

# Connecting Ecological Linkages to the USGS Real-time Salinity Drought Index

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“Ecological drought has been recognized only recently...unlike agricultural drought, ecological drought currently lacks specific indices to quantify it.” (Lake 2011)



# Current Project

- Title: Indicators and indices of drought in southeastern coastal ecosystems
  - Funded by NIDIS through RISA
  - Two phases
    - Needs assessment
      - Dave Chalcraft – East Carolina University
    - Salinity index development and testing
      - Dan Tufford – University of South Carolina

# Current Project

- Needs assessment
  - Broad assessment of all coastal ecological resources
    - Aquatic and upland
    - Inland to extent of tidal freshwater
  - Structured interviews
  - Information and understanding
    - Ecological drought
    - Concerns and sensitivity
    - Triggers, thresholds, trajectories
  - Use of existing or new indices

# Current Project

- Salinity index development and testing
  - Link index to ecological impacts or outcomes
    - Acute, chronic, long-term change
    - Work with NWR, NERR, CCEHBR
  - Salinity effects
    - Seasonal stress
    - Ecosystem conversion
    - Range expansion
      - Benign
      - Pathogenic microbes, invasive species
    - Freshwater intake

# Current Project

- Salinity index development and testing
  - Adaptation planning
    - Waccamaw NWR, Savannah NWR
    - North Inlet/Winyah Bay NERR
    - SC Nature Conservancy
  - Risk assessment
    - Response to increased health risk
  - Future climate scenarios
    - PRISM-2 (Conrads et al. 2013)



# Issues

- Relevant indicator
- Meaningful values / breakpoints
- Medium for communication
  - Interested stakeholders
  - Other publics
- Long-term operational status