

California Department of Fish and Game
Job Progress Report

Project Number: W-65-R-3 Project Title: Nongame Wildlife Investigations

Job Number: II-18 Job Title: Marsh Hawk Status Survey

Period Covered: July 1, 1985 - June 30, 1986

Summary:

The Swainson's Hawk (Buteo swainsoni) intensive survey areas (see W-65-R-3; II-2.0) in the Central Valley served as the source for data collected on Northern Harriers (Circus cyaneus) (formerly Marsh Hawk) in the spring and summer of 1986. Each 36 sq. mi. block is intensively surveyed for nesting Swainson's Hawks; however, sightings of all other raptors are recorded. This is the third year the survey has been performed in this manner. Reported sightings of Northern Harriers began in 1985.

No other work was accomplished on this job during the report period.

Background:

Northern Harrier breeding range is scattered throughout most of California, concentrating primarily in the Central Valley, coastal wetlands, and the Great Basin regions of the state. Habitat loss has resulted in apparent population reductions statewide. In 1978, J. V. Remsen, Jr. contracted with the Department of Fish and Game to compile "Bird Species of Special Concern in California". The Northern Harrier was placed on the second priority list. Remsen concluded that the bulk of the breeding population is concentrated on ungrazed portions of state and federal wildlife refuges. The status of the Northern Harrier on private lands is undocumented, but presumed poor. Reasons for the decline in breeding and wintering populations include the conversion of marsh habitat to agricultural crops, livestock grazing, and certain agricultural and maintenance practices such as summer burning.

Objectives:

1. To determine Northern Harrier distribution and status in California.
2. To determine the extent of suitable Northern Harrier breeding habitat on public and private lands.
3. To evaluate the effect of certain agricultural practices on Northern Harrier breeding phenology.

Findings

The number of Northern Harriers observed was higher in all survey areas in 1986 (Table 1). Sightings were reported incidentally during the Swainson's

Table 1. Number of Northern Harrier Sightings (Density) Within the Swainson's Hawk 36 sq. mi. Intensive Survey Areas

<u>Survey Area</u>	<u>1985</u>	<u>1986</u>
Woodland	5 (0.14/sq. mi.)	6 (0.17/sq. mi.)
Wilton	1 (0.03)	2 (0.06)
Galt-Thornton	1 (0.03)	3 (0.08)
Vernalis	1 (0.03)	2 (0.06)

Hawk intensive survey. No effort was made to locate nests or determine if observed birds were breeding. However, in July 1985 one nest was located in the Vernalis survey area containing two hatchlings and one egg. The nest was in ungrazed grassland approximately one meter tall. This year, in the Woodland survey area, two pairs were found nesting in uncut wheat adjacent to an irrigation channel. The success of these nests is questionable due to wheat harvesting operations.

The Hawk and Owl Reserve, located in the Woodland block, has had up to six nesting Northern Harrier pairs. These data were not included to insure non-biased trend data collection.

Table 2 depicts total percent of raptors reported for four selected species of raptors. These data were collected during statewide raptor surveys, 1971 to 1986. Northern Harriers appear to have increased slightly in terms of the relative number of raptors reported.

Analysis:

Little population data exist for the Northern Harrier in California. The specialized nature of its habitat requirements creates cause for concern over its present and future status. Marsh reclamation has resulted in drastic reduction in wetland nesting habitat. The majority of what remains is found on state and federal wildlife refuges. Northern Harriers attempt nesting in certain agricultural crops and in narrow bands of ungrazed wetland such as bypass channels and river-overflow basins. Data on breeding densities and reproductive success is lacking, obtained primarily from studies on public land and small private reserves. It is clear that studies concerning the status and distribution of the Northern Harrier are needed, followed by further work concerning habitat requirements and breeding biology.

Recommendations:

1. Continue to collect data on Northern Harriers during the Swainson's Hawk intensive survey to determine population trends in portions of the Central Valley.
2. Conduct a survey to determine the status and distribution of the Northern Harrier in California.
3. Determine the effect of various agricultural practices on nesting Northern Harriers and cooperate with public land management agencies and private landowners to reduce the risk of nest failure and destruction.

Table 2. Percent of Total Raptor Survey Sightings of Four Species of Raptors, 1971-1986

Species	1971	1972	1973	1975	1979	1980	1981	1982	1983	1984	1986
Northern Harrier	6.1	5.3	5.0	5.2	5.1	5.2	8.5	7.6	5.5	8.4	8.6
Black-shouldered Kite	3.8	2.5	2.6	4.1	2.3	1.4	3.2	3.1	3.0	3.6	2.9
Swainson's Hawk	*	0.1	*	*	0.2	*	*	0.1	0.1	*	0.2
American Kestrel	24.8	21.8	20.3	22.7	20.7	24.0	21.1	19.0	19.6	20.5	14.7

*Less than 0.1% of total

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