SEA LEVEL RISE ADAPTATION EFFORTS AT THE REGIONAL SCALE – WATER MANAGEMENT

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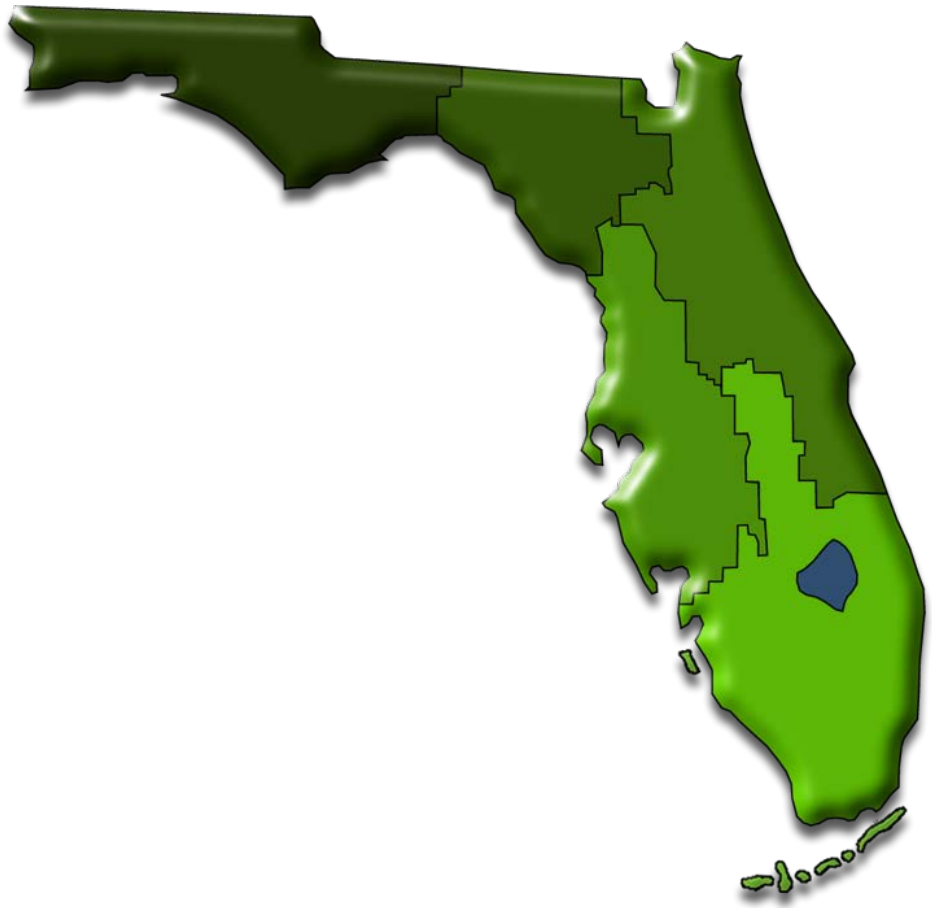
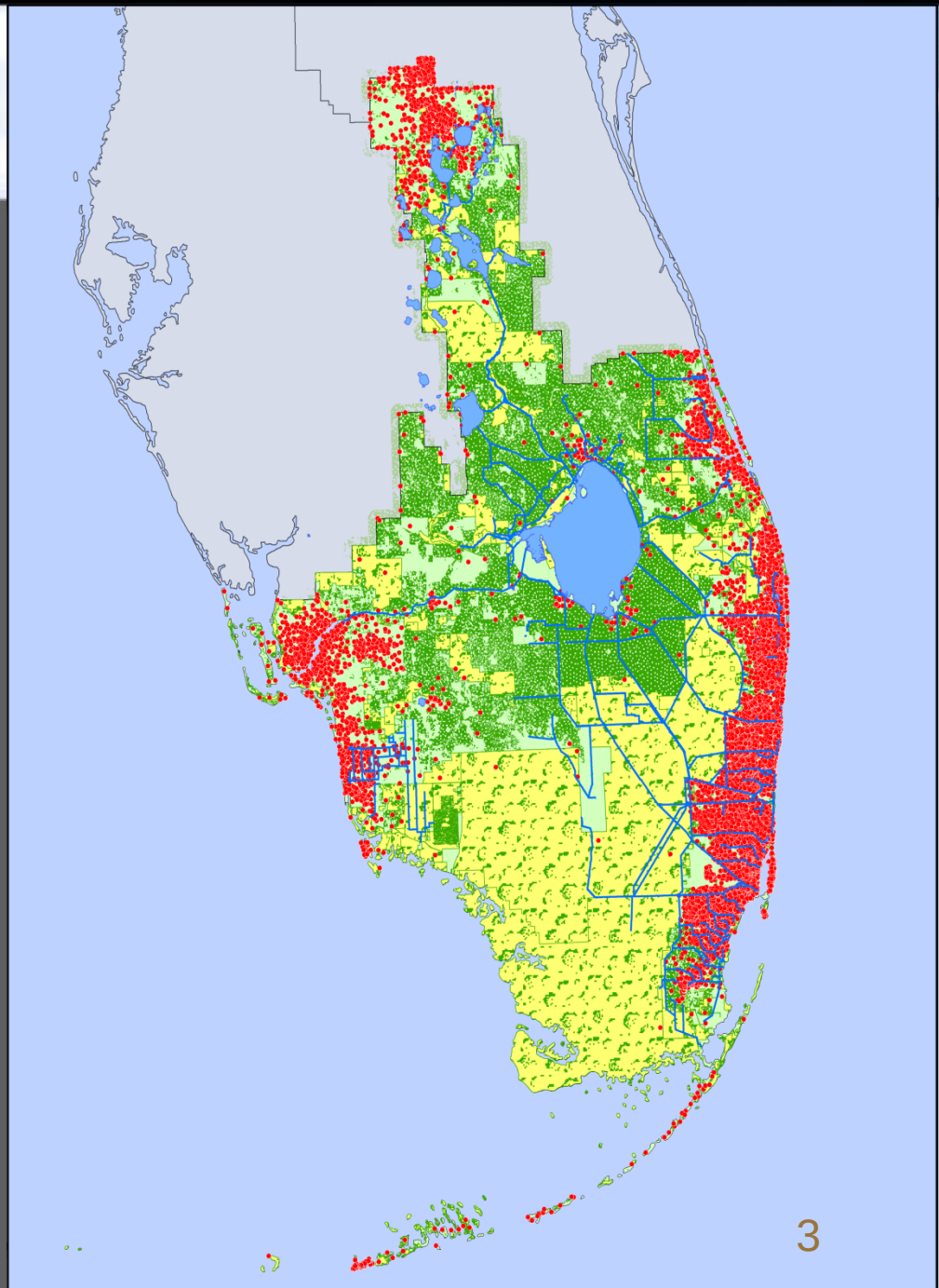
Who We Are and What We Do

- 5 Regional Water Management Districts
  - Hydrology and topography boundaries
- Core Mission
  - Flood Protection
  - Water Quality
  - Water Supply
  - Natural Systems

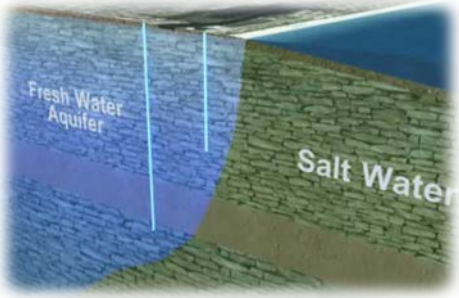


South Florida At-A-Glance

- 18,000 square miles
- Primary flood control and water management system
- 8.1 million residents
- 3+ million acres of agriculture
- Vast protected natural areas

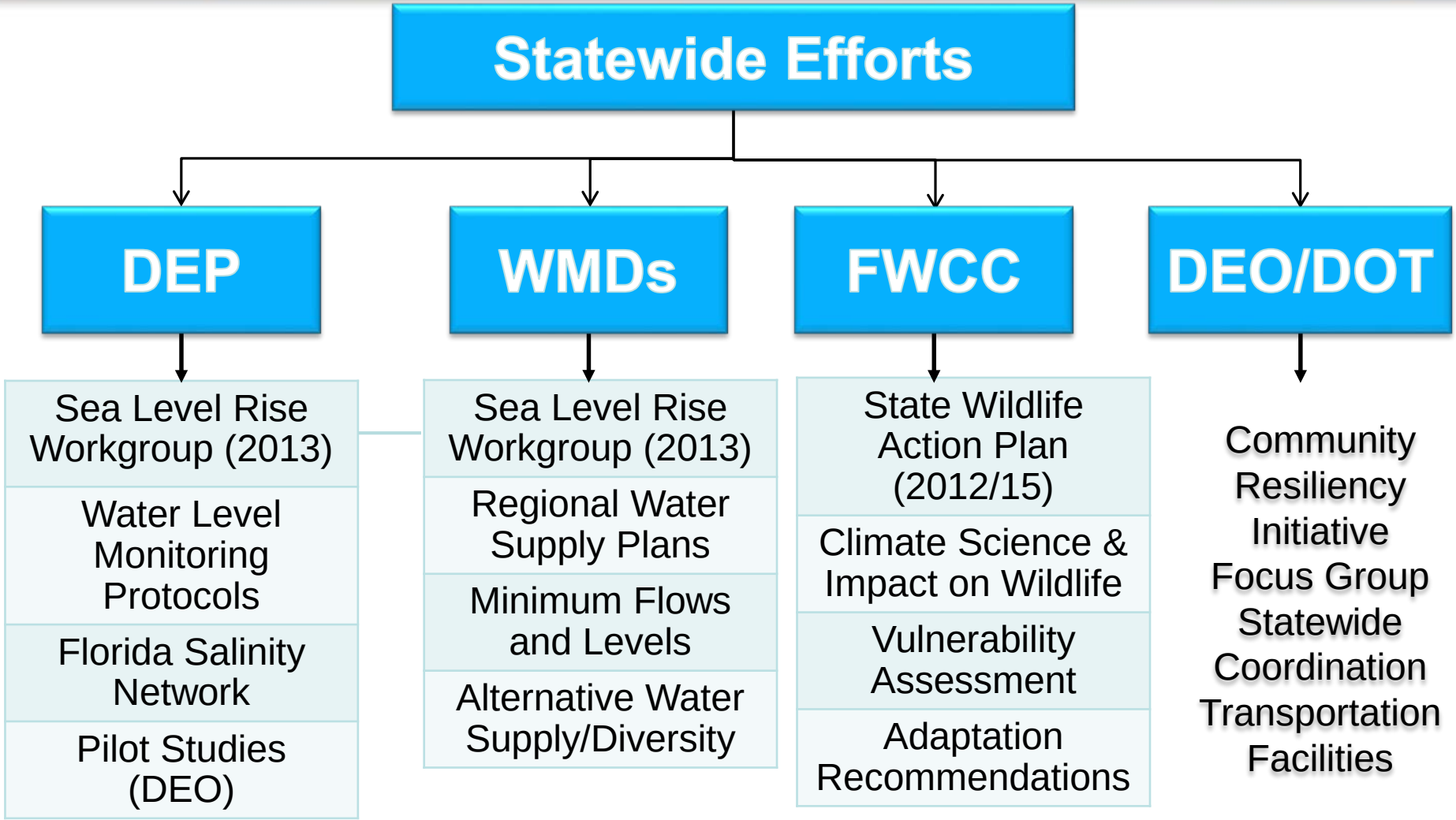


Sea Level Rise
Potential Impacts on Water Management

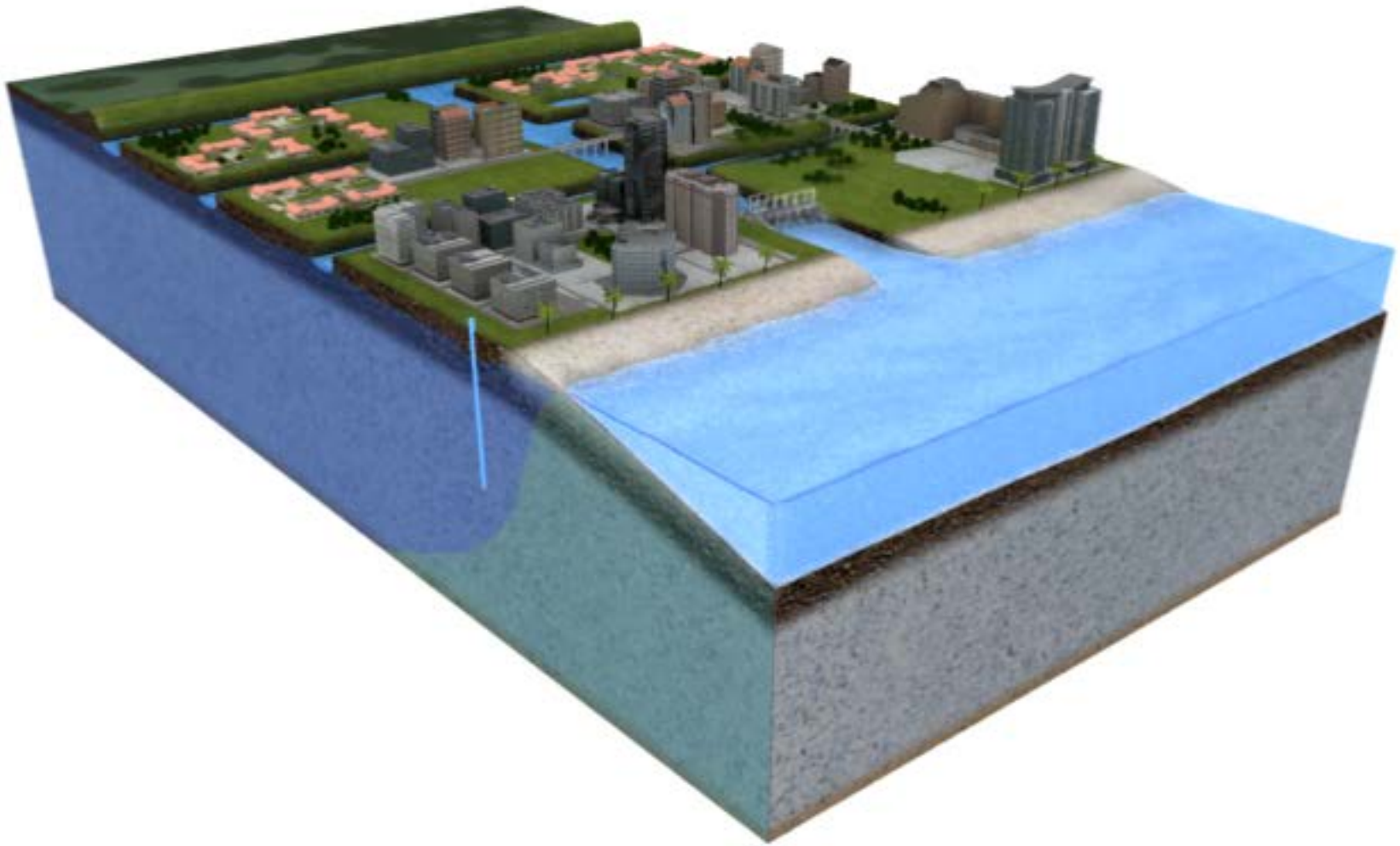


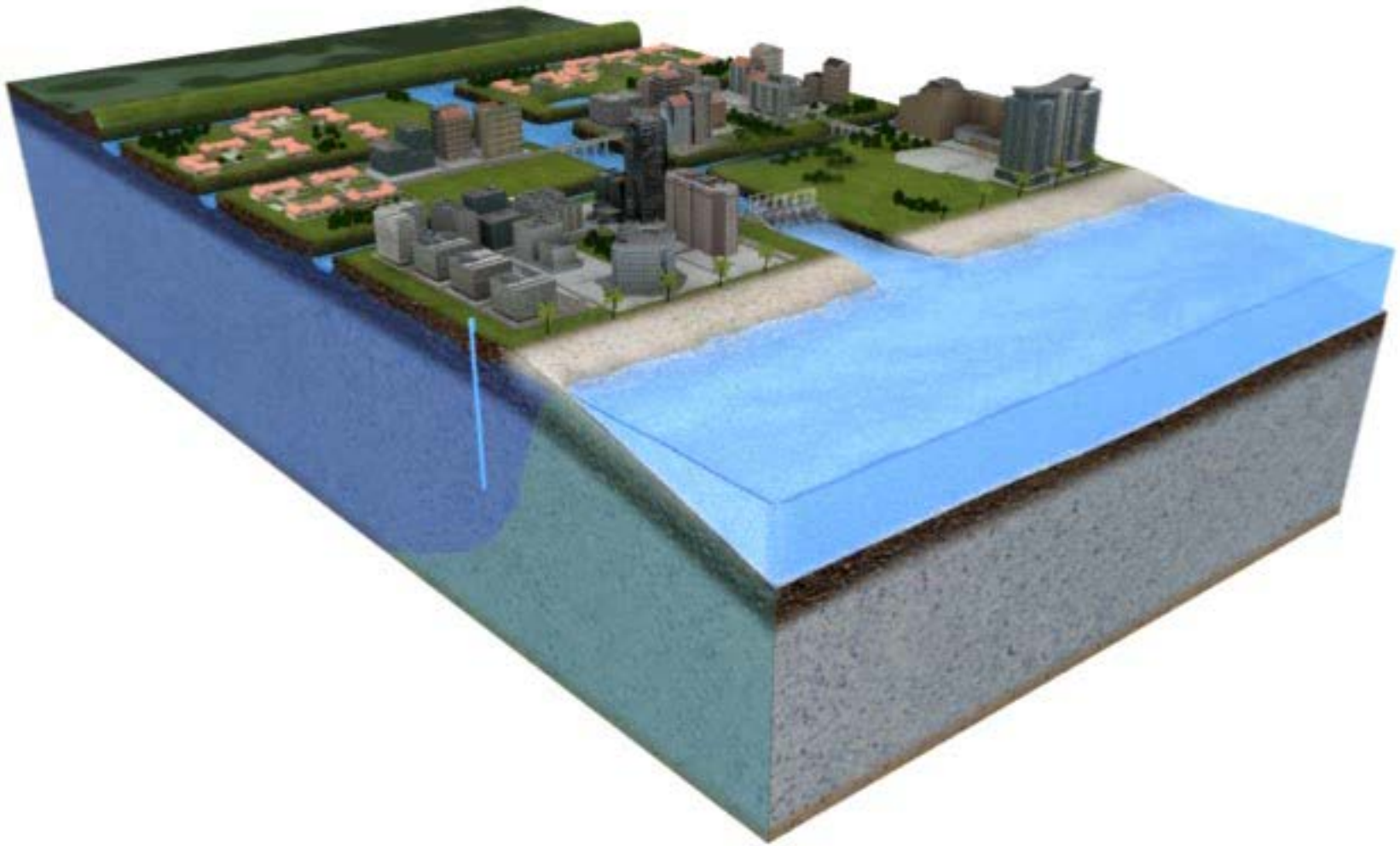
- Flood Protection (flooding, storm surge, interior flooding, hurricanes, coastal structures)
- Drinking Water Supply (saltwater intrusion, freshwater wells)
- Natural Environment (Southern Everglades, coastal wetlands)

State-Level Coordination

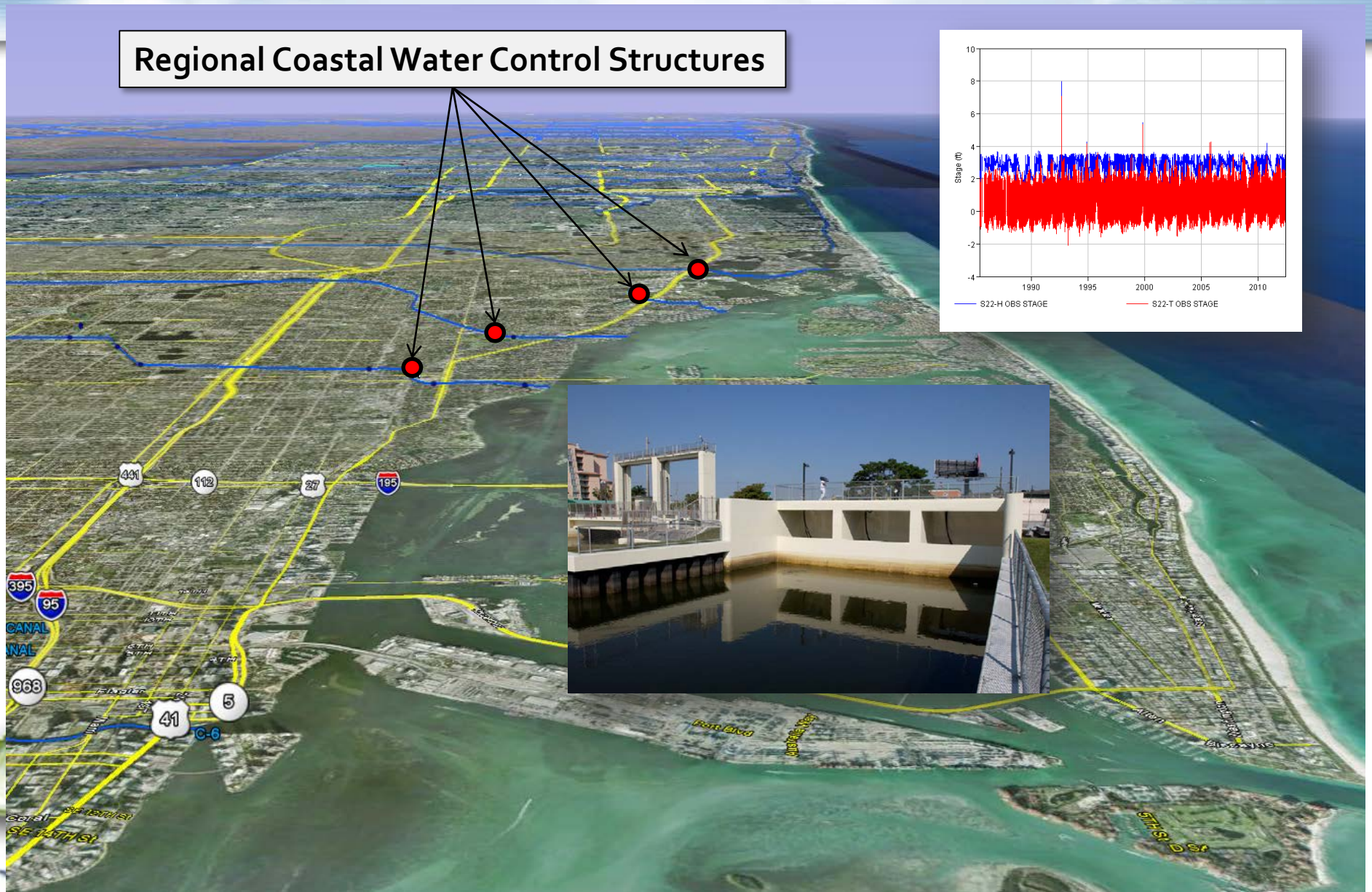


Current Conditions



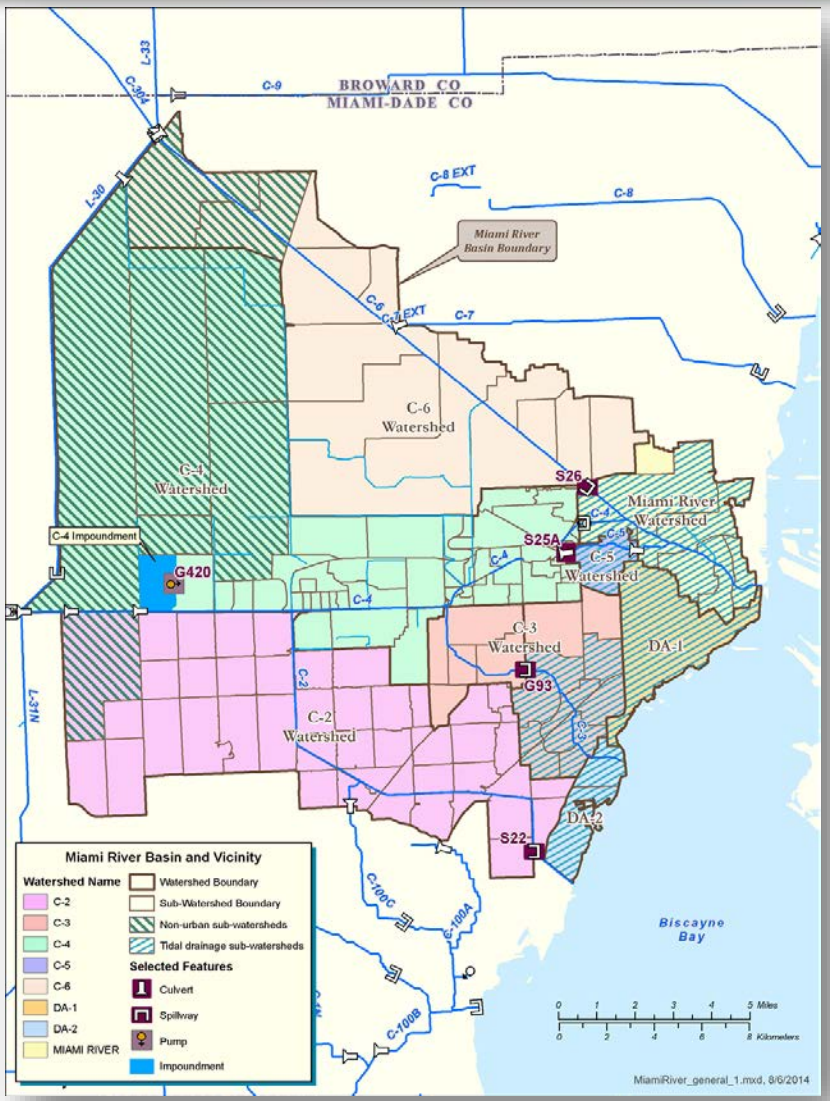


Rising Seas Effect on Salinity Barriers

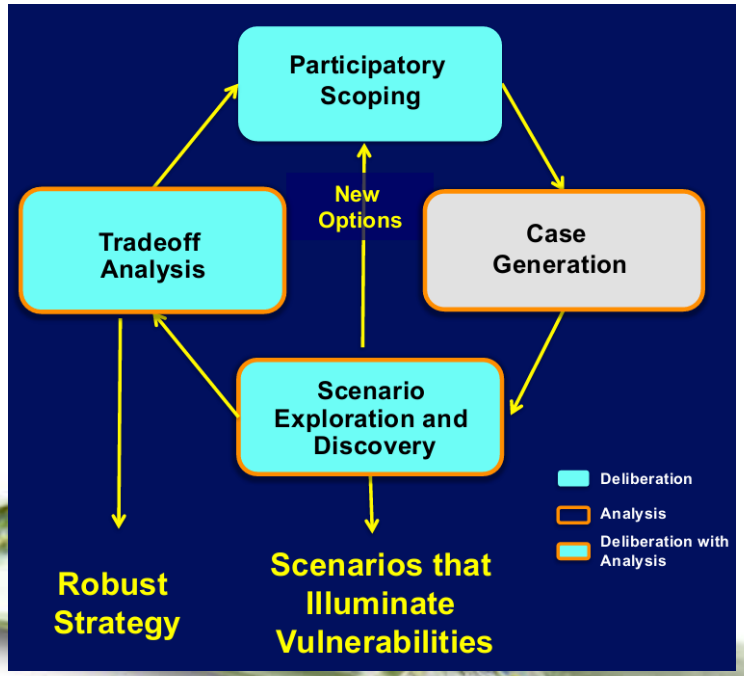


Adaptation to Regional Flood Projection: Level of Service Assessment

- Screening and prioritization of coastal salinity barriers (completed)
  - Aging infrastructure with reduced capacity to remove flood waters under SLR scenario
- Interior regions of coastal basins
  - Rate of urbanization exceeding assumptions in original designs
  - Rising water table due to SLR
- Potential changes in extreme rainfall

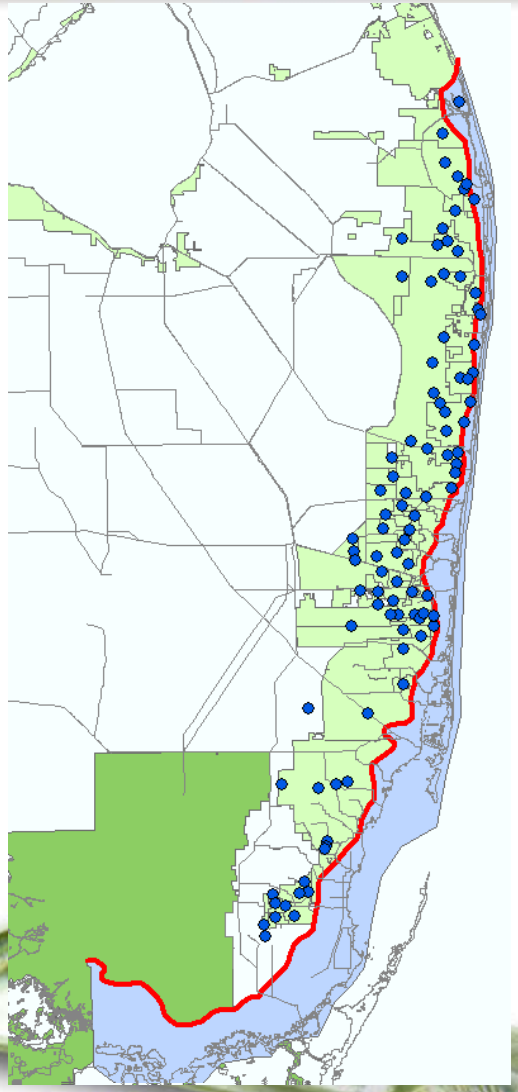


Regional Coordination: Robust Decision Making Under Deep Uncertainty

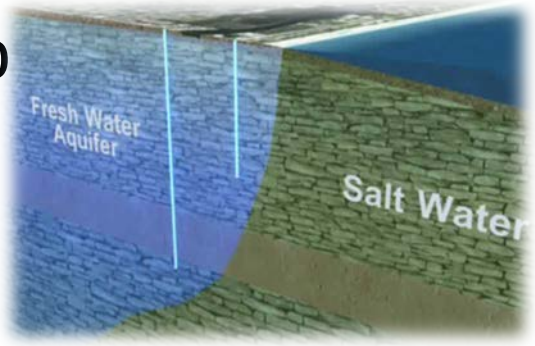


- September 5, 2014, hosted by SFWMD
- More than 50 participants from SFWMD, DOI, Miami-Dade and Broward Counties, Cities of Miami Beach and Fort Lauderdale
- Presentations by Dr. Rob Lempert, IPCC author, and Professor Jos Arts, Netherlands
- Topics covered: strategic decision making in situation of deep uncertainty, stakeholder engagement, sea level rise

Saltwater Intrusion: Adaptation



- Determine saltwater/ freshwater interface (2009 and very soon 2014)
- Update saltwater intrusion monitoring network (ongoing)
- Identify utilities at risk
- Emphasize water conservation
- Alternatives sources of water
- Incorporate SLR into planning



Regional Coordination: Saltwater Intrusion Modeling Workshop

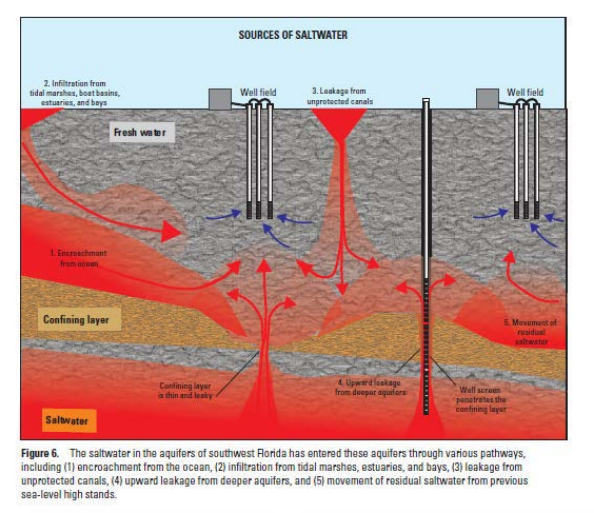
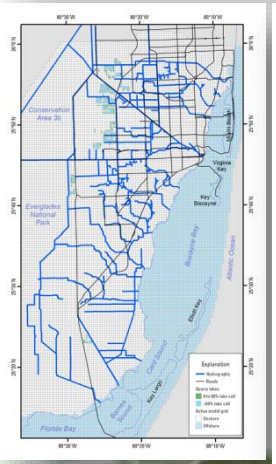
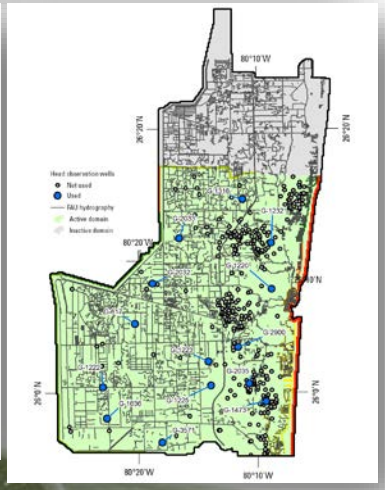


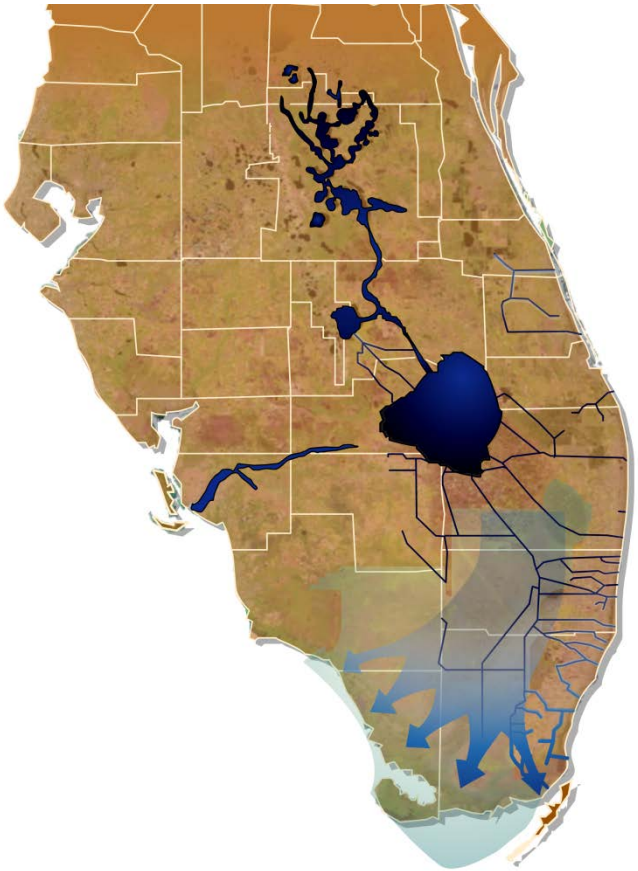
Figure 6. The saltwater in the aquifers of southwest Florida has entered these aquifers through various pathways, including (1) encroachment from the ocean, (2) infiltration from tidal marshes, estuaries, and bays, (3) leakage from unprotected canals, (4) upward leakage from deeper aquifers, and (5) movement of residual saltwater from previous sea-level high stands.



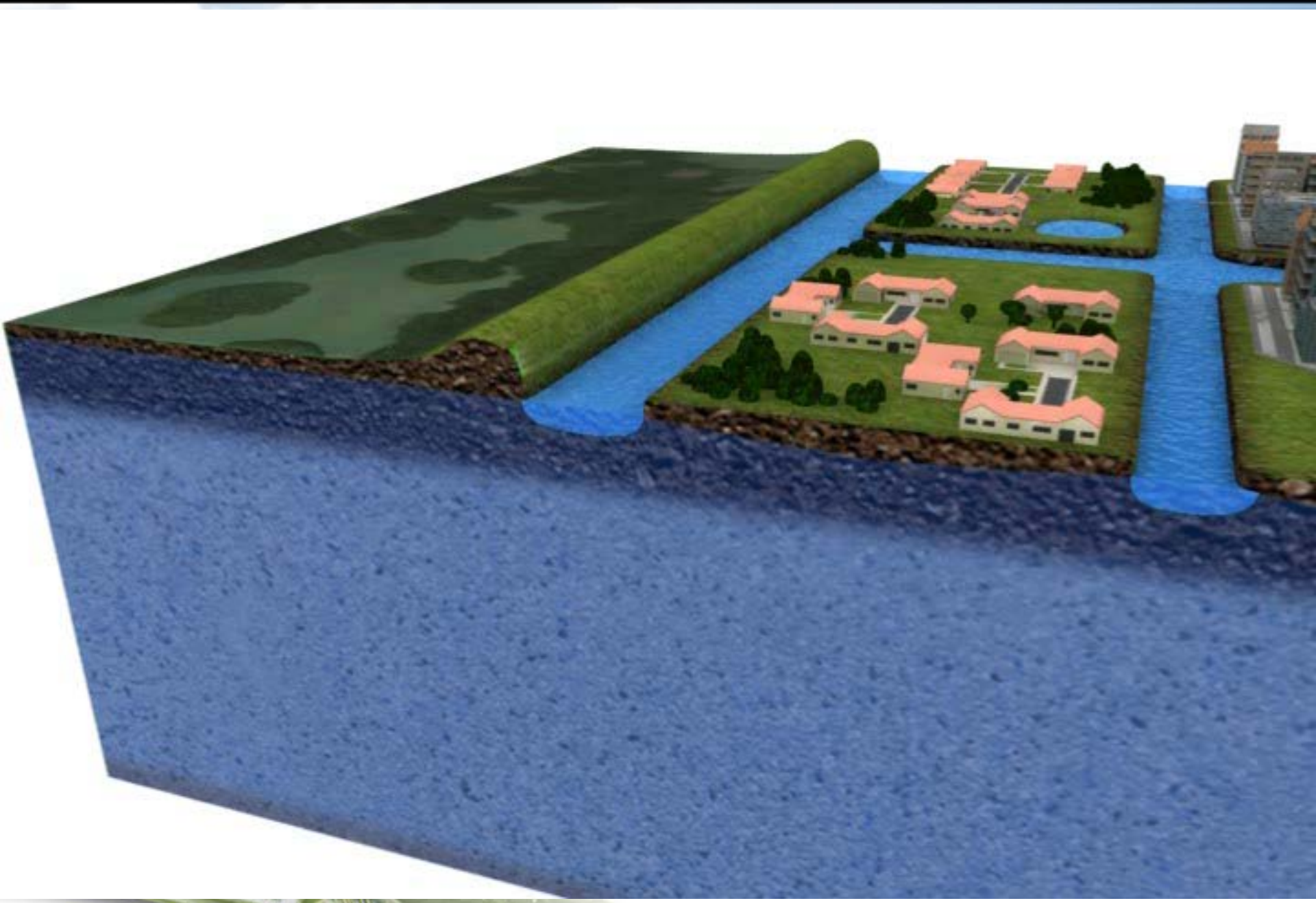


- July 23-24, 2014, hosted by SFWMD
- More than 50 participants from FDEP, Palm Beach, Broward, Miami-Dade, USGS, USACE and NPS
- Participation by experts from the Netherlands
- Topics covered: monitoring, data gaps, status of modeling, risk management, the Dutch experience

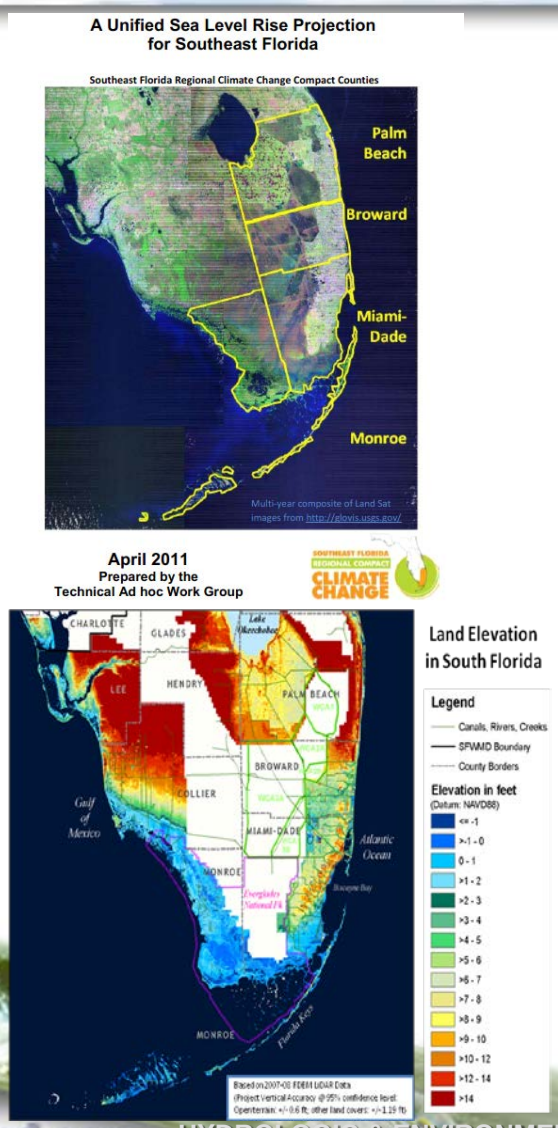
Adaptation Response: Everglades Restoration



- Everglades restoration is an important adaptation response to sea level rise
- Ecosystem resilience can be enhanced through increased water flows through the Everglades and increased storage
- Increased flows into the southern estuaries will reinstate widespread organic soil formation and maintain the freshwater head in order to mitigate the effects of sea level rise and saltwater intrusion



Regional Coordination: Assistance to SE Climate Compact



- Southeast Regional Compact:
  - Participation on the scientific panel regarding sea level rise projections
  - Regional datasets of Digital Elevation Model (DEM) data
- Collaboration with the Netherlands – Memorandum of Agreement
- Member of the Steering Committee