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CLIFF SWALLOW POPULATIONS IN THE
SOUTHERN ASKINUK MOUNTAINS, ALASKA

by
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INTRODUCTION

Cliff swallows (Hirundo pyrrhonota) are gregarious and nest in colonies containing 2-3500+ nests (Bent 1963, Brown and Brown 1988). During breeding season, cliff swallows are widely distributed throughout Alaska and North America south to Mexico, and they are locally common in western and southwestern Alaska (Kessel and Gibson 1978). In western Alaska, cliff swallows occur in colonies of 6-100 nests on the Seward Peninsula east of 166° west longitude (Kessel 1989). In the Kilbuck and Ahklun Mountains of southwestern Alaska, colonies of 10-500 pairs occur along rivers and streams above treeline (circa 240 m asl), and small colonies occur infrequently at lower elevations (Petersen et al. In prep). Other reported colony sites in western Alaska include Unalakleet, St. Michael, Russian Mission, Holy Cross, and along the Andreafsky River (Bent 1963, Kessel and Gibson 1978, B. J. McCaffery Pers comm). On the Yukon-Kuskokwim Delta, 3 colonies totaling <100 nests were observed nesting on cinder cones in the Ingakslugwat Hills (B. J. McCaffery Pers comm). Cliff swallows were previously documented nesting along the Kolomak River and in the adjacent Askinuk Mountains (Kessel et al. 1964, Holmes and Black 1973). In June 1989 initial observations were made of isolated rock exposures along the Kolomak and Kuttak Rivers, and in June 1990 rock exposures in the southern Askinuk Mountains were systematically searched for colonies of cliff swallows.

STUDY AREA

The Askinuk Mountains are located on the Bering Sea coast of the central Yukon-Kuskokwim Delta in western Alaska (Figure 1). They rise abruptly from sea level to 714 m at the summit of Towak Mountain. The Askinuks are composed of a granodiorite pluton locally overlain by roof pendants of sandstone and siltstone (Hoare and Condon 1968). The granodiorite is cut by ≥ 2 well-defined sets of fractures, and numerous eroded tors and slab outcrops of fractured granodiorite are exposed on hillsides and ridges. These rock exposures provide nesting sites for colonies of cliff swallows. Emlen (1954, in Kessel 1989) described three habitat features required by nesting cliff swallows: "(1) an open foraging area, (2) a vertical substrate with a protective overhang for nest attachment, and (3) a local mud source for nest construction". Adjacent intertidal areas provide an abundant source of mud for nest construction, and the coastal tundra supports large populations of flying insects upon which cliff swallows rely for food.

METHODS

During aerial reconnaissance, 69 rock exposures were identified in 456 km² of the Askinuk Mountains. Initial ground observations were made in June 1989 of 10 rock exposures in 6 km² of the southern

Askinuks (Figure 2). No counts were made of the number of nests or cliff swallows present. In June 1990, a 2-person crew searched 18 rock exposures in 18 km² of the southern Askinuks for nesting cliff swallows (Figure 2). All aspects of each rock exposure were inspected from ground level and from adjacent hillsides, and the number of habitable nests were counted. Habitable nests were defined as those nests which were complete in construction. No effort was made to differentiate between active and inactive nests. All colony sites were marked on 1:63,360 scale USGS topographic maps (Hooper Bay Quadrangle).

RESULTS

Habitable nests were observed at 3 of 10 exposures surveyed during initial observations in June 1989 (Figure 2, Table 1). The presence of cliff swallows indicated that all 3 sites contained active nests. During June 1990, cliff swallow colonies, containing 83 habitable nests, were located on the same 3 exposures (Figure 2, Table 1). The 21 habitable nests at site #2 were divided between the western tor (n=2) and the eastern tor (n=19). No cliff swallows were observed at this site, and this colony may have been inactive. The 31 habitable nests at site #5 were divided between the north outcrop (n=16), the south outcrop (n=14), and the southeast outcrop (n=1). All 31 habitable nests at site #16 were located on the single tor. At both sites #5 and #16, numerous cliff swallows observed in and around the nests indicated that most nests (>90%) were active. No cliff swallows or nests were observed at the remaining 15 rock exposures (Figure 2).

DISCUSSION

Scant historical data were available on cliff swallow colonies in the Askinuk Mountains (Table 1). Only site #16 was surveyed previously by Kessel et al. (1964) and Holmes and Black (1973). The number of active nests indicated that the population increased from 1963 to 1966-1968 and from 1966-1968 to 1990. This population increase may reflect an actual increase in the overall population of cliff swallows in the Askinuks. Breeding bird surveys for the 1965-1979 period determined that an increasing population of cliff swallows was reoccupying much of their original range and expanding into new areas in the southeastern United States (Robbins et al. 1986). Perhaps their population is also expanding in the northwestern portion of their range as well. This increasing population counters many passerine species that are declining due to loss of wintering habitat; perhaps cliff swallows are not affected by habitat losses on their wintering range in South America.

Mayhew (1958) noted that the number of nests in a colony varied annually and that in some years cliff swallows may not use a colony

site. During June 1990, cliff swallows were not active at 1 site that was active in June 1989, and the abandoned nests may reflect the use of different colony sites. Brown and Brown (1986) concluded that cliff swallows shift between colony sites in response to ectoparasite infestations. In successive years, nests may be repaired and reoccupied, and new colonies may be established where there is suitable habitat (Withers 1977, Kessel 1989). The cliff swallows in the Askinuk Mountains represent a relatively isolated population at the northwestern extent of their breeding range in North America. It would be interesting to study whether these populations are expanding and establishing new colonies. Other interesting research would focus on the possibility of exchange of individuals between these relatively isolated colonies and other nearby colonies such as the Ingakslugwat Hills located 95 km to the southeast.

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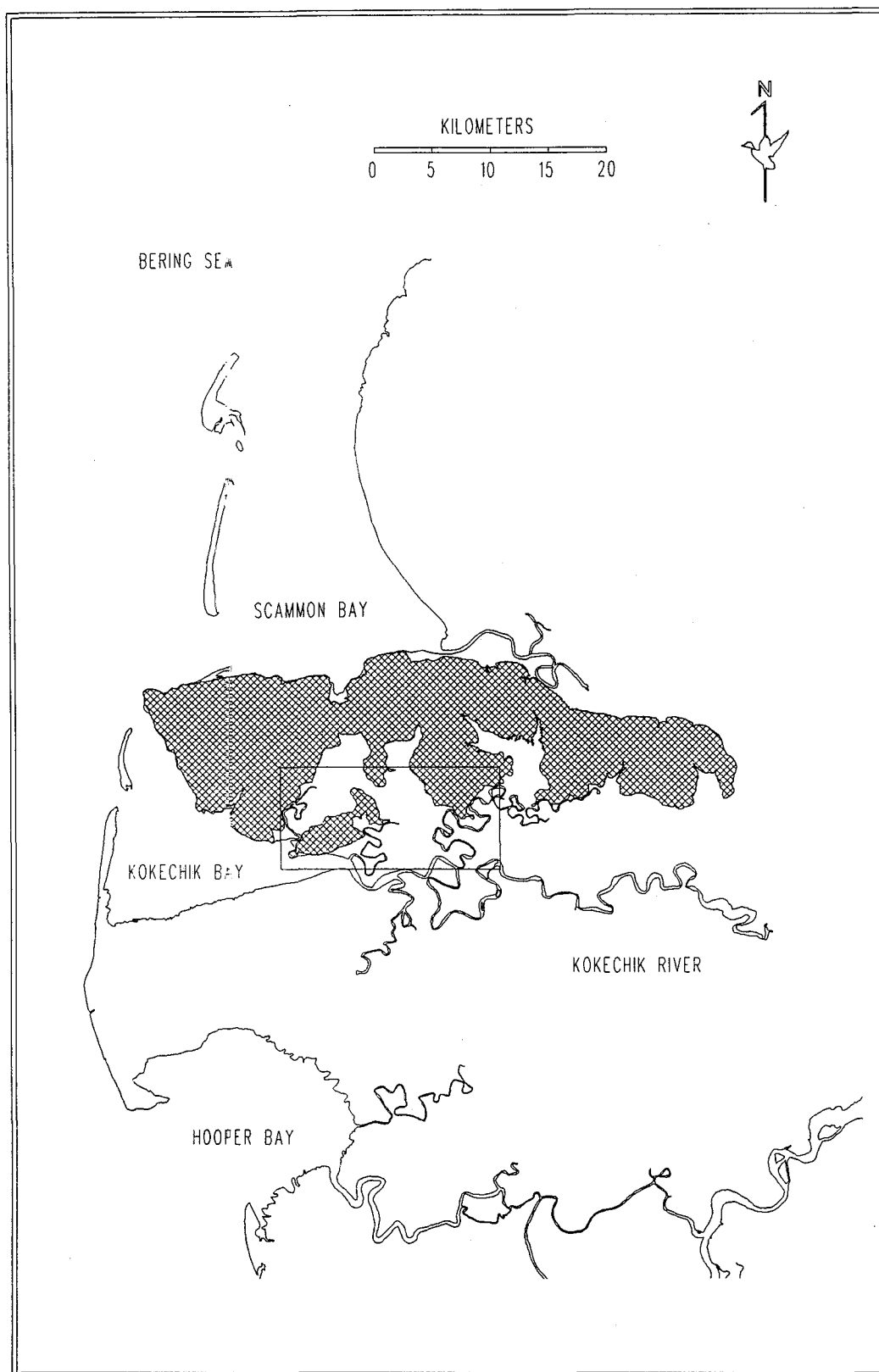


Figure 1. Location of study area in the Askinuk Mountains, Alaska.

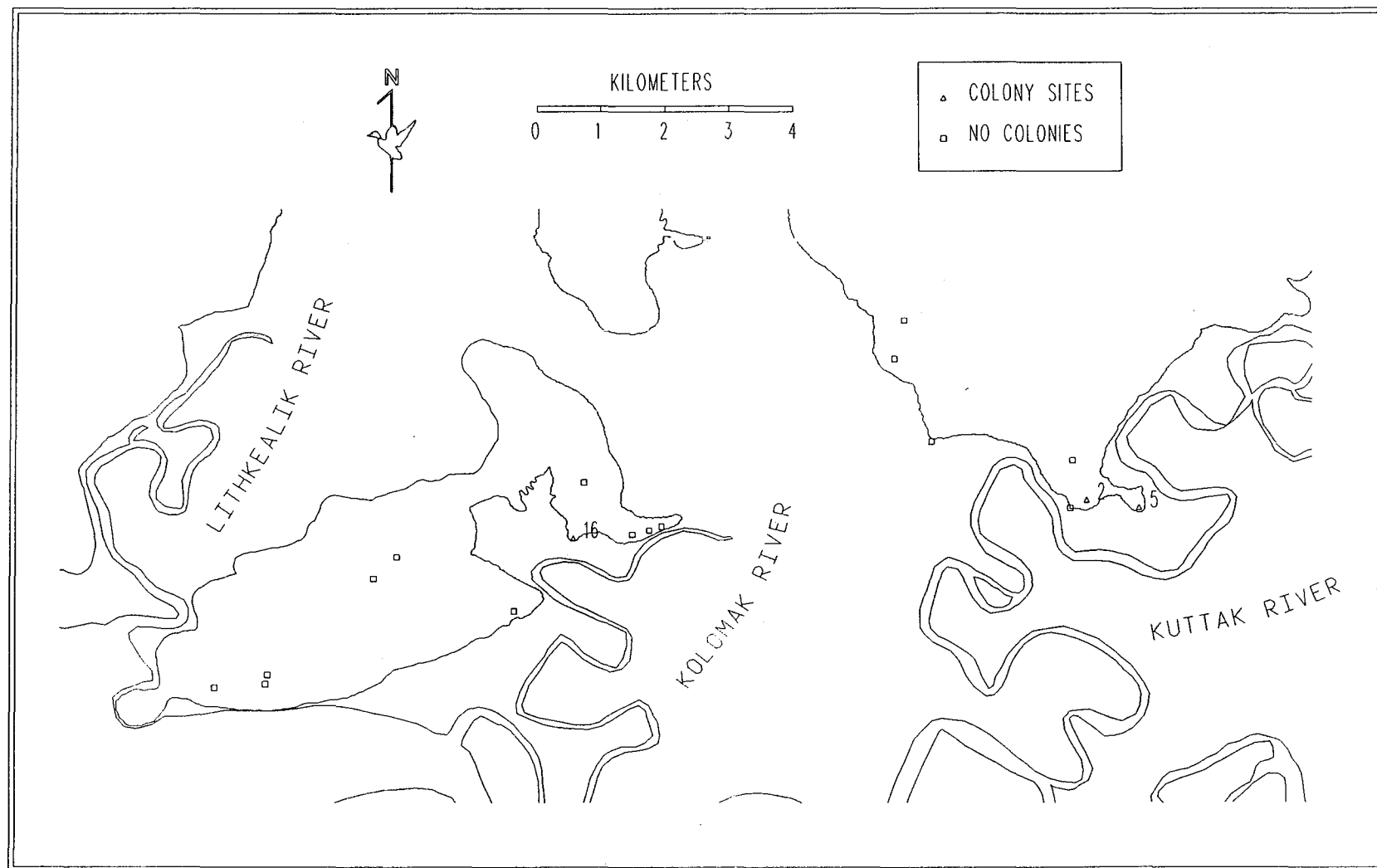


Figure 2. Location of rock exposures and cliff swallow colonies in the southern Askinuk Mountains, Alaska, 1989-1990.

Table 1. Numbers of nests and cliff swallows at colonies in the southern Askinuk Mountains, Alaska, 1963-1990.

Site	Habitat	Date	No. of Nests ¹	No. of Birds	Source
#2	2 tors	15 June 1990	21	0	
		14 June 1989	?	?	
#5	4 slabs	15 June 1990	31	50-75	
		14 June 1989	?	?	
#16	1 tor	18 June 1990	31	50-75	
		18 June 1989	?	?	
		1968	14	?	Holmes and Black (1973)
		1967	10	?	Holmes and Black (1973)
		1966	11	?	Holmes and Black (1973)
		8 June 1963	3	20	Kessel et al. (1964)
No#	?	1968	?	?	Holmes and Black (1973)
		17 June 1963	7	15	Kessel et al. (1964)

¹ Number of nests refers to habitable nests in this study and active nests in Kessel et al. (1964) and Holmes and Black (1973).