

Asian green mussel

Perna viridis

(Linnaeus, 1758)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Pteriomorpha
Order:	Mytiloida
Superfamily:	Mytiloidea
Family:	Mytilidae



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Description

Perna viridis is a large mussel, 80-100 mm in length, occasionally reaching 165 mm. The shell tapers to a sharp, downturned beak and has a smooth surface covered with a periostracum (skin) that can be vivid green to dark brownish-green near the outer edge and olive-green near the attachment point. The ventral margin of the shell is straight or weakly concave. The interior of the shell valves is shiny and pale bluish green. The ridge which supports the ligament connecting the two shell valves is finely pitted. The beak has interlocking teeth: one in the right valve and two in the left. The wavy posterior end of the pallial line and the large kidney-shaped adductor muscle are diagnostic features of this species.

Reproduction & Growth

Sexes in this species are separate and fertilisation is external. Spawning generally occurs twice a year between early spring and late autumn, however in the Philippines and Thailand spawning occurs year round. Fertilised eggs develop into larvae and remain in the water column for two weeks before settling as juveniles. Sexual maturity typically occurs at 15-30 mm shell length (corresponding to 2-3 months age). The life span of *P. viridis* is typically 2-3 years. Growth rates are influenced by environmental factors such as temperature, food availability and water movement. First year growth rates vary between locations and range from 49.7mm/yr in Hong Kong to 120 mm/yr in India.

Feeding

Suspension Feeder

This species is an efficient filter feeder, feeding on small zooplankton, phytoplankton and other suspended fine organic material.

Impacts

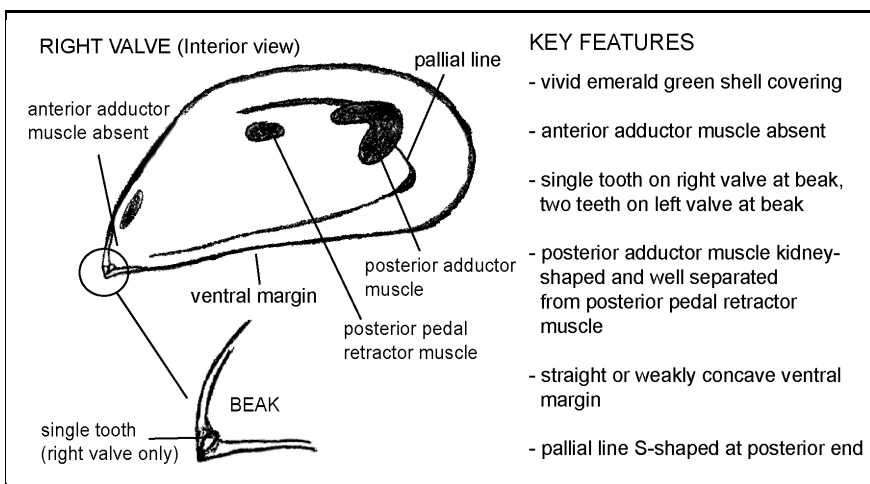
Perna viridis can have economic, ecological and human health impacts. Economically, it can cause problems with water systems of industrial complexes by clogging pipes, increasing corrosion and reducing efficiency. It is also a problem for vessels: fouling can raise costs for owners due to increased maintenance, decreased fuel efficiency and blocked or damaged internal pipes. Fouling on mariculture equipment alters maintenance routines, harvest times and may restrict water flow thus effecting product quality. Ecologically, *P. viridis* is able to outcompete many other fouling species, causing changes in community structure and trophic relationships. *P. viridis* has also been recorded with high levels of accumulated toxins and heavy metals and is linked to shellfish poisoning in humans.

Habitat

Perna viridis forms dense populations (up to 35,000 individuals per square metre) on a variety of structures including vessels, wharves, mariculture equipment, buoys and other hard substrata. It is susceptible to overgrowth from other fouling organisms that make it difficult to detect despite its vivid green appearance. Primarily found in estuarine habitats with salinities ranging from 18-33 ppt and temperatures from 11-32 deg C, *P. viridis* has a broad salinity and temperature tolerance (in experimental testing it survived salinities of 0-80 ppt and temperatures of 7-37.5oC).

Predators

Numerous species prey on *P. viridis*: crustaceans, fish, seastars and molluscs (octopus). It is also a human food source and aquaculture species throughout south-east Asia.

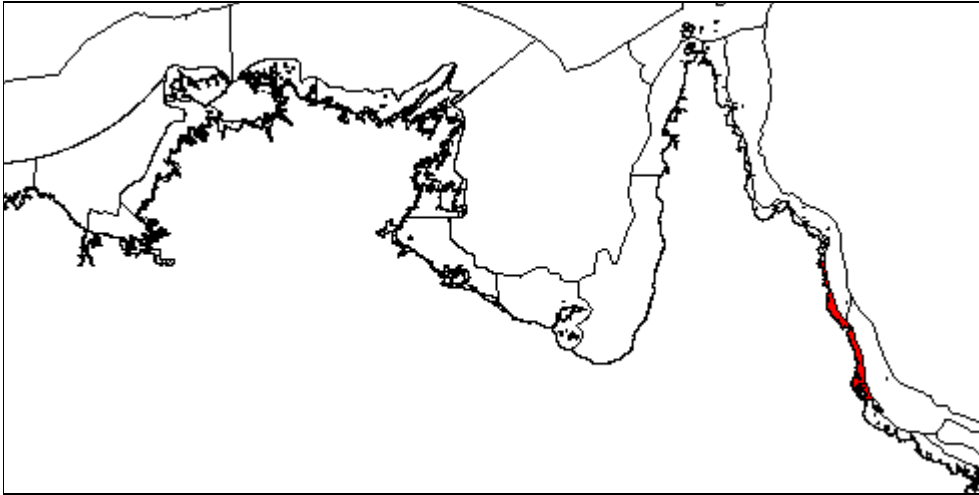


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Similar species

There are only two other species in the genus *Perna* - *P. perna* from Africa and South America, and *P. canaliculus* from New Zealand. *P. viridis* can be distinguished from both these species by the kidney shape of the posterior adductor muscle, the S-shape of the pallial line and the concave ventral margin. The genus *Perna* differs from all other mussels by the absence of an anterior adductor muscle close behind the beak and the green-brown periostracum. *Perna* is most similar to the blue mussels (genus *Mytilus*) in size and shape, but in *Mytilus* the posterior pedal retractor muscle connects with the posterior adductor muscle and the periostracum is blue-black.

Australian IMCRA BioRegion Infection Status



Control Options

For control information see the web site: <http://crimp.marine.csiro.au/nimpis>

Likely Vectors - Class/Vector

Fisheries

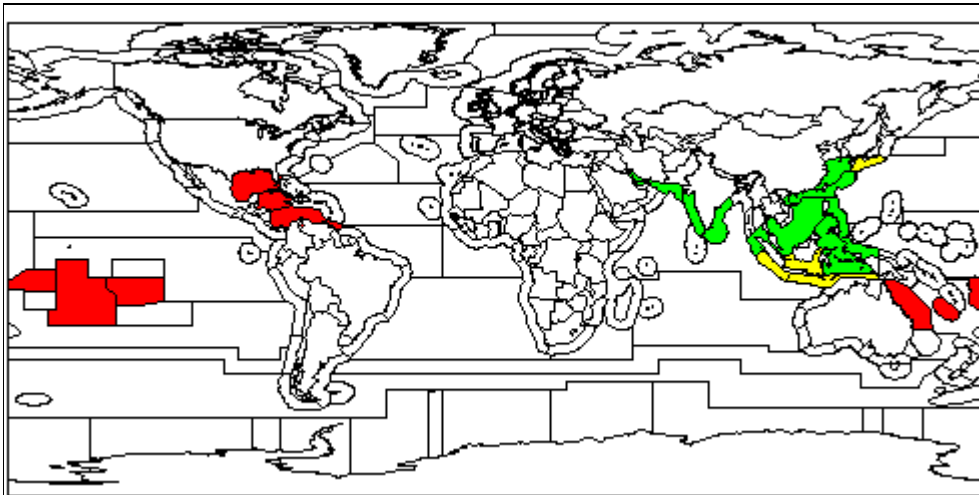
Fisheries: deliberate translocation

Shipping

Ships: accidental with ballast wat

Ships: accidental as attached or fr

Worldwide BioRegion Infection Status



Key References

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