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## AN ANALYSIS OF MIGRATION SCHEDULES OF NON-PASSERINE BIRDS IN NEBRASKA

Paul A. Johnsgard

One of the major components of the *Nebraska Bird Review* since its inception has been the annual spring migration and occurrence report, and in more recent years the fall occurrence report has become equally important. Yet, other than an uncompleted effort by W.F. Rapp, Jr. to summarize the first 25 years of spring migration data, these records apparently have not been analyzed by anyone. Part of the problem is the sheer mass of data to be assimilated, and a second issue is the question of how to classify certain species, for the analysis of a winter visitor required different consideration from that of a spring and fall migrant. Further confusing the question is the fact that many Nebraska species migrate completely out of the state in some years but variably overwinter at other times. Even more difficult are the species that are summer residents in one part of the state, but may be winter visitors elsewhere, such as Townsend's Solitaires. Finally there are the problems of several species that are so little known that it is presently impossible to classify them as summer residents, permanent residents, or migrants. Nevertheless, these are a very small proportion of the total, and it thus seemed worthwhile to make an attempt at an understanding of the migration patterns of Nebraska's avifauna by the present analysis and perhaps pinpoint if not resolve some of these questions. This first report will deal only with the non-passerine species; a later one will concern the passerines.

For the species known to breed regularly in the state I have generally estimated only spring arrivals (initial spring sightings or records) and fall departures (final fall sightings or records). For species that I consider winter visitors I have estimated fall arrival and spring departure periods. For species that are largely or entirely migrants in the state I have estimated spring arrivals, spring departures, fall arrivals, and fall departures. In the case of a few very rare species I have simply summarized all available spring and fall records (literature or specimen) or sightings. All gallinaceous birds, some owls, and most woodpeckers were considered permanent residents and were not analyzed. Median dates have been determined for all samples of ten or more available dates; for smaller samples arithmetic means have been calculated.

Except in the cases of the rarer species, I have not attempted to include all of the available published data\*, but rather have carried the analysis backward in time far enough to satisfy myself that the migration pattern was sufficiently clear to terminate the sample. In some cases this meant that as few as about 50 dates were seemingly adequate, while in others more than 100 were considered necessary. The reader is cautioned against relating the size of the sample to the abundance of the species, there is no necessary relationship. As a matter of convention, the spring migration period was considered to begin on 1 January (as in the *Review*), and terminated on 10 June. The fall migration period was considered to begin on 20 July and terminated on 31 December. In a few instances (such as some shorebirds and gulls) where fall migrants sometimes appear prior to 20 July, this date has normally been used as the initial fall occurrence. However, for rare species actual earlier fall dates are indicated. Additionally, although the initial spring or fall sightings are usually greater in number than are the final ones, in some cases the reverse is true, such as when part of the population oversummered or overwintered. In the case of more common migrants, data were utilized only when such species were reported present over a period of several days, in order to make the arrival and departure estimates more meaningful. Yet, in frequent cases the latest initial sightings may actually be later than the usual departure period. Such anomalies make the extreme dates cited far less significant than the mean or median dates. Further, whenever there was a definite clustering of dates I have determined the period within which at least half of the total migration sightings occurred; the spread of such records provides a useful estimate of the relative predictability of each species' migration.

### List of Species

Common Loon. Excepting two January records, 55 initial spring sightings range from 18 March to 27 May, with a median of 7 May. Fourteen final spring sightings are from 12 April to 28 May, with a median of 6 May. Twenty-five initial fall sightings are from 20 July to 2 November, with

\*The last published data used were for the fall of 1978 and the spring of 1979, a few fall dates for rare species seen during the fall of 1979 were also included.

a median of 24 October. Seventeen final fall sightings are from 25 October to 7 December, with a median of 2 November. Of a total of 135 records, the largest number (37) are for April, followed by May (35), November (26) and October (15). Records exist for all months except February.

Red-throated Loon. Five spring records are from 17 April to 7 May, with a mean of 28 April, and seven fall records are from 2 November to 2 December, with a mean of 17 November.

Red-necked Grebe. Seven spring records are from 13 March to 17 May, with a mean of 9 April, and five fall records are from 30 September to 24 October, with a mean of 13 October.

Horned Grebe. Sixty-two initial spring sightings range from 20 February to 4 June with a median of 16 April. Twenty-four final spring sightings are from 14 April to 22 May, with a median of 6 May. Seventeen initial fall sightings are from 5 September to 11 November, with a median of 8 October. Seventeen final fall sightings are from 9 October to 27 November, with a median of 11 November.

Eared Grebe. A total of 105 initial spring sightings range from 19 February to 5 June, with a median of 22 April. Half of the sightings fall within the period 11 April-5 May. Twenty-three final fall sightings are from 23 August to 15 November, with a median of 16 October. Half of the sightings fall within the period 8-30 October.

Western Grebe. Seventy-seven initial spring sightings range from 16 March to 10 June, with a median of 6 May. Half of the sightings fall within the period 19 April-18 May. Forty-three final fall sightings are from 10 September to 7 December, with a median of 3 October. Half of the sightings fall within the period 1-24 October.

Pied-billed Grebe. A total of 116 initial spring sightings range from 27 February to 10 June, with a median of 5 April. Half of the sightings fall within the period 24 March-22 April. Eighty-four final fall sightings are from 21 August to 6 December, with a median of 6 November. Half of the sightings fall within the period 10 October-16 November.

White Pelican. Eighty-four initial spring sightings range from 21 February to 22 May, with a median of 28 April. Half of the records fall within the period 10-24 May. Thirty final spring sightings are from 12 April to 1 June, with a median of 28 April. Twenty-eight initial fall sightings range from 5 August to 21 November, with a median of 24 September. Twenty-eight final fall sightings are from 16 September to 10 November, with a median of 16 October.

Brown Pelican. The few available dates for this species range from 10 April to 10 October. There are records for April, May, July and October.

Double-crested Cormorant. Of 102 initial spring sightings, the range is 14 March to 29 May, and the median is 12 April. Half of the records fall within the period 14-25 April. Thirty-nine final spring records range from 17 April to 2 June, with a median of 1 May. Thirty-one initial fall sightings are from 7 August to 20 October, with a median of 21 September. Thirty-one final fall sightings are from 17 September to 14 December, with a median of 23 October.

Anhinga. The few available records for this species range from 27 April to October (no date). There are also records for May and September.

Great Blue Heron. The range of 87 initial spring sightings is from 6 January to 6 June, with a median of 2 April. Half of the records fall within the period 26 March-30 April. Of 103 final fall sightings, the range is 8 August to 30 December, and the median is 13 October. Half of the records fall within the period 23 September-7 November.

Green Heron. The range of 93 initial spring sightings is from 19 March to 7 June, with a median of 27 April. Half of the records fall within the period 15 April-6 March. The range of 50 final fall sightings is from 23 July to 9 November, with a median of 18 September. Half of the records fall within the period 4-25 September.

Little Blue Heron. A total of 55 spring records range from 4 April to 1 June, with a median of 8 May. Fifteen fall records are from 23 July to 20 October, with a median of 19 August. Of 80 total records, the largest number (37) are for May, followed by April (16), June (8) and July (7).

Great Egret. Sixty-two initial or only spring records are from 26 March to 1 June, with a median of 29 April. Half of the records fall within the period 16 April-10 May. Ten final spring sightings are from 6 April to 8 June, with a median of 9 May. Twenty-one total fall records are from 2 August to 21 October, with a median of 1 September. Of 95 total records, the largest number (34) are for May, followed by April (30), August (10) and September (8).

Snowy Egret. Twenty-four total spring records are from 13 April to 10 June, with a median of 7 May. Ten total fall records are from 30 July to 1 October, with a median of 17 August. Of 34 total records, the largest number are for May (17), followed by April (6) and August (4).

Cattle Egret. Twenty-one total spring records range from 12 April to 3 June, with a median of 9 May. Eleven total fall records are from 25 July to 5 November, with a median of 29 August. Of 32 total records, the largest number (11) are for May, followed by April (8) and August (5).

Black-crowned Night Heron. Eighty initial spring sightings range from 29 March to 9 June, with a median of 25 April. Half of the records fall within the period 18 April-10 May. Fifty-four final fall sightings are from 22 July to 15 November, with a median of 6 September. Half of the records fall within the period 18 August-29 September.

Yellow-crowned Night Heron. Forty-three total spring sightings range from 2 April to 10 June, with a median of 6 May. Half of the records fall within the period 29 April-14 May. Twelve total fall records are from 1 August to 24 October, with a median of 5 September.

Least Bittern. Thirty-nine initial spring sightings range from 30 March to 4 June, with a median of 15 May. Half of the records fall within the period 4-24 May. Ten final fall sightings are from 28 July to 19 September, with a median of 17 August.

American Bittern. The range of 109 initial spring sightings is from 26 March to 10 June, with a median of 3 May. Half of the records fall within the period 23 April to 11 May. Forty-four final fall sightings are from 24 July to 17 December, with a median of 6 October. Half of the sightings fall within the period 1-27 October.

White-faced Ibis. Thirty total records range from 9 April to 3 October. The largest number (14) of sightings are for May, followed by April (9), and there are two records each for June, August and September.

Whistling Swan. Twenty spring sightings range from 1 January to 15 May, with a median of 27 March. Eleven fall sightings are from 21 October to 14 December, with a median of 22 November.

Trumpeter Swan. Eight spring sightings are from 24 January to 23 May, with a mean of 28 March. Six fall sightings are from 10 August to 7 November, with a mean of 6 October.

Canada Goose. Forty-five initial spring sightings are from 4 January to 3 April, with a median of 27 March. Forty-one final spring sightings are from 19 March to 30 May, with a median of 28 April. Fifty-three initial fall sightings are from 28 July to 20 December, with a median of 13 October. Fifty-four final fall sightings are from 18 October to 31 December, with a median of 10 December.

White-fronted Goose. Twenty-nine initial spring sightings are from 12 February to 12 May, with a median of 12 March. Seventeen final spring sightings are from 23 March to 18 May, with a median of 14 April. Nineteen initial fall sightings are from 14 September to 21 November, with a median of 23 October. Fifteen final fall sightings are from 12 October to 29 December, with a median of 6 November.

Snow Goose. Thirty-six initial spring sightings range from 8 January to 28 April, with a median of 9 March. Twenty-six final spring sightings are from 6 March to 20 May, with a median of 20 April. Forty initial fall sightings are from 19 August to 16 December, with a median of 4 October. Thirty-eight final fall sightings are from 26 October to 31 December, with a median of 2 December.

Ross' Goose. Six spring records are from 10 March to 13 April, with a mean of 29 March. Four fall records are from 10 November to 30 November, with a mean of 20 November.

Mallard. Forty-three initial spring sightings are from 1 January to 29 May, with a median of 12 March. Half of the records fall within the period 2 March-3 April. Sixty-four final fall sightings are from 25 August to 31 December, with a median of 27 November. Half of the sightings fall within the period 21 November-28 December.

Black Duck. Nine spring records range from 1 March to 26 May, with a mean of 26 March. There are fall records from August through November, and the species has been captured during winter banding operations in eastern Nebraska.

Gadwall. The range of 48 initial spring sightings is from 3 January to 8 June, with a median of 28 March. Half of the records fall within the period 6 March-8 April. Fifty final fall sightings range from 4 October to 31 December, with a median of 21 November. Half of the records fall within the period 2 November-2 December.

Pintail. Sixty initial spring sightings range from 18 January to 29 May, with a median of 12 March. Half of the records fall within the period 27 February-20 March. Fifty-seven final fall sightings are from 16 September to 31 December, with a median of 19 November. Half of the records fall within the period 6 November-18 December.

Green-winged Teal. Fifty-eight initial spring sightings range from 1 January to 4 June, with a median of 20 March. Half of the records fall within the period 12-30 March. Fifty-five final spring sightings are from 4 April to 10 June, with a median of 10 May. Forty-six initial fall sightings are from 3 August to 18 October, with a median of 12 September. Forty-nine final fall sightings are from 20 September to 31 December, with a median of 2 November.

Blue-winged Teal. Sixty-eight initial spring sightings range from 10 February to 1 June, with a median of 2 April. Half of the sightings fall within the period 28 March-10 April. Eighty-eight final fall sightings are from 19 August to 31 December, with a median of 10 October. Half of the records fall within the period 24 September-23 October.

Cinnamon Teal. Sixty-two initial spring sightings are from 9 January to 6 June, with a median of 26 April. Half of the sightings fall within the period 8 April-10 May. Six fall records are from 13 July to 14 November, with a mean of 9 September.

American Wigeon. Sixty-seven initial spring sightings range from 9 January to 28 May, with a median of 22 March. Half of the sightings fall within the period 6-30 March. Thirty-four final spring sightings are from 27 March to 6 June, with a median of 3 May. Fifty initial fall sightings are from 28 August to 17 December, with a median of 30 September. Fifty final fall sightings are from 9 October to 31 December, with a median of 18 November.

Northern Shoveler. Seventy initial spring sightings are from 27 January to 6 June, with a median of 23 March. Half of the sightings fall within the period 11-30 March. Sixty-two final fall sightings are from 5 September to 31 December, with a median of 4 November. Half of the records fall within the period 20 October-20 November.

Wood Duck. Sixty-nine initial spring sightings are from 17 January to 7 June, with a median of 28 March. Half of the sightings fall within the period 13 March-8 April. Thirty-five final fall sightings are from 10 September to 31 December, with a median of 21 October. Half of the records fall within the period 3-30 October.

Redhead. Sixty initial spring sightings range from 9 February to 25 May, with a median of 13 March. Half of the records fall within the period 1-20 March. Fifty-six final fall sightings are from 9 October to 1 December, with a median of 9 November. Half of the records fall within the period 28 October-19 November.

Ring-necked Duck. Forty-two initial spring sightings are from 12 February to 25 May, with a median of 21 March. Half of the records fall within the period 7-30 March. Twenty-six final spring sightings are from 24 March to 30 May, with a median of 21 April. Twenty-seven initial fall sightings are from 17 September to 7 December, with a median of 12 October. Twenty-three final fall sightings are from 27 October to 31 December, with a median of 17 November.

Canvasback. Sixty-eight initial spring sightings are from 12 February to 21 May, with a median of 18 March. Half of the records fall within the period 7-30 March. Thirty-nine initial fall sightings are from 12 October to 31 December, with a median of 14 November. Half of the records fall within the period 29 October-23 November.

Greater Scaup. Twenty-seven total spring records are from 11 January to 18 May, with the largest number (12) for March, followed by April (8), and three each for February and May. There are fall records for October and November.

Lesser Scaup. Sixty-nine initial spring sightings are from 12 February to 20 May, with a median of 19 March. Half of the records fall within the period 5-25 March. Forty-three final spring records are from 10 March to 6 June, with a median of 11 May. Forty-five initial fall sightings are from 20 July to 15 December, with a median of 18 October. Thirty-nine final fall sightings are from 15 October to 31 December, with a median of 30 November.

Common Goldeneye. Thirty-five initial spring sightings range from 1 January to 12 April, with a median of 5 March. Twenty-four final spring sightings are from 9 March to 8 May, with a median of 30 March. Thirty-four initial fall sightings are from 10 October to 31 December, with a median of 21 November. Thirty-one final fall sightings are from 22 November to 31 December, with a median of 14 December.

Barrow's Goldeneye. Seven spring records range from 22 February to 2 April, with a mean of 20 March. Three fall records are from 26 November to 21 December.

Bufflehead. Fifty-three initial spring sightings are from 21 February to 1 May, with a median of 18 March. Half of the records fall within the period 6-24 March. Thirty-eight final spring sightings are from 15 March to 29 May, with a median of 21 April. Thirty-four initial fall sightings are from 14 August to 16 December, with a median of 19 October. Thirty-one final fall sightings are from 29 October to 31 December, with a median of 24 November.

Oldsquaw. Thirteen total spring records are from 3 February to 19 April, with a median of 29 March. Ten total fall records are from October (no date) to 11 December, with a median of 27 November.

White-winged Scoter. Five total spring records are from 31 March to 29 April, with a mean of 7 April. Twenty-one fall records are from 7 October to 10 December, with a median of 10 November. Half of the records fall within the period 28 October-22 November.

Surf Scoter. Two spring records are for 21 April and 1 May. Eight fall records are from 7 October to 16 December, with a mean of 6 November.

Common Scoter. Two spring records are for 25 March and 4 May. Six fall records range from 28 September to 10 December, with a mean of 28 October.

Ruddy Duck. Sixty-seven initial spring sightings are from 12 February to 9 June, with a median of 3 April. Half of the records fall within the period 14 March-19 April. Fifty-nine final fall records are from 30 August to 31 December, with a median of 8 November. Half of the records fall within the period 10 October-27 November.

Hooded Merganser. Seventy-four initial spring sightings range from 16 January to 30 May, with a median of 26 March. Half of the records fall within the period 13-28 March. Fourteen final spring records are from 19 March to 30 May, with a median of 25 April. Sixteen initial fall sightings are from 14 September to 27 November, with a median of 5 November. Nineteen final fall sightings are from 6 November to 17 December, with a median of 22 November.

Common Merganser. Fifty initial spring sightings are from 14 January to 25 April, with a median of 9 March. Half of the records fall within the period 3-27 March. Thirty-nine final spring sightings are from 4 March to 30 May, with a median of 6 April. Thirty-eight initial fall sightings are from 18 September to 31 December, with a median of 13 November. Thirty-six final fall sightings are from 20 November to 31 December, with a median of 17 December.

Red-breasted Merganser. Sixty-one initial spring sightings are from 15 January to 12 May, with a median of 29 March. Half of the records fall within the period 19 March-7 April. Twenty-four final spring sightings are from 14 February to 18 May, with a median of 20 April. Sixteen total fall sightings are from 21 September to 31 December, with a median of 18 November. Half of the records fall within the period 14-27 November.

Turkey Vulture. Ninety initial spring sightings are from 12 January to 10 June, with a median of 14 April. Half of the records fall within the period 1-24 April. Nineteen final spring sightings are from 11 April to 10 June, with a median of 18 May. Eleven initial fall sightings are from 20 July to 25 September, with a median of 6 September. Thirty-five final fall sightings are from 6 August to 30 December, with a median of 26 September. Half of the records fall within the period 16 September-4 October.

Mississippi Kite. Eight total spring records are from 15 April to 30 May, with a mean of 15 May. The only fall records are for 9 and 19 September.

Goshawk. Forty-eight spring records range from 1 January to 1 June, with a median of 15 March. Half of the records fall within the two periods 1-11 January and 14 April-16 May, suggesting that this species is both a winter visitor and a late spring migrant. Twenty-two total fall records are from 16 September to 31 December, with half of the records occurring within the two periods 21 September-17 October and 25-31 December.

Sharp-shinned Hawk. A total of 142 initial spring records range from 1 January to 1 June, with a median of 29 March. Half of the records fall within the two periods 1-9 January and 17 March-27 April, indicating that this species is probably a winter visitor and early spring migrant. Forty-one initial fall records are from 26 July to 30 December, with a median of 16 September. Half of the records fall within the period 3-19 September. Thirty-five final fall sightings are from 20 August to 31 December, with a median of 10 November.

Cooper's Hawk. A total of 164 initial spring sightings range from 1 January to 10 June, with a median of 16 March. Half of the records fall within the two periods 1-9 January and 13 March-26 April, suggesting that the species is a winter visitor and early spring migrant. Thirty-four initial fall records are from 7 August to 27 December, with a median of 16 September. Half of the records fall within the period 4 September-1 October. Thirty-five final fall sightings are from 8 September to 31 December, with a median of 30 October.

Red-tailed Hawk. Thirty-two initial spring sightings range from 1 January to 21 May, with a median of 22 March and a nearly random temporal distribution, suggesting that the species is essentially a permanent resident. Twenty-three final fall sightings are from 29 September to 31 December, with a median of 26 November.

Red-shouldered Hawk. Forty-nine initial spring sightings are from 1 January to 10 June, with a median of 3 March and a nearly random temporal distribution, suggesting that the species may be a resident in its limited Nebraska range. Eleven final fall sightings are from 25 September to 27 December, with a median of 16 November.

Swainson's Hawk. Ninety-three initial spring sightings are from 1 January to 8 June, with a median of 18 April. Half of the records fall within the period 3 April-3 May. Sixty-five final fall sightings are from 4 August to 27 December, with a median of 26 September. Half of the records fall within the period 14 September-1 October.

Broad-winged Hawk. Excluding a single January record, the range of 82 initial sightings is from 4 March to 6 June, with a median of 26 April. Half of the records fall within the period 17 April-1 May. Nineteen final spring sightings are from 12 April to 8 June, with a median of 15 May. Eleven initial fall sightings are from 8 August to 3 October, with a median of 12 September. Sixteen final fall sightings are from 25 August to 19 November, with a median of 5 October.

Rough-legged Hawk. Eighty-five initial fall records of this winter visitor range from 30 September to 30 December, with a median of 2 November. Half of the records fall within the period 9 October-22 November. A total of 73 final spring sightings range from 8 January to 20 May, with a median of 26 March. Half of the records fall within the period 10 March-12 April.

Ferruginous Hawk. Seventy initial spring sightings range from 1 January to 25 May, with a median of 1 March. The wide spread of the records (half falling between 17 January and 12 April) suggest that the species is essentially residential in Nebraska. Twenty final fall records are likewise widely spread between 26 August and 31 December.

Golden Eagle. This species is evidently a resident in western Nebraska and a winter visitor elsewhere, and thus the records are not susceptible to ready statewide analysis. Late winter sightings seem to follow closely the pattern of the Bald Eagle.

Bald Eagle. Sixty-five initial fall sightings range from 16 September to 31 December, with a median of 29 November. Half of the records fall within the period 16 November-16 December. Eighty-eight final spring sightings are from 8 January to 12 May, with a median of 19 March. Half of the records fall within the period 17 March-2 April.

Marsh Hawk. Thirty-nine initial spring sightings range from 1 January to 2 June, with a median of 13 March. The wide spread of the records suggest that the species is a permanent resident in much of the state. Thirty-six final fall records are from 14 September to 31 December, with a median of 9 December.

Osprey. The range of 102 initial spring sightings is from 1 January to 25 May, with a median of 21 April. Half of the records fall within the period 12 April-1 May. Twenty-one final spring sightings are from 7 April to 27 May, with a median of 5 May. Twenty-two initial fall sightings are from 28 August to 30 November, with a median of 15 September. Half of the records fall within the period 14-24 September. Seventeen final fall sightings are from 17 September to 26 December, with a median of 9 October.

Gyr Falcon. Seven total records for this species range from 27 November to 3 March. There are two records each for December and January, and one each for November, February and March.

Prairie Falcon. A total of 135 initial spring sightings range from 1 January to 22 May, with a median of 30 January. Half of the records fall within the period 1-30 January, suggesting that the species is primarily a resident and winter visitor, with no obvious secondary peak of spring migration. Forty-five fall records extend from 21 July to 31 December, with a median of 13 November and no obvious fall peak in records. There is a progressively smaller number of monthly records from December backwards to July.

Peregrine Falcon. A total of 97 initial spring sightings range from 1 January to 17 May, with a median of 20 March. Half of the records fall within the two periods 1-20 January and 21 April-11 May, suggesting that the species is a winter visitor and spring migrant. Twenty total fall records extend from 26 July to 26 December, with a median of 22 September. The largest number of fall records (8) is for September, but the sample is too small to suggest a peak period.

Merlin. Ninety-nine initial spring sightings range from 1 January to 6 June, with a median of 19 March. Half of the records fall within the two periods 1-20 January and 30 March-24 April, suggesting that the species is primarily a winter visitor and spring migrant. Forty-eight fall records extend from 16 August to 31 December, with a median of 23 October. The largest number (21) of fall records are for December, followed by September (15) and October (7).

American Kestrel. Twenty-nine spring records and 22 fall records are widely scattered throughout the year, suggesting that the species is essentially residential in Nebraska.

Whooping Crane. A summary of migration records for this species has already been published (*Nebraska Bird Review* 45:54-6), which indicates that the spring migration extends from early March to late May, with a peak during the period 1-15 April. The fall migration extends from mid-September to early November, with a peak during the period 11-25 October.

Sandhill Crane. Fifty-seven initial spring sightings are from 8 January to 1 May, with a median of 1 March. Half of the records fall within the period 10 February-20 March. Thirty final spring sightings are from 9 March to 20 May, with a median of 7 April. Fifty-five initial fall sightings are from 2 September to 24 November, with a median of 8 October. Half of the records fall within the period 28 September-22 October. Fifty-three final fall sightings are from 1 October to 31 December, with a median of 5 November.

King Rail. Nine total spring records are from 2 April to 9 June, with a mean of 6 May. Five fall records are from 10 July to 11 September, with a mean of 7 August.

Virginia Rail. Thirty-six initial spring sightings are from 14 February to 1 June, with a median of 8 May. Half of the records fall within the period 29 April-16 May. Thirteen final fall sightings are from 21 July to 13 October, with a median of 16 September.

Sora. Of 108 initial spring records, the range is from 10 March to 3 June, and the median is 6 May. Half of the records fall within the period 30 April-12 May. Twenty-five final fall sightings are from 27 July to 27 November, with a median of 30 September.

Yellow Rail. Eight total spring records are from 26 April to 10 June, with a mean of 6 May. There apparently are no fall records for the species in Nebraska.

Common Gallinule. Sixteen initial spring records are from 23 March to 1 June, with a median of 11 May. Half of the records fall within the period 1-29 May. Three final fall sightings are from 26 July to 29 September, with a mean of 22 August.

American Coot. Seventy-four initial spring sightings are from 4 February to 7 June, with a median of 29 March. Half of the records fall within the period 19 March-24 April. Eighty-two final fall records are from 25 July to 31 December, with a median of 2 November. Half of the records fall within the period 14 October-21 November.

Semipalmated Plover. Eighty-two initial spring sightings are from 24 March to 6 June, with a median of 29 April. Half of the records are within the period 22 April-11 May. Twenty-six final spring sightings are from 29 April to 6 June, with a median of 12 May. Sixteen initial fall sightings are from 25 July to 24 September, with a median of 11 August. Sixteen final fall sightings are from 30 July to 14 October, with a median of 18 September.

Piping Plover. Sixty-one initial spring sightings are from 27 March to 1 June, with a median of 3 May. Half of the records fall within the period 21 April-12 May. Five final fall sightings are from 27 July to 5 September, with a mean of 19 August.

Snowy Plover. Four spring records for this species range from 6 April to 17 May, with a mean of 29 April. Five fall records are from 7 August to 7 September, with a mean of 21 August.

Killdeer. The range of 86 initial spring sightings is from 11 February to 27 May, and with a median of 13 March. Half of the records fall within the period 8-19 March. The range of 110 final fall records is from 18 August to 31 December, with a median of 19 October. Half of the records fall within the period 27 September-10 November.

Mountain Plover. Two initial spring sightings are for 8 May and 15 May. There are no available fall records.

Golden Plover. Forty-nine total spring sightings are from 6 April to 29 May, with a median of 7 May. Half of the records fall within the period 25 April-14 May. Ten initial fall sightings are from 2 September to 9 October, with a median of 28 September. Ten final fall sightings are from 8 September to 20 November, with a median of 12 October.

Black-bellied Plover. Sixty-six total spring sightings range from 4 April to 9 June, with a median of 16 May. Half of the records fall within the period 12-23 May. Thirteen initial fall sightings are from 27 July to 2 October, with a median of 20 August. Thirteen final fall sightings are from 27 August to 12 November, with a median of 6 October.

Ruddy Turnstone. Twenty-three total spring sightings are from 19 April to 27 May, with a median of 18 May. Half of the records fall within the period 14-25 May. There are no fall records.

American Woodcock. Thirteen initial spring sightings range from 12 March to 1 June, with a median of 10 April. Eleven final fall sightings are from 12 September to 14 November, with a median of 28 October.

Common Snipe. Eighty-one initial spring sightings range from 1 January to 29 May, with a median of 13 April. Half of the records fall within the period 4-21 April. Twenty-three final spring records are from 12 April to 28 May, with a median of 29 April. Thirty-seven initial fall records are from 21 July to 21 December, with a median of 18 September. Forty-two final fall records are from 27 July to 31 December, with a median of 12 November. The data suggest that overwintering is rather rare in this species.

Long-billed Curlew. Eighty-three initial spring sightings range from 7 March to 7 June, with a median of 11 April. Half of the records fall within the period 5-21 April. Twenty-eight final fall sightings are from 22 July to 21 September, with a median of 18 August. Half of the records fall within the period 5 August-1 September.

Whimbrel. Eleven spring records are from 12 April to 27 May, with a median of 10 May. There is a single fall record (27 October).

Eskimo Curlew. Ten spring records are from 22 March to approximately 25 May, with a



median of 12 April. There are no specific fall records, but the species apparently migrated through the state in October.

Upland Sandpiper. The range of 108 initial spring sightings is from 9 March to 9 May, with a median of 2 May. Half of the records fall within the period 24 April-10 May. Seventy-five final fall sightings are from 21 July to 28 October, with a median of 20 August. Half of the records fall within the period 10-26 August.

Spotted Sandpiper. The range of 105 initial spring records is from 3 March to 5 June, with a median of 4 May. Half of the records fall within the period 26 April-3 May. Sixty-two final fall records are from 26 July to 26 October, with a median of 9 September. Half of the records fall within the period 27 August-22 September.

Solitary Sandpiper. Eighty-eight initial spring sightings are from 17 March to 7 June, with a median of 4 May. Half of the records fall within the period 28 April-11 May. Twenty-nine final spring sightings are from 6 May to 10 June, with a median of 13 May. Thirty-six initial fall sightings are from 20 July to 9 September, with a median of 9 August. Thirty-five final fall sightings are from 5 August to 26 November, with a median of 1 September.

Greater Yellowlegs. The range of 115 initial spring sightings is from 13 March to 10 June, with a median of 13 April. Half of the records fall within the period 2-14 April. The range of 55 final spring sightings is from 11 April to 30 May, with a median of 5 May. Thirty-eight initial fall sightings are from 20 July to 16 October, with a median of 18 August. Half of the records fall within the period 4 August-3 September. Thirty-eight final fall sightings are from 14 August to 16 November, with a median of 7 October.

Lesser Yellowlegs. The range of 124 initial spring sightings is from 13 March to 29 May, with a median of 14 April. Half of the records fall within the period 10-27 April. The range of 60 final spring sightings is from 10 April to 1 June, with a median of 13 May. Thirty-five initial fall sightings are from 20 July to 22 September, with a median of 15 August. Half of the records fall within the period 8 August-5 September. Forty-one final fall sightings are from 20 August to 16 November, with a median of 5 October.

Willet. The range of 104 initial spring sightings is from 18 March to 10 June, with a median of 27 April. Half of the records fall within the period 19 April-5 May. Sixteen final fall sightings are from 10 August to 9 November, with a median of 24 August. Half of the records fall within the period 19 August-1 September.

Red Knot. A total of six spring records range from 7 May to 19 May, with a mean of 14 May. Five fall records are from 27 August to October (no date), with a mean of 10 September.

Pectoral Sandpiper. The range of 102 initial spring sightings is from 4 March to 6 June, with a median of 28 April, and half of the records falling within the period 15 April-8 May. Thirty-nine final spring sightings are from 5 April to 25 May, with a median of 13 May. Twenty-eight initial fall sightings are from 20 July to 22 September, with a median of 5 August. Twenty-eight final fall sightings are from 3 August to 20 November, with a median of 4 October.

White-rumped Sandpiper. The range of 100 initial spring sightings is from 28 March to 1 June, with a median of 29 April. Half of the records fall within the period 1-16 May. Seventeen final spring sightings are from 8 May to 25 May. Eleven total fall sightings are from 20 July to 4 October, with a median of 12 August.

Baird's Sandpiper. The range of 125 initial spring sightings is from 12 March to 24 May, with a median of 21 April. Half of the records fall within the period 6 April-4 May. Fifty-four final spring sightings are from 7 April to 29 May, with a median of 13 May. Thirty-two initial fall sightings are from 20 July to 1 October, with a median of 12 August. Twenty-six final fall sightings are from 3 August to 6 November, with a median of 4 October.

Least Sandpiper. The range of 102 initial spring sightings is from 8 March to 29 May, with a median of 2 May. Half of the records fall within the period of 20 April-10 May. Forty-one final spring sightings are from 27 April to 2 June, with a median of 14 May. Twenty-three initial fall sightings are from 20 July to 9 September, with a median of 2 August. Twenty-three final fall sightings are from 28 July to 11 November, with a median of 18 September.

Dunlin. Forty-eight spring sightings range from 6 April to 2 June, with a median of 13 May. Half of the records fall within the period 9-21 May. Eleven fall records range from 15 August to 20 November, with a median of 11 September.

Semipalmated Sandpiper. Eighty-nine initial spring sightings are from 21 March to 10 June, with a median of 28 April. Half of the records fall within the period 20 April-10 May. Thirty-nine final spring sightings are from 28 April to 1 June, with a median of 15 May. Twenty-three initial fall sightings are from 20 July to 8 September, with a median of 5 August. Twenty-three final fall sightings are from 28 July to 16 October, with a median of 18 September.

Western Sandpiper. Forty-one initial spring sightings are from 7 April to 10 June, with a median of 8 May. Half of the records fall within the period 28 April-15 May. Ten final spring sightings are from 3 May to 23 May, with a median of 13 May. Fourteen initial fall records are from 20 July to 19 September, with a median of 12 August. Eleven final fall sightings are from 26 August to 2 October, with a median of 1 September.

Short-billed Dowitcher. Seven spring sightings attributed to this species are from 25 March to 18 May, with a mean of 28 April. Thirteen fall sightings are from 20 July to 2 November, with a median of 2 September.

Long-billed Dowitcher. Thirty-five initial spring sightings range from 12 April to 23 May, with a median of 1 May. Half of the records fall within the period 20 April-11 May. Thirteen final spring sightings are from 4 May to 1 June, with a median of 11 May. Eleven initial fall sightings are from 20 July to 7 October, with a median of 8 August. Thirteen final fall sightings are from 1 August to 3 December, with a median of 14 October.

Stilt Sandpiper. Ninety-nine initial spring sightings are from 3 April to 29 May, with a median of 11 May. Half of the records fall within the period 9-19 May. Sixteen final spring sightings are from 7 May to 30 May, with a median of 17 May. Eleven initial fall sightings are from 21 July to 19 September, with a median of 11 August. Nine final fall sightings are from 3 September to 21 October, with a median of 20 September.

Sanderling. Fifty-six initial spring sightings are from 26 March to 2 June, with a median of 6 May. Half of the records fall within the period 25 April-15 May. Thirteen final spring sightings are from 26 April to 10 June, with a median of 13 May. Seventeen initial fall sightings are from 27 July to 2 October, with a median of 20 August. Twelve final fall sightings are from 12 August to 19 October, with a median of 4 October.

Buff-breasted Sandpiper. Twelve total spring sightings are from 1 May to 20 May, with a median of 10 May. Eleven fall sightings are from 17 August to 26 September, with a median of 7 September.

Marbled Godwit. The range of 117 initial spring sightings is from 5 April to 26 May, with a median of 29 April. Half of the records fall within the period 22 April-10 May. Eleven final spring sightings are from 19 April to 23 May, with a median of 7 May. Eleven fall records are from 20 July to 24 October, with a median of 9 September. This species is evidently much rarer in fall than during spring.

Hudsonian Godwit. Sixty-nine initial spring records are from 12 April to 27 May, with a median of 2 May. Half of the records fall within the period 22 April-12 May. Ten final spring sightings are from 6 May to 25 May, with a median of 15 May. There are no fall records.

Avocet. Eighty-two initial spring sightings range from 2 April to 7 June, with a median of 28 April. Half of the records fall within the period 20 April-6 May. Thirty-eight final fall sightings are from 25 July to 17 November, with a median of 4 September. Half of the records fall within the period 25 August-22 September.

Wilson's Phalarope. The range of 115 initial spring sightings is from 6 April to 6 June, with a median of 2 May. Half of the records fall within the period 25 April-10 May. Thirty-eight final fall sightings are from 26 July to 20 October, with a median of 8 September. Half of the records fall within the period 19 August-12 September.

Northern Phalarope. Forty-two initial spring sightings range from 19 April to 27 May, with a median of 14 May. Half of the records fall within the period 8-19 May. Seven final spring sightings are from 9 May to 25 May, with a mean of 19 May. Ten initial fall sightings are from 20 July to 21 September, with a median of 10 August. Eleven final fall sightings are from 20 August to 14 October, with a median of 27 September.

Glaucous Gull. Nine total spring records range from 12 March to 29 April, with a mean of 28 March. The only fall records are for 8 December and 26 December.

Herring Gull. Forty-seven initial spring records range from 13 January to 13 May, with a median of 18 March. Half of the records fall within the period 2 March-1 April. Twenty-seven final spring sightings are from 5 March to 28 May, with a median of 21 April. Twenty-four initial fall sightings are from 21 July to 24 November, with a median of 26 October. Eighteen final fall sightings are from 29 August to 21 December, with a median of 28 November.

Ring-billed Gull. Eighty initial spring sightings range from 3 January to 15 May, with a median of 16 March. Half of the records fall within the period 5-26 March. Fifty final spring sightings are from 12 March to 7 June, with a median of 12 May. Forty-eight initial fall sightings are from 20 July to 15 November, with a median of 12 September. Fifty-seven final fall sightings are from 25 August to 21 December, with a median of 28 November.

California Gull. Four spring records are from 19 March to 10 April, with a mean of 26 March. The only late summer and fall records are for 18 July, 4 October, and 20 October.

Laughing Gull. Five spring records are from 5 April to 21 May, with a mean of 22 April. The species has been observed in July, but the only other fall records are for 5-7 December.

Franklin's Gull. Eighty-nine initial spring sightings range from 6 March to 8 June, with a median of 10 April. Half of the records fall within the period 27 March-21 April. Fifty-eight final spring sightings are from 2 April to 2 June, with a median of 14 May. Fifty-two initial fall sightings are from 20 July to 24 October, with a median of 7 September. Fifty-eight final fall sightings are from 17 August to 20 December, with a median of 17 October. Half of the records are for the period 3 October-2 November.

Bonaparte's Gull. Thirty-six total spring sightings are from 3 April to 27 May, with a median of 23 April. Half of the records fall within the period 12 April-9 May. Twenty fall sightings are from 18 August to 21 November, with a median of 26 October.

Forster's Tern. Fifty-eight initial spring sightings are from 11 April to 8 June, with a median of 28 April. Half of the records fall within the period 19 April-5 May. Twenty final fall sightings are from 1 August to 8 October, with a median of 11 September.

Common Tern. Sixty-five initial spring sightings are from 18 March to 7 June, with a median of 5 May. Half of the records fall within the period 24 April-15 May. Fourteen final spring sightings are from 25 April to 6 June, with a median of 11 May. Eleven initial fall sightings are from 23 July to 9 September, with a median of 16 August. Eleven final fall sightings are from 9 August to 14 October, with a median of 2 September.

Least Tern. Eighty-seven initial spring sightings range from 8 March to 10 June, with a median of 23 May. Half of the records fall within the period 16-30 May. Twenty-six final fall sightings are from 20 July to 6 October, with a median of 14 August.

Caspian Tern. Twenty-seven total spring sightings are from 23 March to 28 May, with a median of 10 May. Half of the records fall within the period 3-17 May. Twenty-four fall records are from 20 July to 14 October, with a median of 19 September. Half of the records fall within the period 4-25 September.

Black Tern. The range of 130 initial spring sightings is from 9 April to 5 June, with a median of 12 May. Half of the records fall within the period 6-18 May. Sixty-six final fall sightings are from 21 July to 5 October, with a median of 2 September. Half of the records fall within the period 19 August-11 September. The more precise nature of this species' migration as compared with the other terns and gulls is no doubt a reflection of its insectivorous diet.

Mourning Dove. Sixty-two initial spring sightings range from 1 January to 29 May, with a median of 26 March. Half of the records fall within the period 9 March-8 April. Ninety final fall sightings range from 30 August to 31 December, with a median of 1 November. The wide spread of fall departure dates suggests that the species frequently overwinters in the state.

Yellow-billed Cuckoo. The range of 170 initial spring sightings is from 12 April to 10 June, with a median of 23 May. Half of the records fall within the period 15-29 May. The range of 101 final fall sightings is from 23 July to 14 October, with a median of 15 September. Half of the records fall within the period 1-27 September.

Black-billed Cuckoo. The range of 163 initial spring sightings is from 1 April to 10 June, with a median of 24 May. Half of the records fall within the period 16-30 May. The range of 60 final fall sightings is from 28 July to 9 October, with a median of 30 August. Half of the records fall within the period 25 August-9 September.

Snowy Owl. This winter visitor shows a range in 18 initial fall sightings of from 6 November to 29 December, with a median of 4 December. Twenty-three final spring sightings are from 30 January to 30 April, with a median of 4 February.

Burrowing Owl. The range of 119 initial spring sightings is from 16 March to 10 June, with a median of 24 April. Half of the records fall within the period 13 April-9 May. Forty-three final fall sightings are from 21 July to 9 November, with a median of 16 September. Half of the records fall within the period 30 August-30 September.

Long-eared Owl. Twenty-four spring sightings range from 2 January to 14 May, with a median of 9 March. Nineteen fall sightings are from 21 July to 31 December, with a median of 24 November. These limited data suggest that the species is a summer resident and a late fall and early spring migrant, with frequent overwintering.

Short-eared Owl. Thirty-five spring sightings range from 8 January to 6 June, with a median of 12 March. Twenty-nine fall sightings are from 20 July to 31 December, with a median of 30 November. The data are very similar to those of the Long-eared Owl, suggesting that the species is a summer resident and a late fall and early spring migrant, with frequent overwintering.

Saw-whet Owl. Ten fall records are from 29 July to 22 December, with a median of 8 November. Seven spring records are from 1 January to 16 May, with a median of 20 February. These limited data suggest that the species is primarily a winter visitor. In northwestern Nebraska it is a rare summer resident, arriving between 29 April and 22 May (R.C. Rosche, pers. comm.).

Chuck-wills-widow. Fourteen spring records range from 2 May to 9 June, with a median of 3 June. No fall records after 15 August are available.

Whip-poor-will. Thirty-four initial spring records range from 14 April to 21 May, with a median of 2 May. Half of the records fall within the period 25 April-7 May. Fifteen final fall records range from 31 July to 1 October, with a median of 2 September. Half of the records fall within the period 26 August-7 September.

Poor-will. Thirty-three initial spring records range from 25 April to 9 June, with a median of 6 May. Half of the records fall within the period 1-16 May. Eighteen final fall records are from 20 July to 1 November, with a median of 4 September. Half of the records fall within the period 18 August-16 September.

Common Nighthawk. The range of 170 initial spring records is from 16 April to 7 June, with a median of 21 May. Half of the records fall within the period 16-28 May. The range of 137 final fall records is from 21 July to 24 October, with a median of 18 September. Half of the records fall within the period 8 September-2 October.

Chimney Swift. The range of 129 initial spring records is from 7 March to 6 June, with a median of 27 April. Half of the records fall within the period 20 April-4 May. The range of 111 final fall records is from 22 July to 14 October, with a median of 7 October. Half of the records fall within the period 2-14 October.

White-throated Swift. Twenty-six initial spring sightings range from 19 April to 10 June, with a median of 18 May. Half of the records fall within the period 10 May-1 June. Ten final fall sightings are from 1 August to 22 September, with a median of 29 August.

Ruby-throated Hummingbird. The range of 160 initial spring sightings is from 7 April to 10 June, with a median of 12 May. Half of the records fall within the period 5-17 May. Sixty-four final fall sightings are from 30 July to 8 October, with a median of 18 September. Half of the records fall within the period 2-18 September.

Broad-tailed Hummingbird. Fifteen initial fall records of this autumn migrant range from 20 July to 13 September, with a median of 4 August. Fourteen final fall records are from 8 August to 14 September, with a median of 16 August. Half of the total fall records fall within the period 29 July-16 August. There is a single spring sighting, in May.

Rufous Hummingbird. Sixteen fall sightings of this species range from 30 July to 14 September, with a median of 12 August. Half of the records fall within the period 9-17 August. There are no spring records.

Belted Kingfisher. Forty-three initial spring sightings range from 2 January to 10 May, with a median of 20 March. Half of the records fall within the period 14 February-10 April. Forty-seven final fall sightings are from 26 July to 31 December, with a median of 15 November. The concentration of fall records toward the end of the year (nearly half occurring in December) suggest that the species overwinters frequently.

Red-headed Woodpecker. Ninety-eight initial spring sightings are from 2 January to 9 June, with a median of 7 May. Half of the records fall within the period 28 April-17 May. The range of 106 final fall sightings is from 8 August to 31 December. Half of the records fall within the period 8 September to 3 October. Less than ten percent of the fall records are for December, suggesting that this species only rarely overwinters. Presumably its relatively high dependence on aerial insects accounts for this species' migration tendencies as compared with most other Nebraska woodpeckers.

Lewis' Woodpecker. There are too few records to judge this rare species' migration, but 15 records range from 20 January to 23 September, with the largest number of sightings in May. Like the Red-headed Woodpecker, it is somewhat dependent on aerial insects, and is probably relatively migration-prone.

Yellow-bellied Sapsucker. Thirty-four initial fall sightings are from 1 September to 30 December, with a median of 3 October. Twenty-five final fall sightings are from 9 October to 31 December, with a median of 18 December. Sixteen initial spring sightings are from 1 January to 28 May, with a median of 14 March. Fourteen final spring sightings are from 9 January to 21 May, with a median of 23 March. These data would suggest that this species is a very late fall migrant, frequently overwintering in the state, and remaining for a rather variable period in spring.