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Alaska Department of Fish and Game  
Division of Game  
Section 6  
Endangered Species Act  
Final Report



by  
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Project SE-2-2  
November 1987

STATE OF ALASKA  
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DEPARTMENT OF FISH AND GAME  
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DIVISION OF GAME  
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FINAL REPORT (RESEARCH)

State: Alaska

Cooperator: USDI Fish and Wildlife Service

Project No.: SE-2-2 Project Title: Documentation of  
Peregrine Falcon Nest  
Sites in Relation to  
State Land Use  
Proposals

Job Title: Documentation of  
Active Peregrine Nest  
Sites

Period Covered: 1 June 1987-30 November 1987

SUMMARY

The coast of western Alaska from Cape Krusenstern south to Shaktoolik was surveyed for nesting peregrine falcons (Falco peregrinus) in July 1987. Six pairs of peregrine falcons were discovered, and a seventh sighting of a pair may also have been peregrine falcons. An average of 3.0 young/nest was seen in 4 nests. Prey remains collected at nest sites suggested that a variety of avian prey is eaten, including larids, shorebirds, passerines, alcids, and waterfowl. Results of this survey indicate that breeding peregrine falcons are more abundant along the coast of western Alaska than previously reported.

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## BACKGROUND

The peregrine falcon (Falco peregrinus) is a cosmopolitan species that attracted international concern in the 1960's when drastic declines were reported in breeding populations in Europe and North America (Hickey 1969). Three subspecies of peregrine falcon occur in Alaska. The American peregrine falcon (F. p. anatum) inhabits the boreal-forest region of the State and is classified as an endangered species by both the Federal and State governments. The Arctic peregrine falcon (F. p. tundrius) occurs in tundra regions of northern Alaska. This subspecies is also on the state of Alaska's endangered species list; however, in 1984 it was reclassified from endangered to threatened by the Federal government. These two subspecies are migratory, arriving at their Alaskan breeding grounds as early as mid-April and usually departing by late September. The third subspecies, commonly referred to as Peale's falcon (F. p. pealei), nests in coastal regions of the State, including the Aleutian Islands, Gulf of Alaska, and southeastern Alaska, but it does not have the strong migrational tendencies of the other two subspecies. It is not classified as endangered or threatened.

As part of a national program to restore peregrine falcon populations to nonendangered levels, the U.S. Fish and Wildlife Service (USFWS) established the Alaska Peregrine Falcon Recovery Team to develop a recovery plan for the F. p. anatum and F. p. tundrius subspecies (USFWS 1982). A basic step in the recovery program is identification of nesting habitat so that these areas can be protected from development and disturbance.

A review of literature from past peregrine falcon surveys, in conjunction with information on upcoming state land-use activities that could adversely affect these raptors, was used by Alaska Department of Fish and Game (ADF&G), Habitat Division and the USFWS to rank areas needing field surveys (Hughes 1986). The western coast of Alaska from Cape Lisburne south to Norton Sound was identified as a top-priority area. Previous information on peregrine falcons in this area has been primarily based on opportunistic observations by field workers that had been studying subjects other than raptors. The only extensive survey for raptors along the western coast was conducted in 1968-1972 (Roseneau et al. 1976); current information on peregrine falcon nesting habitat is needed for the Northwest Alaska Area Plan being developed by the state of Alaska. Major activities that might potentially affect peregrine falcons include State and Federal offshore oil and gas leases, onshore and offshore mining, and airport and road construction.

#### OBJECTIVES

1. Locate nesting territories occupied by peregrine falcons along the coast in western Alaska;
2. Determine productivity;
3. Band nestlings; and
4. Collect prey remains.

#### STUDY AREA AND METHODS

In July 1987 we surveyed potential peregrine falcon nesting habitat along the Alaskan coast from Cape Krusenstern south to Shaktoolik (Figure 1), concentrating on locations where they had been reported in the past 20 years (Steele and Drury 1977; Biderman and Drury 1978; Biderman et al. 1978; Roseneau et al. 1978; Sowls et al. 1978; Conners 1979; Ramsdell and Drury 1979; R.E. Ambrose and D.G. Roseneau, pers. commun.).

Using an outboard-powered inflatable raft, we surveyed sections of the coast south of Nome. During 8-10 July potential nesting sites between Solomon and Priest Rock at the southwestern tip of Cape Darby were investigated. The sea cliffs between Shaktoolik and Koyuk were visited on 13 and 14 July. Potential nesting habitat was surveyed from the raft,

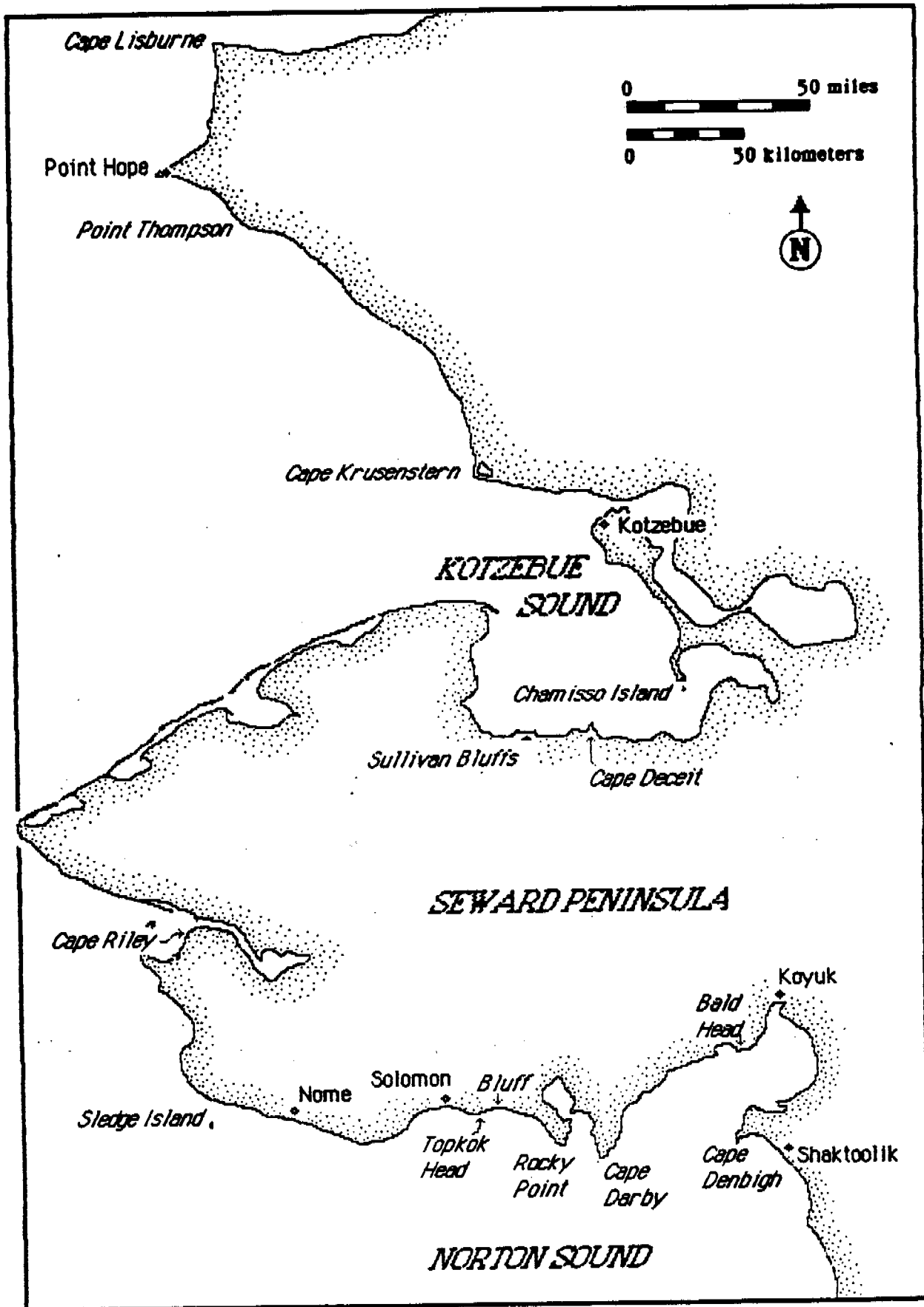


Figure 1. Areas surveyed for peregrine falcons along coastal western Alaska, 1987.

while maintaining a speed of 3-5 kph and an offshore distance of 50 to 500 m. To minimize the disturbance to cliff-dwelling seabirds, we maintained a minimal offshore distance of 150 m; and we extended that offshore distance to 500 m when rough seas and weather threatened to drive us onto shore. When sea conditions permitted, we landed our raft and walked along the tops of cliffs for closer inspection.

Other potential nesting areas were surveyed on foot. Sledge Island was reached by helicopter from Nome on 12 July. Two observers walked the periphery of the top of the island, investigating cliffs and outcrops. Cape Riley and adjacent cliffs were surveyed on 15 July by a single observer on foot. On 17 July two observers walked above and below potential nest sites at Cape Krusenstern, and on 18 July a single observer investigated Cape Deceit.

The presence of young or eggs was determined by climbing to nests or by viewing nests from above. During nest visits, young were banded with USFWS lock-on leg bands. Prey remains were collected from nests and adjacent perches.

The locations where peregrine falcons and other raptors were observed were mapped on 1:250,000-scale U.S. Geological Survey maps. These maps, banding data, and compiled information on peregrine falcons at potential nesting habitats in the western coastal region were deposited with the USFWS Raptor Management office in Fairbanks.

## RESULTS AND DISCUSSION

### Nesting Territories

We found 6 pairs of peregrine falcons in the areas we surveyed, and 2 other falcons observed soaring at a seventh site were believed to be peregrines. Nests were located at sites occupied by four of the positively identified pairs. The remaining 2 pairs were probably nesting because each pair strongly defended their respective cliff sites; however, we could not see into the nests.

Additional information was provided by ornithologists working at seabird colonies in Norton Sound, Kotzebue Sound, and northwestern Alaska. In Norton Sound, nesting was confirmed at one of the sites where we observed a pair of defensive adult peregrine falcons; also, a defensive adult at an additional site was reported (J. Schauer, pers. commun.). A single adult peregrine falcon was observed flying south over Chamisso Island on 7 August 1987, although no evidence of nesting was found during the survey of the island's perimeter

on 6-11 August (D.G. Roseneau, pers. commun.). No peregrine falcons nor evidence of nesting ground were found at Cape Lisburne from 10 July to 5 August 1987 (D.G. Roseneau, pers. commun.) or at Sullivan Bluffs during mid-July 1987 (R. Harris, pers. comm.).

The discovery of at least 6 pairs of peregrine falcons at coastal sites in Norton Sound is encouraging. In their view, Roseneau et al. (1976) found valid records for only 10 pairs of nesting peregrine falcons along the western coast of Alaska between Point Barrow and the Walrus Islands in Bristol Bay. Only one pair of peregrine falcons was found during extensive surveys conducted along the coast of the Seward Peninsula and Norton Sound between 1968 and 1972 (Roseneau et al. 1976); however, these surveys occurred at the time when F. p. anatum and F. p. tundrius populations in Alaska had declined considerably (Ambrose et al., in press). Peregrine falcon populations in northern and Interior Alaska began to recover during the late 1970's and continued to increase into the 1980's (Ambrose et al., in press); apparently, a similar increase has occurred along the coast of western Alaska.

Our survey should not be considered a complete accounting of nesting peregrine falcons along the western coast of Alaska or even that for the selected areas covered. To conduct a thorough census, at least 2 surveys during the nesting period are necessary; we visited the potential nesting habitat only once. Surveys conducted late in the season, such as ours, do not necessarily reflect the number of attempted nestings or the number of birds occupying the sites earlier in the nesting season. Also, before an area can be definitely classified as vacant, it must be thoroughly searched, and in several cases we were unable to do that; therefore, our counts are minimal estimates of peregrine falcons in the areas we surveyed.

#### Productivity and Nesting Phenology

At least 12 nestlings were produced at the 4 nest sites. Broods of 1, 3 (at least, nest not visited but viewed from above), 4, and 4 nestlings were observed, representing an average of 3.0 young per pair. Eight young were banded. No addled eggs were seen. At a fifth site, a pair of adults with 4 fledged young were seen in early August (J. Schauer, pers. commun.).

When observed between 12 and 15 July, all nestlings were covered with down, had emerging primaries of 2-5 cm, and were



estimated to be 20-25 days old. Egg laying probably occurred on 10-14 May, hatching on 20-24 June, and fledging on 29 July-2 August.<sup>1</sup>

#### Prey Remains

Prey remains were gathered at 5 sites; 14 types of prey were identified, including 1 waterfowl, 4 shorebirds, 2 larids, 1 alcid, and 6 passerine species (Table 1). Remains of black-legged kittiwakes (Rissa tridactyla) were found at 3 sites; and the remains of whimbrel, long-tailed jaeger, fox sparrow and redpoll were found at 2 sites. The number of individuals of each species was not determined.

#### Other Raptors

Other raptors and common ravens (Corvus corax) were also seen during our survey. Two pairs of rough-legged hawks (Buteo lagopus) defended nests at sites we visited, and a single rough-legged hawk was seen soaring over a third cliff where nesting was confirmed (J. Schauer, pers. comm.).

One pair of gyrfalcons (Falco rusticolus) occupied a ledge on a sea cliff within 1 km of an active peregrine falcon nest, but it was not possible to observe whether any young were present. Common ravens were observed at six cliffs; adults with fledged young were seen at three of these sites, and one nest held 4 young.

### RECOMMENDATIONS

Results from this survey suggest that breeding peregrine falcons are more abundant along the coast of western Alaska than previously reported. A more thorough survey of all potential nesting habitat, with at least two visits during the nesting period, would provide a more accurate estimate of the status of peregrine falcons in the region.

Current information on nesting peregrine falcons is still lacking for a few areas recommended for study by ADF&G Habitat Division and the USFWS, including rivers draining the northwestern Brooks Range. Cade (1960) identified four promising river drainages for which there was virtually no information on peregrine falcons. The Susitna (White 1974;

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<sup>1</sup>Calculations are based on the following constants: (1) 7 days for laying a complete clutch of four eggs; (2) 34 days for incubation beginning 4 days after laying; and (3) 40 days from hatching to fledging.

Table 1. Prey identified from remains at peregrine falcon nests on the western coast of Alaska, 1987.

Common Name (scientific name)	Nest Site					Total #Sites
	#1	#2	#3	#4	#5	
Oldsquaw ( <u>Clangula hyemalis</u> )					X	1
Whimbrel ( <u>Numenius phaeopus</u> )			X	X		2
unidentified small sandpiper ( <u>Calidris spp.</u> )					X	1
Red-necked Phalarope ( <u>Phalaropus lobatus</u> )			X			1
Common Snipe ( <u>Gallinago gallinago</u> )					X	1
Long-tailed Jaeger ( <u>Stercorarius longicaudus</u> )			X		X	2
Black-legged Kittiwake ( <u>Rissa tridactyla</u> )		X	X		X	3
unidentified seabird ( <u>family Alcidae</u> )						1
Varied Thrush ( <u>Ixoreus naevius</u> )					X	1
Savannah Sparrow ( <u>Passerculus sandwichensis</u> )	X					1
Fox Sparrow ( <u>Passerella iliaca</u> )				X	X	2
Golden- or White-crowned Sparrow ( <u>Zonotrichia spp.</u> )			X			1
Red-winged Blackbird ( <u>Agelaius phoeniceus</u> )					X	1
Redpoll ( <u>Carduelis spp.</u> )			X		X	2
Total #types of prey at site	1	1	7	2	9	

Kessel 1982), Kuskokwim (Ritchie and Ambrose 1978; Mindell 1983), and Copper (M. Amaral, USFWS, 1987 survey, report in preparation) Rivers have been surveyed recently. A portion of the Nushagak River was surveyed by helicopter (Mindell 1983).

Surveys of potential nesting habitat should be conducted periodically in all portions of the ranges of F. p. anatum and F. p. tundrius as a compliment to the intensive studies that are conducted annually on certain Alaskan rivers. In addition to providing valuable information on the status of recovering populations, such periodic regional surveys would also provide site-specific information for the planning and management that are necessary to minimize impacts on these threatened and endangered raptors.

#### ACKNOWLEDGEMENTS

This project was funded by the U.S. Fish and Wildlife Service. Skip Ambrose, USFWS, and Dave Roseneau, FALCO, generously provided advice and assistance throughout the project. Alaska Department of Fish and Game staff in Nome (Steve Machida, Charles Lean, and Robert Nelson) and Kotzebue (David James and Victor Karmun) supplied logistical support and advice on local conditions. Victor Karmun also participated in the survey of Cape Krusenstern. Dan Gibson, University of Alaska Museum, helped in the identification of prey remains.

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