



## Teredo navalis

### Naval Ship Worm, Great Shipworm

#### Threat scores

##### 1. Ecological impact

- Impact is great upon man-made wooden structures, but not upon ecosystems necessarily. A single introduced organism, the shipworm *Teredo navalis*, caused \$615 million (in 1992 dollars) of structural damage to maritime facilities in 3 years in the early part of the 20th century.
- Shipworms feed on wood particles and minute organisms. They do enormous damage to piers and ships and were death to the ships that cruised the oceans of the world. They are particularly bad in the warm tropical waters of the Caribbean Sea.
- Shipworms are of major ecological significance, in that they break
- Down organic material in the sea that has originated on land. This is
- particularly important in tropical regions with mangroves, where the
- large quantities of organic matter accumulating would otherwise take
- Much longer to decompose.

##### 2. Invasive potential

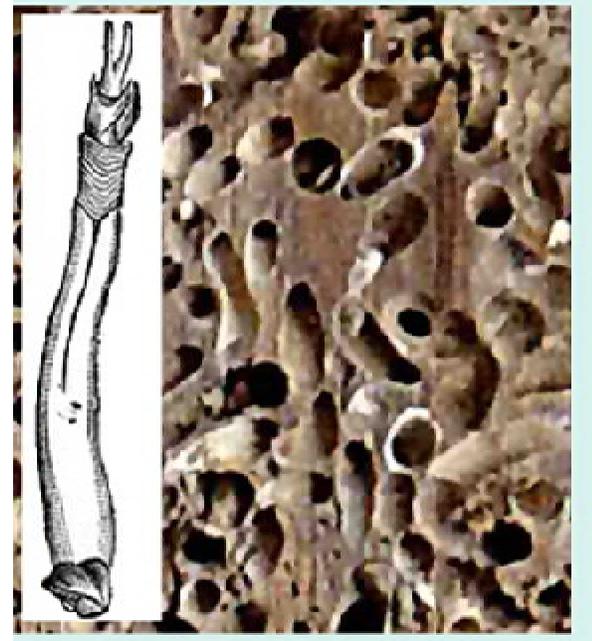
- Shipworms release planktonic veliger larvae (larvae that have developed swimming membranes or velum). The larvae exist in the water column for two or three weeks before settling. Potential for spread through tidal or ocean currents and on driftwood.

##### 3. Geographic extent

- Regionally pervasive

##### 4. Management difficulty

- Chemical, manual, physical treatments. Prevention with copper coating effective.



#### Geography and Habitat

1. Origin: May possibly be cosmopolitan in warm seas. Native in Faroe Islands, Norway and Iceland.
2. First introduction: Evidence of this species having occurred around Warnemunda on the Baltic Coast of Germany as early as 1875.
3. First observed in Swedish waters in the Skagerrak and Kattegat.
4. Marine, fouling communities
5. The great shipworm lives inside wood ships, jetties, piers and other structures that are constantly submerged in sea water. Requires relatively high salinity.

#### Invasion Pathways

##### 1. Climate Change

- Accidental probable
- Cause- warmer waters
- Warmer waters may facilitate the spread of this species

2. Hull/Surface Fouling
  - Accidental probable
  - *T. navalis* has a long history of causing damage to the shipping industry and to structures such as piers and marinas.
3. Natural Spreading
  - Possible
  - Water current transported driftwood
  - It can be found in boats, piers, driftwood and any other wooden structure from below the high tide mark.

#### Non native locations

1. 40- Gulf of Maine/Bay of Fundy
2. 41- Virginian
3. 42- Carolinian
4. 43- Northern Gulf of Mexico
5. 54- Gulf of Alaska
6. 56- Puget Trough/Georgia Basin
7. 57- OR, WA, Vancouver Coast and Shelf
8. 58- Northern California
9. 59- Southern California Bight
10. 64- Eastern Caribbean
11. 65- Greater Antilles
12. 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.
1. <http://conserveonline.org/workspaces/global.invasive.assessment>
2. <http://www.sms.si.edu/irlspec/images/tnavalis2.jpg>