Molgula manhattensis

Ascidian, common sea grape

Threat scores

1. Ecological impact
   - "Can compete with native organisms for space and grow on the native organisms themselves. Locally (Washington State) invasive ascidians are partly responsible for the continued rarity of the native Olympia Oyster (Ostreola conchaphila), through space competition and smothering of juveniles. In addition, where these invaders are common, native ascidians have become less abundant" (Molnar 2008).
2. Invasive potential
   - "A fouling organism. Fast reproduction, short dispersal, and cloning enable these invaders to dominate small areas very quickly. Invasions can spread through areas as large as pleasure craft marinas in months. Non-brooding adults release sperm and eggs into the surrounding water, where fertilization and development of non-feeding swimming larvae occur. This reproductive trait allows for wider dispersal and transport in ballast water. Potential for future translocations on ships fouling communities" (Molnar 2008).
3. Geographic extent
   - Locally patchy
4. Management difficulty
   - "No known eradication methods in marine environment. Mechanisms to control the spread are unknown. Chemical, physical, mechanical methods used. Ascidians are intolerant of freshwater and exposure to air" (Molnar 2008).

Geography and Habitat

1. Origin: Native to northern Japan
2. First introduction: 1960's
3. Found in San Francisco Bay in the 1960's. Found in an aquaculture facility in the San Juan Islands (Washington, USA) in the 1980's.
4. Marine, fouling communities, estuaries/bays
5. Common port resident in temperate sea areas worldwide. Found on rocks, pilings, boat hulls, and various sea weeds in bays and estuaries. It is tolerant of a range of salinity, temperature, and pollution (Meinkoth 1981).

Invasion Pathways

1. Ballast Water and Sediments
   - Accidental probable
2. Hull/Surface Fouling
   Accidental probable

Non native locations

1. 56- Puget Trough/Georgia Basin
2. 57- OR, WA, Vancouver Coast and Shelf
3. 58- Northern California

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://nlbif.eti.uva.nl/bis/tunicata/pictures/molgula.gif