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A SECOND INTENSIVE ORNITHOLOGICAL SURVEY
OF A TYPICAL SQUARE MILE OF CULTIVATED
PRAIRIE, AFTER A TEN-YEAR INTERVAL

CHAS. J. SPIKER

This paper presents a report of a second intensive ornithological survey over a square mile of cultivated prairie. The first survey was made on July 25 and 26, 1916, by Dr. Arthur R. Abel, who was at that time a student in Morningside College, Sioux City, Iowa. The report of this survey was published in the Proceedings of the Iowa Academy of Science, Vol. XXVII, 1920, pages 385 to 393 inclusive. It was thought that a repeated survey over the same ground after an interval of ten years, would be both interesting and important. It was not possible for the writer of this paper to be in this territory on the same dates as those chosen by Dr. Abel; therefore, a number of discrepancies which may appear in this report may be attributed to the difference in time. The present survey was made on June 10, 1926.

The section is located just off the Denison Road, about three miles southeast of Sioux City, and according to Plat is described as Section 11, Township 88 North, Range 47 West. Let me quote Dr. Abel as to the reason for the choice of this particular piece of land for his work: "This particular section was chosen because it was believed to be typical of the upland prairie, as distinguished from the lowland prairie, or river bottom. It was the 'rolling prairie' of the earlier days, when it was covered with the native prairie grass."

There are a few topographical differences which have become apparent during the decade. The writer of the first report found a small creek crossing the northeast quarter of the section diagonally, from the southeast to the northwest. Along part of the course of this creek was a dry, uncultivated slough, with an estimated area of eighteen acres. The slough has now disappeared, and the creek is hardly worthy of the name, having become now but a tiny streamlet in normal times. Also, in the northwest corner of the northeast quarter, is a recent set of farm buildings, with a young grove on the west side. If the second diagram of the section be compared with the first, it will be seen that the crop areas in 1926

were distributed very differently from those in 1916, which might make some difference in the avifauna of the section.

The difference in time, from July 25 to June 10, I believe, will make a difference in the whole number of birds, rather than in the numbers of different species. By the latter part of July, it is safe to say that most species have nested, and that the year's hatch of young is added to the whole number of birds found. By this time, too, some species, such as swallows, are beginning to flock for the fall migration.

The absence of the slough in the northeast quarter of the section, will perhaps account for the reduction in the number of Red-winged Blackbirds and the Marsh Hawks. It was interesting to find that the Burrowing Owls were to be found in practically the same locality as Dr. Abel found them, especially since the species is rare at any time in this section of the state.

In taking the present census, the observer zig-zagged back and forth across each forty acre tract, covering each twice. The work commenced at five a. m., nearly two hours being consumed before breakfast. The forenoon was cloudy, with occasional light showers, so that the grass remained wet until noon. There was a stiff breeze from the southeast until noon, when the wind came from the south for the rest of the day. The afternoon was clear and very warm. Some hay had been cut. Oats were of good height, while corn was just about high enough for the first cultivating.

There were two small orchards on the section, as shown in the diagram (Fig. 1), and there were substantial groves about the farm buildings, except the new set in the northeast quarter, and the two sets near the middle of the south line of the section.

The total number of species found on the section was thirty-six, as compared with thirty-three found by Abel. The present writer found ten not found by the first observer, making a total of forty-three species included in the two surveys. The second survey showed the English Sparrow to be the most numerous species, as compared with the Dickcissel shown by the first survey to be most numerous.

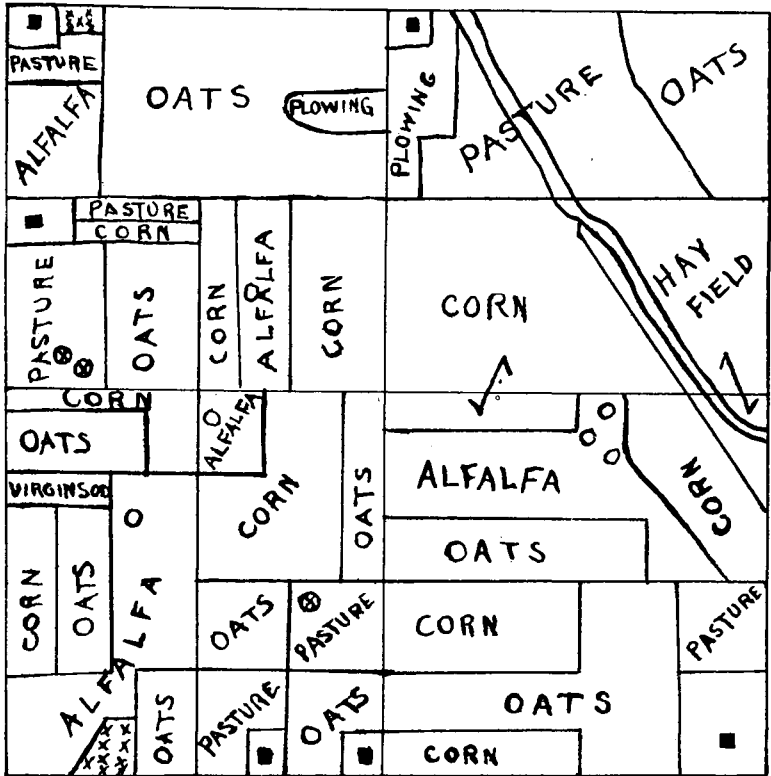
Figure 2 shows the acreage of each crop and habitat. The land is so cut up by small fields, that the acreage must be an estimate. Figure 3 shows the entire list for the two surveys, giving the numbers by crop, with totals, and also Abel's totals for comparison.

It is to be hoped that the survey can again be made after another ten-year interval, and a series of such surveys should be of much importance in an ecological study of birds. In closing the writer

wishes to make acknowledgement to Dr. Arthur R. Abel for permission to use figures and statements from his paper above referred to; to Dr. T. C. Stephens for suggestions in the work; and to the W. A. Hickman family for their kindness and hospitality while the work was being done.

ASHTON, IOWA.

Fig. 1



- Farm Buildings
- ⊙ Hay Stack
- ++ Orchards
- ⊕ Burrowing Owl Nest

Plat of the Section showing crop plantings. The farm buildings and grove on the NW¼ NE¼ were located there since the time of Abel's survey

FIG. 2

	CORN	OATS	ALFALFA	PASTURE	GROVE AND ORCHARD	PLOWING	CREEK	ROADSIDES	FLYING	TOTALS	ABEL'S TOTALS
Acres per crop.....	187	204	87	127	16	14	5	0	0	640	640
Birds per crop.....	16	25	23	39	68	15	32	68	25	311	480
Birds per acre.....	.085	.12	.26	.307	4.25	1.07	6.40	...	...	.48	.75
Area per birds in acres	11.68	8.16	3.78	3.39	.23	.93	.15	...	...	2.05	1.33

FIG. 3

	CORN	OATS	ALFALFA	PASTURE	ORCHARD	PLOWING	CREEK	ROADSIDES	FLYING	TOTALS	ABEL'S Tls.
1. Killdeer	2	..	..	2	2	..
2. Mourning Dove.....	2	17
3. Marsh Hawk.....	5
4. Screech Owl.....	1
5. Burrowing Owl.....	3	..	..	..	..	..	3	5
6. Cuckoo sp.....	1
7. Yellow-billed Cuckoo.....	4
8. Hairy Woodpecker.....	1	..	..	..	..	1	..
9. Red-headed Woodpecker.....	2	..	2	5	1	10	8
10. Flicker	1	..	..	..	2	1	2	6	5
11. Nighthawk	1	..	1	..
12. Kingbird	1	1	..	2	4	..	2	3	..	13	29
13. Phoebe	2	..	2	..
14. Prairie Horned Lark.....	..	5	..	2	..	..	..	..	..	7	15
15. Blue Jay.....	1	..	..	1	3
16. Crow	1	1	1	3	..	..	6	..
17. Cowbird	1	..	..	..	3	3	7	6
18. Red-winged Blackbird.....	5	..	..	..	2	..	7	21
19. Western Meadowlark.....	2	7	6	8	..	..	..	1	..	24	48
20. Orchard Oriole.....	1	..	..	..	..	1	..
21. Baltimore Oriole.....	5	..	..	2	..	7	..
22. Bronzed Grackle.....	3	..	1	2	..	12	..	..	5	23	1
23. Goldfinch	1	..	2	3	..	..	..	..	6	23
24. English Sparrow.....	8	25	2	4	19	2	60	60
25. Grasshopper Sparrow.....	4	1	6	2	..	..	..	3	..	16	13
26. Lark Sparrow.....	3	..	3	1
27. Field Sparrow.....	1	..	..	..	1	..	..	5	..	7	13
28. Swamp Sparrow (?).....	1
29. Indigo Bunting.....	1
30. Dickcissel	15	8	3	6	..	10	9	..	51	73
31. Shrike sp.....	1
32. Barn Swallow.....	1	..	2	..	..	1	1	5	43
33. Bank Swallow.....	4	..	4	42
34. Rough-winged Swallow.....	2	2	..
35. Warbling Vireo.....	4	..	..	..	..	4	..
36. Yellow Warbler.....	1	..	4	..	..	5	2
37. Maryland Yellowthroat.....	1	..	..	1	7
38. Catbird	1	..	1	1
39. Brown Thrasher.....	4	..	1	..	..	5	3
40. House Wren.....	4	..	..	..	..	4	..
41. Chickadee	2	..	..	2	5
42. Robin	2	..	..	3	..	5	9
43. Unidentified	7	7	13
Totals.....	16	25	23	39	68	15	32	68	25	311	480