



Northern Crayfish

ALBERTA REGULATION:
Not Regulated

Last Updated: March 2024

Faxonius virilis Hagen, 1870 (aka Virile crayfish)

syn. *Cambarus virilis*, *Cambarus wisconsinensis*, *Cambarus debilis*, *Cambarus couesi*



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Overview:

Northern crayfish are native to the Central U.S. and Canada from Quebec to Saskatchewan, and even into the Beaver River Watershed in Alberta.⁴ In the rest of Alberta, this species is considered invasive and has become established in the North Saskatchewan Watershed, after being transported for use as fish bait in the 1990s.⁴ Today, these freshwater crustaceans are spread through intentional bait bucket releases and have spread into six of Alberta's river drainages, including at least 14 tributaries of the North Saskatchewan River basins, and most recently the Bow River.⁴

Although northern crayfish are not a regulated species, Alberta Guide to Sportfishing Regulations states, "In all waters, other than the Beaver River, people may harvest crayfish without a license by legal means which currently includes angling, dop net, seine net, minnow trap and capture by hand. The retention and transport live crayfish is illegal and all retained crayfish must be immediately killed to prevent the spread of this species; it is also illegal to use live crayfish as bait."

Habitat:

Slow, warm freshwater streams, ponds, lakes and rivers with abundant vegetation, logs and rocks for shelter from predators.² Waterbodies with mud, silt or sand bottoms up to 10m deep where it is able to avoid freezing and experience oxygen depletion.

Identification:

Grow to be about 10-13 cm long (not including claws) and are an olive to reddish-brown colour with long antennae, straight rostrum and bumps on the sides of the carapace and claws.² Large, broad, flattened claws often with reddish-orange tips. Claws and legs may appear blue.

Ecology:

Northern crayfish are opportunistic omnivores, consuming a wide variety of species. They eat both aquatic plants and invertebrates, as well as tadpoles, small fish and fish eggs (roe). While northern crayfish can hunt moving prey, a large part of their diet is made up of dead animals which they scavenge on.²

Crayfish are highly active at night, leaving their protected hiding spots to forage in the dark using their long, sensitive antennae. Their tolerance to low oxygen levels and hidden gills allows them to crawl onto land or in between shallow pools in search of food.²

Northern crayfish lay their eggs from late May to early June, keeping them protected by carrying them around under their tails. Eggs hatch in July, and grow to about 2-3 cm long by the fall. Both male and female crayfish live for about 2 years on average, but may survive up to 4 years. During the winter, crayfish become less active, moving into deeper water to avoid freezing.²

Like all arthropods, northern crayfish will moult periodically, shedding their hard, exterior shell to grow. After moulting, crayfish will stay hidden for several days until their skin becomes hardene.²



Northern Crayfish *(continued)*

Economic Impacts:

Removal and control of northern crayfish can be costly and labour intensive, creating substantial costs to land managers. Crayfish also cause substantial damage to agriculture, social welfare, and natural resource industries. While little is known about the potential impact of northern crayfish, similar species such as the rusty crayfish have caused up to 3.8 million US in damages globally.¹

Environmental Impacts:

Northern crayfish may impact abundance and diversity of aquatic insects, and macroinvertebrates which can further the decline of native species by competing for resources and altering habitat conditions.³ As omnivores, crayfish consume many of the same food sources as Alberta's native fishes. This includes 23% of the white sucker's diet, 40% of the longnose dace's diet, and 14% of the trout-perch's diet.⁴ The study also

stated that this competition may cause native fish to resort to eating less-preferred food types, potentially leading to a reduction of energy intake and reduced reproduction.⁴ Northern crayfish may also reduce spawning and nursery habitat for native fish by eating large quantities of aquatic vegetation.³

Sociological Impacts:

Through modification of plant communities and competition with native fish, northern crayfish may result in reduced recreational fishing opportunities or loss of intrinsic value in effected waterbodies. Reduction of native fish may also result in loss of fish available and loss of culturally significant species.

Prevention:

Learn how to identify northern crayfish and how to prevent the spread. Do not purchase or keep this crayfish. Never empty your bait buckets into natural

water bodies. Individuals should also use best management practices after recreational activities and clean, drain, dry their boat and equipment before moving to a different waterbody.³

Control:

In order to limit the spread, northern crayfish can be legally captured in any quantity without a fishing license in Alberta. However, it is mandatory to kill captured crayfish on site and their use as fishing bait is strictly prohibited.⁴

Containment: May be controlled through trapping, but this is very labour intensive.¹ Physical barriers may be installed in areas with northern crayfish to stop them from spreading into new water bodies.

Chemical: Pesticide treatment can also be used as a last resort; however, this method can only be used in isolated waterbodies without other fishes.¹

REFERENCES:

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