

ABSTRACT

The fisher (*Martes pennanti*) is a medium-sized mammal native to Vermont. In the recent past, fishers were almost driven to extinction in the state due to the fur trade. Since then, the mammal has been reintroduced. A main factor in the decision to restore fisher populations is that it is one of the only predators of porcupines (*Erethizon dorsatum*) (Zielinski et al., 2004). Porcupines can wound or even kill trees by feeding on their inner bark (Woods et al., 2003). Because fishers control porcupine populations, they may be beneficial to Vermont's forestry industry and the health of the forests in general. Since the fisher is an important species to the state, the range of the species is significant, both for monitoring the progress of fisher restoration, and to consider during development planning. GIS has been employed to create habitat models in a number of studies. This study used ArcGIS to obtain data needed to generate an occupancy probability model for fishers. In 2011, 49 camera traps were set around Vermont to study carnivore occupancy. For this study, the locations of these cameras were plotted in GIS, and information about the landscape was extracted from 500 meter, 1 kilometer, and 5 kilometer buffers. This information included percent land cover, elevation, slope, aspect, and road area. The data will be used to create an occupancy probability model, which will then be used to create a fisher occupancy map for the state of Vermont.