



## Rapana venosa

### Asian rapa whelk

#### Threat scores

1. Ecological impact
  - “Carniverous gastropods whose main diet consists of a variety of other mollusk species such as native oysters. A major pest of oyster beds. Have caused significant changes in the ecology of bottom-dwelling organisms” (Molnar 2008).
2. Invasive potential
  - “This fertile species is extremely versatile, tolerating low salinities, water pollution and oxygen deficient waters” (Molnar 2008).
  - “Spreading less rapidly, but no less of a threat due to spread through planktonic larvae. Most likely spread in ballast water or via the transport of egg masses with marine farming products. *R. venosa* reproduces by laying clusters of egg capsules that resemble small mats of yellow shag carpet, which produce pelagic larvae that eventually settle on the bottom where they develop into hard-shelled snails” (Molnar 2008).
3. Geographic extent
  - Native of western Pacific now established in Black Sea & east coast of South America.
  - Locally pervasive
  - Introduced: Virginia
4. Management difficulty
  - “Recent studies in Adriatic Sea find “breakwaters could represent preferential sites for maintenance of *R. venosa*”. Predation by blue crabs, mud crabs, & spider crabs could be natural control mechanism. Spread inevitable, eradication unlikely” (Molnar 2008).



#### Geography and Habitat

1. Origin: Western Pacific, from the Sea of Japan, Yellow Sea, East China Sea and the Bohai Sea.
2. First introduction: 1998
3. “Possible means of introduction: planktonic larvae in ballast water tanks of ships or that egg masses may have been transported with products of marine farming. 1st specimen collected in Hapton Roads, Virginia in 1998” (Molnar \ 2008).
4. Marine, estuaries/bays

#### Invasion Pathways

1. Ballast Water & Sediments
  - Accidental possible
  - Possible means of introduction: planktonic larvae in ballast water tanks of ships
2. Aquaculture and Mariculture Activities
  - Accidental probable
  - Cause- Transported with marine farming products
  - “egg masses may have been transported with products of marine farming”

3. Hull/Surface Fouling
  - Accidental possible
  - Hull fouling is a possible pathways

#### Non native locations

1. 41- Virginian
2. 56- Puget Trough/Georgia Basin

#### Sources

1. <http://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=1018>
2. <http://www.issg.org/database/species/ecology.asp?si=691>
3. 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.
4. <http://conserveonline.org/workspaces/global.invasive.assessment>