

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.

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Present address: 5927 Lakewood Blvd
Lakewood, California 90712

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