Farmington Bay Wetlands

Update

Great Salt Lake Steering Committee

March 23, 2007

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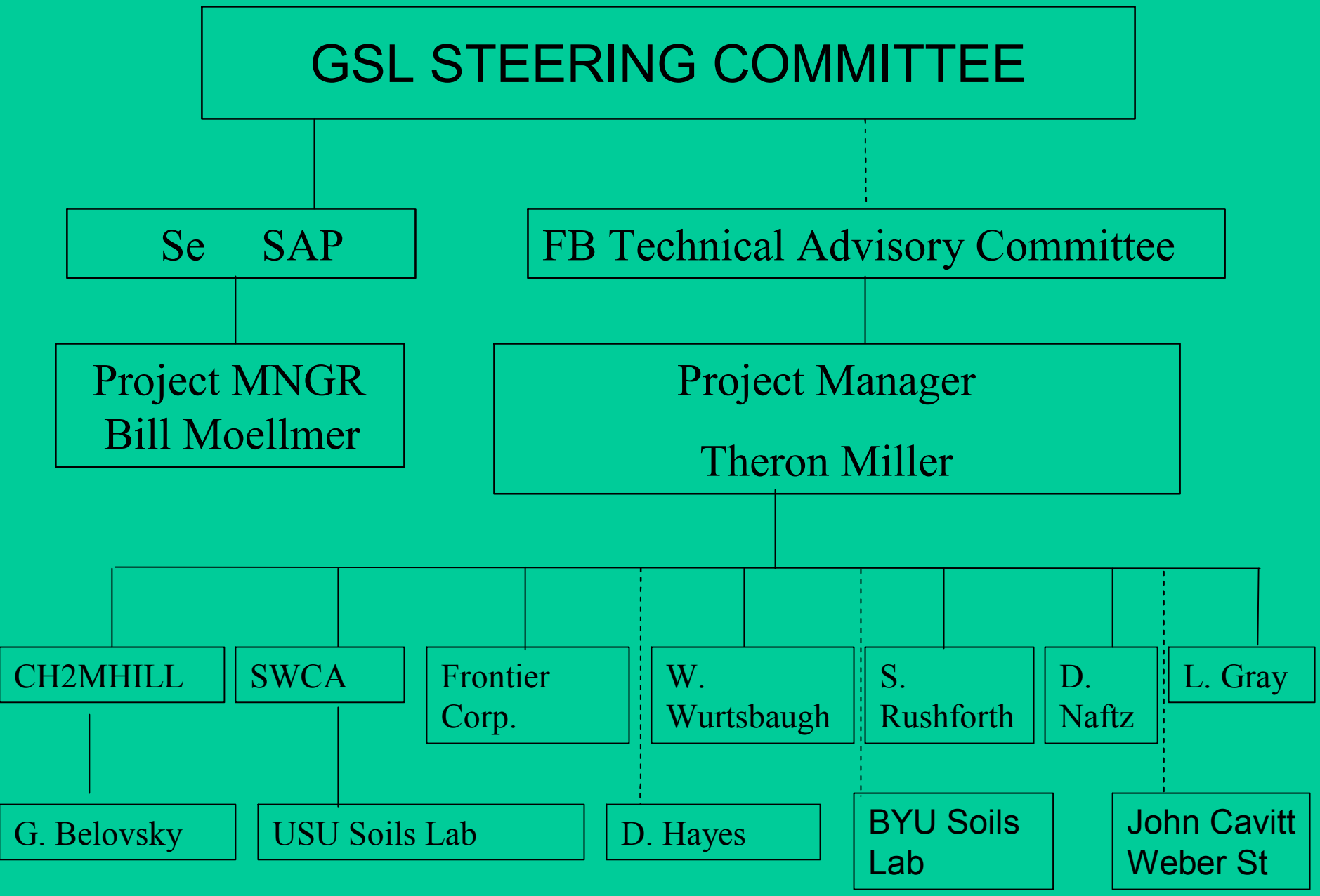
Utah Division of Water Quality

NEEDS

DEVELOP APPROPRIATE METHODOLOGY FOR ASSESSMENT AND EVENTUALLY SITE-SPECIFIC CRITERIA

- **UNDERSTAND "HOW THE ECOSYSTEM WORKS"**
- **IDENTIFY SENSITIVE HABITAT, SEASON AND FOODCHAIN LINKS (LITERATURE REVIEW)**
- **IDENTIFY (TOLERANCE) THRESHOLDS (IF THEY EXIST)**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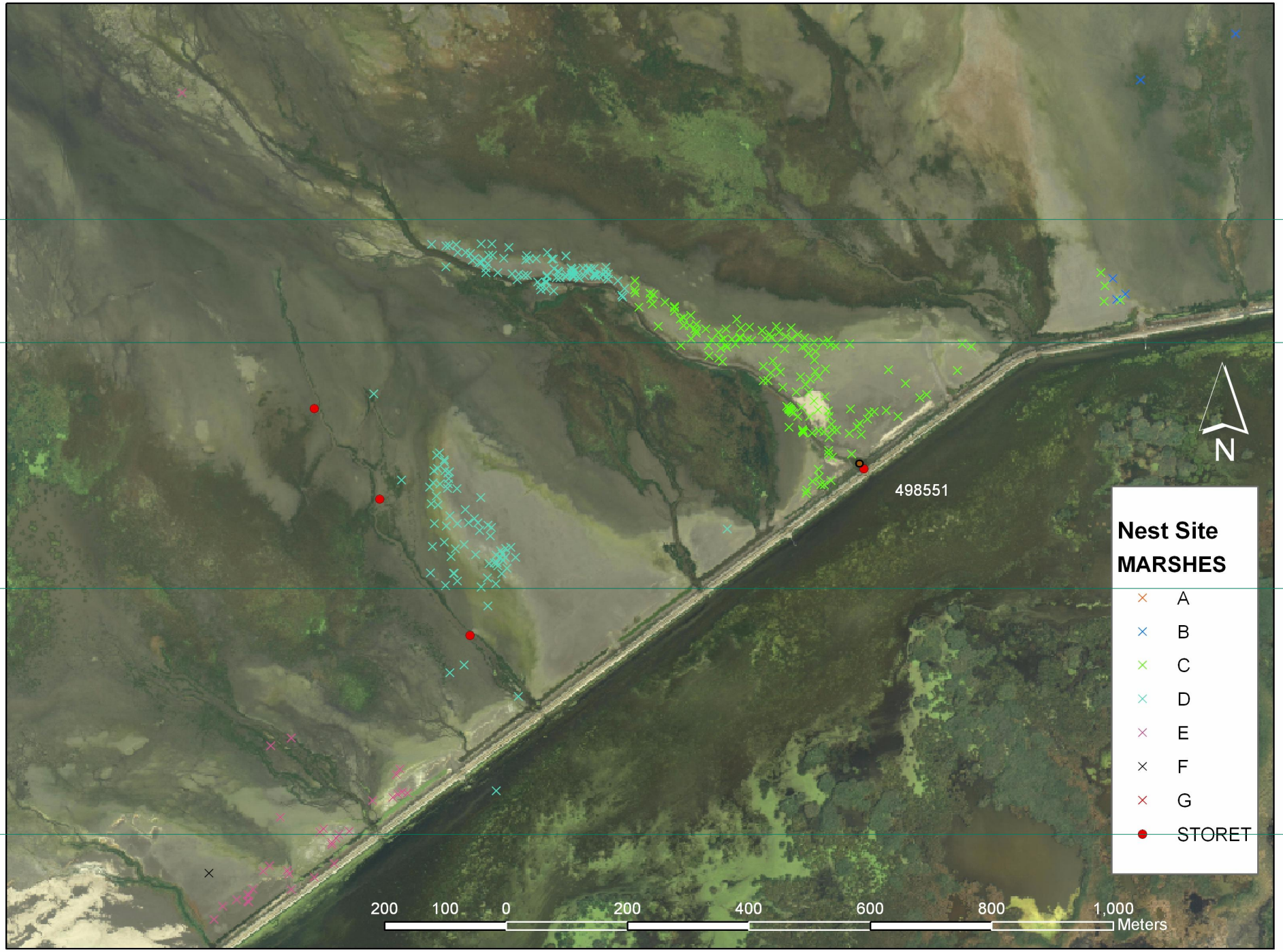
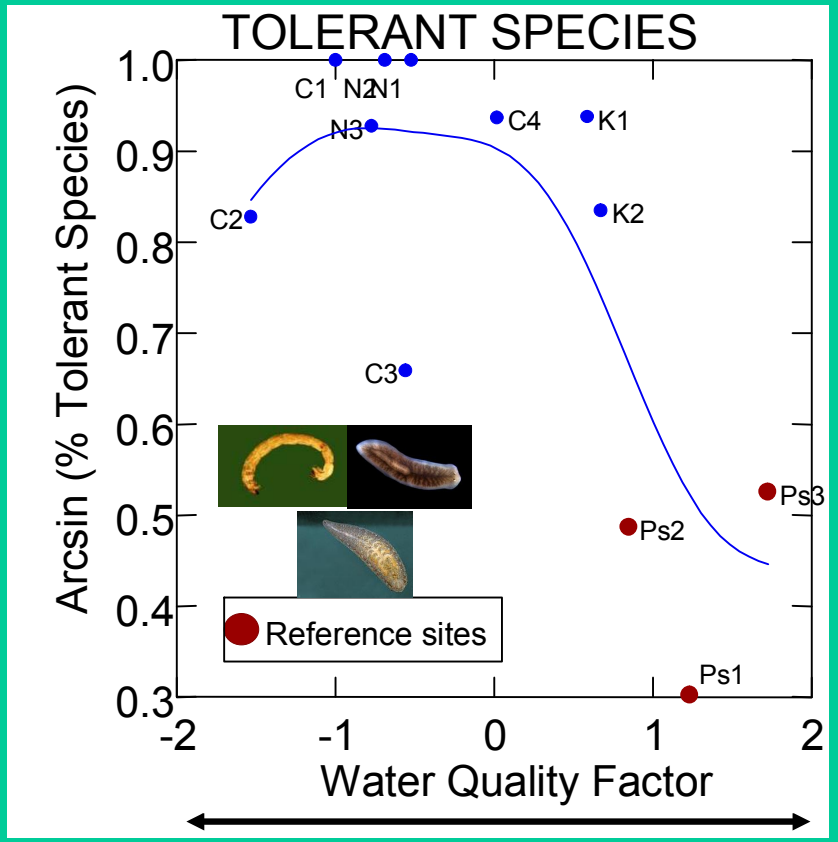

N
498551
Nest Site
MARSHES
A
B
C
D
E
F
G
STORET
200 100 0 200 400 600 800 1,000
Meters

Tolerant & Sensitive Macroinvertebrates (2004)

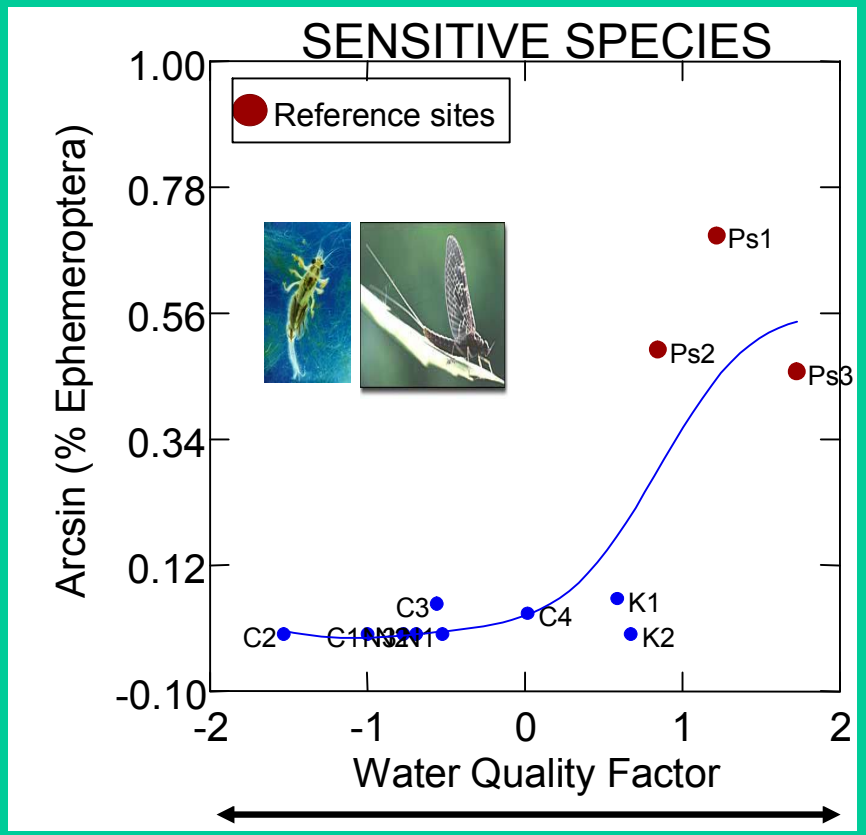
Sheetflow Sites



Increasing Nutrients (Total N and P)

Increasing pH, Dissolved Oxygen and TDS

Tolerant species were more abundant at eutrophic sites

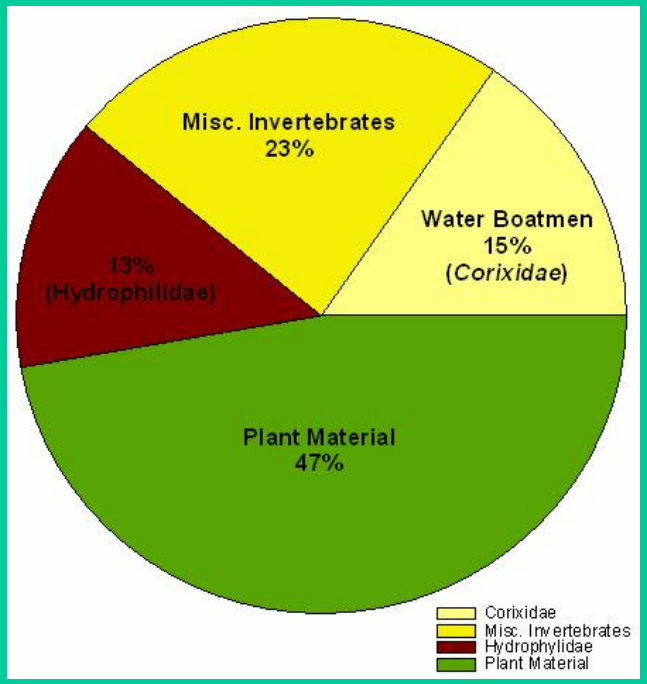


Increasing Nutrients (Total N and P)

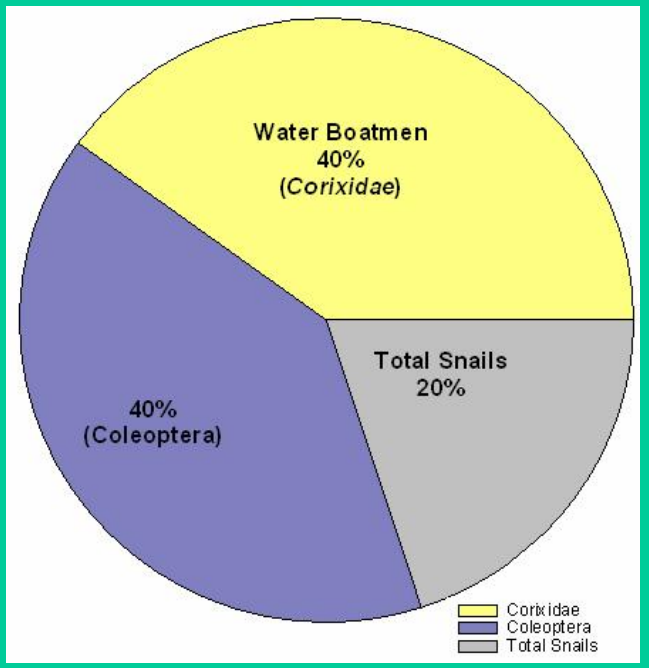
Increasing pH, Dissolved Oxygen and TDS

Sensitive species were more abundant at oligotrophic sites, (e.g. reference sites)

Kays Creek (south)
Stomach contents by volume

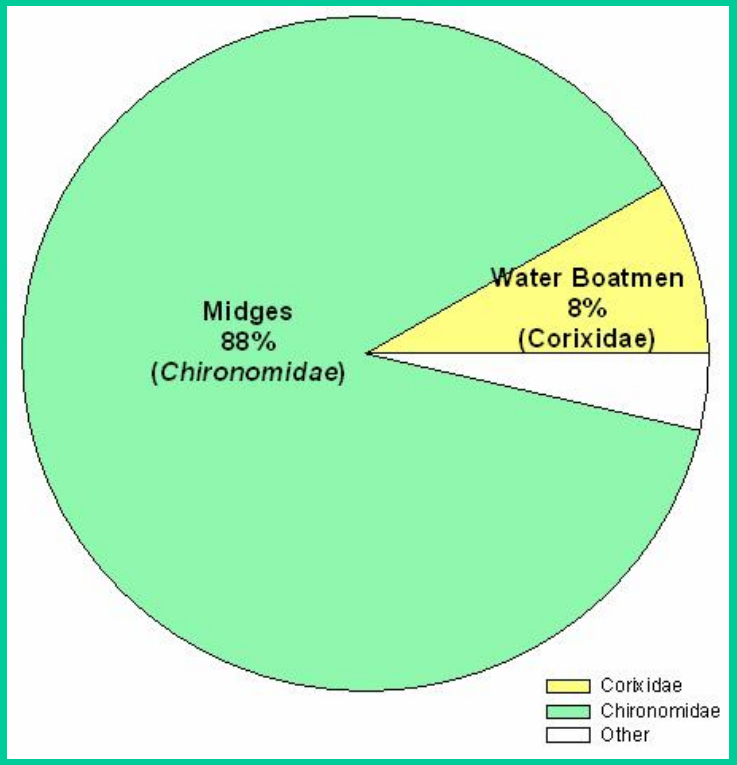


American avocet

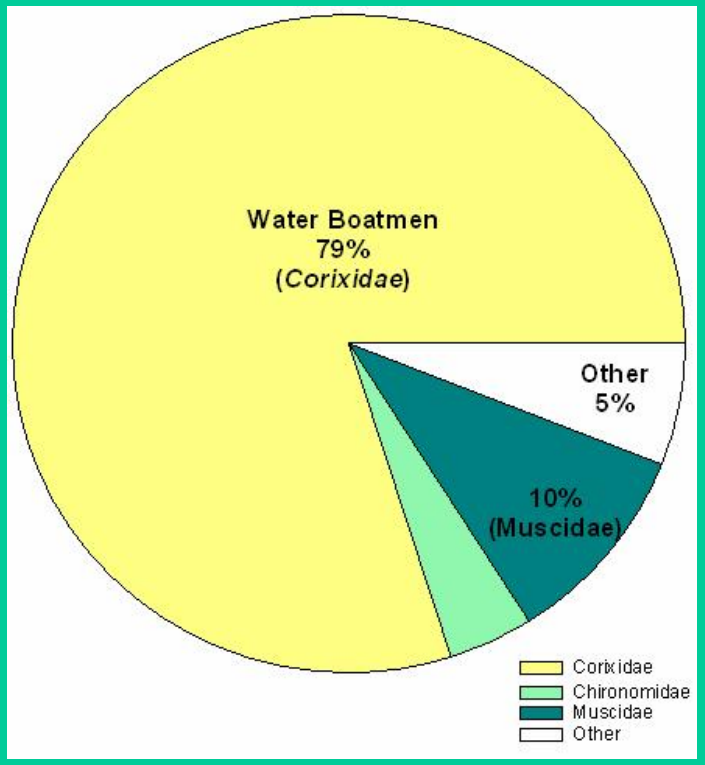


Black neck stilt

Bear River Bird Refuge
Stomach contents by volume



American avocet

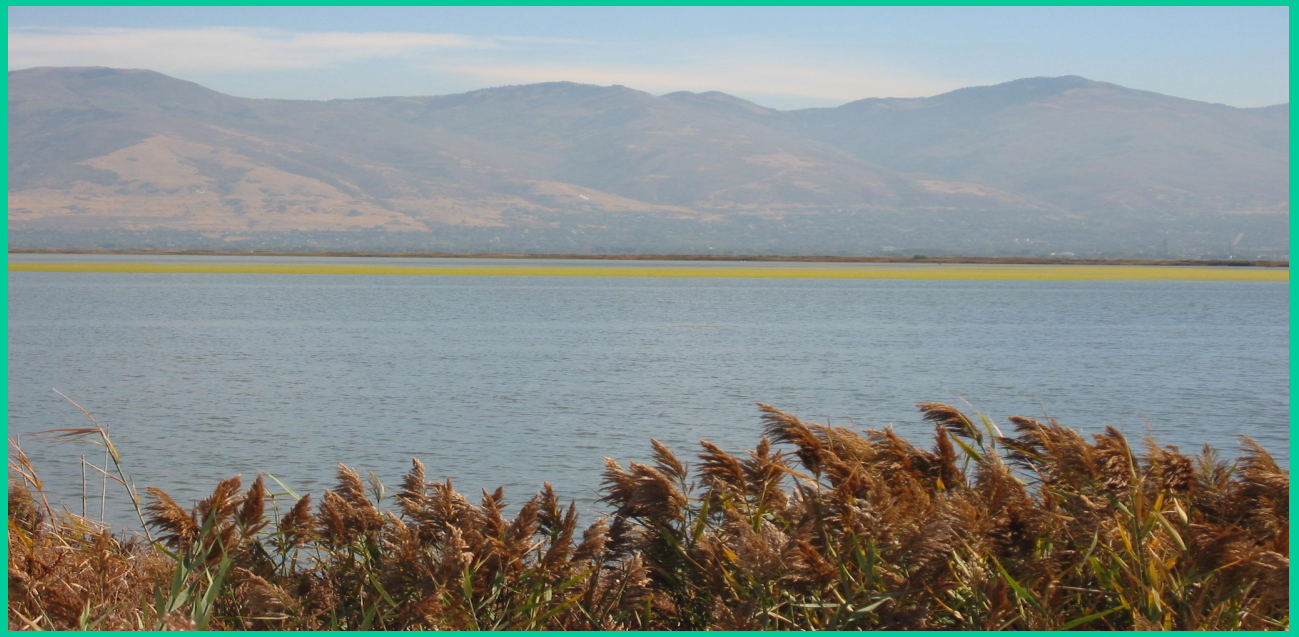


black neck stilt

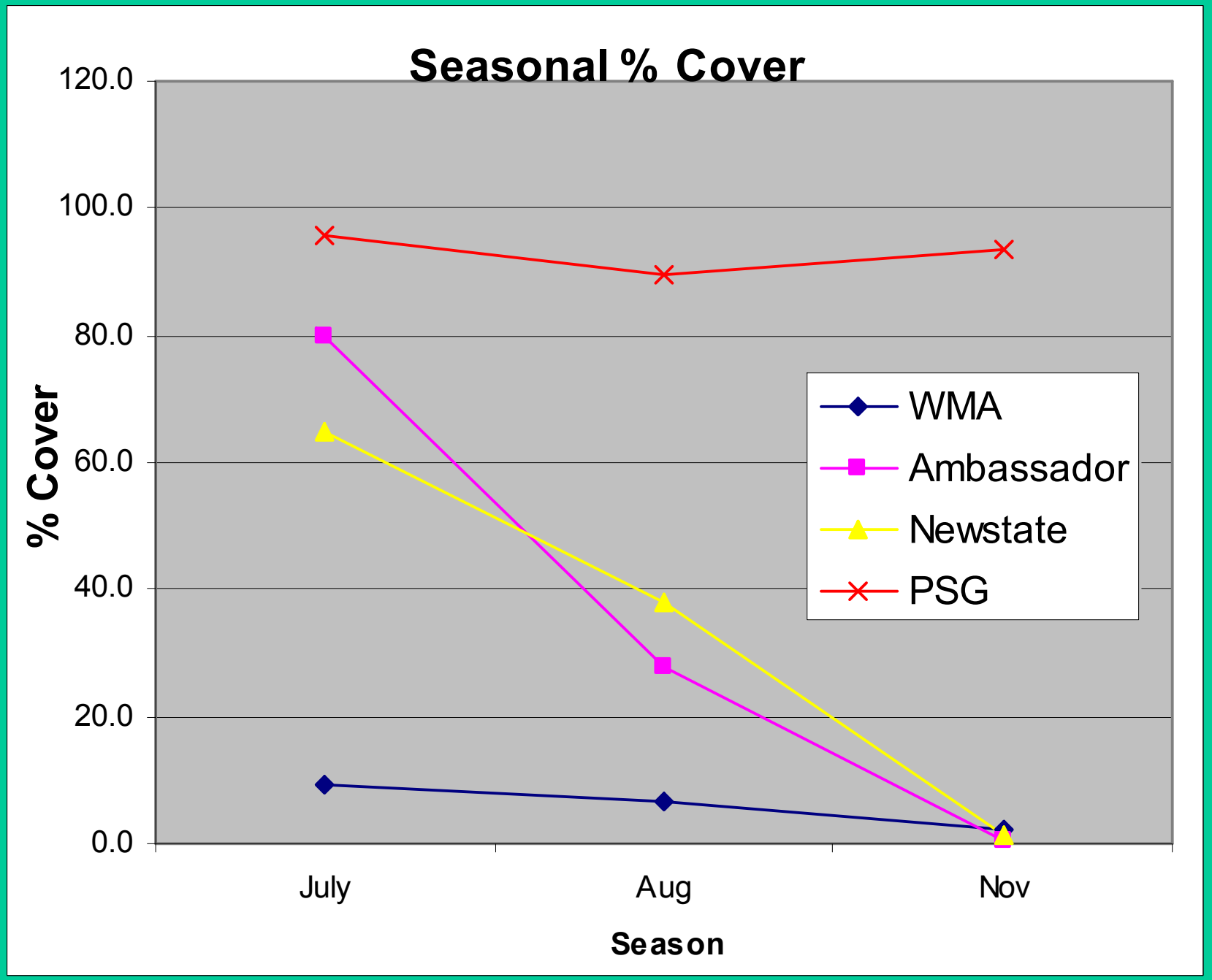
Nesting and Hatching Success

Site	Year	Species	Total Eggs Laid (total nests)	Clutch Size (n)	Hatchability (n)	Total Young Produced (average # eggs hatched / nest)	# Young Leaving/Nest (n)
FARM	**2005**						
		AMAV	**1681 (481)**	**3.86 ± 0.51 (247)**	**0.96 ± 0.13 (247)**	**914 (1.9)**	**3.75 ± 0.57 (247)**
		BNST	**769 (411)**	**3.87 ± 0.48 (201)**	**0.97 ± 0.11 (201)**	**737 (1.79)**	**3.76 ± 0.62 (201)**
	2006						
		AMAV	**2146 (641)**	**3.93 ± 0.30 (413)**	**0.93 ± 0.15 (369)**	**1538 (2.4)**	**3.55 ± (435)**
		BNST	**1123 (313)**	**3.97 ± 0.21 (232)**	**0.96 ± 0.12 (221)**	**916 (2.9)**	**3.77 ± (243)**

Impoundments
2004 Conclusion



- Analytical method shows general trends and relationships, however, we need a more sensitive tool to make the link between ecological function and beneficial use.


Seasonal % Cover
120.0
100.0
80.0
60.0
40.0
20.0
0.0
% Cover
July
Aug
Nov
Season
WMA
Ambassador
Newstate
PSG

Remaining Data Gaps

- Determine relative importance of shading, waterfowl foraging and potential stress from excess P in the impoundments.

- Quantify nesting habitat characteristics in terms of plant communities and proximity to water.

- Quantify shorebird juvenile survivability and link this to habitat and food resource requirements.