



Littorina saxatilis

Rough Periwinkle

Threat scores

1. Ecological impact
 - Affects algal bloom dynamics, preys on newly-settled barnacles. Predict significant long-term impacts on Pacific near-shore ecosystems
2. Invasive potential
 - Transported on algae used for packing material, spread from initial sites of introduction is expected to be slow
 - In the Atlantic it typically takes 2-10 yr to colonize new habitats within a range of 1 km or less, with dispersal mainly occurring on drifting seaweed
 - Does not possess larval stage which would increase chances of "free floating state" spread
 - High potential for establishment once transported to new site
3. Geographic extent
 - Cross continental
 - Regionally pervasive
4. Management Difficulty
 - Restricted locations make eradication through collection methods effective if done while species still confined to San Francisco Bay.



Geography and Habitat

1. Origin: Atlantic Ocean
2. Introduced: California, Hawai'i
3. Habitats
 - Marine, intertidal zones, brackish water, coastland
 - Intertidal, salt marshes, subtidal substrates, crevices of bedrock, empty barnacle shells, under rocks, base of
 - Spartina species, firm mudbanks, submerged brackish water attached to Zostera, Fucus, Ruppia & Potamogeton species

Invasion Pathways

1. Bait Industry
 - Accidental probable
 - Littorina saxatilis was probably introduced into San Francisco Bay with marine baitworms (pileworms and bloodworms) imported from Maine. The worms are packed in a seaweed (Ascophyllum nodosum) which anglers frequently discard into the bay (Molnar 2008).
2. Live Seafood Trade
3. Seaweed
 - Associated w/ Atlantic alga (Ascophyllum nodosum) often used as packing material for live animal shipments
4. Natural Spread

Non native locations

1. 58- Northern California
2. Hawaiian Islands

Sources

1. Molnar, Jennifer, et al. 2008. "Assessing the global threat of invasive species to marine biodiversity." *Frontiers in Ecology and the Environment*. 6 (9), pp. 485-492.
2. <http://conserveonline.org/workspaces/global.invasive.assessment>
3. <http://www.asturnatura.com/Imagenes/especie/littorina-saxatilis.jpg>