



RECLAIMING THE COAST FROM THE PACIFIC OYSTER

A guide to controlling Pacific oysters in your coastal area.

The Pacific oyster was deliberately introduced into Tasmania over 50 years ago in an attempt to establish a fishery and is now widely spread along the north and east coasts. It is also found in Victoria, Western Australia, South Australia, New South Wales and southern Queensland. Wild populations of the Pacific oyster can occur in dense aggregations which can limit food and space available for native intertidal species. Dense aggregations can also limit coastal access and recreational opportunities and can pose a risk of injury as their sharp shells can easily cut through skin.

Thanks to funding from The Tasmanian Community Fund, the Southern Coastcare Association of Tasmania has developed a program in partnership with Coastcare groups, local councils, oyster farmers and the broader community to remove feral oysters from priority beach areas.

Given what is known about the biology, distribution and densities of Pacific oysters in Tasmania, it is widely acknowledged that it is not possible to eradicate this

species in the wild. However, coordinated efforts through the Pacific oyster control program have proven that it is achievable and worthwhile to control and maintain oyster-free areas of the coastline, where there are significant ecological, recreational or aesthetic values.

With your help it is possible to control this introduced species, and make key recreational areas and access points more accessible!

Control Strategy

Control programs for the Pacific oyster are labour intensive so the appropriateness of control should be considered before any works begin. It is vital that sites are carefully selected based on local amenity, recreation and / or environmental values. In addition to this, ongoing capacity to maintain the control effort must be considered at the onset, as eradication will not happen after one control activity. Follow up efforts will be required however; the level of maintenance should decrease over subsequent years.

Oyster Identification

Along with the introduced Pacific oyster (*Crassostrea gigas*), there is a native oyster (*Ostrea angasi*) that occurs in Tasmania. Community members undertaking a wild Pacific oyster control program should ensure they are familiar with identification of both the introduced and native oyster species.

On the Tasmanian mainland, the native oyster and the Pacific oyster are often found in similar habitats, so identification must be based on basic anatomical differences (see Table 1 below).

In addition to observable differences, native oysters in the coastal environment are generally more easily removed from rocks or other surfaces, whereas Pacific oysters are more likely to cement one valve entirely to a surface and are extremely difficult to dislodge.

If you're unsure about identification, contact Dr Catriona Macleod at Tasmanian Aquaculture & Fisheries Institute (TAFI) on 6227 7237 for more information.

Table 1: Characteristic differences between the native and Pacific oyster found in Tasmania

Common Name	Native, Mud or Flat Oyster	Pacific Oyster
Scientific name	• <i>Ostrea angasi</i>	• <i>Crassostrea gigas</i>
Colour outside shell	• yellow-brown	• whitish in colour with purple streaks and spots
Colour inside shell	• white-green	• white-purple
Shell shape	round or oval. Lower shell valve shallow cupped, upper shell valve slightly domed. Exterior shell flaky and interior often chalky.	variable, generally elongated; shell valves (halves) are unequal in form and size (lower valve attached to rocky or other surface is larger and cupped, whereas upper valve is flatter)
Radial grooves	• not apparent	• generally present
Adductor muscle scar	• rarely pigmented / clearly outlined	• mauve-white, not clearly outlined
Size	• up to 10 cm in length	• up to 15 cm in length, can be larger
Habitat	• sheltered oceanic waters along temperate coastlines	• prefers sheltered waters in estuaries and intertidal / shallow coastal areas; subtidal to 3 metres
<i>(Mitchell, 2000 & Department of Fisheries, Government of Western Australia, 2005)</i>		





Developing a Control Program

Once a stretch of shoreline has been selected as a priority for Pacific oyster control, the method of removal needs to be established. There may be some trial and error to see what works best in your area.

Oyster control will be an ongoing process for a period of time (years), as it is likely that individuals will be missed during the control events and further establishment will occur over time.

On soft **sand or silt** oysters are usually unattached and it is generally possible to collect by hand.

Oysters on **rocky surfaces** will generally be attached and can be very difficult to remove. The easiest way is to smash or pierce the top shell, which will quickly result in desiccation and death. Anecdotal evidence suggests that whilst the lower shell will remain attached to the rock after smashing, it will generally be worn down over time through natural coastal processes.

Equipment required for a control program includes: heavy duty gloves (to protect hands against oyster cuts), gumboots (for shallow wading), and buckets, bins or wheelbarrows for collection. For removal on hard surfaces, it is worth experimenting with different tools to see what suits you best. Options include hammers, mattocks, geological picks and other devices that will minimise bending over while smashing.



With a number of people working together it is necessary to work methodically so that oysters are not missed. It is also advisable to work back over an area in the opposite direction to deal with oysters that were missed in the first run. Care should be taken not to miss small oysters, only one or two centimeters in diameter.

All oysters collected should be disposed of at an appropriate land based facility.

Occupational Health and Safety

There are significant risks associated with undertaking Pacific oyster control works. Groups working on control should identify and develop Occupational Health and Safety (OH&S) procedures to suit their circumstances. All persons undertaking the work should be briefed on risks and OH&S measures to avoid any injuries.

Risks to consider include: cuts to hands and feet from the sharp oyster shells, falling over on potentially slippery rocks, eye injury caused by flying oyster shell debris, falling into water, repetitive strain injury or back injury caused by bending over for extended periods, and impacts caused by persons working with swinging tools in close proximity.

Personal protective equipment, including heavy duty gloves, safety glasses, and sturdy footwear should always be worn.

Sun safety is also very important as all oyster control works will be undertaken outdoors in the sun.

Additional Information

Can I eat them?

Oysters in seemingly natural areas are not always safe to eat. It should be noted that there may be potential pollution and contamination issues in some coastal areas at certain times throughout the year. For this reason wild Pacific oysters collected through removal activities should not be consumed unless advice has been sought from the Department of Health and Human Services (more details can be found at the website for Department of Health and Human Services - Shellfish Quality Assurance Program). Pollution and contamination includes heavy metal toxicity in some estuaries (for example the Derwent and Tamar Estuaries) and Paralytic Shellfish Poisoning (PSP) that can affect wild oyster populations from time to time.

Tides

Low tide is the optimal time for oyster removal activities. It should be noted that low tides vary; some are lower than others. Tide tables can be accessed from the internet - www.bom.gov.au/oceanography/tides/

The lowest tides during day light hours occur between November to April and so summer and autumn are generally the best times for control.

Barometric pressure also influences water levels. A high-pressure system coupled with a normal low tide will result in the lowest water condition for oyster control.

Requirements and other considerations

A permit or specific approval is not required to remove Pacific oysters in Tasmania. However, it is recommended to inform the Department of Primary Industries, Parks, Water and Environment (DPIPWE) before any planned removal activities. Contact DPIPWE on 6233 3370.

Any community groups conducting Pacific oyster removal should also contact the DPIPWE Threatened Species Unit on 6233 8759 to ascertain whether there are likely to be any threatened species present where oyster removal is planned. There are several intertidal seastars that are listed as threatened and can occur alongside Pacific oysters in some locations.

Acknowledgements and information sources

Lindsay James, Community Pacific Oyster Campaigner

Alastair Morton, Marine Farming Branch, DPIPWE

Oysters Tasmania: www.oysterstasmania.org

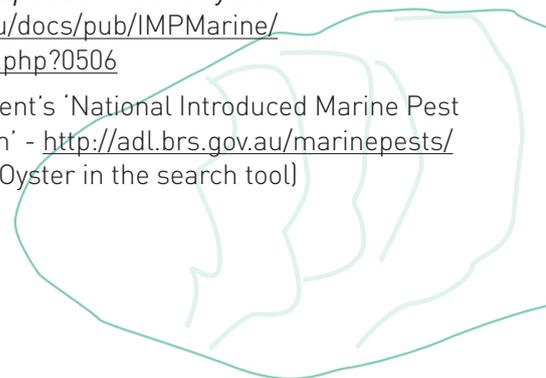
NRM South: www.nrmsouth.org.au

Southern Coastcare Association of Tasmania (SCAT): www.scat.org.au/

Mitchell, I., Jones, A and Crawford, C (2000), *Distribution of feral Pacific Oysters and environmental conditions*, Natural Heritage Trust, Final Report.

Department of Fisheries, Government of Western Australia, 2005, *Marine Aquatic Invaders - a field guide. Introduced Marine Species - Pacific Oyster.* www.fish.wa.gov.au/docs/pub/IMPMarine/IMPMarinePage08.php?0506

Australia Government's 'National Introduced Marine Pest Information System' - <http://adl.brs.gov.au/marinepests/> (search for Pacific Oyster in the search tool)



This project was a partnership initiative between the following organisations:

