2024 Marine Resources Council Indian River Lagoon Report

Methods

For more information, please contact mara@mrcirl.org

Overall Health Assessment

The general health assessment of the Indian River Lagoon sub-basins was determined by averaging the scores of five different categories: sediment health, wastewater spills, harmful algal blooms, water quality, and seagrass coverage. The following values were used to categorize the general assessment scores.

Score	Average Category Scores
Good (3)	2.6-3.0
Okay (2)	1.7-2.3
Poor (1)	1.0-1.6
Very Poor (0)	0.0-0.9

Sediment Health Assessment

The sediment health assessment of the Indian River Lagoon sub-basins was determined using data obtained from the Smithsonian Fort Pierce Marine Station and Florida Institute of Technology. It was decided to show these data as points instead of a general sub-basin score due to the lack of comprehensive data from throughout the lagoon. Organic matter content (%) was chosen as the indicator of sediment quality as it is directly related to benthic infauna community composition. An organic matter content greater than 5% is considered unhealthy. The following values were used to categorize the point scores.

Score	Organic Matter Content (%)
Good	0-5
Okay	5.1-10
Poor	10.1-15
Very Poor	>15.1

Acknowledgements
Thank you to Dr. Holly Sweat from the Smithsonian Fort Pierce Marine Station for compiling and sharing her data. Thank you to the Johnson Lab at Florida Institute of Technology for compiling and sharing their data.

Wastewater Spill Assessment

The wastewater spill assessment of the Indian River Lagoon sub-basins was determined using data from the Florida Department of Environmental Protection. It was decided to show these data as points so that the size and quantity of spills could be visualized. This assessment was not chosen to be a sub-basin score due to the variable nature of the data.

Acknowledgements
Thank you to the Florida Department of Environmental Protection for compiling and sharing the wastewater spill data for this project.

Harmful Algal Bloom Assessment

The harmful algal bloom (HAB) assessment of the Indian River Lagoon sub-basins was determined using chlorophyll-a data from the Watershed Information Network. Coordinate points for the blooms were unavailable, but it is important to note that even a small HAB can have long reaching effects. The following values were used to categorize the assessment scores.

Score	**Chlorophyll-a (ug/L)**
Good	<5
Okay	5.1-12.5
Poor	12.6-19.9
Very Poor	>20

Water Quality Assessment

The water quality assessment of the Indian River Lagoon sub-basins was determined using data from the Watershed Information Network. Data was analyzed for dissolved oxygen (DO), turbidity, chlorophyll-a, pH, salinity, total nitrogen (TKN), and total phosphorus (TP-T). Median values were calculated to give each sub-basin an individual score per subcategory. Finally, the subcategory grades were compiled and averaged to give the complete water quality assessment score. The following values were used to

categorize the assessment scores. Breakdown of assessment score values was obtained from the Environmental Protection Agency.

Score	Chlorophyll-a (ug/L)
Good	<5
Okay	5.1-12.5
Poor	12.6-19.9
Very Poor	>20

Score	Turbidity (NTU)
Good	<1.5
Okay	1.6-3.0
Poor	3.1-4.5
Very Poor	>4.6

Score	Dissolved Oxygen (mg/L)
Good	>6
Okay	5.0-5.9
Poor	4.0-4.9
Very Poor	>4.0

Score	pH (SU)
Good	6.5-8.0
Okay	5.5-6.4 / 8.1-9.4
Poor	4.5-5.4 / 9.5-10.4
Very Poor	<4.5 / >10.5

Score	Total Nitrogen (mg/L)
Good	<0.1
Okay	0.11-0.3

Poor	0.31-0.49
Very Poor	>0.5

Score	**Total Phosphorus (mg/L)**
Good	<0.03
Okay	0.031-0.066
Poor	0.067-0.99
Very Poor	>0.1

Acknowledgements
Thank you to Dr. Austin Fox of the Florida Institute of Technology for his guidance on assessment values and data analysis. Your insight was incredibly valuable.

Seagrass Coverage Assessment

The seagrass coverage assessment of the Indian River Lagoon sub-basins was determined using data from Save Our Indian River Lagoon's (SOIRL) Seagrass Mapping Tool and Fish and Wildlife Conservation Commissions' (FWC) Seagrass Habitat Map. Seagrass coverage from 2022-2023 was compared to coverage from 2023-2024. The following values were used to categorize the assessment scores.

Score	**Seagrass Coverage (hectares) 2023 coverage compared to 2024**
Better	Significant increase in coverage
Okay	Slight increase in coverage / same coverage
Poor	Slight decrease in coverage
Very Poor	Significant decrease in coverage / no coverage

Acknowledgements
Thank you to SOIRL (especially Virginia Barker and for providing their seagrass mapping tool rasters and associated data).