EVERGLADES REPORT CARD PROVIDES SYNTHESIS OF SYSTEM STATUS REPORT

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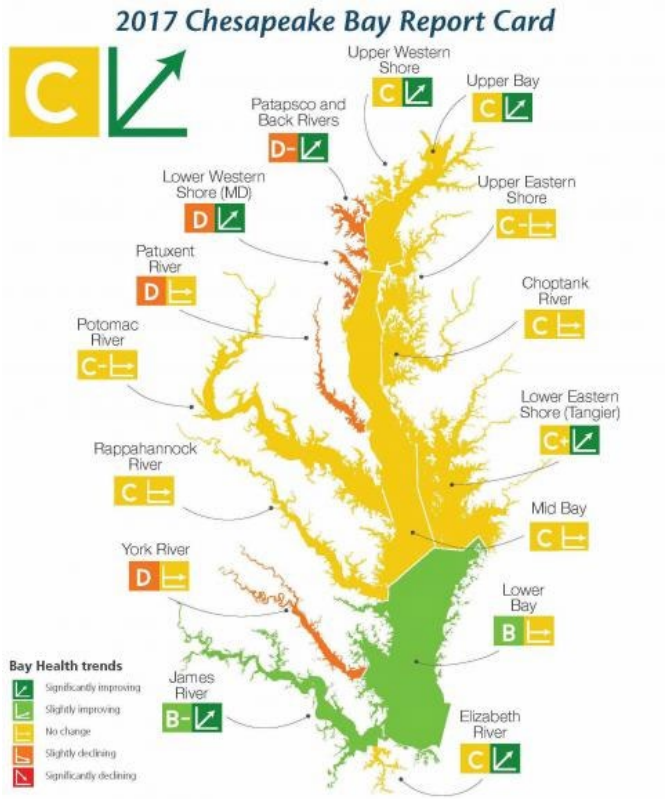
Report Cards Address a Communications Challenge

- Everglades and Chesapeake Bay on parallel paths:
  - 1970s, 1980s: growing concern
  - 1990s: recognize need for system-wide approach
  - 2000: launch regional ecosystem restoration initiatives, adaptive management
- 2006 first Chesapeake Bay report card, Everglades SSR



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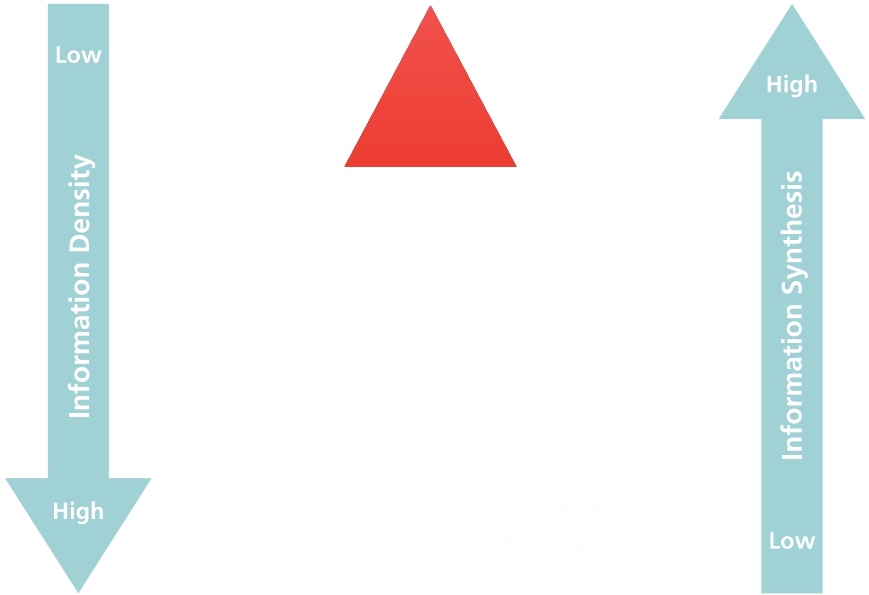
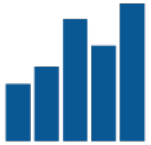


5 step Process for Report Card Development

1 CONCEPTUALIZE

2 CHOOSE INDICATORS



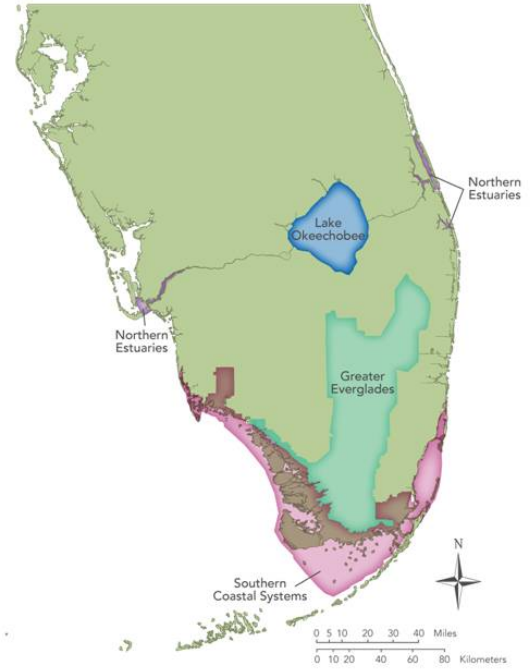
3 DEFINE THRESHOLDS

4 CALCULATE SCORES

5 COMMUNICATE RESULTS

Conceptualize

- Everglades ecosystems organized into 4 distinct sub-systems
- Conceptual ecosystem models, hypothesis clusters, etc.
- Report card introduces more narrative approach to assessment



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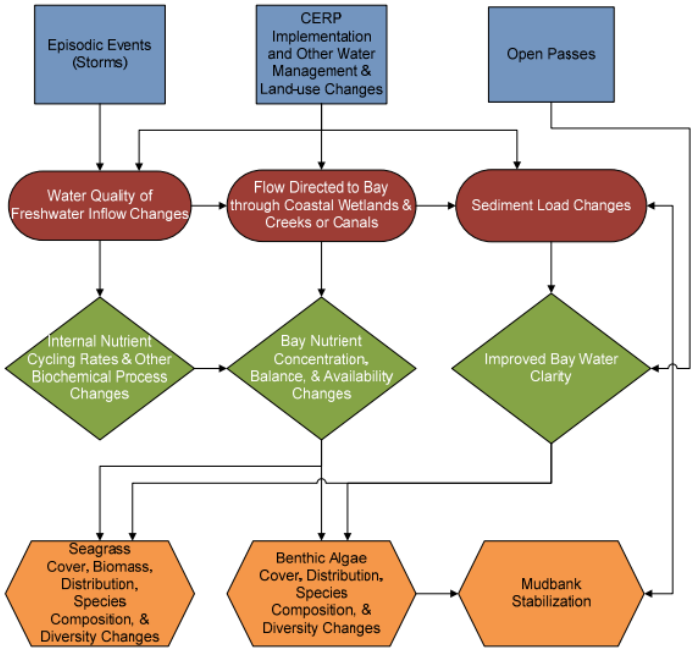

FIGURE 3-36. SOUTHERN COASTAL SYSTEMS SUBMERGED AQUATIC VEGETATION HYPOTHESIS CLUSTER DIAGRAM

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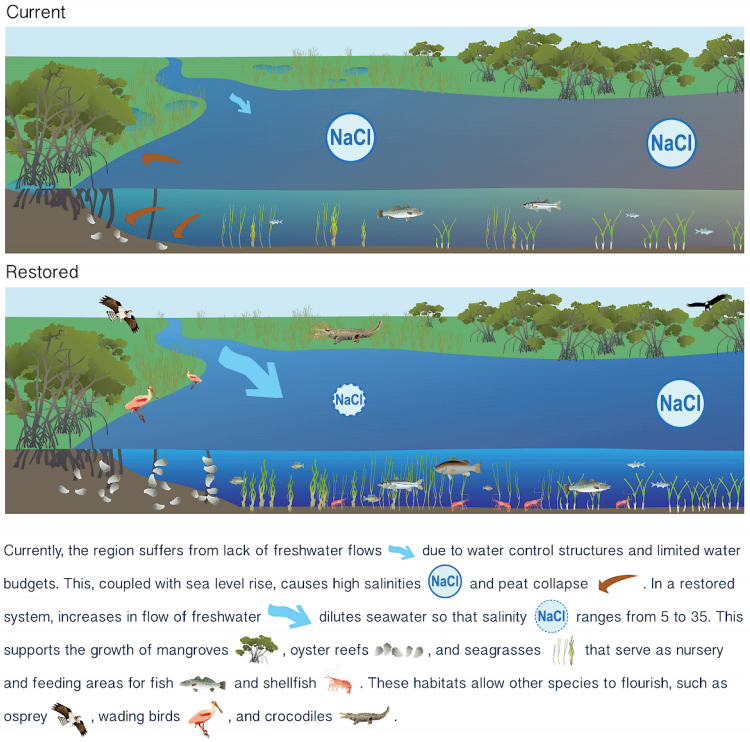

Select indicators, Determine thresholds, and Compute scores

- Existing indicators: Stop light indicators, previous SSR
- How to assign scores?
- Apply process
- Work with individual PIs on scores and narrative

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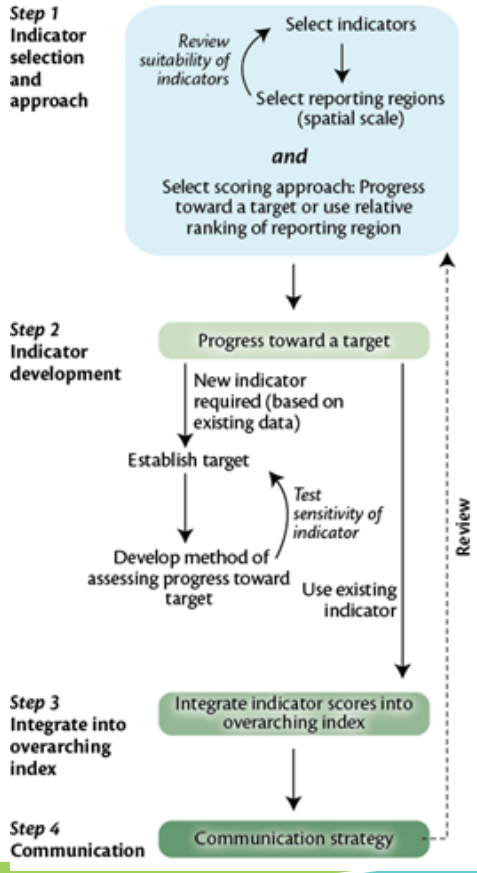

Example: Chlorophyll in Southern Coastal Systems

- Existing stop light indicator based on Boyer et al. (2009)
- Systematic water quality monitoring since mid-1990s
- Regions of similar influence
- Reference period – prior to 2005
- Compare annual median of monthly values to median of reference period

Florida Bay

Water year	2013	2014	2015	2016	2017
WFB					
SFB					
NCFB					
NEFB					
BMB					

Biscayne Bay

Sub-region	2013	2014	2015	2016	2017
NBB					
CBB					
SBB					

Example: Chlorophyll in Southern Coastal Systems

- Florida Bay – “after 8 years of good scores in NCFB and WFB, scores became “cautionary” in WY2016, WY2017 likely from nutrient release from seagrass dieoff in WY2016”
- Biscayne Bay – “plagued with algal blooms and seagrass dieoff,” persistent decline
- Revise scoring algorithm

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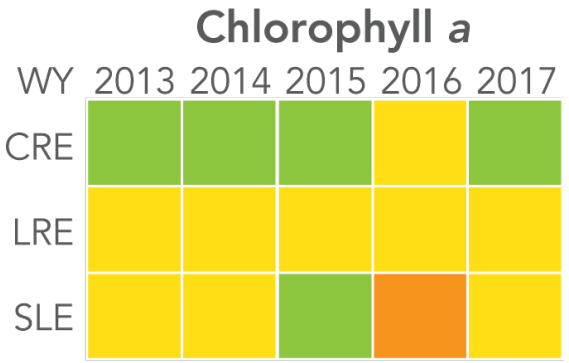
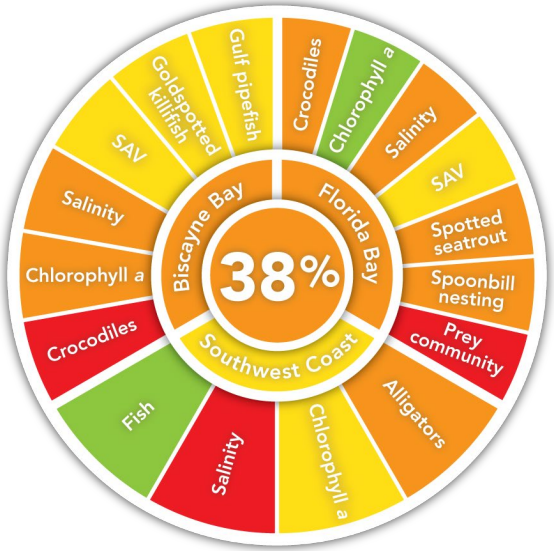
Example: Chlorophyll in Northern Estuaries

- Scored by station
- Period of available data varies, beginning 1995, 2007
- Scoring based on frequency of occurrence above/below long-term median
- Alternative – use new FDEP numeric criteria



Select indicators, Determine thresholds, and Compute scores

- Roll-up by averaging scores
- Discussion:
  - Context of restoration progress measured by condition of ecosystem
  - CERP-specific
  - 5-year period – GPA rather than test score, semester grade
- Conclusion: still have work to do…



0–20% Very poor

These regions or indicators are extremely vulnerable and are unable to provide ecosystem function. Essential ecological functions are extremely degraded and unsustainable.

20–40% Poor

These regions or indicators are highly vulnerable and are struggling to provide ecosystem function. Essential ecological functions are highly degraded and unsustainable.

40–60% Fair

These regions or indicators are vulnerable to further ecological degradation and provide minimal ecosystem function. Essential ecological functions are degraded and unsustainable.

60–80% Good

These regions or indicators are slightly vulnerable, but are maintaining ecosystem function. Essential ecological functions are somewhat sustainable.

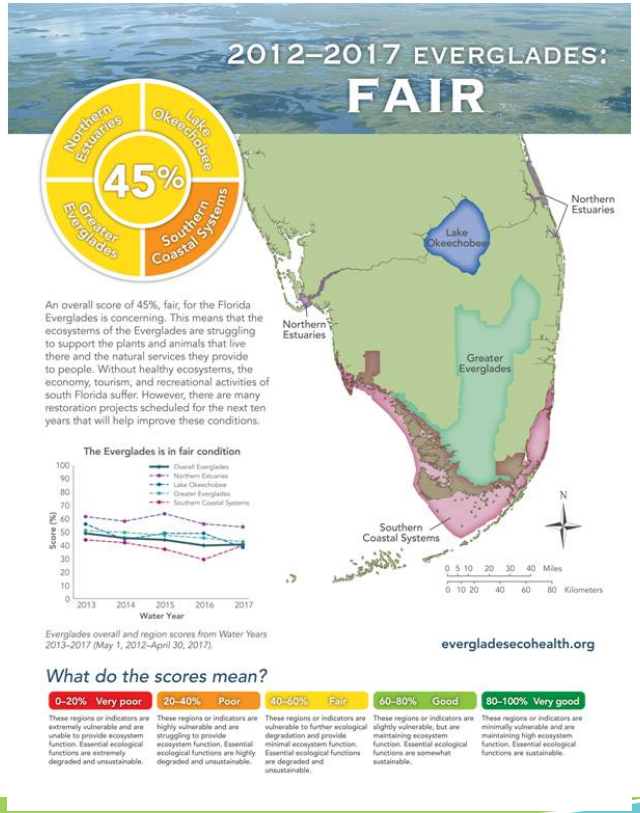
80–100% Very good

These regions or indicators are minimally vulnerable and are maintaining high ecosystem function. Essential ecological functions are sustainable.

Communicate Results

- High-level:
  - Report card document
  - Talking points
- Detailed:
  - 2018 System Status Report
  - Methods Report
  - Website

https://evergladesecohealth.org/



Many people contributed to create the Everglades Report Card

Laura Brandt
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Phyllis Klarmann
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Agnes Mclean
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Steve Schubert
Fred Sklar
Christa Zweig

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Abstract

The 2019 System Status Report includes, for the first time, an ecosystem health report card for the Everglades. RECOVER adopted the report card format in the 2019 System Status Report (SSR) to better communicate the results to the diverse target audience for the SSR.

Similar to school report cards, ecosystem health report cards compare performance-driven metrics to a goal or ecologically relevant threshold. Report cards integrate large, complex datasets into a single score that's easily understood. Report cards are an important component of conservation and restoration planning in south Florida, as they are designed to clearly communicate the status of ecosystem health of the Florida Everglades to a spectrum of audiences.

The process of creating an ecosystem health report card can be broken down into the following steps:
A conceptual framework is developed to identify indicators of valued ecosystem components and ecosystem processes that will be used to assess the health of the system.
Response thresholds are identified; these which can be derived from regulatory or management guidelines, biological limits, or reference conditions.
Indicator scores characterize conditions as "good", "fair", or "poor"; scores and are based on a comparison of response thresholds to measured values of the indicators.
Communication of results is aided by the use visual elements, including photos, maps, figures, and conceptual diagrams.

Conducting a comprehensive assessment on a system with the size and complexity of the Greater Everglades presents unique challenges. The SSR provides an overview of ecological restoration in each of four distinct regions that span the extent of south Florida: Lake Okeechobee, Northern Estuaries, Greater Everglades, and Southern Coastal Systems. To do so requires assembling the results of data and analysis from dozens of principal investigators. The report must document the analysis of data and interpret the results for audiences that include managers, decision-makers, and the public.

The report card serves primarily as a communication tool that synthesizes the results into a form that effectively reaches this diverse audience. The series of workshops used to implement the process of building the report card also served to facilitate the task of producing the system status report by organizing the work of the large group of contributors. Developing and scoring the indicators used in the report card required the acquisition and analysis of a vast amount of data, and this helped to focus the writing on reporting conditions in the Everglades' ecosystems. The value of this approach was evident in the greater engagement and feedback from scientists, NGO's, public and managers during the review process.

BIO (50-word maximum): William K. Nuttle has 25 years of experience working with water managers, engineers, Earth scientists and ecologists in planning eco-hydrology research and to applying the results of this research to ecosystem restoration and management of natural resources.

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