Wading Bird Foraging Trends in Lake Okeechobee

RECOVER Update Meeting March 2, 2016

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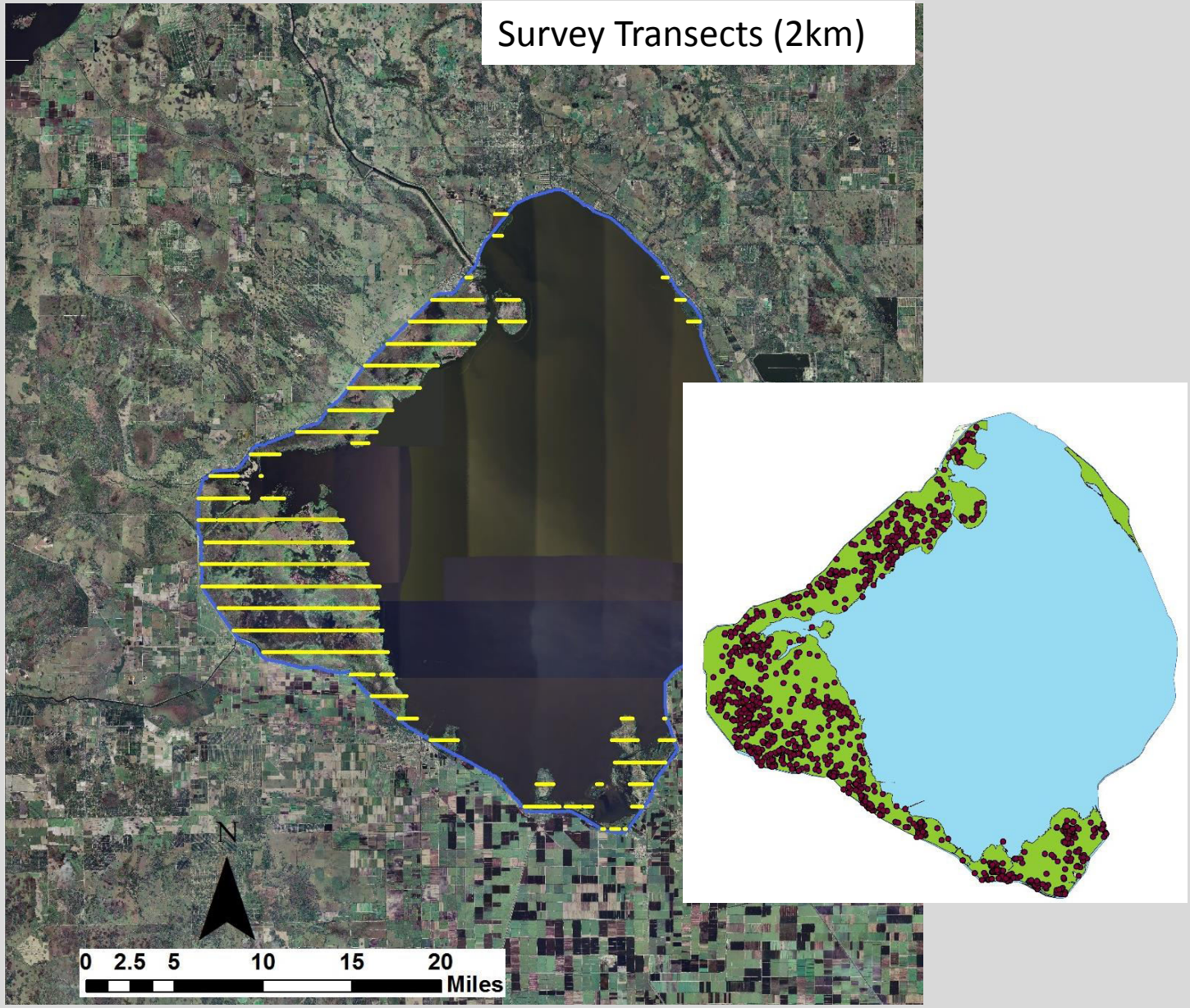
Objectives

- Provide quantitative assessment of wading bird foraging flocks throughout the dry season including flock size, location and composition.
- Facilitate understanding wading bird response to changes in hydrological and environmental variables
- Provide data to model habitat selection to evaluate landscape quality for restoration and management purposes




Survey Flights

- 2010 – Present (collected over 1000 locations)
- Every two weeks (Dec-Jun)
- Entire littoral zone sampled each survey
- Locate flocks >50 birds

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Important Hydrological Variables

Great Egret

- Days Since Drawdown
- Hydroperiod
- 2-week Rec. Rate

Snowy Egret

- Depth
- Days Since Drawdown
- Hydroperiod
- 2-week Rec. Rate

White Ibis

- Depth
- 4 week Rec. Rate

Vegetation

Currently testing different possibilities

- Suitability classification
- Potential to be used throughout system

Prey Selection of Nesting Wading Birds on Lake Okeechobee

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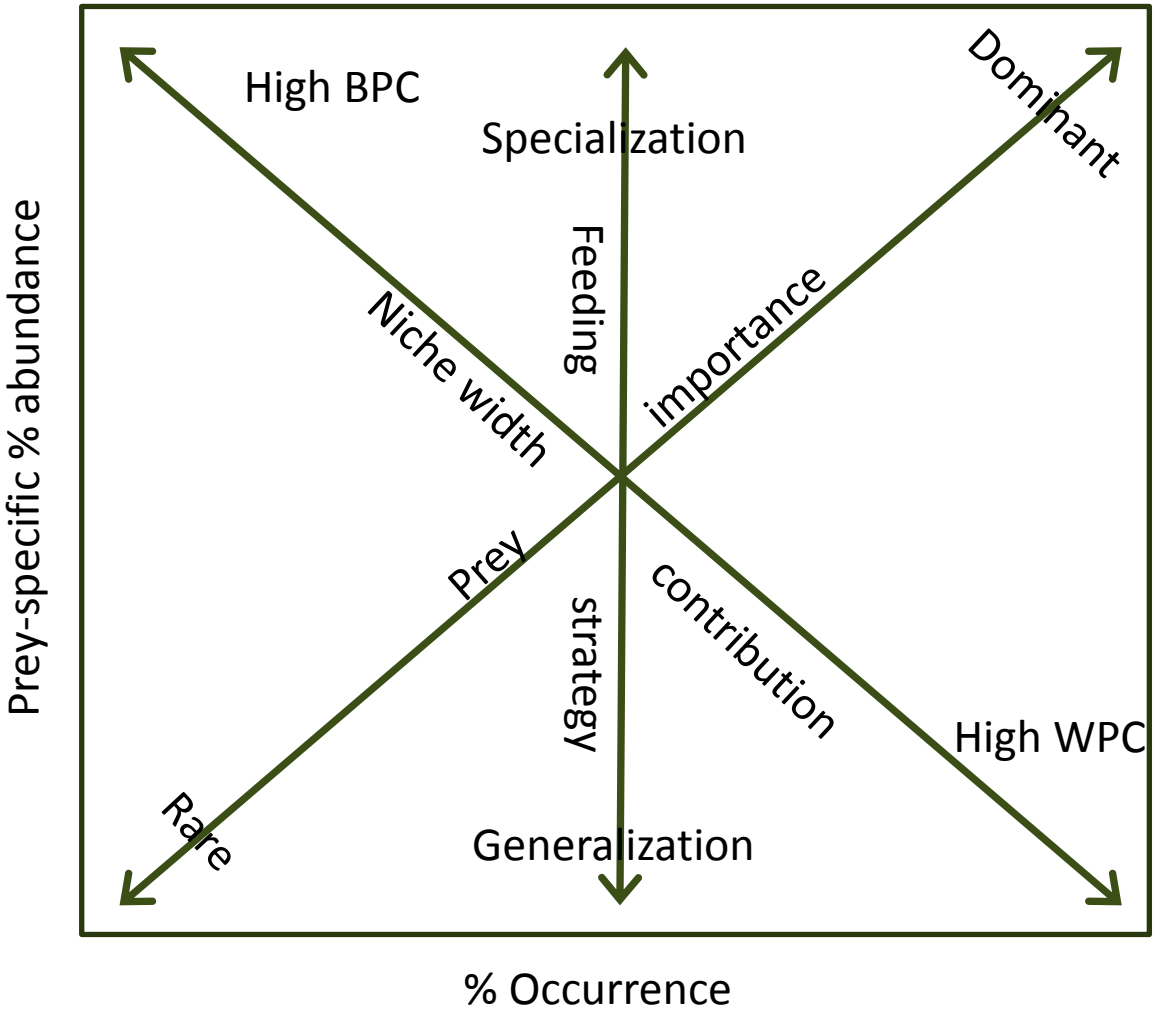
FAU

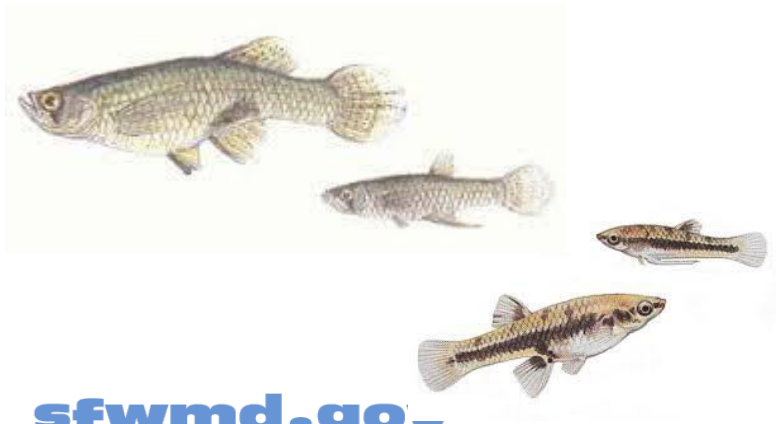
- Examine prey selection by collecting boluses from chicks of three species of nesting wading birds:
  - White Ibis – SFWMD
  - Great Egret and Snowy Egret – FAU
- Questions:
  - How do they respond to changes in hydrology
  - Are the feeding habits of these species different on the lake
  - What are they selecting form what is available

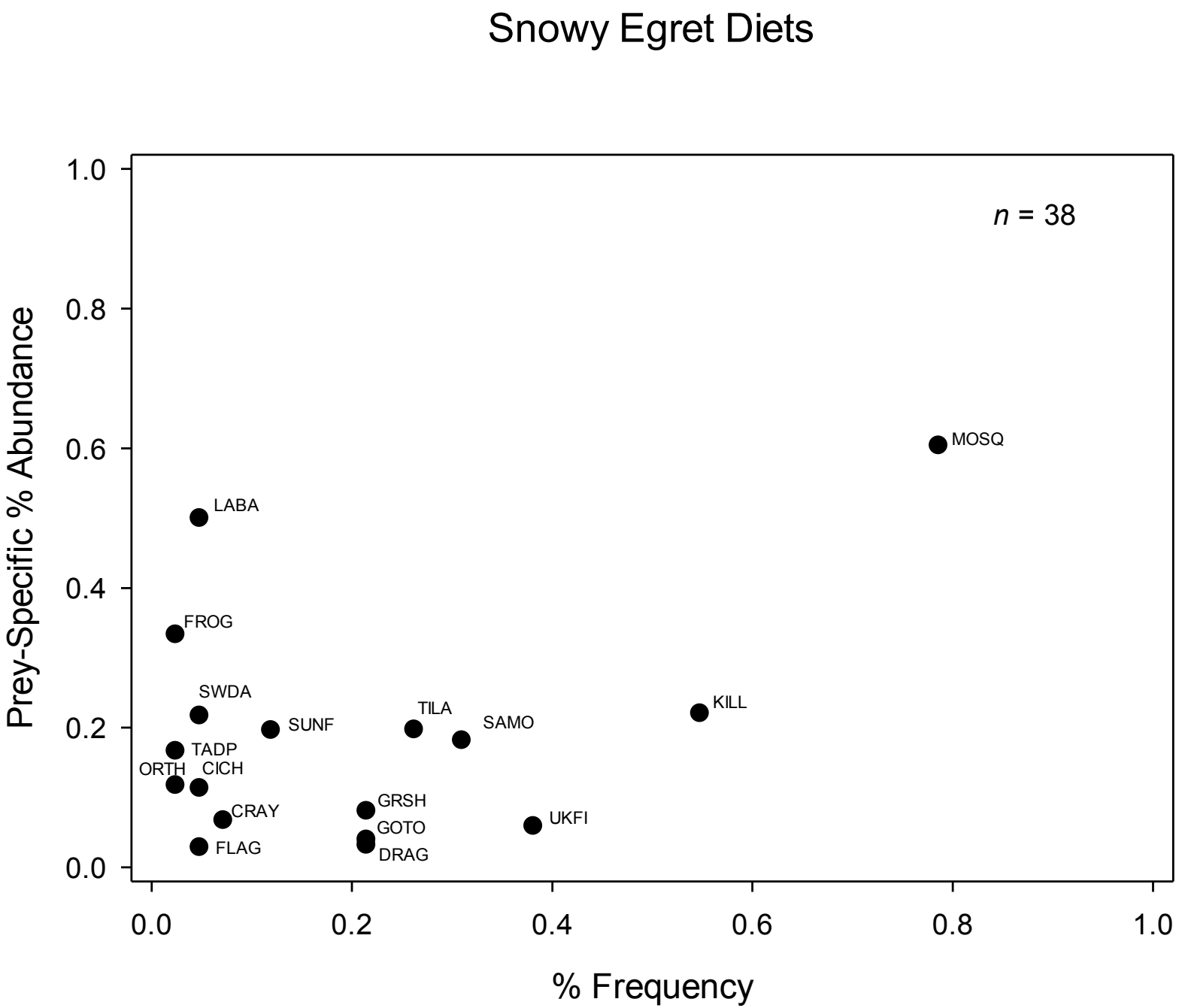
Modified Costello graphs

- Amundsen (1996) suggests calculating prey-specific % abundance
  - Better represents inter- and intra-individual differences in niche width
    - Between Phenotype Component
    - Within Phenotype Component

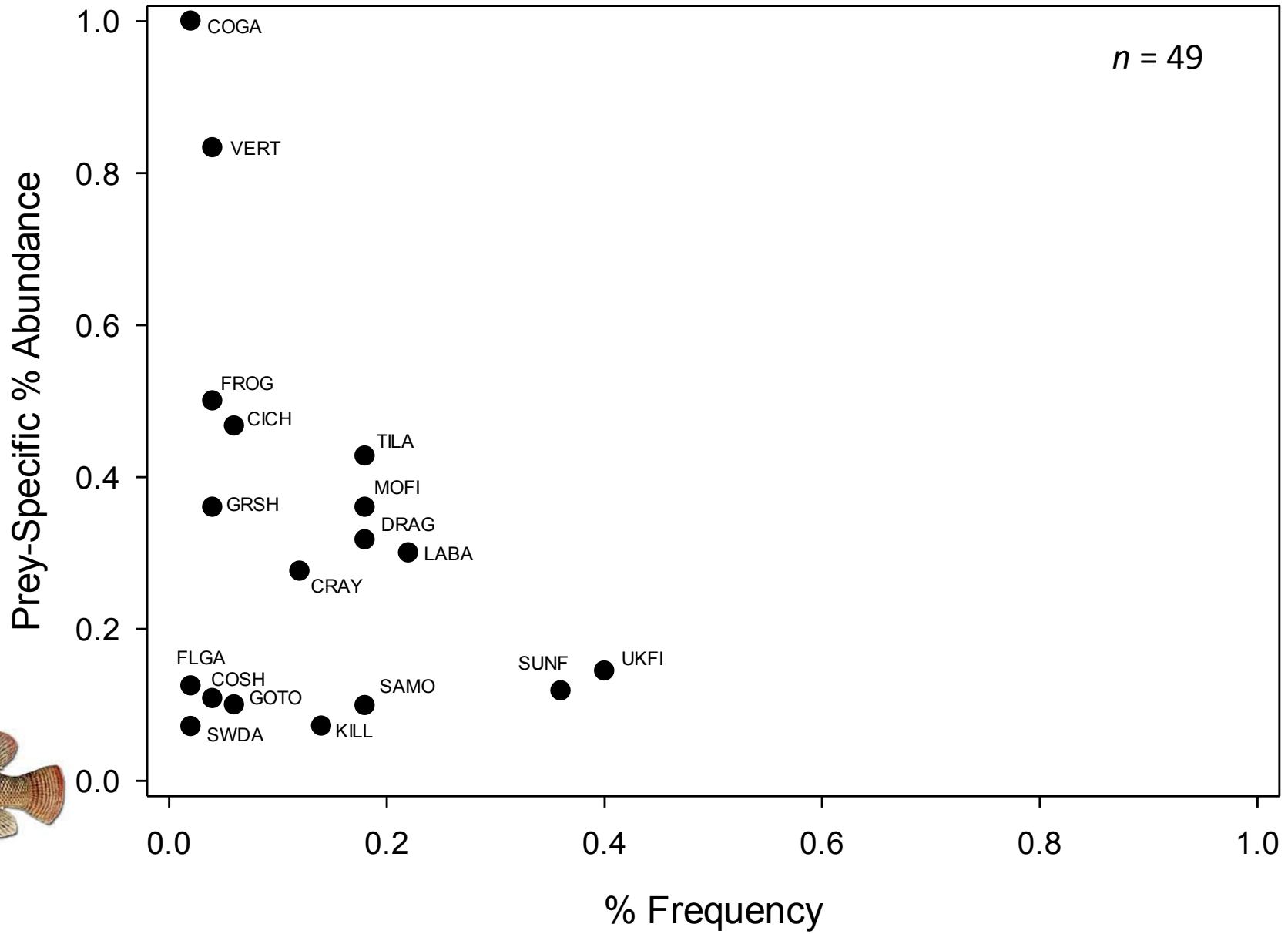


- Most prey items cluster in the 3rd quadrant
  - A generalized diet that is dominated by *Gambusia* and killifish





- No prey items in the 1st or 4th quadrant
  - Generalist piscivore with some individual specialization on terrestrial vertebrates
  - Larger fish are important



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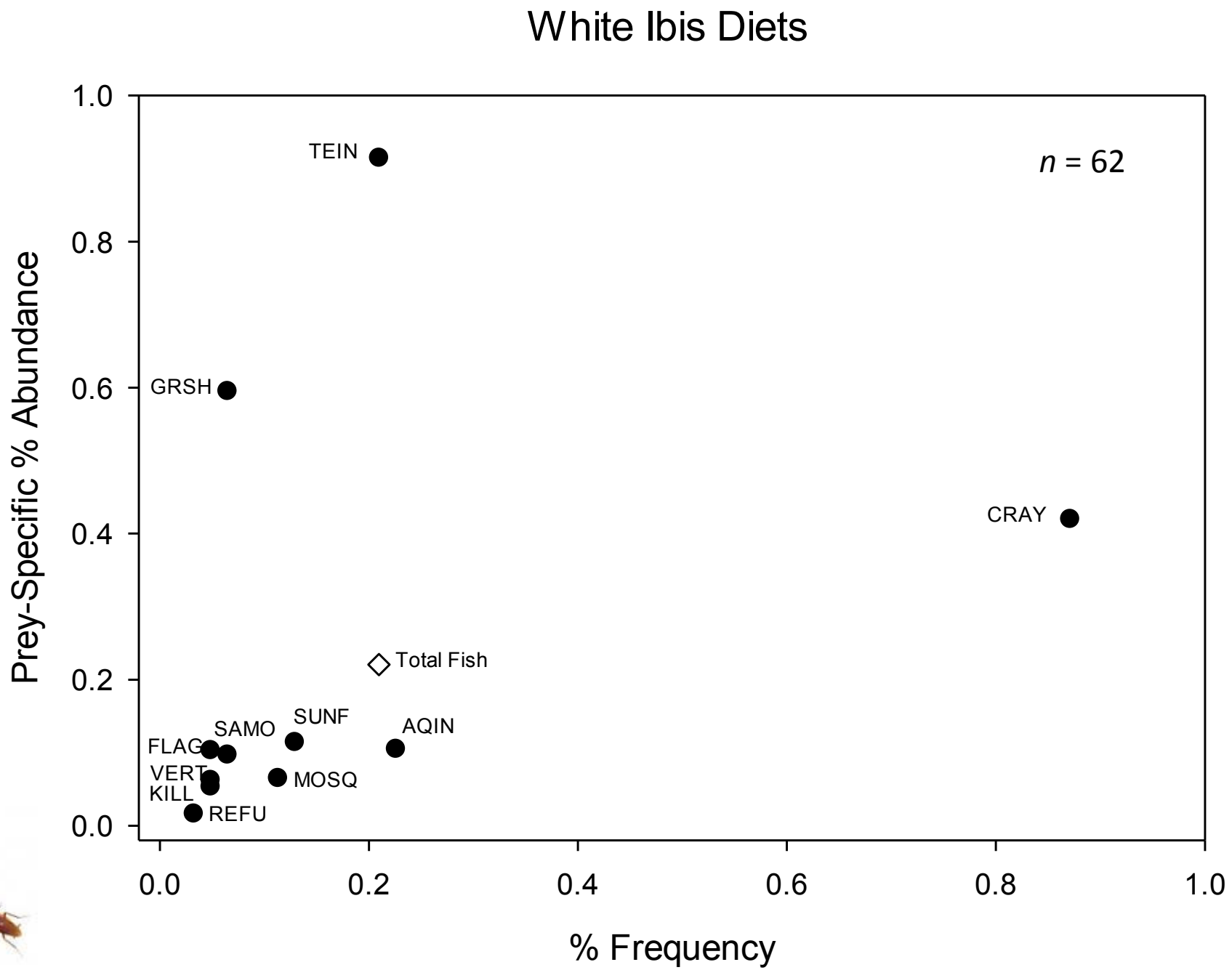
- Relatively few prey items found
- Most are clustered in the 3rd quadrant
  - Crayfish are dominant
  - Generalist piscivores
  - Terrestrial specialists



Year Two

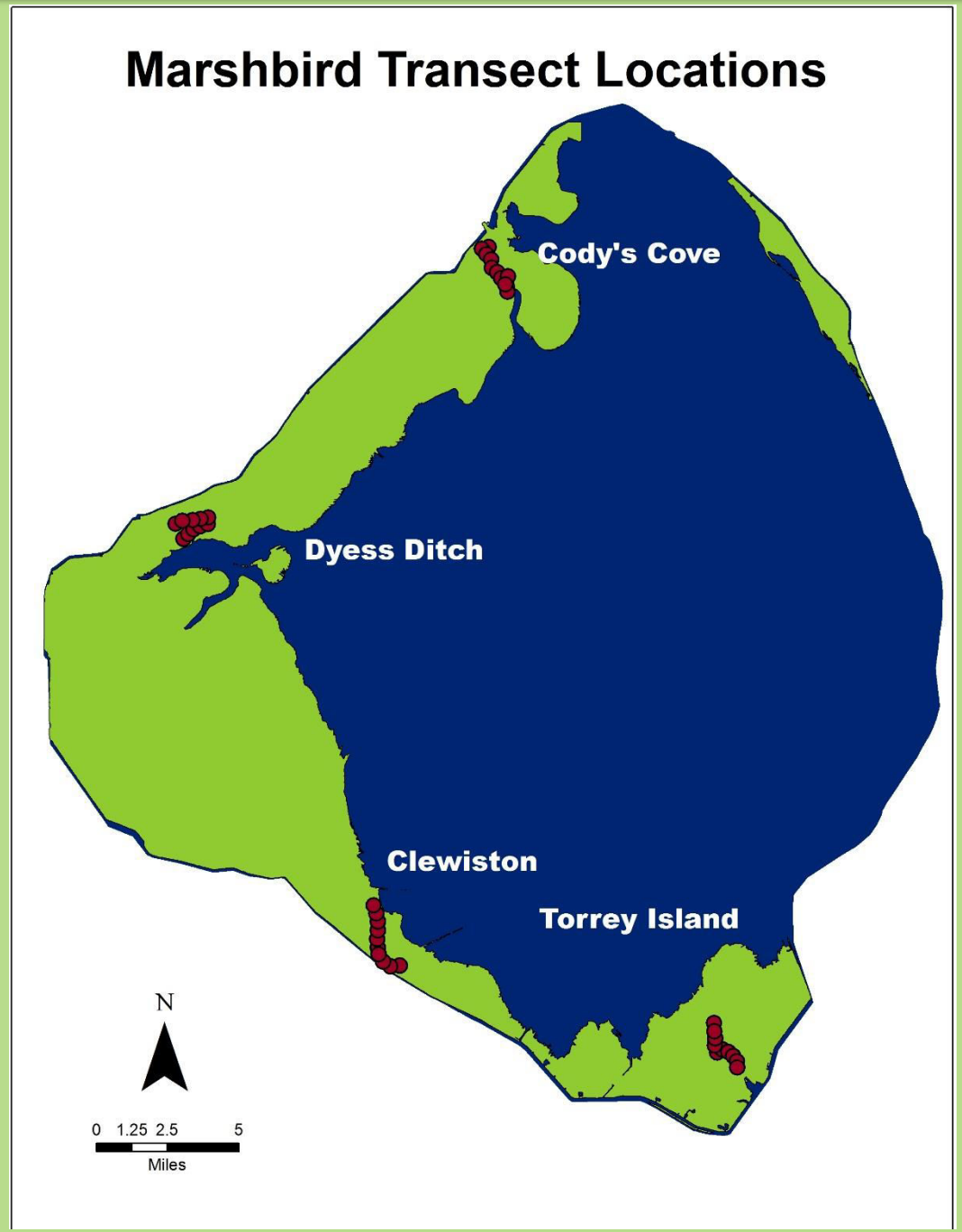
- Continued data collection
- Examine intraspecific (across years and colonies) and interspecific patterns of variation in diet composition.
- Relate to previous and ongoing studies of prey production in specific habitat types

Secretive Marsh Bird Study

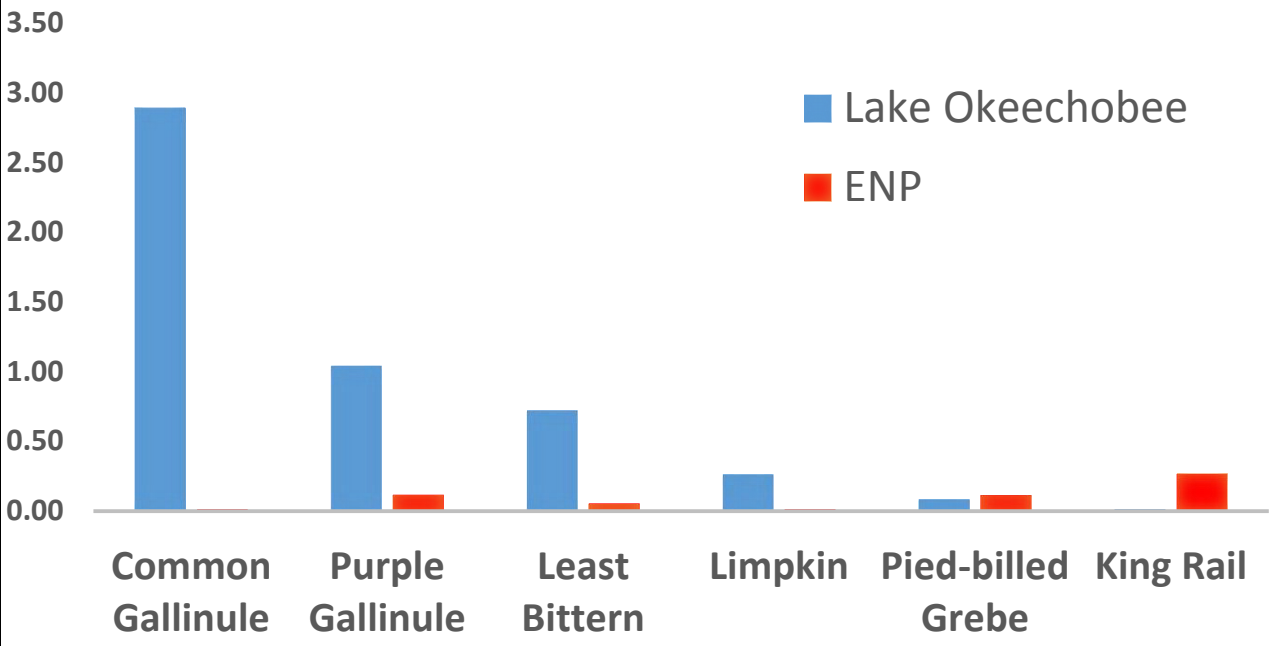
Objectives

- Population status and trends of this group of species.
- Surveillance surveys to determine baseline data on overwintering/breeding status
- Determine habitat use occupied by secretive marsh birds

- Started 2015
- North American Marsh Bird Monitoring Protocol (Conway 2011)
    - Play-callback point count surveys
    - Four transects (10 points ea.) sampled 3x during breeding season Mar – May
- Habitat characterization
    - Quantifying percent coverage and dominant vegetation surrounding each survey point each year
- Surveyed for 7 species
    - Gallinules, Rails, Bitterns, Grebe



DETECTIONS/POINT COUNT



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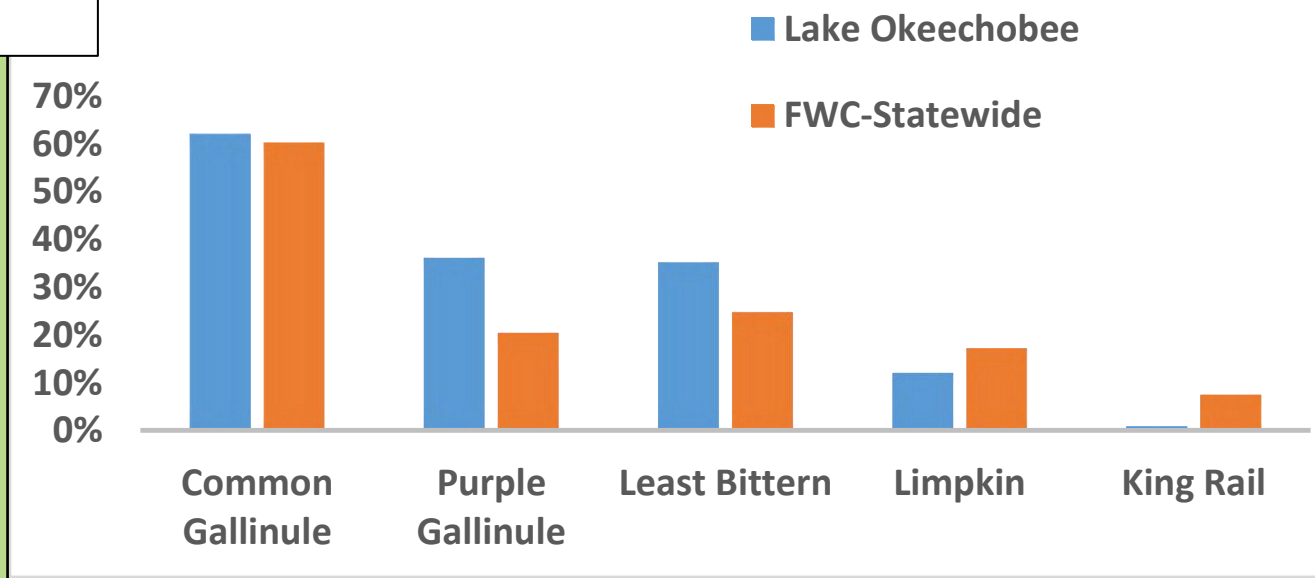
PERCENTAGE OF POINT COUNTS WITH DETECTION ≥1 BIRD



- Lake Okeechobee: Important breeding habitat for Purple Gallinule, Least Bittern
- Need for more data to improve detection rates
  - Limited by accessibility and manpower
  - Rare species
- Habitat Management
  - Consideration of a mosaic of sparse and dense emergent habitats - max edge effect (50/50 interspersion of open water/habitat)

Peregrine Falcon Snacks

Questions