

Star Ascidian

Botryllus schlosseri

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Pathway • Hull fouling • Aquaculture • Ballast water

Impacts



Biodiversity

Competes with native species for space and food, particularly on artificial substrates where it grows rapidly. Increases mortality of seagrass by growing on the leaves and reducing available light. Evidence shows this species will become more abundant as water temperatures increase.



Human Health

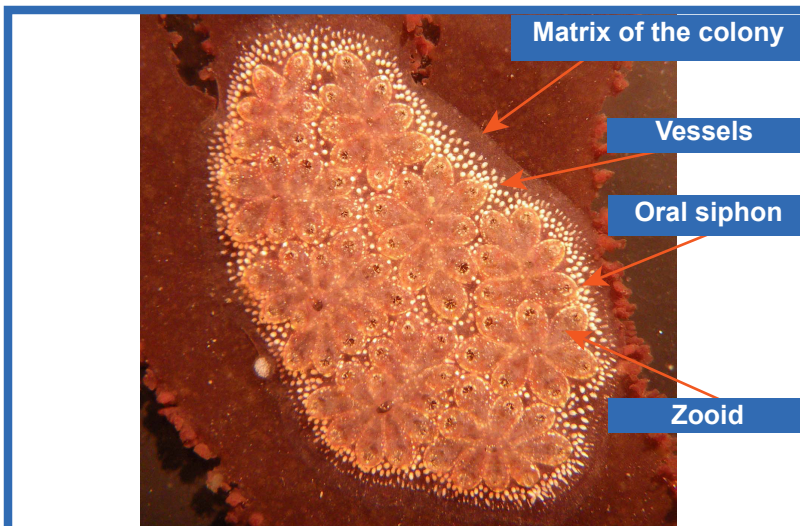
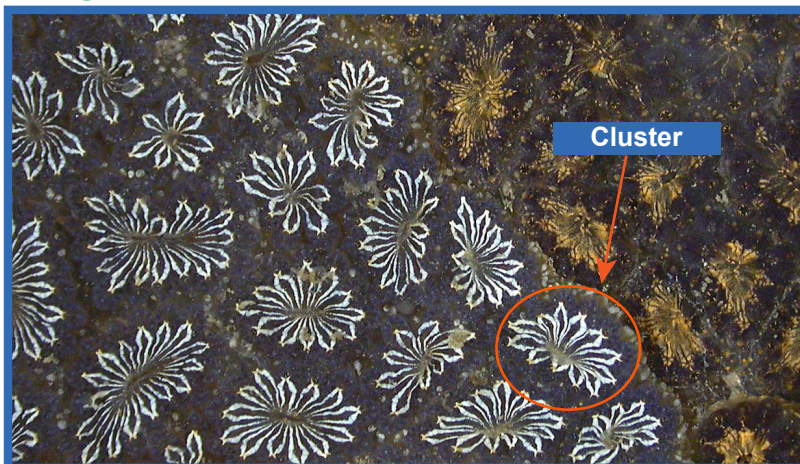
None known.



Economy

It is a common fouling organism on man-made oyster trays and increases aquaculture processing costs.

Key ID Features



Description

Individual single celled organisms called zooids that grow together in clusters of 5 - 20 zooids to form a single star-shaped cluster. Multiple star-shaped clusters together form colonies. Each zooid is an oval or teardrop shape with an oral siphon that appears as a dark dot at the centre of each individual. The narrow end of the zooid points to the centre of the cluster, which can be star-shaped or oval. The clusters in the colony are surrounded by a clear, firm matrix through which the zooids pump water via vessels that appear as small pigmented dots within the matrix.

Size

Individual zooids can be 0.175 – 0.5 cm long and the colonies they form can be up to 0.25 cm x 1.5 cm and 0.2 – 0.4 cm thick.

Colour

Highly variable. They can be yellow, orange, white, grey, dark purple, red, brown, black or green, however every zooid in a colony will be the same colour. It is also possible to see a single dark spot at the centre of each zooid.

*Note: Images not to scale



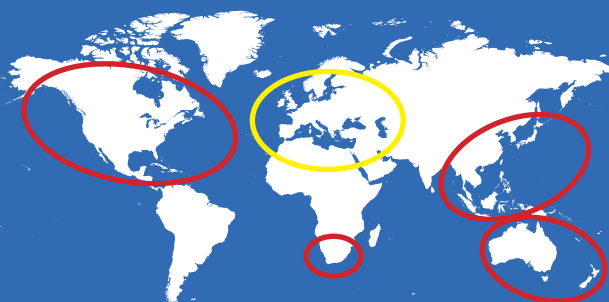
Distribution



Native range: Its origin is uncertain, however it is generally considered to be native to Europe and the Mediterranean, Adriatic and Black seas.



Non-native range: Found globally along temperate coasts such as the Americas, Australia, South Africa, Asia and oceanic Islands. It is now the most common tunicate in North America.



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Habitat and Ecology

Habitat: More frequently sighted on anthropogenic structures than on natural surfaces, it will settle on docks, boat hulls, buoys, ropes, pilings, as well as rocks, bivalve shells and seaweeds.

Environmental preferences: They tolerate temperatures of -1 °C to 30 °C and salinities of 14 PSU to 44 PSU. They also thrive in polluted waters.

Diet: They use their siphons to pull phytoplankton and food particles from the water column.

Reproduction: Both sexually and asexually. They can reproduce asexually through budding, which form from the body wall of the zooid. Each zooid is hermaphroditic and can self-fertilise or have eggs fertilised by nearby individuals. Up to 8000 eggs can be produced by a colony which broods them until they become tadpole-like larvae. The larvae spend one day in the water column, travelling 1 – 10 km before settling on a hard surface.

Confusion with similar species

Can be identified by its colourful, star-shaped clusters.

Similar to the white spotted tunicate *Botryllus tuberatus* (see below). The main difference is that *B. schlosseri* has larger zooids: 0.2 – 0.5 cm compared to 0.1 cm in *B. tuberatus*.



If you think you have seen this species, please contact the person below who will confirm its identity.

Please also refer to the mitigation strategies guidance document, provided as part of the Marine Biosecurity Toolkit.

Further Information

- <https://invasions.si.edu/nemesis/browseDB/SpeciesSummary.jsp?TSN=159373>
- http://www.exoticsguide.org/botryllus_schlosseri
- http://species-identification.org/species.php?species_group=tunicata&id=21

Images

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