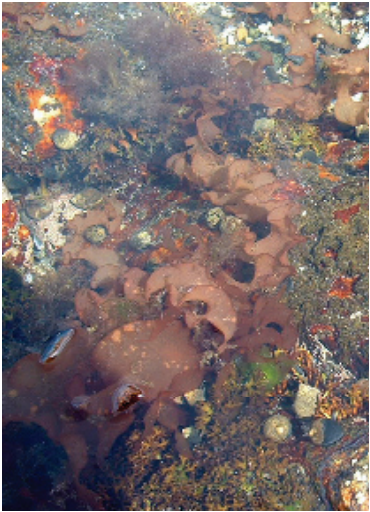


GUIDE TO MARINE INVADERS IN RI COASTAL WATERS

Grateloupia turuturu red algae



Emily Jones



Adrienne Pappal

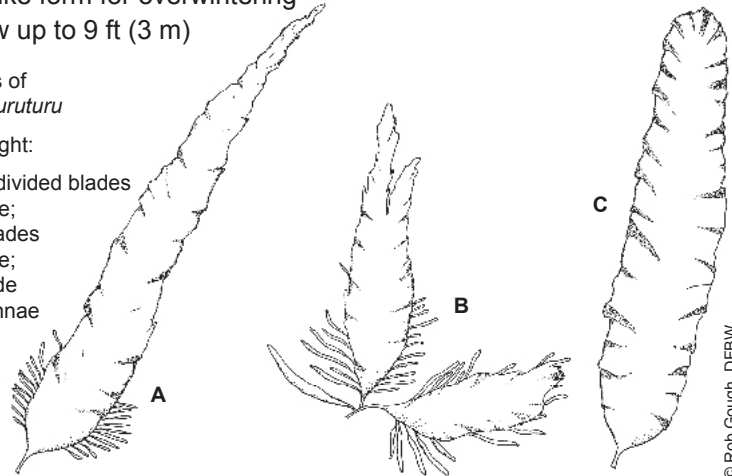
PHYSICAL DESCRIPTION

- Red alga with thin, pink to maroon blades, often with bladelets (pinnae) at base, and a distinctly gelatinous, slippery texture
- Variable growth forms (divided or undivided, varying blade shapes)
- Grows singly, but more typically in clumps of up to 8 individuals
- Grows to full lengths in late summer and early fall, then reduces to crust-like form for overwintering
- Can grow up to 9 ft (3 m)

Various forms of
Grateloupia turuturu

From left to right:

- A.** Single, undivided blades with pinnae;
- B.** Divided blades with pinnae;
- C.** Single blade without pinnae



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HABITAT PREFERENCE

- Found in shallow water down to 2m below mean low water, attached to firm surfaces
- Prefers protected waters such as tidal pools
- Believed to be unable to survive very cold water

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INVASION STATUS & ECOLOGICAL CONCERNS

Grateloupia turuturu (formerly known as *Grateloupia doryphora*) was introduced from the Pacific Ocean, possibly originating from Japan, and was first found on eastern North American shores in Narragansett Bay, RI (1996). This alga has since spread south to Long Island Sound and north to Cape Cod, Mt. Hope Bay and Boston Harbor, MA. The initial method of introduction was probably spores released in ballast water discharge. To date, its expansion northward into the Gulf of Maine seems limited by its apparent inability to tolerate very cold water.

This alga reproduces by spores that settle onto hard surfaces and form crusts that soon sprout into long red leaves. Detached blades can also survive and attach elsewhere as new individuals. While the impact of this species is not yet well understood, its growth pattern and habitat preferences make it a threat to native red algal species, particularly *Palmaria palmata* and *Chondrus crispus*. Studies of *G. turuturu* are also focusing on the impacts of shading caused by its broad blades which may prevent other algae from growing nearby, and how its winter die-back affects local ecology. For example, *G. turuturu* may be replacing algal species such as *C. crispus* that provide an important winter food source for snails and other invertebrates.

SIMILAR SPECIES

Palmaria palmata (dulse)

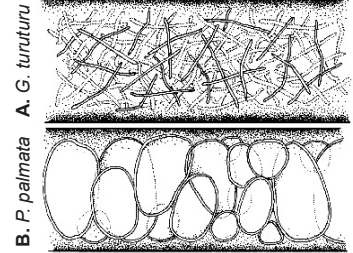
Grateloupia turuturu may easily be mistaken for *Palmaria palmata*, a native red alga with a similar appearance. However, careful study reveals several key physical differences. *P. palmata* has thicker, more leathery blades that typically branch dichotomously or palmately (see right). The gelatinous and slippery texture of the *G. turuturu*'s thallus (body), and the filamentous medulla (internal tissue) (Fig. A at right), vs. rounded cells (Fig. B) are useful in clearly separating these two species.

Palmaria palmata



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Cross-section of Medulla (tissue)



A. *G. turuturu*
B. *P. palmata*

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This card is adapted from an original series produced by Salem Sound Coastwatch (www.salemsound.org). The original series was funded by the MA EOEEA Office of Coastal Zone Management with funding from the U.S.F.W.S. For more information please visit www.mass.gov/czm/invasives/monitor/reporting.htm. The production of this adapted card was funded by the RI Coastal Resources Management Council with funding from the U.S. Fish & Wildlife Service. To report findings please email kcute@crmc.ri.gov or call (401) 783-7772 or (401) 783-3370.