

Uca rapax (Mudflat Fiddler Crab)

Order: Decapoda (Crabs, Lobsters and Shrimps)

Class: Malacostraca (Crustaceans: Crabs, Sand-hoppers and Woodlice)

Phylum: Arthropoda (Arthropods)



Fig. 1. Mudflat fiddler crab, *Uca rapax*.

[<http://ocean.si.edu/mangroves>, downloaded 10 March 2016]

TRAITS. The mudflat fiddler crab *Uca rapax* is considered dimorphic since the males have a large claw on one side of the body (Fig. 1) and the females have two small claws. Males are also larger in body size: in Brazil, the carapace width at maturity was 13-15mm in males and 11-12mm in females (Castiglioni and Negreiros-Fransozo, 2004). Both females and males are generally greyish-white in colour, but green to blue can be seen in the large claw and the eyestalks. Colour is dependent upon environmental factors, and hints of orange and yellow are also found in the claws. Fiddler crabs are darker during the day time and light during the night (Tpwd.Texas.Gov., 2016).

DISTRIBUTION. *Uca rapax* is found along tropical coasts of the USA (southern Florida, Texas), West Indies and the Caribbean, and Brazil (Fig. 2).

HABITAT AND ACTIVITY. As the name suggests (mud fiddler crab), they reside in intertidal zones of muddy areas of the salt marsh and mangroves (Figueiredo et al., 2008) (Fig. 3). The soft mud is not only home to these creatures but also their feeding ground and protection. *Uca rapax* are diurnal, skilled at burrowing into the mud, creating holes that provide a nest for their young, privacy for mating, for sleeping and in the colder regions “hibernation” during the winter

(Gcrl.Usm.Edu., 2016). Fiddlers are food to egrets, raccoons and herons. When the tides are high, the crabs cover the entrance of their burrows, and open up the burrows when the tides are low. One can notice mud pellets around the opening of the mud fiddler's burrow, this is evidence of their presence.

FOOD AND FEEDING. Feeding activities are done in daylight. Their diet consists of organic matter, bacteria and fungi, and small invertebrates which make them detritivores/scavengers. They are considered medium level in the trophic chain (Figueiredo et al., 2008). The mature males can only feed with the smaller pincer while the female can feed with both pincers. Studies have shown that females spend a lot more time feeding than males due to nutrients spent on reproduction. The food is carried towards the mouth via the pincers. When placed into the mouthparts, the unwanted particles come out into minute balls and the rest is digested. There are no boundaries for where a crab feeds; they wander around, moving as far as 50m away from their holes (Encyclopedia of Life 2016). An experiment showed that when food supply is low, fiddler crabs forage more, which increases the number of burrows in an area (Genoni, 1991).

POPULATION ECOLOGY. *U. rapax* are usually seen with related crabs. A study in north Brazil showed that *Uca* and *Ucides* species occur together in the intertidal region of the mangrove forest (Diele and Koch, 2010). No competition for food is seen between *Ucides* and *Uca*. However at an intraspecific level competition for food exists. The species do not interbreed; each has its distinct way of attracting a mate (Fig. 4). The average lifespan of a mudflat fiddler is 1.4 years because they mature and develop at a fast rate. There are a larger number of juveniles compared to that of the smaller adults. Populations in Brazil mangroves may have an average of 200 individuals per square metre. Mudflat fiddler crabs are said to be the most abundant species in the genus *Uca* (Castiglioni and Negreiros-Fransozo, 2004).

REPRODUCTION. Mudflat fiddler crabs breed all year round in the tropics (Castiglioni et al., 2007). The tropical environment enables them to feed, grow (development of gonad) and release their larvae. However in the subtropical regions, these crabs have a high reproductive activity during the summer, less in spring and autumn, and none during the winter. The female mates with the male in his burrow whereupon the fertilized female remains in his burrow day and night. The fertilized eggs are kept in clumps on the abdomen of the female until they are ready to hatch. The ovigerous females can carry up to 5000 eggs at a time (Fig. 5). Larger females create more eggs. Once the larvae are fully developed, the females go to the water to release them (Figueiredo et al., 2008). The planktonic larvae undergo 2 to 5 zoeal stages before transforming into a bottom-dwelling megalopa larva. The final stage is the juvenile crab, which leaves the water for the mudflats (Tpwd.Texas.Gov., 2016).

BEHAVIOUR. Communication: For fiddler crabs the courting display is crucial in winning the female. The male waves its large claw near its burrow, trying to attract a mate. The females are highly selective when choosing her mate and always go for males with the largest pincer (Greenspan, 1980). Fights for mates are often seen between competitors.

Anti-predator behaviour: The large pincer in *U. rapax* males is seen as a threat towards small creatures. In the case of a large predator such as birds, turtles, fish and raccoons, these fiddler crabs flee into their burrows or hide within the mangroves or bury themselves into the mud. The females release their zoeal larvae at night to avoid predation.

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Author: Raka Ramlal

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Fig. 2. Distribution of *Uca rapax*.

[http://www.fiddlercrab.info/u_rapax.html, downloaded 4 March 2016]



Fig. 3. *Uca rapax* in the mangrove (Texas).

[http://www.fiddlercrab.info/photos/u_rapax01.html, downloaded 9 March 2016]

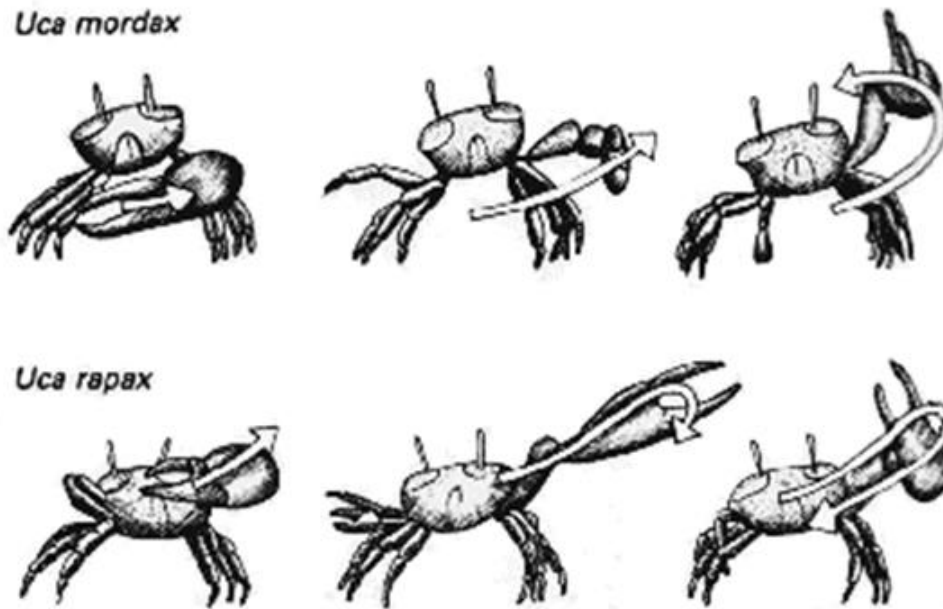


Fig. 4. The wave of males of *Uca mordax* and *Uca rapax*.

[http://www.sivatherium.narod.ru/library/Dixon/pics_01/p00132.gif, download 9 March 2016]



Fig. 5. Female *Uca rapax* carrying eggs on her abdomen.

[http://www.fiddlercrab.info/photos/u_rapax11.html, downloaded 9 March 2016]