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Abstract: The Platte River Endangered Species Partnership monitored whooping crane (*Grus americana*) habitat use along the Platte River between Chapman and Lexington, Nebraska during 11 migration seasons from 2001 to 2006. Daily aerial surveys took place in the morning from 21 March to 29 April in the spring and from 9 October to 10 November in the fall. Decoy detection trials were conducted during each of the 11 survey seasons to calculate actual sample inclusion probabilities for crane groups detected during monitoring flights. The detectability model found significant differences in detectability among strata (upland or channel), contractor, and altitude of the plane. All crane groups observed in the study area were monitored for habitat use and geomorphic profiles were measured at channel use locations. The HECRAS model was used to estimate the water surface differential between the time river profiles were measured and the time of crane group use. The estimated differential was used to adjust flow-dependent characteristics. Resource selection habitat models documented significant selection for areas with large proportions of open water, wetted channel and agriculture, and wetted channels with large unobstructed widths.

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Key words: *Grus americana*, habitat use, migration, Platte River, stopover, whooping crane.
