

Ucides cordatus (Mangrove Crab or Hairy Crab)

Order: Decapoda (Shrimps, Lobsters and Crabs)

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

Phylum: Arthropoda (Arthropods)



Fig. 1. Mangrove crab, *Ucides cordatus*.

[<http://www.projectnoah.org/spotting/1310676009>, downloaded 10 March 2016]

TRAITS. A semi-terrestrial species common to Neotropical mangrove forests with a rectangular or trapezoidal carapace; relatively narrow front, bent downwards; the whole anterior border is fully occupied by the orbits (eye sockets). The mouth cavity is completely covered by the maxillipeds and hides the mandibles; the walking legs are hairy (Fig. 1). Total length of carapace ranges from 3.2-5.8cm, the width ranges from 4.1-6.1cm. Females do not have hairy legs and leave thin deep tracks at their burrow entrances, while males have hairy legs and leave wide and shallow. Pincers are elongated and unequal in both sexes, with sharp tubercles on the inner margins. Colour: bluish-yellow carapace, pinkish legs, hairs on legs grey to black.

DISTRIBUTION. Widespread over the Neotropics, *Ucides cordatus* is distributed throughout the western Atlantic from Florida to the Mexican Gulf, Central America, the Antilles, northern South America and Brazil to Uruguay (Fig. 2). It is replaced on the Pacific coast by the similar species *Ucides occidentalis*.

HABITAT AND ACTIVITY. Found in mudflat habitat, commonly associated with mangroves, they live in an individual 1m-long burrow which they build near the upper limits of the high tide (Nova, 1996) by themselves, always reaching down to the water table. Burrows are often situated among burrows of other crabs, either under mangrove trees or in open ground. *Ucides cordatus* forages actively during the day (Fig. 3), the rest of the time they spend feeding in their burrows, depending on the tidal cycle. At neap tides, foraging and feeding activities increase at dawn and decrease at dusk because they depend on locating food during the daytime (Nordhaus et al., 2009). *Ucides cordatus* is more active outside their burrows in the dry season than during the rainy season. They close their burrow entrances two to three hours before tidal flooding, and re-emerge as soon as the tide retreats (Nordhaus et al., 2009).

FOOD AND FEEDING. *Ucides cordatus* is predominately a herbivore or primary consumer and its major food source is mangrove litter. During the early months of its lifespan, the species feeds on polychaete worms and microorganisms found in the sediments (Nordhaus and Wolff, 2007). They purposely ingest sediments which they collect outside their burrows (Nordhaus and Wolff, 2007). Leaf litter is also stored in their burrows, on which they feed. However, the leaf litter is not stored for long periods of time due to deterioration. Almost all the time spent above ground is devoted to food-seeking. When compared to other leaf-eating crabs *Ucides cordatus* has a high daily energy intake of 37.6 KJ. It has a preference for *Rhizophora mangle* leaves (Nordhaus et al., 2009). *Ucides cordatus* consumes stored mangrove litter within hours to a few days after collection. Long term leaf storage over months is not best for *Ucides cordatus*, since larger crabs force others to move from their burrows. Burying the leaves prevents them from being washed away by tides, thereby allowing extended time for the crabs to feed on them.

POPULATION ECOLOGY. They live in individual burrows among other indigenous crab species. They generally can live from 1-8 years. Studies have indicated that there have been population declines in the coastal regions of Brazil and the species is threatened by overexploitation (Diele et al., 2005; Legat et al., 2005). This may be so because populations of *Ucides cordatus* are impacted upon by factors relating to overfishing, shrimp aquaculture, dams, and irregular rainfall distribution.

REPRODUCTION. Crabs mate dependent upon their individual levels of sexual maturity and stage in the moulting cycle. In order to mate males must have sexually mature gonads. In females, ovulation generally occurs with some delay, making it possible for them to mate before the gonads are fully mature (Hartnoll, 1969). The number of eggs produced by the females may be 100,000. Mating occurs mainly at night in abandoned burrows after the male is successful in subduing the female. Usually they mate during the inter-moult period of the female. It is now known that mating occurs when the male recognises the female in the inter-moult period, and the female cooperates as the male drags her out of the abandoned burrow for reproduction to be successful (Hartnoll, 1969). Megalopae larvae moult into juveniles, which feed continuously on litter and sediment for at least 4 months before their gonads are sexually mature and they can reproduce.

BEHAVIOUR. Anti-predator behaviour: *Ucides cordatus* feeds mostly in its burrow in order to protect itself from predators. It also mates at night for the same reason. Its pincers are well developed for self-defence in confrontations (Fig. 4).

Communication: *Ucides cordatus* drag females out of their burrows during the mating season and prodding takes place with its legs as part of courtship. Mating behaviour is affected during mating season in the lunar cycle and the rising and falling of tides. This is seen by the way the female transfers the eggs to its abdomen while being attached to the male for over two weeks during the inter-moult period.

APPLIED ECOLOGY. Studies regarding population conservation, conducted in the Caroni Swamp, indicate that there is a decline in the population of hairy crabs due to overharvesting, especially during the mating season. Steps are being taken to implement conservation measures such as a moratorium and regulations for closed mating seasons. This research did not unearth any conclusive evidence of human disease or illness caused by *Ucides cordatus*. Hairy crabs are vital to mangrove habitats and their role in biomass production. In Brazil, over 50% of rural household incomes depend on the widespread availability of this crab to harvest, market, process or transport.

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Fig. 2. *Ucides cordatus* geographic distribution (blue).
(Red shows the Pacific mangrove crab, *Ucides occidentalis*.)

[https://upload.wikimedia.org/wikipedia/commons/1/1b/Ucides_cordatus_distibuicao.svg, downloaded 10 March 2016]



Fig. 3. Mangrove crabs foraging by day.

[<http://ti.racoon.free.fr/galleries/AutresAnimaux/Crabes/crabe009.jpg>, downloaded 10 March 2016]



Fig. 4. Mangrove crab defensive threat display.

[http://40.media.tumblr.com/a1e5957ed2b147bef6344a81a02ea7a5/tumblr_n18oivVWDu1sq1114o1_1280.jpg,
downloaded 10 March 2016]

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