



Coastal & Marine Geology Program



USGS Woods Hole Science Center

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USGS National Geologic Studies of Benthic Habitats, Northeastern United States

Marine Invasive Species

Didemnum lahillei, a colonial tunicate; ascidian; sea squirt

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Text in gray (italic) indicates the topic has not been addressed to date.

Taxonomic Classification

Phylum *Chordata*, Subphylum *Tunicata*, Class *Ascidiacea*, Order *Aplousobranchia*, Family *Didemnidae*, Genus *Didemnum*, Species *lahillei*. Hartmeyer, 1909.

Summary of Occurrence

Didemnum lahillei is a marine colonial tunicate (ascidian; sea squirt) that has been observed at several locations in the northeast Pacific and North Atlantic Ocean basins. It exhibits the characteristics of an invasive species: 1) sudden occurrence where not before known; 2) rapid reproduction and excessive biomass; 3) no known predators. It is native to Europe.

The rapid spread of *Didemnum lahillei* alters marine habitats and threatens to interfere with fishing, aquaculture, and other coastal and offshore activities.

It is found on hard substrates that include dock structures and floats, wood and metal pilings, moorings and ropes, steel chain, automobile tires, polythene plastic, rock outcrops, gravel seabed (pebbles, cobbles, boulders), and ship hulls. It overgrows organisms such as tunicates, sponges, macroalgae, hydroids, anemones, bryozoans, scallops, mussels, and oysters. Where *D. lahillei* occurs on the seabed, it likely covers the siphons of infaunal bivalves. *D. lahillei* has been reported from coastal areas in California, New England, northwest France, and the Netherlands. It also has been observed on the continental shelf off New England in the Gulf of Maine region. It has been found at water depths ranging from intertidal to continental shelf depths of 48m (157 ft).

Gross Morphology and Growth Habits

Didemnum lahillei colonies exhibit a wide variety of morphological variants that range from: 1) long, ropey or beard-like colonies that commonly hang from hard substrates such as docks, lines, and ship hulls; to 2) low, undulating mats with short surficial appendages that encrust and drape rocky seabeds (pebbles, cobbles, boulders, and rock outcrops).

Purpose and attribution

The goal of this website is to assemble and communicate information on the distribution, biology, and marine habitat impacts of the highly invasive colonial tunicate *Didemnum lahillei*. Researchers and others are encouraged to share published and preliminary research results and anecdotal observations on these topics. All contributions are acknowledged. The information displayed on this website is in the public domain. Users are expected to give proper credit for images, data, and ideas they incorporate into their work.

Contributions to the website can be sent to Page Valentine, USGS, pvalentine@usgs.gov

Images of *Didemnum lahillei* posted on this website represent occurrences that have been verified through visual inspection or dissection by persons familiar with the species. Images that have not been verified as *D. lahillei* are noted as a "provisional identification" in the image caption and in the occurrence tables.

Website design: Donna Newman, USGS

Image processing and archival: Dann Blackwood, USGS

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