



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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FEDERAL BUILDING, SECOND FLOOR
GRAND ISLAND, NEBRASKA 68801



January 10, 1990

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MEMORANDUM

To: AWE, Region 6 MAIL STOP 60153
(Attention: Larry Shanks)

From: Acting Field Supervisor
Nebraska-Kansas Field Office

Subject: Cooperative Whooping Crane Tracking Project

Des Lacs	Author
Complex	
Project Leader	
Asst. Proj. Leader	
Des Lacs Refuge	
East Grand Refuge	
Grand Island	
Nebraska	
Destroy	

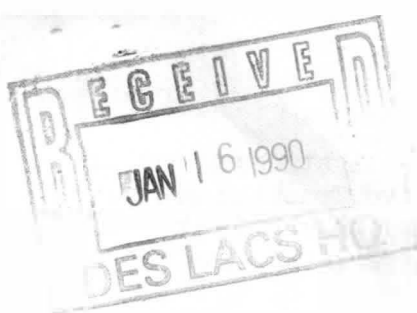
Enclosed is a Whooping Crane Tracking Project summary for the period fall 1975 to spring 1989. Thank you for your cooperation in monitoring the migration of the whooping crane.

Please contact Mr. Wally Jobman of our staff if additional information is needed.

Enclosures

cc: EHC, Washington, D.C.

FWE, Salt Lake City, UT
FWE, Helena, MT
FWE, Cheyenne, WY
FWE, Bismarck, ND
FWE, Pierre, SD
FWE, Billings, MT
FWE, Manhattan, KS
FWE, Tulsa, OK
James Lewis, Whooping Crane Coordinator, Albuquerque, NM
Law Enforcement District #2, Albuquerque, NM
Law Enforcement District #6, Denver, CO
Cleveland Vaughn, SRA, Omaha, NE (69460)
John Cooper, SRA, Pierre, SD (69450)
David Kraft, SRA, Bismarck, ND (69430)
Cornelis Vendel, SRA, Lenexa, KS
Director, Patuxent Wildlife Research Center, Laurel, MD
Rod Drewien, Soda Springs, ID
Central Flyway Representative, Golden, CO
Refuge Manager, Aransas NWR, Austwell, TX
Refuge Manager, Medicine Lake NWR, Medicine Lake, MT (61530)
Refuge Manager, Salt Plains NWR, Jet, OK
Bird Banding Laboratory, Laurel, MD
Bureau of Reclamation, Grand Island, NE
Bureau of Reclamation, Bismarck, ND
RW Field Offices (19), SD, ND, KS, NE



Des Lacs	11-8-89	Action
Cooper		
Project Leader		
Asst. Proj. Leader		
Des Lacs Refuge		
Wood Buffalo Refuge		
Contingency Plan		
Grand Island District		
Refuge Area		
Refuge		
Destroy		

SUMMARY
COOPERATIVE WHOOPING CRANE TRACKING PROJECT
FALL 1975 TO SPRING 1989

The following report is a summary of the information gathered since initiation of the Cooperative Whooping Crane Tracking Project (Project) for the Wood Buffalo/Aransas Whooping Crane Flock. The information included is only for the fall 1975 through spring 1989 migrations, unless otherwise noted. The reporting period includes 14 fall and 14 spring migrations. During the period the Wood Buffalo/Aransas Flock more than doubled, increasing from 57 birds in the winter of 1975-76 to 132 birds in the winter of 1988-89.

The Project was initiated during the fall of 1975 at the U.S. Fish and Wildlife Service (Service) office in Pierre, South Dakota. The monitoring responsibility was transferred from the Pierre office to the Service office in Grand Island, Nebraska, during August 1985. During 1985, the Project was integrated with the "Contingency Plan for State-Federal Cooperative Protection of Whooping Cranes". The Contingency Plan designates the Grand Island office as the Records Management Center for all whooping crane sightings reported in Canada and the United States. All confirmed, probable, and unconfirmed sightings are reported to the Records Center. All confirmed sightings are maintained on a computer databased at the Grand Island office. Mr. Brian Johns, a wildlife biologist with the Canadian Wildlife Service in Saskatoon, Saskatchewan, Canada, monitors the whooping cranes on the Canadian leg of their migration; and Mr. Wally Jobman, a wildlife biologist with the Service office in Grand Island, monitors the United States portion of each migration.

The Project involves the following activities: (a) distribution of Pre-Migration Notices to cooperators, which contain a list of the key and alternate State and Federal contacts in each State, a sighting report form, and color-band information; (b) weekly notification of key contacts regarding the status of the migration; (c) arrangement for the completion of a site evaluation at each confirmed sighting location; (d) distribution of a migration summary to cooperators following each migration; and (e) maintenance of all confirmed sightings, color-marked bird observations, and site evaluations on a computer database.

Sighting Reports

A summary of the geographic distribution of confirmed sightings in the United States and Canada is shown in Table 1. A total of 845 sightings, an average of 30 sightings per migration, were reported during the summary period. In addition, an average of 58 probable and unconfirmed sightings were reported during each migration. Approximately 61% and 39% of the confirmed sightings were reported in the United States and Canada, respectively. Sixty-six percent of the Canadian sightings were reported during fall migrations, compared with 61% in the United States. Canadian sightings were predominantly from Saskatchewan. In the United States, Nebraska reported the greatest number of spring sightings, followed by North Dakota and Kansas. In the fall, the most sightings were reported in Kansas, Oklahoma, and North Dakota. When spring and fall records are combined, Nebraska ranks highest, followed by Kansas and North Dakota. The largest group observed during migration was of 12 birds in Kansas (April 11, 1984).

Table 1. Geographic distribution of confirmed whooping crane sightings reported in the United States and Canada, resulting from the Cooperative Tracking Project, during spring, fall, and combined migrations, fall 1975 to spring 1989. For each area the total sightings(N), average number of sightings(\bar{x}), range(R), and percent of total sightings(%) are shown.

Area	Spring (n=14)				Fall (n=14)				Combined (n=28)		
	N	(\bar{x})	R	(%)	N	(\bar{x})	R	(%)	N	(\bar{x})	(%)
<u>United States</u>											
TX	9	0.6	0-4	2.9	24	1.7	0-4	4.5	33	1.2	3.9
OK	11	0.7	0-2	3.5	66	4.7	0-15	12.4	77	2.8	9.1
KS	41	2.9	0-9	13.1	67	4.8	0-13	12.6	108	3.9	12.8
NE	68	4.9	0-12	21.7	54	3.9	0-8	10.2	122	4.4	14.5
SD	20	1.4	0-4	6.4	36	2.6	0-9	6.8	56	2.0	6.6
ND	43	3.1	0-6	13.7	63	4.5	2-14	11.9	106	3.8	12.6
MT	8	0.6	0-2	2.5	4	0.3	0-2	0.7	12	0.4	1.4
CO	2	0.1	0-1	0.6	0	0.0	0-0	0.0	2	0.1	0.2
WY	1	0.1	0-1	0.3	0	0.0	0-0	0.0	1	0.1	0.1
	203			64.7	314			59.1	517		61.2
<u>Canada</u>											
SK	105	7.5	2-20	33.4	207	14.7	4-38	39.0	312	11.1	36.9
AB	2	0.1	0-1	0.6	9	0.6	0-4	1.7	11	0.4	1.3
MN	3	0.2	0-1	1.0	1	0.1	0-1	0.2	4	0.1	0.5
NWT	1	0.1	0-1	0.3	0	0.0	0-0	0.0	1	0.1	0.1
	111			35.3	217			40.9	328		38.8

Sighting Dates

Table 2 lists the earliest and latest spring and fall migration dates that migrating whooping cranes were observed in the States and Saskatchewan. There was a 152-day period, August 3 (Saskatchewan, 1988) to January 2 (Oklahoma, 1989), during which fall sightings were reported. Spring sightings were reported between February 10 (Kansas, 1986) and June 18 (Nebraska, 1950), a 128-day period. It is difficult to identify the fall migration period because the August 3, 1988, sighting may have been of a bird which summered in the area, and the January 2, 1989, sighting may have been of a bird which wintered in that area. The same problems apply to the spring period, where the February 10, 1986, sighting was of a bird migrating with sandhill cranes, which moved north to Kansas and then moved back south to Oklahoma. The June 18, 1950, sighting was of a bird which, in all likelihood, spent part of the summer in the area. Therefore, the accuracy of the fall and spring migration periods is questionable. The important point is that the fall migration period is longer, and is a factor contributing to the greater number (63%) of sightings being reported in the fall.

A comparison of dates in Table 2 indicates that birds have migrated through adjacent States without being detected. For example, North Dakota and Montana have spring arrival dates that are earlier than in South Dakota; and the earliest fall reporting date in Oklahoma is earlier than in Nebraska or Kansas.

Radio-Marking Project

In cooperation with the Canadian Wildlife Service, a project was initiated in 1981 to radio-mark and monitor juvenile whooping cranes during migration. The migration of 27 individual birds, including 9 radio-marked juveniles, was monitored during the fall 1981-83 and spring 1983-84 migrations. Approximately 85 of the sightings reported in the Project database, and included in this summary, are the direct result of the Radio-Marking Project. Important information on migration chronology was collected during this project.

Color-Banding Project

The Canadian Wildlife Service began color-banding juvenile whooping cranes on the breeding grounds in 1977. The banding project has ended and no birds were banded during the summer of 1989. Parts or all of the color-bands on some birds have dropped off, and in many cases faded, making the identification of individual birds increasingly difficult. During the period 1977-88, 132 juveniles were color-marked, and in the spring of 1989, 80 (61%) of these banded birds were known to be surviving (Table 3). As shown in Table 3, the percent of birds surviving from each age-class varied from 20% to 86%. Through the spring of 1989, a total of 608 color-band observations had been reported in the States and Canada. Sightings of color-banded birds have been reported from Canada (203), Kansas (120), Nebraska (75), North Dakota (60), South Dakota (56), Oklahoma (45), Texas (37), and Montana (12). This banding program has provided valuable information on whooping crane biology, including the breeding and wintering territories, the stopover sites used by individual birds, and the age of initial pairing and breeding.

Table 2. Earliest and latest dates of confirmed whooping crane sightings, during the fall 1975 through spring 1989 migrations, in the United States and Canada. If applicable, sighting dates in Fish and Wildlife Service records, prior to 1975, are listed in parentheses.

Area	Spring		Fall	
	Earliest	Latest	Earliest	Latest
Saskatchewan ^a	4/10/86	5/30/81	8/3/88	11/19/83
Montana	4/3/78	5/18/82	9/24/79	11/6/75
North Dakota	4/2/86	6/10/89 ^b	9/5/77	11/8/83
South Dakota ^c	4/13/88 (4/8/59)	5/21/82	9/20/78 (9/10/64)	11/9/83 (11/11/72)
Nebraska ^d	3/17/87	5/24/89 (6/18/50)	10/4/87 (10/3/69)	12/3/87
Kansas	2/10/86 ^e	4/20/81 (4/28/63)	10/3/84	12/6/87
Oklahoma ^f	3/14/88 (3/10/46)	5/1/80 (5/5/63)	10/1/84	1/2/89
Texas ^g	4/6/84	4/12/83	10/16/82	11/16/85
Aransas NWR ^h	(3/13/66)	(5/16/62,63)	10/3/85	Dec-Jan ⁱ

a Several have summered in Saskatchewan.

b First date observed in area where bird summered.

c Summer sighting 6/13 and 22/73.

d Summer sighting 7/16-23/50.

e Bird migrated back to Oklahoma following sighting.

f Bird wintered in Oklahoma 12/27/86 - 3/11/87.

g Several birds have wintered off Aransas NWR.

h Earliest and latest arrival and departure dates at Aransas NWR.

i Late December or Early January, hard to pinpoint arrival dates of stragglers.

Table 3. Number of juvenile whooping cranes color-banded, 1977-88, and surviving as of spring 1989.

Cohort	No. Banded	No. Surviving	Percent
1977	9	^{a/} 2	22
1978	8	3	38
1979	6	4	67
1980	6	3	50
1981	3	1	33
1982	5	1	20
1983	10	4	40
1984	13	4	31
1985	16	12	75
1986	18	14	78
1987	21	18	86
1988	17	14	82
Total	132	80	61

^{a/} Uncertain about one bird, but likely 1977 bird.

Use-Site Evaluations

Since the fall of 1977, use-site evaluations have been completed on most confirmed stopover sites in the United States. Stopover sites are evaluated according to the "Guide For Evaluation of Whooping Crane Sighting Locations" found in Appendix B of the Whooping Crane Recovery Plan. The evaluations, maintained on a computer database at the Grand Island office, have contributed significant information toward determining the habitat characteristics of migration stopover sites. As of the spring of 1989, a total of 498 evaluations had been completed in the following States: Nebraska (222); Kansas (89); North Dakota (70); Oklahoma (56); South Dakota (43); Montana (13); and Texas (5). Some of the State totals exceed the number of sightings listed in Table 1 because at many stopover sites separate evaluations were done for each night roost and feeding site used during a stopover.

Migration Corridor

The number of whooping crane sightings confirmed in each degree-block during spring, fall, and combined migrations is shown in Figures 1, 2, and 3. Table 4 lists the degree-blocks in which the greatest number of sightings were reported. The two top-ranked degree-blocks in the spring include sightings reported primarily on the Platte River and Rainwater Basins in Nebraska. The primary sighting locations within the number one ranked degree-block in the fall and combined migrations were Quivira National Wildlife Refuge (NWR) and Cheyenne Bottoms State Wildlife Area, Kansas. Salt Plains NWR, Oklahoma, lies within the degree-block ranked number 2 in the fall and combined migrations. Most of the "fringe" sightings, i.e., Colorado, Wyoming, and Manitoba, occurred during the spring migrations (Fig. 2). The Colorado sightings may have been of birds originating from the experimental flock at Grays Lake NWR, Idaho. Since 1975, probable sightings have been reported from the bordering States of Iowa, Minnesota, and Missouri.

The Tracking Project represents a cooperative effort of many dedicated individuals over a 15-year period. The volumes of information gathered on migrating whooping cranes would not have been possible without the help of each cooperator. Special thanks go out to each cooperator, and in particular to individuals with the Canadian Wildlife Service for the information provided on color-banded birds and sightings in Canada. Likewise, the project could not have been successful without the information provided by personnel at Aransas NWR regarding whooping crane arrivals, departures, and color-banded birds. A big thank you to each cooperator who has taken the time to complete a site evaluation. The Project will continue and we will continue to seek your support. During the spring of 1990, the confirmed sighting list should surpass 900 records, which will be an important milestone for the Project.

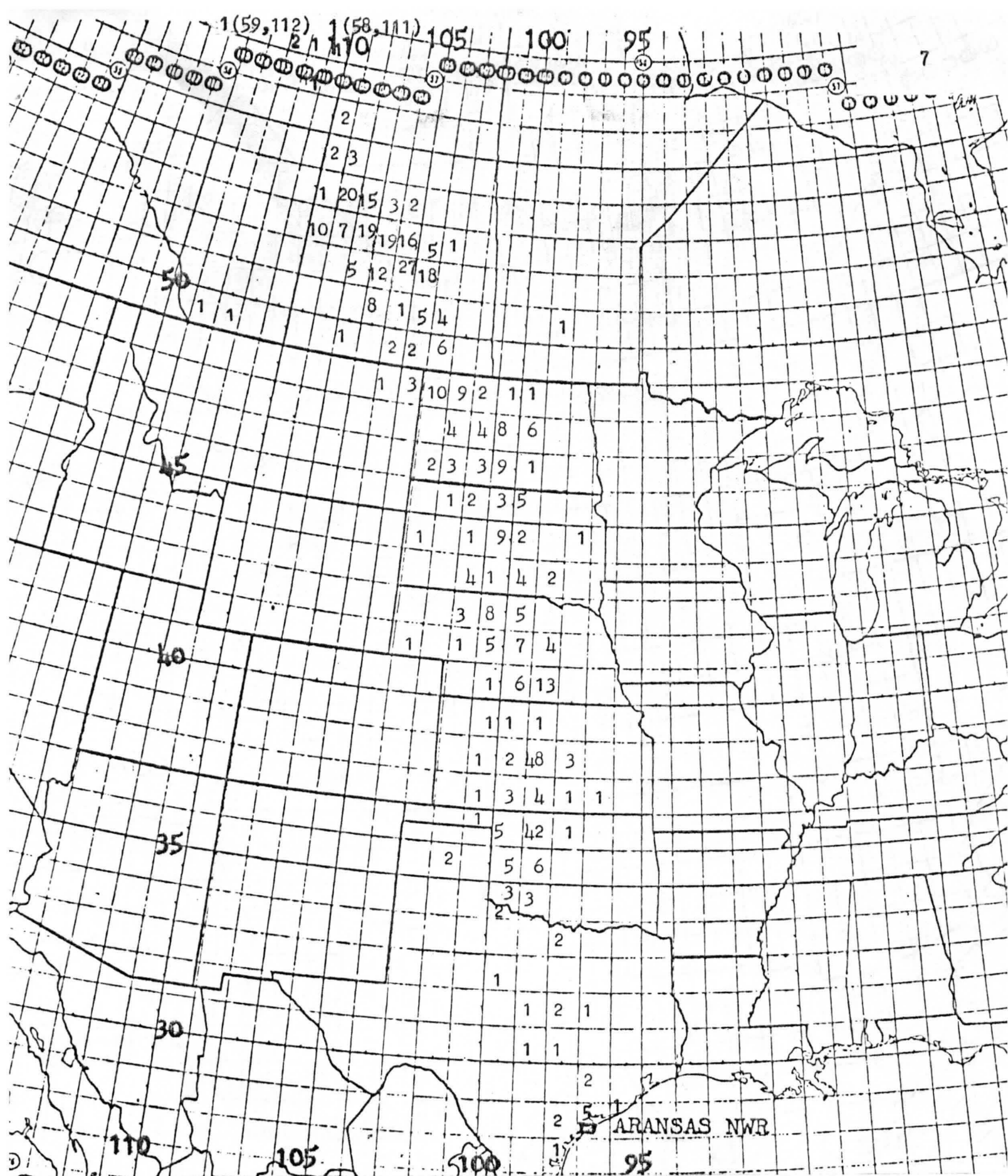


Fig. 1. Number of confirmed whooping crane sightings reported in each degree-block during fall migrations, 1975-88, Whooping Crane Tracking Project.

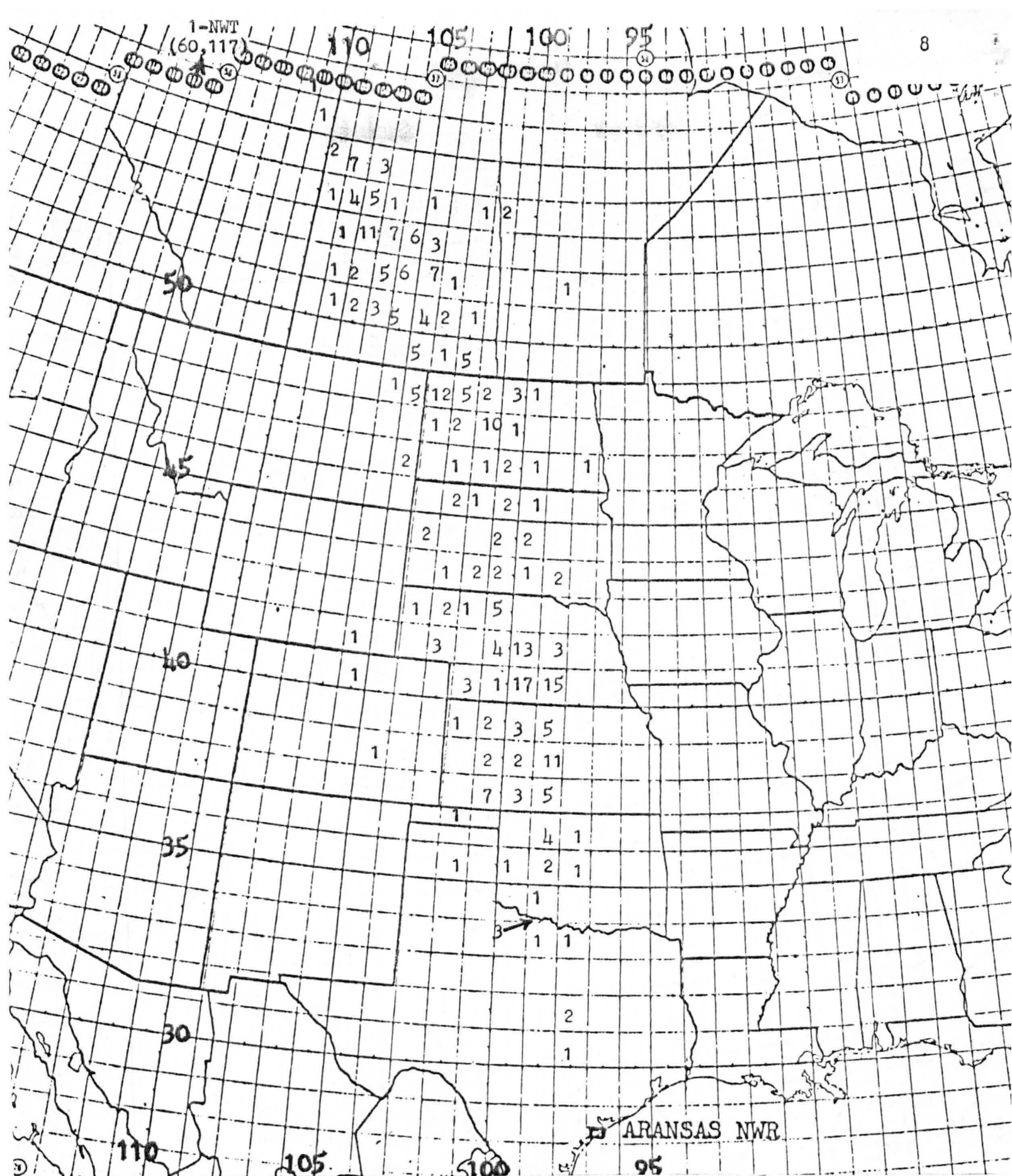


Fig. 2. Number of confirmed whooping crane sightings reported in each degree-block during spring migrations, 1976-89, Whooping Crane Tracking Project.

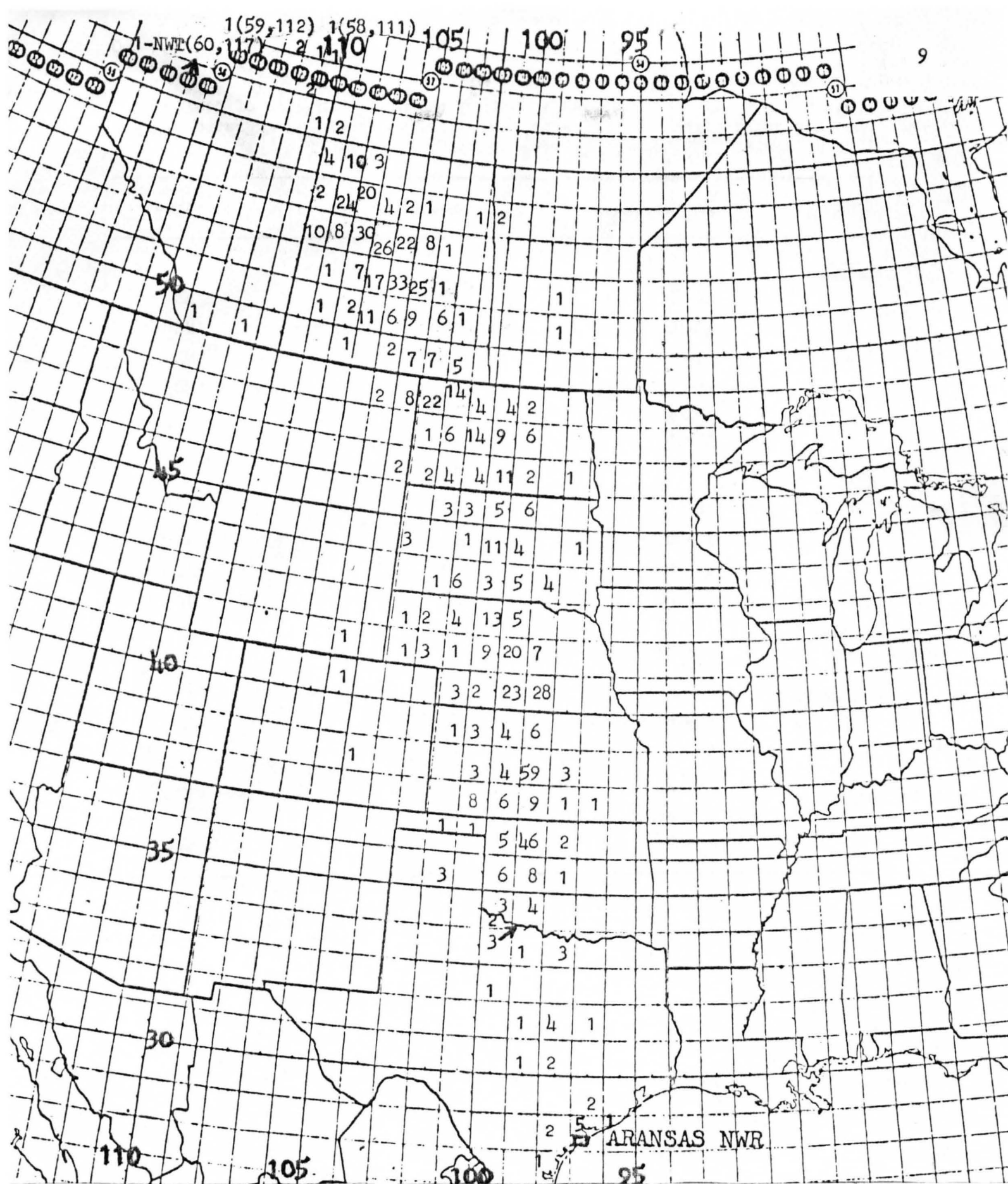


Fig. 3. Number of confirmed whooping crane sightings reported in each degree-block during spring and fall migrations combined, fall 1975 to spring 1989, Whooping Crane Tracking Project.

Table 4. Rank of degree-blocks reporting the highest number of confirmed whooping crane sightings during spring, fall, and combined migrations, fall 1975 to spring 1989, Whooping Crane Tracking Project.

Rank	Degree-Block	No. Sightings	Area
<u>Spring</u>			
1	40-99	17	NE
2	40-98	15	NE
3	41-99	13	NE
4	48-103	12	ND
5(tie)	38-98	11	KS
	52-107	11	SK
<u>Fall</u>			
1	38-98	48	KS
2	36-98	42	OK
3	51-105	27	SK
4	53-108	20	SK
5(tie)	52-106	19	SK
	52-107	19	SK
<u>Combined</u>			
1	38-98	59	KS
2	36-98	46	OK
3	51-105	33	SK
4	52-107	30	SK
5	40-98	28	NE