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LEAST TERN AND PIPING PLOVER SURVEYS OF THE CENTRAL AND UPPER PLATTE RIVER 2001-2004

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Central Platte Natural Resources District (Central Platte NRD), Nebraska Public Power District (NPPD) and Central Nebraska Public Power and Irrigation District (Central) have been involved in monitoring and management of interior Least Tern (*Sterna antillarum*) and Piping Plover (*Charadrius melodus*) nesting habitat along the Platte River and on the shores of Lake McConaughy in Nebraska since the late 1980s. Since 2001, Central Platte NRD, NPPD and Central have also helped implement the Least Tern and Piping Plover monitoring protocol developed by the Technical Advisory Committee of the Platte River Endangered Species Partnership (PRES-P) (PRES-P 2002a, an earlier version of the protocol used in 2001). PRES-P is an organization created under a 1997 "Cooperative Agreement for Platte River Research and other Efforts Relating to Endangered Species Habitats Along the Central Platte River, Nebraska", among the states of Nebraska, Colorado and Wyoming and the U.S. Department of the Interior.

Study Area and Methods

The survey efforts reported here focused on the central and upper Platte River valley between North Platte and Chapman, Nebraska, including surveys of riverine sandbar, constructed nesting island and sandpit habitats. River sandbar and constructed nesting island surveys were conducted by airboat and on foot. Sandpits were accessed by vehicle or on foot. Observations were made from a distance sufficient not to disturb the birds, using binoculars and spotting scopes.

The PRES-P protocol design we utilized is described in detail in PRES-P (2002a) and consists of two principal components: 1) an effort-based survey, and 2) a survey of historic nesting areas and nesting areas on sandpits and constructed islands. The PRES-P monitoring efforts were implemented on the Lexington to Chapman reach of the Platte. Using this same basic study protocol, Central also monitored a managed nesting site at their diversion dam near North Platte, Nebraska, and sandpits along the Platte River from Lexington to North Platte over the same time period. Central Platte NRD conducted sandpit monitoring between Kearney and Chapman, Nebraska, and NPPD surveyed sandpits and constructed nesting islands between Lexington and Kearney. Between 23 and 28 sandpits and 3 or 4 constructed nesting islands were surveyed annually over the survey period.

Table 1. Number of adult Least Terns and Piping Plovers on the Platte River from the Johnson 2 (J2) Return (near Lexington, NE) to Chapman, NE, 2001-2004.

	Least Tern				Piping Plover			
	2001	2002	2003	2004	2001	2002	2003	2004
Riverine Airboat Surveys*	23	31	28	26	17	5	10	5
NPPD Constructed Islands**	4	1	2	0	2	0	1	0
Totals	27	32	30	26	19	5	11	5

*2002 surveys did not include the entire J2 Return to Chapman reach due to low water conditions. The May survey covered Chapman to Gibbon, NE and Kearney Diversion to J2 Return; the June survey covered Wood River to Odessa, NE, Kearney Diversion to J2 Return; and the July survey covered US Highway 34 bridge to Alda, NE and Wood River, NE to J2 Return. The May and June 2003 surveys covered the entire J2 Return to Chapman, NE reach, but no July survey was conducted due to low water conditions. The May 2004 survey covered the Chapman to Grand Island, NE, Alda to Shelton, NE, and Gibbon, NE to J2 Return. The June 2004 survey covered the Kearney Diversion to J2 Return reach, and no July survey was conducted due to low water conditions.

**Three islands were monitored in 2001-2002 and four islands in 2003-2004. Adults counted on constructed islands are not included in riverine airboat surveys.

Survey efforts were conducted beginning in late April or early May and ran through late July or early August. Depending on river discharge and based on PRESP protocol criteria for active river channel width (bare sand and/or water), as many as three airboating surveys (mid-May, mid-June and mid-July) were conducted per year between the Johnson 2 Hydropower Return canal (located approximately 5 miles downstream from the Platte River bridge at Lexington) and Chapman during the breeding season (a distance of approximately 90 river miles). Sandpits were visited a minimum of three times during the season. If Least Tern or Piping Plover nesting activity was observed, those sites were revisited approximately every three days until young fledged.



Least Tern nest. Photo courtesy of Mark Czaplewski.

Results and Discussion

This report presents the results of our surveys of Least Tern and Piping Plover adults and numbers of nests, although habitat and reproductive data were also collected. Riverine airboating survey results for the Chapman to J2 Return reach of the Platte River are incorporated here from PRESP annual monitoring reports (PRESP 2002b, PRESP 2003, PRESP 2004a and 2004b). There was no documented nesting by either Least Terns or Piping Plovers during the 2001-2004 timeframe on the portion of river surveyed, including on the constructed islands (Table 1). Most birds observed on the river were in close proximity to sandpits with known nesting.

The majority of Least Terns and Piping Plovers in central Nebraska were at non-riverine sites, and numbers of adult birds increased from 2001 to 2004 (Table 2). The Broadfoot sandpits located near Kearney and Newark, Nebraska (Kearney to Shelton survey segment) were not surveyed in 2001 and limited access in 2002-2004 did not permit a complete nest count. The nest numbers noted in Table 3 are only intended to document that nesting was occurring in this survey segment. At least one other sandpit in the study area (located just east of U.S. Highway 10 in the Kearney to Shelton survey segment) may have supported nesting Least Terns or Piping Plovers, but the sandpit was not surveyed due to the lack of access.

We believe that few Least Terns or Piping Plovers are going uncounted in the study area. Adult birds seen loafing or feeding on the river are likely birds nesting at sandpits or non-nesting individuals, but are included in the number of birds since no birds are marked and it can not be determined with certainty if these birds come from

Table 2. Number of adult Least Terns and Piping Plovers at non-riverine sites along Interstate 80 in central Nebraska from the Central Diversion (near North Platte, NE) to Chapman, NE, 2001-2004.

Survey Segment*	Least Tern				Piping Plover			
	2001	2002	2003	2004	2001	2002	2003	2004
Central Diversion to Gothenburg (182-211)	10	4	4	10	0	0	0	4
Gothenburg to Lexington (211-237)	8	6	6	10	4	4	2	0
Lexington to Elm Creek (237-257)	16	34	22	22	7	6	9	13
Elm Creek to Kearney (257-272)	21	68	65	69	11	32	21	31
Kearney to Shelton (272-291)	0	10	12	12	0	2	2	4
Shelton to Alda (291-305)	4	4	4	10	0	0	1	2
Alda to Chapman (305- n/a)	0	0	0	0	0	0	0	0
Totals	59	126	113	133	22	44	35	54

* Numbers in parenthesis refer to Interstate 80 mile markers.

Table 3. Number of Least Tern and Piping Plover nests in the Platte River valley from the Central Diversion (near North Platte, NE) to Chapman, NE, 2001-2004.

Survey Segment	Least Tern					Piping Plover			
	2001	2002	2003	2004		2001	2002	2003	2004
River Surveys*									
Riverine Airboat Surveys	0	0	0	0		0	0	0	0
Non-River Surveys**									
Central Diversion to Gothenburg (182-211)	9	2	2	4		0	0	0	1
Gothenburg to Lexington (211-237)	4	3	2	5		2	3	2	0
Lexington to Elm Creek (237-257)	8	17	19	15		3	6	6	5
Elm Creek to Kearney (257-272)	17	32	44	33		7	16	12	11
Kearney to Shelton (272-291)	0	8	6	6		0	1	1	3
Shelton to Alda (291-305)	2	2	2	4		0	0	0	0
Alda to Chapman (305- n/a)	0	0	0	0		0	0	0	0
Totals	40	64	75	67		12	26	21	20

*See the first footnote in Table 1 for survey areas covered and dates.

** Numbers in parenthesis refer to Interstate 80 mile markers.

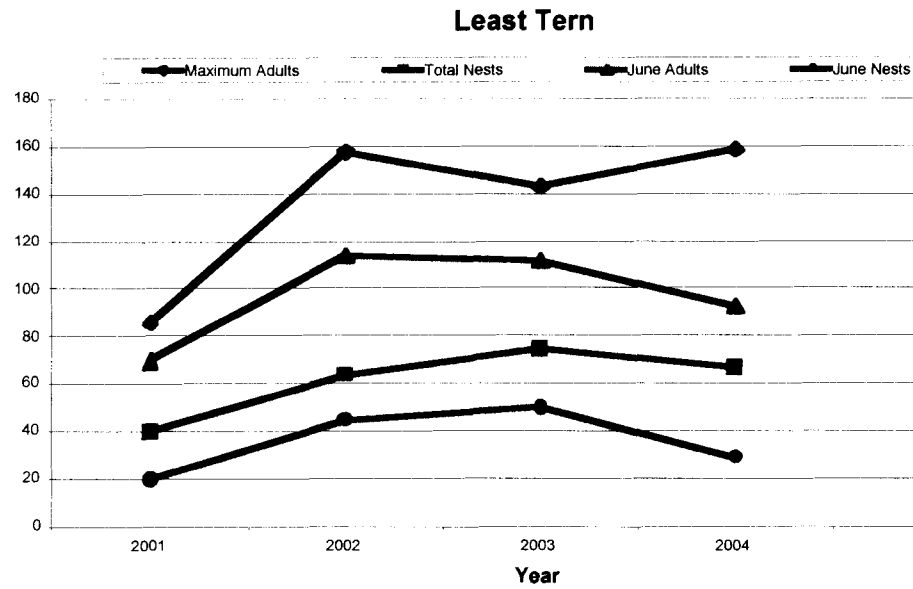


Figure 1. Least tern trends along the central Platte 2001 to 2004.

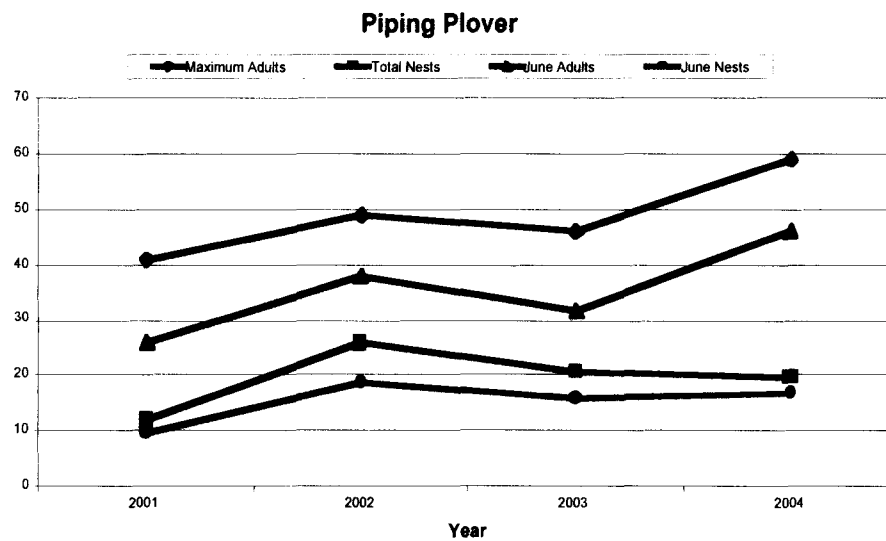


Figure 2. Piping plover trends along the central Platte River 2001 to 2004.

a sandpit. While some of the nests counted here are undoubtedly re-nests, there is little means of quantifying how many nests are original and how many are re-nesting efforts without the aid of marked individuals.

The present drought conditions in central Nebraska began in 2000 and 2001, following five years of higher-than-average flow conditions. The dry conditions experienced over the past four years have had little effect on the numbers of Least Terns (Figure 1) and Piping Plovers (Figure 2) in central Nebraska. The mid-June surveys correspond with the timing of the annual Nebraska statewide surveys and the 2001 International Piping Plover survey. Both species forage in and along the active channel of the river; however, they establish their nests on the sandpits adjacent to the river and these sandpits are not as affected by the dry conditions as is the actual river.

Our surveys document the presence of Least Terns and Piping Plovers in the Platte River corridor of central Nebraska. Past efforts (Faanes 1983, Sidle and Kirsch 1993) indicate nesting occurred on the river proper; however, all nesting identified in this study was on non-riverine habitats, continuing a trend noted by Jenniges (2005). Least Terns and Piping Plovers are species of heightened conservation concern and further study is needed to examine the relationship of the central Nebraska populations to regional and range-wide populations.

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