Working Group (WG) and Science Coordination Group (SCG)
December 14 – 15, 2010

Climate Change Conceptual Model Update

Barry Rosen, USGS

The Task Force has asked that a conceptual model for climate change related to Everglades restoration be developed.

The use of conceptual models has been an effective tool for systematically organizing and prioritizing complex Everglades issues.

Oct. 19th, a workshop was held to elucidate Drivers and Stressors

A status of the effort was presented to the Task Force at its October meeting.

Oct. 19th Workshop: Drivers and Stressors

First step at developing a conceptual model to help coordinated thinking for climate change related to ecosystem restoration.

Participants came to common agreement that for this task the model should be a simple, user-friendly format to help managers, stakeholders and members of the public understand the model and that additional details should be conveyed in attached text.

Participants help create an initial list of Drivers and Stressors that was formatted and sent out for additional review.

Oct. 19th Workshop: Drivers and Stressors

Several participants provided presentations to help guide the discussion and thinking

- Lisa Beever-presentation on CHNEP CEM
- Glenn Landers- COE climate change
- Barry Rosen- presentation (previously given to this group)
- Chris Kelble -Marine and Estuarine (MARES) goal setting for south Florida
- Jayantha Obeysekera-described the efforts of the SFWMD

Oct. 19th Workshop: Drivers and Stressors

Change in precipitation pattern
Longer drought
Wetter wet
Sea-level rise
Change in vegetation pattern - aquatic and terrestrial
Increased temperature - water and air
Change in fire regime
Change in land use
Increased storm intensity
Change in ranges of animals and plants
Change in tropical storms/hurricanes
Change in evapotranspiration
Increased salt water intrusion - ground and surface
Change in ocean current
Change in water management activities
Hydraulic in system and reduced flows associated with its loss
Change in wind pattern

Oct. 19th Workshop: Drivers and Stressors

Increased acidity in oceans
Increased CO_2 and MeOH
Change in storm surges
Change in seasonal timing/phenology
Change in rate?
Change in water chemistry
Change in oxidation/release of CO_2 (carbon cycle)
Change in development patterns and population
ENSO, AMO, PDO, Glacial, GIA
Increased salinity in coastal area
Change in structure of beaches
Tectonic response
Change in feedback mechanism to microclimate i.e. Urban heat island effect
Change in ambient air quality
Exotic species
Change in albedo
Solar cycle
Change in animal and human behavior
Limitation of species
Extirpation of habitat
Change in fragmentation/connectivity
Relate topography(?) for species

Oct. 19th Workshop: Drivers and Stressors

Policy Box	Insurance Management decisions Adaptation strategies Endangered species Budget allocation Economic "life"

Next Steps: 1) Categorize these Drivers and Stressors and array them for easier utilization
2) Ecological Effects Workshop (w/ existing CEMs) with the "experts"