Large-Scale Genetic Structure of Black-Backed Woodpeckers

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The black-backed woodpecker is a naturally rare, wide-ranging woodpecker that inhabits recently burned forests. Due to their natural rarity, little is known regarding black-backed woodpecker movement patterns and population structure. Genetic techniques allow us to measure population structure without intensive fieldwork, such as mark-resight methods. In general, avian populations show little genetic differentiation due to high rates of dispersal, often over exceedingly large distances. This fact, combined with the ephemeral nature of black-backed woodpecker habitat, has led us to predict that black-backed woodpeckers would have little genetic differentiation, even at large geographic scales. In contrast, we have found substantial genetic differentiation along an east/west gradient for birds sampled in Oregon, Idaho, Montana, South Dakota, and Alberta for mitochondrial DNA. However, there was little evidence of genetic differentiation along a north/south gradient within the Rocky Mountains. We detected three main groups of populations: West (Oregon), Mid (Idaho, Montana, and

Alberta), and East (South Dakota). We are currently examining nuclear loci, which will be used in combination with our current mtDNA results, to determine if these groups should be managed as distinct population segments or separate management areas.