**Scientific name:** *Procambarus clarkii*

**Common name:** Red swamp crayfish

### Alaska invasion/introduction history

A red swamp crayfish was collected in the city of Kenai in May of 2004 (Tunseth 2004) and from the Kenai River in a drift net in July of 2007 (Dunker 2008). No other crayfish of this species have been found since and no known populations have established.

### Ranking Summary

<table>
<thead>
<tr>
<th>Ranking Summary</th>
<th>Score</th>
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<tbody>
<tr>
<td><strong>Distribution</strong></td>
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<tr>
<td><strong>Biological Characteristics</strong></td>
<td>19/30</td>
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<td><strong>Ecological Impact</strong></td>
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<tr>
<td><strong>Feasibility of Control</strong></td>
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<tr>
<td><strong>Total</strong></td>
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<tr>
<td><strong>Invasiveness (out of 100)</strong></td>
<td>68</td>
</tr>
<tr>
<td><strong>Moderately invasive</strong></td>
<td></td>
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</tbody>
</table>

**Distribution**

*Current global distribution (0-10)*

Invasive on all continents except Australia and Antarctica (Hobbs et al. 1989).

*Extent of the species US range and/or occurrence of formal state or provincial listings (0-10)*

The USGS nonindigenous species occurrence list for the red swamp crayfish shows occurrences in 23 states (USGS 2011).

*Role of anthropogenic and natural disturbance in establishment (0-5)*

Habitat requirements indicate this species can establish independent of disturbance.

*Climatic similarity between site of origin and release (0-5)*

In an article about the crayfish caught in the Kenai River, Robert Romaine and Ray McClaine, aquaculture professors with Louisiana State University, commented that red swamp crayfish have been introduced to places with similar climates to southcentral Alaska (Dunker 2008), although its naïve range is in a much warmer climate in the gulf coast and Mississippi River basin.

**Total for distribution:** 27/30

**Biological Characteristics and Dispersal**

*Invasive elsewhere (0-5)*

Invasive on all continents except Australia and

### Ecological Impact

**Impact on population dynamics of other species (0-10)**

Invasive crayfish often reduce the abundance of thin-shelled, small-bodied snails and other invertebrates. Consumes and damages (fragments) hydrophytes, often reducing their abundance and biomass (Gherardi

### Dietary specialization (0-5)

Omnivore. A diet study in Portugal found that red swamp crayfish guts were filled with a variety of food and had the highest percentage of plant material, followed by animal, then amorphous material, and lastly, sand. The animal component was comprised of fish, other crayfish, mollusca, diptera, ephemeroptera, coleoptera, hemiptera, and odonata. Other studies in different locations have found a similar diet (Perez-Bote 2005).

### Habitat specialization (0-5)

Inhabits sloughs, swamps, roadside ponds, and flowing water. Tolerant of low oxygen and can be found in most habitat types in sluggish streams and lentic situations (NatureServe 2010). In cool regions of Europe, it prefers small permanent ponds. The red swamp crayfish is able to tolerate dry periods of up to four months (Global Invasive Species Database 2011).

### Average number of reproductive events per adult female per year (0-5)

Depending on the size of the adult female, she can produce 100–500 eggs. In places with a long flooding period (not Alaska), there may be at least 2 reproductive periods (Global Invasive Species Database 2011).

### Potential to be spread by human activities (0-5)

Can spread by anglers as bait, through the pet/aquarium trade, aquaculture, biological supply trade, illegal stocking, and as live food, such as for cooking Cajun dishes (Global Invasive Species Database 2011, Lodge et al. 2000).

### Innate potential for long distance dispersal (0-5)

Males can locally disperse along watercourse (Lodge et al. 2000) and migrate over several miles of dry area (NatureServe 2010).

**Total for biological characteristics:** 19/30
**Scientific name: Procambarus clarkii**

and Acquistapace 2007). Also, can reduce the abundance of algae from direct consumption and by destructing marrophytes algae grow on (Lodge et al. 2000). Red swamp crayfish can also be a vector of disease that attacks native crayfish (Moore 2006), although Alaska does not have native crayfish. Impacts on native fishes and amphibians are less studied, but reductions do occur (Lodge et al. 2000).

**Impact on natural community composition (0-10)**

Destruction and consumption of hydrophyte biomass can in turn impact other organisms by reducing protective cover, substratum, and breeding sites. Additionally, in nutrient-rich lakes, hydrophyte destruction causes the lake to switch from clear to turbid dominated by microalgae (Gherardi and Acquistapace 2007). Consumption of invertebrates and destruction of hydrophytes can impact other trophic levels in the food web, such as competition with native fish that feed on invertebrates (Lodge et al. 2000).

**Impact on natural ecosystem processes (0-10)**

The Red swamp crayfish is an aggressive burrower, causing damage to rice fields in California (Moore 2006) and degrading river banks (Global Invasive Species Database 2011).

**Total for ecological impact** 17/30

**Feasibility of control Score**

**Number of populations in Alaska (0-3)** 1

Has been found twice near Kenai (Dunker 2008, Tunseth 2004).

**Significance of the natural area(s) and native species threatened (0-3)** 2

One of the major threats of invasive crayfish is their ability to reduce native crayfish populations through competition, predation, reproductive interference, and disease (Lodge et al. 2000); however, there are no native crayfish in Alaska. Could indirectly compete with native salmon and trout by altering plant and invertebrate communities (Dunker 2008).

**General management difficulty (0-4)** 2

Since few invasive crayfish have been found in Alaska, prevention of further introductions is the primary management option. After finding the crayfish in 2008, the Alaska Department of Fish and Game recommended keeping both live and dead crayfish out of Alaska’s waters (Dunker 2008).

**Total for feasibility of control** 5 / 10

**Range Map**

**References**


**Scientific name:** Procambarus clarkii  
**Common name:** Red swamp crayfish


**Acknowledgements**

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**Reviewer(s):** James Fetzner Jr., Carnegie Museum of Natural History