

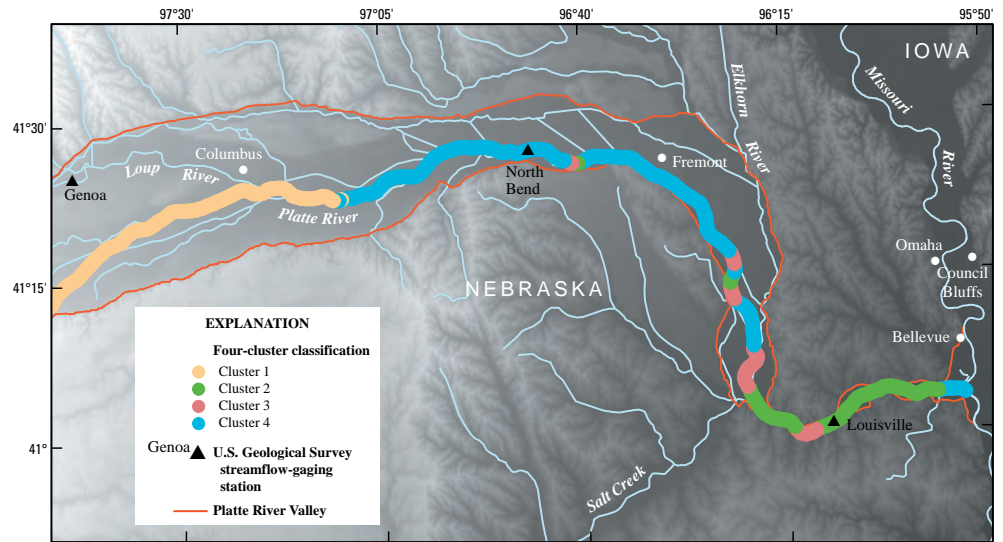


Columbia Environmental Research Center
Publication Brief

Classifying Bird Habitat on the Lower Platte River in Nebraska

A new U.S. Geological Survey (USGS) report provides a habitat classification system for the Lower Platte River in Nebraska. The multiscale classification system was developed in collaboration with the U.S. Fish and Wildlife Service to define river reaches with favorable nesting habitat requirements for the endangered interior least tern (*Sternula antillarum*) and threatened piping plover (*Charadrius melodus*). Scientists collected geomorphic attributes from natural color aerial orthophotography to classify the downstream 220 kilometers (km) of the Platte River. An address system with 500-meter spacing was developed for collection of geomorphic attributes. The classified river segments include the hydrologically distinct reaches of the Platte River 50-km upstream from the Loup River, between the Loup and Elkhorn Rivers, between the Elkhorn River and Salt Creek, and downstream from Salt Creek.

The results provide four-cluster (figure) and seven-cluster classifications for the Lower Platte River based on naturally occurring, statistically determined clusters of features. The classifications were validated using tern and plover nest data for 2006–08, and dependent geomorphic and vegetation variables derived from a supervised classification of 2006 NAIP orthophotography, including the percent area of deep water, dry sand, dark vegetation, and braiding index. Results indicate that variation in valley width is an important variable from upstream to downstream on the Lower Platte River.



The four-cluster classification of the Lower Platte River.

Annual to daily fluctuations in discharge present a challenge to characterizing emergent sandbar habitat directly from existing aerial orthophotography for the Platte River. Therefore, this classification is based on geomorphic measures that are relatively insensitive to prevailing river discharge but may be physically related to emergent sandbar locations, such as valley width, channel width, and sinuosity. Forty percent of the nest locations fell within the same class type in the four-cluster classification, which represented 18 percent of the study area. This class is found primarily in the Eastern

Platte River Gorge, downstream from Salt Creek and upstream from the junction of the Platte River with the Missouri River.

This type of geomorphic river classification can serve as a useful template to guide habitat management and to aid design of monitoring programs by defining discrete reaches with processes necessary for the maintenance of nesting habitats. It can also enable resource managers to integrate regional conservation planning for Platte River resources by grouping reaches with similar physical characteristics.

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