

**ABSTRACTS****SPACE AND HABITAT UTILIZATION BY RED-SHOULDERED HAWKS (*BUTEO LINEATUS ELEGANS*) IN SOUTHERN CALIFORNIA**

I studied the movements of 5 adult Red-shouldered Hawks, 4 of which I radio-tagged, on Camp Pendleton Marine Corps Base, San Diego Co., California for a total of 941 hours between February 1979 and May 1980. Maximum breeding home ranges of males (mean = 61.8 ha) were larger than, and encompassed, the ranges of their mates (mean = 36.8 ha). Percent overlap between adjacent pairs ranged from 6–11% (mean = 8.4%). Changes in space use corresponded with different phases of the reproductive cycle. The least amount of space was utilized during the non-breeding period, while during reproduction, changes in space use were related to the sex of the individual, energy requirements, and territorial activity. Habitat utilization was greatly influenced by the “sit and wait” hunting technique of the individuals studied. Wooded habitats were used most heavily, while the use of open areas was often entirely a result of the presence of man-made perch structures. Differential use of wooded habitats seemed to be influenced by hunting perch structure. Territorial activity was observed throughout the study but increased to a peak during the pre-hatching phase of reproduction and declined to a low level after hatching. Territories encompassed a large portion of maximum breeding home ranges (66.6–94.1%). I also discuss territorial behavior, interspecific interactions, and population status in California.

McCrary, Michael D. 1981. Space and habitat utilization by Red-shouldered Hawks (*Buteo lineatus elegans*) in southern California. M.S. Thesis, California State University, Long Beach, California.

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**MULTIVARIATE ANALYSES OF WEATHER AND FALL MIGRATION OF SAW-WHET OWLS AT DULUTH, MINNESOTA**

The relationship of saw-whet owl (*Aegolius acadicus*) migration to local weather conditions was investigated using synoptic, bivariate, and multivariate techniques. A total of 1401 saw-whet owls were netted at the Hawk Ridge Nature Reserve, Duluth, Minnesota from 1974 through 1978. Weather data were obtained from the Duluth National Weather Service station, 12 km west of the study area. Factor analysis, based on the original weather variables, was used to derive a group of uncorrelated weather factors, each representing a basic characteristic of weather. A multiple regression model, based on weather factors and temporal and moon related variables, accounted for 43% of the variability in migration volume. Peak migration was associated with conditions following cold front passage, i.e. increasing barometric pressure and cooler temperatures, but was suppressed when winds were gusty or exceeded 10 knots. Migration tended to diminish during a several day period prior to full moon. Northwesterly winds were significantly correlated with migration volume, as reported in previous studies, but were much

less important in accounting for changes in migration volume than windiness, barometric pressure, and temperature.

Evans, D. L. 1980. Multivariate analyses of weather and fall migration of saw-whet owls at Duluth, Minnesota, M.S. Thesis, North Dakota State University, Fargo. 49 pp. (Current address: 2928 Greysolon Rd., Duluth, MN 55812).

## ANNOUNCEMENT

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## BURROWING OWL COLORMARKING: REQUEST FOR INFORMATION

In 1982 burrowing owls were colormarked in south-central Saskatchewan during a research program investigating movements of these owls during the breeding season. Information is requested from anyone seeing a colormarked owl to aid in determining migration routes and wintering areas which are presently unknown. Each owl carries a Fish and Wildlife band and from one to three colored plastic leg jesses. Jess colors are yellow, fluorescent red, light blue, and dark green and are one centimeter wide and extend approximately 1.5 cm beyond the leg. Persons observing colormarked owls please record the following: location, date, color and position of leg jess or jesses, leg of attachment of metal leg band and jess or jesses, and any details of the owl's situation. Please send this information to, Bird Banding Office, Canadian Wildlife Service, Ottawa, Ontario, Canada, K1A 0E7 plus an additional copy to the bander, Elizabeth A. Haug, Dept. of Veterinary Anatomy, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Thank you for your assistance.

## REQUEST FOR INFORMATION

As part of a project to re-establish Swallow-tailed Kites in southern Kansas and to study the population biologies of this species and the Mississippi Kite, individuals of both species are being color banded. Some Mississippi Kites have also been given a colored patagial streamer on each wing. It would be appreciated if observations of these marked individuals, including color and condition of the markers and activity of the birds, were reported to the Office of Migratory Bird Management, Laurel, Maryland 20708 with a copy to Dr. Jim Parker, Department of Sciences and Mathematics, University of Maine at Farmington, Farmington, Maine 04938.