

Memorandum



Date: April 25, 2025

To: Honorable Chairman Anthony Rodriguez
and Members, Board of County Commissioners

Agenda Item No. 2(B)(1)
May 20, 2025

From: Daniella Levine Cava
Mayor

A handwritten signature in blue ink that reads "Daniella Levine Cava".

Subject: Report on the 2025 Annual Report Card Program on the Health of Biscayne Bay – Directive No. 180799

Executive Summary

This report is provided pursuant to Resolution No. R-463-18, which I sponsored as Commissioner, directing the County Mayor or County Mayor's designee to develop an annual "report card" program that evaluates the health of Biscayne Bay and employs a simple and easy-to-understand "stoplight" approach to reporting on the health of Biscayne Bay. The Resolution further directed that the health evaluation shall be data-driven, use sound scientific principles, incorporate information on water quality and habitat values throughout Biscayne Bay, and include easy-to-read graphics suitable for the general public to understand, and that the results of the health evaluation shall be made publicly accessible.

The 2025 Biscayne Bay Report Card, attached herein, was developed by staff in the Department of Regulatory and Economic Resources, Division of Environmental Resources Management (RER-DERM) with inputs from various County departments including the Office of Environmental Risk and Resilience (OERR) and the Water and Sewer Department (WASD). The County created a website dedicated to Biscayne Bay (www.miamidade.gov/BiscayneBay) which provides public access to the annual report card in an interactive online format. The report card online provides the public with information related to each indicator evaluated for bay health and each indicator's annual stoplight score across the bay, provides locations of monitoring stations and other information about monitoring programs, highlights the County's accomplishments toward bay restoration over the past year, and shares steps the public can take to help protect Biscayne Bay. Please find attached the "stoplight" maps associated with the 2025 Biscayne Bay Report Card for your review.

Out of the 12 regions in the Bay, nearly all maintained their water quality ratings from 2024. Only one, Region South North Bay-B (or "SNB-B" as shown on the 2025 Biscayne Bay Report Card) declined from "fair" to "poor". It is noted that this region that lies between I-395 and I-195 receives little flushing from either the landward or barrier island side, which can allow waters impacted by pollutants to reside in the basin for longer periods of time without mixing with and being taken away by the tide. These results can vary from year to year, making it all the more important to continue our long-term commitment to ongoing Bay initiatives. Water quality, and the ecological responses to it, are largely determined by the quality of stormwater and groundwater received by canals and eventually the bay. Total nitrogen conditions are "fair" or "poor" in some northern bay and extreme south bay regions and some tidal tributaries; total phosphorus remains in "fair" or "poor" condition in the northern Biscayne Bay basins and tidal tributaries, and chlorophyll-a is in "poor" condition throughout Biscayne Bay other than the tidally-flushed SNB-C basin in the north.

We know that Biscayne Bay is the blue heart of our economy and our regional prosperity, now and for future generations. Given that the Bay and the tributaries canals and groundwater that feed it are facing unprecedented threats to their health and resilience, my administration continues to actively and aggressively

pursue short-term and long-term actions to restore the health of our Bay. The water resources of our County know no jurisdictional bounds, and these actions will require ongoing support and long-standing commitment from our municipal, state, and federal partners.

Policy and Legislative Updates

Building upon our successes in the past few years, many additional actions were taken in 2024 to improve the health and resilience of Biscayne Bay. This is truly a collaborative effort with the support of local, state and federal partners and the coordination of the Office of Environmental Risk and Resilience (OERR) which maintains a strong focus on the Bay. Additionally, the Biscayne Bay Watershed Management Advisory Board (BBWMAB) and the state Biscayne Bay Commission (BBC) provided policy recommendations and opportunities for important public engagement in support of protecting and restoring Biscayne Bay. Actions include continued investigations to inform our scientists about sources of pollution impacting our ground and surface waters; assisting our state and federal partners with regional restoration projects; proffering legislative Code changes and updates to the Comprehensive Development Master Plan to provide additional protections to our water quality while promoting resilient development and initiating capital improvements projects; and utilizing innovative technology to further reduce pollution from entering into our ground and surface waters and ultimately the Bay.

Impervious Surface Ordinance

The Impervious Surface Ordinance, adopted by the Board on September 4, 2024, amended development standards and procedures related to impervious surfaces and the implementation of new and substantially improved stormwater infrastructure, retention, and quality of direct discharges to a canal or Biscayne Bay. Adoption of this ordinance is expected to result in increased resilience, and reduction in flood risk and water quality impacts. The new regulations adjust the standards based on the County's updated stormwater modeling, including the interaction of groundwater, surface water, sea level rise projections, the local hydrology, topography, and land use. The ordinance also establishes recertification of stormwater management systems that serve or drain into a public right-of-way. Staff of RER-DERM is conducting continued engagement with stakeholders including property owners, engineers, contractors, and owners and operators of stormwater management systems over the past year to allow stakeholders adequate time to transition to the new standards. Most recently, RER-DERM hosted three technical webinars to industry and municipalities to highlight the important changes to Chapter 24 as a result of the Impervious Surface Ordinance, which became effective March 31, 2025.

Septic to Sewer Progress

As of January 1, 2023, conventional onsite sewage treatment and disposal systems (i.e., septic systems) are no longer approved for new or complete replacement systems. This is a significant win for water resource protection of Miami-Dade County because performance-based treatment systems (PBTS), of which there are several types, can significantly lower concentrations of nutrients and bacteria that reach groundwater and/or surface water. A total of 709 new PBTS were approved in 2024. Of the total number of projects approved, over 95% were for single-family residences (SFR) with Type 3 systems. For example, the equivalent of 709 three-bedroom homes each with a waste stream of 300 gallons per day, would otherwise have the potential to load total nitrogen at a rate of 64,790 pounds per year and total phosphorus at a rate of 11,662 pounds per year. Using a Type 3 PBTS at 709 single-family homes, there was an estimated 70% reduction in total nitrogen down to 19,437 pounds per year and a 44% reduction in total phosphorus down to 6,479 pounds per year, helping reduce the amount of nutrients reaching the Bay through groundwater.

Collaboration with State and Local Partners to Reduce Nutrient Pollution

On March 1, 2022, the Board of County Commissioners adopted a Resolution directing the development of a Reasonable Assurance Plan (RAP) to be approved by the Florida Department of Environmental Protection

(DEP) to address Biscayne Bay's water quality impairments. Biscayne Bay faces water quality impairments under the federal Clean Water Act through non-compliance with state nutrient criteria including exceedances of nitrogen, phosphorus, and chlorophyll-a. The RAP is a stakeholder-driven effort wherein key stakeholders who contribute nutrient loads to Biscayne Bay collaborate to develop a plan to meet nutrient reduction allocations. Quantifying nutrient loads and from what sources is a major component of the RAP, and this includes sources from more urban land uses as well as agricultural runoff. Miami-Dade County RER-DERM is leading stakeholder coordination and development efforts. To date, all external technical experts needed to develop the RAP have been procured. Additionally, the RAP Plan of Study, providing the outline for what information will be contained in the RAP, has been approved by DEP. Development of the integrated groundwater/surface water model is underway as is identification of County and municipal nutrient-reducing projects for inclusion in the plan.

Grants and Projects Update

Restoration and Coastal Protection Projects

Progress has been made on two key Biscayne Bay Coastal Wetlands (BBCW) infrastructure projects. The Cutler Wetlands Component of the BBCW Comprehensive Everglades Restoration Plan (CERP) project is the final component of the five-part BBCW Project being constructed by the US Army Corps of Engineers and South Florida Water Management District (SFWMD) in partnership with Miami-Dade County. The component will deliver freshwater from the C-1 Canal through the S-701 pump station in order to rehydrate coastal wetlands adjacent to Biscayne Bay, diverting water that would otherwise be discharged directly into the Bay with no treatment, carrying pollutants with it. County staff visited the site with federal and agency colleagues to document the progress made on the S-701 pump feature which is slated for completion and will be operational in November 2025. Additionally, RER-DERM restoration experts led an interagency team to visit local and regional restoration projects in southern Miami-Dade County, including a visit to the BBCW S-703 pump station. The pump was operational and flowing water through EEL-managed wetlands to the Bay. This wetland restoration component will not only help improve the health of Biscayne Bay in this part of the system but will help build resilience along three miles of the County's coastline by rehydrating and enhancing mangrove communities along the coast. I proudly championed these rehydration projects before becoming Mayor, and the County will continue to provide historic support for CERP through the many supporting activities that occur through RER-DERM.

In addition to these regional efforts, many restorative actions were taken on a local level to reduce the amount of marine debris and further reduce the amount of pollution reaching the Bay. RER-DERM staff removed over 40 derelict vessels last year, bringing the County's total number of derelict vessels removed to date to 500. Additionally, over 250 ghost traps, and 37.81 tons of trash from spoil islands as part of their ongoing work to address marine debris and derelict vessels and fishing gear impacting our Bay. RER-DERM's Environmentally Endangered Lands (EEL) Program acquired 24.55 acres of land with high environmental value for the period of January 1, 2024 through December 31, 2024. These lands help the County protect water resources by storing stormwater and recharging the Biscayne Aquifer. The EEL program now manages over 28,000 acres of environmental land for this and future generations.

State and Federal Grants

The County continues its tasks related to the Biscayne Bay Water Quality Improvement (BBWQI) grant program, funded by DEP. The main objective of the Characterization and Pollution Reduction project is to identify and eliminate pollution reaching Biscayne Bay. This work includes characterizing sources of pollution reaching Miami River, Little River, Biscayne Canal, and Arch Creek as well as groundwater, and piloting nutrient-reducing stormwater and wastewater technologies. RER-DERM continues to spearhead the effort to innovate not only stormwater solutions that can help eliminate and reduce nutrient pollution impacting our Bay but also wastewater solutions such as Smart Covers largely through state grant funding. Through December

2024, a total of 426 Smart Covers had been installed with 150 sewage spills being predicted and prevented across coastal Miami-Dade County last year alone. The Water and Sewer Department (WASD) continued to receive important funding from the BBWQI grant program to implement septic to sewer transitions including force main, gravity sewer and laterals. To date, approximately 800 septic tanks have been connected to the central sewer system under this program.

Another highlight of the program was the completion of the draft Living Shorelines Guidance Document for the Biscayne Bay Watershed. This tool developed by RER-DERM, with consulting technical support and input from various stakeholders, will serve to guide parcel owners on the options are available to protect their property while also supporting the health of Biscayne Bay.

The DEP Resilient Florida Grant to support RER-DERM's restoration of West Matheson Hammock Park's historic Snapper Creek slough hit major milestones last year. Two successful pump tests were conducted, mimicking the ecological processes of the Snapper Creek slough and recreating Snapper Creek's historic flow into Biscayne Bay for the first time in nearly one hundred years. Additionally, nearly 300,000 cubic yards of landfill debris have been removed from this historic Everglades habitat at West Matheson. On the coastal side, twenty-five acres of tree island habitat were restored and efforts to eradicate invasive species from Matheson's mangrove habitat were successful.

The County also received a \$500,000 state legislative appropriation to develop the Biscayne Bay Watershed Plan. This plan will serve as a binding blueprint used to achieve water quality, seagrass restoration, and the overall health of Biscayne Bay. Unlike the Reasonable Assurance Plan (RAP) which is exclusively focused on water quality and nutrient reduction, the watershed plan accounts for growth/development policies, enforcement activities, increased development pressures, and recreational usage of the Bay. Providing recommendations for the Watershed Plan is a key duty of the BBWMAB and I look forward to their leadership and input on this critical priority.

Community Outreach and Education

The County's fertilizer ban goes into effect May 15 – October 31, and outreach related last year included educational fertilizer awareness mailers sent to all licensed pesticide and fertilizer applicators in the County. RER-DERM also partnered with fertilizer retail outlets for the display of informational signage at fertilizer points-of-sale in Lowes, Home Depot, and Walmart Garden Centers during the restricted fertilizer application period. The County also launched a paid campaign which included search engine marketing, web banners, and social media advertisement. For communities interested in educating their residents on responsible fertilizer use under the ordinance, please visit www.miamidade.gov/BiscayneBay to download our toolkit.

Residents can also do their part to help protect Biscayne Bay by volunteering for Baynanza. This month we celebrated the 43rd anniversary of Baynanza, the County's signature annual cleanup of Biscayne Bay that RER-DERM has coordinated from its inception. This event spans the length of the County, providing opportunities for volunteers to find a location closest to them to help give the Bay a hand. This year, 3,963 participants collected over 16 tons of trash at 32 sites along the Bay. These initiatives continue to be supported by thousands of volunteers and stakeholders whose work contributes greatly to the restoration and future health of Biscayne Bay and the County is grateful for their dedication.

With funding from the U.S. Environmental Protection Agency, RER-DERM is currently developing the *Biscayne Bay Boating Community Outreach and Education Campaign*. This campaign engage the recreational boating public in Miami-Dade County through a variety of means and methods to promote a sense of individual responsibility and action, and foster lasting environmental stewardship among our coastal waterway stakeholders. Outreach is concentrated in the northern portion of Biscayne Bay, where the density of spoil

islands popular among the boating community for recreational purposes is greatest, as well as public and private marinas and boat ramps, and the County is also providing web resources that will be available to anyone.

Additionally, the Office of Environmental Risk and Resilience has partnered with the Lucy Fernandez Foundation to stand up the Boater Safety and Bay Education Task Force. Over the last year we've increased outreach and education before boating holidays countywide, and I look forward to implementing the recommendations of this task force to continue education with the goal of eliminating preventable accidents and fatalities on our waterways.

In partnership with The Miami Foundation and several local organizations, the OERR reached the goal of 3,000 Biscayne Bay Specialty License Plate registrations resulting in statewide production of the plates by mid-2025. The license plate not only helps to raise awareness about the critical importance of Biscayne Bay but will also provide a source of ongoing funding to preserve and restore Biscayne Bay including water quality improvements, marine debris clean-up and monitoring, and critical habitat restoration grants.

Closing

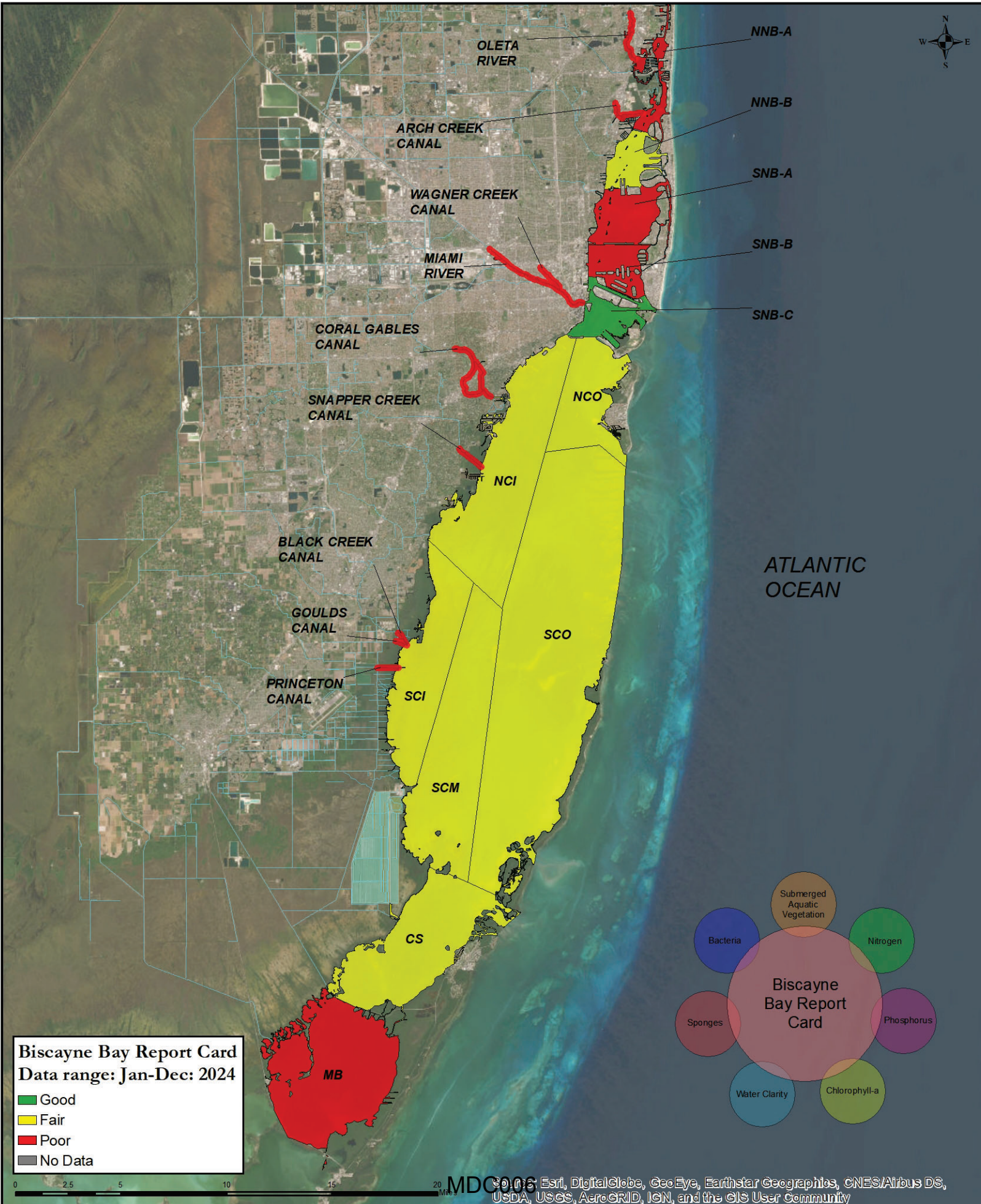
As we continue to balance the needs of our growing community, it is essential that we prioritize the work of restoring the health and resilience of Biscayne Bay to protect not only our environment but our economy. My administration remains steadfast in our commitment to continue to pursue tangible and necessary actions to protect the health of Biscayne Bay, collaborate with our stakeholders at all levels, and implement needed policies, legislation, research, and outreach to accomplish the goals we have set forth together.

In accordance with Ordinance No. 14-65, this report will be placed on the next available Board meeting agenda. If you have any questions regarding this report, please contact Lourdes M. Gomez, RER Director, at 305-375-2886 or at Lourdes.Gomez@miamidade.gov.

Attachment: *2025 Biscayne Bay Report Card*

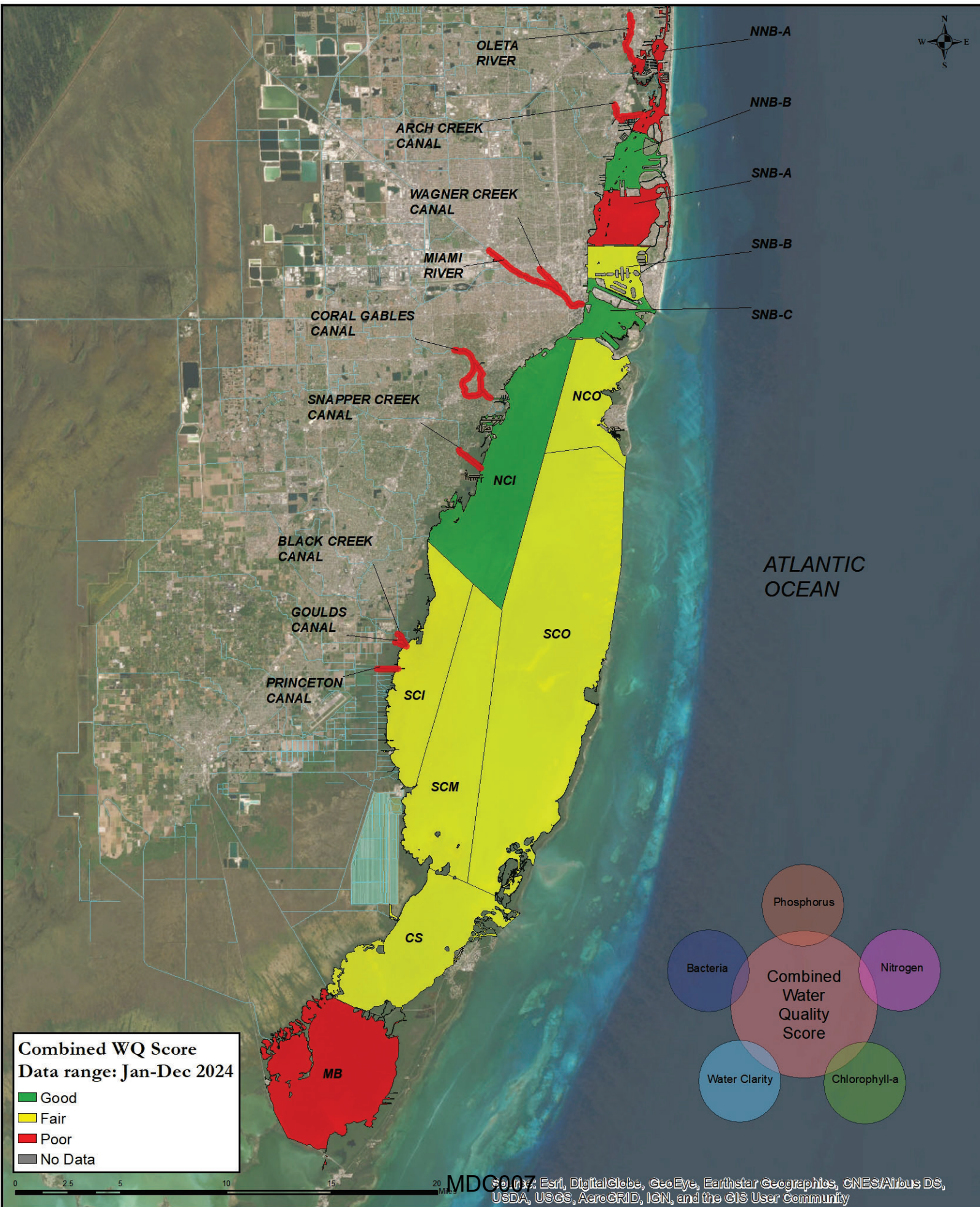
c: Geri Bonzon-Keenan, County Attorney
 Gerald Sanchez, First Assistant County Attorney
 Jess McCarty, Executive Assistant County Attorney
 Office of the Mayor Senior Staff
 Lourdes M. Gomez, Director, Department of Regulatory and Economic Resources
 Lisa Spadafina, Assistant Director, Department of Regulatory and Economic Resources
 Loren Parra, Chief Resilience Officer, Office of Environmental Risk and Resilience
 Yinka Majekodunmi, Commission Auditor
 Basia Pruna, Director, Clerk of the Board
 Eugene Love, Agenda Coordinator

2025 Biscayne Bay Report Card



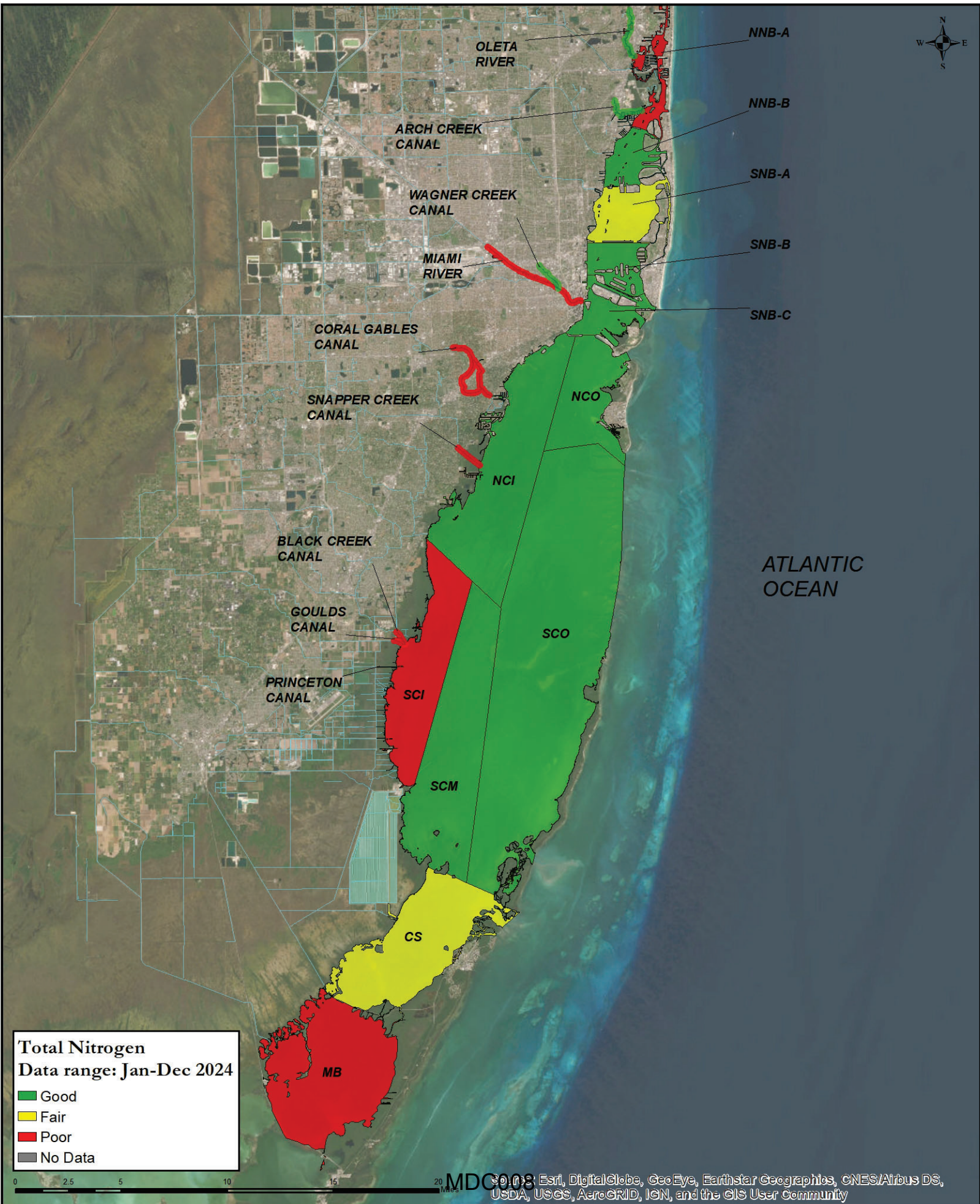
2025 Biscayne Bay Report Card

Water Quality Combined Score



2025 Biscayne Bay Report Card

Total Nitrogen Score

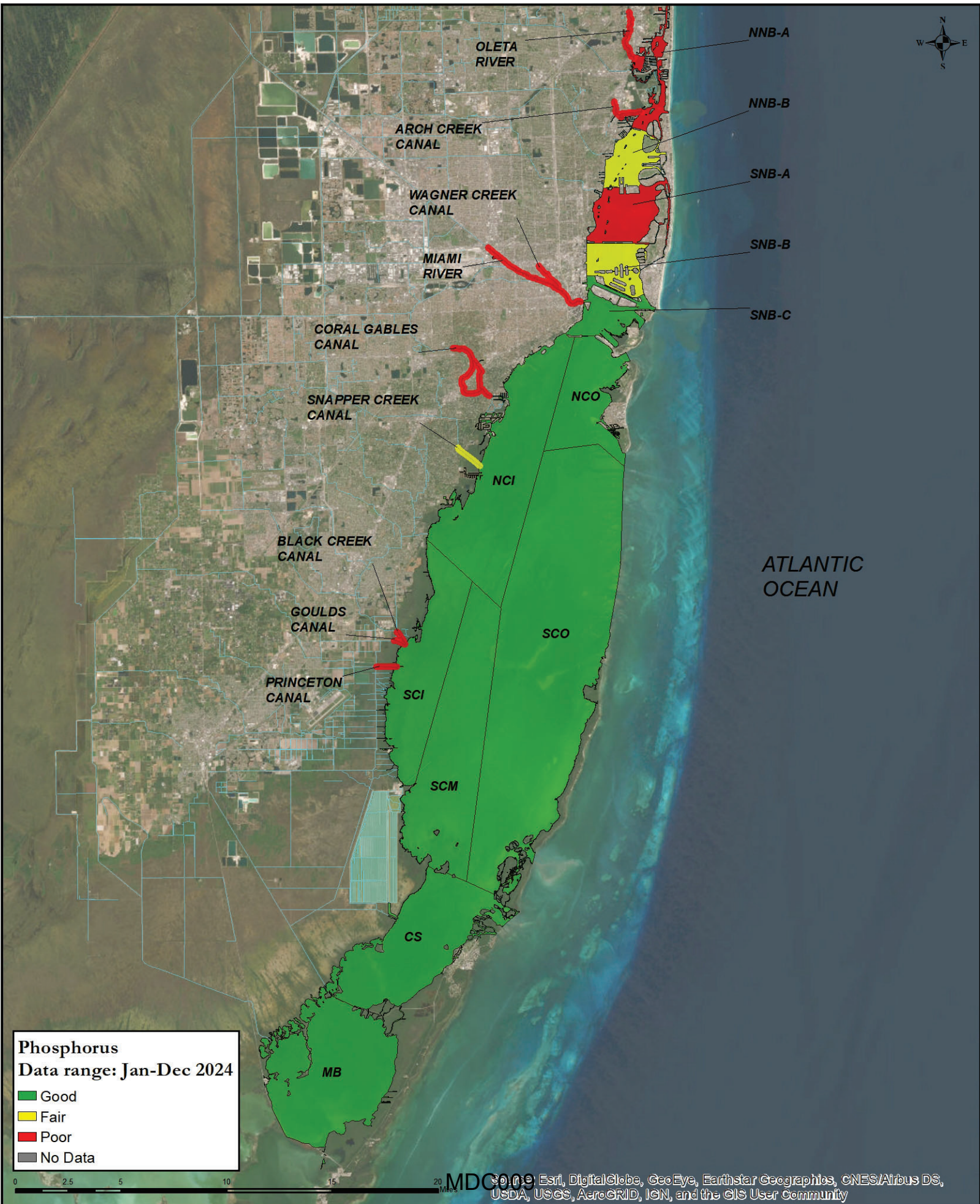


Total Nitrogen
Data range: Jan-Dec 2024

- Good
- Fair
- Poor
- No Data

2025 Biscayne Bay Report Card

Total Phosphorus Score

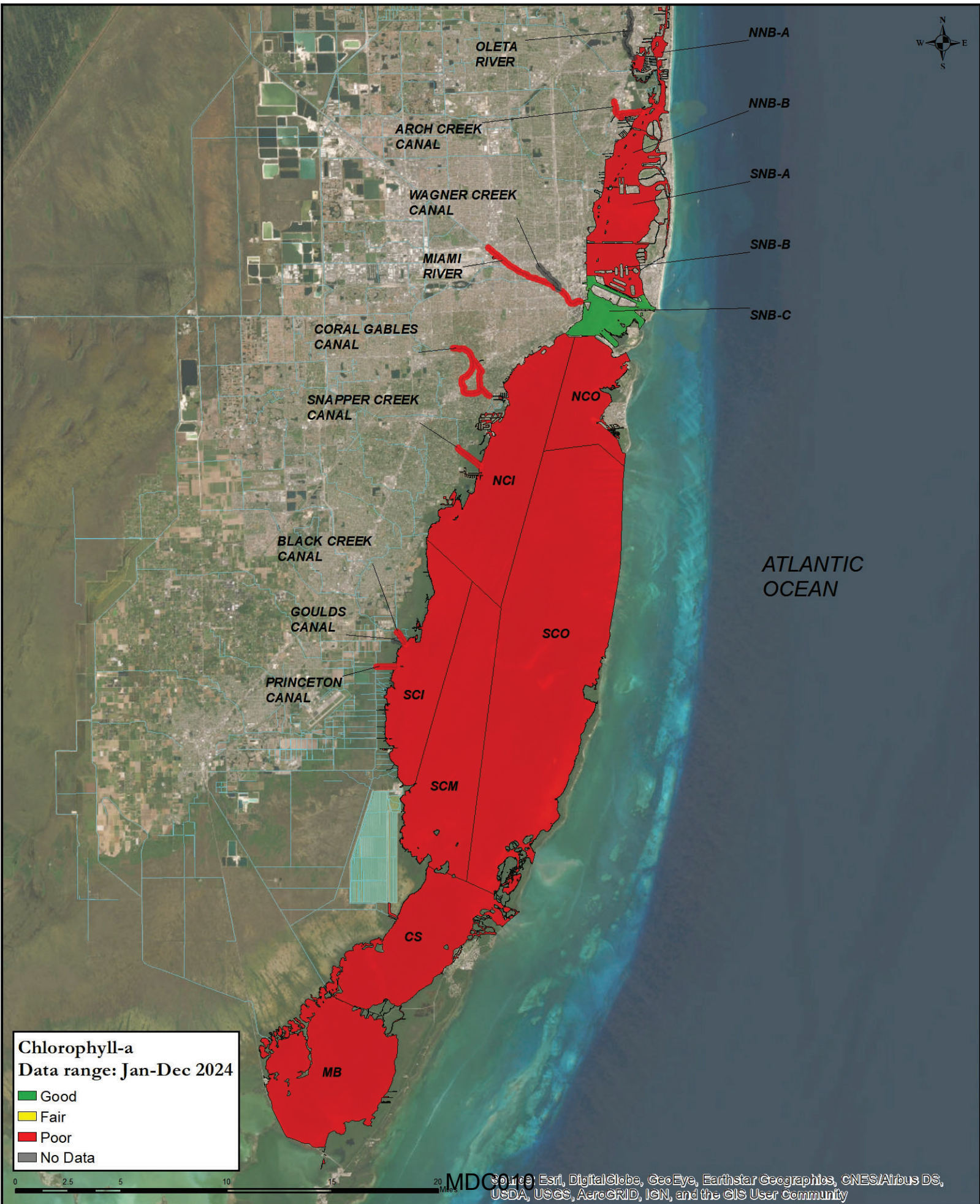


Phosphorus
Data range: Jan-Dec 2024

- Good
- Fair
- Poor
- No Data

2025 Biscayne Bay Report Card

Chlorophyll-a Score

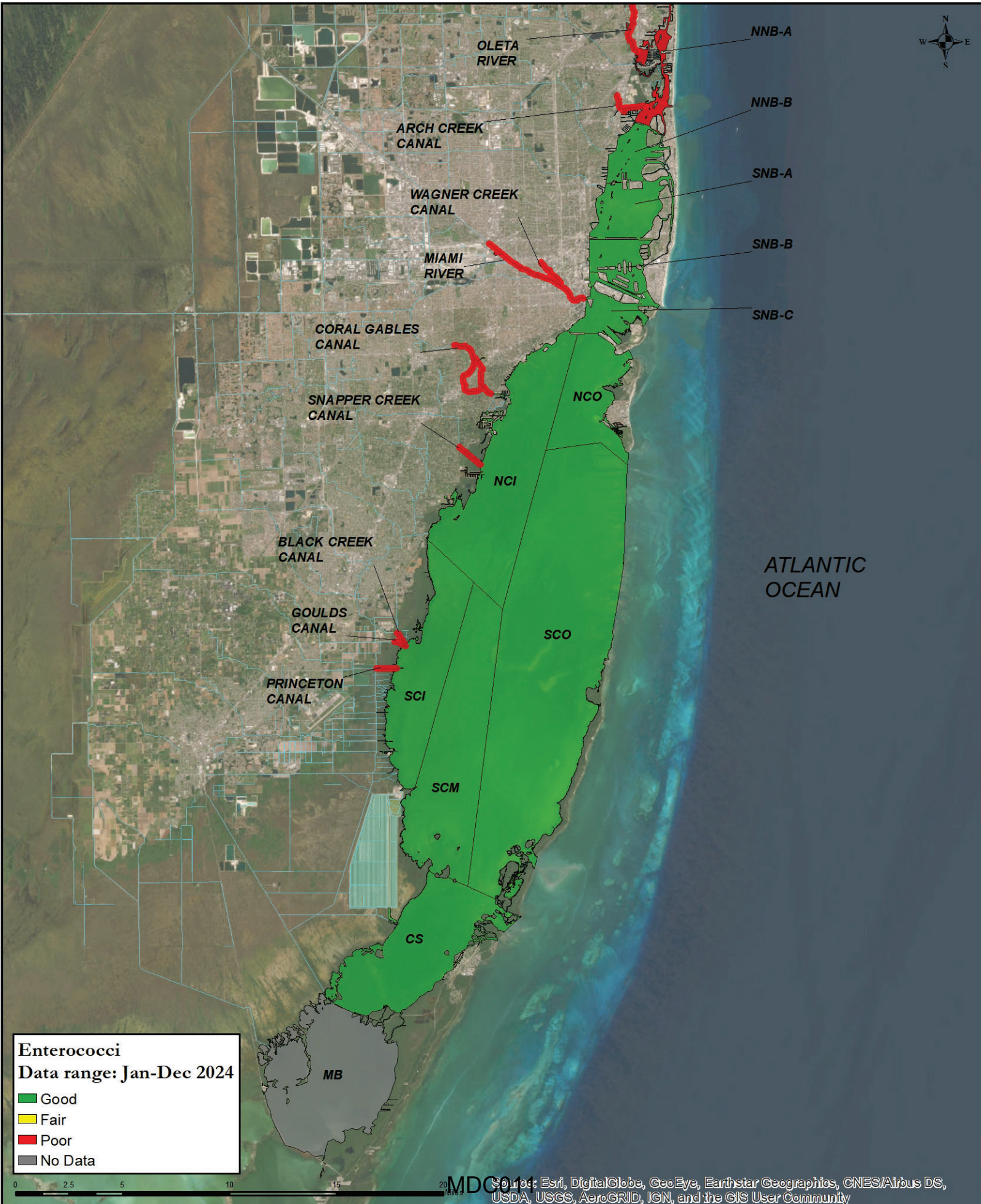


Chlorophyll-a
Data range: Jan-Dec 2024

- Good
- Fair
- Poor
- No Data

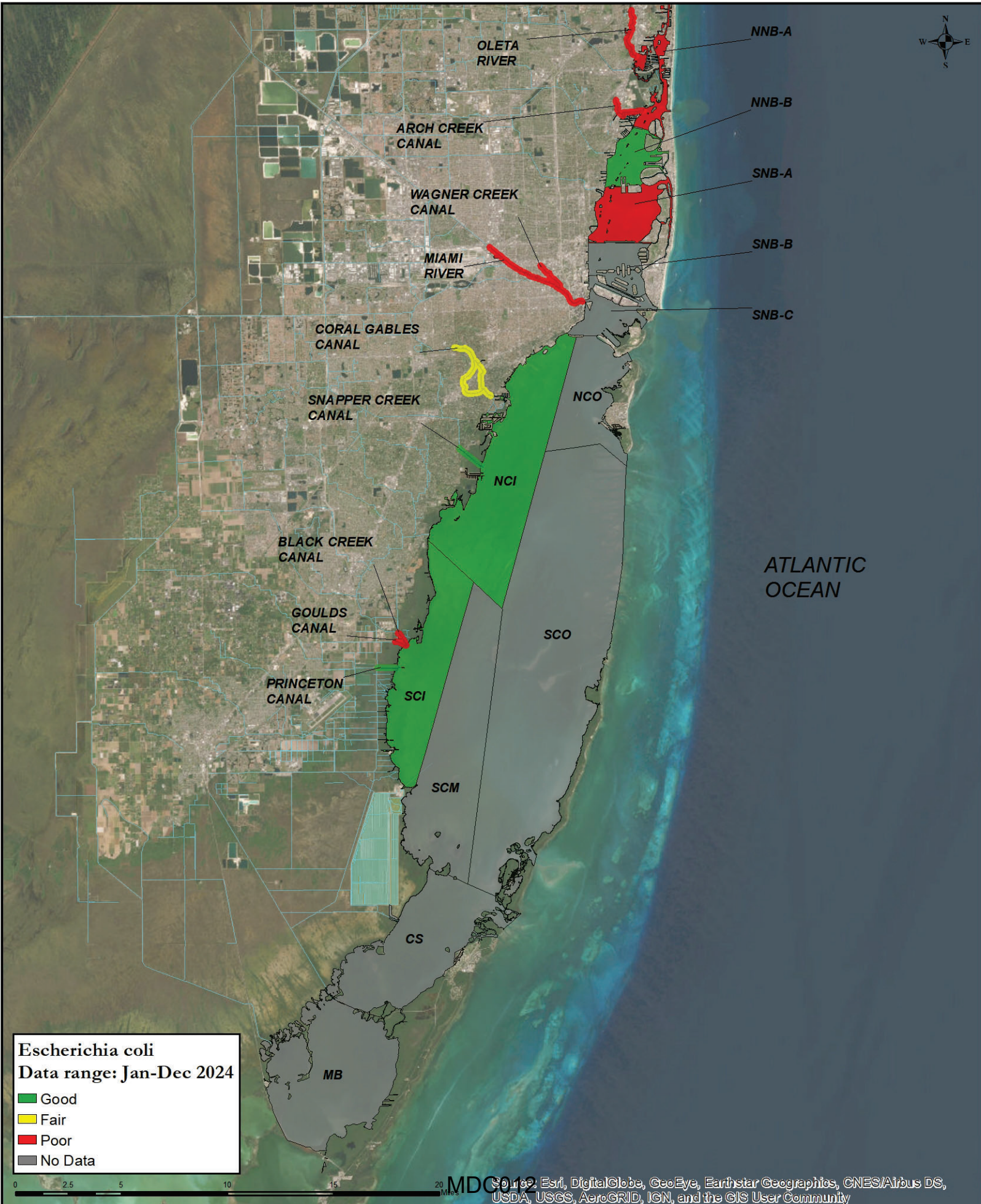
2025 Biscayne Bay Report Card

Bacteriological Score (*Enterococcus* spp.)



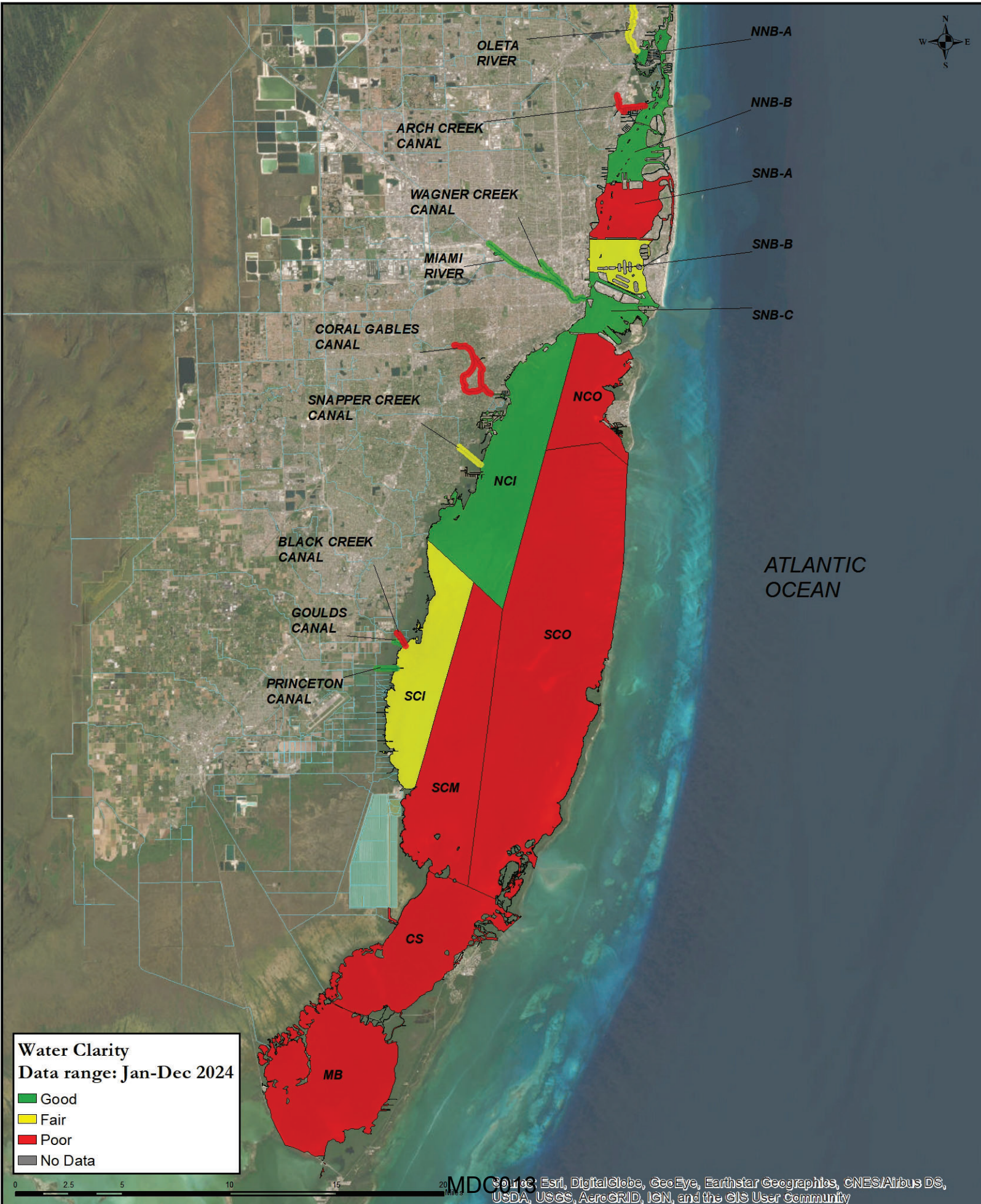
2025 Biscayne Bay Report Card

Bacteriological Score (*Escherichia coli*)



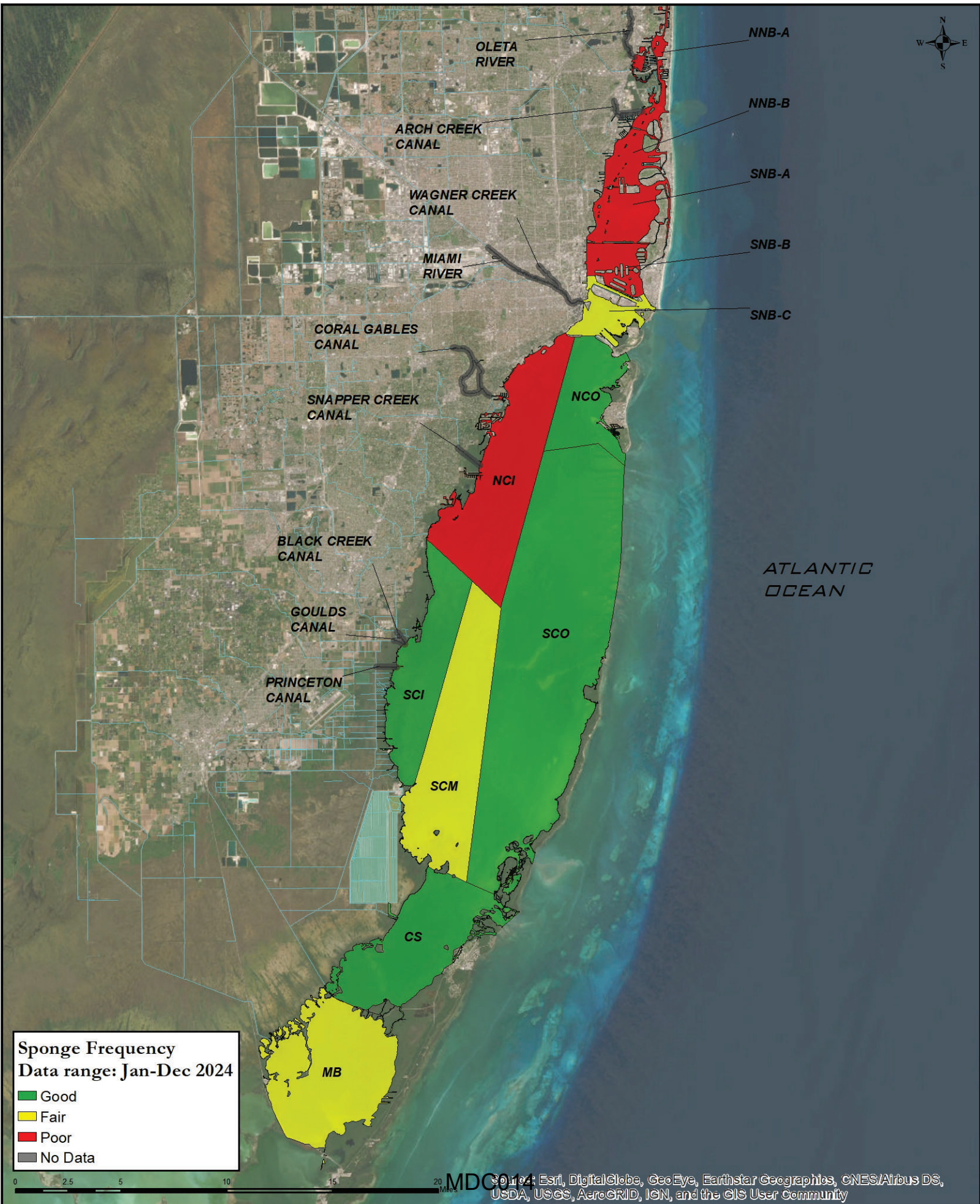
2025 Biscayne Bay Report Card

Water Clarity Score



2025 Biscayne Bay Report Card

Sponge Frequency Score

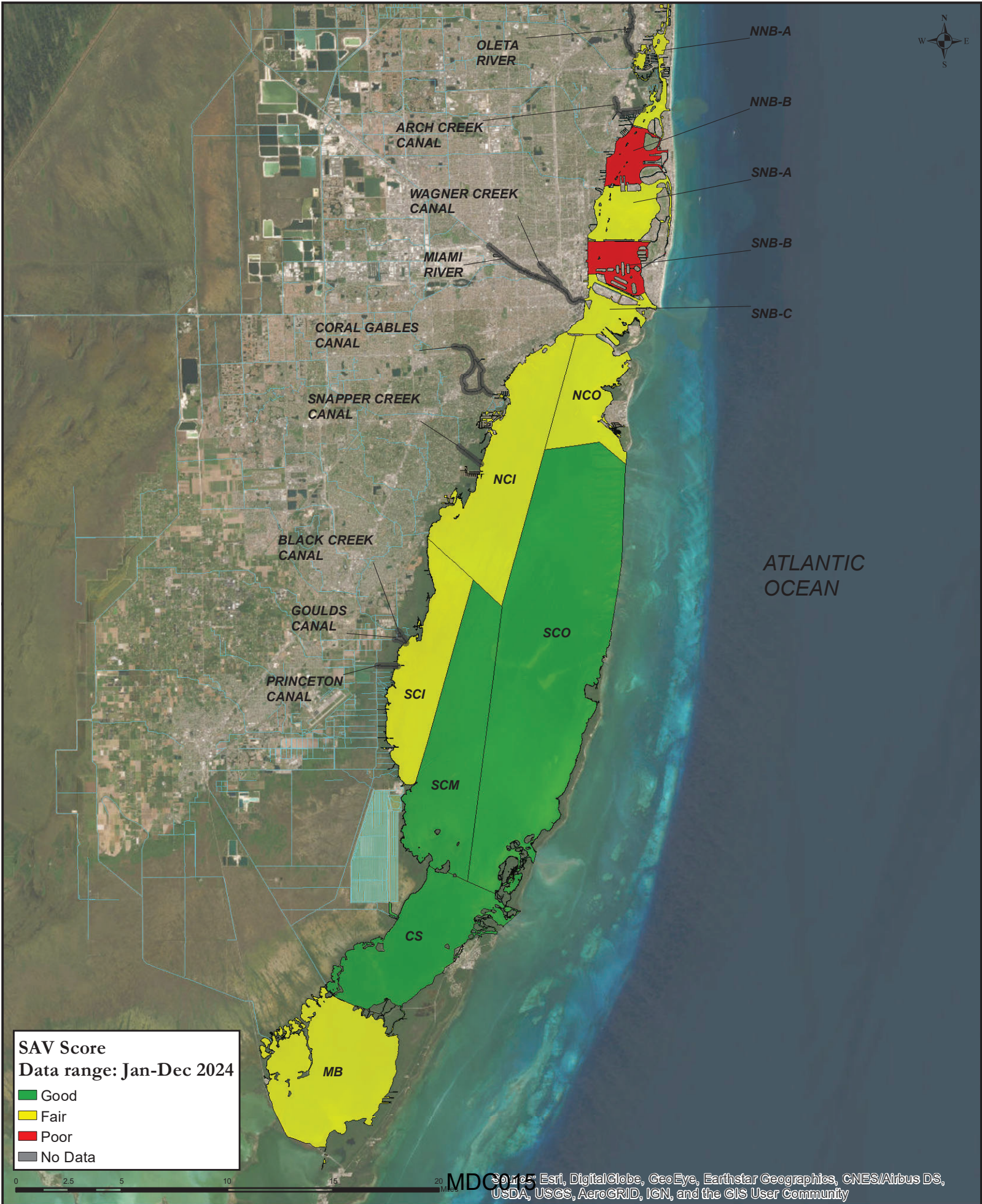


Sponge Frequency
Data range: Jan-Dec 2024

- Good
- Fair
- Poor
- No Data

2025 Biscayne Bay Report Card

Submerged Aquatic Vegetation (SAV) Score



SAV Score
Data range: Jan-Dec 2024

- Good
- Fair
- Poor
- No Data

Report Card Region	2021 Score	2022 Score	2023 Score	2024 Score	2025 Score	2025 Biscayne Bay Health Status by Region
						> 3.9 3.0-3.9 0-2.99
Northern North Bay (NNB-A)	Poor	Fair	Poor	Poor	Poor	Nutrients increased, some reductions in Chlorophyll and Bacteria
Northern North Bay (NNB-B)	Poor	Fair	Fair	Fair	Fair	Total Phosphorus and Chlorophyll increased, Water Clarity decreased
Southern North Bay (SNB-A)	Poor	Poor	Poor	Poor	Poor	Total Phosphorus increased, Water Clarity decreased, and SAV increased
Southern North Bay (SNB-B)	Fair	Fair	Fair	Fair	Poor	Phosphorus increased and Water Clarity decreased, SAV and Invertebrates increased
Southern North Bay (SNB-C)	Fair	Good	Fair	Good	Good	Total Phosphorus increased, Water Clarity decreased, some increases in SAV
North Central Offshore (NCO)	Fair	Fair	Fair	Fair	Fair	Total Phosphorus increased and Water Clarity decreased
North Central Inshore (NCI)	Poor	Fair	Fair	Fair	Fair	Total Phosphorus increased while SAV and Invertebrates decreased
South Central Offshore (SCO)	Fair	Fair	Fair	Fair	Fair	Total Phosphorus increased and Water Clarity decreased, Total Nitrogen decreased
South Central Inshore (SCI)	Fair	Fair	Fair	Fair	Fair	Total Nitrogen, Total Phosphorus, and Chlorophyll increased, Water Clarity decreased, Invertebrates increased
South Central Mid Bay (SCM)	Fair	Fair	Fair	Fair	Fair	Total Phosphorus increased, Water Clarity decreased, and Invertebrates decreased
Card Sound (CS)	Fair	Fair	Fair	Fair	Fair	Total Phosphorus increased, Chlorophyll decreased
Manatee Bay (MB)	Poor	Fair	Poor	Poor	Poor	Total Phosphorus increased, Chlorophyll decreased