Jenkins' spire shell *(Potamopyrgus antipodarum)*

Photo © Dan L. Gustafsson, Montana State University

Common name(s) in English	Jenkins' spire shell. Jenkins' spire snail. New Zealand mud snail.	
… and in other languages	Danish: Ungefødende Dyndsnegl. Estonian: Rändtigu. Finnish: Vaeltajakotilo. German: Neuseeländische Zwergdeckelschnecke. Fluß-Turmschnecke. Latvian: Jaunzelandes jostinhidrobija. Polish: Wodozytka Jenkinsa. Swedish: Nyzeeländsk tusensnäcka. Kölad tusensnäcka. Vandrarsnäcka.	
Scientific name	*Potamopyrgus antipodarum*. Also known as *Hydrobia jenkinsi, Potamopyrgus jenkinsii* and *Paludestrina jenkinsi.*	
Organism group	Molluscs. Gastropods (mud snails).	
Size and appearance	Jenkins' spire shell is usually no longer than about 3–6 mm, but can grow to around 11 mm. The spiral-shaped shell (with around 5 whorls in an adult) is grey or horn-coloured, ranging from light to dark brown, and sometimes slightly translucent. Encrusted shells can vary widely in colour. From a distance, living snails look like small black or grey specks. Their soft parts are white, with dark patches or bands. Populations consist almost entirely of females, which reproduce by bearing young that have developed from unfertilized eggs. Reproduction is slower at higher salinities.	 Photo © Dan Gustafsson
May be confused with	Different species of mud snails can be difficult to identify; there are four species in the seas around Sweden.	
Geographical origin	New Zealand.	
First observed in Swedish waters	1887	

Occurrence in Swedish seas and coastal areas	This species is found along the Swedish coast, from the northernmost part of the Bothnian Bay down to Falsterbo. In addition, it has been recorded in the inner areas of Idefjorden, and probably also occurs in other freshened waters along the west coast of Sweden.
Occurrence in other sea areas	*Potamopyrgus antipodarum* is notorious as an invasive species in many parts of the world (Europe, North America and Australia). In European waters it is found, for example, along the coasts of Britain, the Netherlands, Belgium, France and Germany. It occurs throughout almost the whole of the Baltic Sea.
Probable means of introduction	The species was originally introduced in drinking water barrels aboard ships sailing to Europe from Australia (to which it had been brought from New Zealand). In recent times, it has mainly been spread by shipping, probably as a fouling organism. As the snails are so small, they can also be spread inadvertently to new areas by birds, pet animals, recreational boats, anglers, swimmers and others who come into contact with water where the snails are present and then take them with them to another body of water. The fact that the eggs can develop without fertilization aids the establishment of the species.
Habitat(s) in which species occurs	*Potamopyrgus antipodarum* lives at depths of up to 20 m. It prefers soft sediments, but in the Baltic is also found on hard substrata. It can live on silt, sand and mud, and also on concrete, gravel, cobbles and vegetation. In dry or cold conditions, it can seek shelter by burrowing into benthic sediments. The species can live in everything from fresh to more saline water (up to 26 psu). It is found in lakes (but not in Sweden), ponds, rivers, lagoons, canals, estuaries, ditches, water tanks and reservoirs – provided that the calcium content of the water is high enough. Apart from that, it has modest requirements in terms of water quality: it can cope with both turbid and clear water, can live in sewage, and can even pass intact through the guts of many fish species. Jenkins' spire shell is not temperature-sensitive, coping with everything from near freezing to +28°C, and can withstand a certain degree of desiccation.
Ecological effects	Jenkins' spire shell occurs in large numbers in benthic areas, especially on silty sediments, where it is not unusual to find 100,000 individuals in a single square metre. From the United States there are reports of as many as 750,000 individuals per square metre in rivers in the Yellowstone National Park. The species is able to move very rapidly. When it is as abundant as this, *Potamopyrgus antipodarum* can become the dominant component of the benthic fauna and outcompete other species, including native gastropods. In some American rivers, it makes up over 95 per cent of the invertebrate biomass. This affects food availability for other benthic animals and fish. The spread of the snail also affects the physical environment and its functions in relation to other species. In addition, mud snails are hosts to many parasites, such as flukes (Trematoda), which pass through several stages in their life cycles. The snails ingest the flukes' eggs when they graze on the bottom, becoming hosts to the first stage. In their subsequent stages, flukes usually infest fish and birds.
Other effects	Jenkins' spire shell can cause problems in freshwater reservoirs. In Australia it has been found in water tanks and reservoirs and has spread through water pipes. Pipes have also become blocked by large accumulations of the species.

FIND OUT MORE

- National Environmental Research Institute, Denmark: Dyndsnegl
  http://www.dmu.dk/Forstå+miljøet/Dyr+og+planter/Havsnegle/Dyndsnegl.htm
- Baltic Sea Alien Species Database: *Potamopyrgus antipodarum*
  http://www.ku.lt/nemo/directory_details.php?sp_name=Potamopyrgus+antipodarum
- North European and Baltic Network on Invasive Alien Species: *Potamopyrgus antipodarum*
  http://www.nobanis.org/speciesInfo.asp?taxaID=230
- North European and Baltic Network on Invasive Alien Species: *Potamopyrgus jenkinsi*
  http://www.nobanis.org/speciesInfo.asp?taxaID=1756
- 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
- European Nature Information System Database (EUNIS): *Potamopyrgus antipodarum*
  http://eunis.eea.europa.eu/species-factsheet.jsp?idSpecies=285890&idSpeciesLink=285890
- Joint Nature Conservation Committee: *Potamopyrgus antipodarum*
  http://www.jncc.gov.uk/default.aspx?page=1713
- 3,4 MB: Nationaal Natuurhistorisch Museum: Non-indigenous marine and estuarine species in The Netherlands: *Potamopyrgus antipodarum*
  http://www.marbee.fmns.rug.nl/pdf/marbee/2005-Wolf-ZoolMed.pdf
- Marine and estaurine macroinvertebrates, macroalgae and fish introduced to the Netherlands: *Potamopyrgus antipodarum*
  http://home.hetnet.nl/~faassema/introduced%20Mollusca.html
- Global Invasive Species Database: *Potamopyrgus antipodarum*
  http://www.issg.org/database/species/ecology.asp?si=449&fr=1&sts=
- 392 kB: US Army Corps of Engineers, Environmental Laboratory: *Potamopyrgus antipodarum*
  http://el.erdc.usace.army.mil/ansrp/potamopyrgus_antipodarum.pdf
- US Geological Survey: *Potamopyrgus antipodarum*
  http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=1008
- Montana State University: New Zealand mudsnail in the Western USA
  http://www.esg.montana.edu/aim/mollusca/nzms/

PHOTO CREDIT

- This factsheet on *Potamopyrgus antipodarum* was created on 20 September 2005
- First update: 6 August 2006
- Translated by Martin Naylor on 9 October 2006
- Second update ("Find out more" only): 16 December 2006