



## Perna viridis

Asian Green Mussel, Green mussel, Green lipped mussel, Philippine green mussel, sea mussel

### Threat scores

1. Ecological impact
  - Fouling of human structures; economic losses to aquaculture.
  - Block flow of water in power plants & clog and corrode condenser tubes.
  - “Used as an indicator of biopollution of heavy metals, organochlorines, and petroleum hydrocarbons According to Philips (1980), and IOC (1981), *P. viridis* is one of the best mussel species to test for biopollution” (Molnar 2008).
2. Invasive potential
  - “Has the potential to have increases its geographical distribution by step-wise larval dispersal, or "island hopping." The threat of invasion to coastal ports near Tampa Bay from inter-coastal transport is now a distinct possibility that will require monitoring” (Molnar 2008).
  - “The green mussel was first recorded being seen in Trinidad in the mid-1990s (Agard et al., 1992). The mussels later moved southward to the Gulf of Paria by mode of prevailing currents (Agard et al., 1992). In 1993 the mussel population from Trinidad is thought to have been dispersed into Venezuela by currents (Agard et al., 1992) and human activities (Rylander et al., 1996)” (Molnar 2008).
3. Geographic extent
  - “Now well established in the Tampa Bay estuary, being first discovered by divers doing maintenance work at the TECO powerplant in South Hillsborough County” (Molnar 2008).
  - Regionally patchy
4. Management difficulty
  - Several management options suggested.
  - Continuous high-level chlorination of the intake tunnels effectively detaches and kills the green mussel. However if not all mussels are killed & density will increase again (Molnar 2008).



### Geography and Habitat

1. Origin: Native range of the green mussel is along the Indian coast and throughout the Indo-Pacific (Siddall, 1980). (GSMFC)
2. Intertidal zones, coastland

### Invasion pathways

1. Ballast Water and Sediments
  - Accidental probable
2. Stocking in Open Water
  - Intentional probable
3. Hull/Surface Fouling
  - Accidental probable
4. Natural Spread
  - Probable

- Cause- range expansion
  - "Because of its dispersed spawning nature, lack of local predators, fast growth, and high tolerance of environmental conditions, the mussel population is expected to expand in Atlantic habitats until it reaches its thermal limits" (Molnar 2008).
5. Other Animal Trade
    - Intentional known
  6. Cause- scientific bio-indicator research
    - "The Gulf States Marine Fisheries Commission (2003) reports that, *P. viridis* has also been used as an indicator of biopollution of heavy metals, organochlorines, and petroleum hydrocarbons" (Molnar 2008).

#### Non native locations

1. 43- Northern Gulf of Mexico
2. 65- Greater Antilles
3. 70- Floridian

#### Sources

1. Molnar, Jennifer, et al. 2008. "Assessing the global threat of invasive species to marine biodiversity." *Frontiers in Ecology and the Environment*. 6 (9), pp. 485-492.
2. <http://conserveonline.org/workspaces/global.invasive.assessment>
3. [http://fl.biology.usgs.gov/pics/db\\_green0091.jpg](http://fl.biology.usgs.gov/pics/db_green0091.jpg)