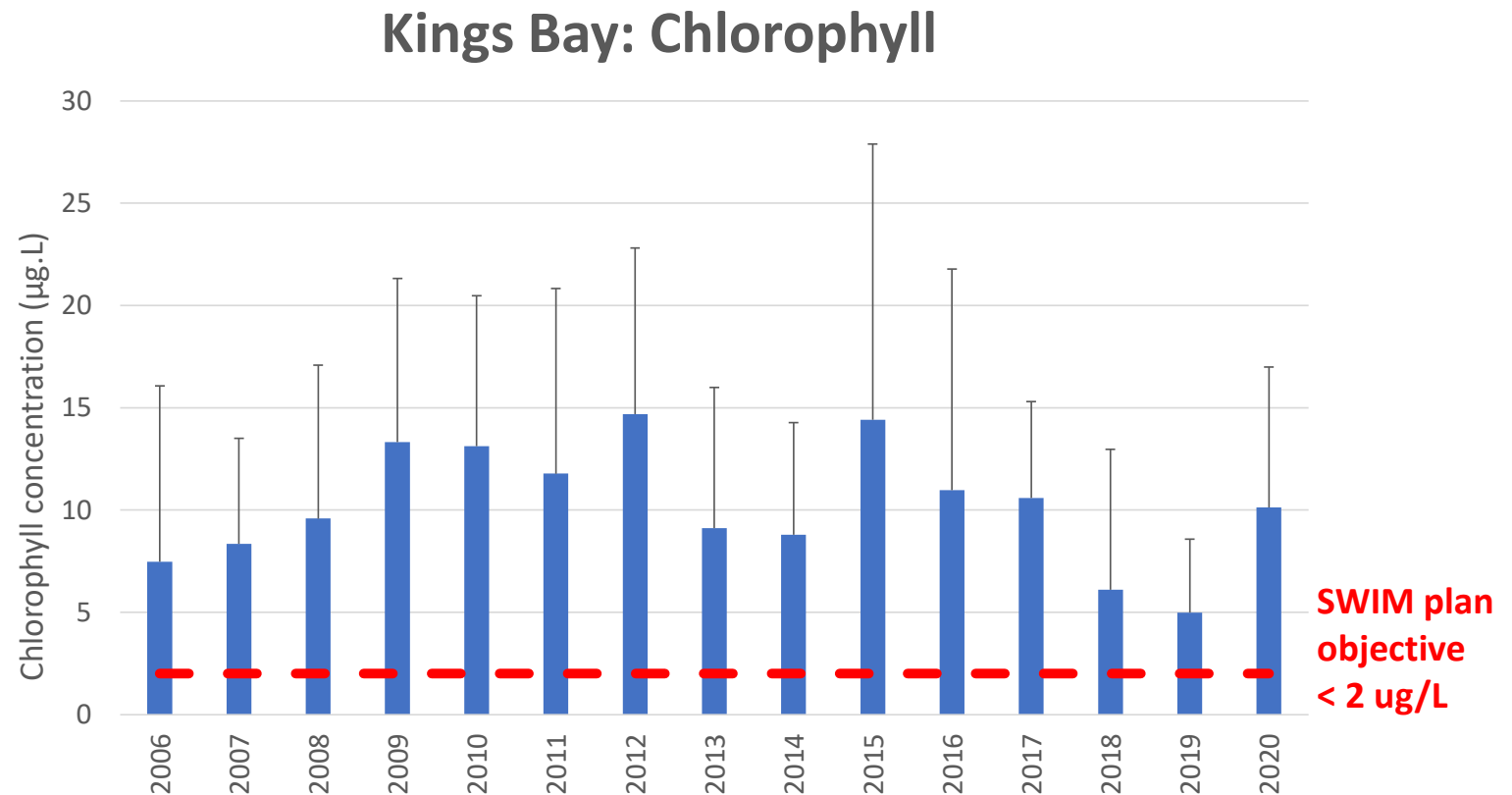
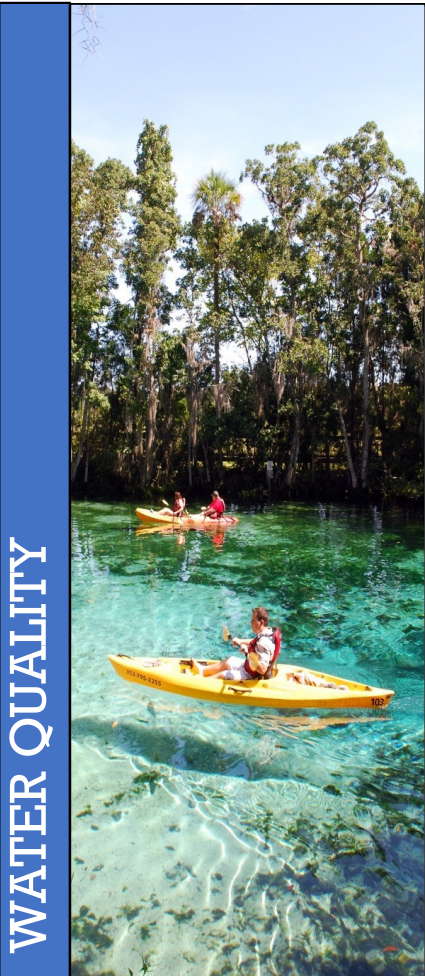
Crystal River QO: Water Quality



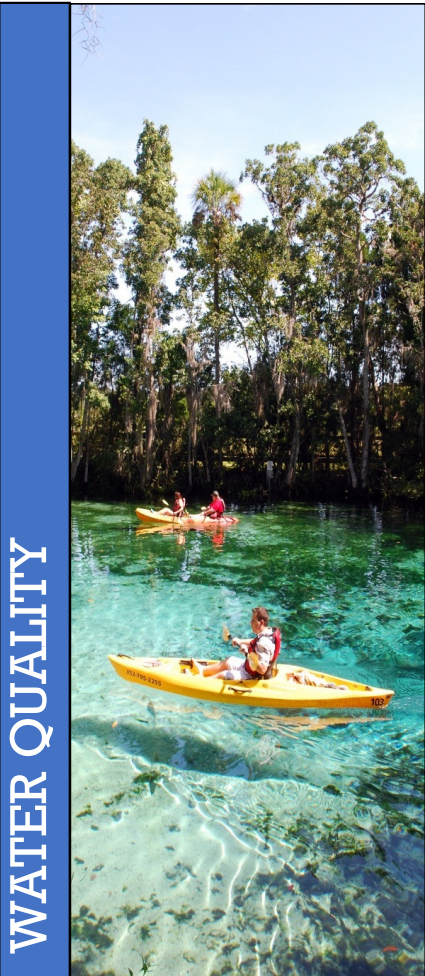
Crystal River QO: Water Quality



Crystal River QO: Water Quality



Crystal River QO: Water Quality



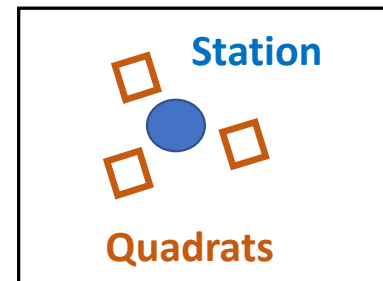
Crystal River QO: Water Quantity



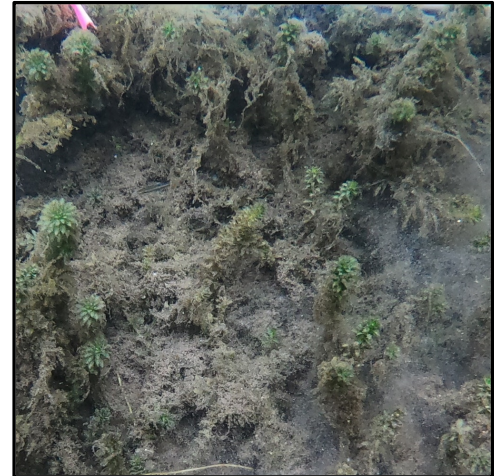
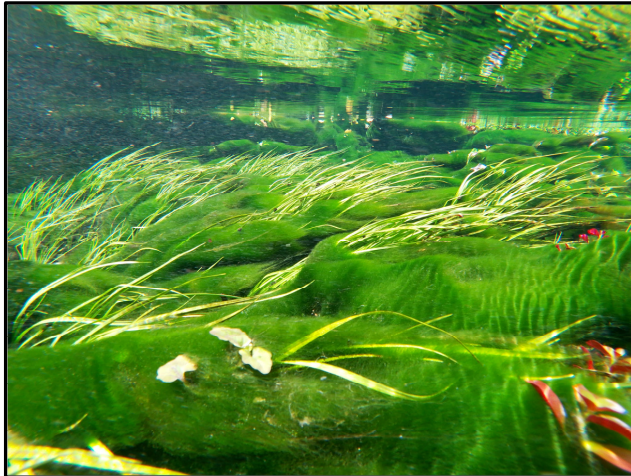
WATER QUANTITY

- Minimum Flow for the River
>89% of Natural Flow
- **MFL Status: 98% Natural Flow**

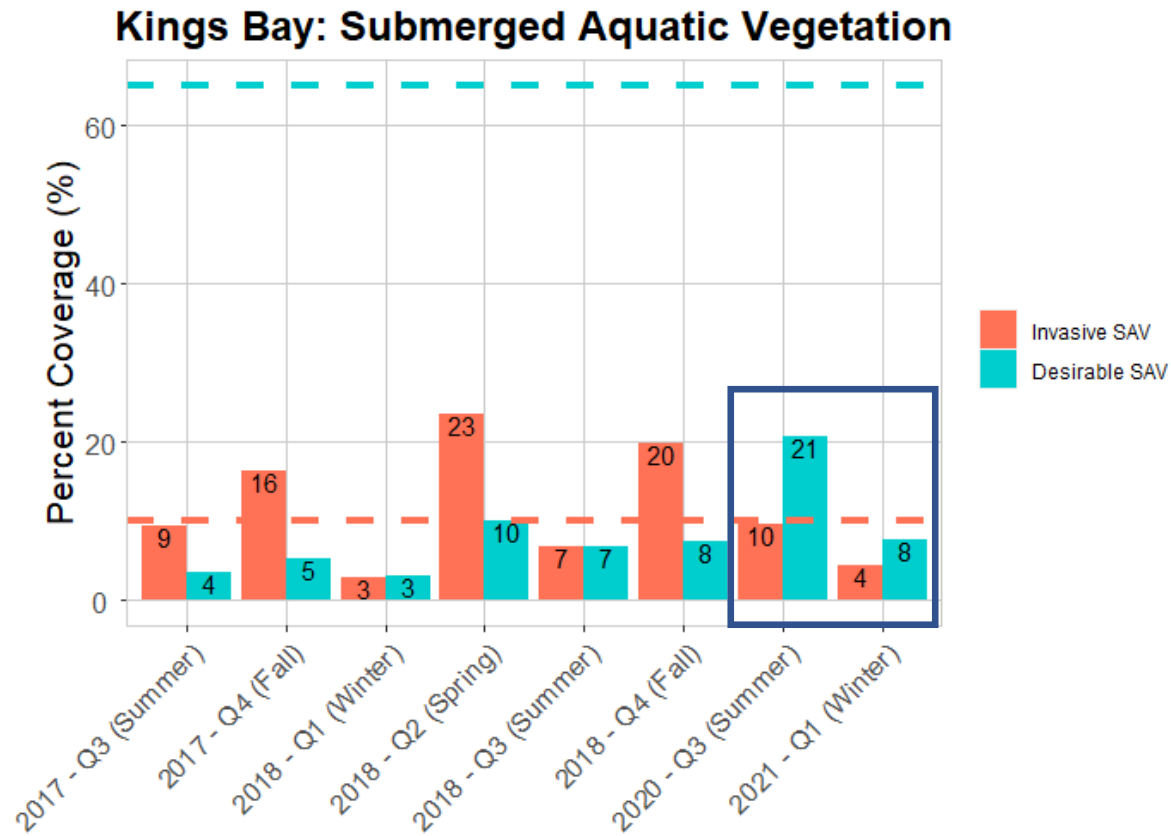
Crystal River QO: Natural Systems



Crystal River Q0: Natural Systems



Crystal River QO: Natural Systems



Crystal River Q0: Natural Systems

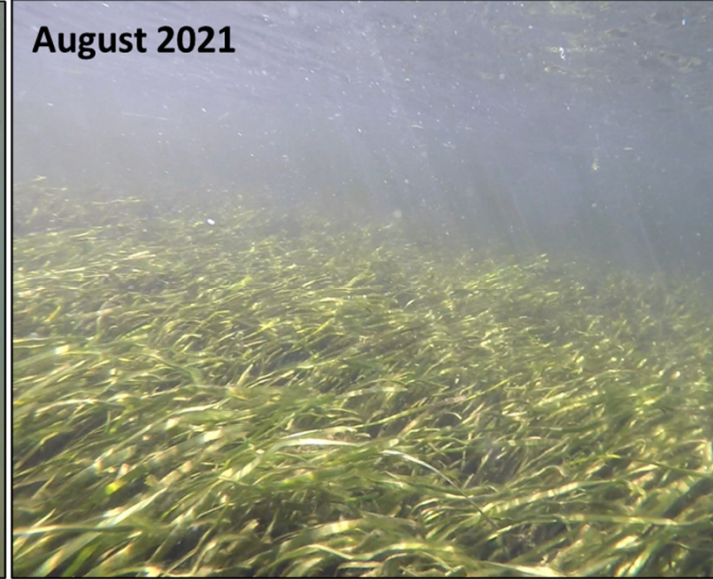
August 2020













February 2021



August 2021



Crystal River QO: Current

	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/L ³
	Water Quantity	
	Minimum flows for the River and Bay system >89% natural flow	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%

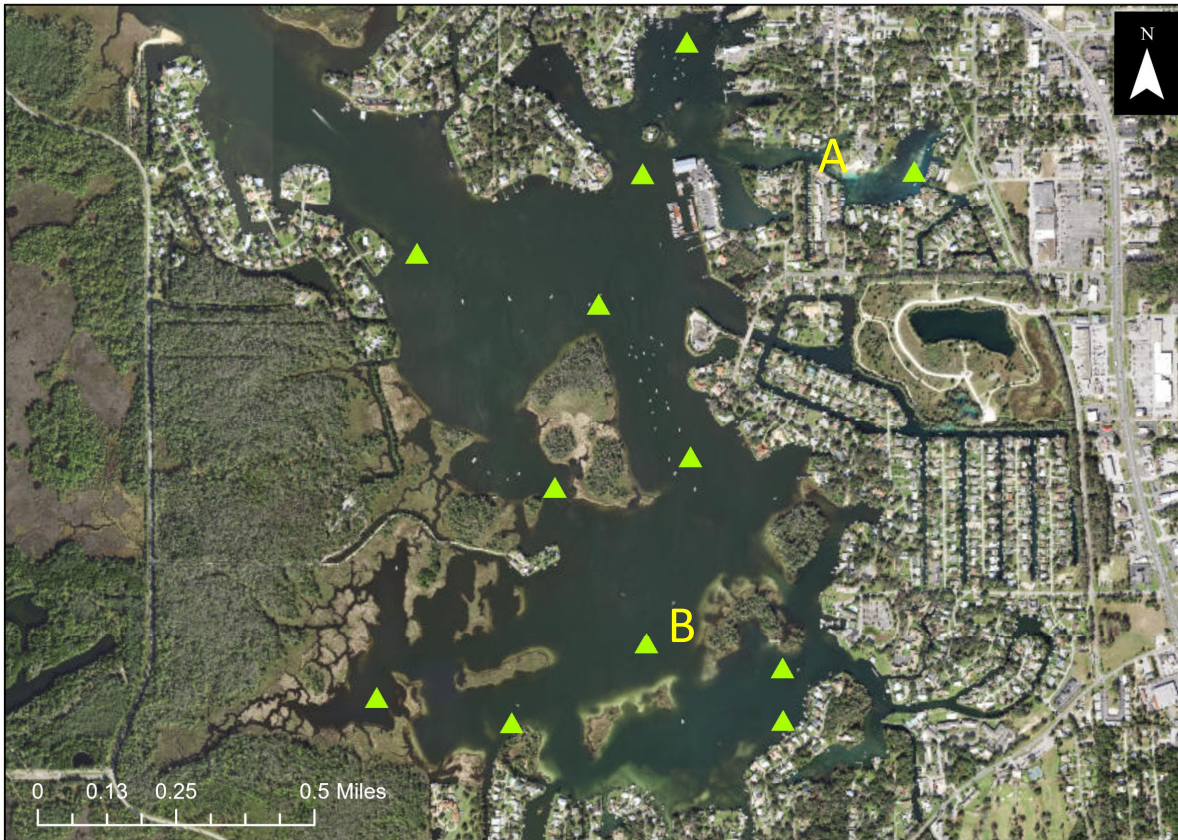
QO: Crystal River TWG Discussions

Indicators	Threshold
Water clarity - Hunter Cove	21 ft
Water clarity - Kings Bay Proper	8 ft
Chlorophyll concentration in the bay	10 µg/L

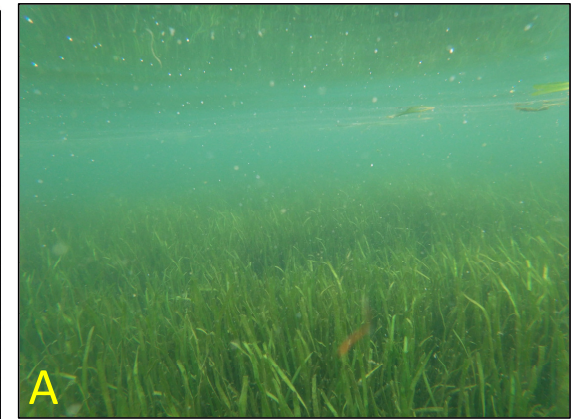
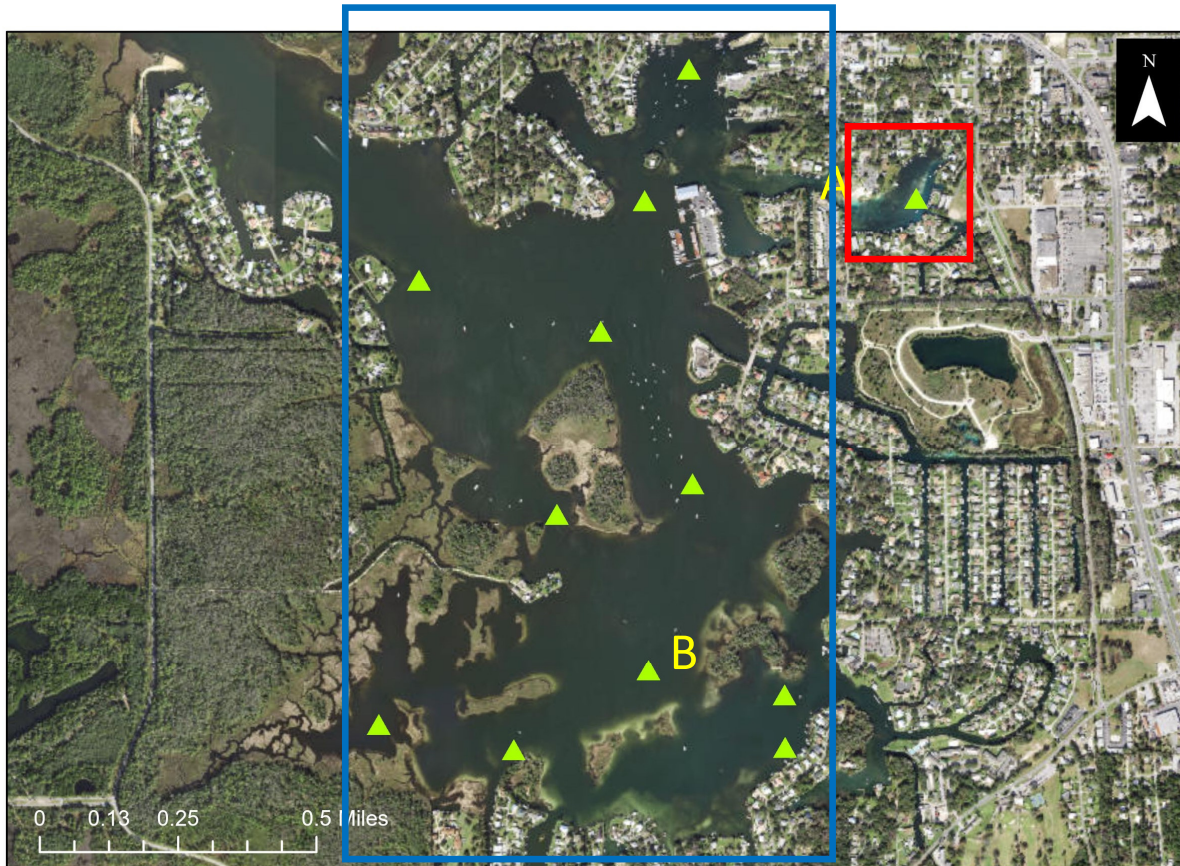
Quantifiable Objectives

Water quality	Target
Total nitrogen concentration in the bay	< 0.28 mg/L
Total phosphorus concentration in the bay	< 0.032 mg/L
Water quantity	
Minimum flows for the springs and river	> 89% natural flow
Natural systems	
Desirable submerged aquatic vegetation in the bay	> 65%
Invasive aquatic vegetation in the bay	< 10%
No net loss of shoreline in natural condition along the bay and river	No net loss
Increase of enhancement to disturbed areas in bay and river	> 20%

Q0: Crystal River TWG –water clarity



Q0: Crystal River TWG –water clarity



Hunter
Cove

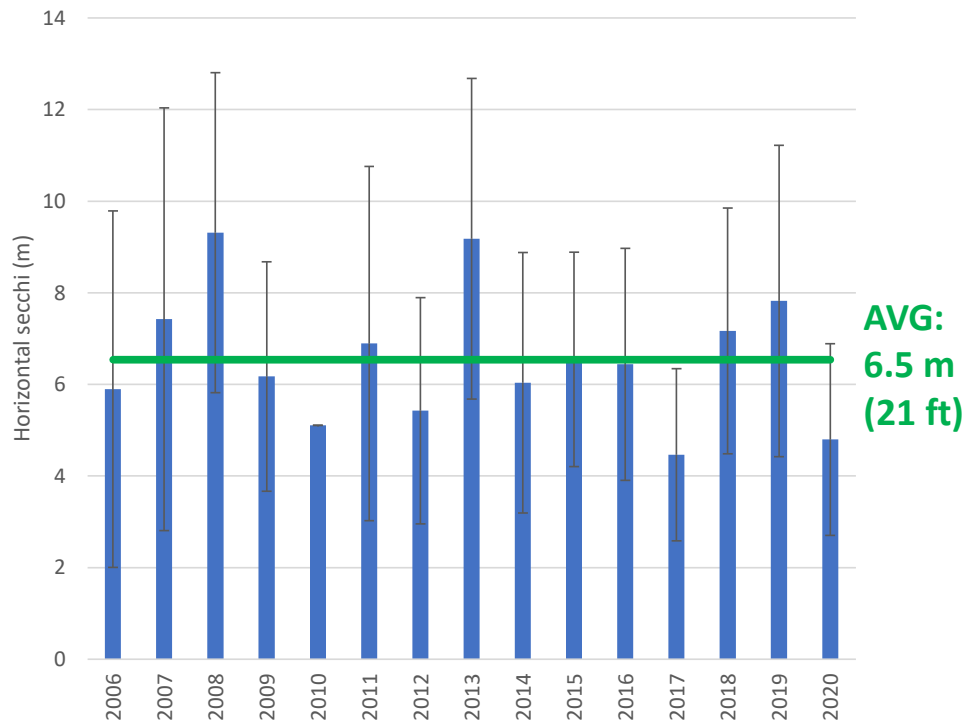


Kings Bay
Proper

Q0: Crystal River TWG –water clarity

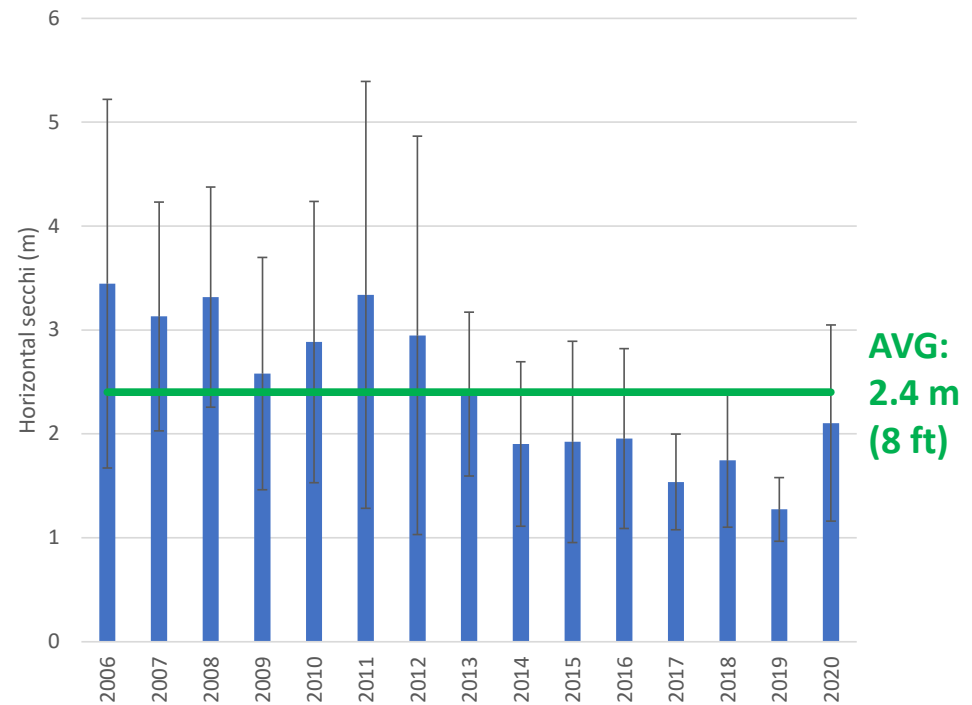
HUNTER COVE

Annual Clarity Average: Hunter Cove

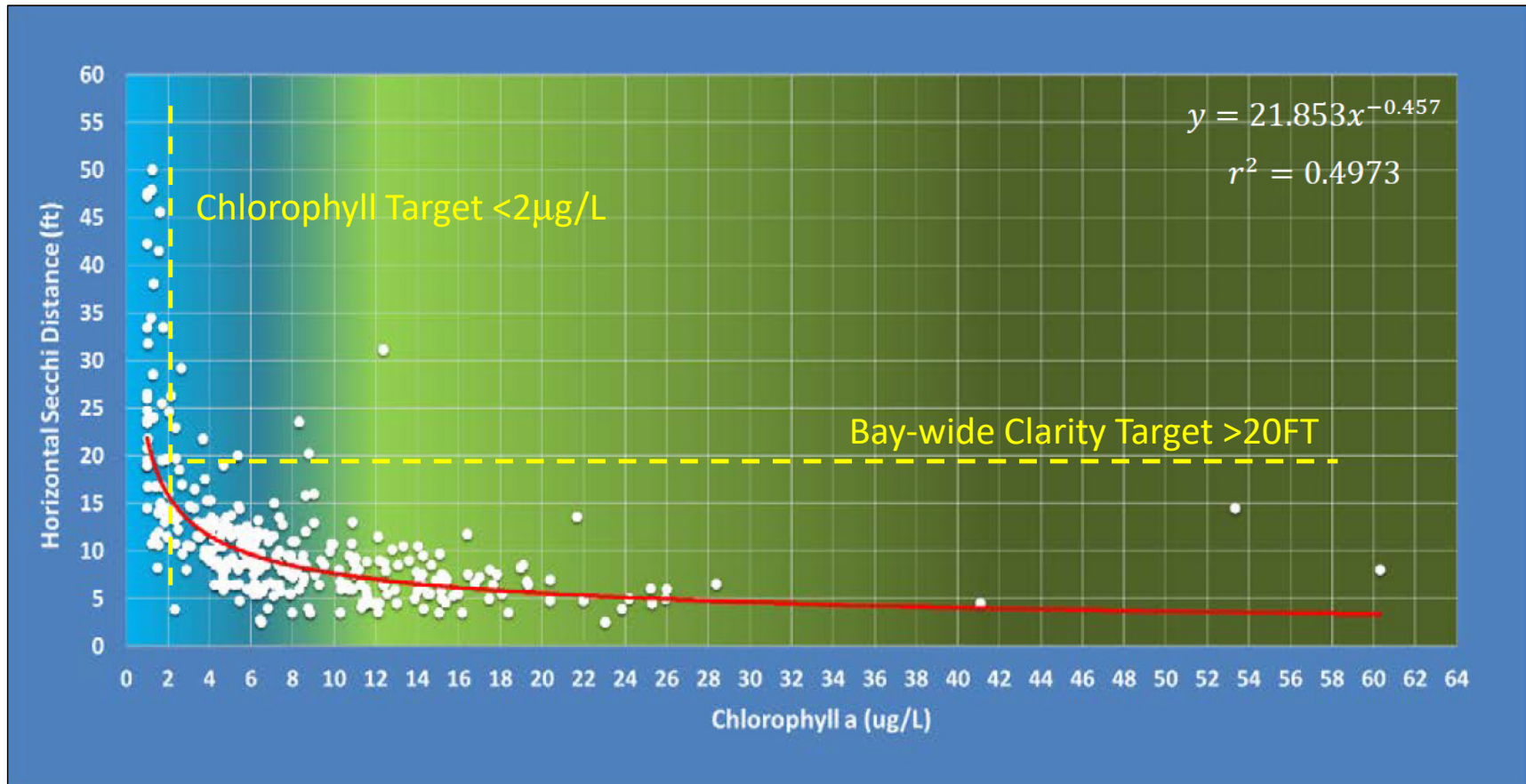


KINGS BAY PROPER

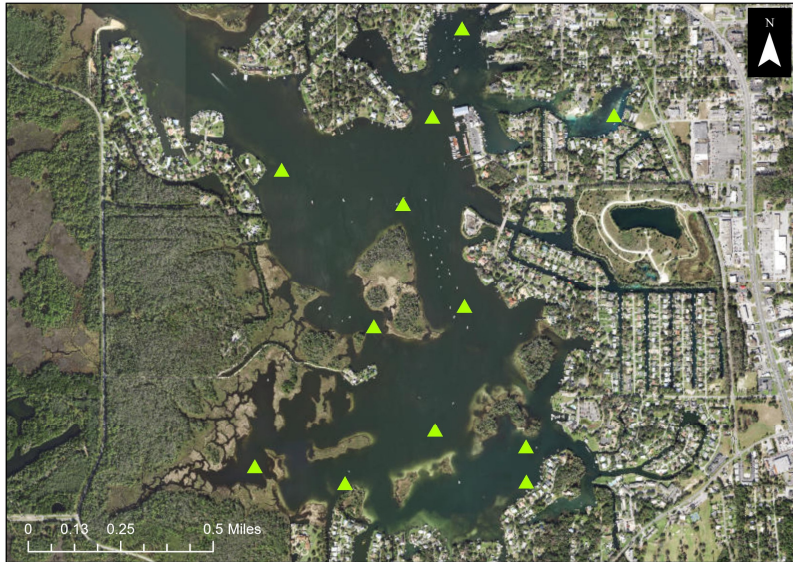
Annual Clarity: Kings Bay Proper



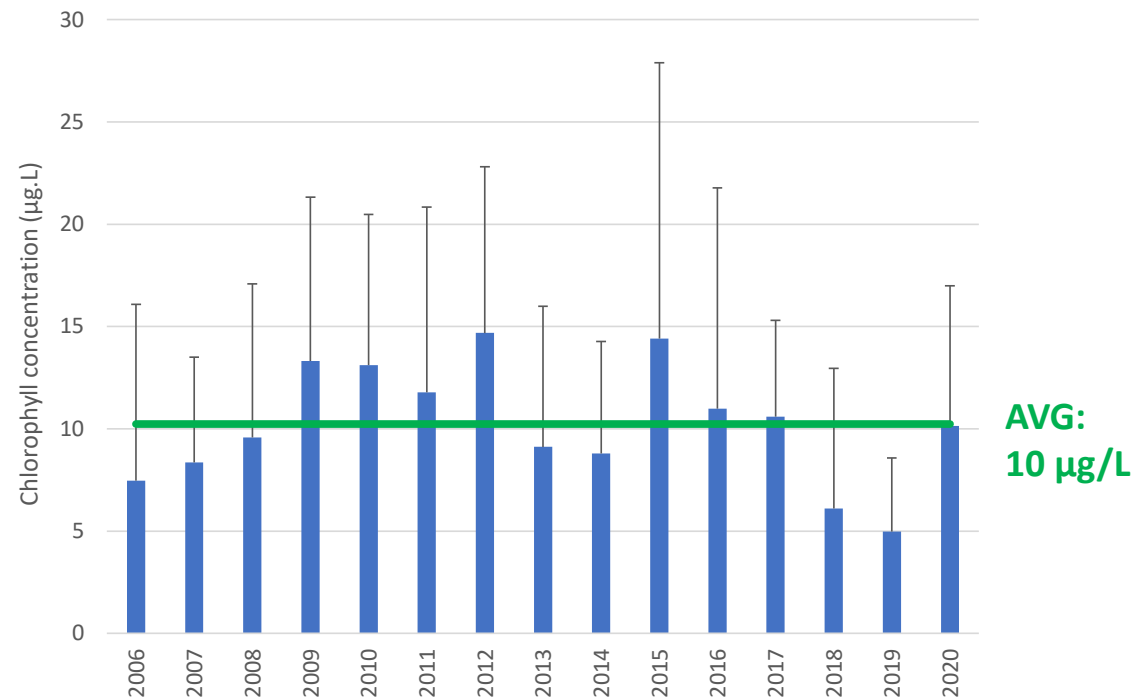
Q0: Crystal River TWG – chlorophyll



Q0: Crystal River TWG – chlorophyll



Kings Bay: Chlorophyll



QO: Crystal River TWG –water clarity

CURRENT:

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/L ³

DISCUSSED:

Indicators	Threshold
Water clarity - Hunter Cove	21 ft
Water clarity - Kings Bay Proper	8 ft
Chlorophyll concentration in the bay	10 µg/L

Quantifiable Objectives

Water quality	Target
Total nitrogen concentration in the bay	< 0.28 mg/L
Total phosphorus concentration in the bay	< 0.032 mg/L