Chinese mitten crab (*Eriocheir sinensis*)

**Common name(s)** in English

**... and in other languages**
- **Danish:** Kinesisk uldhåndskrabbe
- **Dutch:** Chinese Wolhandkrab
- **Estonian:** Hiina villkäppkrabi
- **French:** Crabe Chinois
- **German:** (Chinesische) Wollhandkrabbe
- **Latvian:** Kinas krabis
- **Lithuanian:** Kiniskasis krabas
- **Norwegian:** Kinesisk ullhåndskrabbe
- **Polish:** Krab wielnistoreki
- **Swedish:** Kinesisk ullhandskrabba

**Scientific name**
*Eriocheir sinensis*

**Organism group**
Crustaceans. True crabs.

**Size and appearance**
This crab has different characteristics at different stages in its life cycle. As an adult, it grows to, at most, about 8 cm wide across its square-shaped carapace. An adult crab is light brown in colour, whereas younger stages are somewhat yellower. The characteristic feature of the adult mitten crab is the dense patches of hairs on its claws, its "mittens" or "wool hands", which are more developed in males than in females. This hairy covering is not found in young crabs; it does not form until the carapace is at least 2 cm wide. The powerful, hairy claws have white tips. A typical defensive behaviour in a mitten crab is to show and wave these large claws. In females the abdomen, folded under the thorax, is roughly as wide as that part of the body, while in males it is narrow and elongated. The crab’s legs are twice as long as its carapace is wide. The mitten crab typically has a v-shaped notch in the carapace, between the eyes.

**May be confused with**
The Chinese mitten crab resembles no other known crab in Swedish waters. One source of uncertainty, though, is that there are three other Asian *Eriocheir* species, all of them very similar to this one. It cannot be ruled out, therefore, that one of these other species may also be present here, but that it may have been identified as *Eriocheir sinensis.*

Small mitten crabs may be confused with the native green shore crab (*Carcinus maenas*), although that species has a more rhomboid body. The mitten crab may possibly also be confused with the Harris mud crab (*Rhithropanopeus harrisii*), a risk species for Swedish waters. An adult of that species, however, never grows to more than about 2 cm...
across its carapace; it is also more of a greenish brown and its frontal margin, between the eyes, is almost straight.

**Geographical origin**  
An area extending from Vladivostok in Russia in the north to southern China, with its centre around the Yellow Sea in China.

**First observed in Swedish waters**  
In the 1930s. From Lake Mälaren there are reports of finds in Västeråsfjärden in 1944 and on Kärrobolandet in 1950. The species was recorded in the Bothnian Bay in the 1950s.

**Occurrence in Swedish seas and coastal areas**  
From the Bothnian Bay to the waters off Göteborg. In Sweden the species also occurs in large lakes, including Mälaren and Vänern.

**Occurrence in other sea areas**  
The mitten crab was probably brought to the Baltic by ships at the beginning of the 20th century, and has been permanently present in European rivers, especially in Germany, ever since. The first discovery in Europe was made in Germany in 1912. The species is believed to have spread to the Baltic via the Kiel Canal in the 1920s; the first find on the Baltic Sea coast of Germany was made in 1926. From the Netherlands and Denmark, and from the western part of the Baltic, there are reports of finds in the 1930s. The first recorded occurrence in Estonian waters (off Vormsi) was in 1933, and in Vyborg Bay in the 1930s. The species has also been reported from Finland, as far north as Jakobstad (Pietarsaari), and from Poland. In addition, there are reports of finds of mitten crabs in Finnish lakes.

**Probable means of introduction**  
The Chinese mitten crab was in all likelihood introduced into Nordic waters by shipping (discharges of ballast water). The crabs in Lakes Vänern and Mälaren found their way there as larvae in ballast water. The distribution of the species in open sea and archipelago areas of the Baltic is limited by the low salinity, which makes reproduction impossible. The crabs that are found along the coasts would appear to have got there with the aid of currents or in ballast water.

**Habitat(s) in which species occurs**  
The adult mitten crab spends much of its life in fresh water, often buried in soft sediments such as river banks. The species cannot reproduce in a freshwater environment, however, but has to return to the sea to breed. When fertilized, the females migrate to deeper waters to overwinter, returning to the coast and a brackish-water environment in the spring, which is when the eggs hatch. The larvae are carried up into river systems by currents, while juvenile crabs actively migrate upstream to reach fresh water.

In Nordic waters, the females brood their eggs in the North Sea, after which the larvae drift with the tides into estuaries, where the young crabs live and grow for around 20 months. They then migrate upstream for several years until it is time to return to the sea. At the age of four years or more, they embark on a rapid downstream migration, during which they can move tens of kilometres per day. The males arrive first and wait for the females, which carry more than 100,000 eggs until they hatch into larvae. Adult mitten crabs can leave the aquatic environment in which they live and cross significant areas of dry land to reach a new river system.

The species has a high tolerance for varying salinity, temperature and oxygen levels in the water. It can also live in polluted waters.

**Ecological effects**  
Although the Chinese mitten crab seems to be becoming increasingly common in Swedish lakes, there is not considered to be any risk of it affecting the lakes’ ecosystems. As yet, its populations are quite small compared with other benthic fauna. Warm summers and autumns favour the species, however, and could enable it to overwinter.
Ecological effects reported elsewhere include competition with other species for food and space, impacts on habitats, and the spread of parasites and diseases. In British fresh waters, the predatory mitten crab is a threat to a native crayfish species. Habitats are affected, for example, in areas where the mitten crab is very common, as it undermines river banks. Large numbers of crabs, digging small burrows to live in, result in entire stretches of bank eroding and collapsing.

The species is also the secondary intermediate host for the Oriental lung fluke, whose final hosts are mammals, including humans.

Other effects

The mitten crab can adversely affect fisheries and aquaculture. It tears open fishing nets and feeds on the fish. In areas where the species is very common, large bycatches of crabs are also a problem for fishermen. Undermining of river beds and banks by the crabs represents an economic problem for society as a whole, and may also have adverse impacts on recreation and tourism.

In addition, see above concerning the risk of the Oriental lung fluke spreading to humans. Humans can become infested if they eat undercooked crab.

Additional information

In recent years the species has become so common in Lake Mälaren that it is reportedly possible to buy cooked mitten crabs from fishermen in Västerås. In Asia, mitten crabs are considered a culinary delicacy.

FIND OUT MORE

- North European and Baltic Network on Invasive Alien Species: Eriocheir sinensis
- 284 kB: North European and Baltic Network on Invasive Alien Species: Eriocheir sinensis Fact Sheet
- Baltic Sea Alien Species Database: Eriocheir sinensis
  http://www.ku.lt/nemo/directory_details.php?sp_name=Eriocheir+sinensis
  http://www.ku.lt/nemo/ericho.html
- FAO Fisheries Global Information System (FIGIS): Eriocheir sinensis
  http://www.fao.org/firis/servlet/FiRelServlet?ds=species&fid=3466
- FAO: Cultured Aquatic Species Information Programme: Eriocheir sinensis
- FIMR, Baltic Sea Portal: Alien species in the Baltic Sea
- Estonian Marine Institute: Eriocheir sinensis
- 151 kB: Gollasch Consulting: Eriocheir sinensis
  http://www.gollaschconsulting.de/download/Eriocheir.pdf
- 8,7 MB: Bundesanstalt für Gewässerkunde: Neozoa (Makrozoobenthos) an der deutschen Nordseeküste: Eine Übersicht
- Alien species in Poland: Eriocheir sinensis
- University of Gdansk, Hel Marine Station: Krab welnistoręki
- Aquatic Invasions (2006): First record of the Chinese mitten crab, Eriocheir sinensis from Lake Ladoga, Russia
- Aquatic Invasions (2006): The occurrence of Eriocheir sinensis from the Caspian Sea region, Iran
De Krabben van Nederland: Chinese Wolhandkrab (*Eriocheir sinensis*)
http://www.krabben.net/wolhand.html

Marine and estuarine macroinvertebrates, macroalgae and fish introduced to the Netherlands: *Eriocheir sinensis*
http://home.hetnet.nl/~faassem/introduced%20Crustacea.html

Natuurinformatie: Chinese Wohlhandkrab
http://www.natuurinformatie.nl/ecomare.devleeet/natuurdatabase.nl/i000311.html

Visserslatijn Nederland: Chinese Wolhandkrab

Global Invasive Species Database: *Eriocheir sinensis*

European Environment Agency (EEA): Introduced freshwater species with an ecological effect

State of California: Central Valley Bay-Delta Branch: Chinese Mitten Crab page
http://www.delta.dfg.ca.gov/mittencrab/

Natural History Museum: Chinese mitten crabs
http://www.nhm.ac.uk/nature-online/life/other-invertebrates/chinese-mitten-crabs/chinese-mitten-crabs.html

National Geographic News: Eat the Invading Alien Crabs, Urge U.K. Scientists

Mediterranean Science Commission (CIESM): Atlas of exotic species: *Eriocheir sinensis*
http://www.ciesm.org/atlas/Eriocheirsinensis.html

US Geological Survey: NAS Fact Sheet: *Eriocheir sinensis*

Elkhorn Slough Research: Least Wanted Aquatic Invaders: Chinese Mitten Crab
http://www.elkhornslough.org/research/aquaticinvaders/aquatic9.htm

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http://www.biopix.dk/Species.asp?Searchtext=Eriocheir%20sinensis&Category=Arthropoda&q=eriocheir

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http://www.vattenriket.kristianstad.se/vykort/020827.htm
http://www.vattenriket.kristianstad.se/eng/index.shtml

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