Productivity over eight years averaged 1.76 fledglings per territorial pair, and 2.32 per successful pair. Average breeding spans were: males, 6.0 years; females, 3.5 years (survival rates: 0.85, 0.75). A first-year survival rate of ca. 0.45-0.55 and a floating population at least 50 percent of the size of the breeding population were estimated.

The Langara falcons declined from ca. 21-23 pairs in the early 1950s to 5-6 pairs in 1968-75. This decline paralleled a seabird decline, apparently throughout the Queen Charlotte Islands. Falcons amalgamate territories by means of pseudopolyandry; an orderly population decline results, toward a new "equilibrium" with the prey base.

Peregrines occupy type A, B-A, and B territories, from 0.3-0.5 km to ca. 15 km in diameter. Individuals establish and adjust territory size in relation to available food. They harvest on a conservative sustained-yield basis. The result is the "natural conservation" of V. C. Wynne-Edwards, but the cause is individual selection.

Peregrines demonstrate Bergmann's Rule. Larger birds live in cooler climates and have higher mortality rates and larger clutch sizes. Clutch size offsets natural mortality and provides a floating population of optimum size.

Peregrines evolve a strategy which does not produce the most fledglings at independence (e.g., D. Lack), but which balances the survival of parents and the number and quality of fledglings. Smaller broods will produce young with better survival rates and competitive abilities. When balanced with quantity and combined with philopatry, this strategy tends to increase genetic fitness.

Nelson, R. W. 1977. Behavioral Ecology of Coastal Peregrines (*Falco peregrinus pealei*). Ph.D. dissertation. University of Calgary, Calgary, Alberta. xxi + 490 pp. May.

UTILIZATION OF NEST BOXES BY BIRDS IN THREE VEGETATIONAL COMMUNITIES WITH SPECIAL REFERENCE TO THE AMERICAN KESTREL (*FALCO SPARVERIUS*)

This study was designed to determine if, by providing artificial nest sites, a raptorial predator could be attracted into an area where suitable sites are limited. The American Kestrel (*Falco sparverius*) was a common species in the area and nest boxes designed for their use were placed in three vegetational types in western Utah and eastern Nevada. Seventy boxes were available in 1975 and 110 in 1976. Kestrels nested both years in the salt-desert shrub community but were absent from the pinyon-juniper and riparian areas. Four other bird species nested in the latter two areas, however.

In 1975 the nesting success was affected by severe weather including unseasonable cold and snow. In 1976 interaction with and predation by rodents affected utilization and success. Other factors such as existing hole-nesting populations, size, construction, and placement of the box also affect the rate of occupancy and number of boxes used.

Laurence B. McArthur. 1977. Utilization of Nest Boxes by Birds in Three Vegetational Communities with Special Reference to the American Kestrel (*Falco Sparverius*). M.S. thesis. Brigham Young University, Provo, Utah. 42 pp. April.