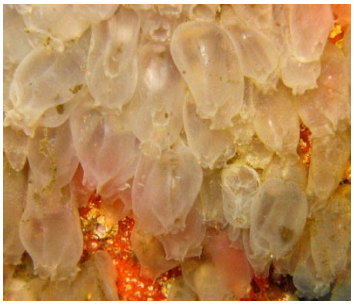
Photo: Janna Nichols

WASHINGTON STATE RECREATION AND CONSERVATION OFFICE
Washington Invasive Species Council

Invasive Tunicates



Ciona savignyi has a clear body that is nearly transparent. Photo: Janna Nichols

What Are They?

Tunicates, commonly called sea-squirts, are primitive marine animals that spend most of their life attached to docks, rocks, or the undersides of boats. Tunicates are built like a barrel. The name "tunicate" comes from the firm, but flexible body covering, called a tunic. Most tunicates live with their posteriors, or lower ends of the barrel, attached to fixed objects, and two openings, or siphons, projecting from the other. Tunicates eat plankton and live by drawing seawater through their bodies.

Ciona savignyi. Photo: Graham Montgomery, Bugwood.org

Are They Here Yet?

Yes. While our marine waters are home to several native species of tunicates, there are three invasive tunicate species present: *Ciona savignyi*, *Styela clava*, and *Didenmun vexillum*. *Ciona savignyi* is in Hood Canal and the Puget Sound, from Olympia to Whidbey Island. *Styela clava* is at Pleasant Harbor Marina in Hood Canal, and at Blaine, Semiahmoo, and Elliott Bay Marinas. A small number of *C. savignyi* were found amongst heavy infestations of *Didemnum vexillum* on Maury Island, but the Washington Department of Fish and Wildlife eradicated them. A local diver sited a single *Styela clava* just south of Maury Island. *Didemnum vexillum* is present in various densities throughout Puget Sound with very heavy infestations in Vancouver, British Columbia.

Report Sightings

Invasivespecies.wa.gov

Why Should I Care?

All three species have been invading coastal waters in several countries, where they spread rapidly. Mats of these species can smother other sea life, and their aggressive water

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filtration affects plankton communities. In some areas of the country, invasive tunicates are becoming a major threat to aquaculture operations because they compete with native filter feeders such as clams, mussels, and oysters.

What Are Their Characteristics?

Didemnum vexillum forms mats with long, hang lobes. Photo: Janna Nichols

Didemnum vexillum

- Color can vary from cream to white, yellow, or tan.
- Dense, blob-like (similar to pancake batter) colonies.
- May form long, hanging, rope-like lobes, like dreadlocks or beard-like colonies on hard substrates. On the sea floor, flat, wavy mats with bumps or small lobes may form.

Styela clava

- May reach densities of 500-1,500 per square meter. The young do not move far before settling and attaching.
- Club-shaped with two siphons; anchored to substrate by a stalk.
- Tough, leathery, bumpy exterior; often covered with other organisms.
- Up to 8 inches with stalk about 1/3 of its total length.
- Found in shallow, subtidal waters on hard surfaces.

Ciona savignyi

- Whitish to almost clear. Can be so transparent that its organs are visible.
- It generally is tube-shaped, has two siphons of unequal length that are slightly scalloped at the edges with small yellowish to orange flecks forming at the rim.
- It usually is found in depths of 40-75 feet but also may be found in protected waters on surfaces under docks, pilings, boat hulls, and other structures.

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How Can We Stop Them?

Although tunicate mats can break apart and spread by currents or storms, the primary way that tunicates spread is in the ballast water of ships or by attaching themselves to boats that are moved from one water body to another. Clean, drain, and dry all watercraft and equipment immediately after use. Find more information about this at: https://invasivespecies.wa.gov/campaigns/clean-drain-dry/

Steya claya is club-shaped with two siphons. Photo: Janna Nichols

The Washington Department of Fish and Wildlife works with commercial divers to remove tunicates from heavily infested marinas. Various marine resource areas and recreational dive groups also help with control. Volunteer diver surveys can be open to anyone interested.

What Should I Do If I Find One?

Report immediately via the WA Invasives mobile app or reporting web form at https://invasivespecies.wa.gov/report-a-sighting/.