Mytilopsis sallei 正體中文

System: Marine

Kingdom	Phylum	Class	Order	Family
Animalia	Mollusca	Bivalvia	Veneroida	Dreissenidae

Common name

false mussel (English), Caribbean black-striped mussel (English, Australia), Caribbean black-striped false mussel (English, Australia), caliche (Spanish, Venezuela), Santo Domingo false mussel (English), black striped mussel (English)

Synonym

Congeria gundlachi , Dall, 1898
Congeria rossmasessleri , Dall, 1898
Congeria sallei , Dall, 1898
Dreissena domingensis , Reculuz, 1852
Dreissena gundlachi , Fischer, 1858
Dreissena morchiana , Fischer, 1858
Dreissena pfeiferi , Fischer, 1858
Dreissena riisei , Dunker, 1855
Dreissena roosmassleri , Fischer, 1858
Dreissena sallei , Recluz, 1849
Dreissenia domingensis , Dunker, 1855
Dreissenia gundlachii , Dunker, 1855
Dreissenia moerchiana , Dunker, 1855
Dreissenia pfeifferi , Dunker, 1855
Dreissenia rossmaessleri , Dunker, 1855
Dreissenia sallei , Dunker, 1855
Mytilopsis allyneana , Hertlein and Hanna, 1949
Mytilus domningensis , Reeve, 1858
Mytilus morchianus , Reeve, 1858
Mytilus rossmassleri , Reeve, 1858
Mytilus sallei , Reeve, 1858
Tichogonia domingensis , Kuster, 1889
Tichogonia gundlachi , Kuster, 1889
Tichogonia moerchiana , Kuster, 1889
Tichogonia pfiefferi , Dunker, 1853
Tichogonia riisei , Dunker, 1853
Tichogonia rossmassleri , Dunker, 1853
Tichogonia sallei , Dunker, 1853

Similar species

Dreissena polymorpha, Mytilopsis leucophaeata, Dreissena bugensis, Brachidontes spp.

Summary

Mytilopsis sallei, commonly known as the black striped mussel, is an opportunistic r-strategist mussel species, which is found in intertidal and shallow waters. It has similar impacts to the zebra mussel Dreissena polymorpha. Mytilopsis sallei is a major fouling species, forming dense monocultures which can lead to a substantial reduction in biodiversity.

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Species Description
Mytilopsis sallei is a small, fingernail sized mussel, growing to an average size of 25mm, although sizes range from lengths of 8-25mm, with a maximum width of 9.68mm and a maximum height of 12.58mm. It has a varied shell colouration, from black through to a light colour, with some small individuals having a light and dark zig-zag pattern. The right valve overlaps the left valve, and is slightly larger. *M. sallei* settles in clusters, and is rarely seen as a single individual (NIMPIS, 2002).

Lifecycle Stages
Juveniles grow rapidly, and are considered mature after one month. Maximum size is reached within six months, and mussels live for about 12-13 (max 20) months. *M. sallei* is ambi-sexual and individual mussels change sex at some stage during their lifetime (NIMPIS, 2002; CSIRO, 2001).

Habitat Description
Mytilopsis sallei has wide temperature, salinity and oxygen tolerances. It also possesses a fast rate of growth, high fecundity and matures early. In its native habitat, *M. sallei* is a colonial surface dweller of sheltered waters, for example, shallow coastal lagoons. In its introduced habitat, it is found in intertidal and shallow waters, at a range of temperatures (10-35°C) and salinities (0-27 ppt), and preferring disturbed habitats and often settling on man-made structures. It has not been found any deeper than a few metres. It prefers to settle on vertical surfaces and objects, but is found on all types of substrata. It is capable of shedding its byssus and reattaching to new surfaces - younger mussels develop byssus apparatus at shorter intervals, and hence move more often, but adults are relatively passive (NIMPIS, 2002; CSIRO, 2001; Udhayakumar and Karande, 1989; Morton, 1981; Bax *et al*. 2002).

Reproduction
Mytilopsis sallei has high fecundity, rapid growth and a fast maturity rate. During their lifespan, individuals change sex, with a proportion of mussels in any population present as hermaphrodites. Eggs and sperm are spawned into the water column, where external fertilisation takes place. Tens of thousands of eggs can be released. Spawning appears to be triggered by changes in salinity - in its native range *M. sallei* has two periods of intense spawning activity apparently stimulated by rapid drops in salinity resulting from seasonal freshwater outflow (Puyana, 1995; in Bax *et al*. 2002). A pelagic larva develops within a day of fertilisation and then settles (NIMPIS, 2002; CSIRO, 2001).

Nutrition
Mytilopsis sallei is a suspension feeder, feeding on zooplankton, phytoplankton and other suspended particulate organic matter (NIMPIS, 2002).

General Impacts
Mytilopsis sallei is an extremely prolific and fecund species, being ecologically similar to its relation the zebra mussel *Dreissena polymorpha*. It has been responsible for massive fouling on wharves and marinas, seawater systems (pumping stations, vessel ballast and cooling systems) and marine farms. In preferred habitats, it forms dense monospecific groups that exclude most other species, leading to a substantial reduction in biodiversity in infected areas (NIMPIS, 2002; CSIRO, 2001).

Management Info
McEnnulty *et al*. (2002) suggest eight possible methods for the control of *M. sallei* in the The Web-Based Rapid Reponse Toolbox: antifoulants (TBT and novel modern coatings), air exposure/dessication/freezing, changes to salinity, oxygen deprivation, copper compounds, endosulfan/endosulphan, chlorine or hydrocarbons.

Pathway
Hull fouling is often an important factor in incursions, such as the introduction of *M. sallei* to Darwin Harbour, Australia in the 1990s (Hutchings *et al*. 2002).Spread *via* ballast water appears less likely because of the short duration of the larval stage (CSIRO, 2001).

Principal source: NIMPIS. 2002. *Mytilopsis sallei* species summary. National Introduced Marine Pest Information System

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG) with support from La Fondation d'entreprise Total

Review:

Pubblication date: 2007-01-09

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[1] AUSTRALIA
[2] HONG KONG
[2] JAPAN
[1] SINGAPORE
[1] FIJI
[3] INDIA
[1] MEXICO
[1] TAIWAN

BIBLIOGRAPHY

16 references found for **Mytilopsis sallei**

Managment information

Bax, N., Hayes, K., Marshall, A., Parry, D. and Thresher, R. 2002. Man-made marinas as sheltered islands for alien marine organisms: Establishment and eradication of an alien invasive marine species. Pages 26-39 in Veitch, C.R. and Clout, M.N. (Eds.). *Turning the tide: the eradication of invasive species*. IUCN SSC Invasive Species Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK.
Summary: This paper discusses the incursion and subsequent eradication of *M. sallei* in Darwin Harbour, Northern Territory, Australia. Available from: http://issg.appfa.auckland.ac.nz/database/species/reference_files/mytgal/Bax.pdf [Accessed 27 November 2006]

Centre for Environment, Fisheries & Aquaculture Science (CEFAS)., 2008. Decision support tools-Identifying potentially invasive non-native marine and freshwater species: fish, invertebrates, amphibians.
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).
The decision support tools are available from:
http://cefas.defra.gov.uk/our-science/ecosystems-and-biodiversity/non-native-species/decision-support-tools.aspx [Accessed 13 October 2011]
The guidance document is available from http://www.cefas.co.uk/media/118009/fisk_guide_v2.pdf [Accessed 13 January 2009].

National Introduced Marine Pest Information System (NIMPIS), 2002. *Mytilopsis sallei* species summary. National Introduced Marine Pest Information System (Eds: Hewitt, C.L., Martin, R.B., Sliwa, C., McEnnulty, F.R., Murphy, N.E., Jones, T. and Cooper. S.).
Summary: This website provides comprehensive information on *M. sallei*.
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General information

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Summary: This paper reports on invasions of marine species, both in India and around the world.

Chu, K.H., Tam, P.F., Fung, C.H. and Chen, Q.C. 1997. A biological survey of ballast water in container ships entering Hong Kong. *Hydrobiologia*. 352: 201-206.
Summary: This paper discusses the species which have arrived in Hong Kong via ballast water in container ships.

Commonwealth Scientific and Industrial Research Organisation (CSIRO), 2001. Black-striped mussel, *Mytilopsis sallei*. Marine pest information sheet 10.
Summary: This information sheet provides basic information about *M. sallei*.
Available from: http://www.marine.csiro.au/crimp/Reports/Infosht10_Mytil0201S3.pdf [Accessed 29 November 2006]

Hewitt, C.L. 2002. Distribution and biodiversity of Australian tropical marine bioinvasions. *Pacific Science*. 56 (2): 213-222.
Summary: This paper discusses the invasive marine species found in Australia, including *M. sallei*.
Hutchings, P.A., Hilliard, R.W. and Coles, S.L. 2002. Species introductions and potential for marine pest invasions into tropical marine communities, with special reference to the Indo-Pacific (1). *Pacific Science*. 56 (2): 223.
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Kimura, T. and Horii, N. 2004. *Mytilopsis sallei* (Bivalvia: Dreissenidae) introduced into Ise Bay. *Chiribotan*. 35 (2): 37-43.
Summary: This paper outlines the introduction of *M. sallei* to Ise Bay in Japan.
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Summary: This paper reports a new record for *M. sallei* in Mexico.
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Morton, B. 1989. Life-history characteristics and sexual strategy of *Mytilopsis sallei* (Bivalvia: Dreissenacea), introduced into Hong Kong. *Journal of Zoology*. 219 (3): 469-485.
Summary: This paper provides a great deal of information about the life history of *M. sallei* in Hong Kong.
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