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Great Salt Lake Wetlands: Legacy Nature Preserve

Brian Nicholson

May 10, 2010

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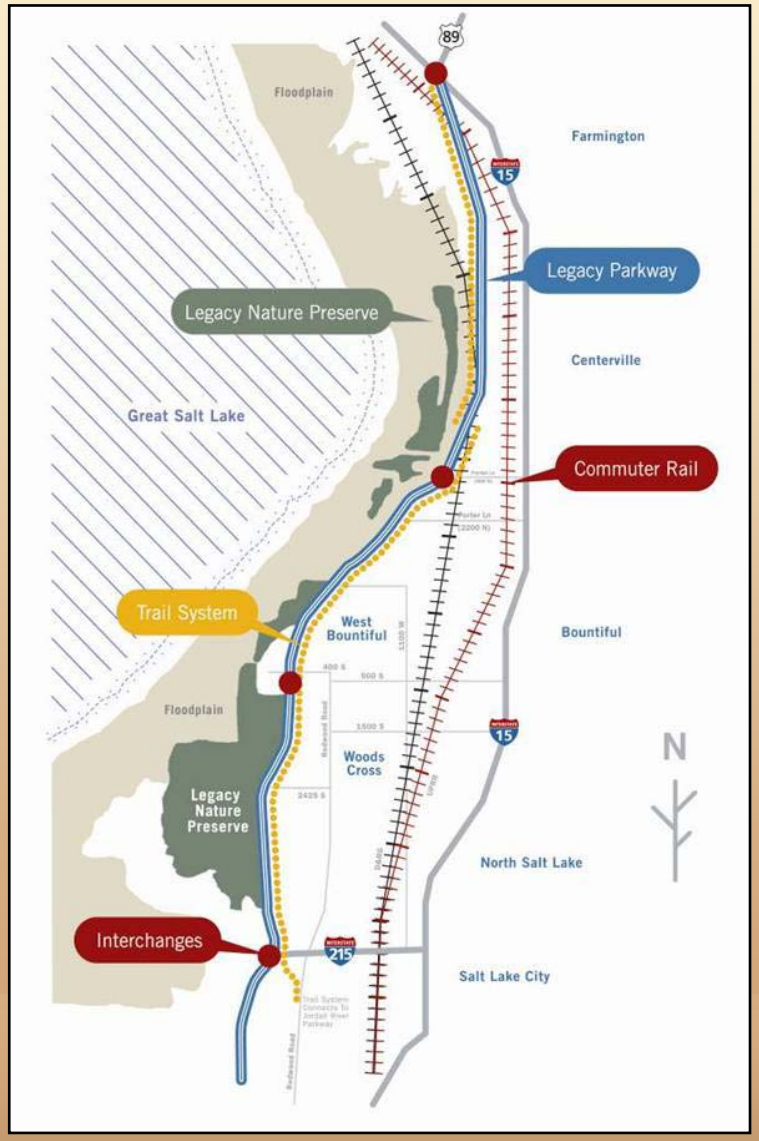

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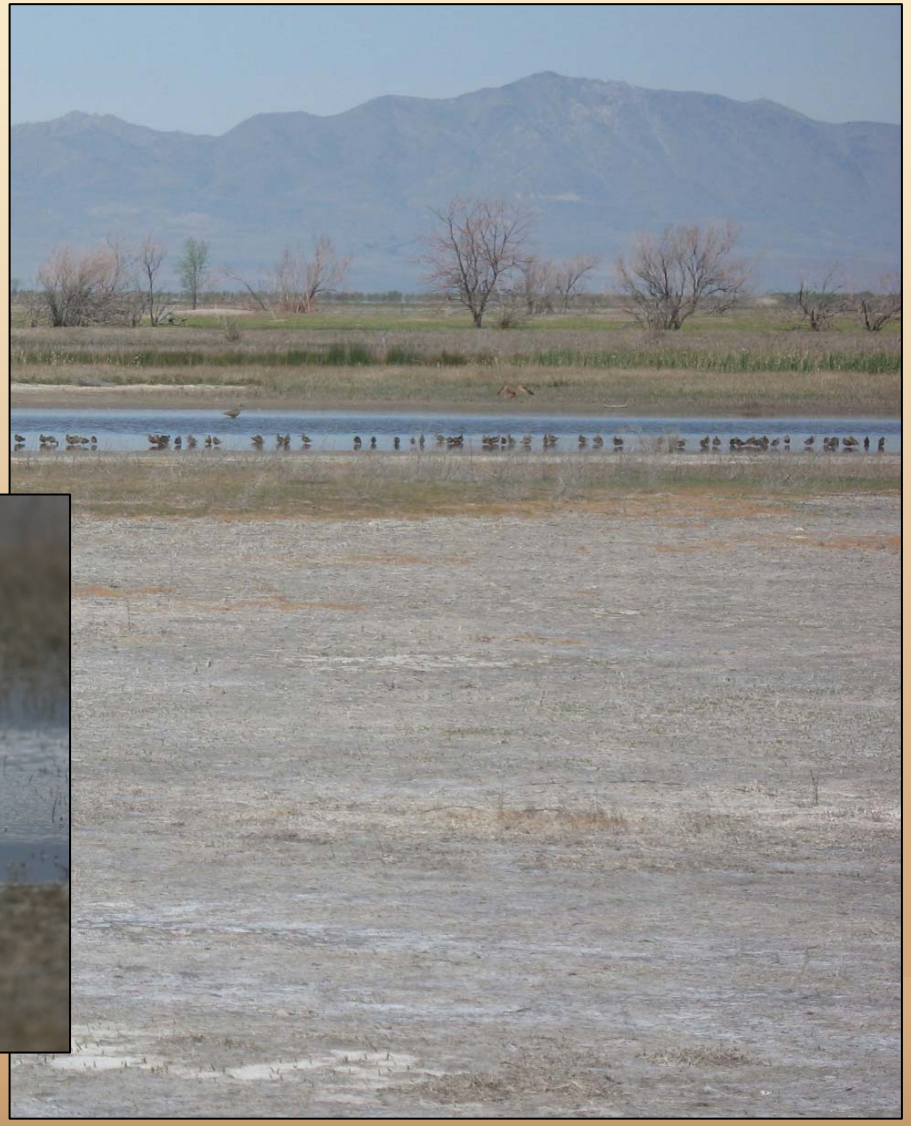
Shorebird Habitat adjacent to the GSL



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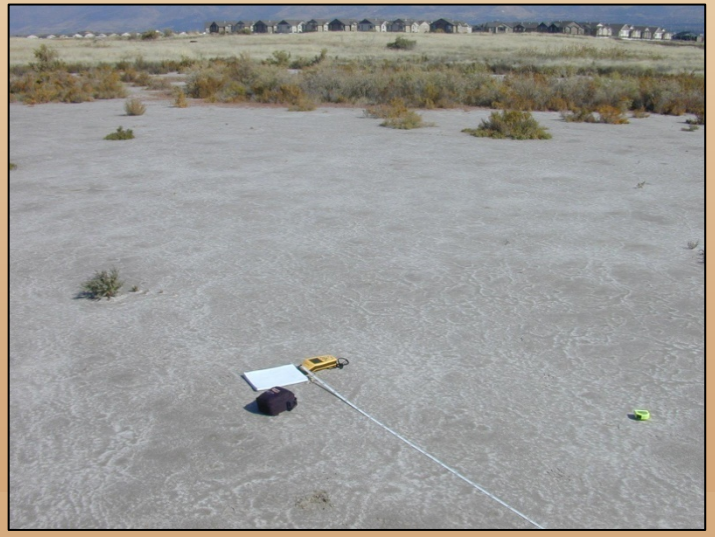
Monitoring / Section 404 Compliance

- Vegetation Transects
- Vegetation Releve and Quadrat Plots

- Birds: Diversity, Use, and Nesting Success
- Aerial Extent of Water
- Water Quality



Transect sampling on a saline playa wetland

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Vegetation Monitoring

Quadrat sampling Utah noxious weeds (*Cardaria draba*)

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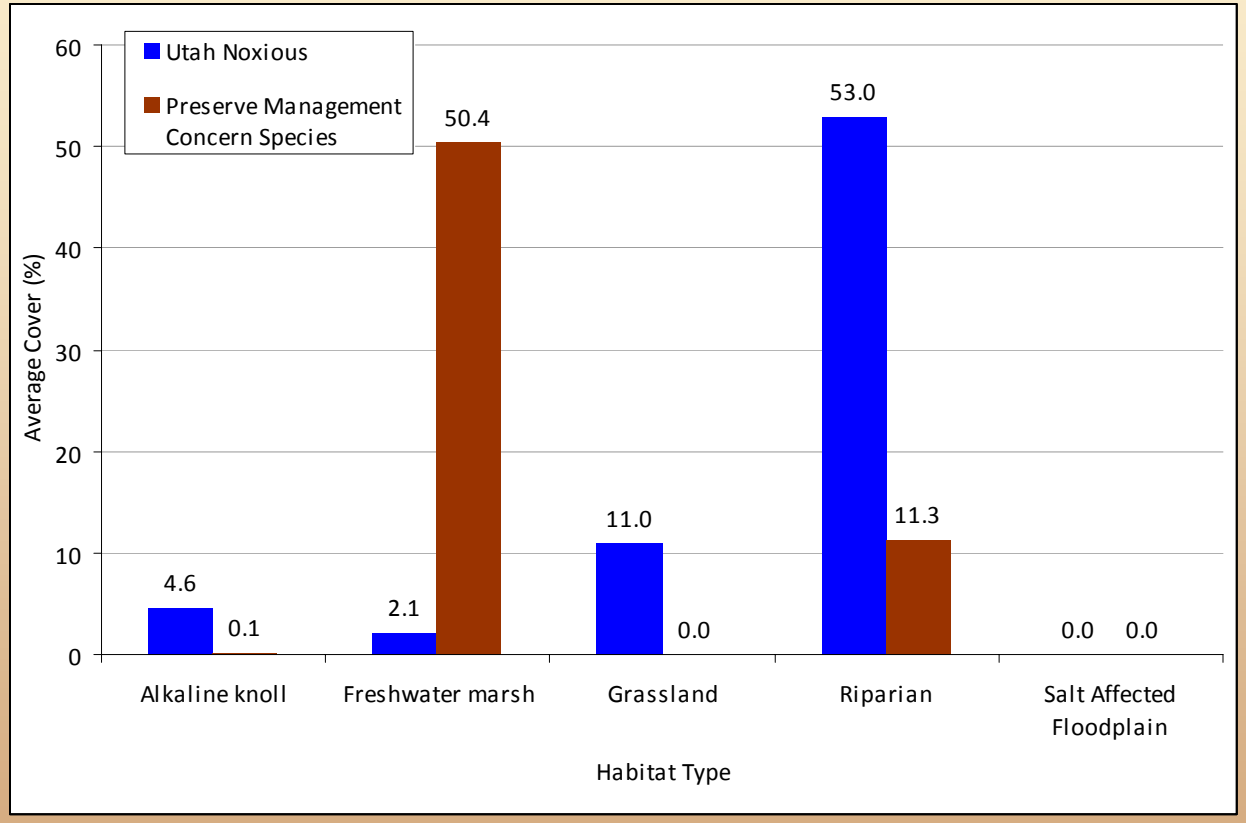

2009 average percent weed cover by habitat type
Across all habitat types, there was an average of 15.1% (+/- 4.5%) weed cover
The Freshwater Marsh and Riparian habitat types both exceeded 20% weed cover

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Avian Monitoring

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- Habitat Use Patterns
- Abundance and Diversity
- Long-Term Management (Weed Treatment

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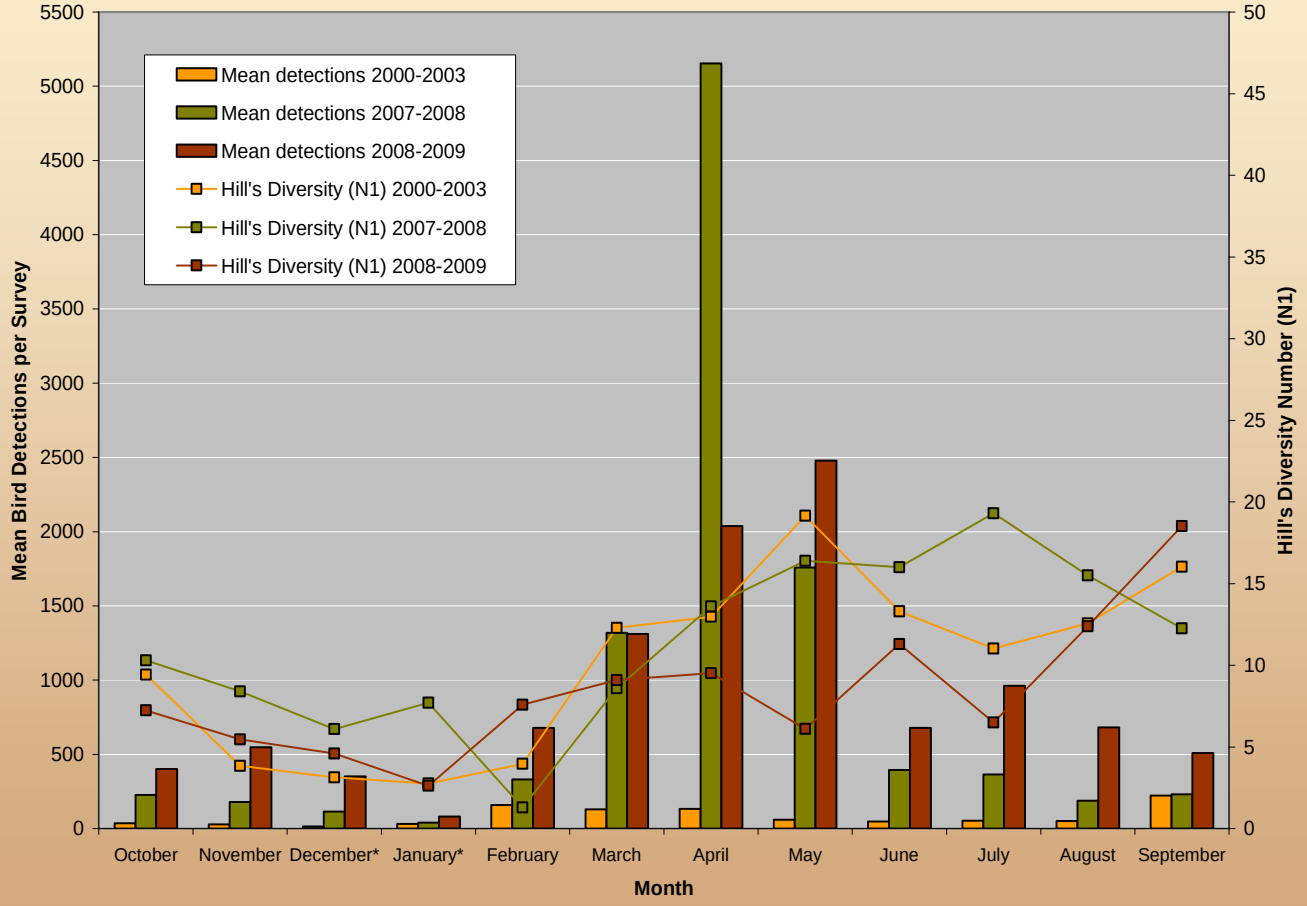

Mean bird detections per survey per month for baseline, 2008, and 2009 monitoring periods(October – September)

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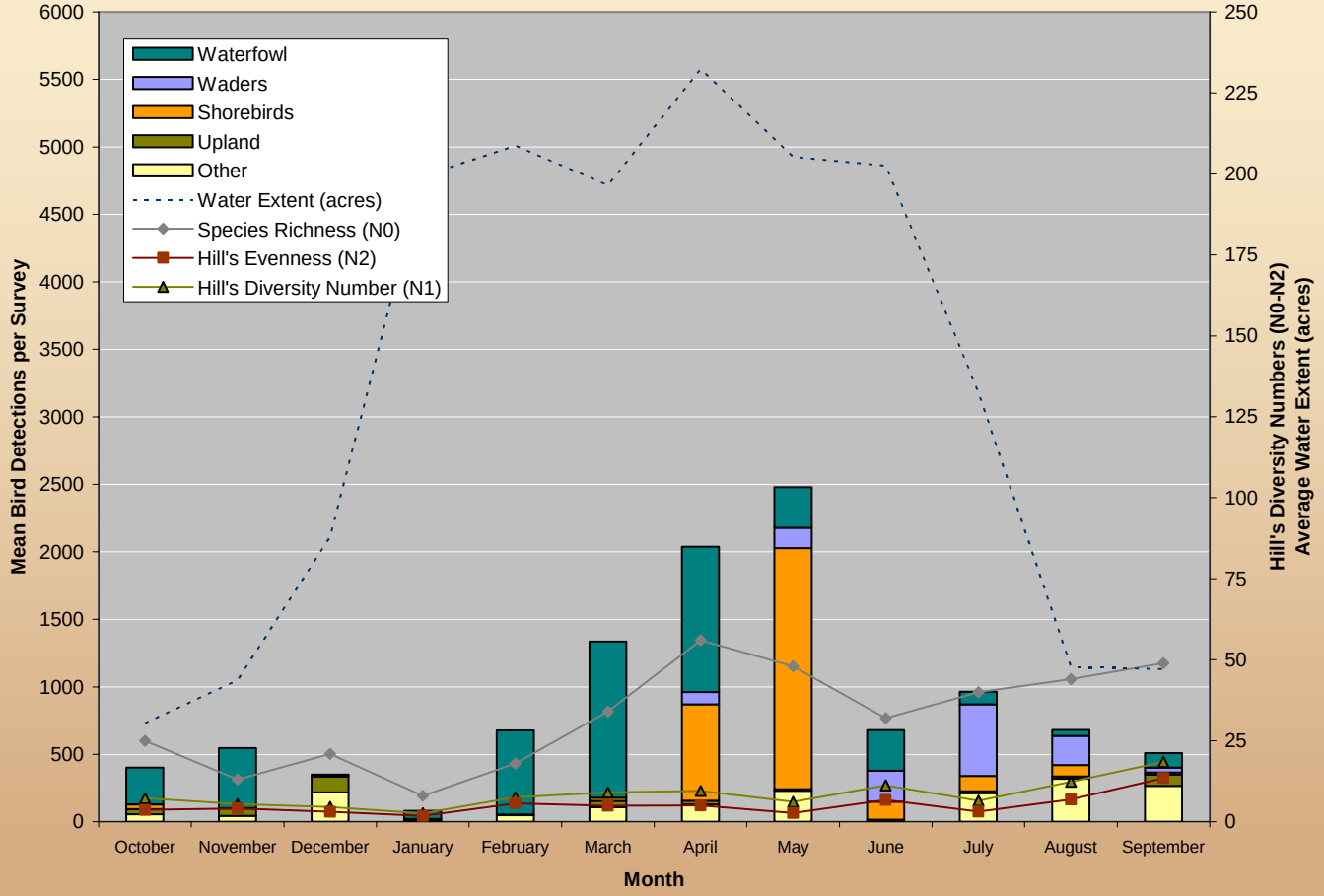

Mean bird detections per belt-transect survey per month in the Jordan River Floodplain Management Unit for the 2009 monitoring period (October 2008-September 2009)

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Table 4.4. Total Priority Species Detections by Monitoring Period for all Management Areas (October 2000 through September 2009)

Priority Species	2000–2001	2001–2002	2002–2003	2003–2004 [1]	2004–2005 [2]	2005–2006 [3]	2006–2007 [4]	2007–2008 [5]	2008–2009 [6]
American Avocet	51	43	26	0	–	40	23	400	849
Bald Eagle	2	2	1	1	–	18	20	24	5
Black-necked Stilt	18	39	13	0	–	88	69	1,171	1,378
Burrowing Owl	0	0	0	0	–	0	0	0	0
Cinnamon Teal	79	104	55	0	–	81	61	1,193	466
Forster's Tern	1	0	0	0	–	28	10	37	63
Grasshopper Sparrow	0	0	0	0	–	0	8	9	0
Long-billed Curlew	2	1	0	0	–	16	4	5	1
Snowy Plover*	0	0	0	0	–	0	0	2	0
Spotted Sandpiper*	12	0	0	0	–	4	2	6	12
White-faced Ibis	38	16	0	0	–	0	221	1,530	3,584
Willet*	8	11	5	0	–	0	31	58	59
Wilson's Phalarope	30	8	0	0	–	5	3	184	76
Total Priority Species Detections	**241**	**224**	**100**	**1**	**–**	**280**	**452**	**4,619**	**6,493**

* Non-priority species included as additional indicators of favorable habitat conditions.

[1] Bird detections from walking transect surveys October 2003 to February 2004

[2] No data

[3] Bird detections from walking transect surveys November 2005 to September 2006

[4] Bird detections from walking-transect surveys (October 2006–April 2007) and point-count surveys (May–September 2007)

[5] Bird detections from walking-transect surveys (October 2007–February 2008) and belt-transect surveys (March–September 2008)

[6] Bird detections from belt-transect surveys (2009 Monitoring Period: October 2008–September 2009)

Total Priority species detections by survey year (October 2000 through September 2009)

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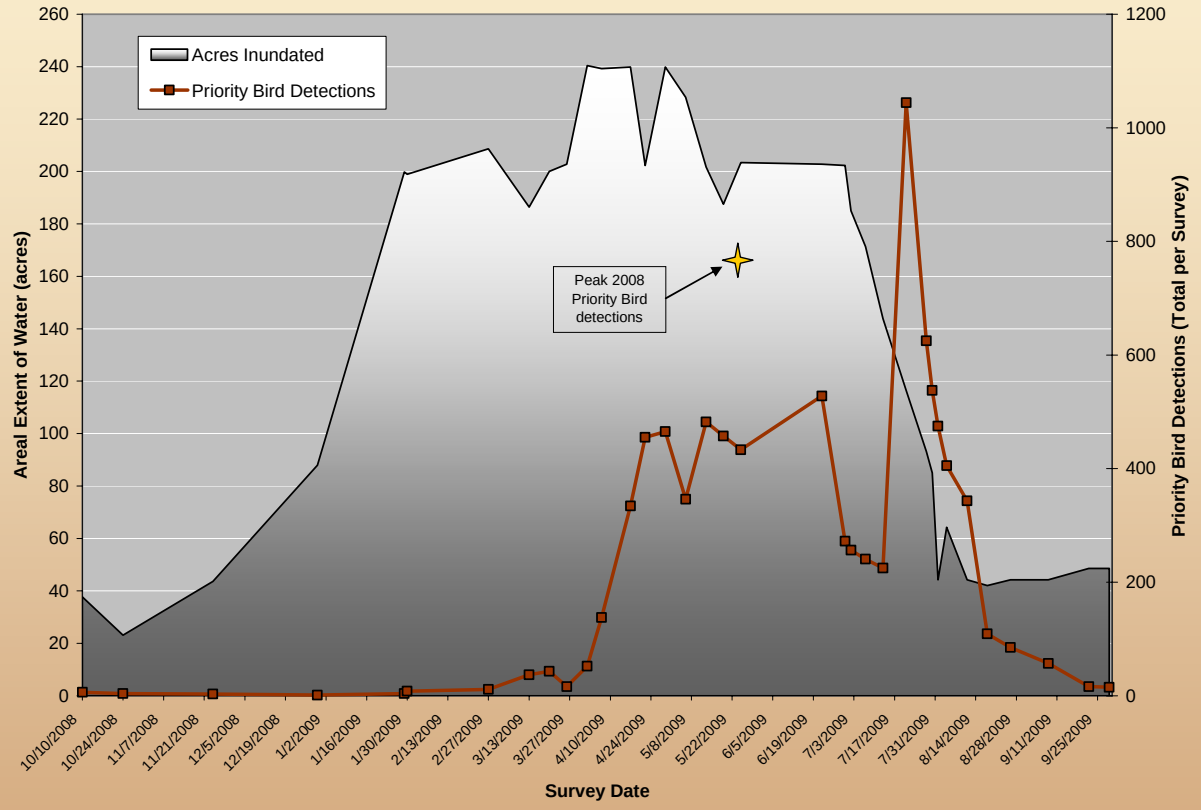

Total priority shorebird detections per belt transect survey with acres of inundation for the 2008–2009 survey year

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Conclusions

- Weed control measures are working
- Active management of ecological processes has been effective in rehabilitating habitats
- Biological monitoring necessary to assess restoration success
- Ongoing monitoring of vegetation, water, and biota needed

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Monitoring Issues

- Lack of long-term vegetation data within the avian transect areas. Can not associate use with species, height, % cover, etc.
- Not monitoring change in habitat composition, e.g., proximity of one habitat type to another.
- Lack of standardized protocol within the LNP over time due to budget and changes in monitoring goals.
- Lack of standardized monitoring protocol within GSL wetlands.

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Management Concerns

- Noxious Weed Establishment
- Poor Water Quality
- Mosquito Abatement
- Predation

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