






Common Native and Invasive Crayfishes in the Great Lakes Region



The Great Lakes region includes the eight U.S. states and two Canadian provinces shown above.

Graphic: Rick Reynolds, adapted from map of North America by El bart089 CC-BY-SA 3.0

Native Crayfish Species	Invasive Crayfish Species	Other High-Risk Species
Big water crayfish <i>Cambarus robustus</i>	Obscure/Allegheny crayfish <i>Faxonius obscurus</i>	Common yabby <i>Cherax destructor</i>
Digger crayfish <i>Creaserinus fodiens</i>  <p>Photo: Don Henise CC BY 2.0</p>	 <p>Photo: Smithsonian Environmental Research Center CC BY 2.0</p>	 <p>Photo: Daiju Azuma CC BY-SA 2.5</p>
Calico crayfish <i>Faxonius immunis</i>	Rusty crayfish <i>Faxonius rusticus</i>	Australian redclaw <i>Cherax quadricarinatus</i>
Northern clearwater crayfish <i>Faxonius propinquus</i>	 <p>Photo: Wisconsin Dept. of Natural Resources</p>	Signal crayfish <i>Pacifastacus leniusculus</i>
Virile crayfish <i>Faxonius virilis</i>	Red swamp crayfish <i>Procambarus clarkii</i>	Florida/electric blue crayfish <i>Procambarus alleni</i>
Devil crayfish <i>Lacunicambarus diogenes</i>	 <p>Photo: Luc Hoogenstein CC BY-SA 4.0</p>	Marbled crayfish <i>Procambarus virginalis</i>
Paintedhand mudbug <i>Lacunicambarus polychromatus</i>		
White River crayfish <i>Procambarus acutus</i>		

NATIVE CRAYFISH SPECIES

Big Water Crayfish (*Cambarus robustus*)



A big water crayfish in its rocky habitat. Photo: Zack Graham

Description: Big water crayfish are a large species. Carapace lengths can be more than 5 cm long. The overall body color is greenish-brown. They have:

- Large, strong chelae with two rows of tubercles (bumps).
- A long, narrow rostrum with rounded corners.
- An areola that is open and somewhat wide.

Habitat: Big water crayfish are commonly found under large, flat rocks. They do not usually burrow, except to survive freezing temperatures or prevent drying out when it is hot. They can live in a wide range of water temperatures and pH levels. They can move short distances over dry land.

Distribution:

- Native to the Great Lakes and Ohio River watersheds
- Found from central Michigan to northern Indiana and northern and eastern Ohio
- They are also found throughout southern and central Ontario, as well as throughout Quebec.

Source: “Cambarus robustus.” USGS: nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=207

Digger Crayfish (*Creaserinus fodiens*, formerly *Cambarus/Fallicambarus fodiens*)



Like most crayfish, digger crayfish can survive out of the water for short periods. Photo: Zack Graham

Description:

- Heavy-bodied, olive-brown or reddish-tan colored
- A pale, iridescent stripe along the midline of the abdomen
- Dark brown blotches cover the body
- Broad chelae with wide, flattened fingers
- Deep groove at base of moveable finger
- Broad rostrum with a trough-like depression
- No areola

Habitats:

- Seasonal wetlands, wooded floodplains, and low-lying fields
- Often lives in burrows up to 3 feet deep

Distribution:

- Digger crayfish live in the Mississippi, Ohio River and Great Lakes watersheds.
- Found from southeastern Wisconsin and central Illinois to eastern Ohio and southern Michigan
- They also live throughout southern Ontario.

Sources:

- "Digger Crayfish." Missouri Dept. of Conservation: mdc.mo.gov/discover-nature/field-guide/digger-crayfish
- Illinois Dept. of Natural Resources: dnr.illinois.gov/content/dam/soi/en/web/dnr/education/cdindex/diggercrayfishapdf.pdf

Calico Crayfish (*Faxonius immunis*)



Calico crayfish are also called papershell crayfish. They have thin shells.

Photo: Chris Lukhaup

Description:

- Calico crayfish have a range of color patterns, from black and brown to mottled green, gray, and brown.
- They sometimes have blue, green, or purple chelae.
- Chelae are large with fairly long fingers. Chelae have large tubercles.
- They have an hourglass pattern on their carapace and tail segments.

Habitats:

- Calico crayfish live in many habitats. These include small gravel-bottom streams and slow-flowing creeks, lakes, and ponds with muddy bottoms.
- They can build simple burrows to prevent getting dried out.

Distribution:

- Calico crayfish live in clean rivers across the Midwest. They are also found in southern Ontario and throughout Quebec.
- They do not live in northwestern Minnesota, central and northern Wisconsin, and southern and eastern Ohio.

Sources:

- "Faxonius immunis." USGS: nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=210
- "Common Crayfishes of the Chicago Region." Field Museum: fieldguides.fieldmuseum.org/sites/default/files/rapid-color-guides-pdfs/981_usa_common_crayfishes_of_the_chicago_region.pdf

Northern Clearwater Crayfish (*Faxonius propinquus*)



Photo: Chris Lukhaup

Description:

- A relatively small crayfish with a carapace length of 25–35 mm
- Usually brownish-green with a dark saddle spanning the top (dorsal side) of its abdomen
- Large chelae; the tips are orange or red with black rings
- Areola is open and wide

Habitats:

- Found in rivers, swiftly flowing streams, and lakes
- Prefer rocky areas; will seek shelter in shallow crevices

Distribution:

- They are found in the Mississippi River and Great Lakes. They are abundant across the upper Midwest east of the Mississippi River.
- They live in eastern Minnesota and Iowa to northern Ohio, in the Wabash River watershed of Illinois and Indiana, and throughout Ontario and Quebec.

Sources:

- “Faxonius propinquus.” USGS: nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=2249
- “Northern clearwater crayfish.” Illinois Dept. of Natural Resources: dnr.illinois.gov/education/wildaboutpages/wildaboutinvertebrates/wildaboutcrayfish/wacfnorthernclearwatercrayfish.html

Virile (Northern) Crayfish (*Faxonius virilis*)



Photo: Alan Schmierer CCO

Description:

- Varies in color, from light brown to olive-brown
- Body has dark brown markings on each segment of abdomen
- Long, sharp tubercles along the middle margin of the chelae
- Tips of chelae are orange
- Upper walking legs and chelae can be bluish in color
- Areola is narrowly open

Habitat:

- They live in small streams, large rivers, and inland lakes.
- Prefer hard, rocky surfaces but can use areas with plants
- Can live in small burrows in muddy river bottoms.

Distribution:

- Native to the Great Lakes, Missouri River, upper Mississippi River, and lower Ohio River
- They are also found in Missouri, Arkansas, Oklahoma, Texas, and New York.
- They occur throughout Ontario, as far north as the James Bay watershed, and in Quebec.
- Non-native introductions have been made in parts of Ohio, Pennsylvania, and New York.

Sources:

- “Faxonius virilis.” USGS: nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=215
- “Virile crayfish.” NatureServe: explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.112669/Faxonius_virilis
- “Faxonius virilis.” Smithsonian Environmental Research Center: invasions.si.edu/nemesis/species_summary/97425

Devil Crayfish (*Lacunicambarus diogenes*, formerly *Cambarus diogenes*)



Photo: Chris Lukhaup

Description:

- Usually olive or tan in color, without obvious blotches or spots
- Chelae have large knobs and tubercles, as well as long bright red/orange highlights on tips.
- Rostrum is deeply grooved and deep red in color.
- Areola is closed.

Habitat:

- Found near streams, ponds, lakes, and ditches
- They burrow and spend most of their time underground. They pile balls of mud at the top of their burrows. They often reveal their presence by these “mud chimneys.”

Distribution:

- Occur across much of the eastern United States
- They are in every state east of the Rocky Mountains except the New England states.

Sources:

- “Devil crayfish.” Missouri Dept. of Conservation: mdc.mo.gov/discover-nature/field-guide/devil-crayfish
- “Devil crayfish.” Illinois Dept. of Natural Resources: dnr.illinois.gov/education/wildaboutpages/wildaboutinvertebrates/wildaboutcrayfish/wacfddevilcrayfish.html
- “*Lacunicambarus diogenes*.” Georgia Dept. of Natural Resources: georgiabiodiversity.org/portal/profile?es_id=405722&group=crayfish

Paintedhand Mudbug (*Lacunicambarus polychromatus*)



Paintedhand mudbug with a tan/olive green coloration. Photo: Zack Graham

Description:

- Broad body and reddish-tan to olive green in color
- Segments of the abdomen and tail fan have red edges.
- Chelae are large, often with green, blue, and olive tones. They have red tips.
- Chelae are covered with many small tubercles.
- The rostrum is deeply grooved and highlighted in deep red.
- Areola is closed.

Habitat:

- They are widespread and common in wetlands, wet meadows, stream banks, and ditches.
- They spend most of their life in deep, complex burrows.

Distribution:

- Occur in the lower Mississippi and Ohio River watersheds
- They are in southern Illinois and northeast through southern Michigan and western Ohio.
- They are also found in southwestern Ontario, in the Detroit River basin in Windsor.

Source:

- "Paintedhand mudbug." Missouri Dept. of Conservation:
mdc.mo.gov/discover-nature/field-guide/paintedhand-mudbug

White River Crayfish (*Procambarus acutus*)



Photo: Chris Lukhaup

Description:

- Large-bodied and usually brick red or tan. They have a black wedge on the top (dorsal surface) of the abdomen.
- They have very long and narrow chelae. Their chelae and body are covered with small (usually black and white) tubercles.
- Rostrum is flat. Areola is open.
- Don't mistake them for invasive red swamp crayfish! Red swamp crayfish have red tubercles on their chelae instead of black.

Habitat:

- They live in wetlands, ditches, creeks, and lakes.

Distribution:

- White river crayfish are found in the southern Great Lakes watersheds to the Gulf of Mexico.
- They also live in the Atlantic Slope (from Maine to Georgia).
- They are an invasive species in Ontario. They are non-native in southeastern Wisconsin and western New York.

Sources:

- "Procambarus acutus." USGS: nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=216

INVASIVE CRAYFISH SPECIES

Obscure/Allegheny Crayfish (*Faxonius obscurus*)



Photo: Smithsonian Environmental Research Center (CC BY 2.0)

Description:

- Small-bodied (4–8 cm) with light brown to olive-green coloration.
- Has a dark brown wedge on the abdomen (tail).
- Large chelae with two rows of rounded tubercles along the middle margin. The tips of its fingers are orange with black bands.
- Rostrum curves inward. Areola is open.

Habitat:

- They are found in small to medium-sized creeks with rocks, gravel, or sand.

Distribution:

- Native range includes the Ohio River watershed in extreme eastern Ohio. Also found in parts of Quebec.
- They are invasive throughout southern and central Ontario.
- Non-native in Lake Huron and Lake Ontario
- Likely introduced to new areas through bait bucket releases. They are a known threat to native crayfish due to competition.

Sources:

- “Allegheny crayfish.” NatureServe:
explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.112938/Faxonius_obscurus
- “Faxonius obscurus.” USGS:
nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=2243

Rusty Crayfish (*Faxonius rusticus*)



Photo: Lake County AIS CCO

Description:

- Olive-green to gray in body color
- Rusty-colored spot on each side of the carapace
- They have black rings around the tips of orange fingers.
- Larger individuals sometimes have chelae with light blue or violet colors.
- Areola is open.

Habitat:

- Rusty crayfish can live in many habitat types. These include lakes, ponds, streams, and rivers.

Distribution:

- Rusty crayfish are native to the Ohio River basin. This includes parts of Kentucky, Ohio, Indiana, and northern Tennessee.
- Rusty crayfish are one of the most widespread invasive crayfish in the U.S. Non-native populations are in the Great Lakes region, including parts of Canada.
- They have also spread as far west as Oregon and as far east as Maine.
- They have moved into new areas partly due to canals connecting waterways in the upper Midwest and Great Lakes regions.
- Bait bucket releases may have increased their spread.

Sources:

- "Rusty crayfish." USFWS: fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Rusty-Crayfish.pdf
- "Rusty crayfish." USDA: invasivespeciesinfo.gov/aquatic/invertebrates/rusty-crayfish

Red Swamp Crayfish (*Procambarus clarkii*)



Photo: Luc Hoogenstein CC BY-SA 4.0

Description:

- Adults are easily identified by their brick red body.
- They differ from most other crayfish species found in the Great Lakes by having chelae that are long and slender.
- Red tubercles on the chelae often extend onto the body.
- Juvenile red swamp crayfish are difficult to identify. They are a variety of tan or brown shades.

Habitat:

- They are found in rivers, lakes, ponds, streams, and canals and live in seasonally flooded swamps and marshes and ditches with mud or sand bottoms.
- Can live in a range of temperature, pH, oxygen, and pollution levels

Distribution:

- Native to the south central U.S. along the Gulf Coast and along the Mississippi River basin.
- Non-native populations live as far north as southern Illinois and in several other Great Lakes, and mid-Atlantic states.
- They have spread to Idaho, Utah, Arizona, South Dakota, Nebraska, and Georgia.
- They are among the most popular and frequently raised crayfish species in the world. They are found in the bait, aquaculture, and pet trade industries.

Sources:

- “Red swamp crayfish.” USFWS: fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Red-Swamp-Crayfish.pdf
- “Procambarus clarkii.” USGS: nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=217

OTHER HIGH-RISK AND PROHIBITED CRAYFISH SPECIES

The following species have not yet been established in the Great Lakes region. However, they are high risk or prohibited based on risk assessments and Great Lakes region crayfish regulations.

Common Yabby (*Cherax destructor*)



Photo: Daiju Azuma CC 2.5

Description:

- A very large and aggressive crayfish. They can grow up to 30 cm.
- They have a smooth body and short, stout pincers.
- Their rostrum is short, broad, and triangular.
- Their color ranges from green-beige to almost black. Captive animals are usually blue-grey.

Habitat:

- They can live in many environments and habitats. These include springs, lakes, alpine streams, subtropical creeks, swamps, dams, and canals.
- In Australia, they burrow extensively. Burrows can destabilize shorelines.

Distribution:

- They are native to Australia.
- They have been transported globally for aquaculture, food markets, and aquariums.
- They are not yet found in the U.S. or in any waters connecting to the Great Lakes. If introduced into the Great Lakes, they may change aquatic food webs. They would compete with native crayfish and could spread diseases, such as crayfish plague.

Sources:

- “Yabby (*Cherax destructor*)” USFWS: [fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Yabby_0.pdf](https://www.fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Yabby_0.pdf)
- “*Cherax destructor*.” NOAA: nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?Species_ID=3648&Potential=Y&Type=2

Australian Redclaw (*Cherax quadricarinatus*)



Photo: 5snake5 CC BY-SA 4.0

Description:

- This is a large-bodied and aggressive crayfish. They can grow up to 25 cm.
- Blue-green to green coloration and red/maroon highlights
- Adult males have a bright red patch on the outer margins of their chelae.
- Four long, distinct ridges on the head

Habitat:

- Found in freshwater creeks and water bodies in tropical regions of Australia
- Can live in habitats with a wide range of temperatures and dissolved oxygen levels

Distribution:

- Native to Australia
- Introduced in parts of California, Nevada, and Texas
- They may impact native species through competition, predation, or habitat changes. They carry diseases that could spread to native crayfishes and shrimps.
- They are a popular aquarium animal because they are colorful and hardy. Aquarium dumps are a possible means of introduction.

Sources:

- "Cherax quadricarinatus." USGS: nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=220
- "Redclaw (Cherax quadricarinatus)." USFWS: fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Redclaw.pdf

Signal Crayfish (*Pacifistacus leniusculus*)



Signal crayfish female with eggs on the lower abdomen.

Photo: Alaska Region USFWS CCO

Description:

- They are usually bluish-brown to reddish-brown in color on their dorsal side. Average carapace length is 50-70mm.
- The undersides of their claws are bright red. The base of each claw joint has a white or turquoise colored patch.
- The surfaces of the claws and carapace are smooth. They lack the tubercles that are typical of other non-native crayfish.
- Areola is open.

Habitat:

- They have moved into many types of habitats. These range from warm coastal waterways to sub-alpine waters.

Distribution:

- They are native to the northwestern U.S. They live in the Columbia River Basin and areas of Washington, Oregon, Idaho, and British Columbia.
- They are now found in the midwestern region of the U.S. Scientists confirmed sightings in Lake Winona, Minnesota in October 2023.
- May spread to new areas due to live bait release, stocking for harvest, or stocking for fish food.

Sources:

- "Pacifastacus leniusculus." USGS: nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=200
- "Signal crayfish (*Pacifastacus leniusculus*).". Minnesota Dept. of Natural Resources: dnr.state.mn.us/invasives/aquaticanimals/signal-crayfish.html

Florida/Electric Blue Crayfish (*Procambarus alleni*)



Photo: Chris Lukhaup

Description:

- Wild Florida crayfish can be blue, brown, or red in color. Captive crayfish have been bred to have a brilliant blue color.
- They have dark, circular areas called “headlights” at the base of both antennal glands.
- They have a narrowly open areola.

Habitat:

- They tolerate a wide range of habitats. These include seasonal and permanent wetlands, ditches, and small streams.

Distribution:

- Native range includes most of central and southern Florida.
- They are not established in the Great Lakes yet.
- There is a high risk of introduction. They are popular in the aquarium trade due to their color. Future introductions may occur through aquarium releases.

Sources:

- “Florida Crayfish (*Procambarus alleni*).” USFWS: fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Florida-Crayfish.pdf
- “*Procambarus alleni*.” USGS: nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=2812

Marbled Crayfish (*Procambarus virginalis*)



Photo: Zfaulkes CCO

Description:

- Are usually olive to brown in color when found in the wild
- Have a marbled pattern that covers their entire back and claws
- A dark stripe runs down each side of their carapace and abdomen.
- Male marbled crayfish do not exist. All individuals are female and reproduce by parthenogenesis.

Habitat:

- This species does not occur naturally in the wild. They are descended from the slough crayfish, found in the southeastern U.S.
- Their environmental impacts are unknown.

Distribution:

- The marbled crayfish is a common species in the pet trade.
- Multiple individuals have been found in the Lake Ontario watershed near Toronto.
- Only one individual is needed to establish a population. Thus, it the potential to be highly invasive.
- Not yet found in the U.S. as of this writing.

Sources:

- "Marbled Crayfish (*Procambarus virginalis*).” USFWS: fws.gov/sites/default/files/documents/Ecological-Risk-Screening-Summary-Marbled-Crayfish.pdf
- "Procambarus virginalis.” USGS: nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=3656