

Bay barnacle (*Balanus improvisus*)



Photo © Karin Fagergren, Stockholm Archipelago Foundation

Common name(s) in English	Bay barnacle. An acorn barnacle.
... and in other languages	Danish: Brakvandsrur. Estonian: Tavaline tõruvähk. Finnish: Merirokko. German: Ostsee-Seepocke. Brackwasser-Seepocke. Latvian: Juras zile. Lithuanian: Juros gile. Norwegian: Brakkvannsrur. Polish: Pškla bałtycka. Swedish: Slät havstulpan. Brackvattenlevande havstulpan.
Scientific name	<i>Balanus improvisus</i>
Organism group	Crustaceans. Cirripedes.
Size and appearance	<i>Balanus improvisus</i> grows to around 10 mm in diameter, the largest specimens reaching just under 20 mm. It has a white or greyish white calcareous shell. The bay barnacle is usually fairly flat, with a maximum height of about 6 mm (although it can grow taller in crowded conditions), and has a smooth surface. It can be recognized by its radially calcareous base. Generally it has a longevity of one year, but occasionally individuals can live for just over two years.
May be confused with	In the Skagerrak and Kattegat, the bay barnacle may be confused with other acorn barnacles, such as the northern rock barnacle (<i>Balanus balanoides</i>) or the rock barnacle (<i>B. crenatus</i>). Nine species of acorn barnacles occur in the waters around Sweden (see also the factsheet on the striped barnacle (<i>Balanus amphitrite</i>), a non-native species in Swedish waters).
Geographical origin	Probably North America.
First observed in Swedish waters	Around 1844.
Occurrence in Swedish seas and coastal areas	<i>Balanus improvisus</i> occurs in freshwater-affected areas of the Skagerrak and Kattegat, and generally in the Baltic Sea proper and the Gulf of Bothnia, as far north as the Northern Quark.
Occurrence in other sea areas	The species is widespread around the world, and is one of the very first known introductions to the Baltic. It was discovered in Denmark in 1880, in Sweden and Lithuania around 1844 and in Germany (Elbe estuary) in 1858. The first finds in the North Sea were made in Britain

	in 1854 and shortly afterwards in the Netherlands. <i>Balanus improvisus</i> occurs in several areas of the North-East Atlantic, including Norway, France and probably Spain. It is also found in the Adriatic and the Red Sea.
Probable means of introduction	As fouling on ships' hulls. The species could also conceivably spread as a fouling organism on shellfish imported for aquaculture. In addition, acorn barnacles tolerant of high salinities can attach themselves to driftwood and other debris (plastics, wood or metal) in the sea. There are reports of objects encrusted with barnacles which, judging from the state of development of the barnacles, have been in the sea for 2–3 months.
Habitat(s) in which species occurs	<i>Balanus improvisus</i> commonly grows on rocks, jetties, boats' hulls, algae and bivalves, from the water surface down to a depth of about 6 m. It thrives close to the waterline, either below or alternately above and below it. The bay barnacle can attach to various man-made structures in water, to aquatic animals with hard surfaces (e.g. large crustaceans such as crabs) and to certain algae (e.g. bladderwrack). It can cope with brackish-water conditions (it is the most freshwater-tolerant of the acorn barnacles) and is capable of living in waters with salinities from around 1.6 psu to as high as 40 psu. The species can also withstand wide fluctuations in water temperature.
Ecological effects	<i>Balanus improvisus</i> may compete with other organisms for space. To control fouling by the species, toxic anti-fouling paints containing organo-metallic compounds have been used (and still are being used, despite a ban) on ships' and boats' hulls and other structures in water, such as jetties. The compounds involved are highly toxic to the marine environment as a whole.
Other effects	In aquaculture, fouling of mussels and oysters and of cages by acorn barnacles is a problem. They can also block power station water intakes (a problem reported from the coast of Finland as far north as Vaasa). Sharp <i>Balanus improvisus</i> shells can pose a health risk to humans.
FIND OUT MORE	
<ul style="list-style-type: none"> • North European and Baltic Network on Invasive Alien Species: <i>Balanus improvisus</i> http://www.nobanis.org/speciesInfo.asp?taxaID=255 • Swedish Centre for School Biology and Biotechnology http://www.bioesurs.uu.se/myller/hav/smakraftdjur.htm http://www.bioesurs.uu.se/myller/hav/havstulpan.htm http://www.bioesurs.uu.se/myller/hav/havhelp_batskrov.htm • Baltic Sea Alien Species Database: <i>Balanus improvisus</i> http://www.ku.lt/nemo/balanus.html http://www.ku.lt/nemo/directory_details.php?sp_name=Balanus+improvisus • Eesti Mereinstituut: <i>Balanus improvisus</i> http://www.sea.ee/Sektorid/merebioloogia/MASE/Benthic_invertebrates.htm •  37 kB: Gollasch Consulting: Leppäkoski: <i>Balanus improvisus</i>. http://www.gollaschconsulting.de/download/Balanus_p1.pdf •  8,7 MB: Bundesanstalt für Gewässerkunde: Neozoa (Makrozoobenthos) an der deutschen Nordseeküste: Eine Übersicht. http://www.stefannehring.de/downloads/083_Nehring+Leuchs-1999_BfG-Bericht-1200_neozoa-nordsee.pdf • Universität Rostock, Institut für Biowissenschaften: <i>Balanus improvisus</i> http://www.biologie.uni-rostock.de/oekologie/balticsea/03%20Animals/08%20Crustacea/Balanus%20improvisus.htm • University of Gdansk, Hel Marine Station: Pškla bałtycka http://hel.hel.univ.gda.pl/jurek/org/sko/pak/pak.htm • European Nature Information System Database (EUNIS): <i>Balanus improvisus</i> http://eunis.eea.eu.int/species-factsheet.jsp?idSpecies=26218&idSpeciesLink=26218 	

- Marine and estuarine macroinvertebrates, macroalgae and fish introduced to the Netherlands: *Balanus improvisus*
<http://home.hetnet.nl/~faassema/Balanusimprovisus.html>
-  3,4 MB: Nationaal Natuurhistorisch Museum: Non-indigenous marine and estuarine species in The Netherlands: *Balanus improvisus*
<http://www.marbee.fmns.rug.nl/pdf/marbee/2005-Wolf-ZoolMed.pdf>

PHOTO CREDIT

- © Karin Fagergren, Stockholm Archipelago Foundation
<http://www.skargardsstiftelsen.se/SE/>
http://www.ab.lst.se/templates/Proj_Page___8025.asp

- This factsheet on *Balanus improvisus* was created on 20 September 2005
- First update: 29 June 2006
- Second update: 6 November 2006
- Translated by Martin Naylor on 1 December 2006
- Third update ("Find out more" only): 16 December 2006