

1987

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### Recommended Citation

Pogson, Thomas H. (1987) "Sandhill Crane Banded in Alaska Migrates to California and Oregon," *North American Bird Bander*. Vol. 12 : Iss. 3 , Article 1.

Available at: <https://digitalcommons.usf.edu/nabb/vol12/iss3/1>

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# Sandhill Crane Banded in Alaska Migrates to California and Oregon

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Lesser Sandhill Cranes (*Grus canadensis canadensis* L.) nest in northeast Siberia, throughout Alaska and northern Canada to the west shore of Hudson Bay (A.O.U. 1957, 1983, Lewis 1977). Cranes nesting in Siberia, northern Canada, and in Alaska north of the Alaska Range comprise the Mid-Continent Population (Kessel 1984, Tacha et al. 1984), while those nesting near Cook Inlet and Bristol Bay are assigned to the Pacific Flyway Population (PFP) (Herter 1982, USFWS 1983). These two populations use different migration routes and winter areas (Boise 1979, Herter 1982, Kessel 1984, Littlefield and Thompson 1982, Tacha et al. 1984, Iverson et al. 1985). Because the PFP summer range is poorly defined I attempted to color-mark flightless young cranes (colts) near Bristol Bay, Alaska (Figure 1). Observations of these birds at migration stopovers and on winter areas would establish their population affiliation. This paper summarizes observations of the only crane banded in Bristol Bay, suggesting a relationship between one nesting area, a migration stopover area, and a winter area of the PFP.

## Methods

I selected the Nushagak Peninsula as the banding site. Conant and King (in litt.) found the largest numbers of cranes in the presumed nesting range of the PFP on the Nushagak Peninsula during the USFWS aerial waterfowl breeding pair survey (Conant et al. 1985).

Between 20 July and 4 August 1983, I located 17 flightless colts and pursued ten on foot, but captured only one on 31 July. The colt was 7-8 weeks old and near fledging. I marked it with an aluminum neck-band, a plastic leg-band, and a no. 8 lock-on aluminum leg-band. The yellow neck-band and leg-band were 5.2 and 6.2 cm tall, and bore alpha-numeric codes J01 and CJ01 respectively. The neck-band was fastened with two aluminum pop-rivets and the plastic leg-band was sealed with quick drying cement. The bird was released 5 minutes after capture.

I searched for J01 near the capture site after banding, and during the summer of 1984. S.M. Lindstedt and I conducted roadside surveys of cranes throughout winter areas in the northern and central portions of the Central

Valley, California, logging 16,500 miles during 142 days of field work the 1983-84 winter, and 12,300 miles during 123 days of field work the 1984-85 winter. The surveys consisted of censusing, age ratio counts, flock activity scans, observations of color-marked Greater Sandhill Cranes (*G. c. tabida* Peters), and classification of individuals within mixed flocks of Greater and Lesser Sandhill Cranes to subspecies. Several observers searched for J01 at a traditional spring stopover area along the Silvies River near Burns, Oregon, between 1983-1986.

## Results and Discussion

J01 was seen in California and Oregon every wintering period and every spring migration, respectively, during three years following banding (Table 1 and Figure 1). It was resighted two days after banding with its parents. When resighted in central California and southeastern Oregon in January and April 1984, respectively, it was found with its parents and its unbanded sibling. I did not locate J01 near the banding site in July 1984. On the Yukon-Kuskokwim Delta in western Alaska, Boise (1981) found 11 of 126 color-marked colts the summer following banding; 7 were 0-3.9 km and 4 were 4-7.9 km from banding sites. In the Rocky Mountains, Drewien (1973) found few Greater Sandhill Crane pairs returning to nesting territories with their yearling progeny, although the families had been intact a month earlier in Colorado during spring migration. Most yearling Greaters arrived in their natal valleys 1-2 months after the arrival of their parents. Some yearling Greaters summered away from their natal areas, indicating they separated from their parents prior to their arrival on nesting areas.

J01 was only observed on the San Joaquin-Sacramento Delta when Lesser Sandhill Cranes were arriving during fall migration or were beginning to move north from winter areas in the southern Central Valley (Littlefield and Thompson 1982). Although the absence of sightings does not necessarily mean J01 was absent from areas searched, the chronology of sightings (Table 1) suggests it overwintered in the southern Central Valley or in western Mexico, where Lessers also occur. We only conducted cursory searches of restricted portions of the

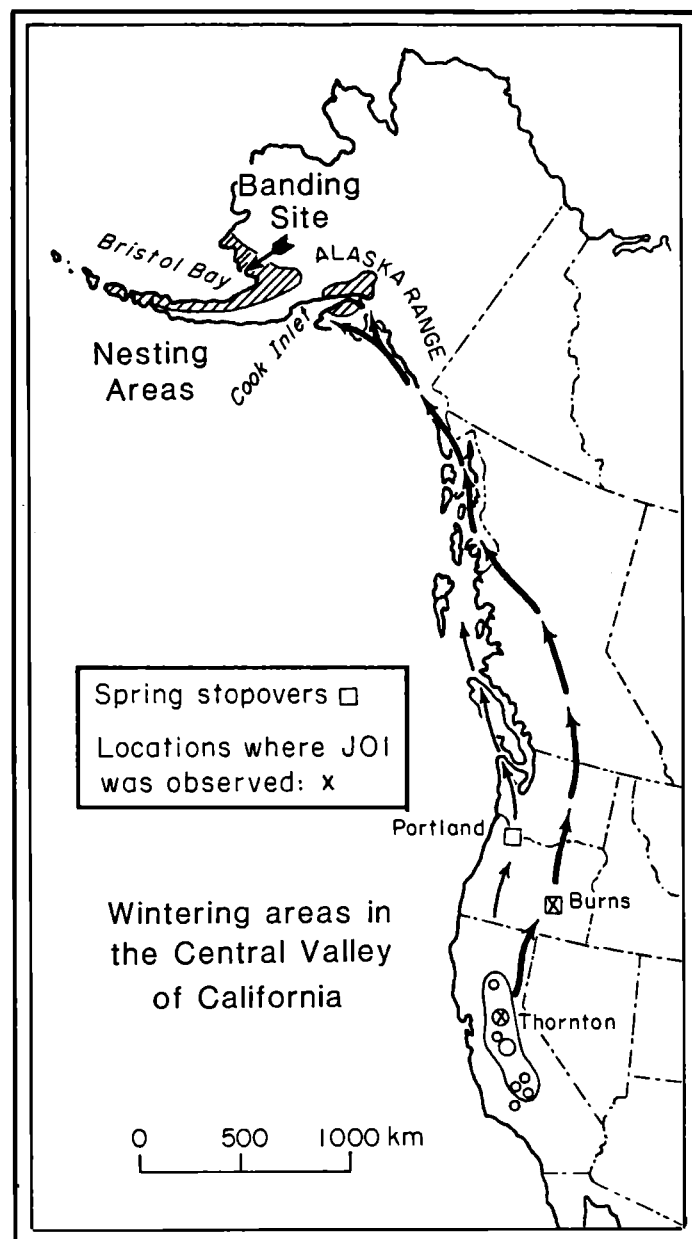
winter areas in the southern Central Valley in 1983-84, and no surveys were conducted in western Mexico.

**Table 1. Observations of Lesser Sandhill Crane J01, captured on the Nushagak Peninsula, Bristol Bay, Alaska, on 31 July 1983.**

Location	Dates Sighted
Nushagak Peninsula, AK	2 August 1983
Thornton, CA	10 January 1984
Burns, OR	1-10 April 1984
Thornton, CA	22, 29 October 1984
Burns, OR	18-21 March 1985
Thornton, CA	19 February 1986
Burns, OR	13-15 March 1986

J01 showed a high degree of site fidelity during winter and spring 1984-85, and 1985-86, returning to the same areas it visited while accompanying its parents in 1983-84. Sightings in October 1984 and February 1986 were within 2.5 km of where J01 was observed in January 1984. Similarly, all subsequent spring sightings near Burns were within 1.3 km of the first sighting. The recurrence of J01 in California and Oregon, if representative of the population, confirms a relationship between a nesting area, spring stopover area, and a winter area of the PFP. As J01 was marked near the north-western limit of the presumed geographic distribution of the PFP, it is possible that all cranes nesting in Alaska at points east and south of the Nushagak Peninsula migrate to California and/or western Mexico, and are affiliated with the PFP. Because J01's family remained intact through spring 1984, I ruled out that it migrated in an aberrant fashion.

The PFP consists of two flocks which use different migration routes and winter areas (Littlefield and Thompson 1982). The eastern flock, numbering 20,000-23,000 winters in the central and southern Central Valley, migrates east of the Cascade-Sierra axis, and stops on the Silvies River floodplain near Burns, Oregon, during spring migration (Figure 1). The western flock ranges between 1,400-2,000, winters in the northern Central Valley, migrates west of the Cascade-Sierra axis, and uses Sauvie Island near Portland, Oregon, as



**Figure 1. Observations of J01, Lesser Sandhill Crane colt color-marked on the north shore of Bristol Bay, Alaska, July 1983 to March 1986.**

a traditional spring and fall stopover area. J01 may have wintered in the southern Central Valley or western Mexico. It was observed near Thornton, California, and near Burns, Oregon, suggesting the eastern flock of the PFP, or a portion of it, nests near Bristol Bay. Nesting area locations for the western flock are currently unknown.

The probability of observing J01 among the 20,000-25,000 cranes in the PFP was extremely low. This marked crane was observed repeatedly because the sites

it used were accessible to observers. Observations of J01 also suggest the population concentrates at restricted winter and migration stopover areas where habitat losses are occurring. The success of observing J01 suggests what can be expected from additional color-marking and radio-tagging of PFP cranes in Alaska.

## Acknowledgments

Many individuals contributed to the project and I am indebted to them. D. Fisher and L. Hotchkiss, Togiak NWR, Alaska, provided generous logistic support for capturing cranes. D.R. Herter helped in planning and reviewed the manuscript. D. Cooper assisted with banding. I thank C.D. Littlefield and S.M. Lindstedt who searched for J01 in Oregon and California, and reviewed the manuscript, and R. Canniff for reporting J01 in Oregon. Field work in the Central Valley was funded (in part) by the Office of Migratory Bird Management, USFWS, Portland, Oregon, and the San Luis NWR Complex, Los Banos, California. D. Bauer, J. Bartonek, C. Smith, D. Derksen, D. Timm, M. Minard, J. Skrade, M. Nelson, T. and A. Rothe, G. Zahm, F. Milton, B. Reisweig, S.M. Crandell, J.V. Osgood, and personnel at the Alaska Cooperative Wildlife Research Unit, University of Alaska, Fairbanks all contributed to the project, their assistance and support are appreciated. Special thanks to S.F. MacLean, S.H. Warner, M. Stern, B. Kessel, R. Drewien, and K.P. Reese for reviewing the manuscript, and to D. Borchert for preparing the figure.

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