

An Invasion in Progress: The Spread of Rusty Crayfish in a Maryland Watershed

The invasive Rusty Crayfish was discovered by biologists of the Maryland Department of Natural Resources (MDNR) in Marsh Creek, a northern tributary to the Monocacy River, in 2007. This crayfish, a formidable invader and nuisance species that has caused ecological damage in many other regions (<http://dnr.maryland.gov/invasives/rustycrayfish.pdf>), is believed to have been introduced into the Monocacy River as bait by anglers. It is now highly abundant and reproducing in the northern portion of the river. Since any attempt to eradicate this species would cause undue harm to other aquatic species and would likely prove futile, MDNR focused its efforts on preventing the spread of Rusty Crayfish by anglers from the Monocacy into other Maryland watersheds. MDNR recently banned the use of all live crayfishes in three Maryland river basins (<http://www.dnr.state.md.us/fisheries/recreational/index.asp#4e>) to stop the spread of this invader. MDNR is also working with Maryland anglers to stop bait-related introductions of Rusty Crayfish and other problematic invasive species.

Since 2007, MDNR partnered with biologists from Hood College, the University of Maryland Appalachian Laboratory, and Mount St. Mary's University to annually monitor 38 sites located throughout the Monocacy River and its tributaries. MDNR is studying how fast the Rusty Crayfish is spreading in the watershed and what effects this invader has on other crayfishes in the river. Information gathered from this survey will help guide prevention and control measures if additional introductions occur in Maryland.



MDNR biologists collect crayfishes using a kick-seine in Carroll Creek, a tributary to the Monocacy River. MDNR and its partners are monitoring the invasion of this species to document its effects on native crayfishes and other aspects of the river ecosystem.



Rusty Crayfish and Virile Crayfish (pictured here) are very abundant in the Monocacy River watershed. The dumping of unused bait by anglers is responsible for the introduction and spread of these two crayfishes, and several other invasive species in Maryland waters.

What have we learned so far?

- Rusty Crayfish is very abundant and reproducing in the northern 14 miles of the Monocacy River in Maryland.
- Rusty Crayfish is not the only non-native species in the watershed. Virile Crayfish, another problematic invasive species, was introduced (likely by anglers) and is now widespread in the area.
- Rusty Crayfish and Virile Crayfish appear to have eliminated native crayfishes from large portions of the Monocacy River and its tributaries.
- Rusty Crayfish is spreading on its own downstream in the Monocacy River and upstream into some tributaries.
- Based on research at Hood College, Rusty Crayfish is very tolerant to saltwater, so natural dispersal of this invasive species may not be limited to freshwater.

What next?

- MDNR will continue annual monitoring of the Monocacy River and other Maryland watersheds to examine the effectiveness of recent bait-related regulations at preventing invasive species introductions and dispersal.
- MDNR is increasing efforts to spread the word to Maryland's angling community on invasive species prevention.

