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Geographic Variation in Yellow-Headed Blackbirds from the Northern Great Plains

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We sought to identify phenotypically distinct, geographic subpopulations of yellow-headed blackbirds (*Xanthocephalus xanthocephalus*) to help ascertain if damage to the North Dakota sunflower crop is primarily the result of depredations by resident or migrant blackbirds. During the springs of 1987 and 1988, we collected male and female, adult, "territorial" yellow-headed blackbirds from hypothetically, discrete breeding populations in Minnesota, South Dakota, North Dakota, Manitoba, Saskatchewan, and Alberta. Up to 18 morphological measurements were obtained from each bird and entered into discriminant analyses. Discrimination on the first four principle components provided good separation between U.S. and Canadian populations, both for males and females. In subsequent discriminate models we used 5 and 2 temporally stable, morphometric variables for males and females, respectively. These reduced models yielded 67% and 80% probability of correctly classifying U.S. and Canadian subpopulations of males and females, respectively. Additional models classified males and females among the six state/provinces with probabilities 19% and 35% greater than chance alone, respectively. Thus despite a smaller sample size and fewer morphometric variables, the female discriminant model appeared to be better than the male model for assigning geographic origin. Using these discriminant models, we predicted the geographic origin of yellow-headed blackbirds collected in central North Dakota during the summer and fall. An increase in the proportion of migrants of predicted Canadian origin was detected from June through August for both males and females. Females, however, exhibited a more uniform temporal increase than did males. Concurrent with the migratory exodus of yellowheads from central North Dakota in early September, a precipitous drop in the proportion of predicted Canadian migrants was detected.