

# GUIDE TO MARINE INVADERS IN THE GULF OF MAINE

## *Grateloupia turuturu* red algae



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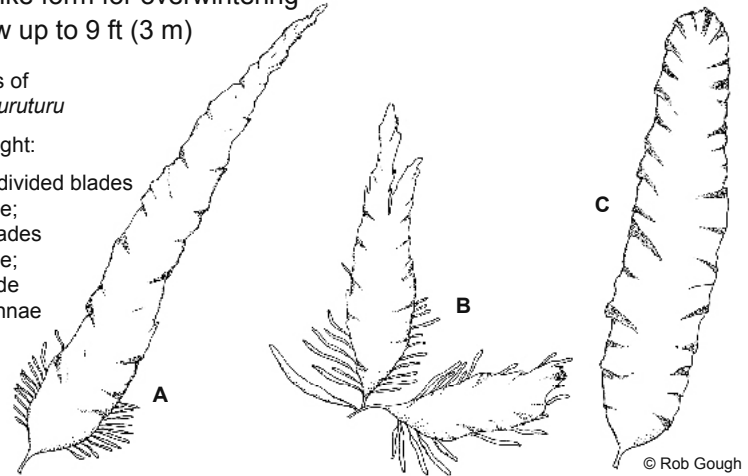
### PHYSICAL DESCRIPTION

- 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*



R. Gough

#### Cross-section of Medulla (tissue)

A. *G. turuturu*



B. *P. palmata*



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This identification card is one of a series produced by Salem Sound Coastwatch ([www.salemsound.org](http://www.salemsound.org)) highlighting introduced species that pose a threat to the marine environments of Massachusetts and the Gulf of Maine. The original development of these cards was funded by the MA EOEPA Office of Coastal Zone Management with funding from the U.S. Fish and Wildlife Service. For additional species information or to report sightings, please visit [www.mass.gov/czm/invasives/monitor/reporting.htm](http://www.mass.gov/czm/invasives/monitor/reporting.htm).

