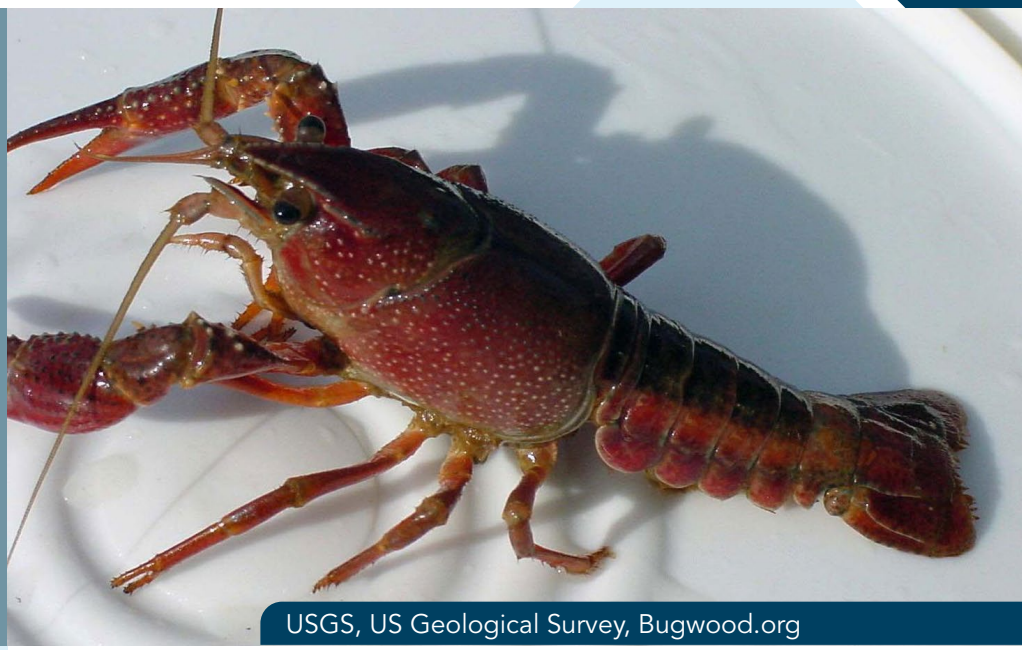
Socio-Economic Impacts of **Red Swamp Crayfish**

Red Swamp Crayfish (*Procambarus clarkia*), referred to as the Louisiana crawfish or crawdaddy, is an aquatic invasive crustacean established in western and Great Lakes states. Introduced for commercial harvesting due to it's nutritional content, the commercial harvesting industry yields $150 million/year throughout the USA (U.S. Fish and Wildlife Service, 2015). However, this species has several detrimental ecological and socio-economic impacts when introduced into ecosystems.



USGS, US Geological Survey, Bugwood.org

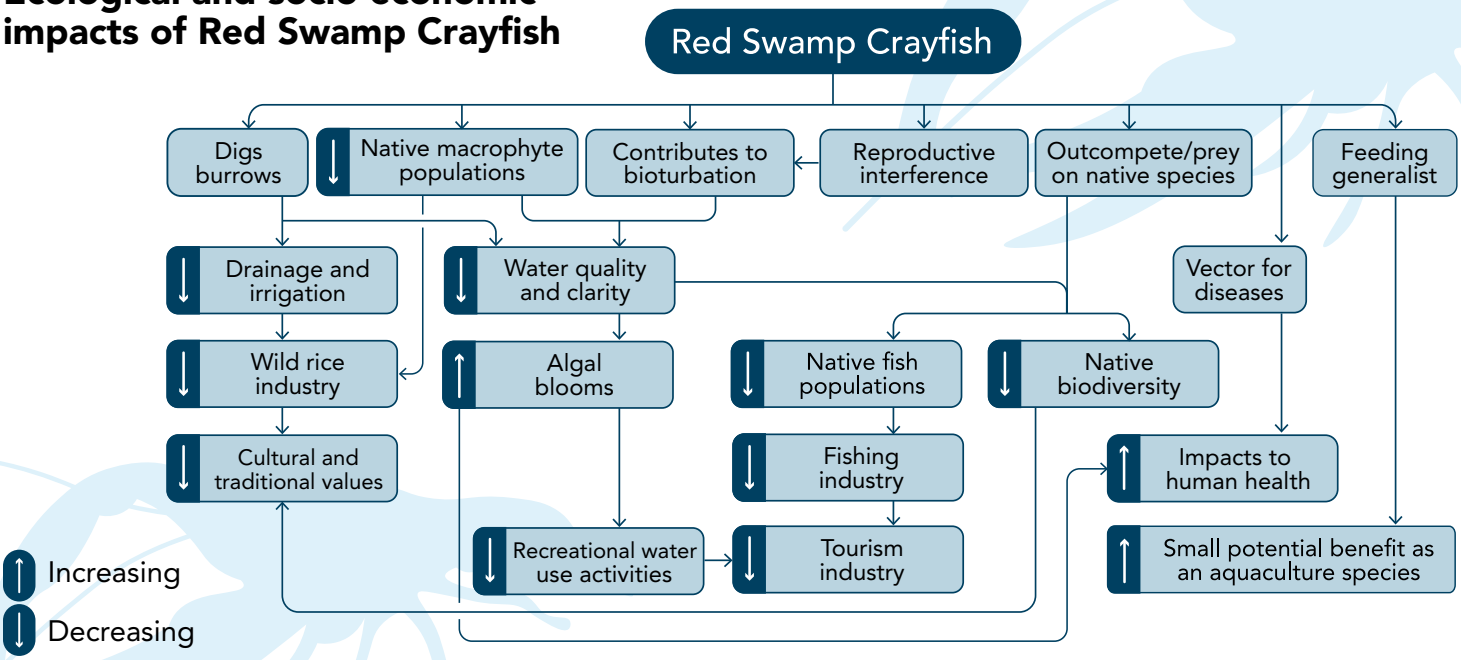
There are several potential negative socio-economic impacts in the Canadian Prairies from Red Swamp Crayfish:

Irrigation | Red Swamp Crayfish threatens the $3.6 billion irrigation industry in the Prairies as it can damage irrigation systems of crops by blocking channels and disrupting reservoirs (Arce & Diéguez-Uribeondo, 2015). The value of this industry is anticipated to grow significantly in the future as the Westside Irrigation Project moves forward in Saskatchewan, adding $40 to $80 billion over the next 50 years.

Tourism | The tourism industry in Prairie provinces is valued at over $13 billion per year, most of which is resource-based tourism that is reliant on visitors using the natural environment. The red swamp crayfish can substantially impact resource based recreation by reducing water quality and pose potential safety hazards due to digging burrows and destroying river banks.

Fishing | Sport and commercial fishing industries in the Prairies are valued at $597 million per year, with additional personal value to over 670,000 anglers. The Red Swamp Crayfish can consume large quantities of aquatic vegetation which can reduce spawning habitats and shelter for native fish species (Huang et al., 2016). Feeding habits are considered to be aggressive which can harm other aquatic species such as fish.

Ecological and socio-economic impacts of Red Swamp Crayfish



Ecological impacts

Red Swamp Crayfish have serious potential ecological impacts and are aggressive invaders which can alter aquatic ecosystems.

- threatens species at risk
- deteriorates aquatic abiotic conditions such as water quality through burrowing in ways that increase risks of algae blooms
- burrowing can also damage riverbanks and shorelines
- reproduce at a rapid rate
- carry large egg masses and disperse them as they move
- wide tolerance of environmental conditions and habitat generalist
- major vector of the crayfish plague (*Aphanomyes astaci*) which harms native crayfish populations

Arce, J. A., & Diéguez-Uribeondo, J. (2015). Structural damage caused by the invasive crayfish *Procambarus clarkia* (Girard, 1852) in rice fields of the Iberian Peninsula: a study case. Fundamental and Applied Limnology, 186(3), 259-269.

Huang, J., Zheng, X., Wu, Z., Liu, H., & Deng, F. (2016). Can increased structural complexity decrease the predation of an alien crayfish on a native fish? Hydrobiologia, 781(1), 191-197.

U.S. Fish and Wildlife Service. (2015 Revised). Red swamp crayfish (*Procambarus clarkii*): Ecological risk screening summary. https://www.fws.gov/fisheries/ans/erss/highrisk/Procambarus-clarkii-ERSS-revision-May2015.pdf

Prevent further spread of Red Swamp Crayfish:

Clean, Drain, and Dry
your watercraft and equipment every time

Don't Let it Loose
Never release aquarium pets, water garden plants, live food, or live bait into any water body or storm sewer

Report any sightings
to provincial reporting platforms such as EDDMapS or provincial hot lines

Know Before You Go
Know the laws in your jurisdiction and those you are travelling to: invasivespeciescentre.ca/know-before-you-go

Invasive Species Centre

With support from:

Fisheries and Oceans Canada