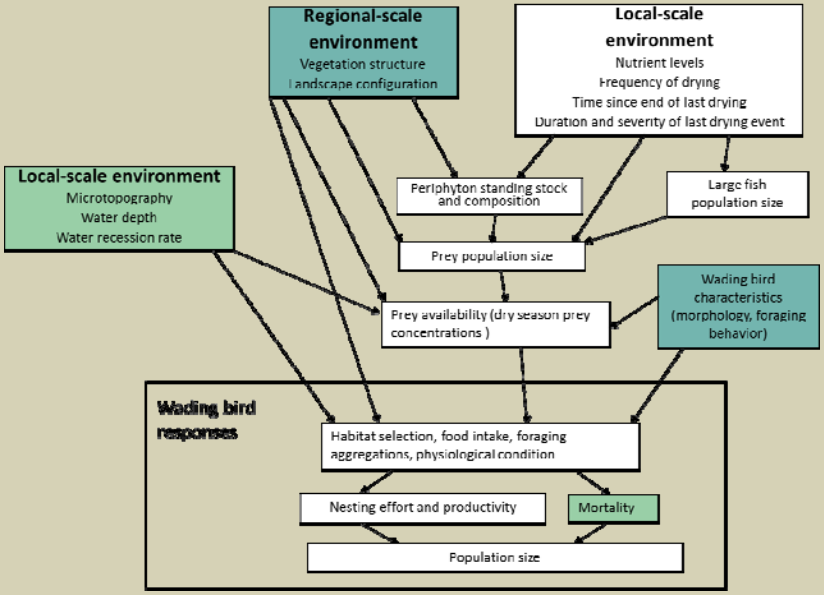
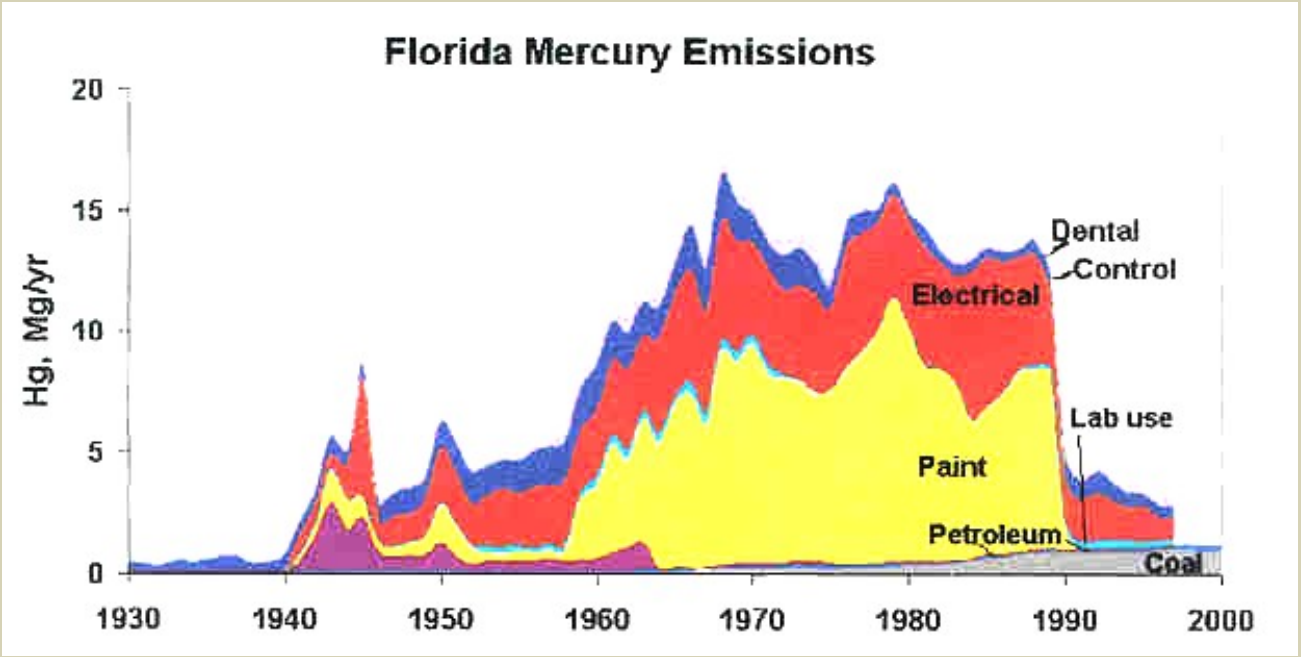
Uncertainties in predictions of trophic hypothesis under future restoration

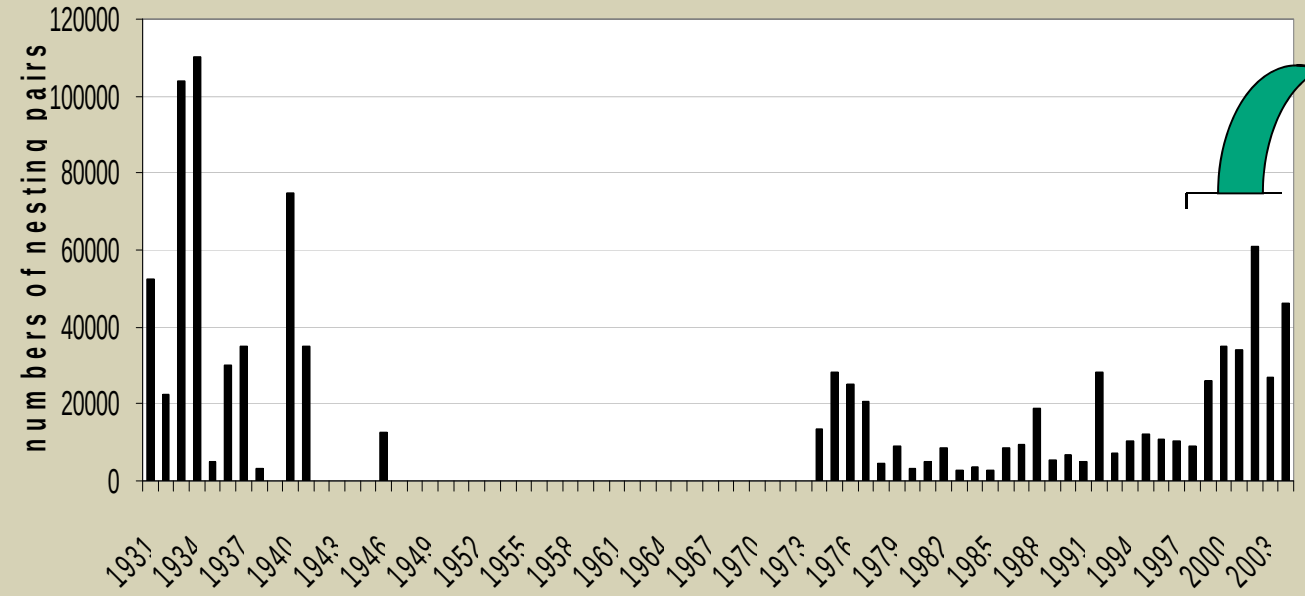
Future contamination

Distant magnets

Novel predators







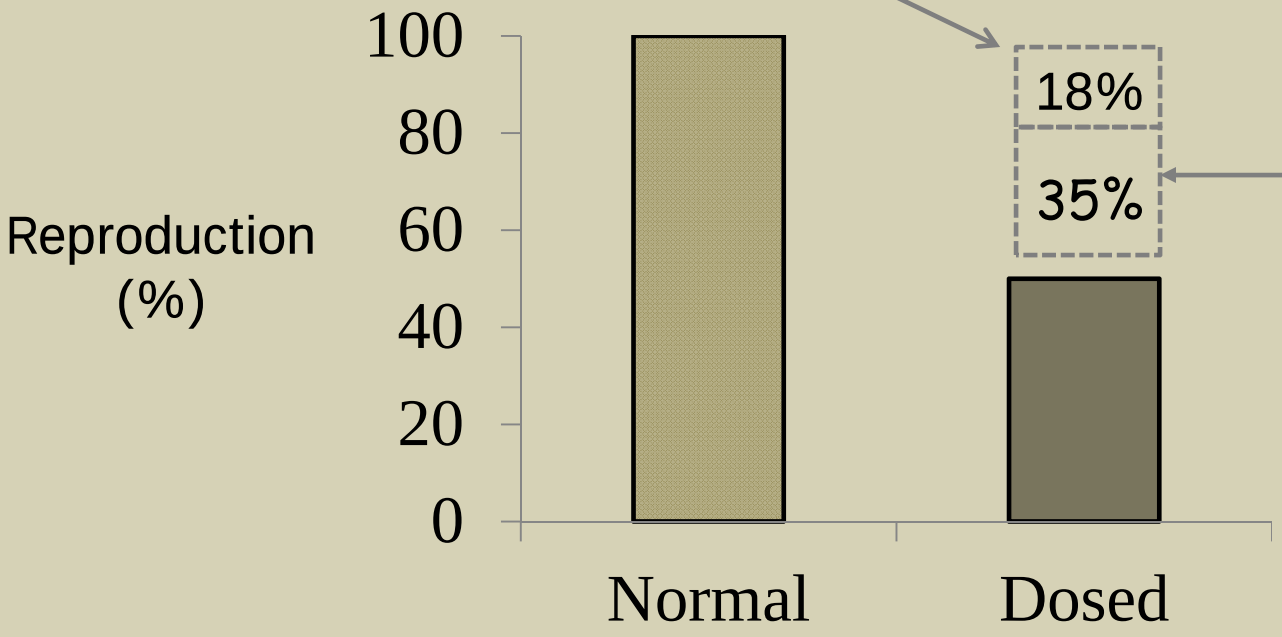
90% reduction in tissue mercury

Increase in nests by 3X

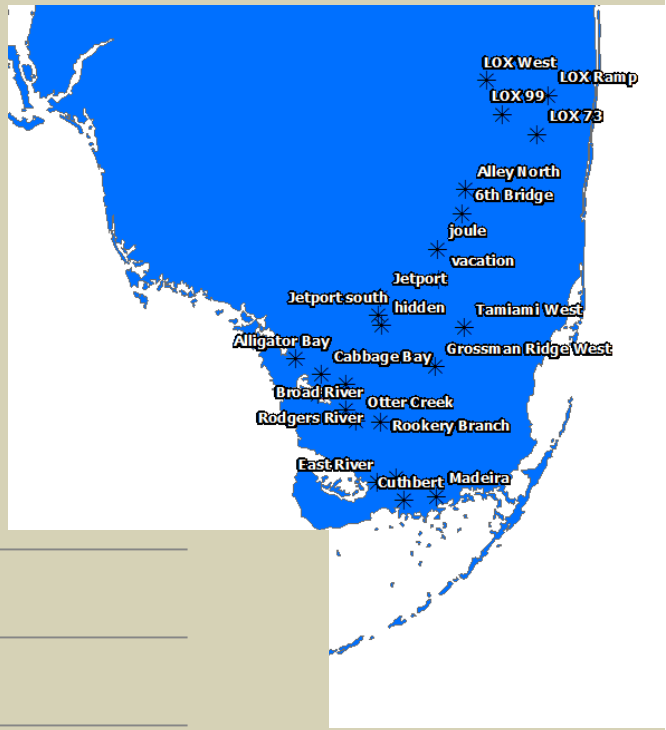
Effects of methylmercury at Everglades exposure levels

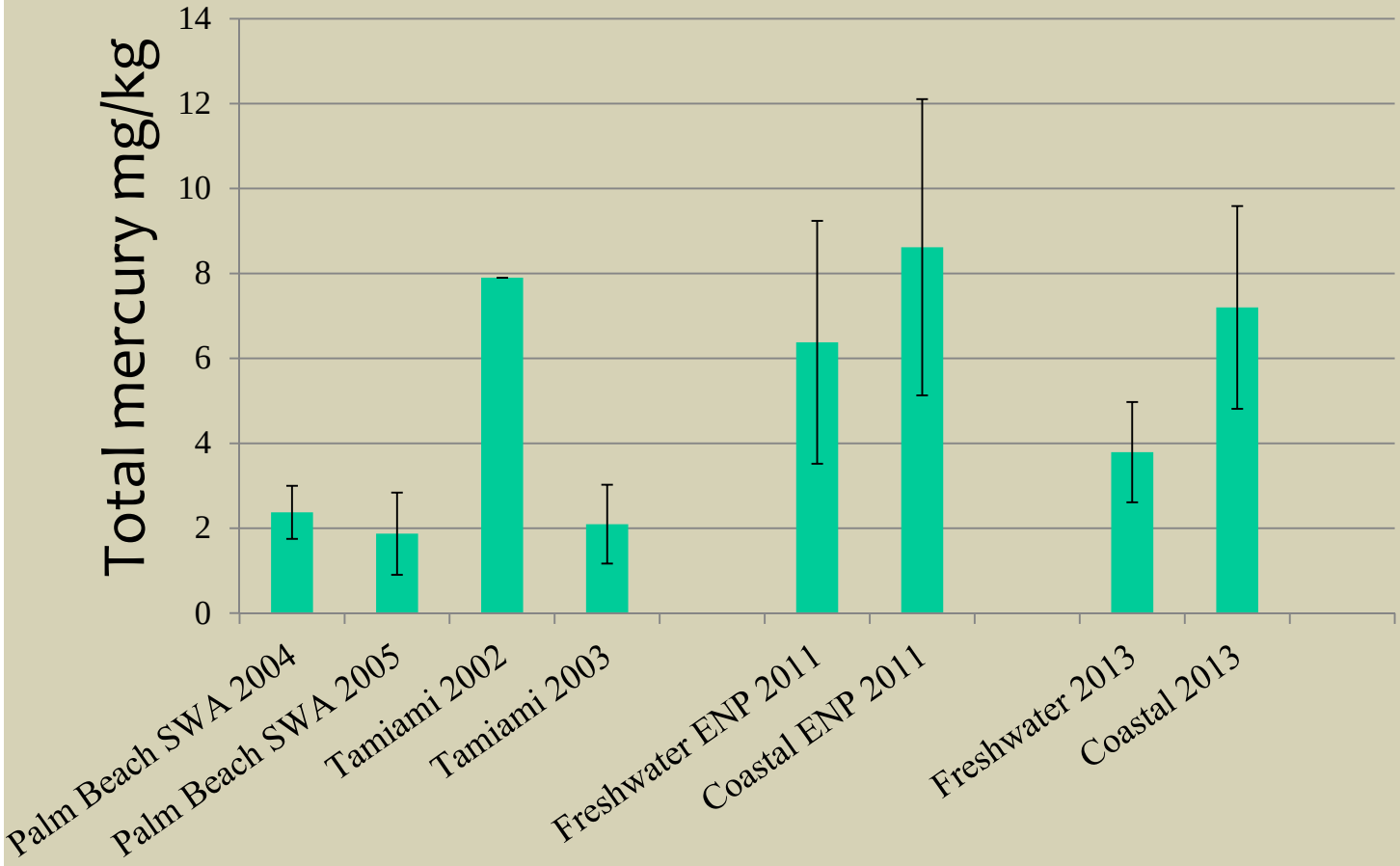
Homosexual pairing
No Eggs

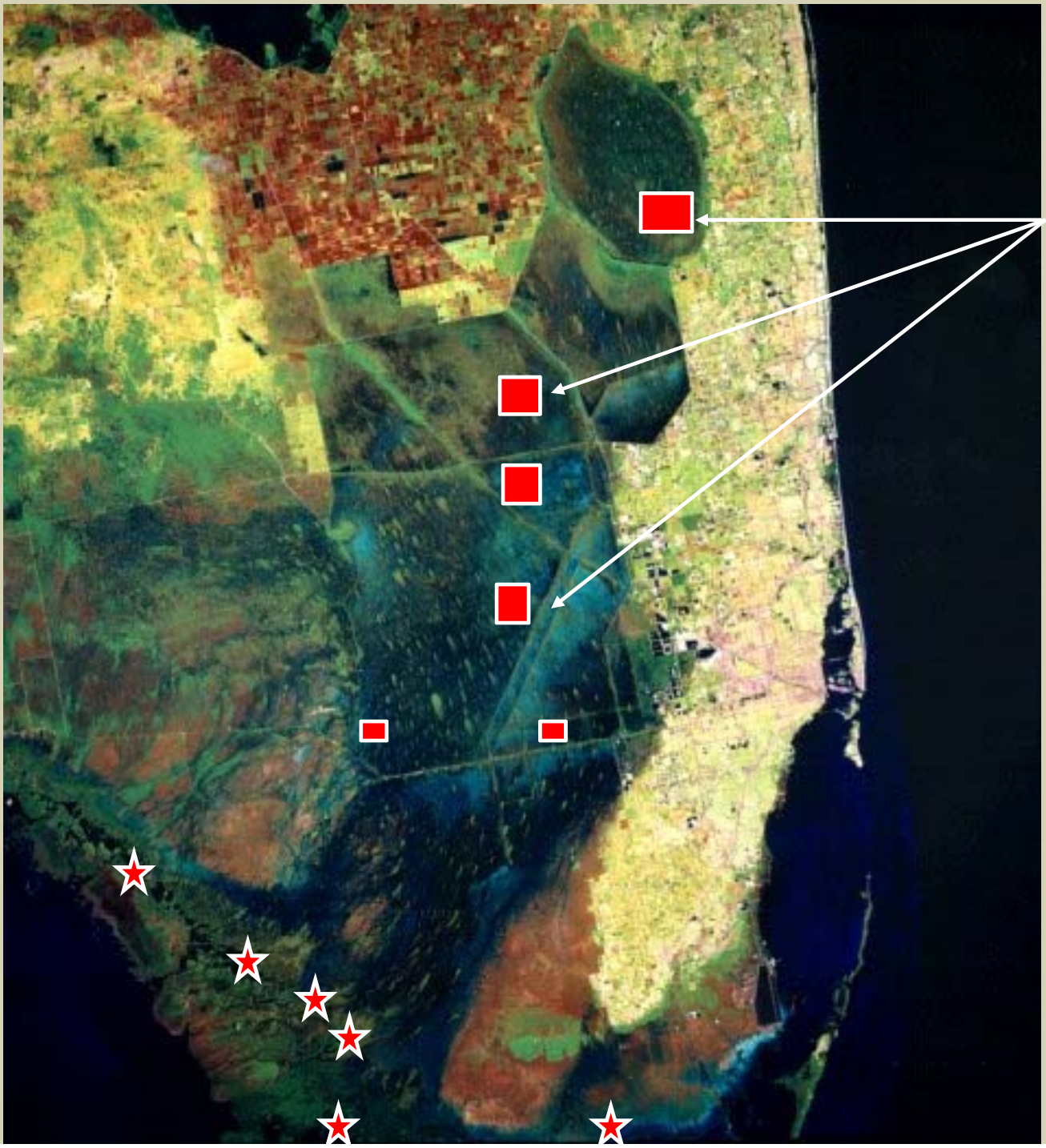
Heterosexual pairing
Poor parenting



Wood Stork nestling feather Hg





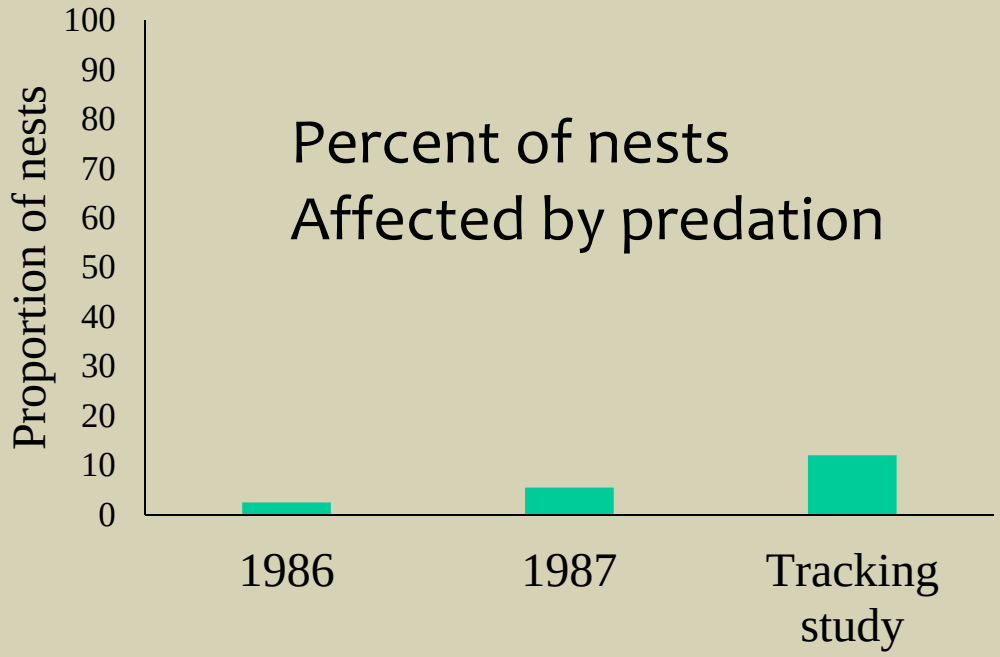


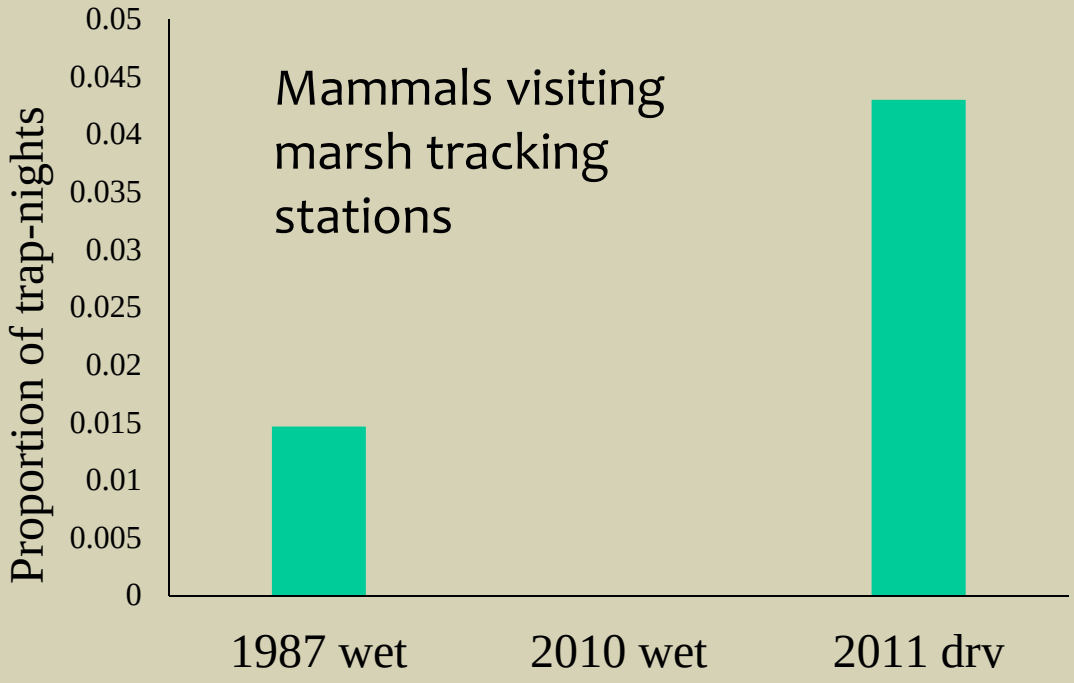
Mercury Contamination

Inland colonies now Relatively clean

Coastal colonies remain at risk of HG contamination

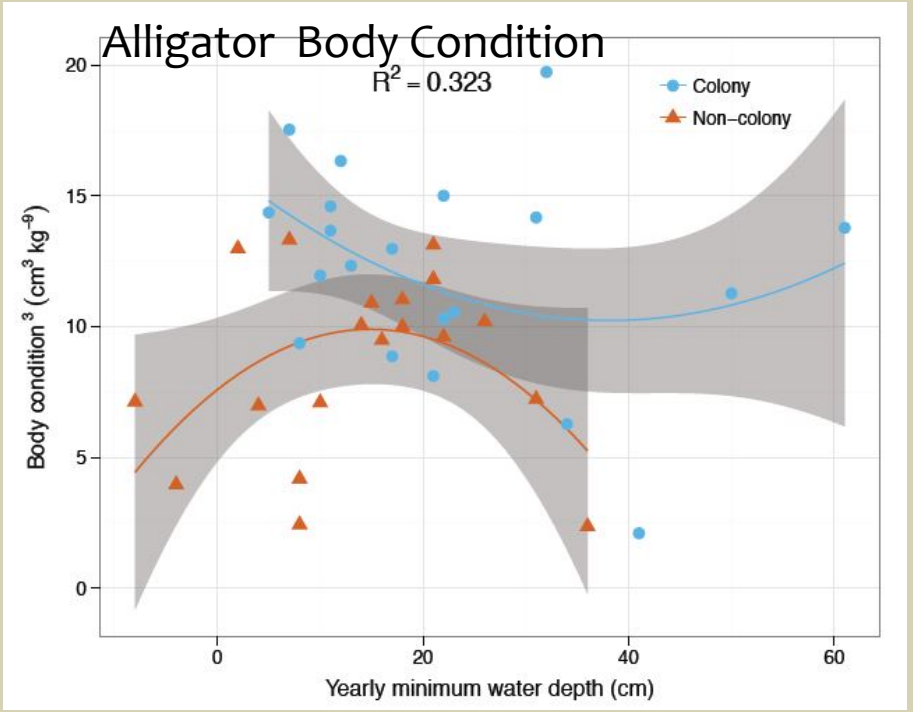
H1. Hydrological restoration will move birds back to coastal regions





Bird feathers in raccoon scat

Alligator-bird
nesting colony relationships



Alligators "protect" nesting birds

Food from bird nests expands alligator Hydrological niche space.

Nell, L. 2014. *Exploring benefits to American Alligators associating with long-legged wading bird nesting colonies in the Everglades. MS. Thesis University of Florida.*

Novel Predators

Burmese Pythons

Aquatic, omnivorous

99% reduction in raccoons?

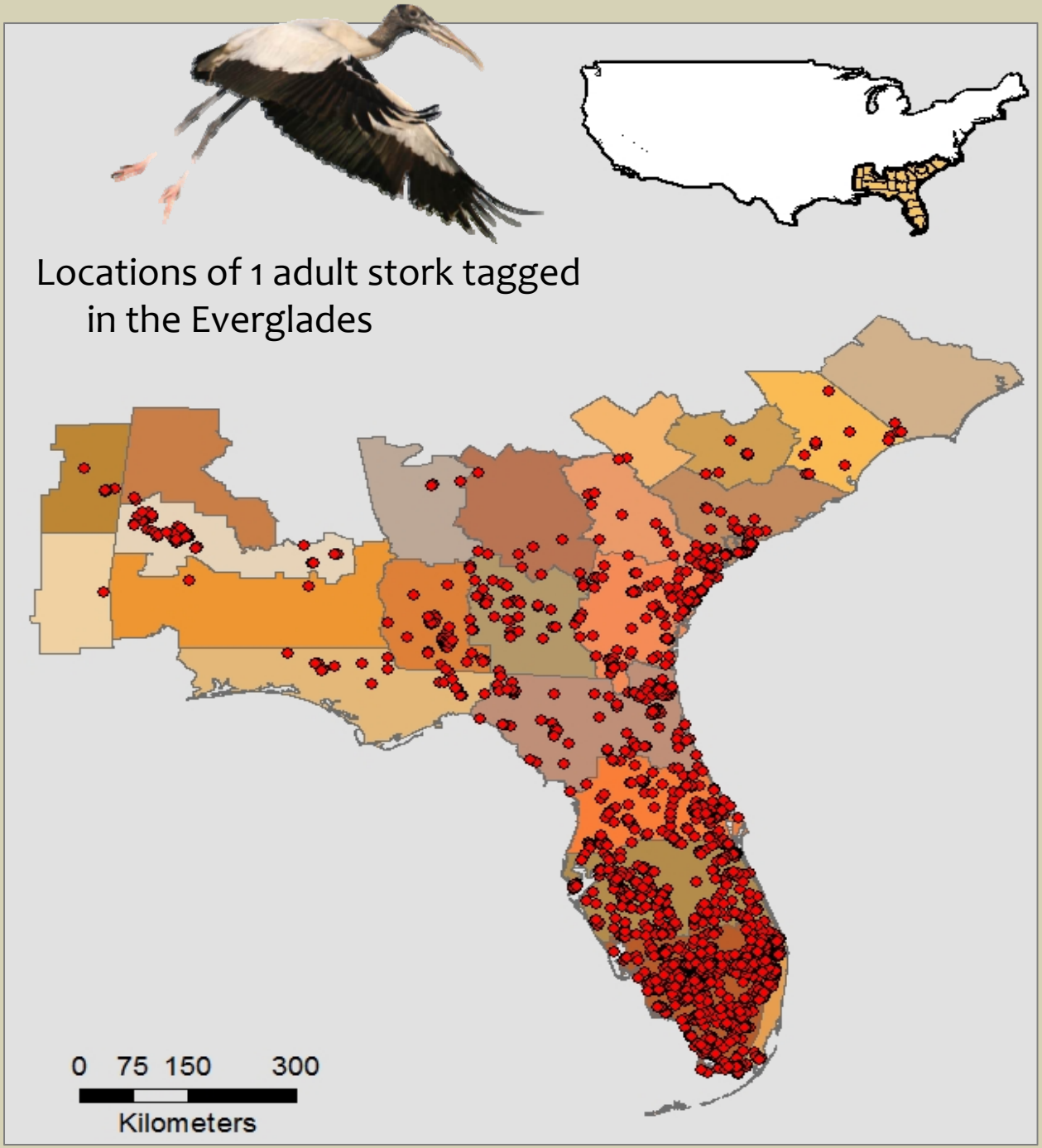
Aquatic bird predator

Gator killer or gator food?

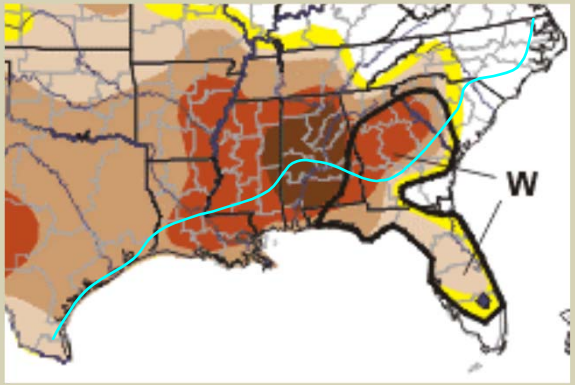
Nest predator?

Python effects
on nest predation?

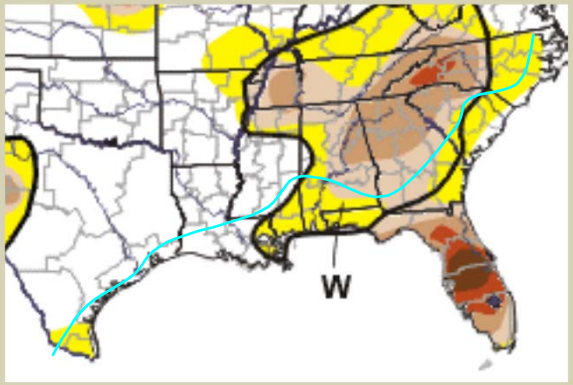
Water
Depth


Locations of 1 adult stork tagged
in the Everglades
0 75 150 300
Kilometers

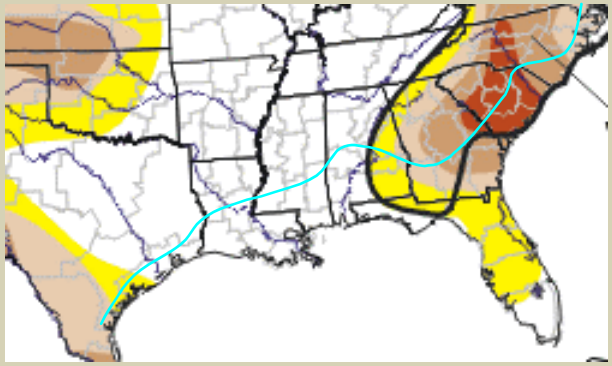
Asynchronous climate systems?
South Florida vs. temperate Southeast US.



2000



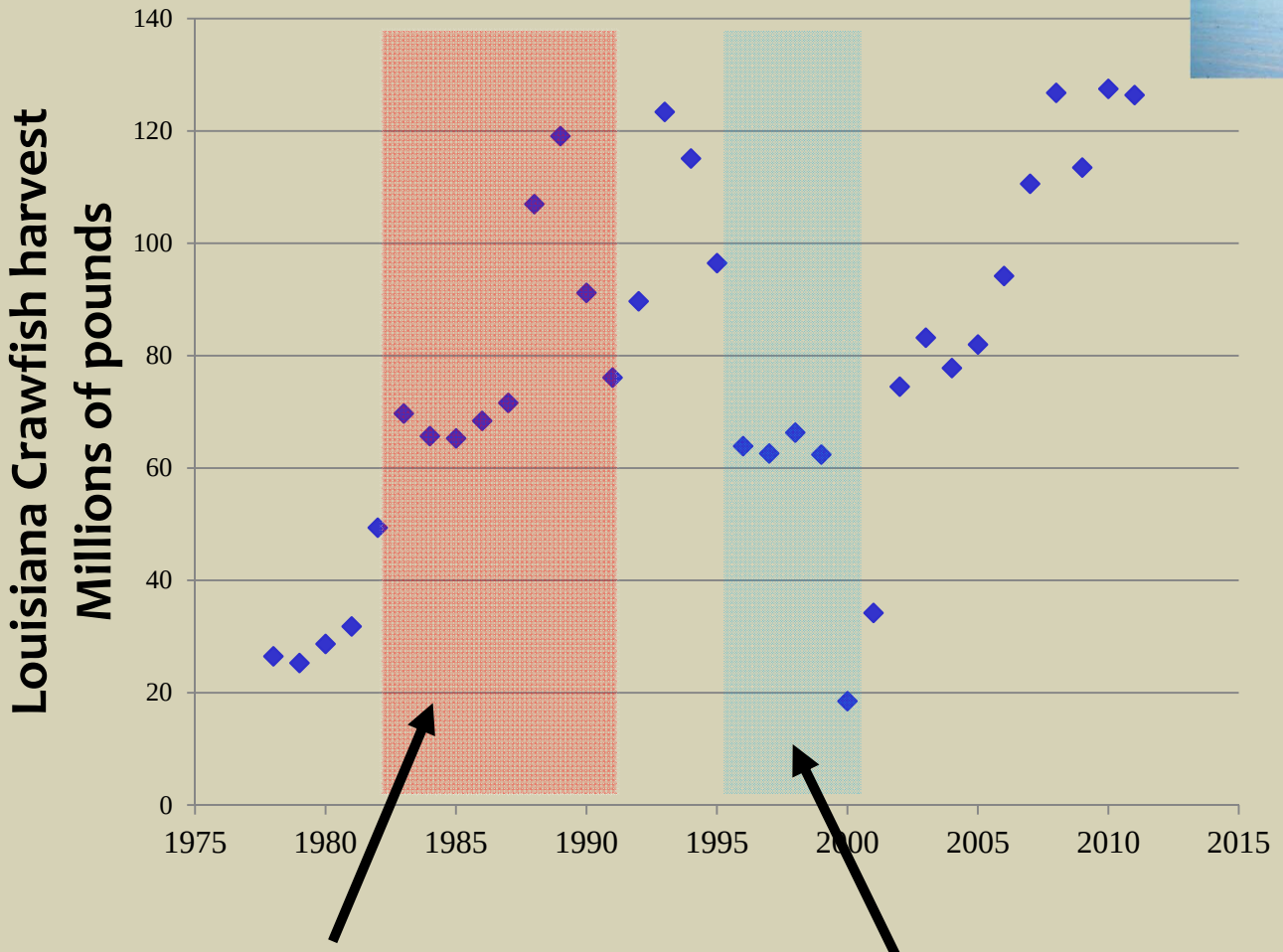
2001



2002

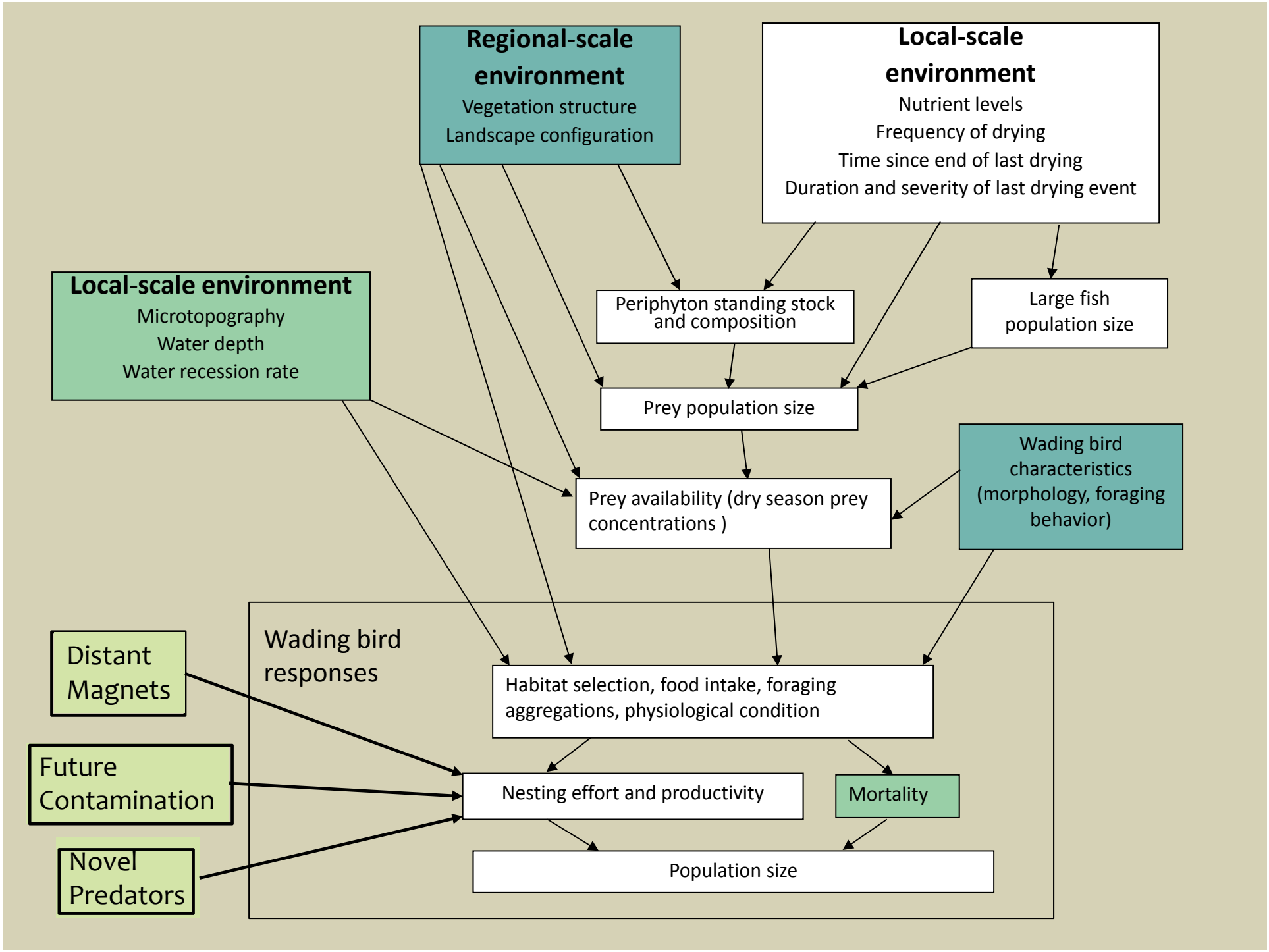
U.S. Drought Monitor

Corporate Shortstopping?



43% reduction
in Florida ibises

4 – 5X increase in
Everglades nesting


Regional-scale environment
Vegetation structure
Landscape configuration
Local-scale environment
Nutrient levels
Frequency of drying
Time since end of last drying
Duration and severity of last drying event
Local-scale environment
Microtopography
Water depth
Water recession rate
Periphyton standing stock and composition
Large fish population size
Prey population size
Wading bird characteristics (morphology, foraging behavior)
Prey availability (dry season prey concentrations)
Wading bird responses
Distant Magnets
Habitat selection, food intake, foraging aggregations, physiological condition
Future Contamination
Nesting effort and productivity
Mortality
Novel Predators
Population size