

Invasive Crayfish Threaten Maine Ecosystems

Maine is now home to several non-native crayfish species. Of those species known to be from "away," two are considered by state experts to pose the greatest threat to native ecosystems: rusty crayfish (*Orconectes rusticus*) and red swamp crayfish (*Procambarus clarkii*). Though some non-native crayfish populations are now well known, the statewide distribution of these species is not fully known. Rusty crayfish are believed to be native to the Ohio River Basin and the states of Ohio, Tennessee, Indiana and Illinois. This mid-western crayfish species has now spread to other regions in the United States from New Mexico to Maine. Rusty crayfish have been in Maine for several decades, and were probably first introduced by non-resident anglers who brought them here to use as fishing bait. Once invasive crayfish populations were well established, the sale of trapped crayfish by bait dealers may have increased the rate of spread within the state.

Rusty crayfish inhabit lakes, ponds and streams. They generally dig small pockets under rocks and other debris, though under some circumstances they may dig more substantial burrows. Unlike some

other crayfish species that may inhabit seasonal waterbodies, *O. rusticus* needs permanent (year-round) water. Rusty crayfish have robust claws with black bands at the tips and an oval gap when closed. They also have dark, rusty spots on each side of their carapace as though you picked up the crayfish with rust-colored paint on your forefinger and thumb. (The spots may not always be present or well developed.) Like all crayfish, *O. rusticus* is an opportunistic omnivore. Rusty crayfish feed on a variety of aquatic plants, benthic invertebrates

(like aquatic worms, snails, leeches, clams, aquatic insects and crustaceans), detritus (decaying plants and animals and the associated bacteria and fungi), fish eggs, and small fish.

Introductions of both *O. rusticus* and *P. clarkii* have caused serious damage to aquatic ecosystems outside of Maine; the latter being a notorious invasive globally. *O. rusticus* is an aggressive species, and is known to displace native crayfish in two ways: through crayfish-to-crayfish competition and by causing increased fish predation on native species. (Rusty crayfish, for example, force native species



Red swamp crayfish (Procambarus clarkii)



Rusty Crayfish (Orconectes rusticus)

from the best daytime hiding places.) Rusty crayfish also are known to reduce plant and invertebrate diversity and abundance in the aquatic ecosystem. This may in turn negatively impact native fish and waterfowl populations. Many of these impacts occur only after crayfish populations have reached high nibble-your-toes densities. Impacts of these crayfish on Maine ecosystems have not been studied. Environmentally sound ways of controlling introduced populations have not yet been developed. The best way to prevent potential ecological damage is to prevent or slow the spread of these species into new waters. Maine Department of Inland Fisheries and Wildlife and other Maine researchers have begun collecting crayfish distribution data. Distribution data for all crayfish species found in Maine is valuable to researchers. Please report any crayfish sightings to: VLMP at 207-783-7733 or vlmp@mainevlmp.org.

References:

1. Rusty Crayfish a Nasty Invader; Jeff Gunderson; 1995 (Revised 2002); Minnesota Sea Grant website; www.seagrant.umn.edu
2. The Crayfish of Maine; William Reid and Matthew Scott; the Water Column (the Maine Volunteer Lake Monitoring Program newsletter); Vol. 10, No. 3; Winter 2006; p. 12.
3. Editorial comments by Karen A. Wilson, William Reid and Matthew Scott