

## THE BIOGEOCHEMISTRY OF NEARCTIC PEREGRINE FALCONS

Secondary remex feathers collected from nestling Peregrine Falcons (*Falco peregrinus*) representing 3 Nearctic subspecies were analyzed for trace element content using Instrumental Neutron Activation Analysis (INAA). Concentrations of Na, Mg, Al, S, Cl, Ca, Ti, V, Mn, Cu, I, K, Br, Fe, Zn and Hg were useful in constructing isotopic diagrams for comparison of known breeding localities of *F. p. tundrius* (N = 298), *F. p. anatum* (N = 214), and *F. p. pealei* (N = 27). Trace element quantities were subjected to a series of multivariate discriminant functions analyses in order to formulate predictive equations for group membership of feather samples tested. Variation in predictability ranged from 77.9–100% and resulted when selected trace element quantities were utilized to formulate predictive equations. Concentrations of Mg, Al, Cl, Mn, Hg, and to a lesser extent Ca and Br, were the most discriminating variables for predicting group membership. Concentrations of Hg and Cl in feathers were sufficiently high for some populations to indicate possible negative impacts on reproductive efforts. **Parrish, Jimmie R. 1989. Ph.D. Dissertation, Department of Zoology, Brigham Young University, Provo, UT 84602, USA.**

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## NEWS AND REVIEWS

**Color-Marking of Endangered Species in Manitoba.** Burrowing Owls, Ferruginous Hawks, Loggerhead Shrikes, and Baird's Sparrows nesting in southwestern Manitoba have been banded and color-marked from 1987–1989.

**Burrowing Owls were marked as follows:**

- a) FWS aluminum band during all 3 years;
- b) a black leg jess (1 cm wide × 1.5 cm long) during 1988;
- c) red and white or blue numbered plastic bands (0.7 cm wide) and fast drying fluorescent orange paint on primaries and/or tail feathers during 1989.

**Ferruginous Hawk juveniles were marked as follows:**

- a) FWS aluminum band during all years;
- b) black anodized aluminum band with a 2-digit alpha-numeric code on the opposite leg during 1988 and 1989;
- c) fluorescent orange paint on the underside of tail and selected flight feathers during 1989.

**Loggerhead Shrikes were marked as follows:**

- a) FWS aluminum band during all years;
- b) red plastic band (0.4 cm wide) on the opposite leg during 1988;
- c) red and white plastic band on the opposite leg during 1989;
- d) larger juveniles were marked with fluorescent orange on the tail and/or primaries during 1989.

**Baird's Sparrows were marked as follows:**

- a) FWS aluminum band and a colored plastic band during 1988.

We are particularly interested in reports of Burrowing Owls, Ferruginous Hawks and Loggerhead Shrikes that were color-marked with fluorescent orange during 1989; we expect some birds to retain marked feathers until summer 1990.

Anyone observing these birds should note the location, date, color marker and band combinations and other details of the sighting. **Send particulars to Ken De Smet, Manitoba Department of Natural Resources, Box 14, 1495 St. James Street, Winnipeg, Manitoba R3H 0W9, Canada; telephone (204) 945-6301.**

**The Journal of Student Research.** The Journal of Student Research, to begin publication in the fall of 1989, will publish research papers by high school students, as well as instructional articles by professional researchers and teachers to help students do better research and write better papers. An article might, for example, discuss why raptor research is important, what kinds of projects might be undertaken by students, and how to get started. **Manuscripts or inquiries may be sent to Gerry Roe, Editor, 20110 Canyon Road, Sheridan, OR 97378.**