

Pomacea urceus (Freshwater Conch or Black Conch)

Superfamily: Ampullarioidea (Operculate Snails)

Class: Gastropoda (Snails and Slugs)

Phylum: Mollusca (Molluscs)



Fig. 1. Freshwater conch, *Pomacea urceus*.

[<http://www.jaxshells.org/9006.htm>, downloaded 19 March 2015]

TRAITS. The black conch *Pomacea urceus* has a spherical or globe-like shell with a short spire (Fig. 1). It can range to 124-135mm in height and 115-125mm in width. Although often blackish, various colours such as yellow and olive green have added to the variety of the freshwater conch, with the inner lip of the shell being anywhere from red to white. The operculum (cover) is horny (Alderson, 2015). Four main structures of *Pomacea urceus* can be observed: the foot, visceral mass, mantle and the face. The foot is the soft muscular part that is used to move about. Its visceral mass houses the digestive apparatus and the pericardial cavity. The mantle has the function of secreting the shell and the face consist of two long tentacles, with the eyes being at their bases.

Also present is a siphon, 2.5 times its body length. The sexes in this species are separate (Kondapalli, 2015).

DISTRIBUTION. It is most common in tropical and subtropical South America (Fig. 2), including the Amazon and the Plata Basin, and has been introduced to Asia. It is also native to Trinidad and Tobago (Burky, 1974).

HABITAT AND ACTIVITY. Freshwater conchs inhabit an extensive variety of ecosystems from marshes, trenches, lakes, ponds and rivers. The conch favours calm waters rather than flowing water. They are not necessarily found in disturbed habitats, but can be found there (Burky, 1974), and can also tolerate low levels of salinity (Prashad, 1925). It is amphibious, and may spend time outside of the water to breathe. One problem that the conch faces whilst out the water is overheating by the sun, and as a result will be found frequently at dusk (crepuscular). To overcome this overheating, the conch uses evaporative cooling to keep its temperature below 41°C (Alderson, 2015). It may also aestivate (become dormant) in the dry season (Agard, 2015). The average life span for *Pomacea urceus* is 2-4 years, with some living longer (Holswade, 2013).

FOOD AND FEEDING. *Pomacea urceus* is herbivorous (Ramnarine, 2003). They would usually eat vegetation that floats on water, and riparian (waterside) vegetation. This is very problematic to farmers as they eat their plants and destroy them (Wikipedia, 2015). The shells of adults have often been abraded by other conchs, particularly around the spire (Fig. 3), seeking a source of calcium.

REPRODUCTION. The reproductive biology and life cycle of *Pomacea urceus* have been assessed in Trinidad. The species have male reproductive organs in one individual and female reproductive organs in another. The reproduction cycle occurs every year. Females lay their eggs at the end of the rainy season (June to December), and the eggs are kept in the aperture of the mother's shell, under the operculum (Burky, 1974), while she aestivates during the dry season (January to May). The process of development takes about 22-30 days, then the eggs hatch and the juveniles remain inside the mother's shell for the rest of the dry season, protecting them from drying out. While this hatching takes place, the females would be in a state of dormancy, where the metabolic rate drops and they would be partially inactive (Kong, 2015), buried in mud at the edge of the habitat (Fig. 4). The amount of eggs laid can range from as little as 21, to as high as 93, with 54 eggs being the average number (Ramnarine, 2003).

BEHAVIOUR. *Pomacea urceus* is amphibious. It would sometimes leave the swamps and rivers to search for food on land, even though they get a lot of food in marshes. They would go in search for their food at nights and then at the break of day, hide in the water to avoid predators. They are nocturnal and quite mobile. They can however be seen at all times of the day. The fire ant *Solenopsis geminata* has been known to eat the eggs of *Pomacea urceus*. They are highly sought after by the ants as they are highly nutritious.

APPLIED ECOLOGY. This species is not listed by the IUCN and no actions are in place to help conserve it. It is hunted and sought after here in Trinidad as food and is not scarce.

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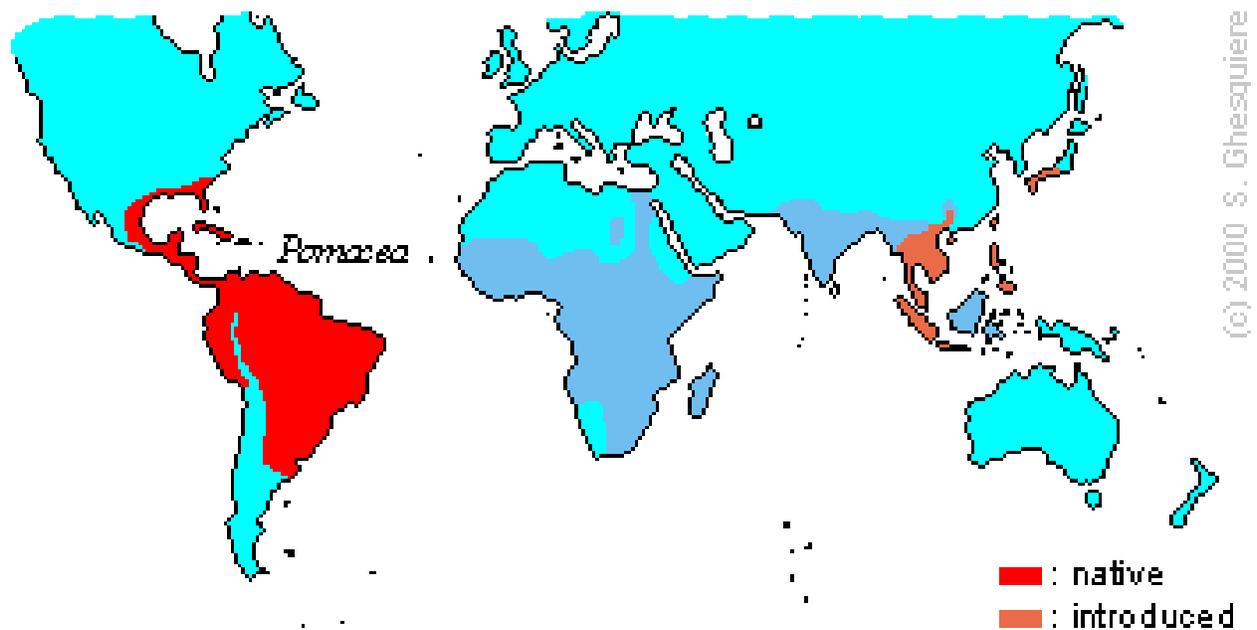


Fig. 2. Freshwater conch geographic distribution.

[http://applesnail.net/content/illustrations/maps/pomacea_map.gif, downloaded 19 March 2015]



Fig. 3. Abraded shell of *Pomacea urceus* due to other conchs seeking calcium.

[<http://acuaristasdevenezuela.com.ve/portal/files/manuales/que-caracol-es-este-es-recomendable-tenerlo-en-el-acuario-vt3329.html>, downloaded 22 May 2015]



Fig. 4. *Pomacea urceus* burrowing in mud to aestivate and brood eggs.

[<http://www.bing.com/images/search?q=pomacea+urceus+in+sand+laying+eggs&FORM=HDRSC2>, downloaded 19 March 2015]