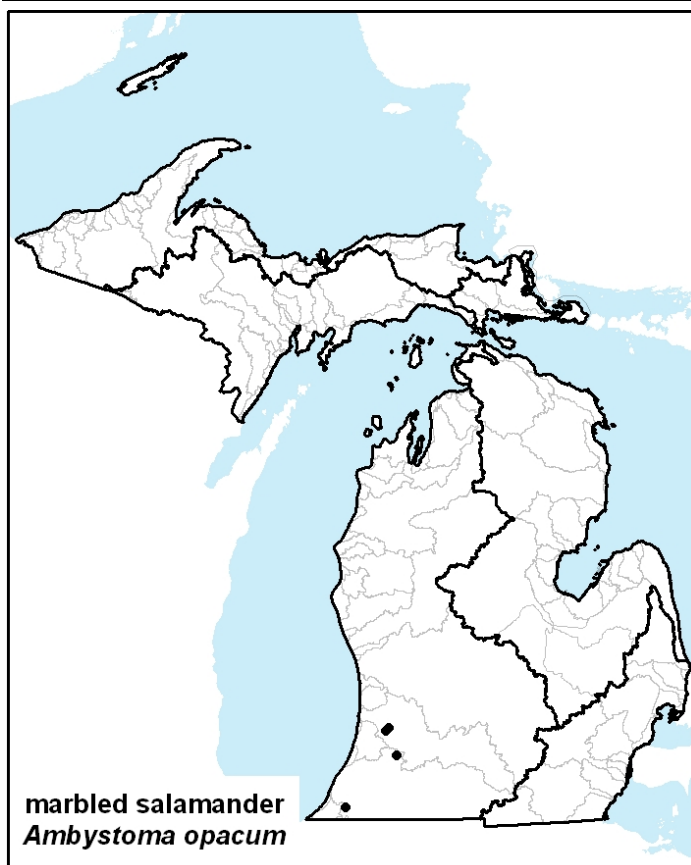


AMPHIBIANS



marbled salamander (*Ambystoma opacum*)

DISTRIBUTION & ABUNDANCE: State listed as threatened. Rare in Michigan. Abundance is unknown.

ASSOCIATED LANDSCAPE FEATURES: *aquatic:* ephemeral wetland; swamp; woody structure; *terrestrial:* lowland hardwood; mesic hardwood; dry hardwood; forest opening; ephemeral wetland; swamp; river/stream/riparian/floodplain corridor; down woody debris

ASSOCIATED THREATS: other biological interactions (shows density-dependent regulation during larval stage); climate change; conversion to agriculture lands; fragmentation; altered hydrologic regimes; industrial/residential/recreational development; lack of scientific knowledge; forestry practices; wetland modifications

COMMENTS: Populations in Michigan are considered relict populations. This species may be a good indicator of general climate change. Population status needs to be determined.