

Pacific Oyster

Magallana gigas

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Pathway • Hull fouling • Ballast water • Aquaculture

Impacts



Biodiversity

Dense reefs displace native species and alter habitats by reducing the number of soft bottom fauna. Can impact native species by transporting other invasive non-native species and diseases when transferred to new habitats for aquaculture.



Human Health

Waste products from oyster reefs can impact water quality through eutrophication and the release of toxic gases. Their sharp shells have been documented to cut feet and shoes.



Economy

The outcompeting of local oyster species has led to the collapse of business and an increase in coastal management costs to manage Pacific oyster reef expansion.

Key ID Features



Description

Elongated, teardrop shape, rough shells with an irregular margin. The shell comprises of two solid, unequal sized and shaped halves which both have prominent radial ribs. The upper shell half is flat or slightly convex in shape and can sit inside the lower shell half which is deep and cup-shaped.

Shell shape can vary with the environment they are found in:

- Hard substrates: usually have grooved shells with rounded radial folds.
- Soft substrates: can have oval shaped, smooth shells.

Size

8 – 30 cm, one of the largest and heaviest oyster species.

Colour

Variable. External shell is usually an off-white to brown colour with patches / streaks and spots of purple. Internal shell is white with a single muscle scar.

*Note: Images not to scale



Distribution



Native range: western North Pacific, specifically in estuarine and coastal waters of Japan, China, Taiwan and Eastern Russia.



Non-native range: almost global, including Atlantic Ocean and Mediterranean Sea.



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Habitat and Ecology

Habitat: Prefer littoral rock and other hard substrata in areas with low to moderate wave exposure (sheltered). Most commonly found cemented by one shell half to a firm substrate; often cemented to artificial hard substrates in ports and marinas (including ladders) or small rocks. Can form biogenic reefs by cementing their shells to each other. Juveniles and adults are sedentary and are usually found in lower intertidal areas of estuaries. Depth range from shoreline to ~3 m but has been found in depths of 80 m and on mud or mud-sand sediment.

Environmental preferences: Able to tolerate and adapt to large variation in salinity (12 - 42 PSU, pH (6 - 9.2) temperature (3 - 35°C).

Diet: Filter feeder, feeds on phytoplankton & detritus.

Reproduction: Spawning normally takes place in temperatures of 18 - 26°C, larvae dispersed by water currents. Larvae are planktonic and settle after 11 - 30 days on hard surfaces then mature after 1 year and can live up to 30 years. Fast growth and high reproductive rates. Adults are less prone to predation than larvae so once settled they have an increased chance of establishing a population.

Confusion with similar species

This oyster species can be differentiated from other species by its large shell with irregular margins and prominent radial ribs.

Images

Front: Top © Picture Partners / Bottom: © Daniela Agius



Special Precautions

The characteristic rough shells are sharp and can pose a hazard to humans through cuts and abrasions.

If you think you have seen this species, please contact the person below who will confirm its identity.

Please also refer to the mitigation strategies guidance document, provided as part of the Marine Biosecurity Toolkit.

Further Information

- <https://www.marlin.ac.uk/species/detail/1676>
- <https://www.cabi.org/jsc/datasheet/87296>
- <http://www.nonnativespecies.org/factsheet/factsheet.cfm?speciesId=1013>

