

Modeling American marten (*Martes americana*) dispersal in northern Wisconsin

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Goals:

We are parameterizing a spatially explicit individual based simulation to model patterns of American marten (*Martes americana*) dispersal in northern Wisconsin. This will lead to investigation of martens' responses to habitat change, such as habitat management practices and development.

Recent Publications:

Williams, B.W., Gilbert, J.H., and Zollner, P.A. 2007. Historical perspective on the reintroduction of the fisher and American marten in Michigan and Wisconsin. Gen. Tec.

Statement of Problem:

Although field studies offer a great deal of information about animal space-use, they are generally unable to identify the underlying causes of observed patterns and cannot be used to quantitatively predict patterns of response to habitat change. Simulation models fill this void by identifying the underlying mechanisms of habitat selection and by predicting patterns of response to habitat change.

This research will focus on marten dispersal in northern Wisconsin using an animal movement simulation that is under its final stages of development. We hope to simulate patterns of marten dispersal that reflect patterns observed in northern Wisconsin to identify mechanisms of marten movement. We will then conduct simulations to predict martens' response to habitat change, such as habitat management.

This is important because marten reintroductions into northern Wisconsin between 1975 and 1990 have yielded mixed results; the western Chequamegon-Nicolet National Forest population has not expanded, while the eastern population has. The simulation promises to offer insights into this disparity and will help to inform marten management.

Current Activities:

We are currently developing the new simulation and writing a manuscript that describes it. Research questions that can be addressed using the new tool are also being developed.

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Rep. NC 06-150. Newton Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 29 p.

Dumyahn, J.D., Zollner, P.A., and Gilbert, J.L. (In Press) Home range level habitat selection of American marten in Wisconsin. *American Midland Naturalist*.