**Mytilopsis sallei**  

**System:** Marine

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animalia</td>
<td>Mollusca</td>
<td>Bivalvia</td>
<td>Veneroida</td>
<td>Dreissenidae</td>
</tr>
</tbody>
</table>

**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 roosmaessleri*, 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 pfeifferi*, Dunker, 1853
- *Tichogonia riisei*, Dunker, 1853
- *Tichogonia rossmassleri*, Dunker, 1853
- *Tichogonia sallei*, Dunker, 1853

**Similar species**
- *Dreissena polymorpha*, *Mytilopsis leucophaeata*, *Dreissena bugensis*, *Brachidontes*

**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.
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 Response 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).


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

**Publication date:** 2007-01-09

**ALIEN RANGE**

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

**BIBLIOGRAPHY**

16 references found for *Mytilopsis sallei*

**Management information**


**Summary:** This paper discusses the incursion and subsequent eradication of *M. sallei* in Darwin Harbour, Northern Territory, Australia.


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 Villizzi, 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. Halloky (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].


General information


Summary: This paper discusses the species which have arrived in Hong Kong via ballast water in container ships.


Summary: This paper outlines the introduction of M. sallei to Ise Bay in Japan.


Summary: This paper reports a new record for M. sallei in Mexico.


Summary: This paper examines the effects of petroleum hydrocarbons on M. sallei in Visakhapatnam Harbour in India.


Summary: This paper discusses the morphology of M. sallei in Visakhapatnam Harbour in India.


Summary: This paper provides a great deal of information about the life history of M. sallei in Hong Kong.


Summary: This paper reports on the species present in the Singapore River subsequent to attempts to clean up pollution in the river.


Summary: This paper provides information about the invasive marine species in Indian waters.


**Summary:** This paper discusses details of the byssal threads of *M. sallei*. 
