

Chinese Mitten Crab

(*Eriocheir sinensis*)

What is it?

The Chinese mitten crab is a freshwater crab named after the conspicuous mitten-like hairs on its claws. These hairy bristles (or setae) might look like an interesting fashion statement, but their exact purpose is unknown. Mitten crab can be found in bays and estuaries, as well as in freshwater rivers and streams with abundant aquatic vegetation. Chinese mitten crabs are a catadromous species. Catadromous refers to a life cycle in which organisms are born or hatch in the marine environment, migrate into freshwater where they spend the majority of their lives (2-5 years in the case of mitten crab), then migrate back to salt water to breed. While in freshwater, mitten crabs spend much of their time burrowed into riverbanks, hiding under rocks, or migrating upstream to find food.

FACT: Polish researchers have discovered hundreds of tiny organisms living in the “mittens” of crabs. They fear the mitten crab may transport its own nuisance species via its claws as it migrates to new habitats.

What does it look like?

Adult mitten crabs are brownish-orange to greenish-brown in color with white tipped hairy claws (hair is greatly reduced or absent in juveniles). Unlike native crab species, the shell or carapace of a mitten crab is very convex and uneven, with a distinct notch between the eyes, and four spines along each side of the shell. Legs of a mitten crab are typically twice as long as the carapace width.

FACT: Chinese mitten crabs spend approximately 90% of their life in freshwater.

Where is it from & where is it now?

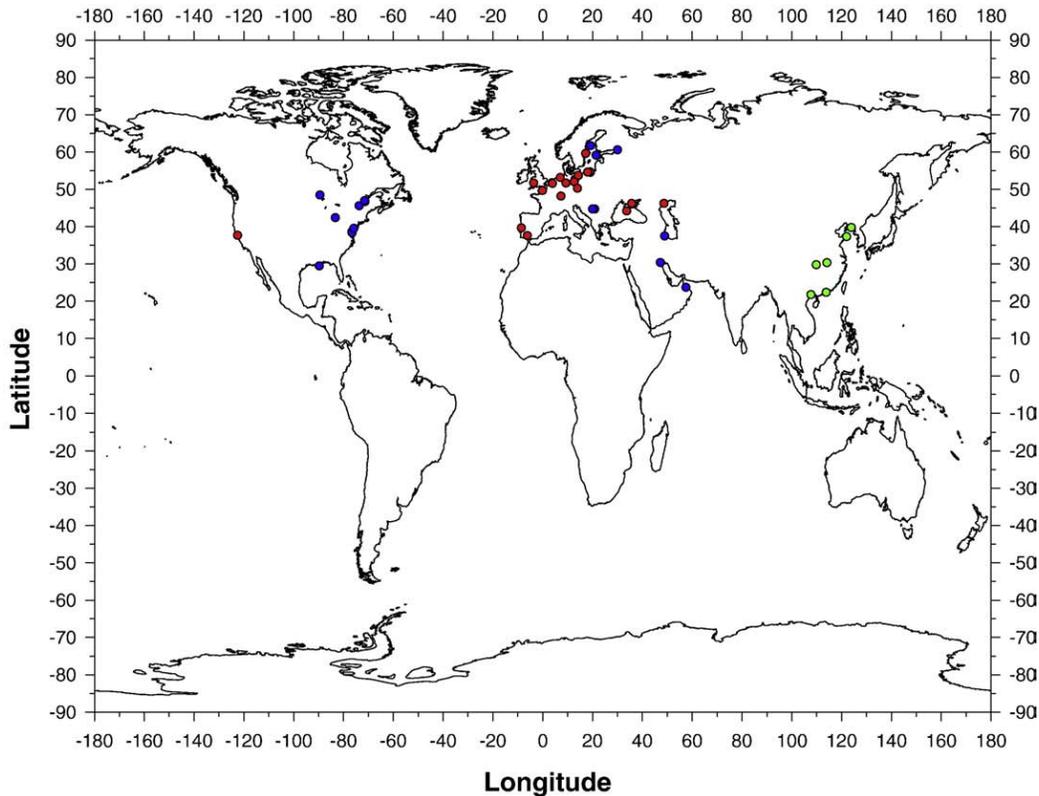
As its common name suggests, the Chinese mitten crab is native to the Pacific coast of China and Korea.

The first notable invasion of Chinese mitten crabs occurred in Germany in the early 1900's. It has since plagued a number of Northern European countries, as well as areas in Western Asia (Iran and Iraq), Canada and North America. The first confirmed sighting of Chinese mitten crabs in the US occurred in the Great Lakes in 1965. Since this time, mitten crabs have been found in Chesapeake Bay, Delaware Bay, Hudson River, Mississippi River, San Francisco Bay, and the Columbia River. The only self-sustaining population of mitten crabs is currently found in San



San Francisco Bay, California. It remains unclear whether mitten crab have established a population in the mid-Atlantic region.

FACT: Single specimen of mitten crab have been captured in the Columbia River near Portland Oregon (1999) and Columbia River Estuary near Port of Ilwaco (1997).



General distribution of Chinese mitten crab populations. Red circles and blue circles correspond to established and non-established populations in non-native range, green circles indicate distribution in the native range. Taken from Dittel, A.I., Epifanio, C.E. 2009. Invasion biology of the Chinese mitten crab *Eriocheir sinensis*: a brief review. *Journal of Experimental Marine Biology and Ecology*. 374, 79-92.

How did it get here?

It is believed Chinese mitten crab were introduced to the US in one of two ways. They may have been released intentionally to create a fishery and provide a food resource (in Asia, the mitten crab is a delicacy), or the juveniles (free floating larvae) were introduced to our waters accidentally through the transport of contaminated ship ballast water.

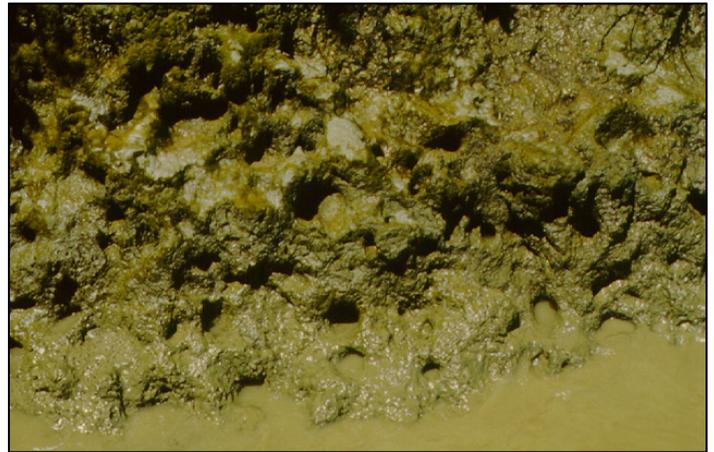
Today the mitten crab is still spread through ballast water discharge, intentional stocking, and by commercial or recreational boating activities. Once introduced to a new location, it is possible the crab can migrate to surrounding water bodies on its own.

FACT: This creepy crustacean can migrate up to 11 miles per day and will even travel on dry land to avoid barriers such as dams and levees.

What are its impacts?

You only make the Global Invasive Species Database's list of "100 of the World's Worst Invasive Alien Species" one way folks! <http://www.issg.org/database/species/search.asp?st=100ss> In high densities, Chinese mitten crab cause a number of problems in their introduced range.

They may out-compete native crab, mussels, and crayfish for food and space. Their voracious appetites can completely alter the aquatic food chain and cause a general decline in the species it competes with and/or consumes (e.g., algae, aquatic plants, detritus, benthic invertebrates, salmon/trout/sturgeon eggs). The burrowing activity of Chinese mitten crab can undermine levees and significantly increase the occurrence of stream bank erosion. Mitten crab may impact commercial and recreational fishing industries by consuming bait, inundating or damaging fishing nets and devouring or damaging catch. In California, massive migrations of the crab have clogged screens, pumps, water intake structures at fish collection facilities and power plants. The mitten crab can even be a threat to human health – as they are an intermediate host of the Oriental lung fluke. Humans become infested if raw or undercooked crabs are eaten. Fortunately the fluke has not been found in mitten crab collected within the United States.



Mitten Crab burrows. Photo credit: California Department of Fish and Game.

FACT: Female mitten crab produce 250,000 to 1 million eggs per brood.

What is being done about it?

A number of control methods such as trapping, trawling, physical barriers, and harvest programs have been used to battle this mitted monster with limited success. Chemical controls are generally not considered a viable option to combat mitten crab because of their mobile nature. However, research on a fungus that is lethal to mitten crab may prove to be an effective biological control agent in the future. For now, federal legislation (Federal Lacey Act) has made it illegal to import eggs and live mitten crab to the United States. It is also illegal to transport or possess live mitten crab in the states of California, Washington, and Oregon (OAR 635-056).

Public outreach and education remains the best most cost effective method of preventing the introduction and spread of Chinese mitten crab.



Photo credit: California Department of Fish and Game.

FACT: English researchers have considered selling invasive Chinese mitten crab to restaurants and markets as a way to control their numbers.

How can YOU prevent the spread of Chinese mitten crab?

Aquatic nuisance species have the uncanny ability to hitch a ride in places we least expect them. To minimize the potential spread of unwanted invaders, follow these simple steps.

- **CLEAN:** your boat and all your gear including waders and boots after each use.
- **DRAIN:** all of the water from your boat (including the bilge, live well, motor), trailer, tackle and gear before leaving the area.
- **DRY:** your gear completely (at least 48 hours) after each use.
- **NEVER:** move live organisms from one water body to another – it is illegal!
- If you happen to capture a mitten crab, **DO NOT** throw it back alive. Take a photograph, freeze it or preserve it in rubbing alcohol, and report your finding to a local authority.

What if I find a mitten crab?

If you find Chinese mitten crab or any other “tenacious trespasser” contact the Aquatic Nuisance Species Task Force at 1-877-STOP-ANS. If you spot a potential aquatic invader in Oregon, contact the Oregon Invasive Species Hotline at 1-866-UNVADER. In Washington State you can report a potential sighting at 1-877-9-INFEST.