Mycale grandis **System:** Marine

Kingdom	Phylum	Class	Order	Family
Animalia	Porifera	Demospongiae	Poecilosclerida	Mycalidae

Common name orange keyhole sponge (English, USA, Hawaii), orange sponge (English)

Synonym

Similar species

Summary Mycale grandis is an introduced sponge that is considered invasive and a potential threat to corals and reefs in Hawaiian waters. It is generally restricted to shallow-water fouling communities in major harbours associated with disturbed habitats, but has recently been observed over-growing native corals in lagoon-patch reef communities in Kane‘ohe‘ohe Bay, O‘ahu, Hawaii.

view this species on IUCN Red List

Species Description
Mycale grandis is an orange-red brightly coloured sponge. The colouring is both internal and external. It can grow as thickly encrusting to lobate-massive cushions up to 1 metre diameter and 0.5m thick or larger. The upper surfaces of large sponges show large ostia or \"keyholes\", hence the common name. The sponge's surface is uneven. The texture is fibrous and firm but compressible, and can be torn easily. The interior is cavernous, and often packed with small ophiuroids (*Ophiactis* cf. *savignyi*) (Eldredge and Smith 2001).

Habitat Description
Mycale grandis is typically restricted to shallow-water fouling communities (i.e. pier pilings, floating docks) in major harbours or on associated disturbed habitats (i.e. dredged channels and artificial lagoons). This species has also been found over-growing native coral communities in areas of Hawaii like Kane‘ohe'ohe Bay, where it grows on patch reefs in the southeast corner of the bay as well as artificial structures (Eldredge and Smith 2001; Coles and Bolick 2006).

Reproduction
Like most sponges, *Mycale grandis* is probably capable of asexual reproduction by fragmentation but specific details regarding sexual reproduction of this species are unstudied (Eldredge and Smith 2001).

Nutrition
Mycale grandis is a filter feeder, continuously circulating water through its body. Microscopic food particles are removed from the water by specialised collar cells. Digestion is intracellular (Eldredge and Smith 2001).

General Impacts
Mycale grandis is a fouling organism whose ecological impacts have not been well studied. Observations suggest that it competes for space with native sponge and coral species and threatens lagoon-patch reef communities around Hawaii where it is overgrowing two of the dominant reef-forming corals in the Kane‘ohe‘ohe Bay. (Coles *et al.* 2004a; Eldredge and Smith 2001).

Pathway
Unintentional introduction, most likely as fouling on ships' hull (Eldredge and Smith 2001).

Principal source: Dr. Steve Coles, Bishop Museum.
Coles, S. L and Bolick, H. 2006. Assessment of invasiveness of the orange keyhole sponge *Mycale armata* in Kane`ohe Bay, O`ahu, Hawai`i.

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Steve Coles\ Research Zoologist\ Bishop Museum Hawai'i USA

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ALIEN RANGE

[2] AUSTRALIA
[1] MALAYSIA
[32] UNITED STATES
[1] INDIAN - OCEAN EASTERN
[1] MEXICO

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Summary: The electronic tool kits made available on the Cefas page for free download are Crown Copyright (2007-2008). As such, these are freeware and may be freely distributed provided this notice is retained. No warranty, expressed or implied, is made and users should satisfy themselves as to the applicability of the results in any given circumstance. Toolkits available include 1) FISK- Freshwater Fish Invasiveness Scoring Kit (English and Spanish language version); 2) MFISK- Marine Fish Invasiveness Scoring Kit; 3) MI-ISK- Marine invertebrate Invasiveness Scoring Kit; 4) FI-ISK- Freshwater Invertebrate Invasiveness Scoring Kit and AmphISK- Amphibian Invasiveness Scoring Kit. These tool kits were developed by Cefas, with new VisualBasic and computational programming by Lorenzo Vilizzi, David Cooper, Andy South and Gordon H. Copp, based on VisualBasic code in the original Weed Risk Assessment (WRA) tool kit of P.C. Pheloung, P.A. Williams & S.R. Halloy (1999).
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