

BREEDING ECOLOGY OF THE FERRUGINOUS HAWK IN NORTHERN UTAH AND SOUTHERN IDAHO

Forty-three and 54 Ferruginous Hawk (*Buteo regalis*) pairs were found occupying territories in northern Utah and southeastern Idaho during 1972 and 1973, respectively. Of these, 38 and 27 nesting pairs laid eggs. Nesting success was 77.1 percent in 1972 and 74.6 percent in 1973. For successful nests, an average of 2.9 and 2.6 young hatched and 2.7 and 2.3 young fledged during the respective years. This population is reproductively comparable to others in Utah and Colorado. Analysis of prey items collected from the nests indicated that black-tailed jackrabbits (*Lepus californicus*) constitute 86 percent of the biomass (by weight) of three major prey species consumed by Ferruginous Hawks in this area. Jackrabbit density may be a major determinant of the number of young produced in a given year. Weight gained by nestlings showed a marked sexual dimorphism. Female fledglings weighed up to 1.43 times as much as males. Criteria were developed for sexing Ferruginous Hawks by measuring the diameter of the hallux. Mortality of 17 birds from the study area was recorded, of which 47 percent were immature birds. A total of 108 fledglings were banded and marked with color-coded patagial wing markers. Band reports of five (10 percent) of these birds were received. Utah juniper (*Juniperus osteosperma*) provided nest sites for 96.0 percent of the nests, and 3 percent were built on the ground. Plant community types were determined at 63 nesting sites from aerial photographs. Dominant vegetation around nest sites were desert shrub types and crested wheatgrass (*Agropyron cristatum*) seedlings. The possible impact of land management practices on Ferruginous Hawks is discussed.

Howard, Richard P. 1975. Breeding ecology of the Ferruginous Hawk in northern Utah and southern Idaho. M.S. thesis, Utah State University, Logan, 70 pp.

THE BIOENERGETICS OF THE BARN OWL (*TYTO ALBA*)

The bioenergetics of the Barn Owl (*Tyto alba*) was investigated to gain information on a larger raptor and a representative of family Tytonidae. Measurements of oxygen consumption from 0°C to 37°C, body temperature, insulation, and existence energy are presented.

The relationship between standard metabolic rate and body weight in owls was re-evaluated. Results show that the SMR for the Barn Owl is slightly lower than for other strigiform species and much lower than predicted values based on weight for other non-passerines. Insulation values were lower than those for other owls. It is suggested that *T. alba* has apparently made up for this inability to conserve energy over a broad temperature spectrum by the use of man-made and natural shelters.

Metabolized energy of wild Barn Owls was estimated to be 7.3 times greater than existence energy of captives, and 11.2 times greater than SMR.

Johnson, Wayne Douglas. 1974. The bioenergetics of the Barn Owl (*Tyto alba*). M.A. thesis. California State University, Long Beach. 55 pp.