THE LONG-BILLED CURLEW IN SASKATCHEWAN: STATUS AND DISTRIBUTION

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The Long-billed Curlew is one of the largest shorebirds in the world, attaining at maturity a length of up to 65 cm (including a bill up to 20 cm long) and a weight approaching 1 kg (2 pounds). Unlike many less conspicuous birds, it was often recorded by early settlers and explorers, and thus its pre-settlement distribution throughout much of Saskatchewan is almost as well documented as its present day status. Ironically, in spite of its large size, its alert disposition has made the study of natural behaviour difficult, and much remains to be learned about its habits. In fact as late as 1979, when "A Field Guide to Western Birds' Nests" was compiled, not even its incubation period was known with certainty.[9]

Like many North American birds, the Long-billed Curlew has suffered population declines throughout its range in the past 150 years due to such factors as spring hunting and loss of habitat.[7 4 25] Some have suggested that the curlew's rate of decline has been arrested, or even turned around, in recent years,[25 37] however, there is abundant evidence that it remains much less common in Saskatchewan than it was in the late 1800's and early 1900's. While spring hunting no longer poses a threat to the Long-billed Curlew, habitat loss in Saskatchewan has already contributed to its disappearance from large areas of its range.

This paper attempts to summarize various aspects of the Long-billed Curlew's life cycle in Saskatchewan, and documents its distribution and population declines since settlement of the plains began in the 1880's. Information was gathered in 1979 from published and, especially, unpublished sources. For the sake of brevity, contributors of previously unpublished information are acknowledged in the text by their initials in parentheses, followed by an asterisk to indicate a personal communication. For example, "(AY*)" indicates a personal communication from A. G. Young; the notation "(SM-MG*)" indicates an observation by S. A. Mann as received from M. A. Gollop. Observers, correspondents and institutions are listed at the end of the paper. Unpublished manuscripts are listed with published reports in the references. Saskatchewan place names mentioned in the text appear in Figure 1.

Spring Migration

A summary of spring arrival dates from representative localities in Saskatchewan and southeastern Alberta is given in Table 1. First arrival dates from some other Saskatchewan localities with sporadic coverage or few records were: central Qu'Appelle Valley, 27 April;[5] Kenaston, 22 April (LB*); Matador, 14 April;[20] Moose Jaw, 16 April;[18] Regina, 16 April

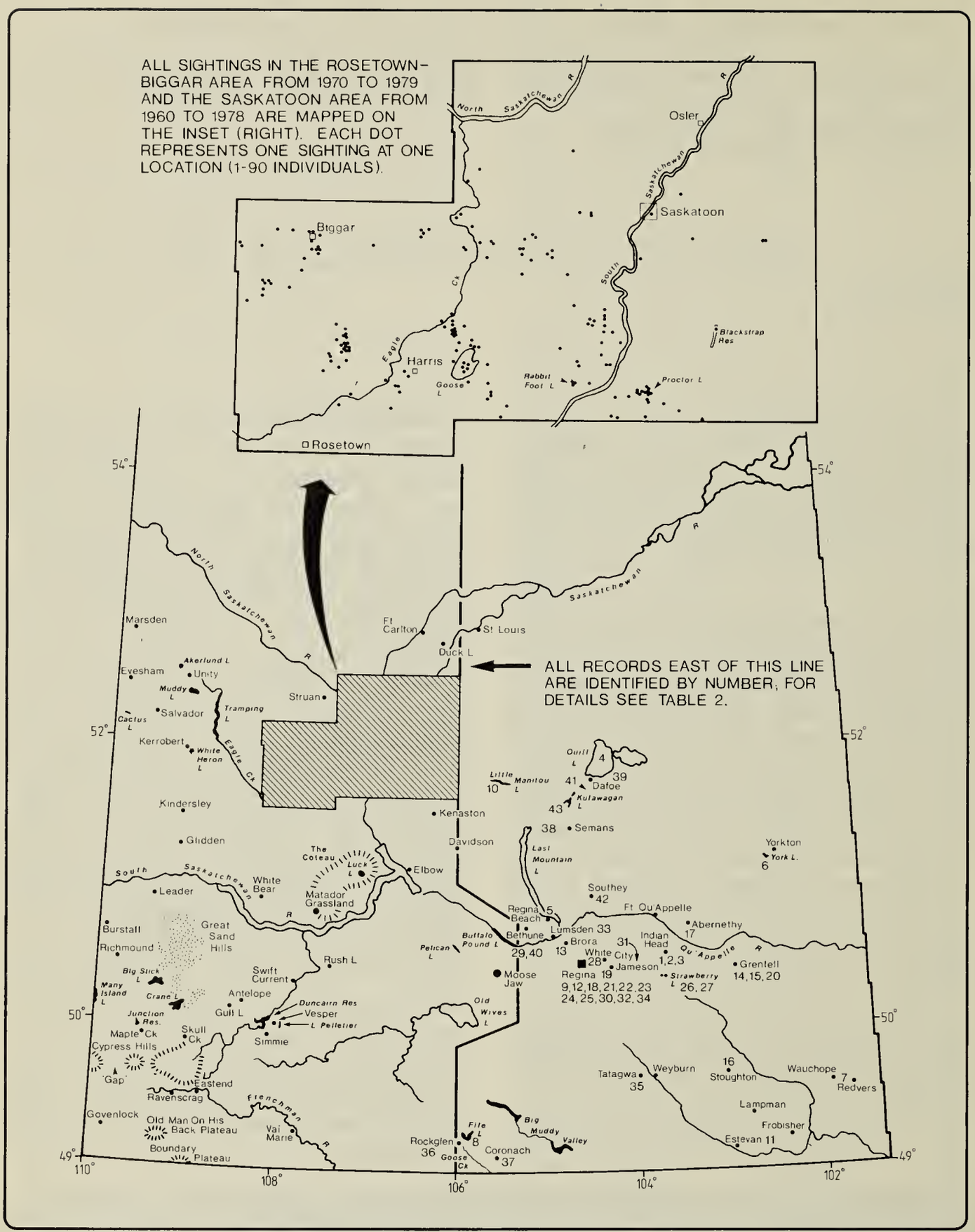

Figure 1. Saskatchewan place names mentioned in the text, and records of Long-billed Curlews in eastern and some northern areas of the species' range.

(MB*); Swift Current, 19 April (RPe*) and White Bear, 18 April (SJ*).

The earliest certain spring arrival date for the province was on 8 April (1967) at Skull Creek north of the Cypress Hills (SM-MG*); Mann had one earlier record of one identified by call only on 26 March 1947 (MG*—excluded from Table 1). The curlew's arrival in the extreme southwest averages about 17 or 18 April, similar

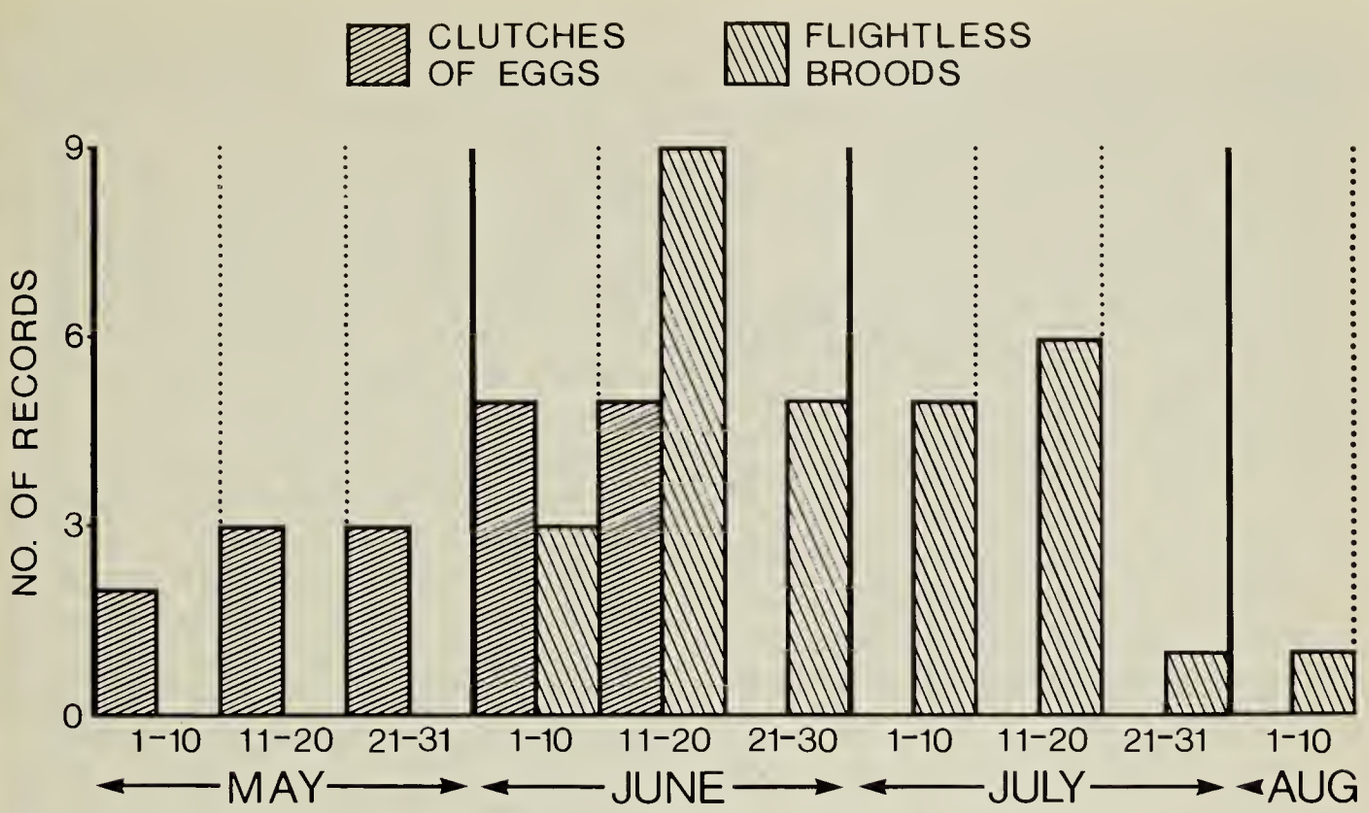

Figure 2. Temporal distribution of records of eggs (13 clutches) and flightless broods (30 records) by 10-day periods. Observations of eggs at two nests spanned several weeks (17 May-19 June; 28 May-12 June) and hence appear in several date ranges.

to southeastern Alberta (DN*). Within a week of the first sightings in the extreme southwest, the species has usually arrived at the northern edge of the breeding range near 52° N.

The first spring observations usually consist of small groups of two or three individuals. Of 33 records for April 1960-78 in the Saskatoon area, there was only one group of more than three individuals (five on 22 April); the average group size was 1.7 birds (SNHS). Even in the Val Marie area, where curlews are more common, the largest flocks noted in April were of seven individuals (29 April 1973, 19 April 1976), each flying northwest in an apparent migratory movement (DC*).

Breeding Chronology

Figure 2 shows the temporal distribution of records of clutches of eggs and broods of flightless young. The dates of 13 clutches of eggs for which complete information is available ranged from 10 May (4 eggs) to 19 June (4 eggs and 1 newly hatched chick) — both at Matador (ARS*). Bent listed 11 egg dates for Saskatchewan,[4] five of which are probably included in the above total of 13 clutches, from 3 May to 4 July; six records were from 23 May to 10 June. It thus appears that the height of incubation occurs from about mid-May to mid-June.

The incubation period is not definitely known, but has been estimated at 29 or 30 days.[25 9] Information on one nest at Matador Grassland indicated an incubation period of about 30 days.[20]

As with most other shorebirds, the normal clutch size is four.[25] Ferry found one set of two well incubated eggs at Quill Lake,[6] and Sadler and Maher recorded one five-egg clutch at Matador.[32]

Pipped eggs have been found as early as 10 June (1979) near Unity (AY*), and fledged juveniles have

been observed as early as 5 July (1909) at Quill Lake.[6] In both cases, eggs must have been laid by the first week of May. Maher recorded the latest flightless juveniles at Matador on 5 August (1970).[20]

Young curlews are highly precocial and leave the nest shortly after their natal down has dried. A brood banded at the nest on 12 June 1968 at Matador was found on 18 June more than 6.5 km from the nest site.[32] It is not known, however, if this movement is normal. Curlews apparently remain in family groups until fledging and may flock together with other curlews prior to migration.

Fall Migration

The information on fall migration is fragmentary, probably a result of our location on the periphery of the curlew's breeding range, the general rarity of the species within the province, and the fact that its scarcity is further amplified when widely dispersed family groups and pairs gather together into flocks, thus becoming even more locally distributed.

Family groups probably begin to gather together by mid- to late July, soon after the chicks fledge. It is not known if failed breeders and nonbreeders depart earlier. In the Rosetown-Biggar district, curlews were recorded later than 31 July only once during 1970-79 (WR, GW*, AS*): a flock of 90 was feeding in dry foxtail in the flats of Eagle Creek valley near Harris on 6 August 1979. Previously, no more than five (a family group) had been recorded in late summer at one location. In the Saskatoon district, Long-billed Curlews were seen later than 31 July in only three years during 1960-78 (SNHS-JBG*). The largest flock was of 57 at Rabbit Foot Lake on 2 August 1976; later counts there of 29 on 8 August and four on 10 August suggested that there was a gradual exodus from the lake. Previously, the largest summer flock in the Saskatoon area had been of 19 at Proctor Lake on 4 July 1978; these were attracted by the noisy behaviour of a pair evidently defending their young (JBG*). All other July-August groups at Saskatoon numbered less than five individuals (SNHS). The latest fall record for the province, and the only one for September, was one observed near Blackstrap Reservoir southeast of Saskatoon on 12 September 1971 (JBG*). On the northeastern edge of the range at Quill Lake, Ferry reported the latest fall migrants on 11 August (1909).[6]

Farther south in the province, Long-billed Curlews are observed more regularly in August, perhaps a result of larger local nesting populations and some influx of south-bound migrants. At White Bear, on the north bench of the South Saskatchewan River, flocks of 10-24 individuals are seen regularly in mid August, but leave abruptly by the 3rd week of the month (SJ*). A similar pattern of departure was noted at Matador from 1967 to 1972 where flocks began to form in late July or early August; the latest fall observations varied annually from 15 July to 16 August (ARS*).[20] Maher gives no indication of flock sizes, but Roy stated that the largest flock observed within the elbow of the South Saskatchewan River was 40 at Luck Lake on 15 August 1943.[31]

Departure data from the southwest and south-central areas Is less complete. In the Moose Jaw area, curlews often go unreported in August: the largest fall flocks were 30 at Pelican Lake on 12 August 1973 and 12 at Old Wives Lake on 5 August 1975 (LK*). The latest departure date is 20 August (1972—LK*). In the Cypress Hills/Frenchman River area, the largest flock, consisting of at least

Long-billed Curlew *Wayne Lynch*

100 curlews, was seen at Junction Reservoir on 19 August 1976 (BL*). Taverner saw a flock of 100 at Many Island Lake on the Alberta-Saskatchewan border on 8 August 1920.[28] These are evidently the largest concentrations known for the province or immediate vicinity. (*Ed. Note:* A flock of at least 140 was studied by JBG on 27 July 1980 on a slough about 10 km (6 mi.) west-northwest of Ardath, Sask.) The only other comparatively large flock recorded in the literature was of 100 at Medicine Hat, Alberta, on 2 August 1920.[28]

Bent listed 6 August as the latest fall record for Eastend,[4] presumably on the basis of Potter's observations which began in 1901. However, several later observations (the latest: 26 August at Junction Reservoir — ARS*) have subsequently been made, aside from the large flocks listed above. The paucity of observations in the southwest points out the extremely local distribution and/or scarcity of the species in August. In contrast, in the Medicine Hat region of southeastern Alberta, "[from 1958-1969] late summer flocks of 10-20 were fairly common throughout August. No observations were recorded after the third week of August" (DN*).

In southeastern Saskatchewan, Long-billed Curlews are extremely rare in late summer and early fall, suggesting that very few migrate southeast from breeding areas in western Saskatchewan.

Habitat

During spring migration (April to early May), Long-billed Curlews usually confine themselves to dry upland prairies both near, and at some distance from, water bodies and water courses. In the eastern part of the province, where extensive grasslands are scarce, curlews are usually seen in company with other shorebirds at sloughs and runoff ponds (e.g., Regina[2]). In spring migration, the curlew is also often seen in fallow and stubble fields. It is not, however, very much of a "shorebird" during its period of residence in Saskatchewan.

During the nesting season, the Long-billed Curlew apparently prefers prairies, either moist or dry. Bent noted that north of the Cypress Hills, the curlew showed "a decided preference for damp, grassy hollows in the prairie, or long slopes near lakes or watercourses."[4] At Matador, the species nests in dry, open prairies; shortly after hatching, the chicks move to areas with greater cover, if available.[20] In parts of its range (e.g., Saskatoon — SNHS; Rosetown-Biggar;[29] White Bear — SJ*; Burstal-Richmound — GA*) it is also reported in fallow and stubble fields, and in forage crops or grain crops, usually where these abut prairies or shrublands; their behaviour frequently suggests that eggs or young are present. The only definite nest records in stubble and summerfallow fields are from White Bear; "the curlew tends to nest on cultivated ground . . . the young are usually wandering in the fields at spraying time" (SJ*). It is possible that many of these observations represent adults tending broods that were hatched in grasslands, and which later wandered into nearby croplands. The Long-billed Curlew is rare or absent as a breeder in large areas under complete cultivation, except that Belcher has a possible breeding record, based on the behaviour of two adults on 12 June 1959, in a stubble field on the well cultivated Regina Plains.[2] In adjacent North Dakota, the Long-billed Curlew has not been recorded breeding in agricultural habitats.[35]

Some observers have noted the complete absence of breeding curlews in areas of seemingly suitable prairie habitat throughout the Saskatchewan range (MG*).[31] None has been found nesting in the fescue prairies on the upper escarpment of the Cypress Hills, where they have possibly never nested due to a heavy grass cover (MG*, WH*).[3 8] Even where curlews do nest regularly, such as at Matador, the densities are low (1 pair per 6 or 7 km²) compared to densities in parts of the United States.[32] Either the existing habitat in Saskatchewan is being under-utilized for unknown reasons, or much of the habitat is of marginal value for breeding. Many factors besides those on the Saskatchewan breeding grounds may be responsible for the small numbers now present there, as has been suggested for the Burrowing Owl.[40]

During fall staging and migration, the Long-billed Curlew occurs more frequently near lakeshores and river valleys; but even then they are more often seen feeding in dispersed flocks at some distance from the shorelines.

Distribution and Abundance to 1950

The long history of ornithology in Saskatchewan has given us much information on the early distribution of the province's Long-billed Curlews. While most early bird work took place in central Saskatchewan, the lack of records of curlews by many of the early residents there leaves little doubt which areas were beyond the

species' pre-settlement range. Richardson did not record the species at Fort Carlton or in areas of the Saskatchewan and North Saskatchewan rivers downstream from there in May 1820.[16] Drummond, who was present at Fort Carlton from 5 April to 14 July 1827, and Bourgeau, who was present there in the spring of 1858 until 19 June, also failed to record the Long-billed Curlew.[16] Coubeaux, who homesteaded in the Duck Lake and St. Louis districts from November 1893 to 1903, never saw this species.[16]

However, at Osler (only 57 km south of Fort Carlton and 52 km southwest of Duck Lake), W. C. Colt reported the Long-billed Curlew as "common" and "breeding" in 1893.[14] In 1909, Ferry found it "abundant" at the Quill Lakes where he located one nest and at least two broods; while no actual counts were taken, he noted that during their several-week stay "their loud cries were constantly in [their] ears".[6]

Pre-1950 records from areas at the same latitude nearer to the Alberta border are scarce. Long-billed Curlews nested regularly in the 1930's and 1940's near Struan, Saskatchewan (EJ*, WJ*). Symons' most northerly record during extensive travelling in southern Saskatchewan was on 12 June 1931 when he took a set of four eggs from a boy at Cactus Lake.[37] The most northerly record for the pre-1950 period was one observed by Will Neave at Evesham near the Alberta border on 3 May 1922 (*Family Herald and Weekly Star*, Montreal, 14 June 1922, p. 42).

The first indication of a decline along the northern edge of the range was in July 1924-26 when Munro visited the Quill Lakes and failed to record a single curlew.[23] Then in 1932, W. E. Clyde Todd, while in Saskatchewan on a collecting trip for the Carnegie Museum, reported more fully on their decline in areas to the south.[39] He remarked, presumably on the authority of Reuben Lloyd who had lived in the Davidson area since 1904,[13] that the Long-billed Curlew was a "summer resident, once common, but becoming rare and local." It was by then so locally distributed in south-central Saskatchewan that Todd failed to see a single curlew at the Quill Lakes or at Last Mountain Lake during what should have been the height of the breeding season. The only ones seen were along the South Saskatchewan River near Elbow where seven specimens were eventually collected: "On the wide plains west of the Saskatchewan River we had hoped to find a colony established, but after a long search could discover but three individuals. I picked up a young bird in the down. The parents made a great outcry, and swept downward repeatedly. Two days later we secured one of the adults; and on July 22 Mr. Lloyd returned to the same area and collected a few adult and immature birds".[39]

In southeastern Saskatchewan, as in southwestern Manitoba,[38] the species was probably never common, even in pre-settlement days. The earliest record for the southeast was a specimen collected at Indian Head in 1892.[5] Curlews, not otherwise specified to species, were observed at Indian Head on 10 and 11 May 1903 by George C. Harvey, and on 9, 11 and 15 May by George Lang.[5] Harvey listed them as rare and not breeding; Lang as common, breeding and "remains all season" (Chandler S. Robbins *fide* C. S. Houston). Indian Head was not listed as a breeding locality in Bent's range description, suggesting that at least by 1929 it was no longer breeding there.[4] The earliest record for the immediate Regina area was in 1941, by which time virtually all the native grassland had been ploughed.[1] Farther

Long-billed Curlew chick less than one day old at Akerlund Lake, probably the northernmost definite breeding area on the continent. 10 June 1979.

Allen Young

southeast in the Wauchope-Redvers area, Nixon recorded the species until at least the 1930's;[24] however, it is not known if it nested locally.

The most complete historical accounts of the Long-billed Curlew's former abundance are from southwestern and south-central regions. In 1891, the egg collector, Walter Raine, found the Moose Jaw area ". . . alive with curlews", and farther west at Rush Lake he noted that curlews were "numerous" on 10-11 June.[27] Moose Jaw was the most easterly locality in extreme southern Saskatchewan where Long-billed Curlews were known to have been even moderately common.

Macoun and Macoun described the species as "common" or "fairly common" at places they visited: "this species was found breeding at Wood Mountain, in June, 1895, and for 150 miles to the west towards the Cypress Hills, upon which numbers were breeding in 1894".[19] North of the Cypress Hills, Bent found curlews "tolerably common in scattered pairs on the prairies" in 1905 and 1906.[6] Williams, however, listed few observations in extreme southwestern Saskatchewan and adjacent Alberta in spite of intensive field work carried on for the Geological Survey of Canada in the summers of 1924-26.[41]

Laurence Potter, resident naturalist in the Eastend-Ravenscrag area from 1901 to 1940, provided some of the longest continuous coverage of bird distribution in the Cypress Hills area. In 1920, Potter's impressions of declining numbers of curlews were

first noted in the "Natural History Club" section of the *Family Herald and Weekly Star*, Montreal (15 September):

"It is regrettable to note a diminution in numbers of certain prairie-dwelling birds, particularly the Long-billed Curlew, which is now almost extinct."

Potter's observation elicited a response from S. J. Darcus who noted in a letter published in "Natural History Club" on 8 December 1920:

"I am glad to be able to state that in the part of the Cypress Hills in which I was last spring, I met with the long-billed curlew and found several nests of that species . . ."

Potter's impressions of decline were no doubt to some extent echoed in Mitchell's remark in the first *Birds of Saskatchewan* that the Long-billed Curlew was "apparently decreasing in numbers in some parts".[22]

In 1930, Potter further noted that "twenty-five years ago the Long-billed Curlew swarmed everywhere; today it has become a rarity in the [Frenchman] valley, but a few may yet be seen on the prairie [i.e., the upper benches above the valley]."[26] Potter's field-notes from the spring of 1920 stated "getting scarcer", in fall 1920 "very scarce this summer", in spring 1921 "getting much scarcer", in fall 1923 "a slight but marked increase in numbers this year" and in spring 1924 "seems to be increasing again" (MG*). M. Gollop* notes that Potter's relative immobility[15] may have given rise to a very local impression of curlew scarcity, for observers elsewhere in the Cypress Hills area continued to find the species well distributed.

In 1948, Godfrey found Long-billed Curlews "not uncommon on the prairie both south and north of the Cypress Hills"; his maximum counts included 12 between lower Cypress Hills and the Montana border on 8 July, and 11 between Gull Lake and Antelope on 15 July.[8] Soper provided some of the most detailed accounts of its abundance in southern and southwestern Saskatchewan during field work from 1920 to 1946; he found the largest numbers in the vicinity of Duncairn Reservoir southwest of Swift Current:

"Present in moderate numbers, July 17-24 [1946]. On the 21st, a dozen were seen . . .; meeting with from two to six daily was of common occurrence. A local rancher, Mr. George Ecker, told me that on July 16 he had seen a total of 35 of these curlews in the general neighborhood of Duncairn Reservoir and that during the breeding season a goodly number occupied the high, virgin plains not only in this locality, but also out from Vesper, Simmie and Lake Pelletier and southwest in the Swift Current Creek territory. Ecker said that in the overall Duncairn Lake district he had seen at least 100 of these curlews in the spring and to his knowledge they had nested there for at least the past 40 years."[34]

Figure 3 summarizes the distribution of the Long-billed Curlew. The northern edge of the historic breeding range closely paralleled the aspen parkland/mid-grass prairie boundary. However, as settlement of the grasslands accelerated in the early 1900's, the Long-billed Curlew became locally scarce, especially in eastern and northeastern areas of its former range. Records by Harrold for Old Wives Lake in 1922,[10] Potter in the Cypress Hills in the 1920's,[26] Williams in southwestern Saskatchewan and southeastern Alberta from 1924 to 1926,[41] and Symons' statement that "they became very scarce some thirty-five years ago [i.e., about 1932], but seem now to be once more well established"[37] suggest that a decline in many parts of the Saskatchewan breeding range in the 1920's and early 1930's may have been followed by a local resurgence of numbers. However, as later observations

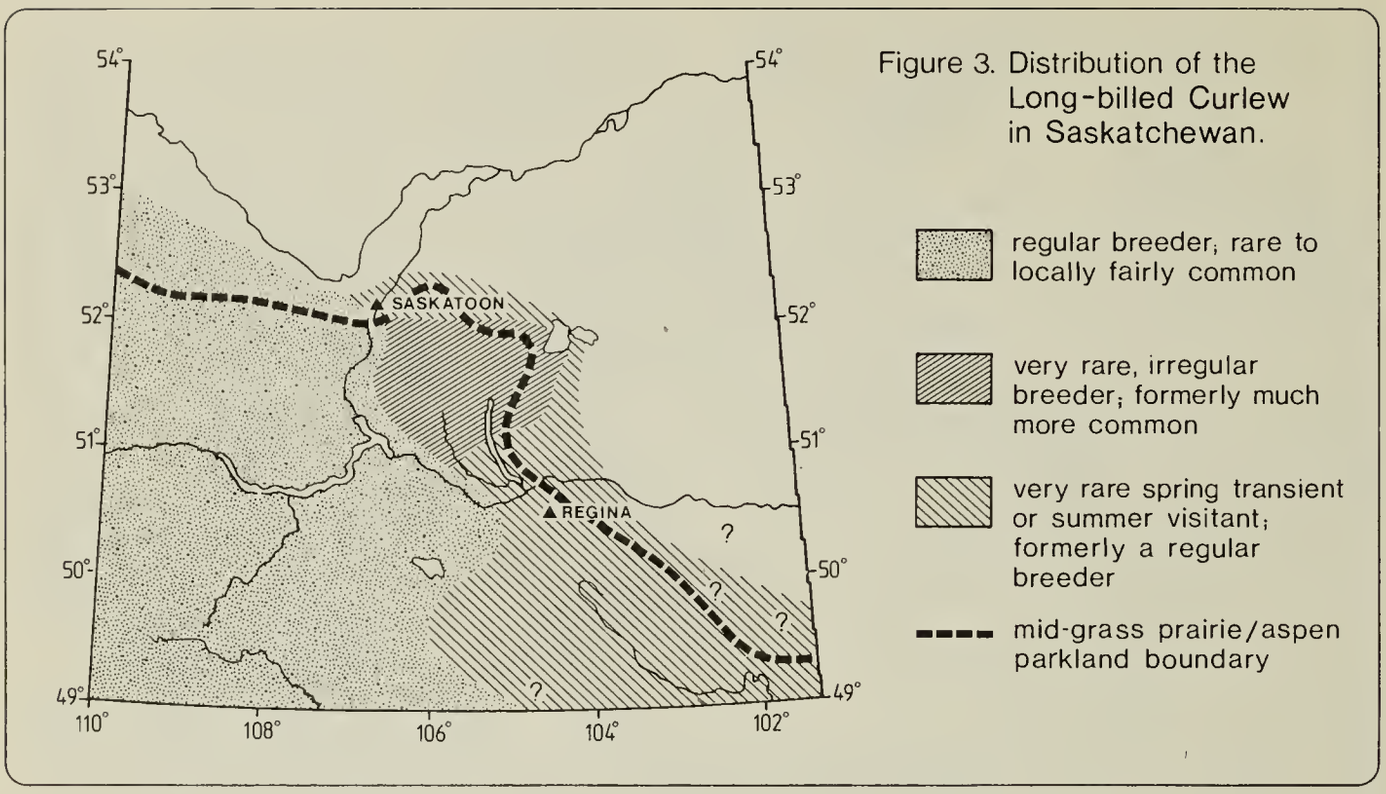

Figure 3. Distribution of the Long-billed Curlew in Saskatchewan.

showed, the recovery failed to occur in all eastern and at least some western areas.

Distribution and Abundance, 1950-1979

Unlike eastern Saskatchewan, there has been little change in the breeding range of the Long-billed Curlew in western parts of the province during this century. In the 1910's, the species nested north to approximately the southernmost bend of the North Saskatchewan River.[14] In 1977, Long-billed Curlews were seen, and probably breeding, near a Ducks Unlimited project south of Marsden at 52° 47' N, the northernmost record for the province (HdeV*). On 10 June 1979, a nest with four eggs was found at Akerlund Lake, 11 km northwest of Unity; one other pair appeared from their behaviour to be nesting in the area (AY*). This location is somewhat north of the known breeding range in Alberta.[33] Additional sightings in the Unity-Kerrobert area near White Heron Lake (AS*), Salvador (AY*), Muddy Lake (WR, KF*) and Tramping Lake (WR) suggest that the species is widely distributed in low numbers; observations at Salvador and Tramping Lake consisted of pairs vigorously diving in apparent defense of eggs or young. The discovery of a nest with four eggs at Cactus Lake on 10 May 1978 (AY*) indicates that curlews still nest where Symons found his most northerly breeding pair in the early 1930's.[37]

Long-billed Curlews were noted as uncommon breeders throughout the Rosetown-Biggar area in the 1970's (GW*, AS*,[29]). While usually only scattered pairs were seen there, a total of nine adults attracted by the capture of two young 14 km southwest of Harris on 18 June 1978 indicates that aggregates of pairs may occur in some areas. At Struan, the Long-billed Curlew is now less frequently observed than formerly, although it was still present, and presumably nesting, as late as the mid-1970's (EJ*).

In the Saskatoon area, curlews nest locally on a few large tracts of uncultivated or intermittently cultivated prairies and parklands south and southwest of the city. There has evidently been a slight retraction

of their range and probably a more marked decline in their numbers in the area in the past 75 years. Long-billed Curlews no longer nest northeast to Osler where Colt recorded 25 on the first day it was seen during spring 1893.[14] In spite of greater mobility, better field equipment and dozens of competent observers, the members of the SNHS never observed more than 12 in a day (May Day Bird Count — 27 May 1978) nor were more than 10 seen in one day by one observer (8 May 1971, 1 June 1978) during spring from 1960 to 1978 (SNHS). Few curlews now occur anywhere northeast of Saskatoon and none has been observed recently in the Osler area (see inset, Fig. 1).

North of the South Saskatchewan River — Qu'Appelle River area some of the more significant breeding populations occur in parklands southwest of Biggar (AS*), along Eagle Creek (probably intermittently throughout its entire length — SNHS,[29]), at White Heron Lake southeast of Kerrobert (AS*), the Missouri Coteau near Elbow,[31] the upper benchlands along much of the South Saskatchewan River from the Alberta border to near Saskatoon (SNHS, SJ*, GF*,[21 31]), and along the upper Qu'Appelle Valley from the Qu'Appelle dam to near Buffalo Pound Lake (GA*, DH*, WH*, LK*, [18 11]). The species is regarded as very rare (RF*, GF*) to uncommon (JBG*) in the large community pastures in the Kindersley area. The largest number reported in that area was a group of 6-8 in a PFRA pasture between Glidden and the South Saskatchewan River in July sometime between 1954 and 1959 (JBG*).

The range of the Long-billed Curlew in eastern Saskatchewan (approximately east of 106° W. Long.) has undergone the most marked change in the past 100 years. Table 2 summarizes all known records in eastern Saskatchewan. The only areas of eastern Saskatchewan where curlews now nest regularly are near the upper Qu'Appelle Valley, Moose Jaw and Old Wives Lake (LK*,[11 18]). Its status in the Big Muddy area is unknown, although it is doubtful that large numbers have gone unreported there. At the Quill Lakes, there are only a few recent records (Table 2), and recent field trips to the area (e.g., SNHS summer meet to the north end of Big Quill Lake in 1975,[30]) have failed to record the species. However, a small number of post-1950 observations during May and June suggest that some may still breed in the extensive prairies between Quill and Last Mountain lakes.

The curlew is now only an irregular spring transient in the Regina and Qu'Appelle River areas.[2 5] Farther south it is rare or absent. R. Luterbach*, who lived in the Lampman-Estevan area in the 1950's and 1960's, did not record this species. Stoudt did not see Long-billed Curlews and during a 14-year study (1952-65) of factors affecting waterfowl production in the Redvers area.[36] Knapton did not see curlews in the extreme southeastern part of the province during intensive investigations from 1974 to 1978, although some relatively large tracts of uncultivated grassland still existed.[17]

Long-billed Curlews are still locally fairly common throughout the southwest, south of the South Saskatchewan and Qu'Appelle rivers, and west of 106° W. Long., although a continued recent decline has been noted in some areas. South of Val Marie, Long-billed Curlews were "quite abundant and regular residents . . . 20 years back [i.e., about 1959]"; today they are thinly distributed and often go unrecorded during a day's travel where they were once numerous (DC*).

TABLE 1: Some dates of earliest spring arrival of the Long-billed Curlew in Saskatchewan and southeastern Alberta.

Area	*Average Date (No. Yrs.; Period)*	*Earliest Date*	*Source*
SASKATCHEWAN			
Cypress Hills	17 Apr. (55;1907-78)	10 Apr.	MG*, SM, LP, JWi*
Val Marie	18 Apr. (27;1940-79)	8 Apr.	DC*
Saskatoon	24 Apr. (16;1960-78)	12 Apr.	SNHS
Rosetown-Biggar	24 Apr. (8;1970-79)	16 Apr.	DHR*, WR, AS*, GW*
Struan	26 Apr. (18;1940-74)	14 Apr.	EJ*, WJ*
SOUTHEASTERN ALBERTA			
Medicine Hat	16 Apr. (12;1958-69)	*16 Apr.	DN*

TABLE 2: Records of the Long-billed Curlew in eastern Saskatchewan. Map numbers refer to Figure 1.

Map No.	*Locality*	*Date (No. Seen)*	*Observer(s)*	*Source of Record*
1.	Indian Head	9 May 1904—spring arrival date	GL	Bent 1929
2.	Indian Head	1892	WS	Smith 1914 in Callin 1980
3.	Indian Head	10-11 May 1903 (1) [species ?]	GH	Callin 1980
4.	Quill L.	summer 1909	JF	Ferry 1910
5.	Regina Beach, Last Mountain L.	27 June 1933 (female col. — SMNH)	FB	KR*
6.	York L.	22 May 1938 (1)	IP	Houston 1949
7.	Wauchope-Redvers	"up to 1939"	MN	Nero & Lein 1961
8.	E of Fife L.	4 July 1940 (1)	JDS	Soper 1970
9.	Regina	1941 (1)	EF	Belcher 1961
10.	Little Manitou L.	15 June 1943 (2)	JDS	Soper 1970
11.	between Frobisher and Estevan	5 May 1946 (1)	JDS	Soper 1970
12.	Regina	17 April 1948 (1)	FB	Belcher 1961
13.	Brora	3 May 1949 (1)	TB	Belcher 1961
14.	Grenfell	1 May 1951 (1)	"Hubbard"	Callin 1980
15.	Grenfell	16 May 1954 (2?)	"Hubbard"	Callin 1980
16.	6 km E of Stoughton	27 July 1954	?	*Blue Jay* 12:21-22
17.	Abernethy	27 April 1959	"Storer"	Callin 1980
18.	Regina	26 May 1959 (1)	FL	Belcher 1961
19.	Jameson	12 June 1959 (2)	?	Belcher 1961
20.	Grenfell	14 June 1961 (1)	"Hubbard"	Callin 1980

Map No.	Locality	Date (No. Seen)	Observer(s)	Source of Record
21.	E of Regina	1 May 1962 (1)	LM	MB*
22.	Regina	2 May 1962 (1)	WF	MB*
23.	Regina	9 May 1962 (2)	DEW, DRW	MB*
24.	Regina	26 April 1963 (2)	MB, DRW	MB*
25.	Regina	4 May 1963 (1)	RPo, DEW, DRW	MB*
26.	Strawberry L.	5 May 1963 (1)	"Nero & Wade"	Callin 1980
27.	Strawberry L.	26 May 1964 (1)	"Nero & Wade"	Callin 1980
28.	White City	8 May 1966 (1)	RT	*Am. Birds* 20:521
29.	16 km S of Bethune	24 June 1968 (1 male collected — ROM)	JD	DR*
30.	Regina	16 April 1971 (1)	RR	MB*
31.	21 km E of Regina	13 May 1972 (1)	"Belcher party"	MB*
32.	Regina area	2 May 1973 (1)	FS	MB*
33.	Lumsden	June 1974 (1)	?	BBS
34.	Regina	3 May 1975 (2)	RD	MB*
35.	near Tutagwa	6 May 1975 (1)	DH	DH*
36.	Goose Ck. near Rock Glen	July 1975	GA	GA*
37.	Coronach	23 Aug 1975 (2)	GA	GA*
38.	7.5 km W of Semans	21 May 1976 (1)	WH	WH*
39.	S end Big Quill L.	23 May 1976 (1)	WH	WH*
40.	11 km S of Bethune	3 July 1977 (1)	WH	WH*
41.	7 km S of Dafoe	summer 1978 (1)	GA	GA*
42.	13 km NE of Southey	12 May 1979 (1)	WH	WH*
43.	Kutawagan L.	29 May 1979 (1)	WH	WH*

In the Cypress Hills area, curlews are fairly common in the extensive short-grass prairies of the 'Gap', the upper slopes of the east block of the Cypress Hills, the Frenchman River both above and below Val Marie, and probably in the heart of Boundary and Old Man On His Back plateaus (DC*, MG*). Two observations from the Cypress Hills area indicate that local aggregations of breeding curlews still occur. On 13 June 1976, several were observed in the 'Gap' about 22 km WSW of Maple Creek:

"A Red-tailed Hawk was seen flying for about 1.5 km in a straight line over a series of mixed fields (crop, forage, pasture). When first seen, it was being chased by a single calling curlew. As the hawk passed over the fields, one after another single curlews rose and joined the chase. When lost of view a total of seven curlews were following the hawk" (ON, JWe*).

The same day, they saw two other pairs within 16 km of this sighting. On 19 July 1979, a total of 12 adult and 9 flightless young in three broods were seen 13 km north of Govenlock (SL*, WH*).

Population levels within the Great Sand Hills are poorly known. Bent found the species well distributed south of the sandhills near Big Stick and Crane lakes in 1905-06.[3] They were noted as "fairly common — often two pairs protesting at once" in the Burstall-Richmound area to the west in summer 1978 (GA*). On 6-7 June 1979, single pairs exhibiting territorial

Long-billed Curlew nest with eggshell *Wayne Lynch*

behaviour were seen 21 and 24 km SW of Leader on the western edge of the sandhills (PT, RC — JBG*). (*Ed. note:* During field work from 23 May to 18 August 1978, curlews were reported at four of nine study blocks. H. T. Epp and L. Townley-Smith. 1980. *The Great Sandhills of Saskatchewan.* Saskatchewan Environment, Regina. 156 pp.)

So, by the late 1970's, the Long-billed Curlew had been reduced to the status of a very rare breeder or spring transient throughout most of its former range in Saskatchewan east of 106° W as part of a general westward shrinking of the species' range in North America.[25] In western Saskatchewan, it is a locally rare to fairly common breeder in large areas of grassland north to the southern edge of the aspen parklands near 53° N. Throughout the southwest, where probably the largest provincial breeding population existed in the 1800's, the species is still locally common, although its continued decline to the present has been suggested by many observers. Because of its dependence on the primeval grasslands, it seems likely that even there the Long-billed Curlew has suffered marked declines both as a result of the alteration of prairie habitats (e.g., overgrazing, replanting of non-native grasses) and the more disruptive effects of cultivation. Undoubtedly loss of habitat has been one of the major factors that caused, and continues to cause, a decline in the Long-billed Curlew populations in Saskatchewan. One regrets the lack

of any quantitative information on such population changes. Proposed monitoring of population levels of the Long-billed Curlew by the Canadian Wildlife Service (RF*) may provide baseline information against which to assess future changes in numbers.

Summary

LONG-BILLED CURLEW. Summer resident, formerly throughout the prairie and southern parkland regions of Saskatchewan north to Marsden, Struan, Osler, Big Quill Lake; east to at least Indian Head and probably to Estevan and Weyburn though without definite evidence of breeding. Present range west of 106° W is similar to historic range (except absent at Osler). East of 106° W, now breeds regularly only near Moose Jaw, Old Wives Lake, Buffalo Pound Lake, possibly Big Muddy Valley; probably irregularly in Last Mountain Lake and Quill Lake areas. Now only a rare, irregular spring transient in Regina, central Qu'Appelle Valley, Estevan, Weyburn.

Dates of occurrence range from 8 April to 12 September. Earliest spring arrivals average 17-18 April in the southwest (49° to 50° N) and 24-26 April near the northern edge of the range (51° to 53° N). Spring groups consist of 1-7 individuals. Egg dates range from 3 May to 4 July, mainly mid-May to mid-June. Flightless broods may occur until early August. Fall exodus begins by late July and is completed in most areas by the 3rd week of August when flocks of 90-100 may occur.

It usually inhabits short-grass and mid-grass prairies during breeding season; occurs during the spring migration and nests occasionally in fallow, stubble, planted grain crops, and fodder fields. In August, it occurs more regularly near lakeshores and river valleys.

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OBSERVERS, CORRESPONDENTS AND INSTITUTIONS LISTED IN THE TEXT

GA : Anweiler, Gary;
FB : Bard, Fred G.;
LB : Beckie, Lawrence;
MB : Belcher, Margaret;
TB : Beveridge, Thos M.;
BBS : BREEDING BIRD SURVEY;
RC : Caldwell, Robert;
DC : Chandler, David;
HdeV : DeVogel, Hans;
JD : Dick, J. A.;
DTRR : DEPARTMENT OF TOURISM AND RENEWABLE RESOURCES;
RD : Donison, Robyn;
ED : Dutton, E. J.;
JF : Ferry, John;
RF : Fife, Richard;
KF : Finley, Kerwin J.;
WF : Flemming, William;
EF : Flock, Elizabeth;
GF : Fox, Glen;
JBG : Gollop, J. Bernie;
MG : Gollop, Michael A.;
WH : Harris, Wayne C.;
GH : Harvey, George C.;
DH : Hjertaas, Dale;
EJ : Jasper, Ernest S.;
WJ : Jasper, William E.;
SJ : Jordheim, Sig O.;
LK : Knight, Leith M.;
FL : Lahrman, Fred W.;
SL : Lamont, Sheila M.;
GL : Lang, George;
BL : Lyon, Bruce;
SM : Mann, Steve A.;
LM : Murray, L. H.;
DN : Neiman, Dan J.;
ON : Nielsen, J. O.;
MN : Nixon, Marion;
RPe : Peart, Robert;
LP : Potter, Laurence B.;
RPo : Pough, Richard;
PFRA : PRAIRIE FARM REHABILITATION ADMINISTRATION;
IP : Priestly, Isabel;
RR : Rafuse, Robert;
DHR : Renaud, Don H.;
WR : Renaud, Wayne E.;
DR : Richardson, Dorothy;
KR : Roney, Keith (SMNH);
ROM : ROYAL ONTARIO MUSEUM;
SMNH : SASKATCHEWAN MUSEUM OF NATURAL HISTORY (REGINA);
SNHS : SASKATOON NATURAL HISTORY SOCIETY;
AS : Schmidt, Adam;
ARS : Smith, Alan R.;
JDS : Soper, J. Dewey;
WS : Spreadborough, William;
FS : Switzer, Frank;
PT : Taylor, Phil;
RT : Tempel, R.;
DEW : Wade, Dorothy E.;
DRW : Wade, Douglas R.;
GW : Wapple, Guy J.;
JWe : Wedgwood, James A.;
SW : Wedgwood, Shirley L.;
JWi : Wilkinson, Jack;
AY : Young, Allen G.

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