REstoration, COordination, VERification (RECOVER)

Lake Okeechobee Hypothesis Clusters

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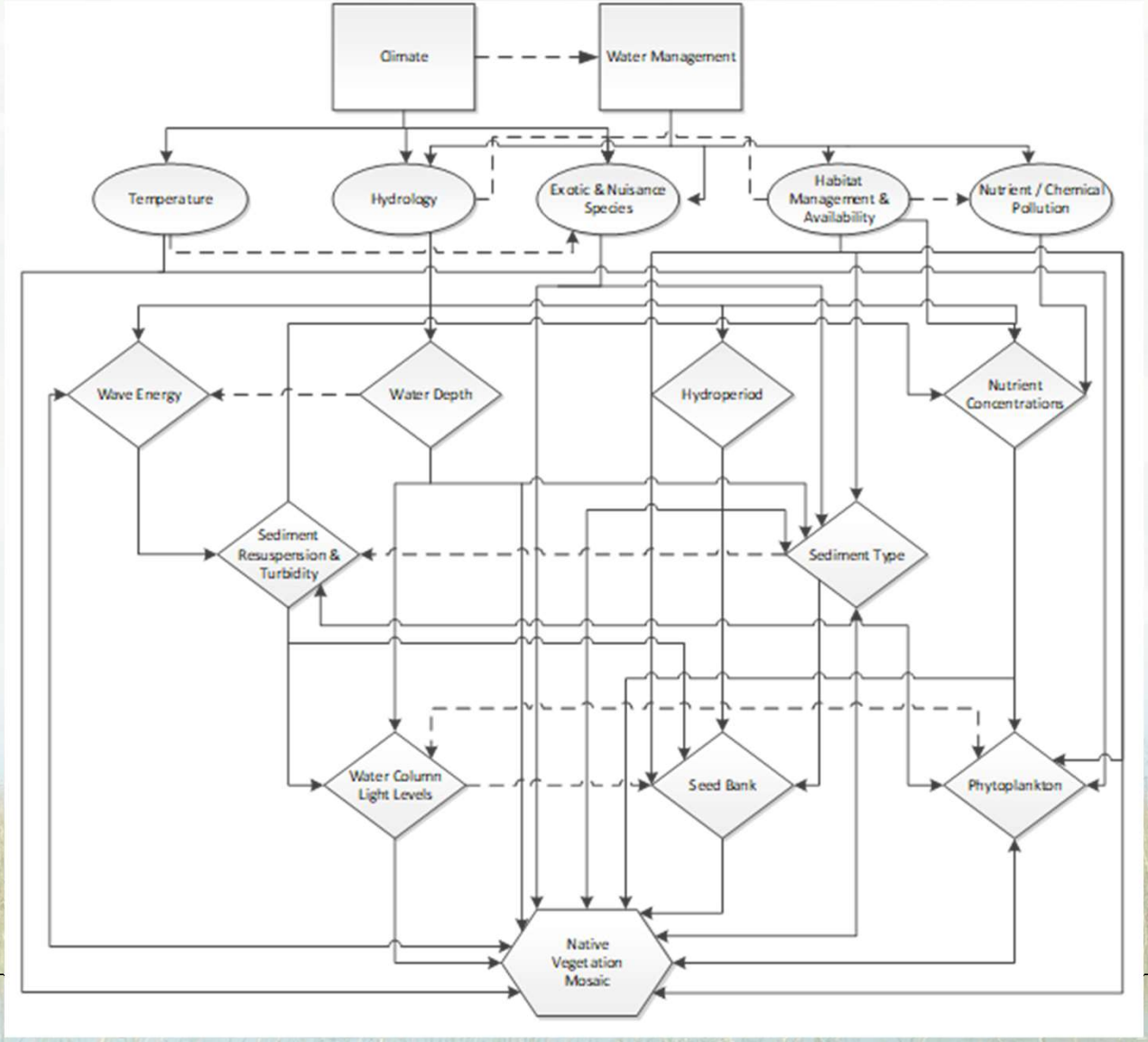
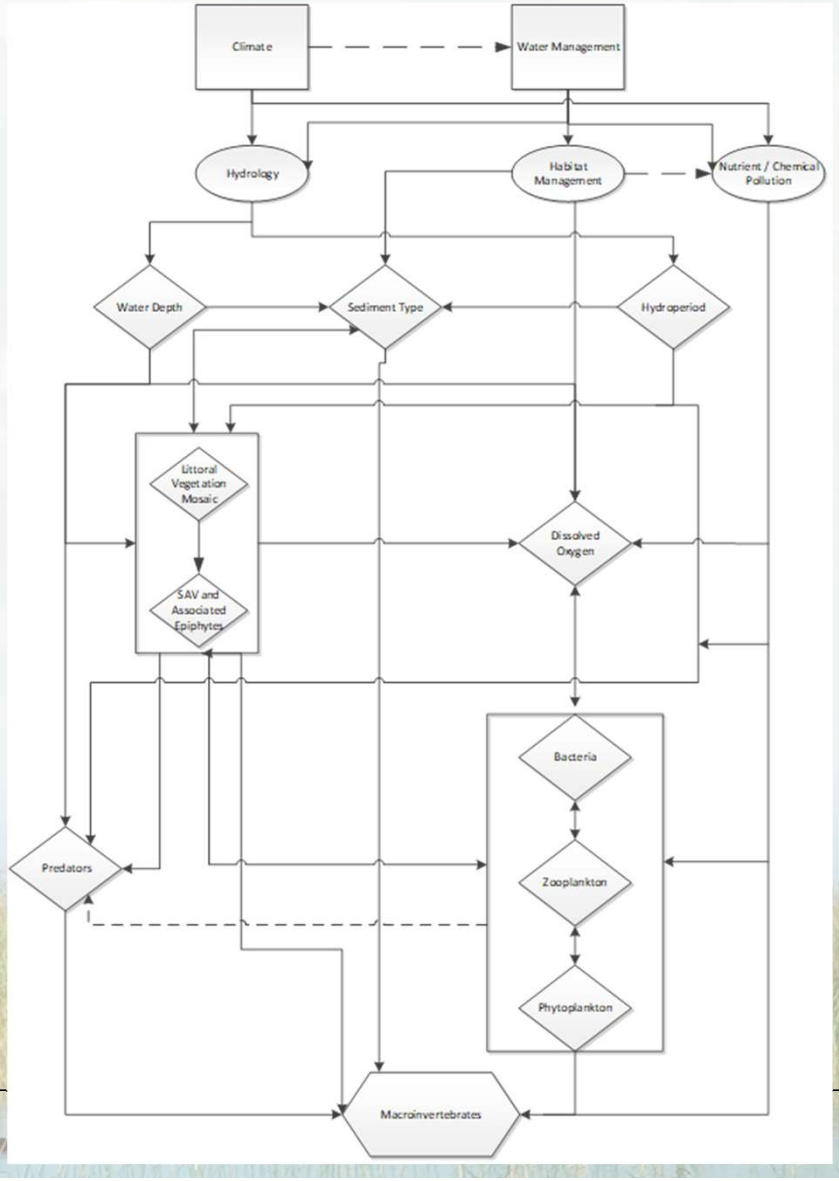
Lake Okeechobee Native Vegetation Mosaic Hypothesis Cluster



Lake Okeechobee
Native Vegetation Mosaic Hypothesis Cluster

- **Working Hypotheses:**
  - *Restoration and storage projects outside of Lake Okeechobee will allow for better control of lake stage, allowing it to be maintained within a defined ecologically beneficial envelope and eliminating extreme high and low stages, which would promote a diverse mix of native vegetation communities and maximize areal coverage.*
  - *Management activities independent of CERP restoration to adequately control exotic vegetation will allow native emergent and submerged species to more consistently maintain maximal areal coverage.*
  - *Reestablishment of the emergent and submerged vegetation mosaic and appropriate water levels will serve to minimize physical damage due to storms.*
- **MAP Monitoring:**
  - SAV – annual grid and spring and fall transect surveys (SFWMD)
  - EAV – aerial imagery and sentinel sites (SFWMD)
- **Key Uncertainties:**
  - Storage Capacity
  - ~~Sediment Composition and Transport~~
  - Climate-related Events

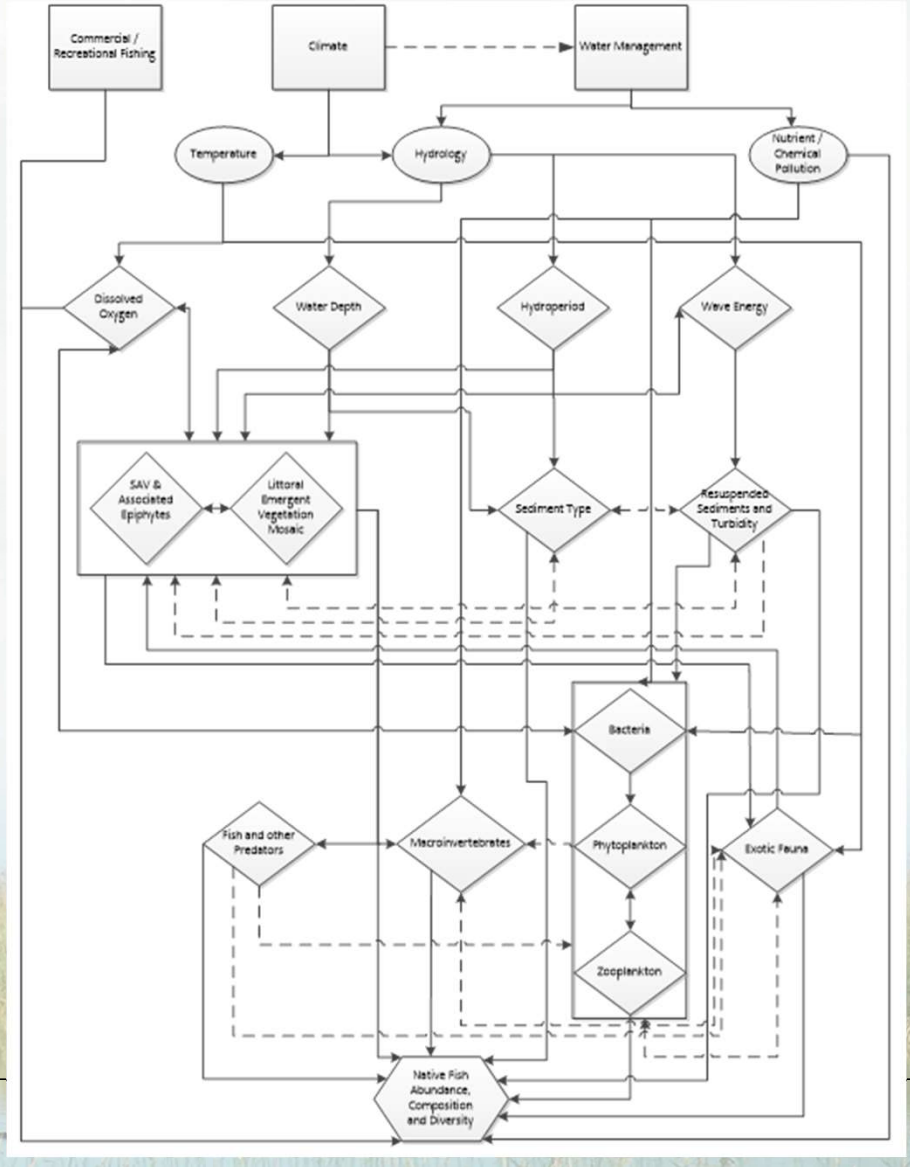
Lake Okeechobee Macroinvertebrate Hypothesis Cluster



Lake Okeechobee
Macroinvertebrate Hypothesis Cluster

- **Working Hypotheses:**
  - *Eutrophication in Lake Okeechobee has resulted in a macroinvertebrate community composition dominated by pollution-tolerant taxa.*
  - *Macroinvertebrate assemblage is more diverse and contains more taxa that are pollution-intolerant in regions of the lake underlain by sand and peat sediment than in areas underlain by mud sediments.*
  - *Adverse changes in macroinvertebrate communities result in negative cascading impacts on fish and other higher-trophic level organisms that utilize them as a food source.*
  - *Macroinvertebrate densities and assemblage structure reflect changes in the plant community structure.*
- **MAP Monitoring:**
  - Benthic Macroinvertebrates – pelagic, nearshore and littoral sites, different sediments, spring and fall (FWC)
- **Key Uncertainties:**
  - Water Quality Improvement Projects
  - Management Activities

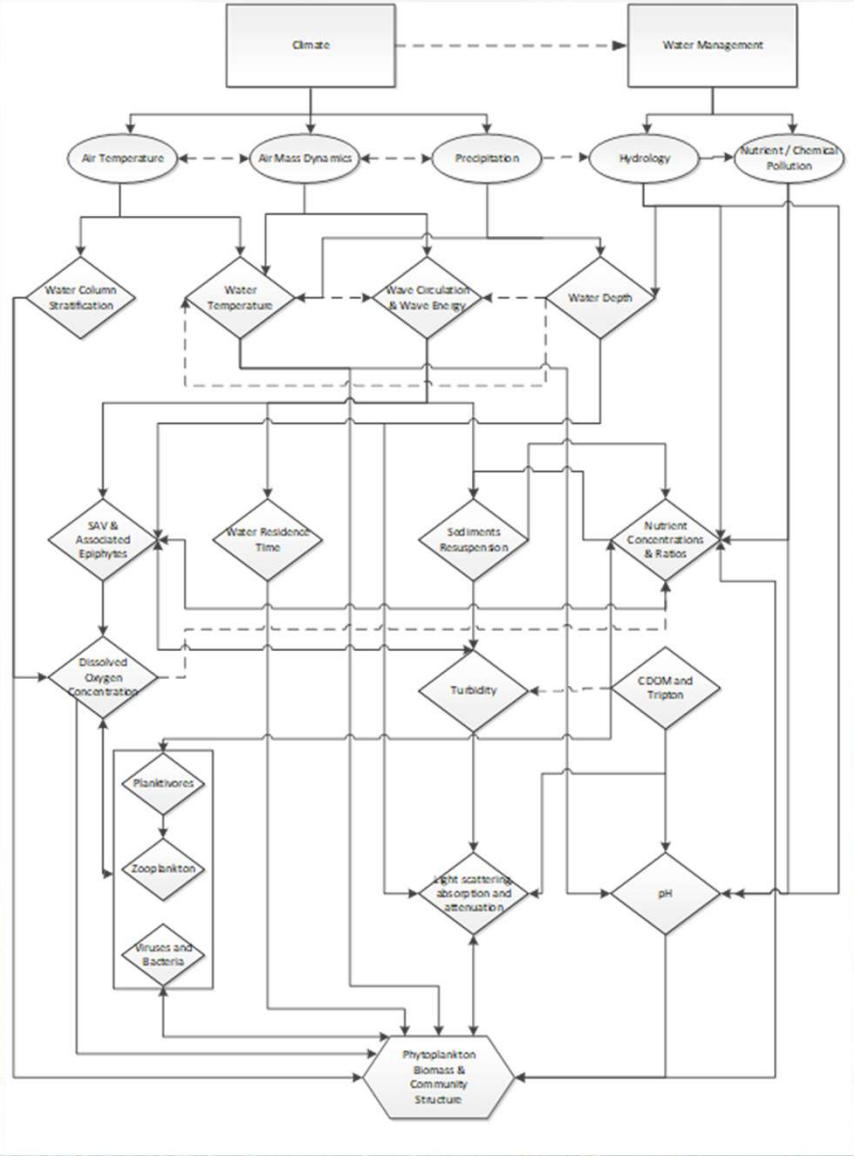
Lake Okeechobee Native Fish Hypothesis Cluster



Lake Okeechobee
Native Fish Hypothesis Cluster

- **Working Hypotheses:**
  - *A productive and healthy littoral and limnetic fishery requires suitable habitat for foraging, spawning and shelter (refuge from predators) and abundant food.*
  - *Decreases in nutrient loads and improvements in water quality will result in increased fish diversity and a shift from less desirable rough fish to more desirable game fish.*
- **MAP Monitoring:**
  - Fishery – pelagic trawls, nearshore electrofishing, annually in fall (FWC)
- **Key Uncertainties:**
  - Exotic Species
  - Fishing Pressure
  - Climate Change
  - Management Activities

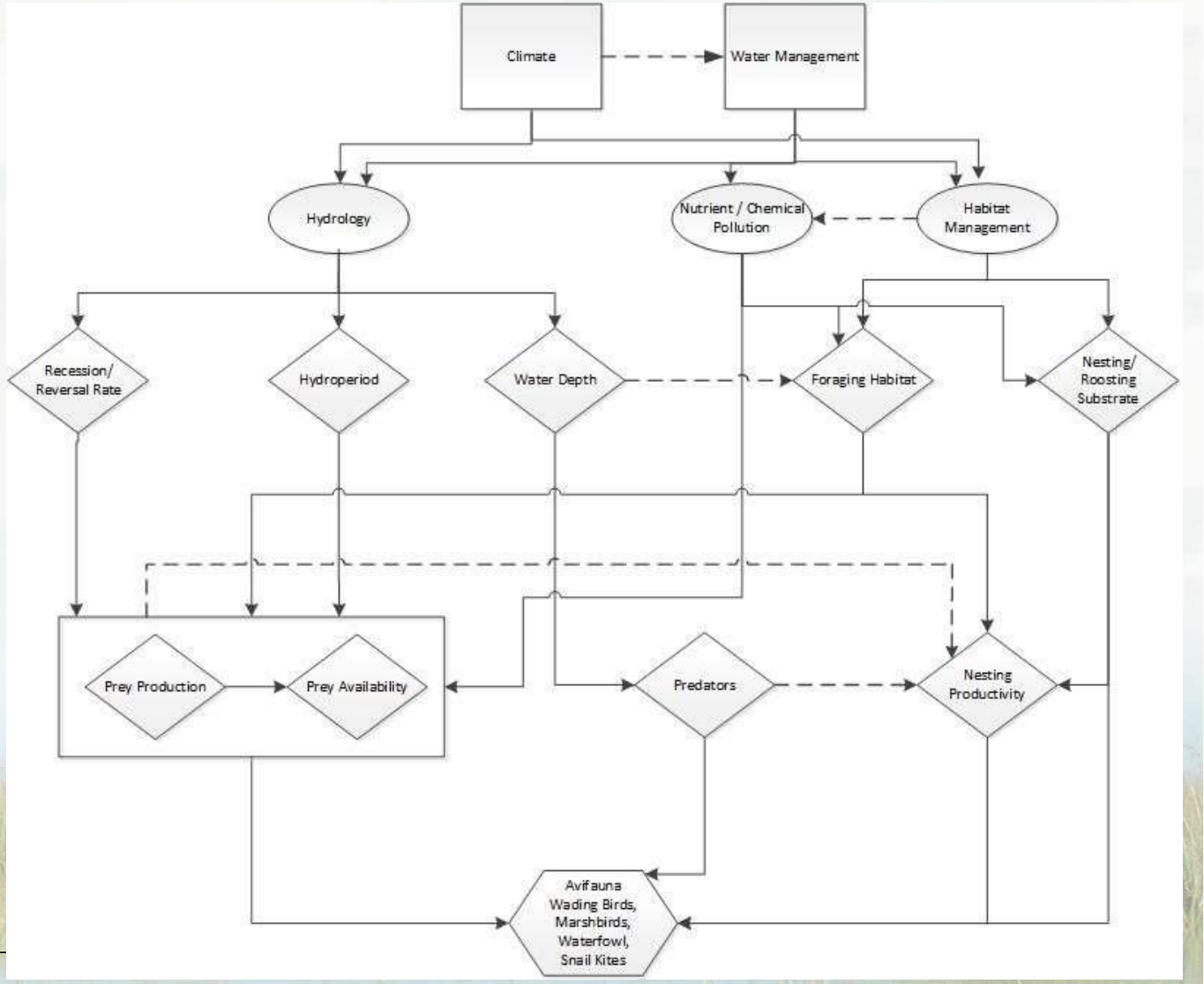
Lake Okeechobee Phytoplankton Hypothesis Cluster



Lake Okeechobee
Phytoplankton Hypothesis Cluster

- **Working Hypotheses:**
  - *Restoration in the watershed will result in reduced external nutrient loading, improving water quality, thereby decreasing algal blooms.*
  - *Restoration would result in a shift to phosphorus (P)-limitation and improved light conditions thereby decreasing cyanobacterial bloom frequency and severity.*
  - *Restoration would increase the coverage, distribution, and community structure of SAV and associated epiphytes, affecting phytoplankton biovolume and resulting in fewer algal blooms.*
- **MAP Monitoring:**
  - Algal Blooms and Associated Toxins – lakewide, bimonthly sampling (May – Oct), monthly sampling (Nov – Apr) (SFWMD and FDEP)
- **Key Uncertainties:**
  - Internal Loading
  - Climate Change
  - Land Development

Lake Okeechobee Avian Hypothesis Cluster



Lake Okeechobee
Avian Hypothesis Cluster

- **Working Hypotheses:**
  - *Long term hydrological patterns can influence wading bird and snail kite productivity by affecting the distribution and composition of vegetation available for nesting substrate and foraging habitat.*
  - *Rapid seasonal fluctuations of water levels can influence prey densities and availability as well as predator access to the nests and nesting colonies.*
- **MAP Monitoring:**
  - Wading Bird Nesting – aerial surveys, monthly from Dec to June (FAU)
  - Wading Bird Foraging – aerial surveys, bimonthly from Dec to June (SFWMD)
- **Key Uncertainties:**
  - Exotic Species
  - Climate Change
  - Management Activities