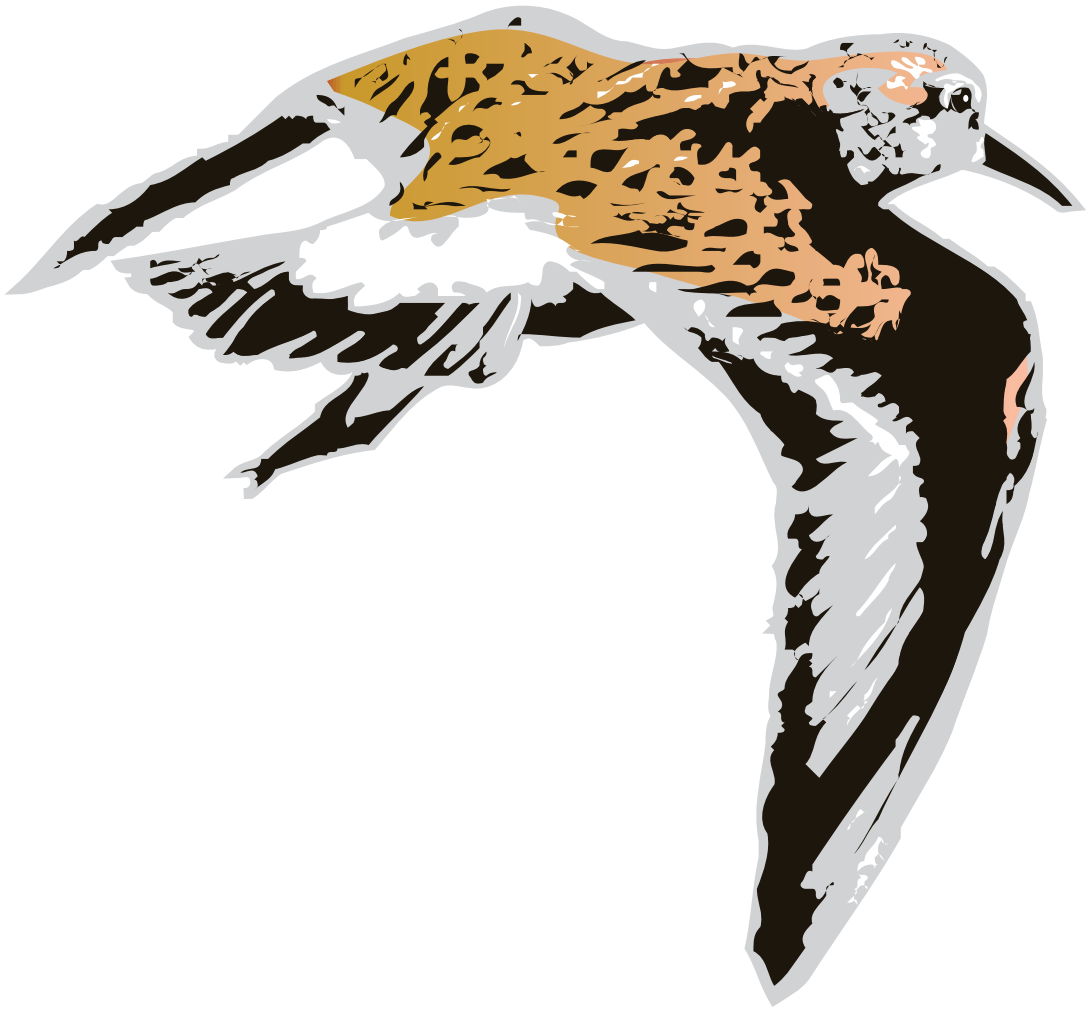
KANSAS SHOREBIRD SURVEY 2002



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2002 KANSAS SHOREBIRD SURVEY PRELIMINARY RESULTS

Currently, we have received data for 39 sites (78%) surveyed in spring and 34 sites (68%) surveyed in summer-fall (Fig. 1). Most volunteers conducted one survey per survey period, 5 in spring and 8 in summer-fall. However, up to 54 surveys were conducted per site. To minimize bias due to differences in number of surveys, when analyzing data for statewide comparisons the survey site with the highest number of shorebirds was selected per survey period. In the rare case of a tie, the survey with the most variety was selected (i.e., species diversity, fewest killdeer).

In spring, 97,342 shorebirds were reported. Not surprisingly, Cheyenne Bottoms Wildlife Area (CBWA, 73% of statewide total), Quivira National Wildlife Area (QNWR, 14%), and The Nature Conservancy Preserve at Cheyenne Bottoms (4.8%) accounted for the highest proportions of the shorebirds (Fig. 2). After these traditional hotspots came Marais des Cygnes Wildlife Area (1.5%), Flint Hills National Wildlife Refuge (FNWR, 1.5%), and Kirwin National Wildlife Refuge (1.2%).

During summer-fall, 75,393 shorebirds were reported. Shorebird numbers were again highest at CBWA (74%) and QNWR (16%), followed by FNWR (2%) and Fort Riley (2%) (Fig. 2). Because the number of shorebirds at CBWA and QNWR comprised such a high proportion of shorebirds reported in this survey during spring and summer-fall, species composition and migration chronology for 3 groups of sites were analyzed: CBWA, QNWR, and the rest of the sites.

During both spring and summer-fall, 30 species of shorebirds were recorded. Statewide, unidentified shorebirds comprised 44% of shorebirds recorded; however, most of these were from CBWA (Fig. 3). Of those shorebirds identified to at least a group, species composition varied between the 3 groups of sites during spring and summer-fall.

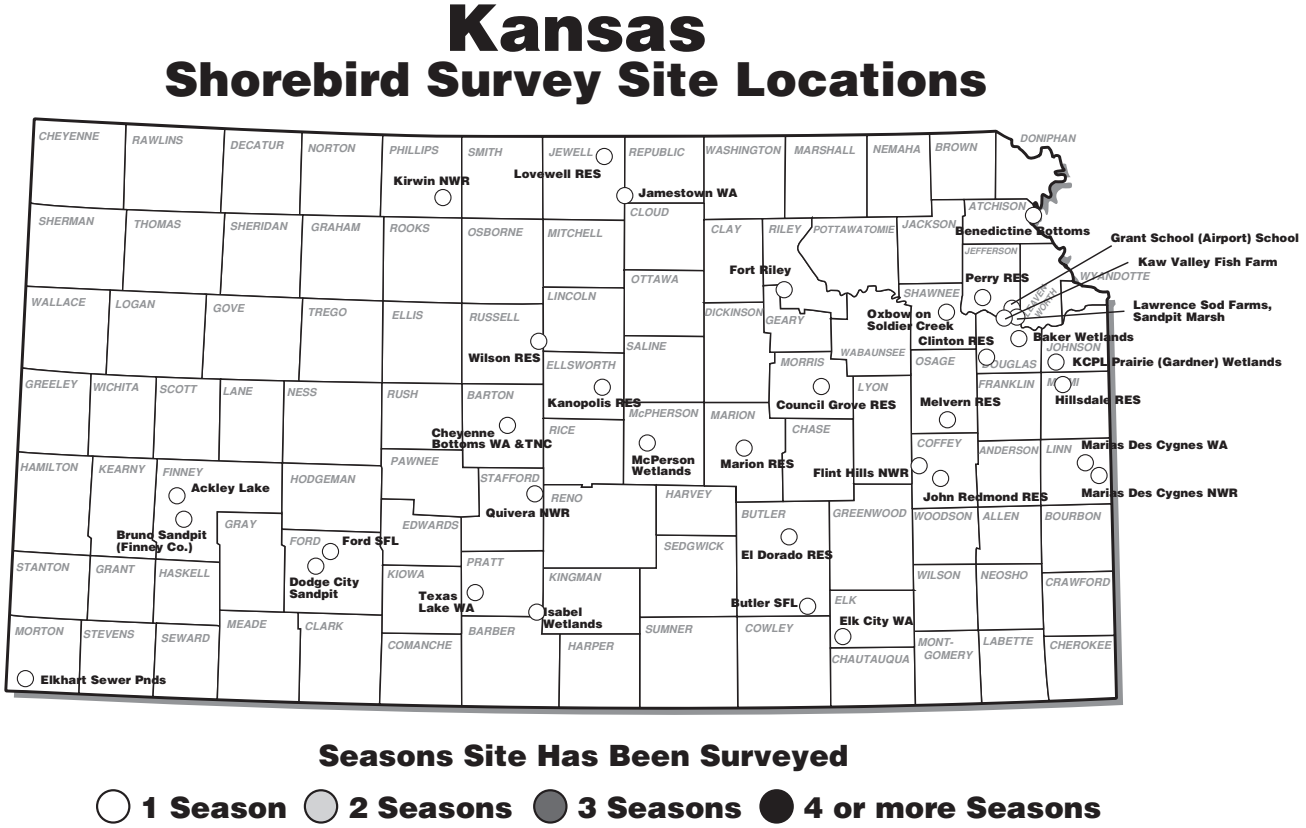


FIGURE 1

SURVEY FINDINGS

At CBWA in spring, dowitchers and "peeps" (both 29%), were the most common shorebirds reported followed by stilt sandpipers (25%) and Wilson's phalaropes (13%). Of the small calidrids (i.e., peeps) identified, white-rumped and Baird's sandpipers were recorded most often. Wilson's phalaropes (49%) and peeps (28%) were the most common species at QNWR. Baird's (5%), semipalmated (5%), and stilt sandpipers (3%) were the predominant calidrids reported. Throughout the rest of the state, peeps (28%) were the most common species reported, followed by Baird's sandpipers (11%), killdeer (10%), lesser yellowlegs (8%), and semipalmated sandpipers (8%).

During summer-fall, dowitchers (51%) were the predominant species at CBWA. Stilt sandpipers (13%) also were common. At QNWR, peeps (50%) were the most common species, distantly followed by least sandpipers (14%). Killdeer (31%) were the most commonly reported species throughout the rest of the state, followed by peeps (18%) and least sandpipers (13%).

Statewide, shorebird numbers in spring peaked during the first and second weeks of May (62% of shorebirds), followed by the third and fourth weeks of April (16%) and the first and second weeks of April (13%). Migration timing was similar among the 3 groups of sites, however, the peaks were more pronounced at CBWA and QNWR than throughout the rest of the state (Fig. 4). The peak for the rest of the state occurred during both the last half of April and the first half of May.

During summer-fall, statewide shorebird numbers were highest during September (24%), but the peak was much less dramatic than in spring. Shorebird numbers peaked during September at CBWA (Fig. 4). At QNWR, there was no pattern in shorebird numbers. Throughout the rest of the state, shorebird numbers peaked during the last 2 weeks of August and the first 2 weeks of September.

These results are very preliminary and it is too early to reach conclusions. Patterns in shorebird migration such as site use, species composition, and timing vary annually in response to many factors, including weather and habitat conditions. Rainfall was below average throughout most of the state before and during the survey periods. Thus, water levels in most marshes were relatively low and shorebird habitat at such sites was probably below average to non-existent. Below-average precipitation probably increased habitat availability for shorebirds at large reservoirs. However, reservoirs are difficult to survey because of the large area of shoreline; much of which is not accessible by roads.

It is premature to conclude that Cheyenne Bottoms and QNWR are the only important shorebird areas in the state. Surveys need to continue for a few more years (at least 4) to adequately assess the value of other shorebird areas in the state. Surveys conducted during different weather patterns are necessary to make this assessment.

The size of Cheyenne Bottoms and QNWR is one reason that it these areas attract large numbers of shorebirds. To adequately compare shorebird use among all the sites in this survey, the density of shorebird use will be calculated in addition to the number of shorebirds. This will require maps of all surveyed sites.

Currently, maps of the survey area are available for 26 of the 51 sites. The survey area is the portion of the site where searches for shorebirds actually occurred. Estimates of "percent of site suitable for shorebirds today" will be used to further refine density estimates and to track habitat availability at each site. However, these density estimates can only be calculated if survey area maps are available and there are enough estimates of habitat availability.

Figure 2. Number and percent of shorebirds reported from survey areas throughout Kansas in spring and summer-fall 2002.

	Spring		Summer-fall	
Location	Number	%	Number	%
Ackley Lake	5	0.005	3	0.004
Airport (Grant) Slough	25	0.026	2	0.003
Baker Wetlands	71	0.073	108	0.143
Benedictine Bottoms	39	0.040	35	0.046
Bruno (Finney Co.) Sandpit	76	0.078	70	0.093
Butler State Fishing Lake	2	0.002	NS[1]	
Cheyenne Bottoms TNC Preserve	4,630	4.756	295	0.391
Council Grove Reservoir	26	0.027	NS	
Cheyenne Bottoms Wildlife Area	71,139	73.082	55,940	74.198
Clinton Reservoir	325	0.334	32	0.042
Coblentz Marsh	206	0.212	NS	
Dodge City Sandpit	32	0.033	283	0.375
Elk City Reservoir	518	0.532	242	0.321
El Dorado Reservoir	209	0.215	NS	
Elkhart Sewer Ponds	210	0.216	313	0.415
Flint Hills National Wildlife Refuge	1,429	1.468	1,712	2.271
Ford State Fishing Lake	8	0.008	46	0.061
Fort Riley	170	0.175	1,596	2.117
Hillsdale Reservoir	419	0.430	433	0.574
Isabel Wetlands	40	0.041	69	0.092
John Redmond Reservoir	139	0.143	426	0.565
Jamestown Wildlife Area	36	0.037	37	0.049
Kanopolis Reservoir	39	0.040	135	0.179
KCPL (Gardner) Wetlands	412	0.423	47	0.062
Kirwin National Wildlife Refuge	1,133	1.164	221	0.293
Kaw Valley Fish Farm	68	0.070	4	0.005
Lawrence Sod Farm	1	0.001	9	0.012
Lawrence Sandpit Marsh	19	0.020	71	0.094
Lovewell Reservoir	9	0.009	76	0.101
Marion Reservoir	174	0.179	160	0.212
Marais des Cygnes Wildlife Area	1,443	1.482	204	0.271
Marais des Cygnes NWR	0	0.000	0	0.000
Melvern Reservoir	136	0.140	350	0.464
McPherson Wildlife Area	55	0.057	NS	
Oxbow on Soldier Creek	71	0.073	98	0.130
Perry Reservoir	19	0.020	18	0.024
Quivira National Wildlife Refuge	13,825	14.203	12,200	16.182
Texas Lake Wildlife Area	129	0.133	13	0.017
Wilson Reservoir	55	0.057	145	0.192
Total	**97,342**		**75,393**	

[1]NS mean no survey conducted.

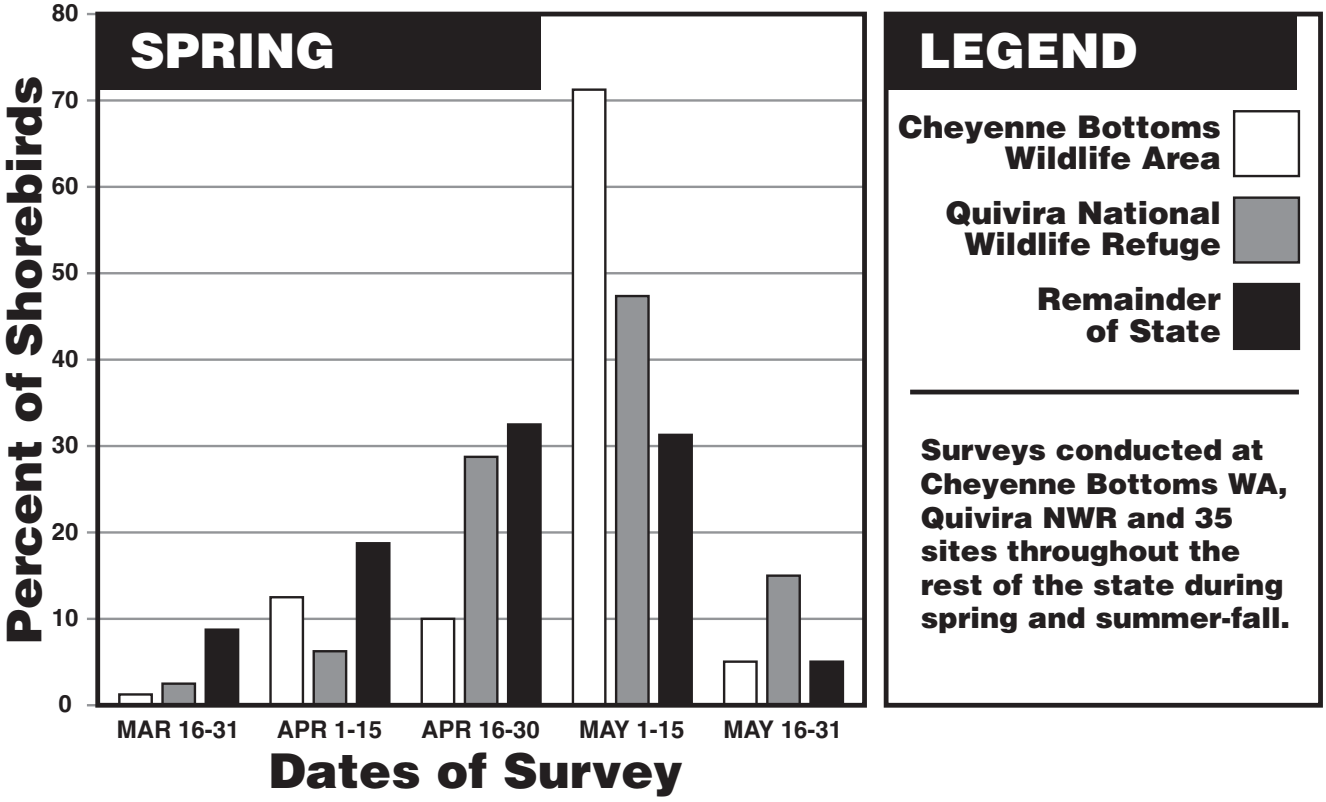
FIGURE 2

Figure 3. Number of shorebirds and percent of total shorebirds (excluding unidentified shorebirds) at Cheyen 37 other sites throughout Kansas during spring and summer-fall 2002.

	Spring					
	Cheyenne Bottoms WA		Quivira NWR		Rest of state	
Species	Number	%	Number	%	Number	%
Black-bellied plover	2	0.007	43	0.311	8	0.065
American golden-plover	9	0.032	2	0.014	17	0.137
Snowy plover	8	0.029	108	0.781	1	0.008
Semipalmated plover	7	0.025	8	0.058	37	0.299
Piping plover	0	0.000	1	0.007	2	0.016
Killdeer	123	0.439	67	0.485	1,265	10.221
Black-necked stilt	12	0.043	58	0.420	4	0.032
American avocet	256	0.914	281	2.033	141	1.139
Greater yellowlegs	64	0.228	19	0.137	401	3.240
Lesser yellowlegs	103	0.368	290	2.098	972	7.854
Unidentified yellowlegs	43	0.153	0	0.000	389	3.143
Solitary sandpiper	0	0.000	1	0.007	30	0.242
Willet	2	0.007	65	0.470	20	0.162
Spotted sandpipter	3	0.011	11	0.080	97	0.784
Upland sandpiper	0	0.000	0	0.000	25	0.202
Whimbrel	0	0.000	0	0.000	0	0.000
Long-billed curlew	0	0.000	0	0.000	0	0.000
Hudsonian godwit	4	0.014	7	0.051	16	0.129
Marbled godwit	2	0.007	3	0.022	6	0.048
Ruddy turnstone	0	0.000	0	0.000	0	0.000
Sanderling	2	0.007	0	0.000	1	0.008
Semipalmated sandpiper	32	0.114	621	4.492	952	7.692
Western sandpiper	7	0.025	0	0.000	67	0.541
Least sandpiper	22	0.079	34	0.246	388	3.135
White-rumped sandpiper	308	1.099	103	0.745	488	3.943
Baird's sandpiper	124	0.443	758	5.483	1,322	10.682
Pectoral sandpiper	5	0.018	6	0.043	704	5.688
Dunlin	0	0.000	2	0.014	1	0.008
Stilt sandpiper	7,081	25.274	458	3.313	43	0.347
Buff-breasted sandpiper	0	0.000	0	0.000	0	0.000
Peep	8,012	28.597	3,851	27.855	3,425	27.675
Short-billed dowitcher	0	0.000	0	0.000	0	0.000
Long-billed dowitcher	0	0.000	0	0.000	582	4.703
Unidentified dowitcher	8,130	29.018	131	0.948	536	4.331
Common snipe	16	0.057	0	0.000	100	0.808
American woodcock	0	0.000	0	0.000	2	0.016
Wilson's phalarope	3,638	12.985	6,750	48.825	332	2.683
Red-necked phalarope	0	0.000	0	0.000	2	0.016
Unidentified *Charadrius*	0	0.000	147	1.063	0	0.000
Unidentified *Pluvialis* plo	2	0.007	0	0.000	0	0.000
Unidentified godwit	0	0.000	0	0.000	0	0.000
Unidentified shorebirds	43,122		0		2	
Total shorebirds	**71,139**		**13,825**		**12,378**	

FIGURE 3

Kansas
Shorebird Survey
Migration Chronology 2002



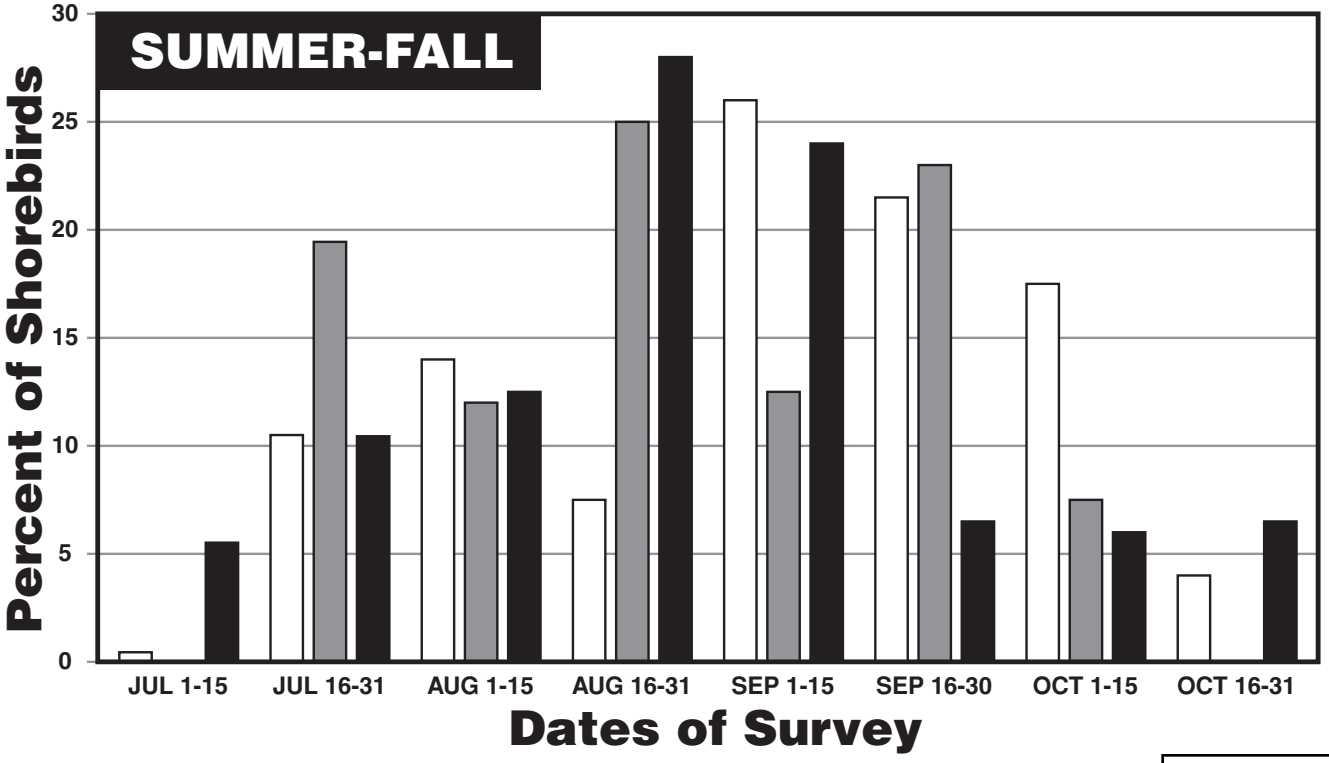


FIGURE 4

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