

# Quantifiable Objective Refinement

Crystal River/Kings Bay



Madison Trowbridge, Ph.D.

Springs Scientist

Natural Systems and Restoration

# SWIM Plans

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- 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



# CR/KB: Current Quantifiable Objectives

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Water Quality	Target
Water clarity - bay wide	>20 feet
Water clarity – spring areas	>60 feet <sup>1</sup>
Total nitrogen concentration in the bay	<0.28 mg/L <sup>2</sup>
Total phosphorus concentration in the bay	<0.032 mg/L <sup>2</sup>
Chlorophyll concentration in the bay	<2.0 µg/L <sup>3</sup>
Water Quantity	
Minimum flows for the River and Bay system	TBD in 2017 <sup>4</sup>
Natural Systems	
Coverage of desirable submerged aquatic vegetation in the bay	>65% <sup>5</sup>
Coverage of invasive aquatic vegetation in the bay (including filamentous algae)	<10% <sup>5</sup>
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%

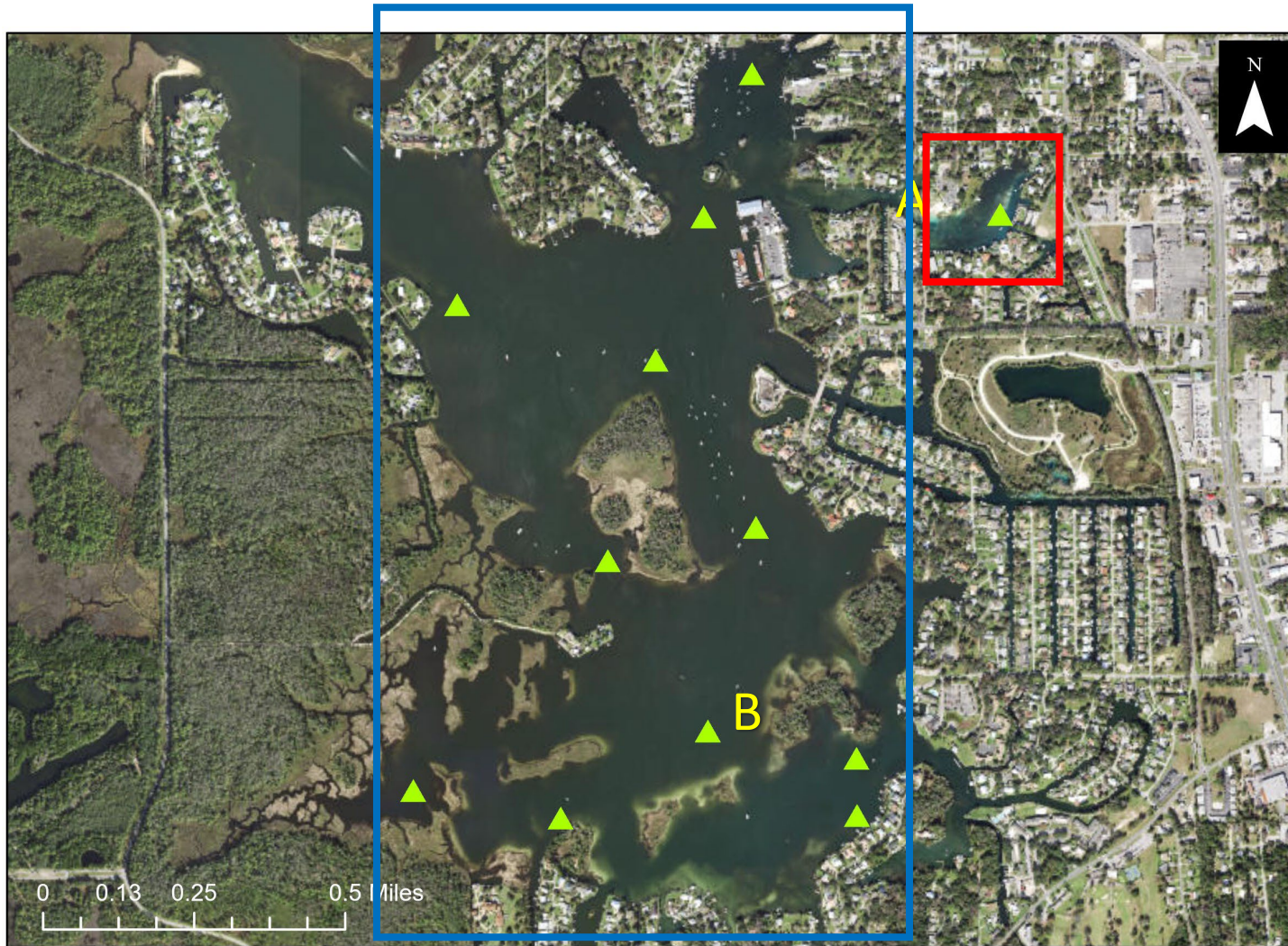
# CR/KB: Refinement Discussion

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- Minimum flows as >89% natural flow
- Define quantifiable objectives as different portions
  - Water clarity - Hunter Cove & Kings Bay Proper
- Define water clarity and chlorophyll as indicators



# CR/KB: Refinement Discussion



Hunter  
Cove

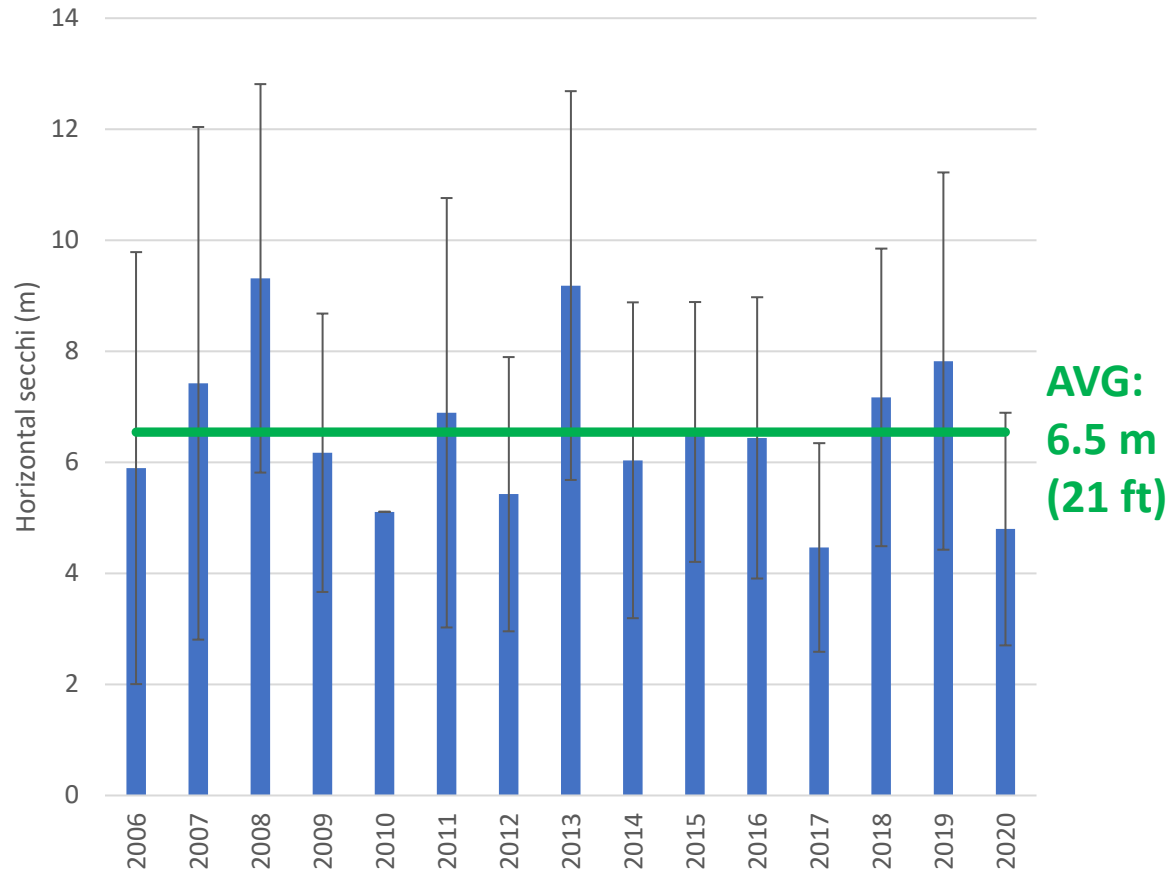


Kings Bay  
Proper

# CR/KB: Refinement Discussion

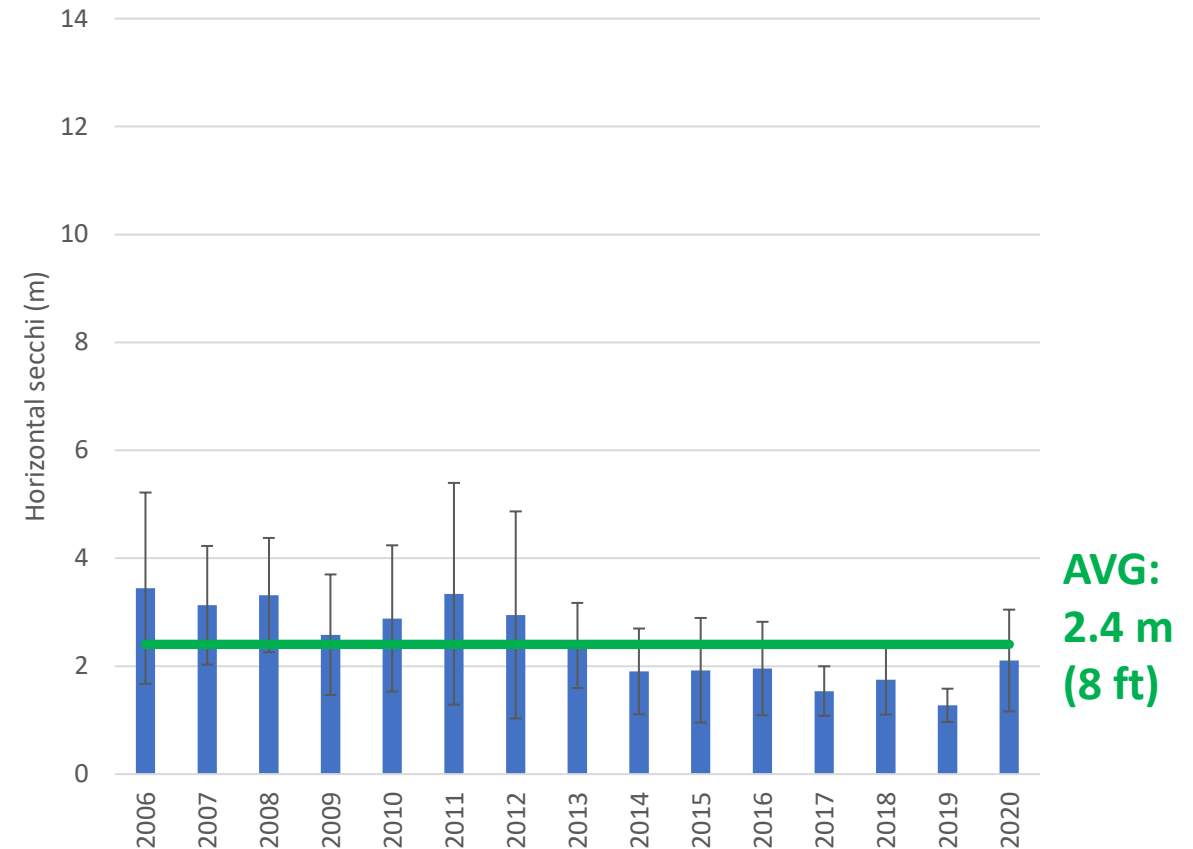
## HUNTER COVE

Annual Clarity Average: Hunter Cove



## KINGS BAY PROPER

Annual Clarity: Kings Bay Proper





# CR/KB: Refinement Discussion

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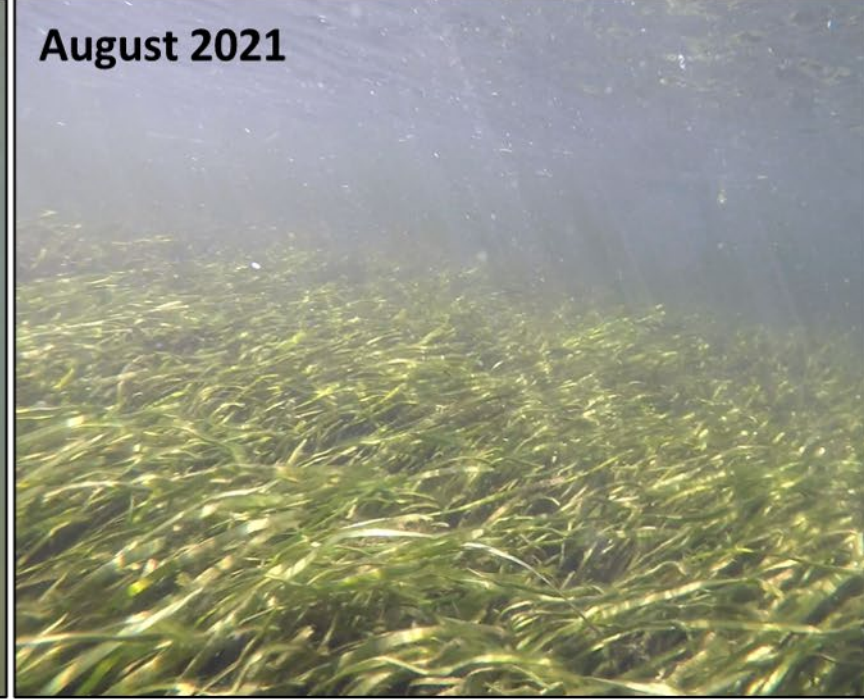
August 2020



February 2021

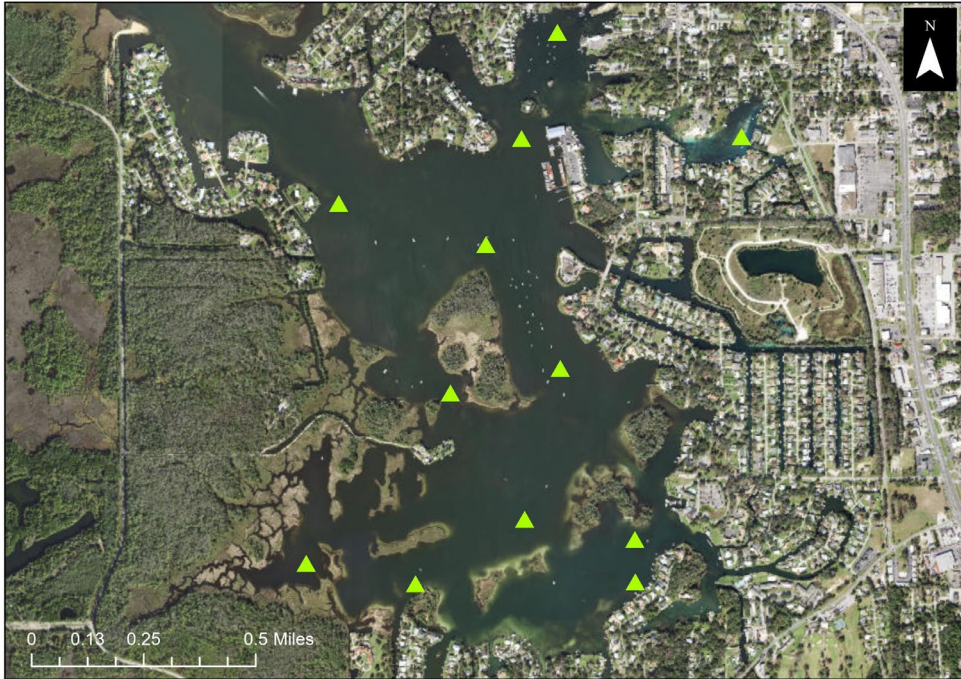


August 2021

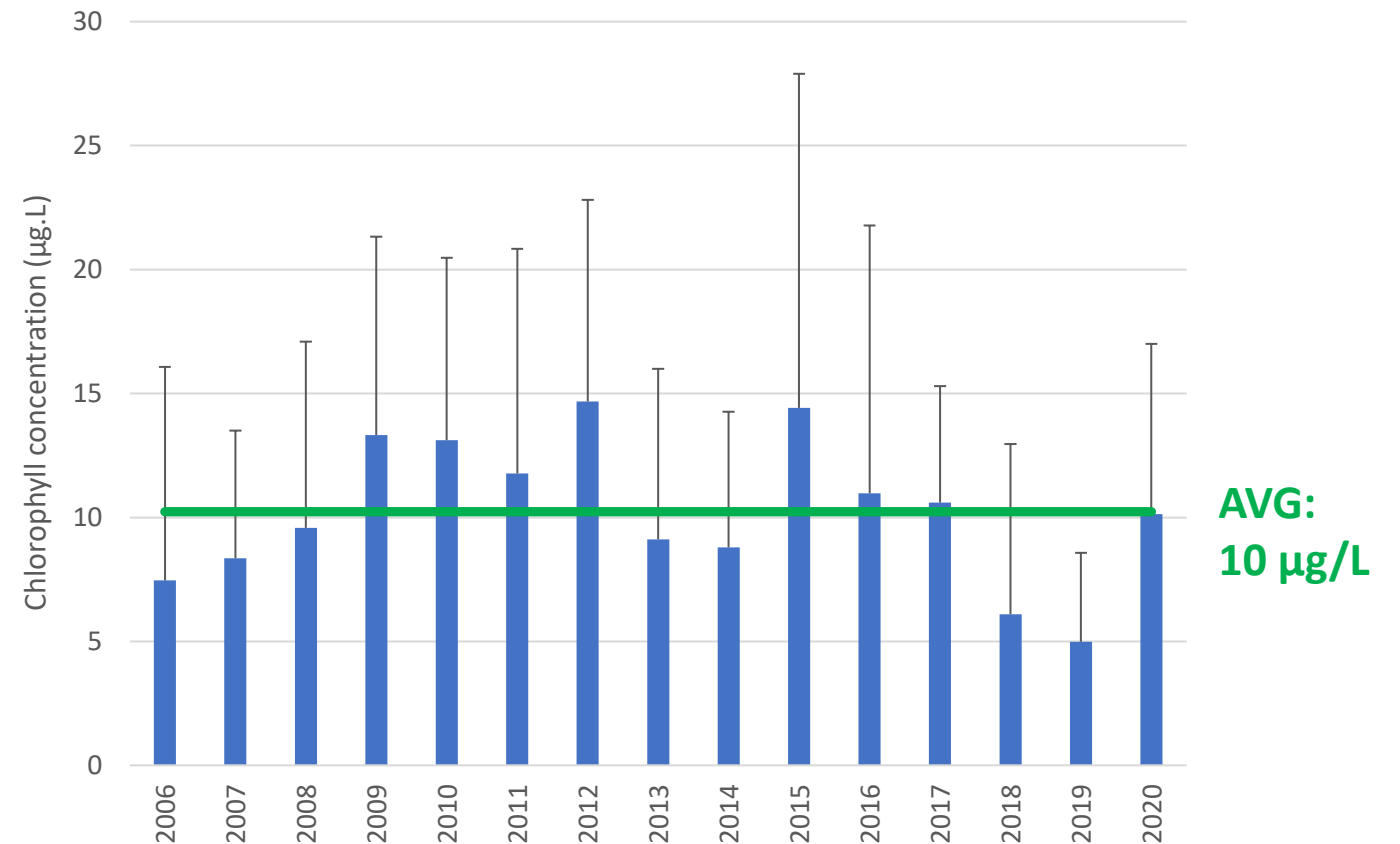




# CR/KB: Refinement Discussion



Kings Bay: Chlorophyll



# CR/KB Refinements Summary

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## CURRENT

### OBJECTIVES:

Water Quality	Target
Water clarity - bay wide	>20 feet
Water clarity – spring areas	>60 feet <sup>1</sup>
Total nitrogen concentration in the bay	<0.28 mg/L <sup>2</sup>
Total phosphorus concentration in the bay	<0.032 mg/L <sup>2</sup>
Chlorophyll concentration in the bay	<2.0 µg/L <sup>3</sup>

## PROPOSED

### REFINEMENTS:

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

# Action item

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**Approve quantifiable objective refinements to replace those currently in the SWIM Plan.**

- **Update minimum flows target as adopted**
- **Redefine water clarity and chlorophyll as an indicators**
- **Define water clarity evaluated as Hunter Cove and Kings Bay Proper**