



# Indian River Lagoon Annual Report Card:

The Indian River Lagoon (IRL) is the second largest, and one of the most biologically diverse estuary systems in the nation. In addition to being an ecological treasure, the system provides billions in economic value to the region. Over the past 50 years, and more markedly since 2008, the IRL system has been in steep decline as evidenced by a loss of habitat, fisheries, and a general decline in water quality. Many agencies, universities, and community groups are working together to bring the Lagoon back to life. A publically-available, comprehensive annual evaluation of these efforts would aid not only in coordination of these efforts, but also in bolstering community understanding and support. Such environmental “report cards” have had great success in other regions, most notably the Chesapeake Bay Estuary. The proposed IRL annual report card will cover social and economic metrics in addition to environmental measures, making it a truly novel undertaking. An outline of the proposed report card can be seen below. Funds acquired for development of the annual report card are necessary for:

- Funding Annual Representative Survey’s to assess Economic and Social Metrics
- Acquisition of proper data, statistical packages, and model licenses
- Funding University/Agency/Non-profit partnerships for research and data sharing
- Production and distribution of Report Card Materials

## Example Report Card Metrics:

### 3 Areas: Social, Economic, Environmental

- **Example Metrics- Social**
  - Public Involvement
    - Proposed Measure:
      - Representative survey responses to proposed questions aimed at gauging environmentally significant behavior (see Stern, 2000) as compared to some goal OR as compared to previous year’s results
      - Number of participants in “Go Floridian”, “FL friendly yards”, or similar programs as compared to a goal number , or as a % increase from previous years
  - Political Will
    - Proposed Measure:
      - # and type of regional regulations passed/proposed as compared to a goal (goal idea- % coverage of important factors- nutrients, habitat protection, etc.?)
- **Example Metrics- Economic (see 2007 IRL Economic Assessment)**
  - Value of Living near the Lagoon
    - Proposed Measure
      - Hedonic Price Analysis % change from year to year
  - Value of Lagoon Fisheries
    - Proposed Measure



- Data from FWC- estimated value compared to goal
  - Value of Recreation on the Lagoon
    - Proposed Metric
      - Representative Survey % change from year to year as compared to goal
  - Non-Use Value
    - Proposed Metric
      - Representative Survey; % change from year to year as compared to goal
- **Example Metrics- Environmental**
  - Water Quality
    - Nitrogen and Phosphorous
      - Proposed Measure:
        - Avg. value (mg/L) as compared to goal
    - Water Clarity:
      - Proposed Measure:
        - Avg. Value (Secchi Depth) as compared to goal
    - TMDL
      - Proposed Measure:
        - Regional progress towards adopting and achieving TMDL goals as compared to outlined goals
  - Habitat
    - Seagrass
      - Proposed Measure
        - Hectares recovered as compared to baseline goal
    - Muck
      - Proposed Measure:
        - Proposed coverage as compared to baseline goal
        - Lbs. (or other measure) removed through projects
  - Wildlife
    - Shellfish/ Oyster
      - Proposed Measure
        - Estimated population as compared to baseline goal
        - # of “planted” oysters
    - Fish Species (?)
    - Other Wildlife Species (Birds, Dolphins, Turtles?)

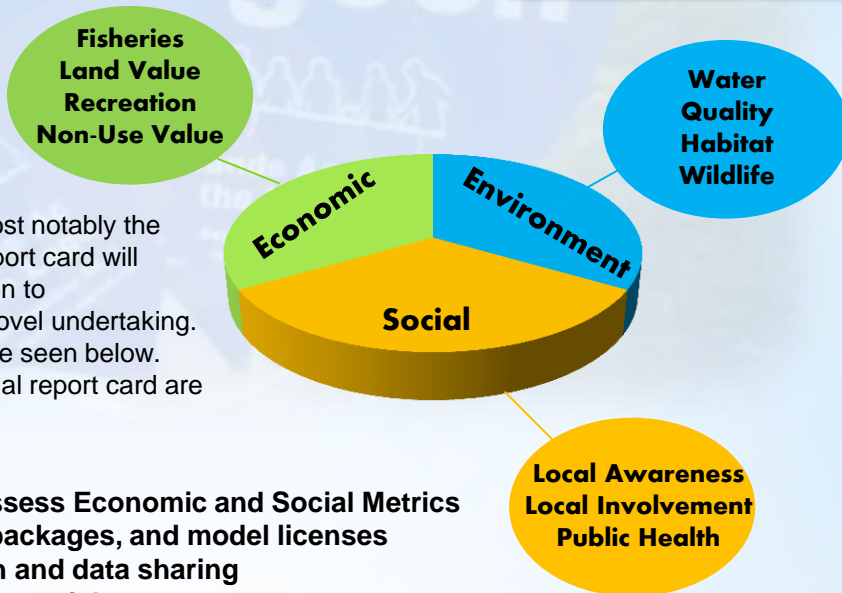


# Report Card Metrics & Possible Measures

## The Indian River Lagoon

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- Funding Representative Surveys to assess Economic and Social Metrics
- Acquisition of proper data, statistical packages, and model licenses
- Promotion of partnerships for research and data sharing
- Production/distribution of report card materials

Category	Metric	Possible Measure(s)
Environmental	Water Quality	<b>Nitrogen, Phosphorous:</b> Percent completion of Total Maximum Daily Load Goal. <b>Water Clarity:</b> Average Value as compared to goal
	Habitat	<b>Sea Grass Coverage:</b> Percent completion of sea grass restoration goals. <b>Muck Removal:</b> Percent completion of muck removal goals.
	Wildlife	<b>Population:</b> Estimated number of indicator species (Manatee, Shellfish) as compared to goal. <b>Health:</b> Number of annual illness or kill events as compared to goal.
Social	Local Awareness	<b>Quantitative Survey:</b> Average local awareness of lagoon issues as compared to goal.
	Local Involvement	<b>Participation Count:</b> Number of local participants in lagoon-related events as compared to goal
	Public Health	<b>Threat Analysis:</b> Number of annual Lagoon-related health threats as compared to goal.
Economic	Fisheries	<b>Value Model:</b> Estimated value of lagoon fisheries as compared to goal
	Property Values	<b>Value Model:</b> increase or decrease in value of Lagoon-adjacent properties as compared to goal
	Recreation	<b>Quantitative Survey:</b> Dollar amount spent on recreation within the Lagoon-percent change as compared to goal
	Non-Use	<b>Quantitative Survey:</b> Average local value given to non-use categories (wildlife viewing, etc.), percent change as compared to goal.

# Example Metric Report:

# Environmental-

Metrics used to determine the Lagoon's environmental grade are water quality, habitat, and wildlife. The overall score is calculated by averaging the grades from the three sub-categories

**Overall Grade:**

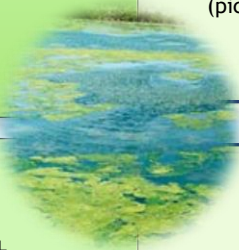
**C-**

**Water Quality**

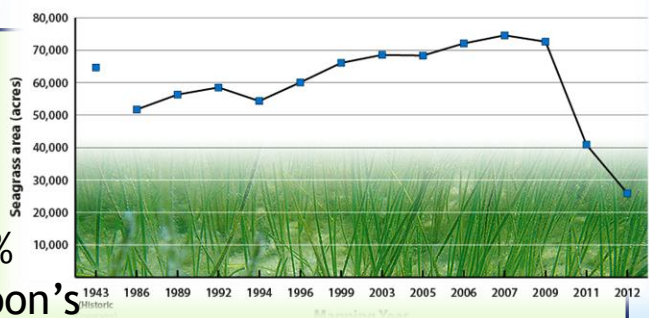
**C**

**Example-Nutrients:** As of this year, the Lagoon is not meeting standards set for Nutrients. Nutrient loading is thought to contribute to algal bloom events, including the “super-bloom” that occurred in 2011.

(pictured below, left- Image- spacecoastdaily.com)



**Indian River Lagoon Seagrass Coverage**  
(within SJRWMD to Fort Pierce Inlet)



**Habitat**

**D**

**Example: Sea Grass:** Roughly 60% Of the Lagoon's sea grass coverage has been lost since the “super bloom” of 2011. (see chart, above, right from SJRWMD)

**Wildlife**

**C**



**Example: Health-** This year we saw an increase in wildlife illness and kill events, including increased accounts of papillomavirus in local bottlenose dolphins

(pictured, left- Image Bossart, 2007)