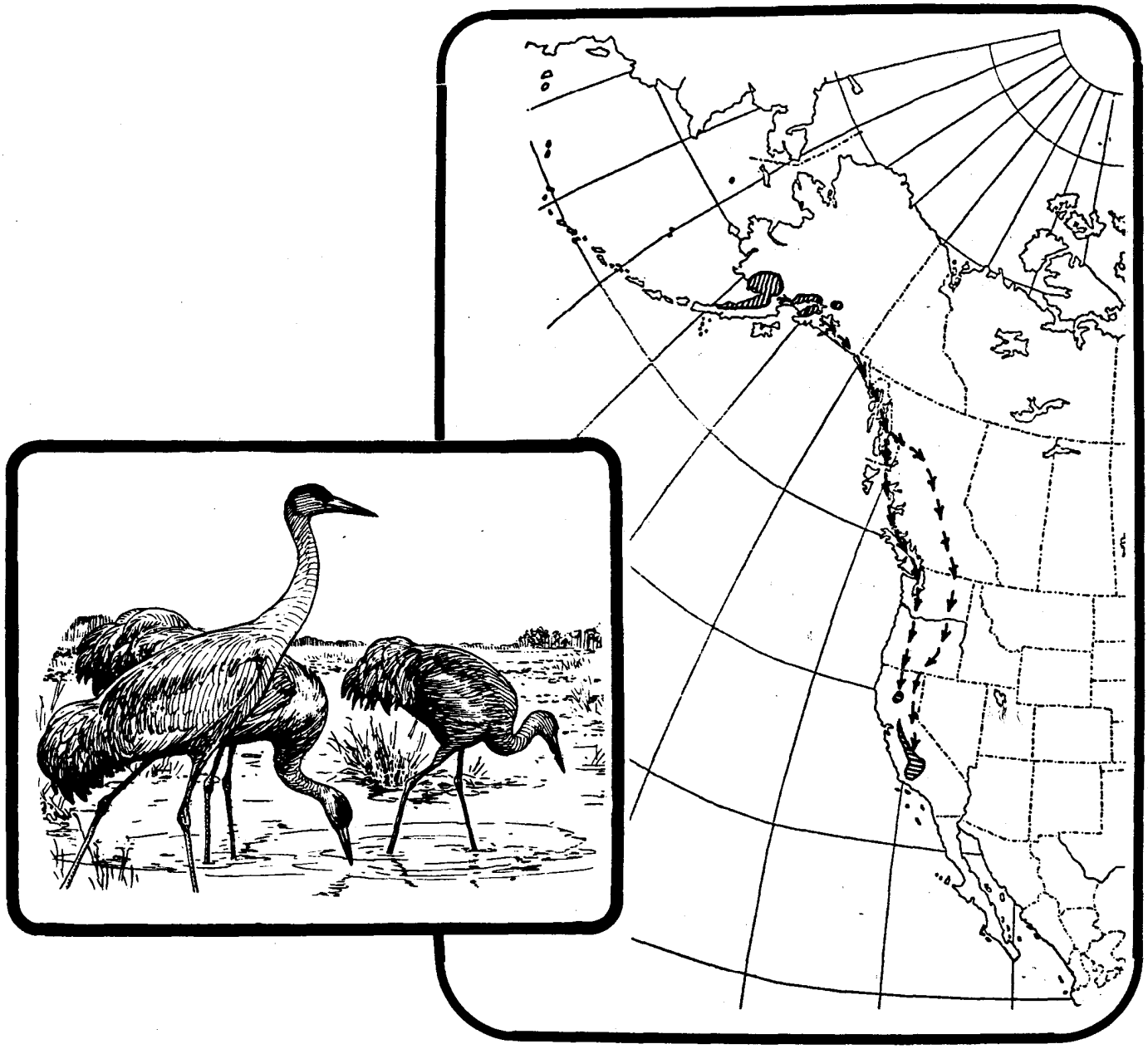
Pacific Flyway Population of Lesser Sandhill Cranes



This management plan is one of a series of cooperatively developed plans for managing various species of mi~ratory birds of the Pacific Flyway. Inquiries about this plan may be directed to member states of the Pacific Flyway Councilor to the Pacific Flyway Representative, U.S. Fish and Wildlife Service, 500 N.E. Multnomah St., Suite 1692, Portland, OR 97232.

PACIFIC FLYWAY MANAGEMENT PLAN

FOR THE

PACIFIC FLYWAY POPULATION OF

LESSER SANDHILL CRANES

Prepared for the:

Pacific Flyway Council
Canadian Wildlife Service
U. S. Fish and Wildlife Service

March 1983

PACIFIC FLYWAY MANAGEMENT PLAN

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PACIFIC FLYWAY POPULATION OF LESSER SANDHILL CRANES

Prepared by the Subcommittee on the Pacific Flyway Population of Lesser Sandhill Cranes of the Pacific Flyway Study Committee:

Gary W. Kramer, U.S. Fish and Wildlife Service, Delano, CA, Subcommittee Chairman

Bruce Conant, U.S. Fish and Wildlife Service, Juneau

Gary Kaiser, Canadian Wildlife Service, Delta, B.C.

Carroll D. Littlefield, Arizona Cooperative Wildlife Research Unit, Tuscon

Ronald W. Schlorff, California Department of Fish and Game, Sacramento

Daniel E. Timm, Alaska Department of Fish and Game, Anchorage

Approved by:

William A. Molini — Chairman, Pacific Flyway Council — 3/20/83 Date

Director General, Canadian Wildlife Service — Date

Director, U.S. Fish and Wildlife Service — Date

TABLE OF CONTENTS

I. INTRODUCTION

The lesser sandhill crane (Grus canadensis canadensis) as its common name implies is the smallest race of the species. The race nests throughout north-central and northwestern Canada, Alaska, and into the extreme northeastern portion of the U.S.S.R., and winters in southern portions of both the Pacific and Central Flyways. Relationships between breeding areas, migration routes and wintering areas are poorly defined.

The purpose of this management plan is to provide guidelines for the cooperative management of the Pacific Flyway Population (PFP) of lesser sandhill cranes which winters in California and breeds probably in southwestern and south-central Alaska (Fig. 1). Management of the larger Mid-Continent Population is being covered in another plan.

II. GOALS AND OBJECTIVES

The goals of this management plan are to maintain and enhance the Pacific Flyway Population of lesser sandhill cranes for its intrinsic values as well as for its direct benefits to man.

Objectives of this plan are to:

A. Maintain the wintering population of lesser sandhill cranes in California at the current level of an estimated 20,000 to 25,000 birds. (This objective may be modified pending results from more complete inventories of the population.)

B. Maintain production, migration, and wintering habitat for lesser sandhill cranes in adequate quantity and quality to support the population at levels and distribution shown in Figures 1-3 and listed in Table 1. (Because relationships between production, migration, and wintering areas are so poorly defined, the objective for distribution as listed in Table 1 will certainly be changed pending results from banding investigations and population surveys.)

C. Maintain consumptive and nonconsumptive uses of this population at their current levels (See III Status, Use, Table 2). (Changes in levels of use would be dependent upon more definitive estimates of population status.)

III. STATUS

Population and Distribution

Summer

The nesting areas used by those lesser sandhill cranes wintering in California have not been confirmed by banding or color-marking information. Lesser sandhill cranes nest at scattered locations throughout much of northern Canada, Alaska and the Chukotsk-Kolyma region of the U.S.S.R. Almost three-fourths of the cranes breeding in surveyed portions of Alaska do so on the Yukon-Kuskokwim Delta (Conant et al. 1981). The principal nesting areas of the PFP cranes, however, are presumably to the south in the lowlands of Alaska's Bristol Bay and Upper Cook Inlet where an estimated 8.3% and 0.3%, respectively, of cranes from surveyed areas are found (Figure 1). PFP cranes may also nest further north in areas used by the Mid-Continent Population. As with other populations of birds of the same subspecies that nest in close proximity, a small percentage of cranes from the Pacific Flyway Population probably exchange with those of the Mid-Continent Population. A very few cranes have been reported as nesting or suspected to be nesting on Kupreanof, Kuiu, and Sergief islands in southeastern Alaska (Gabrielson and Lincoln 1959) and could belong to either the PFP cranes or to the Central Valley Population of greater sandhill cranes *(Q.* £. tabida) whose northern range extends into British Columbia and is also poorly defined.

Winter

Wintering PFP cranes within the Central Valley of California are separated into two groups or subpopulations (Figure 3, Table 1). The northernmost and smallest group, about 1,400 birds, winters just east of Red Bluff, Tehama County. These birds loaf and roost near the Sacramento River north of Red Bluff. The southern group, about 20,000 to 24,000 birds, winters from near Thornton, southeast to the Carrizo Plains in San Luis Obispo County (Littlefield and Thompson 1982). A majority of this group winters on and near Merced and San Luis NWRs, but during the winter of 1979-80 when conditions were unusually dry large numbers wintered in the Delta-Grizzly Island area. Up to 6,500 lesser sandhill cranes winter in the Carrizo Plain and use the shallow waters of Soda Lake for roosting

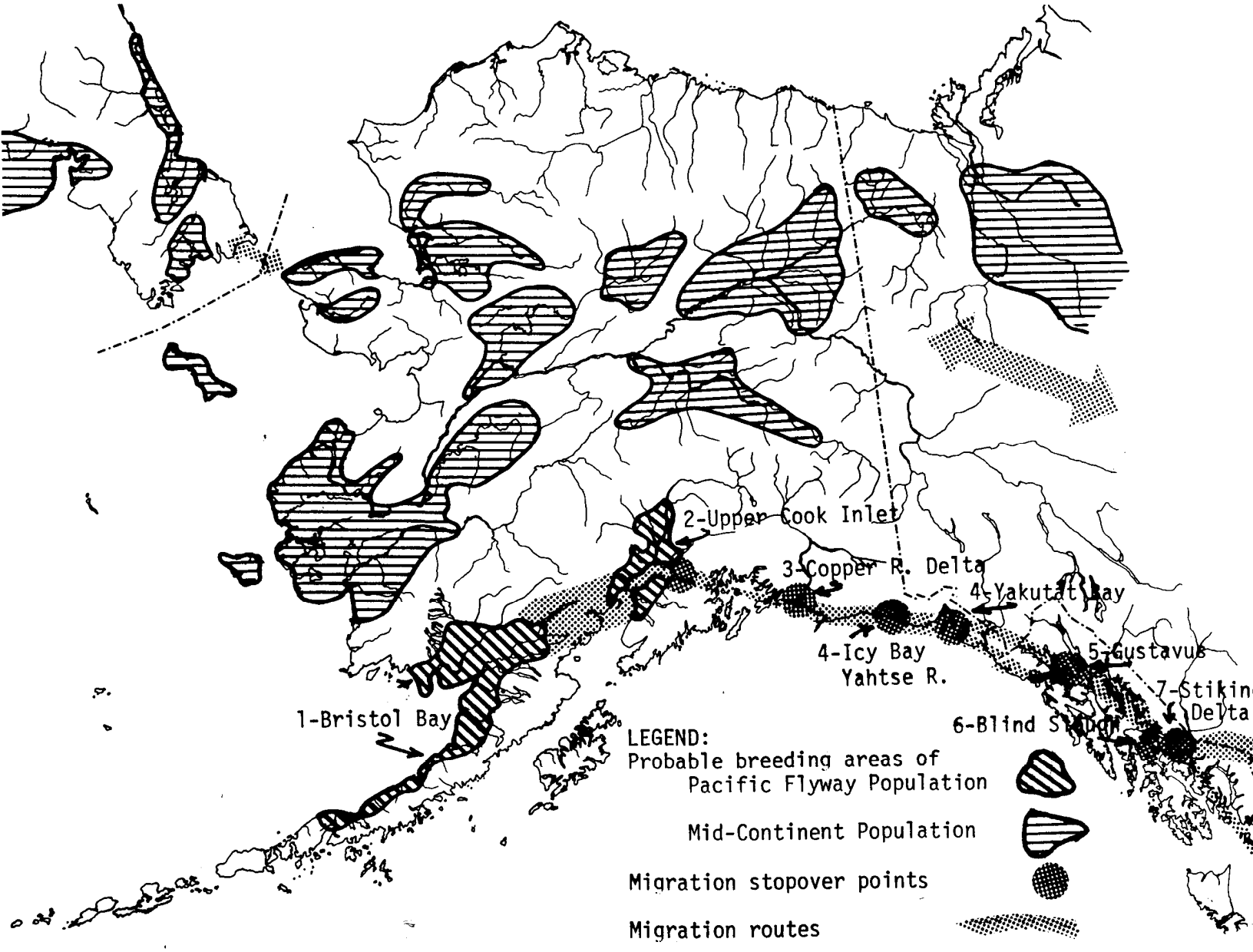

Figure 1. Major breeding grounds of lesser sandhill cranes in Alaska and portions of the U.S.S.R. and Canada. Probable breeding areas for both the Pacific Flyway and Mid-Continent Populations are shown. Migration stopover points and routes for only the PFP cranes are shown.

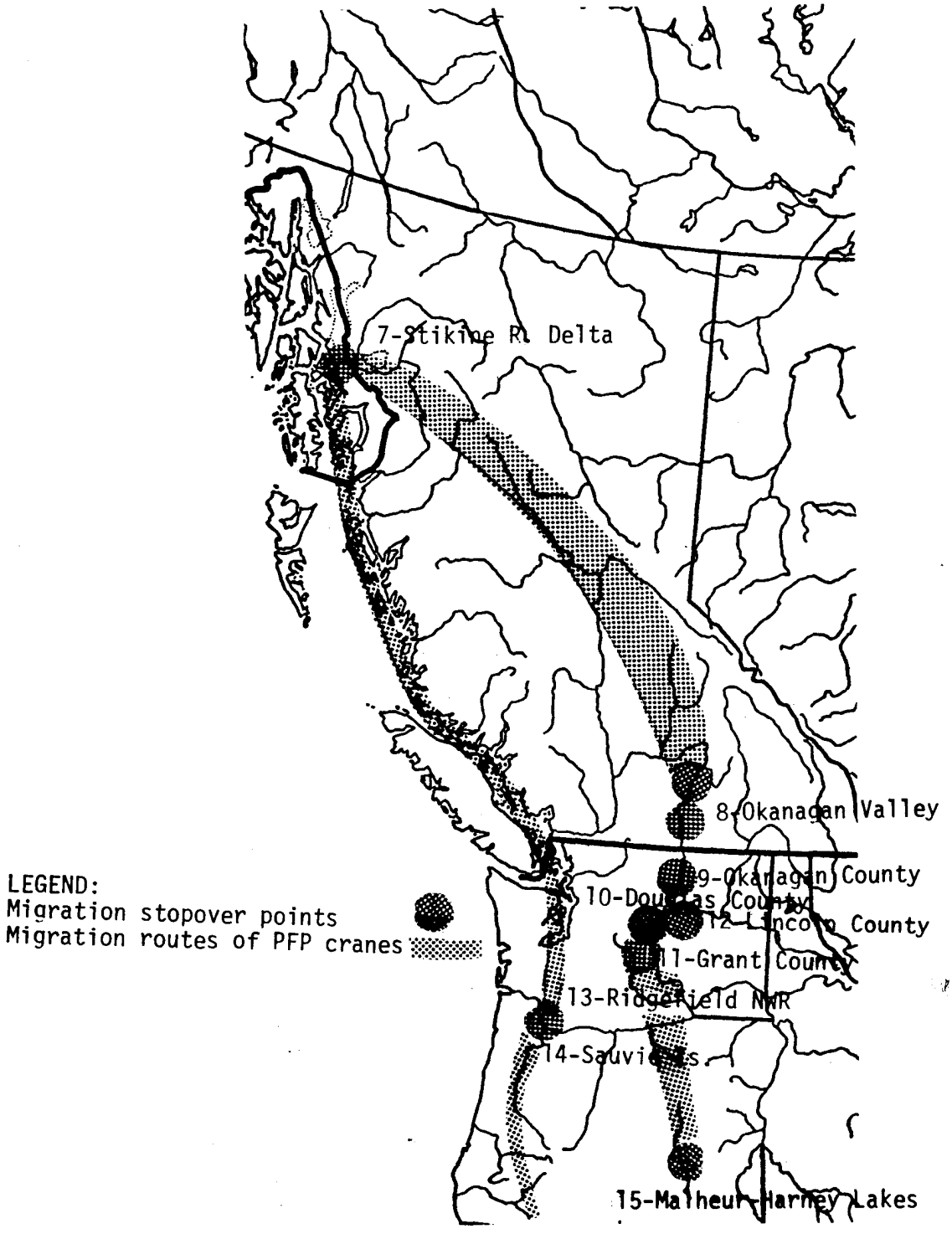

Figure 2. Migration routes and stopover points of the Pacific Flyway Population of lesser sandhill cranes.

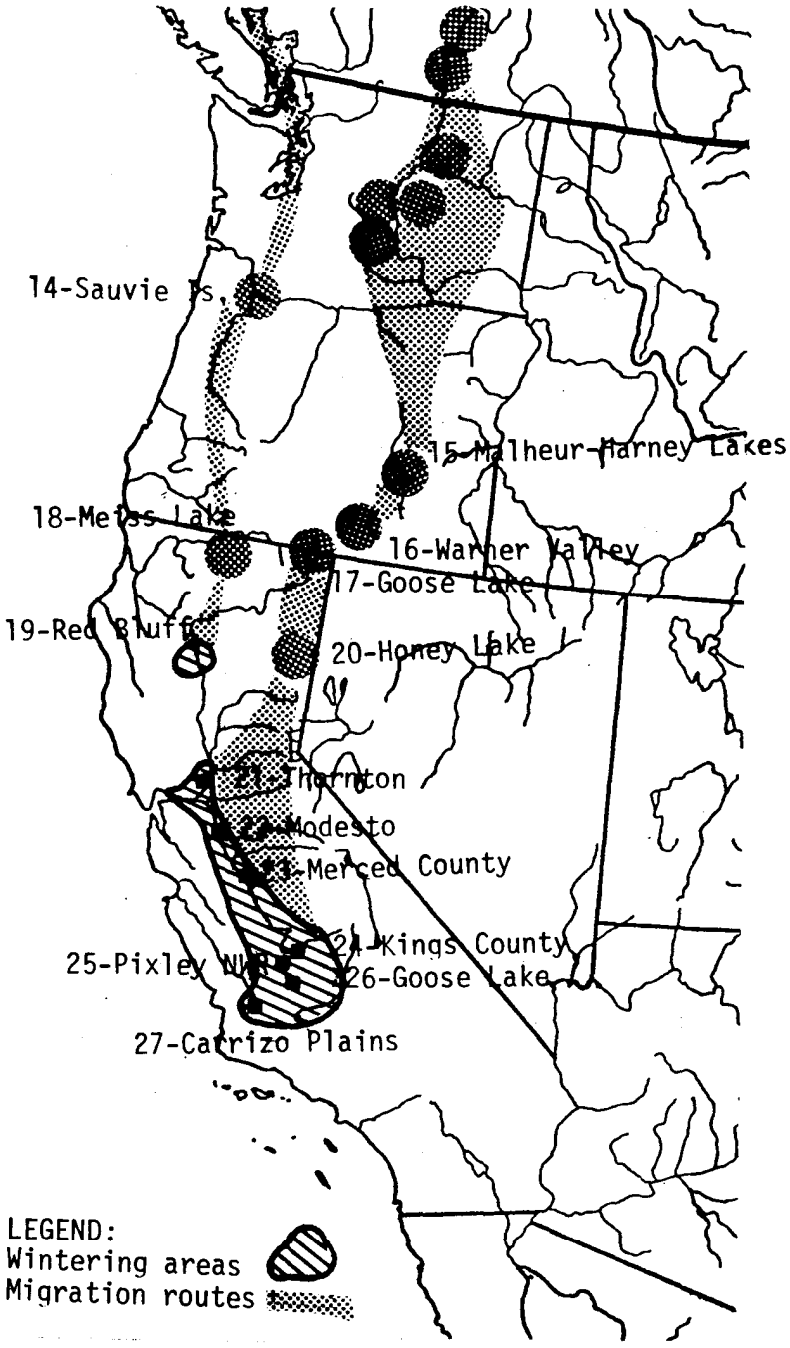

Figure 3. Migration routes, stopover points and wintering areas of Pacific Flyway Population of lesser sandhill cranes.

Table 1. Principal locations used by the Pacific Flyway population (PFP) of lesser sandhill cranes, use of those areas and estimated numbers of cranes. Map numbers correspond to locations shown on Figures 1-3.

Map Number	Location	Use by Cranes	Estimated Number of Cranes & Remarks
ALASKA			
1	Bristol Bay Lowlands	Nesting	Unkown numbers; presumably the major breeding grounds for PFP cranes; about 2,400 counted in spring Breeding Waterfowl Survey
2	Upper Cook Inlet-Susitna River Marshes	Limited nesting; major migration stopover	Estimated 500-1,000 cranes summer in Cook Inlet marshes; estimated 10,000+ cranes stopover in fall, with fewer stopping in spring; Portage Flats is a particularly important stopover point.
3	Copper River Delta	Major stopover	20,000+ cranes stopover both in spring and fall
4	Icy Bay, Yahtse River, & Yakutat Bay	Migration stopover	Unknown
5	Gustavus Area	Migration stopover	Unknown
6	Blind Slough	Migration stopover	Unknown
7	Stikine River Delta	Migration stopover	Unknown
BRITISH COLUMBIA			
8	Okanagan Valley	Migration stopover	Unkown
WASHINGTON			
9	Okanogan County	Migration stopover	1,200 cranes stopping in October 1978; numerous sightings of small numbers stopping and
10	Douglas County	Migration stopover	Repeated sightings of 1,000-2,000 cranes resting on pond near St. Andrews; numerous sightings of cranes feeding and in migration.
11	Grant County	Migration stopover	1,000 cranes at Banks Lake in October 1967
12	Lincoln County	Migration stopover	Numerous records of cranes feeding and in migration, with flock size upwards of 500 birds.
13	Cowlitz County	Migration stopover	Cranes are found in the vicinity of Woodland and on Ridgefield NWR (feeding area). large numbers in flight.
OREGON			
14	Sauvie Island, Columbia County	Migration stopover	1,400 cranes
15	Malheur-Harney Lakes area, Harney Co.	Migration stopover	Major stopover point; 14,000+ cranes
16	Warner Valley, Lake County	Migration stopover	10,000+ cranes
17	Goose Lake, Lake County	Migration stopover	4,000+ cranes
CALIFORNIA			
17	Goose Lake, Modoc County	See above	See above
18	Meiss Lake, Siskiyou County	Migration stopover	Unknown
19	Red Bluff, Siskiyou County	Wintering	About 1,400 cranes; probably a distinct subpopulation.
20	Honey Lake, Lassen County	Migration stopover	10,000+ cranes
21	Thornton, San Joaquin County	Wintering	4,100 cranes in winter of 1969-79*
22	Modesto, Stanislaus County	Wintering	2,400 cranes in winter of 1969-70**
23	Merced County	Wintering	9,800 cranes in winter of 1969-70*
24	Kings County	Wintering	325 crane in winter of 1969-70*
25	Pixley NWR, Tulare County	Wintering	8 cranes in winter of 1969-70*
26	Goose Lake, Kern County	Wintering	630 cranes in winter of 1969-70**
27	Carrizo Plains, San Luis Obispo Co.	Wintering	2,765 cranes in winter of 1969-70*

*Examination of these areas in 1970, 1971, and 1976 showed that they were still being used by lesser sandhill cranes in about the same numbers as during the survey of 1969-70.
**During 1978 and 1979, respectively, peak populations were 1,300 (13 December) and 1,200 (14 December).

(Bowen 1982). Few PFP cranes have been seen between Red Bluff and Thornton, and apparently there is no interchange, at least in the wintering ground, between these two wintering groups. Appendix A contains more detailed information on population size and distribution in winter.

Migration

Confirmation of the migration routes used by PFP cranes is based partly upon conjecture and part by limited observations of marked birds. Forty-three cranes were color-marked at Merced NWR in February and March 1980 which resulted in three sightings in spring east of Klamath Falls, Oregon, four sightings on or near Malheur NWR in spring, two sightings in spring and two in fall on the Copper River Delta, a fall sighting near Gustavas in southeastern Alaska, and three sightings in the Central Valley during the subsequent fall and winter (Herter 1982). Bandings of cranes breeding on the Yukon-Kuskokwim Delta showed an affinity for migrating east of the Rocky Mountains (Boise 1979). Hereter (1982) reviews information on sightings of lesser sandhill cranes along the Pacific Coast states and in British Columbia.

During late February and March, PFP cranes leave the Central Valley in a northward direction (Figure 30). The migration route for the southern group of the population crosses the Sierra Nevada Mountains over Placerville. From there they continue north to Honey Lake, near Susanville. After leaving Honey Lake the migration slows as birds spend time feeding. The cranes enter Oregon south of Lakeview and in Warner Valley, and further to the west through Klamath County (Littlefield and Thompson 1982).

The major spring stopover area for the southern group is in Harney County where the birds spend a few weeks feeding in the native-grass meadows south and east of Burns (Figure 3). About 6,000 cranes are normally present during peak periods. However, when inclement weather persists their departure is delayed; and up to 14,000 birds may be present. Migration progresses rapidly through eastern Oregon after the cranes leave Harney County (Littlefield and Thompson 1982). The cranes fly north between John Day and Dayville, to the west of Pendleton, and enter Washington in the vicinity of Pasco. PFP cranes regularly stop near Moses Lake and Ephrata, Grant County, and near Mansfield, Douglas County, central Washington.

Upon leaving central Washington the migration of the southern group continues north into British Columbia through the Okanagan Valley (Figure 2). Where these birds go through British Columbia is uncertain, but they likely follow routes shown in Figure 2.

Cranes have been reported stopping in spring near the Stikine River Delta and at Gustavus in Alaska (Figure 1). They apparently follow a coastal route to the Copper River Delta and from there spread across the Kenai Peninsula and Upper Cook Inlet area before going to the various breeding areas mainly to the west. The reverse is true during fall, although more use is made of staging areas then than in spring for at least Portage Flats (D. E. Timm pers. comm.).

The small northern group of PFP cranes that winters near Red Bluff apparently uses a separate route. From Red Bluff this group migrates north to Meiss Lake, enters the Willamette Valley near Eugene, and stages on Sauvie Island in the Columbia River. From there they move to the Puget Sound region of Washington and then migrate along the coast of British Columbia and Alaska (Figure 1). The fall migration route is probably the reverse of that of spring, and Sauvies Island is again an important use area. During mild winters a few birds remain on Sauvie Island, but normally all continue south to Red Bluff (Littlefield and Thompson 1982). The nesting population in Cook Inlet and the group wintering near Red Bluff are approximately the same size and may be synonymous (D. E. Timm pers. comm.).

Uses

Legal hunting of PFP cranes occurs only in Alaska. The season opens on 1 September in most portions of the State and extends as late as 22 January. All birds, however, have migrated from Alaska by early November. The daily bag and possession limits are 2 and 4, respectively. The past 10-year average harvest of cranes in Alaska was about 765, with an estimated 230 cranes being PFP birds and the remaining 535 birds belonging to the Mid-Continent Population (Table 2). Hunting of this particular population is prohibited in all other states and in British Columbia.

Subsistence harvest of PFP cranes is believed to be negligible. Two estimates of subsistence harvest have been made on the Yukon-Kuskokwim delta, Alaska, where in 1965 an estimated 1,033 cranes were taken from spring through fall (Klein 1966) and in 1981 an estimated 1,477 were taken in spring

Table 2. Retrieved sport harvest of lesser sandhill cranes in Alaska as measured by State Mail Surveys (1971-77) and Federal Mail Survey (1978 to date). Ratio of cranes belonging to the Pacific Flyway Population and the Mid-Continent Population is estimated to be 3:7.

	Estimated Sport Harvest of Cranes		
	Pacific	Mid-Continent	
Year	Population	Population	Total
1971	145	345	490
1972	230	535	765
1973	180	420	600
1974	190	450	640
1975	490	1,150	1,640
1976	260	615	875
1977	185	435	620
1978	90	220	310
1979	205	470	675
1980	315	735	1,050
Average	230	535	765

(Copp and Smith 1981). Additional subsistence harvest may occur in Canada and the U.S.S.R. Birds from these areas, however, probably belong to the Mid-Continent Population.

Observing sandhill cranes is an important pastime throughout the birds' southern range. It is particularly important in Central Douglas County, Washington, in migration near Portland, Oregon, near Thornton and at the .Merced and San Luis NWRs in the San Joaquin Valley. Fewer people have opportunities for observing cranes on their breeding grounds, but for many in the North seeing and hearing cranes contribute towards a truly "wilderness experience."

Management

Lesser sandhill cranes have benefited largely from measures taken to manage migratory birds in general, e.g. protection afforded by State and Federal regulations and habitat protection through refuges, the Grassland Easement Program, and the Water Bank Program. The Bureau of Land Management is considering implementing cooperative management practices at Soda Lake in the Carrizo Plain that would benefit cranes and other wildlife (Bowen 1982). The PFP cranes have benefited directly by cereal grain production on Merced NWR and warning markers on powerlines. Breeding populations of lesser sandhill cranes have been surveyed annually in portions of Alaska since 1957 as part of the continental Waterfowl Breeding-pair Survey Conant et al. 1981). The PFP cranes have been studied on one of their principal staging grounds, the Copper River Delta (Herter 1982). Forty-three cranes were color-marked in California to obtain information on their migration and relationships to staging and man-caused disturbances on the Copper River Delta (Herter 1982). Inferences on breeding biology of PFP cranes can be drawn from a study of cranes of the Mid-continent Population on the Yukon-Kuskokwim delta (Boise 1979).

IV. PROBLEMS

The breeding origin of PFP cranes and most northern routes and stopovers of their northern migration to and from California are have not been verified. Stopover points and their relative importance to the birds have been only cursorily identified.

Estimates of population size, production, and sport harvest are not precise. The lack of field

identification techniques for distinguishing between lesser and greater sandhill cranes makes it difficult to accurately gather population data in areas where they mingle.

Unregulated spring and summer harvests of lesser sandhill cranes occur in Alaska, and possibly in Canada and U.S.S.R.; and likely exceeds the legal sport harvest. The harvest is believed to be proportionately greater on the Mid-Continent Population than on the PFP. The magnitude and consequence of this harvest on either population are unknown; and, lack of harvest data confounds purposeful management efforts.

With increasing human populations and expanded natural resource exploitation, disturbances of PFP cranes throughout their range is an increasing problem. Loss of wintering habitat, particularly roost sites, from various forms of land development in California poses the most serious threat. Depredation on grain fields by PFP cranes is now a minor problem that could change under different circumstances.

Cranes collide with transmission lines and fences. There remains a potential for disease outbreaks in wintering areas where cranes concentrate, but presently the impact is minor.

V. RECOMMENDED MANAGEMENT PROCEDURES

The following management procedures are recommended. The degree and timing of their implementation by the various lead agencies will be influenced by manpower, fiscal, and legislative constraints. Whenever possible, management procedures in this plan should be coordinated and incorporated into those procedures recommended in plans for other species and populations of Pacific Flyway birds.

Habitat

1. Inventory of Habitats.~-Identify and catalog the habitats used by PFP cranes in order to facilitate protection of these areas.

   Lead Agencies: USFWS, ADFG (State lands), CWS, BCFWB, WDG, ODFW, CDFG

   Participating: BLM

Priority: 1

Schedule: 1984-85

2. Habitat Preservation.--Acquire through either fee title, easements, or cooperative agreements protection for key wintering habitats of PFP cranes, particularly roost sites. Continue to provide suitable habitat for cranes on National Wildlife Refuges in California and in Alaska.

Lead Agencies: USFWS and CDFG

Participating: Other State and Federal land-managing agencies and citizen organizations will be invited to participate in providing protection to these habitats.

Priority: 1

Schedule: Ongoing.

3. Utility Corridors.--Assist utility companies in planning corridors that would avoid primary migration pathways and concentration areas of cranes. Where construction of new transmission lines would pose hazards to cranes, efforts would be made to have them buried, rerouted or strung with highly visible markers.

Lead Agencies: USFWS, ADFG (state and private lands), CWS, BCFWB WDG, ODFW, CDFG

Participating:

Priority: 2

Schedule: Ongoing

4. Disturbance.--Disturbance to cranes, particularly in staging and wintering areas, should be minimized, unless it is purposefully intended to alleviated crop depredations. Pilots should be advised as to recommended minimum altitudes to be flown over areas used by cranes. As appropriate, minimum altitude requirements over refuges should be enforced and other human disturbances minimized.

Lead Agencies: USFWS, ADFG (State lands), CWS, BCFWB, WDG, ODFW, CDFG

Participating: BLM

Priority: 1-3

Schedule: Ongoing.

Uses

1. Interpretive programs.—The Subcommittee will develop written and pictoral information of the life history of PFP cranes and on the nature and necessity for a cooperative program. State, Provincial, and Federal agencies, schools and citizen groups could use these materials, in part, to develop interpretive programs that include cranes.

   Lead Agencies/Group: Subcommittee develop materials.
   USFWS, CWS, BCFWB, WDG, ODFW, CDFG develop and implement interpretive programs

   Participating: Citizens' organizations

   Schedule: Develop material by 1984
   Develop and begin implementing interpretive programs by 1986.

2. Sport Harvest.—Maintain the sport harvest of PFP cranes within limits of harvest potential and in consideration of other uses of the population.

   Lead Agencies: USFWS and ADFG

   Priority: 1

   Schedule: Ongoing

3. Subsistence Harvest.—The size and distribution of subsistence harvest of PFP cranes should be assessed and related to the annual harvestable surplus. Recommendations for allowable spring and summer harvest should be made in consideration of these other factors.

   Lead Agency: USFWS

   Participating: ADFG

   Priority: 2

   Schedule: Ongoing.

Surveys and Research

1. Delineation of Populations.—Cranes should be color-marked or telemetered first in the Bristol Bay and Cook lnlet-Susitna lowlands and second in the areas where they could belong to either the PFP or the Mid-continent Population. Searching for and making observations on marked cranes

is an obligate part of this task.

Lead Agencies: USFWS, CWS, BCFWB, WDG, ODFW, CDFG

Participating: ADFG

Priority: 1

Schedule: 1984-86

2. Winter Population Survey.—Either aerial or ground surveys of PFP cranes wintering in California should be conducted biannually. This survey could be done during either the periodic fall waterfowl surveys or during the midwinter waterfowl survey. Appropriate timing will be determined through trial uses of both types of surveys.

Lead Agencies: CDFG and USFWS

Priority: 1

Schedule: Evaluate appropriateness of various surveys during 1982-84.

Implement survey in fall and winter of 1984-85 and conduct at 2-year intervals, thereafter.

3. Field Identification Technique.—A field identification key will be developed to distinguish between lesser and greater sandhill cranes.

Lead Agencies/Group: Subcommittee

Participating:

Priority: 1

Schedule: 1984

4. Productivity Survey.—Obtain productivity data at Merced NWR and if it can be done incidental to other surveys also on the Copper River Delta. Surveys in California should be conducted prior to December because afterwards it becomes increasingly difficult to distinguish birds of the year from older birds.

Lead Agencies: USFWS and CDFG

Priority: 3

Schedule: Ongoing

5. Development and Review of Research Proposals.--The Subcommittee shall propose or develop as

necessary research projects for Federal, State, or other source funding, recommend needed research, and review unsolicited research proposals. The Subcommittee shall consider priorities of that information needed on the population as a whole, rather than on a local or provincial basis.

Lead Agency/Group: Subcommittee

Priority: 1

Schedule: Ongoing

Annual Review of Plan

The Subcommittee shall meet annually or as needed to measure progress toward achieving the goal and objectives of this plan and to recommend revisions. The Subcommittee shall report on accomplishments and shortcomings of the cooperative management efforts to the Pacific Flyway Council (through the Western Migratory Upland Game Bird Technical Committee), those State, Provincial and Federal agencies having management responsibilities, and those agencies and organizations interested or cooperating in the management of cranes. Composition of the Subcommittee should be comprised of, but not limited to, representatives from those agencies having management responsibility for PFP cranes.

Lead Agency/Group: Subcommittee

Priority: 1

Schedule: Annually (March meeting of the WMUGBTC) or as needed

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APPENDIX A. Winter distribution of the Pacific ~lyway Population of lesser sandhill cranes (Littlefield and Thompson 1981).

During the winters of 1969-70 and 1970-71 all areas in California known to be used by cranes were examined for their presence.

Upon entering the Central Valley in the fall most lesser sandhill cranes concentrate near Merced, then disperse northwest and southeast after spending 3 to 4 weeks in the Merced area.

Near Thorton, San Joaquin County, 828 lessers were counted on 14 December 1969. After this date a substantial increase was recorded. By late December over 2,000 were there, and an estimated 4,100 were present on 7 January.

In Stanislaus County, the subspecies winter about 8 to 10 mi west of Modesto on the Faith and Mape's Ranches at the confluence of the Tuolumne and San Joaquin Rivers. In 1969, lesser sandhill crane numbers fluctuated through mid-November, but stabilized in December. Dates of counts and numbers were:

October 31	404
November 4	2,403
November 14	617
December 12	898
February 3	800

The peak number was on 4 November when cranes were decreasing in Merced County.

Five roost sites in Merced County were periodically surveyed during the winter of 1969-79. Counts at these sites tallied the following:

Merced NWR and vicinity

24 October	5,934	10 December	1,042
25 November	2,600	26 January	2,253

Greenhouse (2 mi west and 4 mi north of Merced NWR)

1 December	754	8 December	864

Bowles Farm (8 mi east and 2 mi north of Los Banos)

2 November	4,000	11 December	573
16 November	2,500	29 January	0
2 December	597		

San Luis NWR

6 November	599	12 December	802
19 November	2,838	2 February	52
30 November	56	18 March	30

Kesterson NWR

31 October	800	11 December	183
12 November	121	1 February	540
29 November	790		

Merced County is the most important wintering region for PFP cranes in the Central Valley. Estimated peak numbers of cranes at the Merced NWR (from Refuge Narrative Reports) were:

1951	3,000	1961	9,000	1971	1,500
1952	1,500	1962	21,000	1972	750
1953	2,000	1963	15,000	1973	2,000
1954	5,000	1964	9,000	1974	10,000
1955	5,000	1965	4,000	1975	10,000
1956	1,200*	1966	6,500	1976	5,000
1957	30,000**	1967	6,000	1977	5,250
1958	21,500	1968	2,500	1978	8,000
1959	15,000	1969	5,950	1979	8,000
1960	15,000	1970	1,460	1980	5,400

On 23 November 1969, 324 PFP cranes were using Melga Reservoir, 12 mi south of Hanford, Kings County. By 15 December their numbers had dropped to four, and none was recorded on 26 January.

In Tulare County, 8 PFP cranes were observed on Pixley NWR on 22 November 1969, for the only

record. However, southwest of this refuge at Goose Lake, 11 mi west and 4 mi south of Wasco, Kern County, cranes wintered in large numbers. On 21 November, 223 were using the area, increasing to 415 on 16 December and 628 on 26 January.

West of Goose Lake large numbers of cranes usually winter at the Carrizo Plains, San Luis Obispo County. In the winter of 1969-70, three counts were made: on 24 November, 1,011 cranes were counted; 17 December, 1,439; and 25 January, 2,763.

In addition to those that winter in the Central Valley a few are sometimes seen in the Imperial Valley. Four were seen 7 mi southeast of Brawley, Imperial County, on January 1971, and one was recorded near Blythe, Riverside County, on 31 January 1976. These birds probably migrate south along the east side of the Sierra Nevada Mountains.

*Population was reported in the Refuge narrative report to be 50,000 cranes, but this number was believed to be grossly overestimated.

**Believed to be an overestimation of the true population size.