Sarasota Bay Estuary Program's Ecosystem Health Report Card

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SARASOTA BAY ESTUARY PROGRAM
RESTORING OUR BAYS

A healthy bay is important to our **quality of life**

A healthy bay is important to our economy

Many bay habitats depend on good water quality

Our watersheds…

- Over 85% urbanized
- Remaining natural lands are in parks, preserves, and agriculture.
- Open land is needed to absorb and filter water running off the watershed.
- Loss of these lands causes water to rush toward the coast and can have adverse impacts on water quality, habitat, and animal populations.

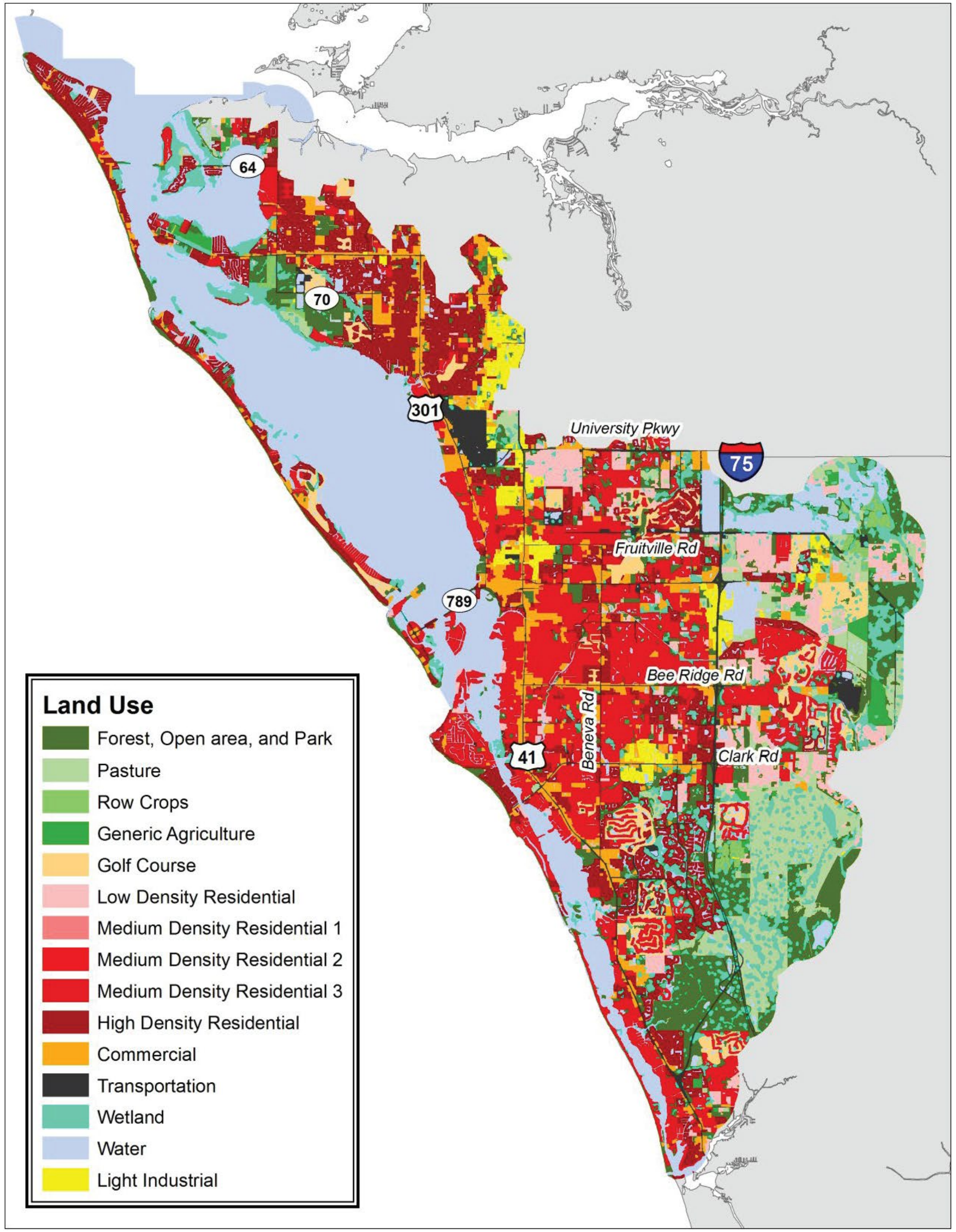


Figure 4. Map of the 16 Major Land Use Categories Used in the SIMPLE Model for 2021

WHAT IS THE BAY REPORT CARD?

Every year, we create an **Ecosystem Health Report Card** to track conditions in each of our five bay segments. The report card is intended to guide and prioritize monitoring and management actions. We use **four measurements** of ecosystem health to assess conditions in our bays.

Total Nitrogen

A common nutrient.
Too much can lead to algae growth.

Chlorophyll-a

Floating microscopic algae.
Too much can impact water clarity.

Seagrass

Vital to our bay.
A good indicator of overall water quality.

Macroalgae

Known as seaweeds.
Can be harmful to bay health when present in high quantities.

HOW DO WE SCORE?

We assign each bay segment one of four scores for each year based on the status of that bay segment's ecosystem health indicators. We encourage continued monitoring in bay segments with good scores while bays with poorer scores require more attention.

One poor score may not indicate an ongoing problem, but a bay with several years of yellow or red scores almost certainly needs scrutiny and management action.

A All signs indicate healthy water quality; continue to monitor as usual

B Most signs indicate healthy water quality; monitor carefully

C One or more signs indicate concern; investigate stressors, check for compliance with wastewater and stormwater permits, and plan for management actions

D All signs indicate water quality degradation; take management actions

SARASOTA BAY ESTUARY PROGRAM

Methods

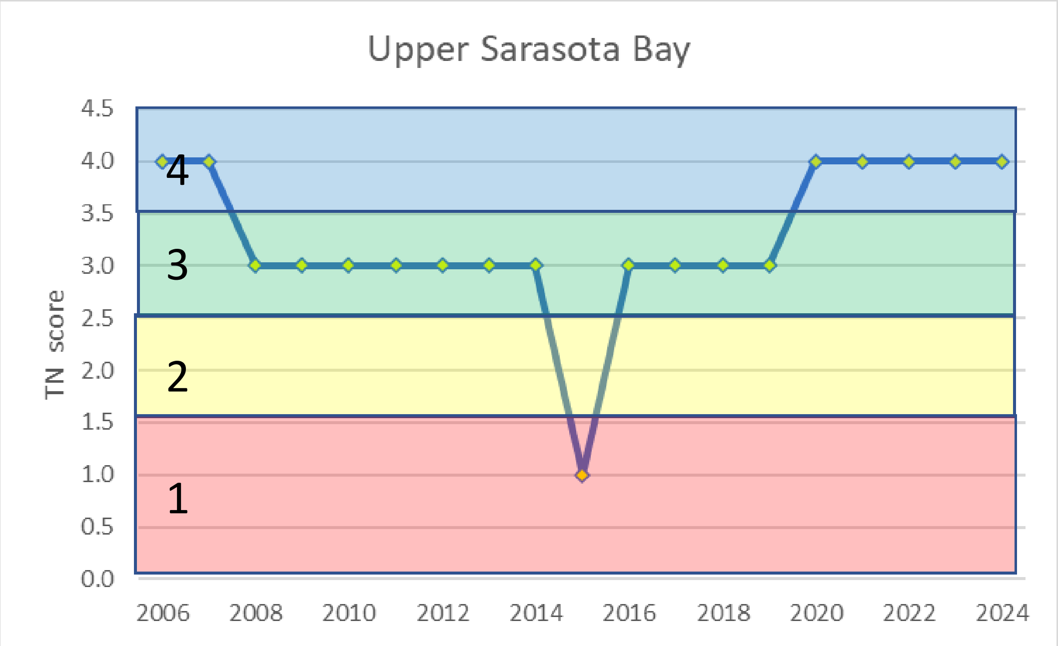
Reference Period 2006 - 2012

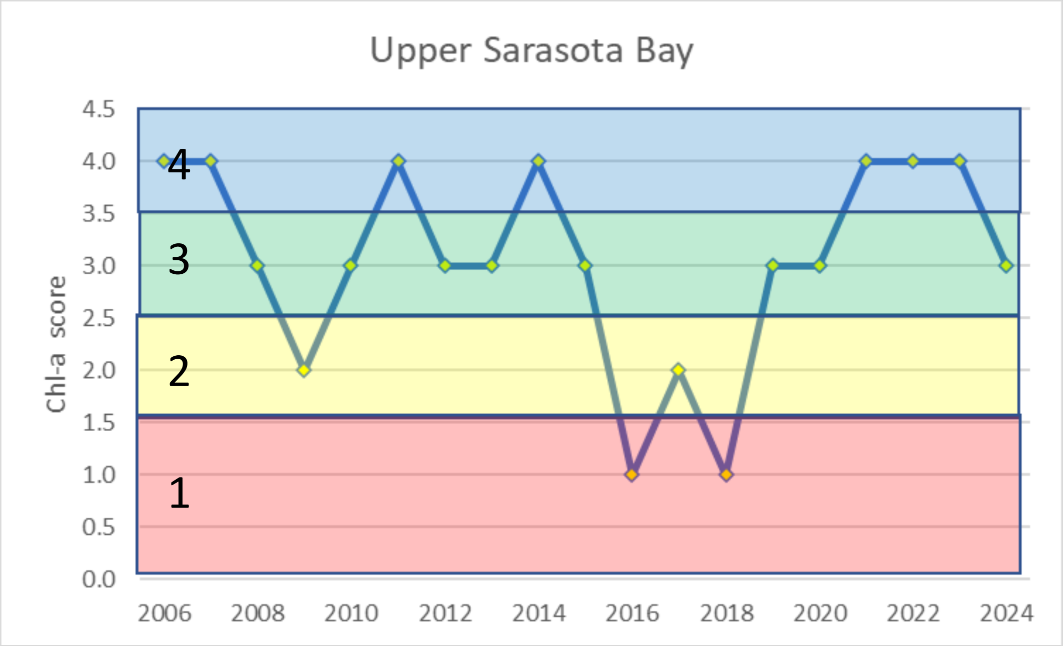
Nitrogen and Chl-a
Annual Geometric Mean (AGM)
Compared to Reference Period AGM

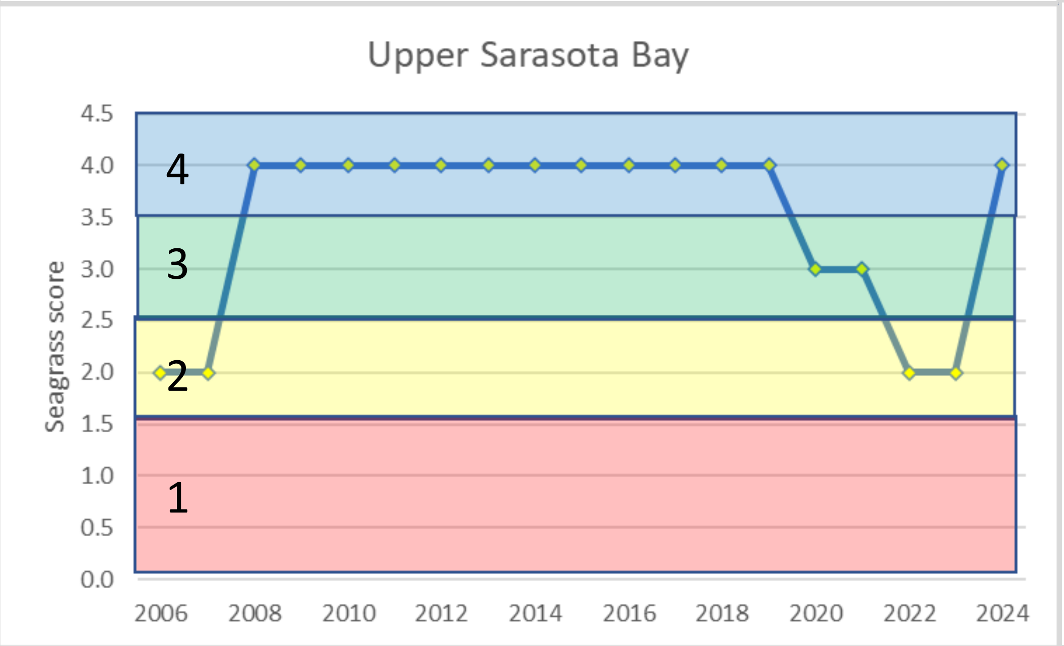
Seagrass
Annual Mean Acres Compared
to Reference Period Mean

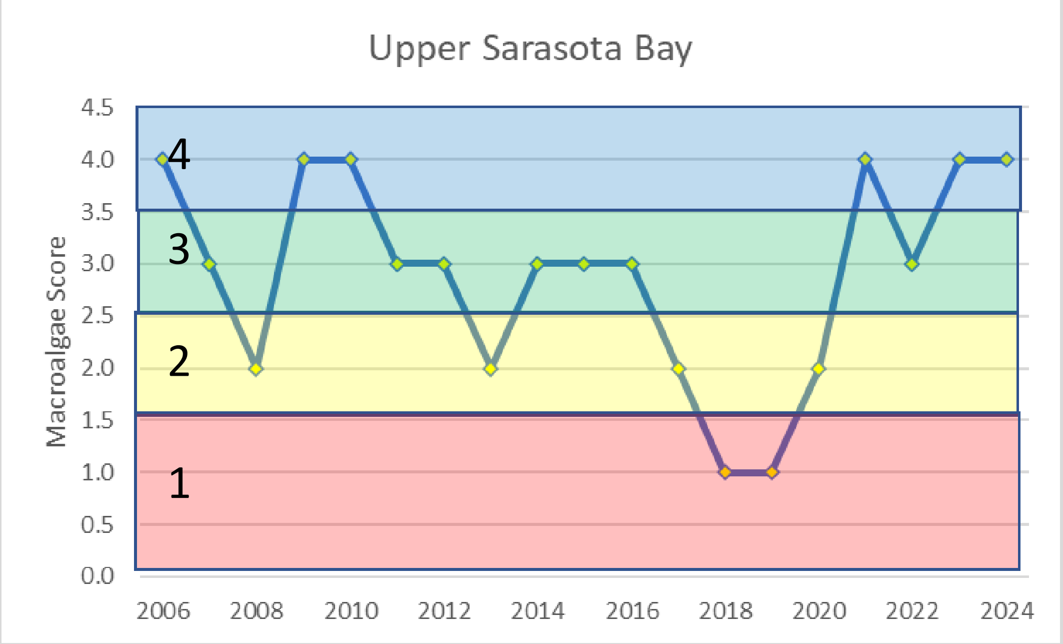
Macroalgae
Annual Average Percent Cover
ranked by coverage (<25%, 25-50%, 50-75%, 75%<).

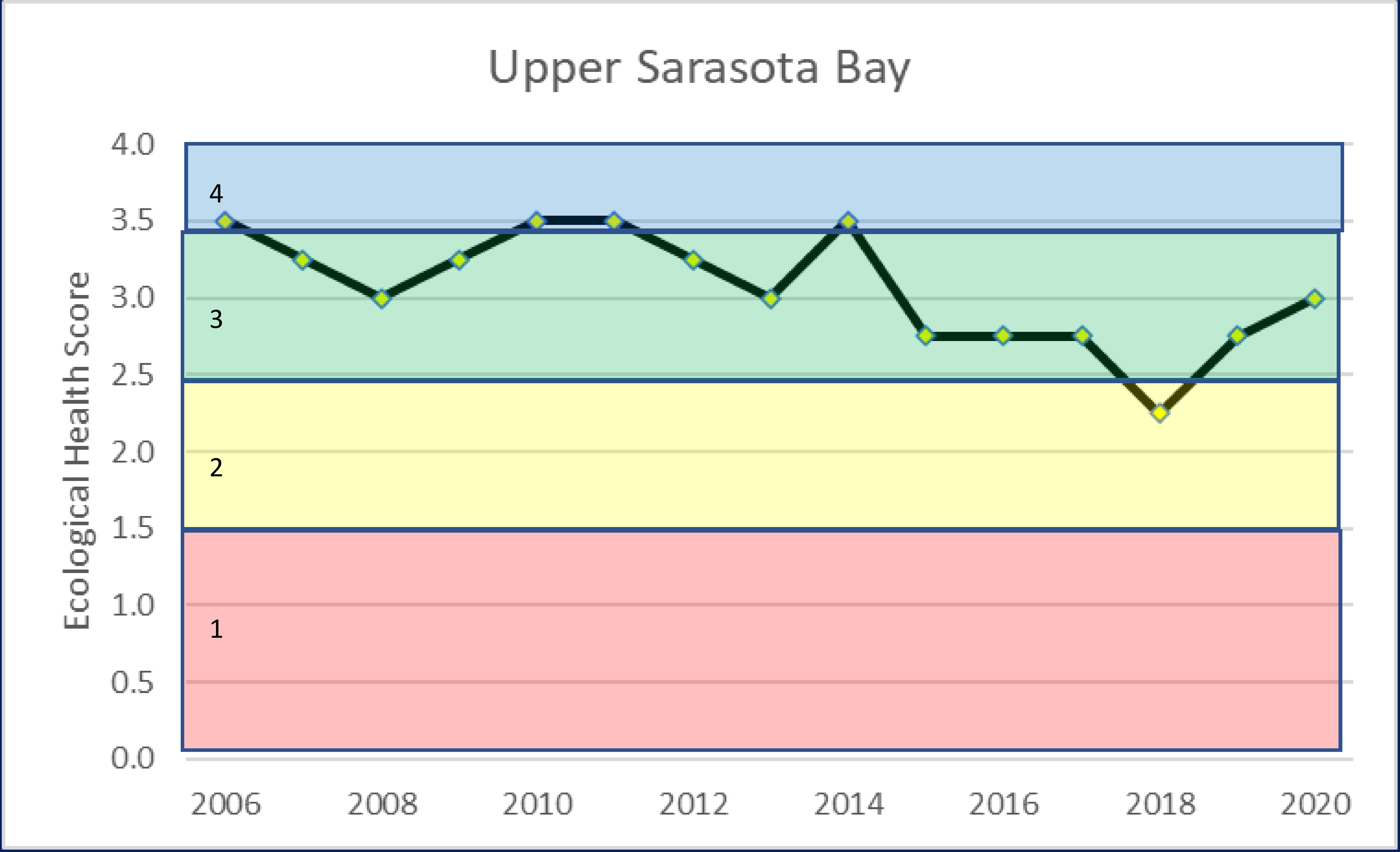
4	Excellent Conditions	2	Concerning Conditions
3	Good Conditions	1	Poor Conditions


Upper Sarasota Bay
TN score
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
4
3
2
1
2006
2008
2010
2012
2014
2016
2018
2020
2022
2024


Upper Sarasota Bay
Chl-a score
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
4
3
2
1
2006
2008
2010
2012
2014
2016
2018
2020
2022
2024


Upper Sarasota Bay
Seagrass score
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
4
3
2
1
2006
2008
2010
2012
2014
2016
2018
2020
2022
2024


Upper Sarasota Bay
Macroalgae Score
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
4
3
2
1
2006
2008
2010
2012
2014
2016
2018
2020
2022
2024


Upper Sarasota Bay
Ecological Health Score
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
4
3
2
1
2006
2008
2010
2012
2014
2016
2018
2020

2024

SARASOTA BAY
ECOSYSTEM HEALTH REPORT CARD

	YEAR	PALMA SOLA	UPPER	ROBERTS	LITTLE	BLACKBURN
Reference Period	2006	3.67	3.50	3.50	3.75	3.75
	2007	3.00	3.25	4.00	3.75	3.75
	2008	3.67	3.00	3.00	3.25	3.25
	2009	3.67	3.25	3.25	3.50	3.00
	2010	3.67	3.50	3.00	2.75	2.75
	2011	4.00	3.50	3.00	2.75	2.50
	2012	3.00	3.25	3.25	3.00	3.00
Degraded Period	2013	3.67	3.00	2.50	2.00	2.00
	2014	4.00	3.50	2.50	2.25	2.25
	2015	3.67	2.75	2.00	2.00	2.00
	2016	3.67	2.75	1.75	1.75	2.25
	2017	3.67	2.75	2.00	2.00	2.00
	2018	4.00	2.25	2.00	1.25	1.75
	2019	4.00	2.75	3.25	1.50	1.50
Recovering	2020	4.00	3.00	3.00	2.25	2.00
	2021	3.75	3.75	3.75	2.75	3.00
	2022	4.00	3.25	2.75	2.25	2.75
	2023	3.75	3.50	3.50	3.00	3.25
	2024	3.75	3.75	3.25	2.75	2.75

Excellent Conditions
Concerning Conditions
Good Conditions
Poor Conditions

Ecosystem Health Indicators

Total Nitrogen
A common nutrient. Too much can lead to algae growth.

Chlorophyll-a
Floating microscopic algae. Too much can impact water clarity.

Seagrass
Vital to our bay. A good indicator of overall water quality.

Macroalgae
Known as seaweeds. Can be harmful to bay health when present in high quantities.

Ecosystem Health Report Card

Reference period

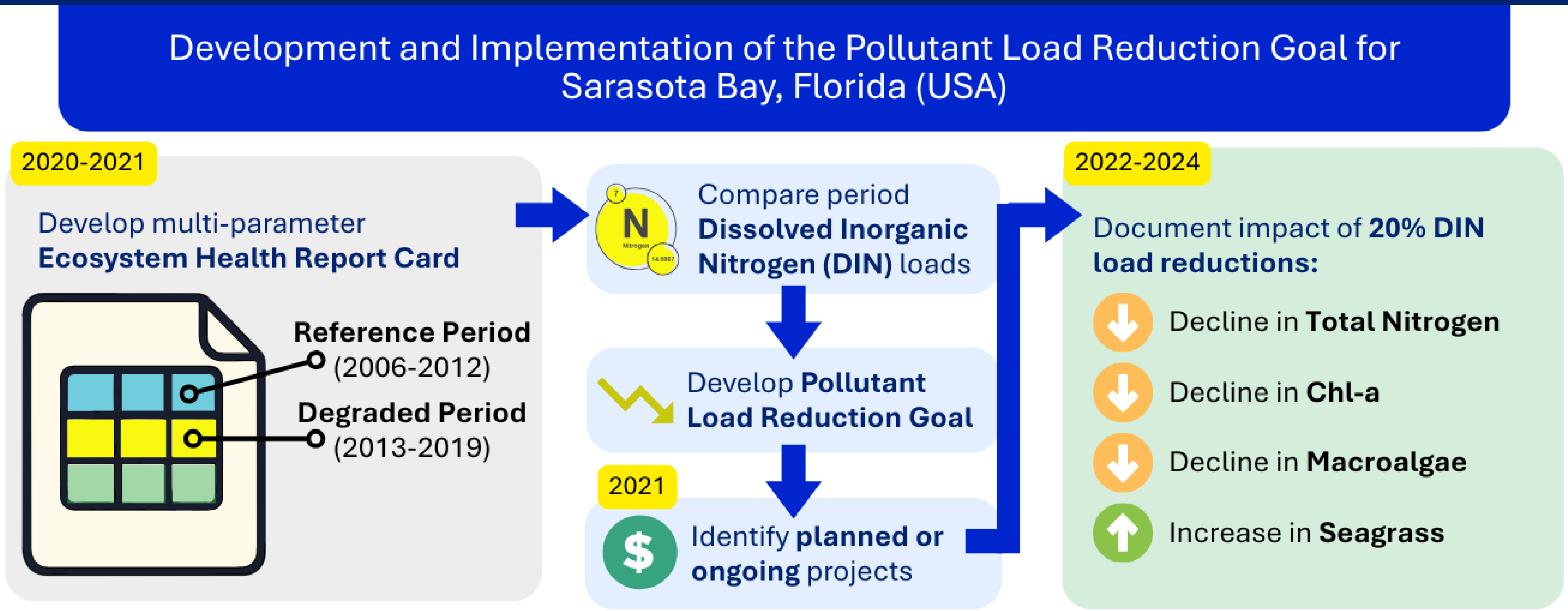
Across the bay, healthier conditions during the **reference period.** Better water quality, less macroalgae, ca. 30% increase in seagrass

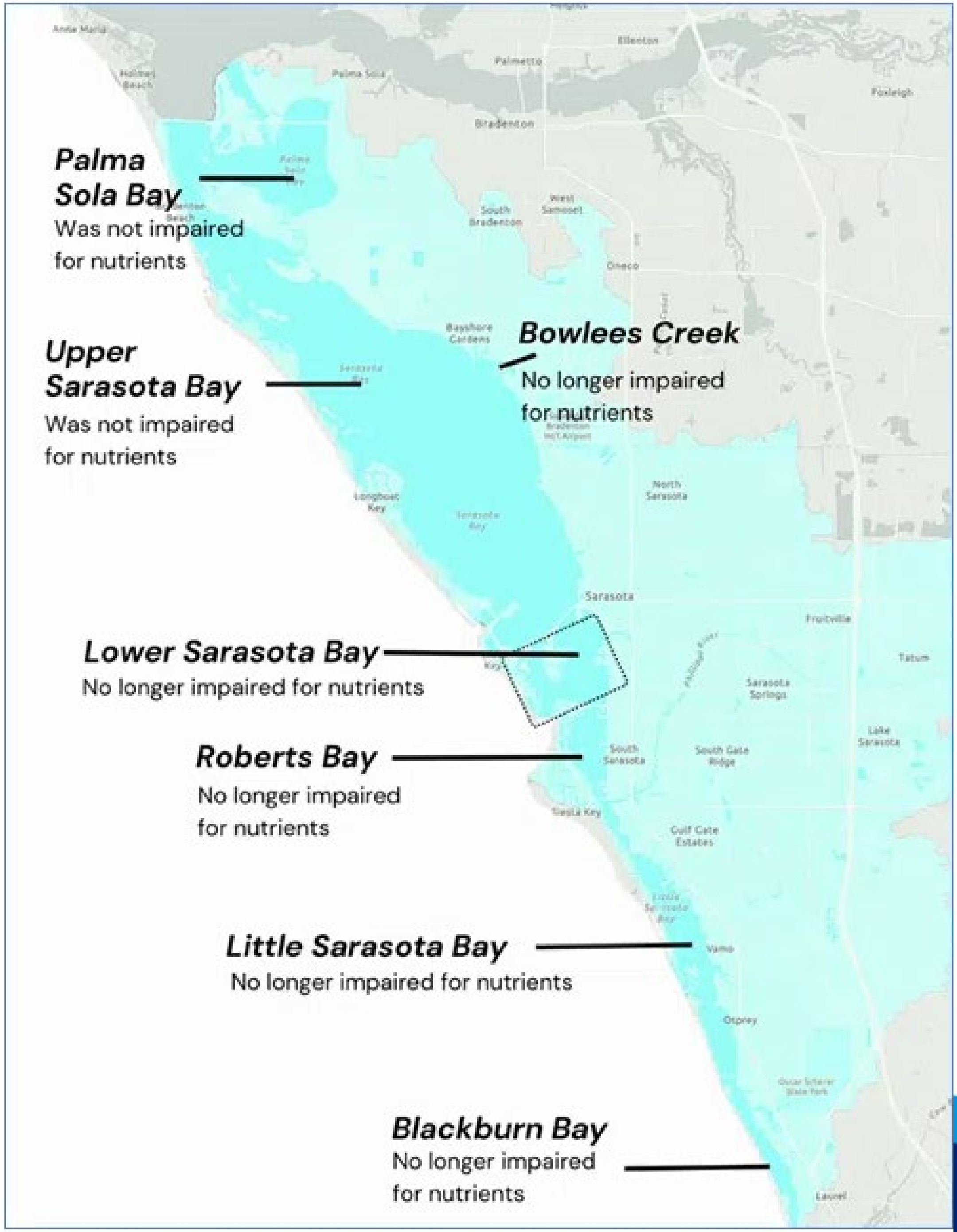
Degraded period

During the **degraded period,** worse water quality, more macroalgae, and ca. 30% seagrass loss

Improving trends

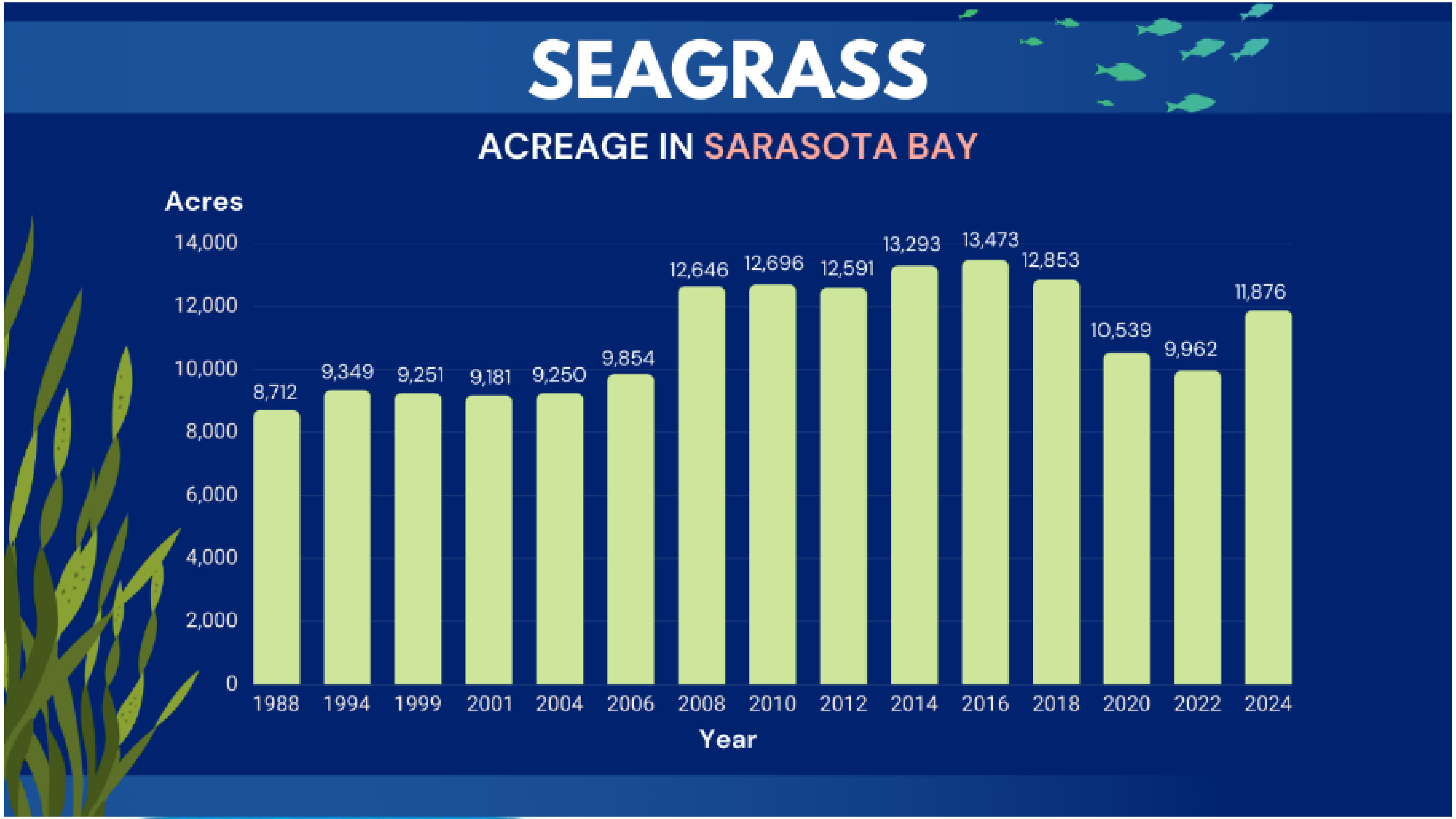
Despite Piney Point in 2021, Hurricane Ian and Tropical Storm Nicole in 2022, evidence of **improving conditions**


Development and Implementation of the Pollutant Load Reduction Goal for Sarasota Bay, Florida (USA)
2020-2021
Develop multi-parameter Ecosystem Health Report Card
Reference Period (2006-2012)
Degraded Period (2013-2019)
Compare period Dissolved Inorganic Nitrogen (DIN) loads
N
Develop Pollutant Load Reduction Goal
2021
Identify planned or ongoing projects
$
2022-2024
Document impact of 20% DIN load reductions:
Decline in Total Nitrogen
Decline in Chl-a
Decline in Macroalgae
Increase in Seagrass

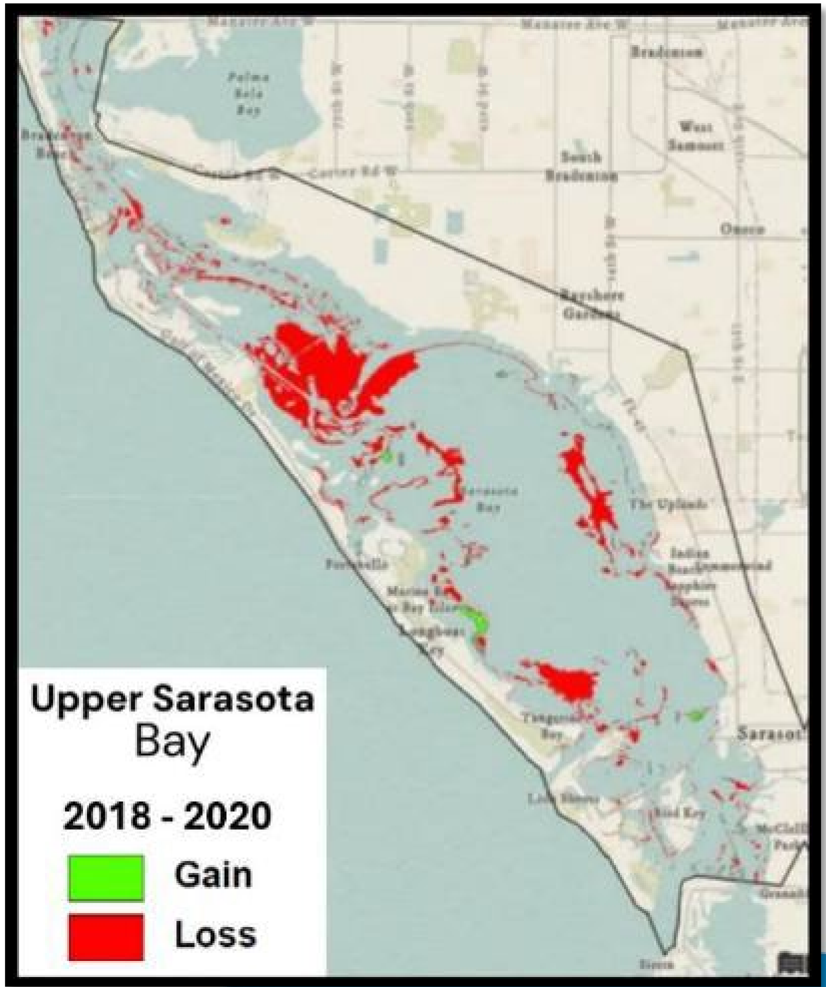


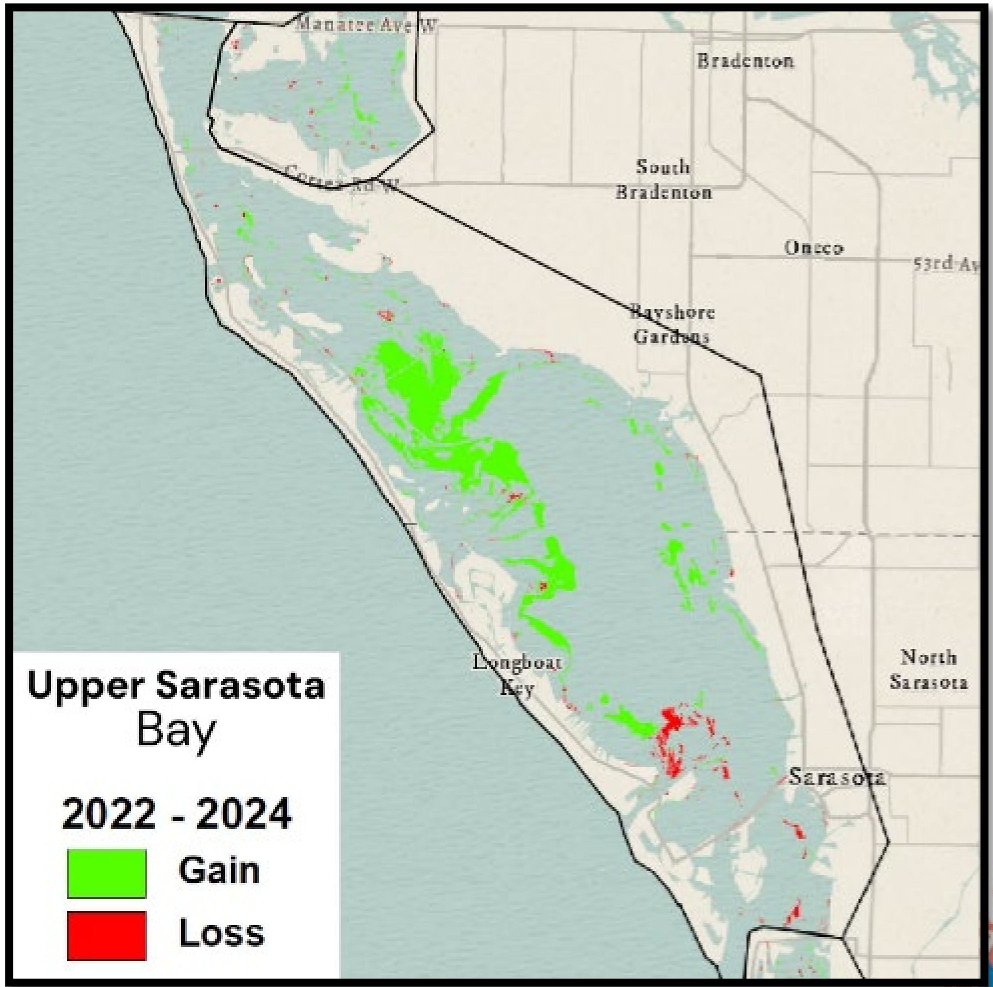
Sarasota Bay is no longer "impaired" for nutrients (FDEP, 2023)

Second biggest increase in 30 years



Most of the increase is recovery from prior losses





Wildlife benefits of substantial increase in seagrass acreage

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A cleaner bay is a more resilient bay.


Tribe