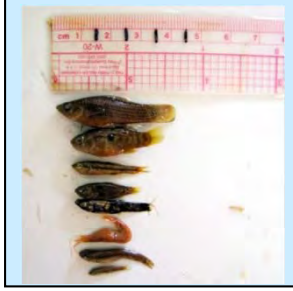
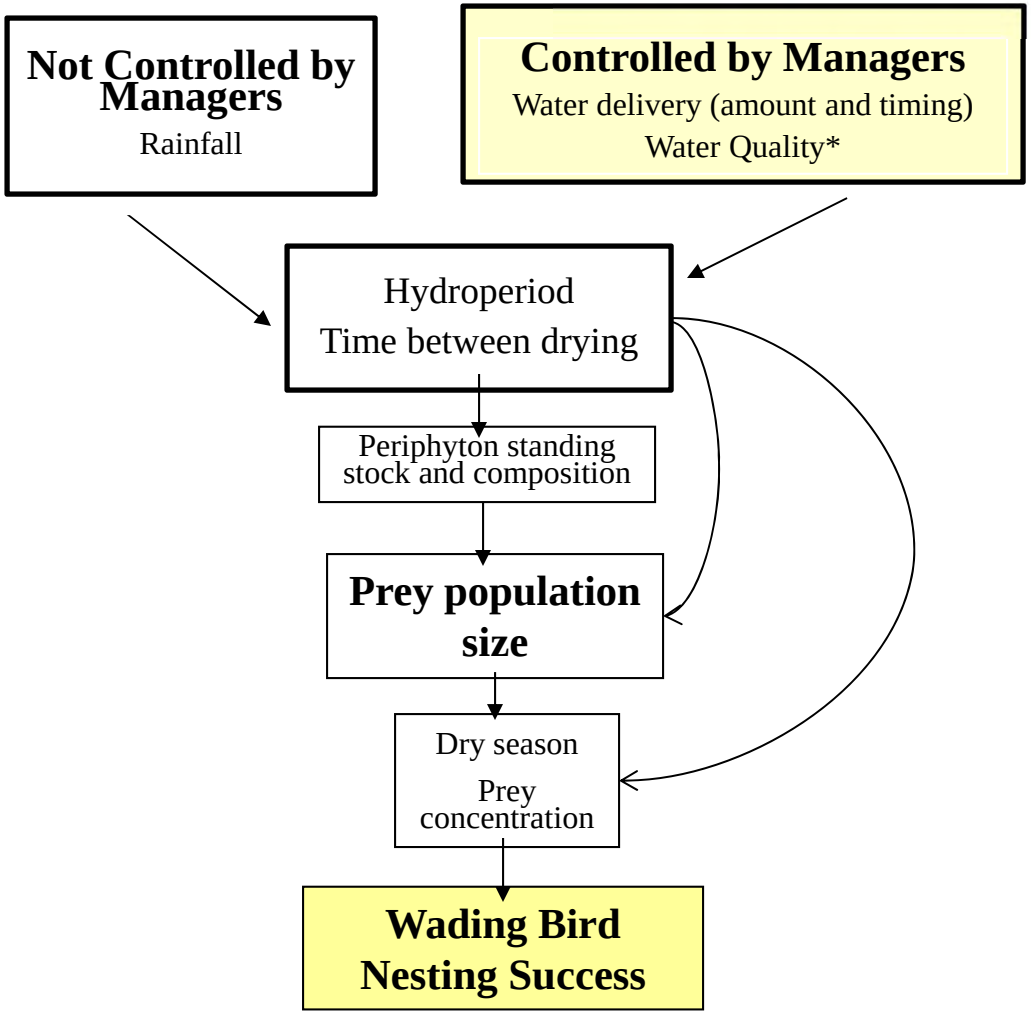
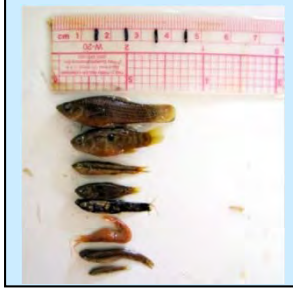


Monitoring Bird Food

Trophic Hypothesis

How can managers affect the availability of wading bird feeding opportunities and enhance nest success?

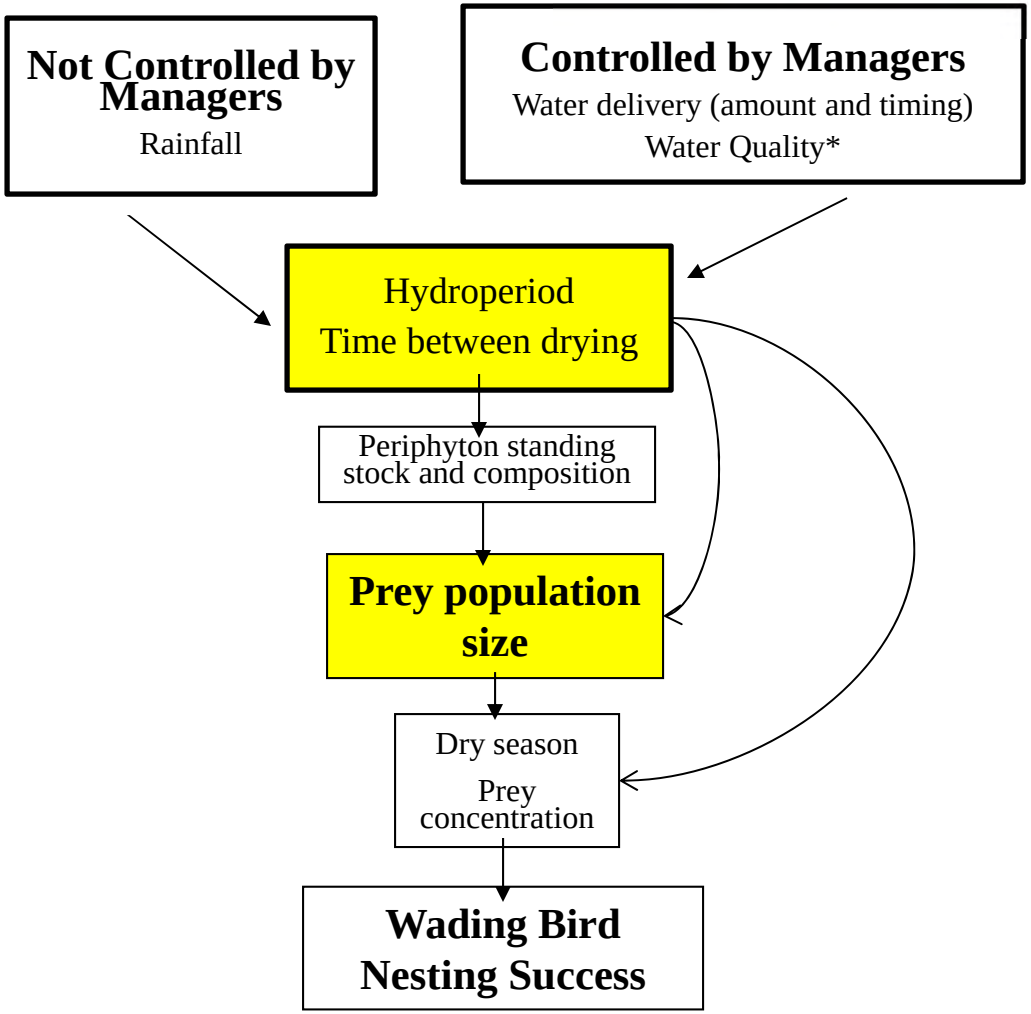




Monitoring Bird Food

Trophic Hypothesis

Small fish, shrimp, and crayfish populations provide the materials for wading bird feeding



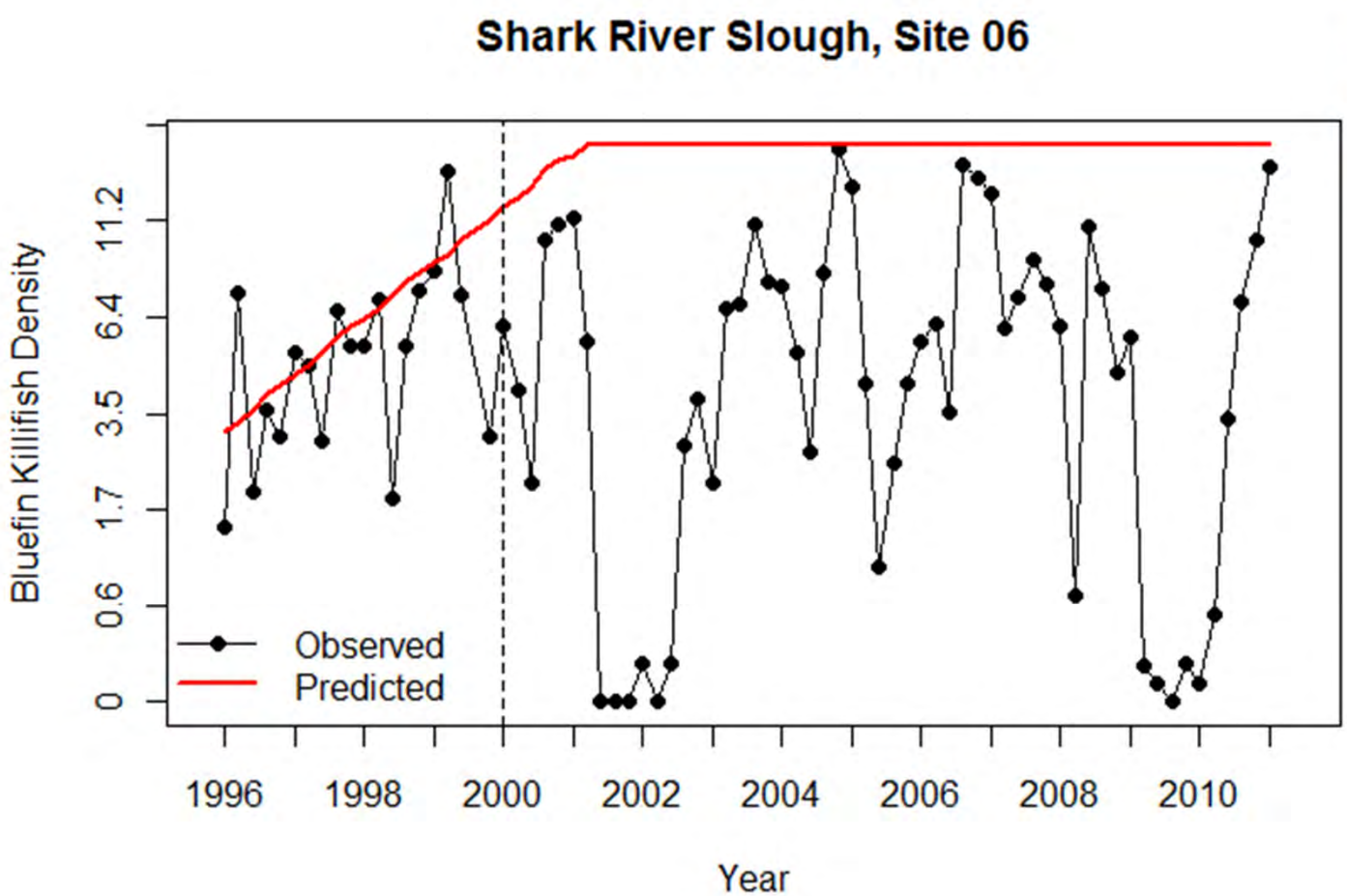
Data for Assessment
Prey Population Size
Six Performance Measures

- Four species selected as Performance Measures to represent different life histories related to effects of marsh drying
- Total fish as a measure of fish availability for higher trophic levels
- Frequency of non-native fish species

Ecological Assessment

Aquatic Consumers

1. Compare annual field data for PM to target



Ecological Assessment

Aquatic Consumers

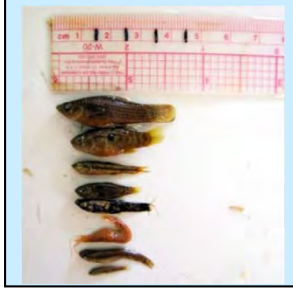
3. Compile regional assessments in a report-card reporting format

Shark River Slough

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Fish	G	G	R	R	R	R	R	R	Y	Y	Y
Non-native Fishes	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	G
Bluefin Killifish	G	Y	Y	R	Y	Y	Y	Y	Y	R	Y
Flagfish	G	G	G	Y	G	G	G	G	G	Y	G
Eastern Mosquitofish	G	G	Y	R	R	Y	Y	R	Y	G	G
Everglades Crayfish	G	Y	G	Y	R	Y	Y	Y	G	G	Y

Note: Assessments conducted over water years from July through April

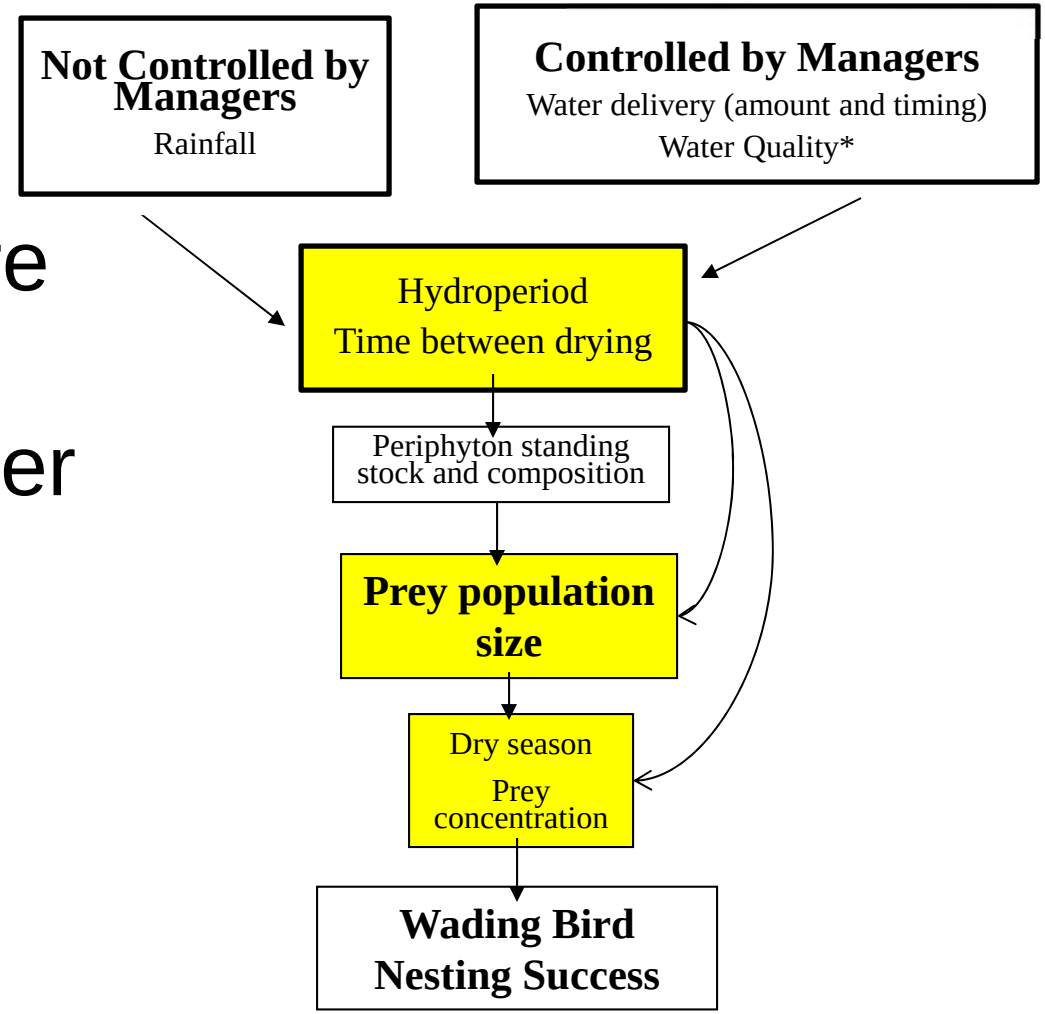
e.g., 2010 assessment is from July 2010 to April 2011



Monitoring Bird Food

Trophic Hypothesis

Wading birds require high concentrated pools of prey in water of an appropriate depth and when chicks are hungry



Trophic Hypothesis

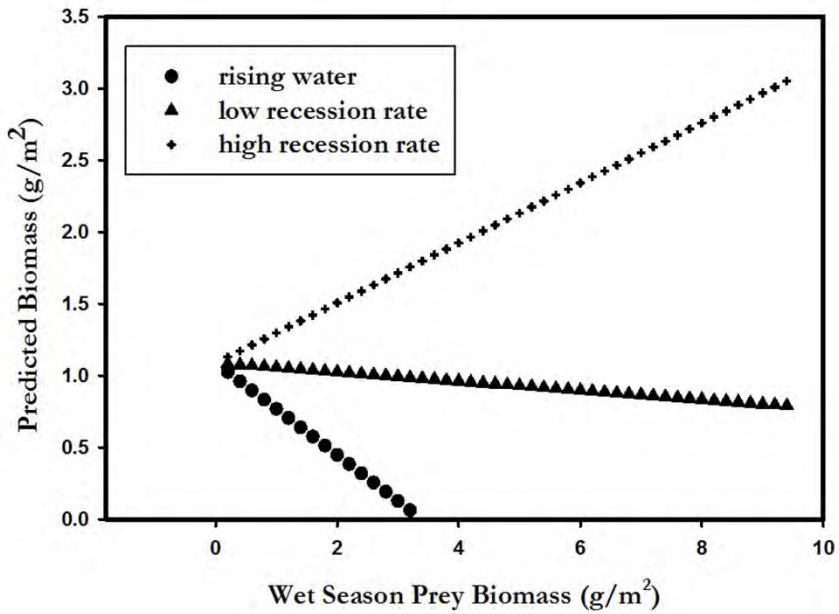
Dale Gawlik, Bryan Botson, James Beerens and colleagues

- Wading bird nesting is limited by food availability during the nesting season
- Water recession rate, microtopography, and wet-season prey biomass provide best predictions of dry-season prey concentrations

Trophic Hypothesis

Dale Gawlik, Bryan Botson, James Beerens and colleagues

- Goal: develop models that can be used to provide real-time advice to managers about operations to optimize prey availability.



Conclusions

- Indicators are used to assess overall progress of restoration and provide advice for future actions
- Management to support wading birds is monitored based on their food (how much and how available?)
- Assessments are coupled with efforts to develop data-driven models to support water management in real time