**Overview**

**Short description of Austrominius modestus, Darwin’s barnacle**

A small sessile barnacle, five -10 mm in diameter, characterised by having four shell plates. Low, conical body shape with a diamond shaped opening. Young specimens are white and smooth; adults are grayish brown and usually eroded.

**Description of Austrominius modestus, Darwin’s barnacle status in GB**

This barnacle is distributed around most coasts of England and Wales, a few areas of Scotland and some Scottish islands including the Outer Hebrides.

**Habitat summary: Austrominius modestus, Darwin’s barnacle**

Can inhabit almost the entire intertidal zone, but is most common from mid-shore to shallow subtidal areas of estuarine and sheltered marine habitats. It attaches to a variety of substrates including rocks, stones, hard-shelled animals and artificial structures including ships, and tolerates a wide range of temperature and salinity.

**Overview table**

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<td>Native range:</td>
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<td>Functional type:</td>
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<td>Location of first record:</td>
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**Invasion history: Austrominius modestus, Darwin’s barnacle**

**Origin**

This barnacle is native to Australasia – New South Wales, Australia, Tasmania and New Zealand.

**First Record**

This species was first recorded in Britain in Chichester Harbour, Hampshire in 1946, although it is believed to have arrived sometime between 1940 and 1943.

**Pathway and Method**

It is thought to have been introduced during the Second World War attached to the hulls of merchant and warships. Following the initial introductions further transport by hull fouling, natural larval dispersal or association with aquaculture products may have continued the species’ spread.

**Species Status**

After reaching Europe during the early 1940s this barnacle spread rapidly all over
European Atlantic coasts; it is now found from Gibraltar to Germany with recent records from the Mediterranean. Its range in GB extended from Chichester Harbour to Shetland in 38 years. This rapid spread has been attributed to a combination of pelagic larval dispersal and further transport by hull fouling. This species has become the dominant barnacle in a number of locations around GB.

**Ecology & Habitat: Austrominius modestus, Darwin’s barnacle**

**Dispersal Mechanisms**
Larvae are planktonic for up to a month and during this time may be transported by water currents or in ships’ ballast water. Further dispersal of settled individuals may occur through attachment to other organisms or artificial substrata including ships’ hulls.

**Reproduction**
Like most barnacles this species is a cross-fertilising hermaphrodite. Unlike native barnacle species it can breed almost continuously throughout the year, and under favourable conditions it has been reported to release broods every 10 days with each brood producing an average of 500 nauplii. Breeding begins when water temperatures exceed 6 °C. Duration of larval development varies with temperature from 40 days at 6 °C to 10 days at 24 °C. Development rate is also influenced by salinity. This is a fast growing species that is quick to reach maturity, which combined with its high reproductive output gives it a competitive advantage over slower growing, less fecund native species.

**Known Predators/Herbivores**
Worms, whelks, fish, birds, crabs, some sea slugs and starfish are amongst the wide range of animals to prey upon acorn barnacles.

**Resistant Stages**
None known.

**Habitat Occupied in GB**
This barnacle is found throughout the intertidal zone but is more common on the mid to lower shore and may occur in shallow subtidal waters. It occurs widely in estuaries and sheltered coasts due to its tolerance of a wide range of salinities. It is more tolerant of low and fluctuating salinity than native barnacle species.

**Distribution: Austrominius modestus, Darwin’s barnacle**
Native range from southern Australia to New Zealand and Tasmania. In Britain it is distributed around most English and Welsh coasts, at a few locations around Scotland and some Scottish islands.

**Impacts: Austrominius modestus, Darwin’s barnacle**

**Environmental Impact**
Competes with native species for space and appears to have entirely displaced native barnacle species in some places, including Lough Hine and the Tamar estuary. Since the 1960s in Lough Hine, macroalgal cover has decreased as barnacle abundance has increased.

**Health and Social Impact**
None known.

**Economic Impact**
Fouling of vessels, equipment and interference with mariculture activities may incur costs associated with cleaning and loss of utility. Furthermore, heavily fouled ships require more fuel to maintain speed due to disruption of water flow over the hull.

**References & Links: Austrominius modestus, Darwin’s barnacle**

**Identification**
Biology, ecology, spread, vectors


Management and impact


General

