

Discussing Regional Conceptual Ecosystem Models (CEM)

at the 2017 Recover/SCG Science Meeting:

The Total System CEM

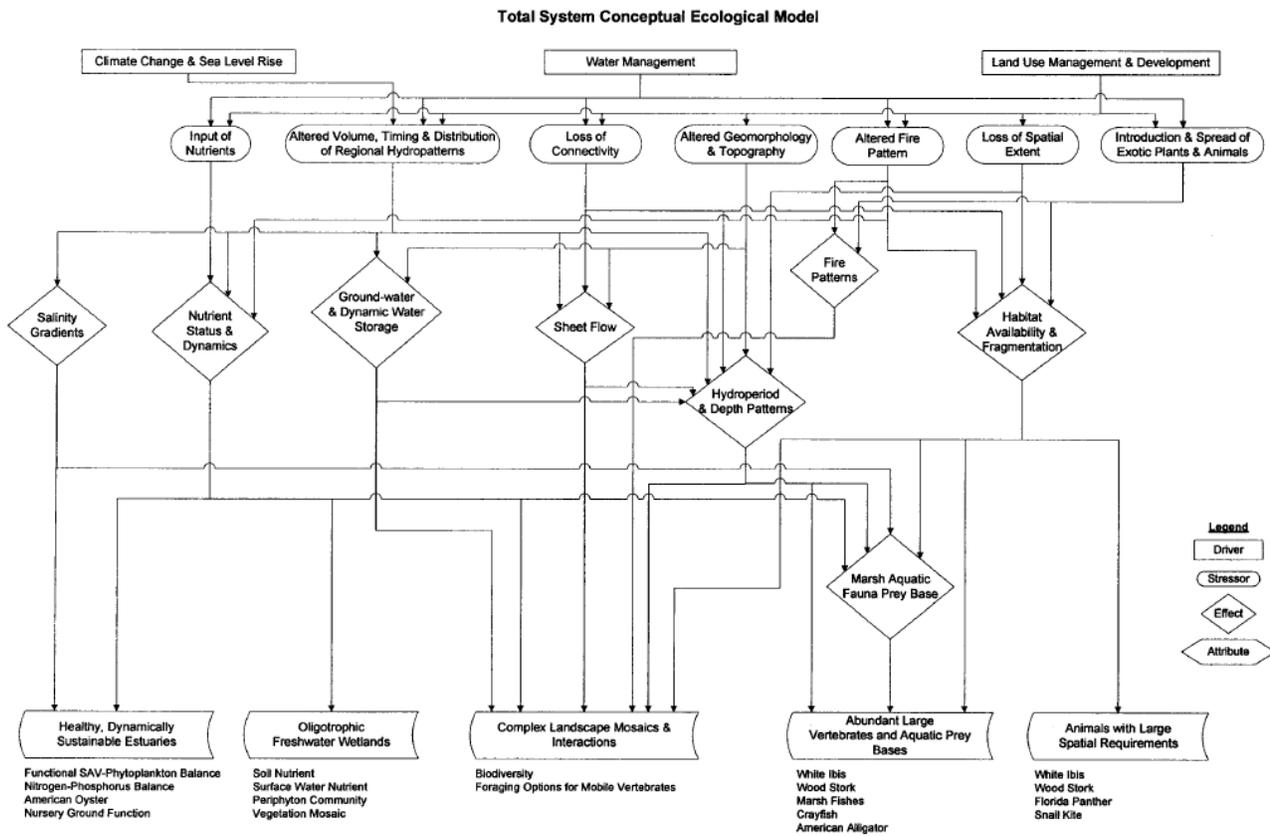
Introduction

This discussion of the Total System CEM is designed to provide logistic guidance to the Regional Coordinators and RECOVER Facilitators in their respective break-out groups on day 2. The tables below that ask questions related to the drivers and stressors associated with the CEM's that were published in Wetlands in 2005 are designed to organize your thoughts on CEM modifications and hypotheses.

Goals associated with our review of the Total System CEM:

- 1) Provide an overview of the Total System CEM and describe its salient features, including a description of its defining characteristics.
- 2) Capture the full range of thought associated with how the drivers and stressors have changed since first published and how they are likely to change by 2050.

Here is the Total System CEM as published in 2005:



Definitions

Driver

Driving forces that occur outside the natural system, which have large-scale influences on natural systems. Drivers are natural forces (e.g., sea-level rise) or anthropogenic (e.g., water management).

Stressor

Physical or chemical changes that occur within natural systems that are brought about by drivers, causing significant changes in biological components, patterns and relationships in natural systems.

Ecological Effects

Physical, chemical, and biological responses caused by stressors

Attributes

A parsimonious subset of all potential biological elements or components of natural systems that are representative of overall ecological conditions of the system. Attributes typically are populations, species, guilds, communities, or processes. Attributes, also known as indicators or endpoints, are selected to represent known or hypothesized effects of stressors (e.g., nesting wading bird numbers) and elements of systems that have important human values (e.g., endangered species, sports fishing).

Defining Characteristics of the Total System CEM

“Defining characteristics of the ecosystem are 1) abundant large vertebrates and aquatic prey bases, 2) animals with large spatial requirements, 3) healthy, dynamically sustainable estuaries, 4) oligotrophic freshwater wetlands, and 5) complex landscape mosaics and interactions.”

The Process

Updating the Drivers

Facilitators will ask that each participant take 2-3 minutes to address, in writing, each Driver. It is recommended that the facilitators address and discuss each driver, one-driver-at-a-time. Notice that the table has empty rows after each Driver. This allows you to delve a little deeper into the exact nature of the driver.

Updating the Stressors

Facilitators will ask that each participant take 2-3 minutes to address, in writing, each Stressor. It is recommended that the facilitators address and discuss each stressor, one-stressor-at-a-time. Notice that the table has empty rows after each Stressor. This allows you to delve a little deeper into the exact nature of the Stressor.

Wrap-up, Conclusions and Action Items

If there is time, the facilitators will summarize the final product and identify where there were agreements and disagreements. Please hand in their written comments.

What do you think should be the next steps in this RECOVER CEM update?

Table 1. Total System CEM Drivers. Question 1 – Given what we now know, compared to 2005, have the influences of the Drivers changed? If so, how? Question 2 – In the next 30 years, without Restoration, will the influences of the Drivers change? If so, how?

- No Change = 0
- Increasing Influence = (+) or (++)
- Decreasing Influence = (-) or (--)
- Unsure = (?)

Contact: Name, Title, Affiliation, Email, Phone _____

Driver	Changed since 2005?	How? – Since 2005	Predicted for 2047	How? – for 2047
<i>Climate Change and Sea Level Rise</i>				
Additional Comments and Notes				
<i>Water Management</i>				

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Additional Comments and Notes				
<i>Land Use Mgmt and Development</i>				
Additional Comments and Notes				
<i>Other Drivers?</i>				

Additional Comments and Notes	
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Table 2. Total System CEM Stressors. Question 1 – Given what we now know, compared to 2005, have the threats from the stressor remained the same, decreased or increased? If so, how? Question 2 – In the next 30 years, without Restoration, will the threats from the stressor remain the same, decrease or increase? If so, how?

- No Change = 0
- Increasing threats = (+) or (++)
- Decreasing threats = (-) or (--)
- Unsure = (?)

Contact: Name, Title, Affiliation, Email, Phone _____

Stressor	Changed since 2005?	How – Since 2005		Predicted for 2047	How – for 2047
<i>Input of Nutrients (TP)</i>					
Additional Comments and Notes					
<i>Hydrology: Altered Volume</i>					
Additional Comments and					

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Notes				
<i>Hydrology: Altered Timing</i>				
Additional Comments and Notes				
<i>Hydrology: Altered Distribution</i>				
Additional Comments and Notes				
<i>Loss of Connectivity</i>				
Additional Comments and Notes				

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<p><i>Altered Geomorphology and Topo</i></p>				
<p>Additional Comments and Notes</p>				
<p><i>Altered Fire Pattern</i></p>				
<p>Additional Comments and Notes</p>				
<p><i>Loss of Spatial Extent</i></p>				
<p>Additional Comments and Notes</p>				

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<i>Spread of Exotic Plants</i>				
Additional Comments and Notes				
<i>Spread of Exotic Animals</i>				
Additional Comments and Notes				
<i>Other Stressors?</i>				
Additional Comments and Notes				

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