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THE ECOLOGY OF NATIVE GRASSLAND MACROINVERTEBRATES AND FEEDING ECOLOGY OF SANDHILL CRANES

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Abstract: The ecology of native grassland macroinvertebrates along the Platte River in central Nebraska and their role in the feeding ecology of sandhill cranes (*Grus canadensis*) was examined on 3 native grasslands along the Platte River during late winter–early spring, 1989 and 1990. Four hundred forty-four soil samples from the study area were sorted for macroinvertebrates. Environmental factors such as soil moisture, water table depth, soil texture, and plant species composition were recorded from each soil collection site. Fifteen sandhill cranes, observed feeding for 40 minutes, were collected from 1 of the study areas. Macroinvertebrates were collected from 4 sites in close proximity to the location where each crane was feeding. In 1989, nearly all earthworms were found at sites with a water table depth >60 cm, whereas in 1990 earthworms were found at sites with water table depths ≤10 cm of the surface; however, the greatest numbers were found on sites where water table depths varied between 50 and 60 cm. The 1989 collections corresponded to severe drought conditions. Insect biomass was positively correlated with water table depths. Other relationships were documented. The dominant insect taxa found on the 3 study areas were scarab beetles (Scarabaeidae), click beetles (Elateridae), Lepidoptera, crane flies (Tipulidae), and ground beetles (Carabidae). *Aporrectodea* spp. and *Diplocardia* spp. were the predominant earthworm genera. Scarab beetle larvae occurred in 58% of the crane esophagi, and snail shells and vegetation occurred in 50% of the crane esophagi. Other food items included earthworms, crane fly larvae, and ground beetles.

Key Words: *Grus canadensis*, macroinvertebrates, native grasslands, Nebraska, Platte River, sandhill cranes, water table