

## ABSTRACT

### ECOLOGY AND FOOD HABITS OF THE AMERICAN MINK (NEOVISON VISON) IN WESTERN MASSACHUSETTS.

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CHRISTOPHER H. WOOD

A.S., STOCKBRIDGE SCHOOL OF AGRICULTURE

B.S., UNIVERSITY OF MASSACHUSETTS AMHERST

M.S., ANTIOCH UNIVERSITY

In freshwater stream systems, the American Mink (*Neovison vison*) is an upper level carnivore that eats fish. The impact of mink predation and selection within fish populations is poorly documented in the literature. In stream systems throughout the Northeastern U.S., there are two common fish species: the brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*), both of which are eaten by mink. To quantify American mink feeding on an individually tagged population of fish, I collected mink scats and probed mink den sites in an area where most fish had a passive integrated transponder ("PIT" tag) implanted into the fish's abdominal cavity. My study aimed to recover these PIT tags, in an effort to measure trends in mink feeding preference by fish species, size, and quantity. Surveying for scats and den sites in snow and non snow conditions yielded 70 mink scats, five PIT tags, and located six den sites. Non-snow scat and den surveys were five times more efficient at recovering scats than snow surveys. All the known den sites were surveyed with an electronic PIT tag wand and probe; this yielded an additional 15 PIT tags. Through scat content analysis fish comprised 23% biomass of mink diet. USGS has installed PIT tag antennas throughout the study area; one uniquely placed antenna recorded 24 anomalous PIT tags believed to be mink with prey PIT tags in the intestinal track. In total 42 PIT tags were used to measure mink preference and selection upon the population of fish. The PIT tags recovered demonstrated a preference for brook trout 50% (n=21 tags) compared to brown trout 29% (n = 12) and 21% (n=9) Atlantic salmon (*Salmo salar*). In addition, I live trapped for mink for 26 nights totaling 516 trap nights, however no mink were trapped. Ultimately, my study explored different methods to recover PIT tags to quantify predation. For larger inferences to be made regarding the impacts of mink feeding on fish populations, more PIT tags and scat samples would need to be collected.