

Winter Habitat Selection by Muskrats in Southern Boreal Wetlands

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Poster Presentation Abstract:

Muskrats (*Ondatra zibethicus*), as a semi-aquatic furbearer, are highly dependent on water levels and adjacent food resources to help them survive northern winters. In some areas, muskrats also act as an indicator species for monitoring changes in wetland ecosystems, such as in the deltas of the Mackenzie, Peace, and Athabasca rivers where both muskrat numbers and water levels have declined. To determine which environmental factors are most influential for winter habitat selection by muskrats, we applied a linear mixed-model approach to analyze the relationship among the number of muskrat lodges and push-ups relative to various abiotic (e.g., water depth, degree of shoreline development, pond size) and biotic factors (beaver presence, vegetation characteristics). Our study was restricted to pothole wetlands in Alberta's southern mixed-wood boreal forest. We used a geographic information system to assess lodge location and push-up distribution relative to the most important environmental variables arising from our models. Our research provides greater insight into a species that plays an important role as both predator and prey within wetland ecosystems.

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