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Estimating American mink, Neovison vison, density in complex river networks using spatial capture-recapture

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American mink, Neovison vison, are riparian habitat specialists, generalist predators, and aquatic community regulators. However, despite being both biologically and economically important, estimates of population size and status assessments are rare, largely due to logistical and technical challenges with monitoring small carnivores. For instance, mink are elusive, wide ranging and occur at relatively low density making them difficult to capture, and estimating population size requires intensive sampling over large spatial scales. The concurrence of the use of scat detection dogs, the ability to identify individuals using non-invasive genetic sampling, and the development of spatial capture-recapture models, together provide a means to sample elusive species, such as mink, efficiently over large areas. Moreover, unlike conventional capture recapture in which the area being sampled is not known, spatial capture-recapture provides estimates of absolute density allowing formal comparisons of populations to be made. In this paper we demonstrate how the combination of these exciting developments in ecological monitoring and analytical methods can be used to assess the status of a species that is important, yet difficult to study.