

JOB PROGRESS REPORT

State: CaliforniaProject Number: W-54-R-12 Project Title: Nongame Wildlife InvestigationsJob Number: II-6.0 Job Title: Prairie Falcon Harvest ProgramPeriod Covered: July 1, 1979-June 30, 1980 Job Type: Survey & Inventory

SUMMARY:

During May and June, 1980, a survey was conducted to obtain information on nest site activity and reproductivity of Prairie Falcons (Falco mexicanus) in California. Surveys were conducted at nine locations representing 4 major geographical areas of the state; they were: 1) Desert, 2) Central Coast, 3) Great Basin, and 4) Sierra Nevada.

A total of 189 Prairie Falcon territories were visited. Of these, 101 (60.5%) were active and 70 of the active sites (69.0%) apparently were productive. Number of young produced per successful pair of Prairie Falcons averaged as follows: Desert (2.8), Central Coast (3.8), Great Basin (2.3), and total statewide population (3.1). No data were available on productivity in the Sierra Nevada due to the relatively small sample size of eyries involved.

The survey was accomplished with the aid of the U.S. Forest Service, Bureau of Land Management, Santa Cruz Predatory Bird Research Group (SCPBRG), and other cooperators. Based on the results of the survey, a decision was made allowing a limited harvest of Prairie Falcons for use in the sport of falconry.

BACKGROUND:

Title 14, Section 670, of the California Administrative Code states that the take of Prairie Falcon for use in falconry is prohibited. In April 1978, demands by falconers to allow use of Prairie Falcons for falconry resulted in changes in falconry regulations to permit an annual harvest of ten nestlings. The harvest would be conducted by Department representatives and would proceed only in years when Prairie Falcon population surveys indicated at least normal productivity in the wild. Eyrie locations and information contained in Departmental files indicate that a limited harvest of Prairie Falcons can proceed without threat to breeding populations of the species in California.

Data were available from studies conducted by Brian Walton of SCPBRG during the 1970's including a large survey of the Central Coast area involving 69 nest territories during 1977. Subsequently, Department surveys were conducted in the Central Coast during 1978, involving 36 territories, and 1979, involving 23 territories. Results of the 1977 and 1979 surveys indicated at least normal activity and productivity but heavy rains fell on the Central Coast area during courtship and nest selection times and apparently suppressed normal breeding behavior during 1978.

OBJECTIVES:

The objectives of this annual survey are to determine the nest site activity and reproductivity of Prairie Falcon populations in California. Sample size of monitored eyries must be large enough to ensure that results of the survey present an accurate picture of the species' reproductive status in the state. When results indicate there is at least normal Prairie Falcon nesting success, a limited harvest of 10 falcons may be authorized.

PROCEDURES:

During May and June, 1980, the Department and cooperating Federal agencies (U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service), groups (Santa Cruz Predatory Bird Research Group) and individuals conducted a multi-regional survey to determine nest site activity and reproductivity status of Prairie Falcon populations statewide. Arrangements were made with the various cooperators to ensure adequate coverage of major geographic areas of the state. The U.S. Forest Service conducted aerial surveys in portions of the Sierra Nevada, primarily to search for Peregrine Falcon (*F. peregrinus*) eyries. They were able to supply information on other cliff nesting raptors such as Prairie Falcons. Intensive ground surveys also were conducted by Forest Service personnel in various regions of the state. Department personnel accompanied BLM and USFS biologists on surveys of Desert and Great Basin populations of Prairie Falcons. Department personnel conducted some surveys in the Central Coast region and the eastern Sierra Nevada region of the state. The Santa Cruz Predatory Bird Research Group conducted surveys in the Central Coast region and Great Basin region of California. Private individuals supplied information on Prairie Falcon nesting in San Diego County and the Mt. Hamilton area of Santa Clara County. Additional information from scattered areas was received from various agencies, groups, and individuals throughout the state. Most of these surveys were based on visits to historic or traditional nest sites of known recent activity and productivity. Some "new" territories also were located during the 1980 survey.

The data obtained were records of nest site activity and productivity. A nesting territory was assumed active if the nest was located with a pair of birds in attendance. A territory was considered inactive if no birds were sighted in the area or only bachelor birds (single males) were seen nearby. Some territories were recorded as "undetermined activity" because nests could not be located or other factors made determination of activity difficult or impossible. Territories were considered productive if eggs, young, or indications of either were evident. Successful eyries were those in which all young known to exist were countable. The number of young per successful eyrie gave an index which could be compared between areas and from year to year. Number of young per active or occupied eyries provides a better population index but is not obtainable within the present scope of surveys.

FINDINGS:

Results of the 1980 survey were based on visits to 189 eyries statewide (Table 1). The results were stratified by study area and when combined, represent

nesting in four major geographic areas occupied by Prairie Falcon in the state. These areas include the Desert, Central Coast, Great Basin, and the Sierra Nevada range (Fig. 1). Results for the total survey indicate a 60.5% rate of activity (Table 1). Sixty-nine percent of the active sites apparently were productive. The average brood size of 3.1 per successful nest apparently indicates a normal rate of productivity. However, number of young produced per active eyrie was low (0.83). This is well below the 2.56 young per all pairs observed required to maintain population stability based on calculation's made by Garrett and Mitchell (1973) using equations developed by Henny et al. (1970). However, since it was not possible, because of the limited scope of the survey, to confirm the productivity of 31 active sites, the actual productivity (number fledged per active pair) is assumed to be some rate between 0.83 and 3.1 young fledged per eyrie.

ANALYSIS:

Despite difficulties inherent in obtaining large samples of data in a relatively short period of time, the 1980 Prairie Falcon survey resulted in a sufficiently large sample size of eyries checked to meet conditions of the Prairie Falcon Management Plan. However, survey difficulties still have prevented acquisition of a large enough sample of data on productivity in time to harvest young for falconry. The problem is compounded by several factors including 1) need to obtain the data in a relatively short time period, 2) inability to check most sites more than once to confirm productivity, 3) inefficient survey methods and equipment in rugged terrain, 4) lack of sufficient funds to conduct helicopter surveys, and 5) insufficient planning, manpower, and funding to conduct harvest operations once the survey is completed.

The survey data seem to indicate that the Prairie Falcon population is re-producing well and in some regions of the state, productivity may be optimal. The decision to harvest young has been based primarily on apparent trends indicated by the activity data and suggested by the limited productivity data. This, compiled with data from the 1979 survey, which indicated good productivity, allowed population assessment based on statistically insufficient productivity data.

While it may be possible to make the apparently correct biological decision based on these parameters in 1980, that may not always be the case in future surveys if productivity data is sparse and no clear trends of population stability are evident.

LITERATURE CITED:

- Garrett, R. L., and D. J. Mitchell. 1973. A study of Prairie Falcon populations in California. Calif. Dept. Fish & Game, Wildl. Manage. Branch Admin, Rep. 73-2. 15 pp.
- Henny, C. J., W. S. Overton and H. M. Wight. 1970. Determining parameters for populations by using structural models. Journal of Wildlife Management, 34(4)690-703.

STUDY AREAS

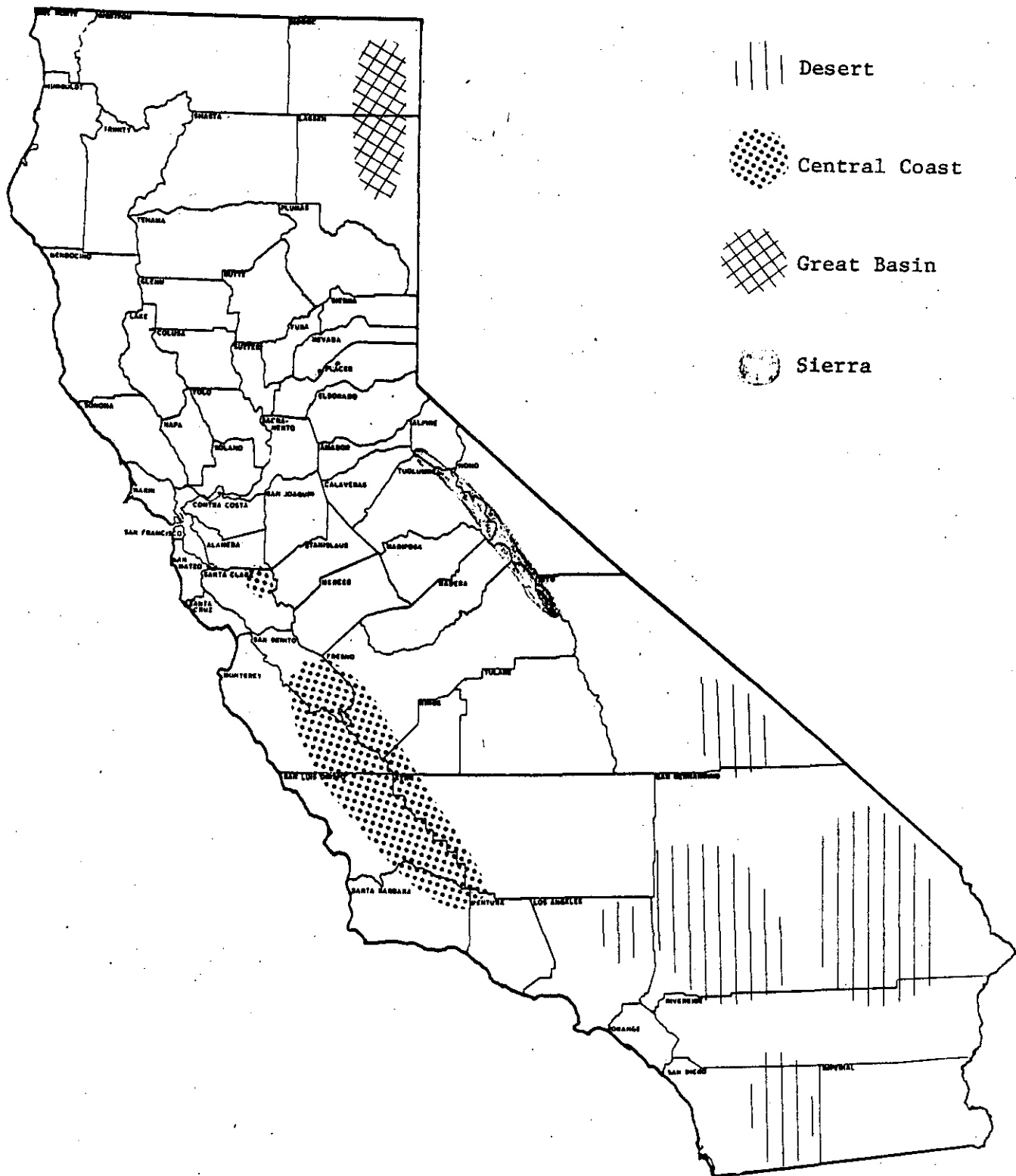


Figure 1., Major study areas surveyed for nesting Prairie Falcons during 1980.

Table 1. Results of Prairie Falcon Survey, by geographic region in California, 1980.

GEOGRAPHIC REGION

	Desert	Central Coast	Great Basin	Sierra	Total
No. eyries checked	61	79	32	17	189
No. eyries active ^{1/}	29 (51.8) ^{6/}	52 (68.4)	17 (63.0)	3 (33.3)	101 (60.5)
No. eyries inactive ^{2/}	27	22	10	5	64
No. eyries activity undetermined ^{3/}	5	3	5	9	22
No. eyries apparently productive ^{4/}	15 (51.7) ^{7/}	42 (80.8)	13 (76.5)	-	70 (69.0)
No. eyries successful ^{5/}	9	12	6	-	27
No. young present	25	45	14	-	84
No. young per successful eyrie	2.8	3.8	2.3	-	3.1
No. young per active eyrie	0.93	0.87	0.82	-	0.83

- ^{1/} nest located with pair
^{2/} no birds, or only bachelors present
^{3/} nest not located
^{4/} young or eggs
^{5/} young counted in nest
^{6/} percent of eyries checked
^{7/} percent of active eyries

RECOMMENDATIONS:

1. Continue Prairie Falcon surveys to determine activity and productivity.
2. Continue to coordinate surveys with other agencies and groups to maximize sample size and efficiency.
3. Conduct aerial surveys to reduce field time and maximize efficiency of data gathering and validity of survey results, particularly production data.
4. Consider alternative which allows double-clutching certain Prairie Falcon eyries with concurrent monitoring of those eyries to determine if there are any ill-effects. Use previous years survey results to justify a given year's harvest attempt (i.e., double clutching) in order to obtain young birds at proper time of the year for transfer to qualified falconers.

Prepared by

Ronald W. Schlöff
Ronald W. Schlöff
Wildlife Biologist

Approved by

Robert D. Mallette
Robert D. Mallette
Nongame Wildlife Coordinator

Approved by

Elbridge G. Hunt
for Elbridge G. Hunt, Chief
Wildlife Management Branch

Date

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