


Memorandum



Date: April 22, 2022

To: Honorable Chairman Jose “Pepe” Diaz
and Members, Board of County Commissioners

From: Daniella Levine Cava
Mayor 

Subject: Report on the 2022 Annual Report Card Program on the Health of Biscayne Bay
– Directive No. 180799

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 “stop-light” approach to reporting on the health of Biscayne Bay. The Resolution further directed that the health evaluation shall be data-driven, shall use sound scientific principles, shall incorporate information on water quality and habitat values throughout Biscayne Bay, shall 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.

Please see the attached annual report, 2022 Biscayne Bay Report Card, for your review. Out of the 12 regions in the Bay, this year’s Report shows improved stop-light scores in six areas and no area showed a deterioration in stop-light score. These results can vary from year to year, making it all the more important to continue our long-term commitment to ongoing Bay initiatives. The Report Card serves as an important tool to display data that we can use to target areas of critical concern in the Bay.

The Report Card was developed by staff in the Department of Regulatory and Economic Resources, Division of Environmental Resources Management (RER-DERM). The regular communication of this information to the Board of County Commissioners and the public is an important tool for communicating our progress in restoring Biscayne Bay. The County has 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.

Two years ago, a massive fish kill became the flashpoint for renewed attention to the health of the Bay. This event made our entire community aware of the importance of water quality. It also put a spotlight on the role that our activity on the land plays in impacting Biscayne Bay. We learned that nutrients, caused by pollutants from our streets and neighborhoods flowing off our “watershed” as both stormwater and groundwater, were in large part to blame for the die off. That is why our continued attention and commitment to reducing nutrients in Biscayne Bay is so important.

As our community has grown and developed, stewardship of our environment has become increasingly important yet more complex. The real key to protecting the Bay is not actually out

on the Bay—it is on land where we live and work. Whether it is the way in which we handle our waste, how we maintain our septic tanks, how we manage our yard waste or landscape, or even what we do with household goods, it all has the potential to impact our water on its journey from our land to the Bay.

Whether we are near it or not, we impact the Bay every day in the choices we make. We help the Bay when we decide not to litter, when we refrain from using fertilizer during the rainy season, when we make responsible choices about the maintenance of our septic tanks, when we are careful not to spill oil, fuel or other hazardous substances on the ground, and even when we choose to can our cooking oil and grease instead of dumping it down our drains. The actions we take each day can help or hurt our water quality and our Bay. We need to respect the Bay and its valuable natural resources—not just when we use it for recreation—but in our personal choices every day.

Biscayne Bay is closely linked to our quality of life as a community, therefore we protect the Bay as we plan for this County’s future. My administration has prioritized water resource protection by developing a suite of educational and legislative initiatives, working with the Board of County Commissioners, including better sanitation systems, reducing fertilizer runoff during the rainy season, finding better ways to manage water, and ensuring that we preserve areas for stormwater runoff. The County is educating our residents about the proper way to care for their septic systems because they can pollute our groundwater and need to be properly maintained. We are also implementing the septic-to-sewer conversion project, in addition to updating standards for septic systems in places where sewer connections are not yet feasible in order to reduce the amount of nutrients migrating through the groundwater to Biscayne Bay.

Enactment of new County Flood Criteria will also provide further solutions to our growth by updating minimum elevation requirements as we develop and redevelop, creating storage capacity during rain events within our urban areas as we prepare for the rising groundwater levels that will accompany sea-level rise.

In addition, the County continues to support its Environmentally Endangered Lands Program, which manages over 27,000 acres of conservation lands that not only preserve important habitat but also provide natural areas for water to go and for water quality to improve on its journey to the Bay.

All of this is in addition to our efforts to educate our community about our new fertilizer ordinance, which provides comprehensive rules for the proper use of fertilizer and also prohibits their use during the rainy season.

Tomorrow we are celebrating the 40th Anniversary of Baynanza, the County’s signature annual clean-up of Biscayne Bay. Miami-Dade County has been committed to cleaning up the Bay for four decades. During those 40 years, over 200,000 people have removed more than 2 million pounds of trash from our shoreline. And in that same time, our community has grown by over a million people. That is why our continued attention and commitment to protecting Biscayne Bay is even more important today than it was when the first Baynanza cleanup was organized 40 years

ago. Baynanza is not just a clean-up day, it is a celebration of our community’s commitment to the health of our Bay.

We will continue to provide solutions that will allow us to live in South Florida in a way that minimizes impacts on resources and preserves our quality of life so we can continue to welcome the growing numbers of people who wish to make Miami-Dade home. Clean water, clean air, streets that are not flooded—my administration is working each day to make changes that build resilience today and for our future. Managing the way, we live on the land is key to the health of Biscayne Bay.

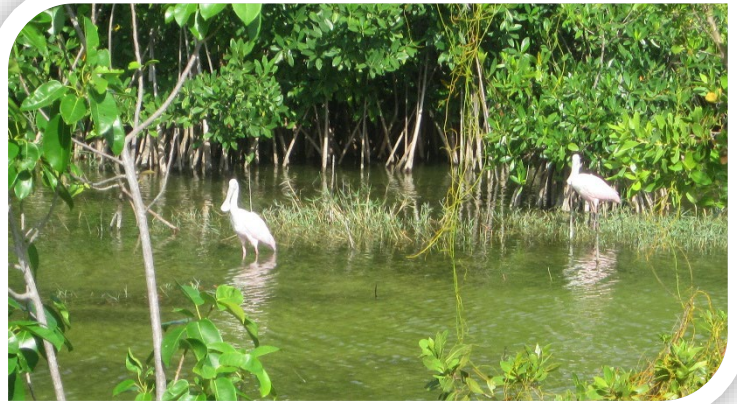
In accordance with Ordinance 14-65, this memorandum and report will be placed on the next available Board meeting agenda. If you have any questions regarding this report, please contact Lourdes Gomez, RER Director, at 305-375-2886 or Lourdes.Gomez@miamidade.gov or Rashid Istambouli, Interim Assistant Director, RER-DERM at 305-372-6754 or Rashid.Istambouli@miamidade.gov.

Attachment: Report- *2022 Biscayne Bay Report Card* (DERM)

- 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
- Lee N. Hefty, Environmental Policy Advisor, Department of Regulatory and Economic Resources
- Rashid Istambouli, Interim Assistant Director, Division of Environmental Resources Management
- Irela Bagué, Chief Bay Officer
- Inson Kim, Director, Department of Communications and Customer Experience
- Jennifer Moon, Chief, Office of Policy and Budgetary Affairs
- Yinka Majekodunmi, Commission Auditor
- Basia Pruna, Director, Clerk of the Board
- Eugene Love, Agenda Coordinator

2022 Biscayne Bay Report Card

Since the onset of the COVID-19 pandemic, we have been reminded of how important Biscayne Bay is to our community. Some have found immense relief, both physical and mental, by taking up or continuing outdoor activities in and along its shores. In the wake of the ecological impacts we have witnessed, appreciation of and support for our Bay was unparalleled in 2021 with many lending their voices to advocate for its restoration. Following the Biscayne Bay Task Force's efforts and its subsequent recommendations submitted in 2020 to the Board of County Commissioners (Board), the County has received grant funding through the Florida Department of Environmental Protection through its water quality improvement grant program as well as its Resilient Florida program. Water quality improvement efforts include investigations to identify and reduce or eliminate sources of pollution and better understand the extent to which pollution travels through the watershed, conduct septic to sewer conversions, and implement innovative wastewater and stormwater projects. Resilience funding will help the County address stormwater issues, restore important coastal and upland habitats, and acquire environmentally endangered lands which also play an important role protecting Biscayne Bay.



Roseate spoonbills in wetlands near Biscayne Bay, photographed by a DERM hydrogeologist studying water levels and water quality in the southern portion of the watershed.

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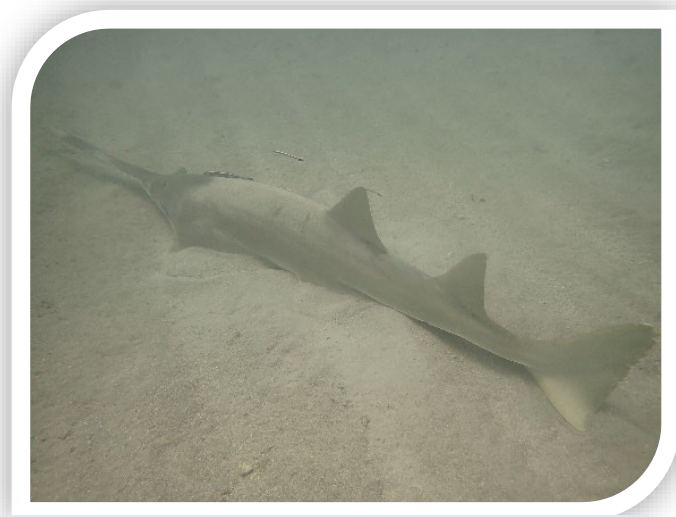
Through the implementation of the Biscayne Bay Task Force recommendations, the Board passed a County-wide fertilizer ordinance to help reduce pollutant loading to Biscayne Bay and its tributaries. During the summer months, when rainfall is heaviest, fertilizer use is restricted to prevent fertilizer and the nutrients it contributes from potentially impacting the Bay, canals, and groundwater. Furthermore, the use of fertilizer containing phosphorus is prohibited year-round. Another component of the Task Force's recommendations that was accomplished this year was the creation of the Biscayne Bay Watershed Management Advisory Board (BBWMAB), with its first meeting held in December. The BBWMAB is comprised of a diverse group of Bay stakeholders, including some members of the Board, with the primary objective to develop a watershed management plan for the Bay and oversee the various aspects of Biscayne Bay restoration per the Task Force recommendations. The work of the BBWMAB, additional information about the County's fertilizer ordinance, and other accomplishments can be found at www.miamidade.gov/BiscayneBay.

In 2018, the Board directed DERM to develop and implement an annual report card program that would serve as a user-friendly update on the status of the Bay's overall health using a red, yellow, and green "stoplight" approach. A rigorous methodology was established to create a historic baseline that represents healthier Bay conditions against which each current year of data will be compared as well as a process for analyzing five water quality parameters and two habitat parameters. To evaluate current conditions of the Bay, the annual geometric means for each parameter are assigned a stoplight score and are compared to the historic baseline. The evaluation presented provides an overall stoplight score per region. The table below provides a snapshot of changes from year to year without inferring any statistically significant trends. Trends will be evaluated over time when additional years of data analysis can be performed. It is noted that short-term changes between years are not uncommon as climatological patterns, changes in rainfall and incidence of severe storms, water management activities and other factors differ between years. Presented herein via the link below is the 2022 Biscayne Bay Report Card, reporting on the state of the Bay based on data collected during the 2021 calendar year. The online interactive tool showcasing the report card and a discussion of results can be found at www.miamidade.gov/BiscayneBay. More information on the methodology describing how the report card was

developed can be found at the “Methodology” tab of the online tool. Information on what the public can do to help protect and restore Biscayne Bay can be found at the “Restoring Biscayne Bay” tab.

The findings of the 2022 Biscayne Bay Report Card continue to support analyses from prior years indicating that nutrients and bacteria from within the watershed are documented in canals at concentrations that can ultimately impact Bay resources. Conditions noted in the 2022 Report Card are similar to those found in past report cards, with few notable changes and no regions shifting from “Good” to “Fair” or “Fair” to “Poor”. The western region of the Bay along the shoreline and the highly compartmentalized basins of northern Biscayne Bay largely remain in the “poor” to “fair” range. Since the first report card in 2019, most northern bay regions are noted as “fair” or “poor” overall. Slight improvements in water quality or habitat cover can afford a change in stoplight score but does not necessarily reflect a marked improvement or enduring condition. While minor in scale of improvement, the South North Bay-C and North Central Offshore regions are noted as “Good”, having been “Fair” in prior year results. South North Bay-A, where significant seagrass die-off and fish kills have occurred, continues to receive a score of “Poor”. Chlorophyll concentrations and water clarity improved in Manatee Bay. Submerged aquatic

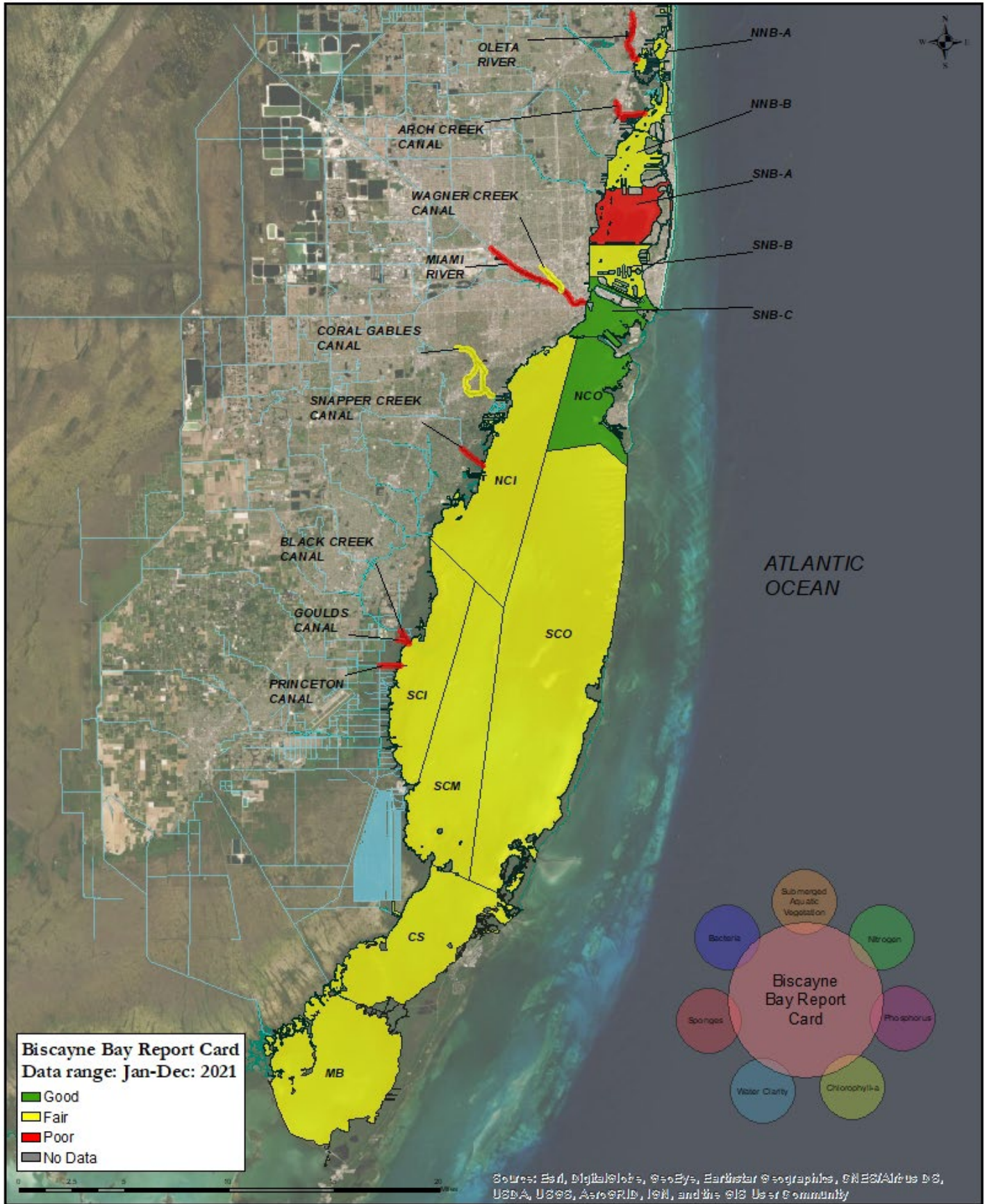
vegetation scores in northern Biscayne Bay largely remain “poor”, as chlorophyll and total nitrogen continue to be a significant issue across large swaths of the Bay. Sponge frequency, representative of hardbottom habitat in the Bay, largely remained in the “poor” or “fair” condition across the Bay.



Smalltooth sawfish, photographed by DERM biologists in northern Miami-Dade County, are endangered and depend on seagrass and mangrove habitat as juveniles.

As we work diligently and quickly to restore Biscayne Bay, it is important to note that the ecological recovery of the Bay will take some time to achieve. Over the next years, the County will continue to engage with stakeholders, academic institutions, state and federal resource agencies and municipalities to set goals and priorities as well as undertake infrastructure projects and technical investigations that will help identify potential sources of pollution and continue our work to reduce or eliminate pollution reaching our Bay.

2022 Biscayne Bay Report Card



Biscayne Bay Report Card
 Data range: Jan-Dec: 2021

- Good
- Fair
- Poor
- No Data



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Report Card Region	2019 Score	2020 Score	2021 Score	2022 score	2022 Biscayne Bay Health Status by Region		
					0 - 2.9	2.91 – 3.9	3.91 +
NNB-A	Fair	Poor	Poor (2)	Fair (3)	Highly reduced seagrass coverage with little recovery, nutrient inputs from canals, and elevated chlorophyll concentrations relative to baseline conditions. Slight improvements in Enterococci, SAV, and Total Nitrogen from 2021 that collectively improves overall score.		
NNB-B	Fair	Fair	Poor (2.9)	Fair (3)	Reduced seagrass coverage following die-off events with little recovery, nutrient inputs from canals, and elevated chlorophyll concentrations relative to baseline conditions. Slight improvement in Chlorophyll-A since 2021.		
SNB-A	Poor	Poor	Poor	Poor	Continued decline relative to baseline conditions following a combination of the relatively recent seagrass die off with little indication of recovery, and elevated chlorophyll concentrations and nutrient inputs from canals.		
SNB-B	Poor	Fair	Fair	Fair	From the Julia Tuttle Causeway to MacArthur Causeway, highly reduced seagrass coverage, nutrient inputs from canals, and elevated chlorophyll concentrations relative to baseline conditions.		
SNB-C	Fair	Fair	Fair (3.9)	Good (4)	Reduced seagrass coverage, nutrient inputs from the Miami River which contributes a significant volume of water to Biscayne Bay, and elevated chlorophyll concentrations relative to baseline conditions. Slight improvement in Sponge Metric since 2021.		
NCI	Fair	Fair	Poor (2.8)	Fair (3)	Algal blooms that impacted seagrass coverage, nutrient inputs from canals, and elevated chlorophyll concentrations relative to baseline conditions. Considerable improvement in Water Clarity and Slight improvement in SAV and Total Nitrogen since 2021. Slight improvement in SAV and Total Nitrogen, and some improvement in Water Clarity since 2021.		
NCO	Fair	Fair	Fair (3.4)	Good (3.5)	Reduced seagrass coverage, elevated chlorophyll concentrations, and some elevated nutrient inputs relative to baseline conditions. Slight improvement in SAV, Sponge Frequency and Water Clarity, but slight increase in Total Nitrogen concentrations since 2021.		
SCI	Poor	Fair	Fair	Fair	Reduced seagrass coverage with little recovery, reduced sponge frequency, nutrient inputs from several canals and elevated chlorophyll concentrations relative to baseline conditions.		
SCM	Fair	Good	Fair	Fair	Although seagrass coverage is consistent with historic baseline conditions this basin exhibits some elevated nutrient inputs.		
SCO	Good	Fair	Fair	Fair	Seagrass coverage and most nutrient indicators in this basin are consistent with baseline.		
CS	Fair	Fair	Fair	Fair	Reduced seagrass coverage; some nutrient inputs and elevated chlorophyll concentrations relative to baseline conditions.		
MB	Poor	Poor	Poor (2.5)	Fair (3)	Reduced seagrass coverage, reduced sponge frequency, some nutrient inputs and elevated chlorophyll concentrations relative to baseline conditions. Notable improvement in Chlorophyll-A and slight improvement in Water Clarity since 2021.		