

FEATURE ARTICLES

SEASONAL TRENDS IN POPULATION DENSITY, DISTRIBUTION, AND MOVEMENT OF AMERICAN DIPPERS WITHIN A WATERSHED OF SOUTHWESTERN BRITISH COLUMBIA, CANADA

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Manuscript received 2 September 2003; accepted 18 July 2004.

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Abstract. American Dippers concentrate on low-elevation streams during fall and winter in many parts of their range; however the breeding origin relative to the wintering location is poorly understood. Our objectives were to identify seasonal changes in the density and distribution of American Dippers, to classify the migratory behavior of the local population, and to determine the origin of winter migrants within a coastal watershed of British Columbia, Canada. During 1999–2002, we color banded 522 dippers and radio-tagged 14 in the Chilliwack River watershed. Using mark-resighting techniques, we identified peak densities on the main river during early November (9.8 ± 1.4 [SE] birds per stream km), which was nearly 5 times higher than in early July (2.1 ± 0.3 birds per stream km). The watershed's total population size, estimated from November surveys, was 429 ± 64 [SE] dippers in 1999, 682 ± 79 in 2000, 697 ± 123 in 2001, and 550 ± 72 in 2002. The majority (79–90%) of the dipper population seasonally migrated, primarily moving from the main river in fall and winter to the higher-elevation tributaries in spring. The remaining dippers (10–16%) remained resident on the main river year-round. Migrants showed a high degree of winter site fidelity with 67% returning to the same site on the Chilliwack River for 2 or more years. Given the population's defined structure and predictable seasonal movements, this study has implications for applying American Dipper populations as indicators of water and habitat quality in North American watersheds.

Key words: altitudinal migration, American Dipper, *Cinclus mexicanus*, indicator species, mark-recapture, radio-telemetry, watershed.