



An Australian Government Initiative



THE NATIONAL SYSTEM
FOR THE PREVENTION AND
MANAGEMENT OF
MARINE PEST INCURSIONS

MARINE PEST IDENTIFICATION GUIDE

*KEEP MARINE PESTS
OUT OF AUSTRALIAN WATERS*

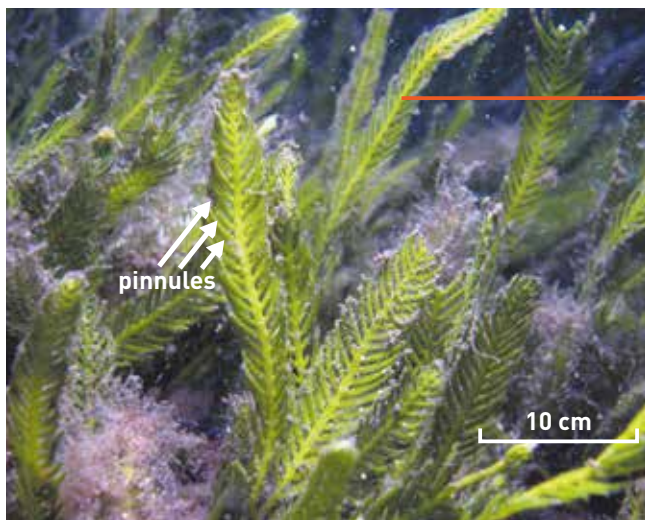


Department of
Fisheries

MARINE PEST:

Aquarium Caulerpa

Caulerpa taxifolia



Key features

- Flattened 2D fronds
- Pinnules upward curving
- Pinnules attach directly opposite one another
- Up to 15 cm long (>60 cm in deep water)

Habitat

- Up to 100 m depth; exposed & sheltered estuaries, coastal lagoons & bays
- Rock, sand, mud & seagrass beds

Impacts

- Overgrows native habitat & can establish vast beds on soft sediment, degrading fish habitat
- Tangles in nets & anchors

Known locations

- Native in subtropical to tropical Australia from Port Denison, WA to Southport, QLD
- Introduced to Port River & North Haven Marina SA; 14 coastal lakes and estuaries in NSW (see www.dpi.nsw.gov.au for all current locations).

Native distribution

Likely to establish



See last page for full details on how to report an aquatic pest or disease.



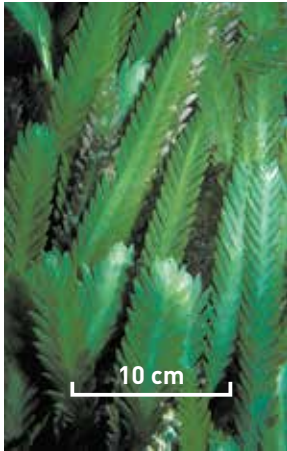
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What it is not

Native species that look similar to the pest



Caulerpa scalpelliformis

Key Features

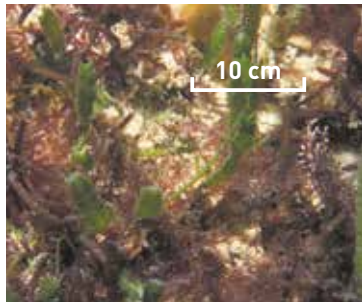
- Pinnules attach alternately, not opposite
- Fronds to 20 cm long

Habitat

- Primarily exposed rocky reef but also sand, mud and seagrass beds
- To 36 m depth

Known Locations

- Jervis Bay NSW to Whitford Beach WA; Tas



Caulerpa distichophylla

Key Features

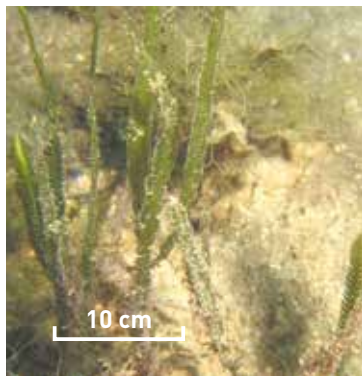
- Short pinnules attach opposite, closely spaced along midrib
- Fronds to 15 cm long

Habitat

- Soft substrate and reef in coastal areas, up to 7 m depth

Known Locations

- WA only: Dongara sound to King George Sound



Caulerpa cupressoides

Key Features

- Short pinnules, attach opposite, widely spaced along midrib

Habitat

- Soft/hard substrates; coastal areas

Known Locations

- Houtman Abrolhos, WA, around northern Australia to Lord Howe Island, NSW.

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location
- Check anchors, trailers & other equipment for tangled algae – ***Caulerpa taxifolia* can live for two weeks out of water & reproduce from fragments as small as 2 mm**

Learn more

Read the national biofouling management guidelines for your sector.

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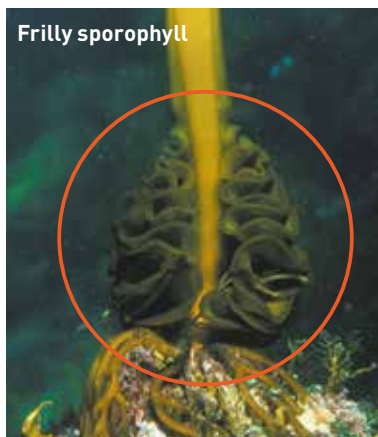
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MARINE PEST:

Japanese seaweed or Wakame *Undaria pinnatifida*



Mature *Undaria pinnatifida* showing frilly sporophyll



Frilly sporophyll



Key features

- Frilly sporophyll near base of mature plant
- Mature plant only found from early winter to late summer
- Strap-like midrib
- Smooth thin blades stop well short of base
- Generally brown/green
- Up to 1 m long, sometimes to 3 m

Habitat

- Cold temperate ocean waters
- Lower intertidal to 20 m depth
- Rock, reef and stones, artificial structures and aquaculture equipment

Impacts

- Can rapidly form dense forests on any available space & overgrows natives

Known locations ○

- Near-shore habitats south-east & east coast of Tas; Port Phillip Bay Vic

█ Likely to establish



See last page for full details on how to report an aquatic pest or disease.



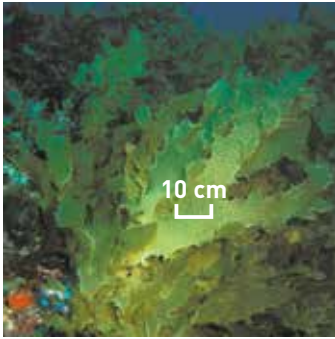
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What it is **not**

Native species that look similar to the pest



Common kelp
Ecklonia radiata

Key Features

- No midrib or frilly sporophyll
 - Rough blades not smooth
- Note: *E. radiata* is hard to distinguish from juvenile *U. pinnatifida*; *E. radiata* is more leathery

Habitat

- Rocky shores
- Moderate exposures
- Subtidal to 44 m depth

Known Locations

- Southern Australia from Caloundra Qld to Kalbarri, WA; Tas



Phyllospora comosa

Key Features

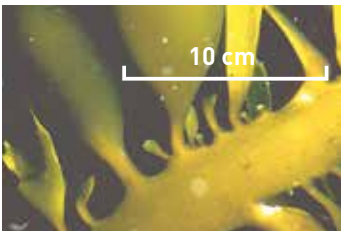
- No midrib or frilly sporophyll
- Sawtooth edged fronds
- Branches close together
- Blades terminate at base

Habitat

- Hard substrates
- Exposed coasts
- Subtidal to 20 m depth

Known Locations

- From Port Macquarie NSW to Robe, SA; Tas



What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location
- Check anchors & other equipment for tangled algae

Learn more

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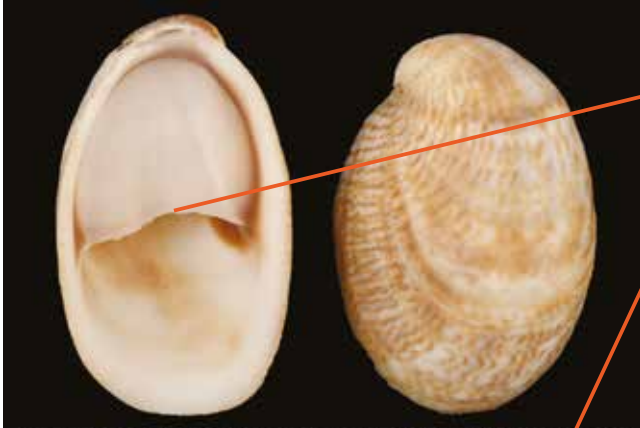
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MARINE PEST:

American slipper limpet

Crepidula fornicata



A stack of
C. fornicata



Key features

- Large internal aperture with a shelf extending half its length
- Oval shaped, smooth shell
- Irregular growth lines
- Commonly found in stacks
- Shell colour white, yellow or pink with red/brown streaks
- Up to 5 cm long

Habitat

- Intertidal
- Shallow estuaries & coastal bays
- Mostly found on other shells or hard substrates in muddy areas, also found on sand, gravel & rocks

Impacts

- Competes with natives for food & space
- Impacts commercial oyster beds

Known locations

- Not yet in Australia

█ Likely to establish



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What it is not

Native species that look similar to the pest



Northern slipper shell *Bostrycapulus pritzkeri* (formerly *Crepidula aculeata*)

Key Features

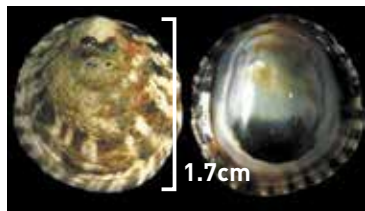
- Exterior of shell not smooth, with spines or bumps
- Shell brown & white
- Up to 3 cm long

Habitat

- Intertidal to subtidal
- Found attached to other shells, stones or mangroves in sand or mud

Known Locations

- From Shark Bay WA around northern Australia to south-east Vic



Limpet *Notoacmea mayi*

Key Features

- Shell has no internal shelf
- Shell light brown to grey with mottled bands
- Up to 1.5 cm long

Habitat

- Hard substrates in upper intertidal zone

Known Locations

- NSW; Vic; around Tas; eastern SA; western Vic



Nerita polita

Key Features

- Glossy, smooth shell with fine growth lines
- Shell marbled, streaked or banded with white, cream, grey or pink
- Up to 3 cm long

Habitat

- Often buries in sand, surfacing at low tide to graze on rocks
- Abundant in tropics

Known locations

- North West Cape WA to Sydney NSW

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

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MARINE PEST:

New Zealand screwshell

Maoricolpus roseus



Key features

- Smooth conical shell
- Generally brown, fading to purple/white with age
- Broader tapering shell with up to 18 whorls
- Up to 9 cm long, usually ~6 cm

Habitat

- Lying on or partially buried in sand, mud or gravel
- Also found in crevices
- Low intertidal & subtidal up to 130 m depth


Impacts

- Densely blankets the sea floor with live & dead shells
- Can compete with scallops & commercially farmed shellfish for food

Known locations

- South-east to north-west Tas; Bass Strait, Wilsons Promontory Vic & north to Botany Bay, NSW, (up to 80 m depth on the continental shelf possibly to 200 m depth)



 Likely to establish



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What it is not

Native species that look similar to the pest

**THIS SPECIES IS
THREATENED.
DO NOT COLLECT SAMPLES**

5 cm



Native screwworm *Gazameda gunnii*

Key Features

- Narrow tapering shell with marked ridges
- Off-white to light brown
- Up to 5 cm long (usually ~3 cm)

Habitat

- Up to ~140 m depth

Known locations

- Tas

Mud whelk *Velacumantus australis*

Key Features

- Dirty grey shell with ridges
- Up to 4.5 cm long

Habitat

- Soft sediments in shallow, sheltered areas, usually among seagrass
- Estuaries, mangroves, tidal flats

Known Locations

- South Qld; NSW; Vic; Tas; SA; WA

Terebra lima

Key Features

- Flaring lip
- Up to 9 cm long

Habitat

- Soft sediments including mud & sand
- Subtidal from 35 to 350 m depth

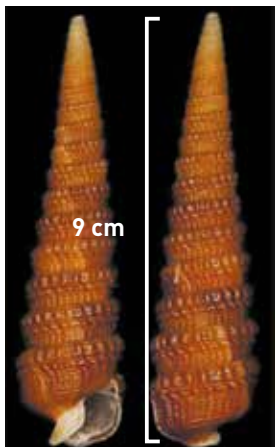
Known Locations

- NSW as far south as Trail Bay

4.5 cm



9 cm



What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

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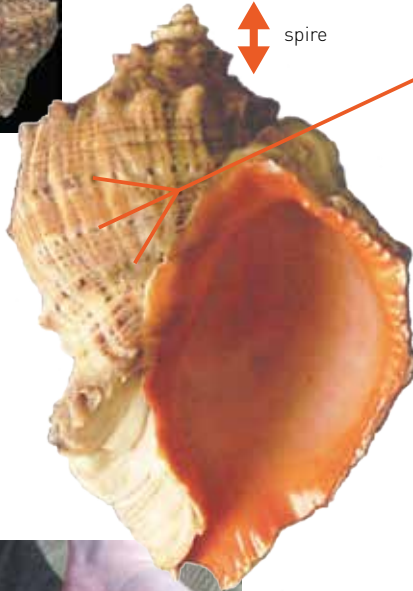
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MARINE PEST:

Rapa or veined whelk

Rapana venosa



Key features

- Black vein-like pattern on entire shell
- Distinctive deep orange interior
- Large, heavy grey to red/brown shell
- Shell has short spire
- Up to 18 cm long

Habitat

- Intertidal to subtidal
- Estuaries & coastal bays
- Sandy or hard substrates

Impacts

- Predator of native shellfish & aquaculture species
- Affects the ecology of bottom dwelling organisms

Known locations

- Not yet in Australia

█ Likely to establish



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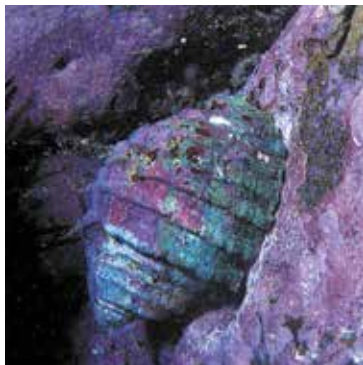
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What it is not

Native species that look similar to the pest



Cartrut shell
Dicathais orbita

Key Features

- Shell sculpted with prominent grooves
- Shell colour grey/brown to green
- Shell height to 8 cm

Habitat

- Found attached to rock platforms & rocky reefs, up to 10 m depth
- One of the most abundant snails intertidally & subtidally on southern coasts of Australia

Known Locations

- Southern Qld to Barrow Island, WA & around Tas



Helmet shell
Semicassis pyrum

Key Features

- Smooth helmet shell
- Shell cream with brown blotches
- Shell height to 7 cm

Habitat

- Found buried under sand during the day, forages at night
- Exposed sand to 480 m depth

Known Locations

- From NSW to Fremantle, WA & around Tas



What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

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MARINE PEST: Asian bag or Asian date mussel *Arcuatula senhousia*



Key features

- Shell has zig zag markings & iridescent radiating bands
- Shell olive green/brown & is easily crushed
- Up to 3 cm long

Habitat

- Prefers soft sediments but also fouls artificial hard surfaces
- Up to 20 m depth

Impacts

- Can form mats on soft sediments smothering bottom communities & altering food availability

Known locations

- Portland & Port Phillip Bay, Vic; estuary mouths northern Tas; SA; Cockburn Sound, Lower Swan River & Fremantle, WA

█ Likely to establish



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What it is **not**

Native species that look similar to the pest



Cuming's bag mussel *Musculus cumingianus*

Key Features

- Shell is uniformly brown
- Shell has ribs on front & rear but not centre

Habitat

- On rocky reefs inside sea squirts

Known Locations

- Widespread in tropical & warm temperate Australia (i.e. Qld, WA, NT)



Limnoperna [formerly *Xenostrobus*] species

Key Features

- Shell smooth & elongate with radial markings
- Variable shell colour ranging from blue to brown/black
- Shell 3 to 4 cm long

Habitat

- Found in clusters attached to rocks or shells on rocky reefs

Known Locations

- Southern Qld; NSW; Vic; Tas; SA; southern WA



What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

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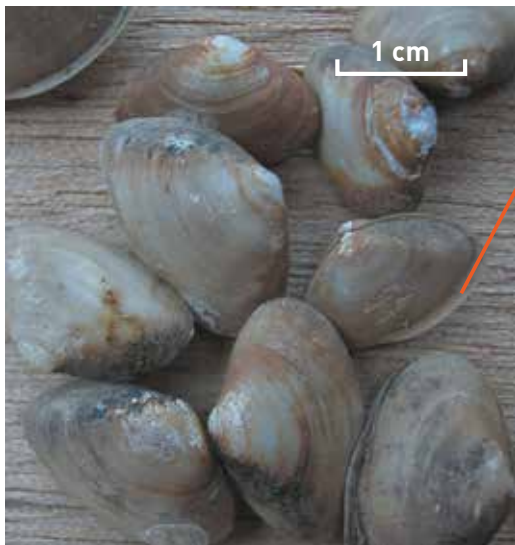
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MARINE PEST:

Asian basket clam

Corbula (Potamocorbula) amurensis



Key features

- Shells unequal in size, one is larger than the other with a distinctive overlap
- Thin & smooth shell (older shells may be wrinkled at edges)
- Shell colour is dirty white, tan or yellow, no exterior markings
- Up to 3 cm long

Habitat

- Partially buried in soft bottom habitats most abundant on mixed sand & mud bottoms
- Mostly subtidal, but also intertidal
- Upper estuarine to fully marine
- Subtropical to cold temperate waters

Impacts

- Reduces planktonic food sources & causes decline in native species

Known locations

- Not yet in Australia

Likely to establish



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What it is not

Native species that look similar to the pest



Serracorbula verconis

Key Features

- Shells of unequal size, one side is larger & overlaps the other
- Shell has concentric grooves
- Solid, compressed, glossy shell - hard to crush
- White shell with small, translucent brown spots
- Up to 10 cm long

Habitat

- Found in sand & mud up to 65 m depth

Known Locations

- Northern to southern Qld; SA



Paphies species

Key Features

- White/cream shell with brown covering
- Interior white
- Up to 2.5 cm long

Habitat

- Sandy intertidal

Known Locations

- NSW; Vic; Tas; SA; WA



Tellina semitorata

Key Features

- Usually white, sometimes pink shell
- Up to 1.6 cm long

Habitat

- Sandy intertidal

Known Locations

- South Qld to NSW; Vic; SA

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

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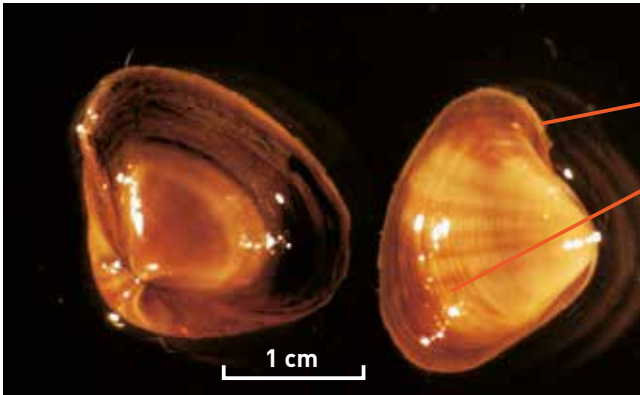
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MARINE PEST: European or basket shell clam *Varicorbula gibba*



Key features

- Shells unequal in size, one is larger & fits like a lid, overlapping the other
- Coarse grooves & ridges
- Shell is plump, broadly oval coming to a triangular end
- Shell colour white to pink with radiating red/brown rays
- Up to 2 cm long

Habitat

- Burrows into soft bottom habitats, may attach to gravel & stones
- Intertidal to 150 m depth
- Temperate waters; highly tolerant of polluted waters

Impacts

- Fast growing & competes with native species for food & space (e.g. commercially grown scallops)

Known locations ○

- Coastal & Port Phillip Bay & Western Port Bay Vic; northern & south-eastern Tas

■ Likely to establish



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What it is **not**

Native species that look similar to the pest



Spisula trigonella

Key Features

- Shells identical in size & shape (both curved & meet together evenly)
- Shell is smooth & cream coloured with brown "skin" covering
- Up to 2 cm long

Habitat

- Sandy intertidal

Known Locations

- Qld; NSW; Vic; Tas; SA; southern WA; NT



Paphies species

Key Features

- Shells identical in size & shape
- Shell is smooth & cream coloured with brown "skin" covering
- Up to 2.5 cm long

Habitat

- Sandy intertidal

Known Locations

- NSW; Vic; Tas; SA; WA



What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

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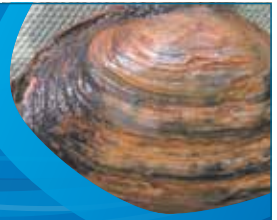
<http://www.fredandsarah.plus.com/ukseashells/>

(bottom)

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MARINE PEST: Soft shell or long-necked clam *Mya arenaria*



One half of
Mya arenaria
shell showing
scooped out
projection



Key features

- Very different shells; one has a distinctive large scooped out projection & the other a pit. They fit together but gape at both ends when closed
- Shell is thin, oval, chalky, white with rough exterior & uneven growth lines
- Up to 15 cm long

Mya arenaria
stained from mud



Mya arenaria showing
protruding brown siphon

Habitat

- Buried up to 30 cm deep in sand, mud, clay & gravel mixes
- Mainly upper intertidal; also in shallow subtidal

Impacts

- Outcompetes native bivalves, changes characteristics of sediments & composition of bottom dwelling communities

Known locations

- Not yet in Australia

Likely to establish



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What it is not

Native species that look similar to the pest



Gaper clam
Lutraria rhynchaena

Key Features

- Shell is solid, elongated & gapes when shut
- Fine concentric ridges
- Shell colour is off-white often covered with a brown "skin"
- Up to 12 cm long

Habitat

- Usually deeply buried in sheltered intertidal sand & mud

Known Locations

- NSW; Vic; Tas; SA; southern WA



Venus cockle
Venerupis galactites

Key Features

- Solid white shell with identical valves that close completely without a gape
- No scooped out projection
- Up to 5 cm long

Habitat

- In sand, estuaries, bays & sheltered coasts
- Intertidal

Known Locations

- NSW; Vic; Tas; SA; southern WA



Lantern/gaper shell
Laternula recta/rostrata

Key Features

- Shell elongate & gapes at both ends when closed
- Shell sculpted with fine, concentric ridges & growth lines
- Shell colour white
- Up to 6 cm long

Habitat

- In mud or sand

Known Locations

- NSW; Vic; SA

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
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MARINE PEST:

Black striped mussel

Mytilopsis sallei



Key features

- Shells unequal in size, one side overlaps the other
- Shell is smooth, small and easily crushed
- Forms dense clusters
- Shell sometimes zig zagged or striped
- Up to 2.5 cm long

Habitat

- Subtropical to tropical
- Estuarine to marine
- Up to a few metres depth
- Hard vertical surfaces (e.g. hulls & pylons)

Impacts

- Fast growing & can displace native species
- Mass fouling of wharf pylons, marinas, vessel water intake systems & marine farms

Known locations

- Not yet in Australia

█ Likely to establish



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What it is not

Native species that look similar to the pest



Brachidontes maritimus

Key Features

- Thicker, black/brown shell
- Strong longitudinal ribs along the length of the shell (not radially striped)
- Up to 4.5 cm

Habitat

- Rocky shores & hard substrates
- Tropical marine waters

Known Locations

- Northern coast of Australia (i.e. Qld, WA & NT)



Goose barnacle *Lepas* species

Key Features

- White shells on top of a rubbery brown contractile stalk attached to floating objects

Habitat

- Attached to drift wood and other floating objects

Known Locations

- Cosmopolitan in all tropical and warm temperate oceans

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

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MARINE PEST:

Asian green mussel

Perna viridis



Key features

- Juvenile shell bright green; older shells dark green to brown
- Smooth exterior with concentric growth lines
- Adults 8–16 cm long

Habitat

- Hard substrates (vessels, artificial structures, wharves, aquaculture equipment, intake pipes, buoys, etc.)
- Low tide mark to 42 m depth, lower estuarine to marine
- Tropical to warm temperate

Impacts

- Fast growing & outcompetes native species, forming dense colonies
- Can clog seawater cooling pipes and intake systems

Known locations

- Not yet in Australia

Likely to establish



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What it is not

Native species that look similar to the pest



Septifer bilocularis

Key Features

- Strong radial ridges
- Variable colour (red, blue or green), internally blue
- Up to 5 cm long

Habitat

- Attached to rocks or debris
- Tropical

Known Locations

- Northern Qld; NT to Albany, WA



Stavelia subdistorta

Key Features

- Dense, concentric ridges
- Brown shell, inside blue/white
- Up to 15 cm long

Habitat

- Attached to rock or debris up to 30 m depth
- Tropical

Known Locations

- Northern Qld to northern WA

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

Read the national biofouling management guidelines for your sector.

Photograph credits

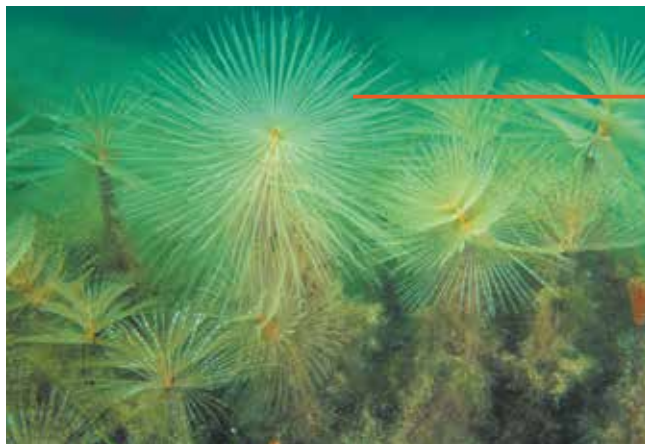
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Last revised August 2008

MARINE PEST:

European fan worm *Sabella spallanzanii*



Key features

- Spiral fan of feeding tentacles
- Flexible, leathery tube
- Fan white/pale fawn/orange/banded red/brown
- Tubes up to 40 cm long, solitary or in groups

Habitat

- Tubes attach to hard surfaces, artificial structures, rocks, shells & seagrass on soft sediments
- Sheltered temperate waters, to 30 m depth

Impacts

- Forms dense colonies consuming vast amounts of food
- No known predators in Australia
- Fouls aquaculture structures increasing cost for industry

Known locations

- Cockburn Sound, Fremantle, Bunbury, Albany & Esperance WA; metro Adelaide coast SA; Port Phillip Bay Vic; Devonport Tas; Eden NSW

█ Likely to establish



See last page for full details on how to report an aquatic pest or disease.



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What it is not

Native species that look similar to the pest



Sabellastarte species

Key Features

- Fan is U-shaped not spiral shaped
- Fans are white or purple with orange/purple/brown bands
- Usually solitary, not densely clumped
- Tube up to 5 cm long

Habitat

- Exposed rocky reef and artificial structures
- Subtidal to 200 m depth

Known Locations

- Widely distributed: NSW; Vic; Tas; SA, north-west coast WA

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location
- Check anchors & other equipment for tangled organisms

Learn more

Read the national biofouling management guidelines for your sector.

Photograph credits

This side: Mark Norman, Museum Victoria (top)
Reverse side: CSIRO Marine & Atmospheric Research (top and bottom left); Tim Glasby, NSW Dept. Primary Industries (bottom right)

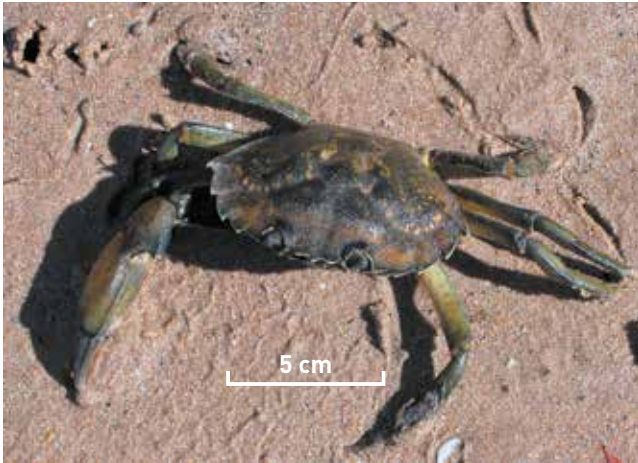
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Last revised August 2008

MARINE PEST:

European green shore crab

Carcinus maenas



Key features

- 5 spines on each side of eyes
- Last pair of legs sharp & slightly flattened at tips - no swimming paddles
- Smooth green/brown shell with pale orange underside
- Shell up to 7 cm wide

Habitat

- Prefers bays/estuaries but found on all types of shores up to 60 m depth
- Tolerates temperatures up to 30°C

Impacts

- Aggressive predator, outcompetes natives for food & habitat

Known locations

- NSW; Vic; Tas; SA

■ Likely to establish



See last page for full details on how to report an aquatic pest or disease.



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Department of Fisheries

What it is not

Native species that look similar to the pest



Sand crab

Ovalipes australiensis

Key Features

- Distinctive purple spots towards rear
- Swimming paddles on last set of legs
- Pale grey shell, up to 10 cm wide

Habitat

- Burrows into sand
- Intertidal & subtidal to 60 m depth

Known Locations

- Qld; NSW; Vic; Tas; SA; WA



Paragrapsus species

Key Features

- 3 spines on each side of eyes
- First walking legs have felt patch on inner side
- Yellow/brown shell with dark red spots
- Shell up to 4.5 cm wide

Habitat

- Under stones & burrows in mud
- Intertidal to shallow subtidal
- Estuaries & sheltered coasts

Known Locations

- South of Narooma, NSW; Vic; Tas; SA



Rough rock crab

Nectocarcinus integrifrons

Key Features

- Shell covered in fine hairs
- Pincers/fingers of claws black
- Last pair of legs not swimming paddles
- Shell up to 8 cm wide

Habitat

- Rocky bottoms, sandy/muddy shores, sheltered seagrass beds
- Intertidal to 15 m depth

Known Locations

- Fremantle, WA to Port Stephens, NSW; around Tas

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

Read the national biofouling management guidelines for your sector.

Photograph credits

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Reverse side: P. Gibson NSW Dept. Primary Industries (top). CSIRO Marine & Atmospheric Research (bottom)

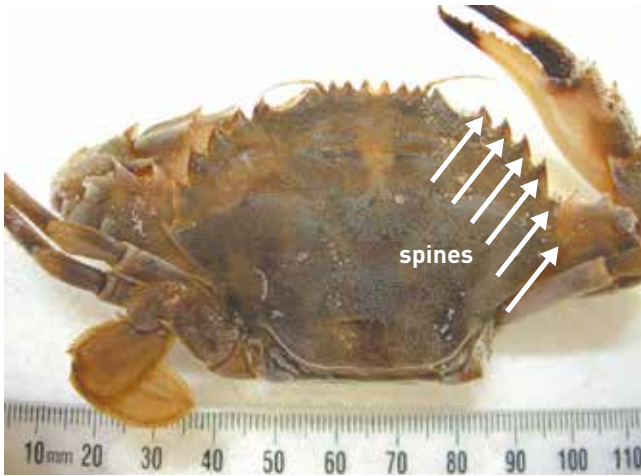
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Last revised August 2008

MARINE PEST:

Asian paddle crab

Charybdis japonica



Key features

- 5 distinct spines on upper surface of foreclaw
- 6 spines on each side of eyes
- Swimming paddles on last set of legs
- Red/purple/orange to pale green & off-white shell
- Shell up to 12 cm wide

Habitat

- Mobile; found on or buried in firm, fine sand or mud
- Subtidal to 15 m depth
- Estuarine & marine areas

Impacts

- Can carry White Spot Syndrome virus which can devastate native & farmed prawns, crabs & lobsters



Known locations

- Not yet in Australia

Likely to establish



See last page for full details on how to report an aquatic pest or disease.



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Department of Fisheries

What it is not

Native species that look similar to the pest



Pacific swimming crab

Charybdis helleri

Key Features

- 4 spines on foreleg
- 6–8 spines on either side of eyes
- Shell up to 14.5 cm wide

Habitat

- Under rocks & coral; on rocky, sandy & muddy shores & coral reefs to 30 m depth
- Lower intertidal, subtidal

Known Locations

- Native to tropical Australia (north coast NT, central east & north-east coast Qld, north-west coast WA); Indo-west central Pacific Oceans



Blue swimmer crab

Portunus pelagicus

Key Features

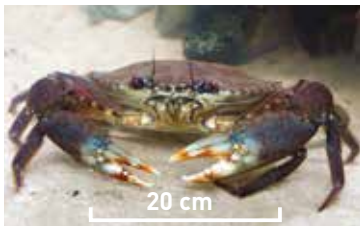
- No spines on either side of eyes
- Bright blue legs & claws

Habitat

- Sheltered sand, intertidal & subtidal to 70 m depth
- Sheltered bays & inlets
- Shell up to 21 cm wide

Known Locations

- Tropical Australia, south to Cape Naturaliste WA, & Eden NSW; South Australian gulfs



Mud crab

Scylla serrata

Key Features

- 9 spines either side of eyes
- Large robust claws
- Shell up to 25 cm wide

Habitat

- Mangroves, sheltered estuaries & coastal tidal flats

Known Locations

- Northern Australia (Exmouth, WA to Bega River, NSW); isolated records from Mallacoota estuary, Vic, Swan River, WA & south-west WA estuaries

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

Read the national biofouling management guidelines for your sector.

Photograph credits

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MARINE PEST:

Chinese mitten crab

Eriocheir sinensis



Key features

- Hairy "mittens" on claws unlike any Australian crab
- 4 spines on either side of eyes
- 4 sharp spines in between eyes
- Shell is smooth & up to 8 cm wide

Habitat

- Burrows into mud on river banks, estuaries & coastal areas
- Adults in freshwater for first 4-5 years
- Usually tropical waters

Impacts

- Burrowing causes erosion; damages fishing gear & impacts aquaculture activities
- Hosts liver fluke (*Paragonimus* species) that is harmful to human health

Known locations

- Not yet in Australia
- Likely to establish



See last page for full details on how to report an aquatic pest or disease.



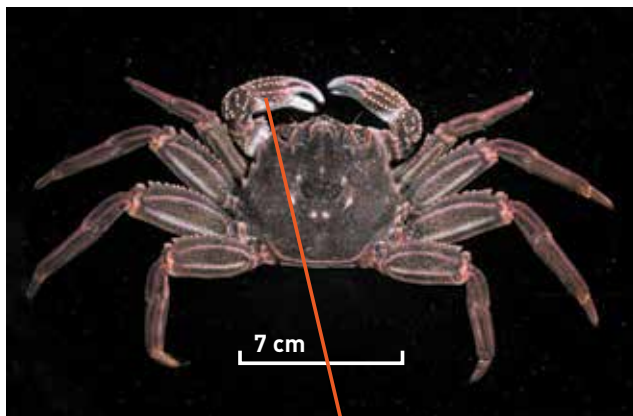
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What it is **not**

Native species that look similar to the pest



Red bait crab *Plagusia chabrus*

Key Features

- Front of shell deeply notched between the eyes
- Claws hairless with bumps & ridges
- Orange/red shell covered with dense fine hair, darker red on walking legs
- Shell up to 7 cm wide

Habitat

- Exposed rocky shores
- Lower intertidal, usually subtidal (to 50 m depth)

Known Locations

- Hervey Bay, Qld; NSW; Vic, Tas; SA; southern WA to Bunbury

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

Read the national biofouling management guidelines for your sector.

Photograph credits

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MARINE PEST:

Asian shore crab

Hemigrapsus sanguineus



Key features

- 3 spines on each side of eyes
- Banding pattern on walking legs & spots on claws
- Square shaped green/purple to orange/brown shell
- Shell up to 4 cm wide

Habitat


- Under rocks, shells, debris & artificial structures
- Intertidal to shallow subtidal
- Estuaries, exposed rocky coasts & tidal flats
- Tolerates a wide range of temperatures

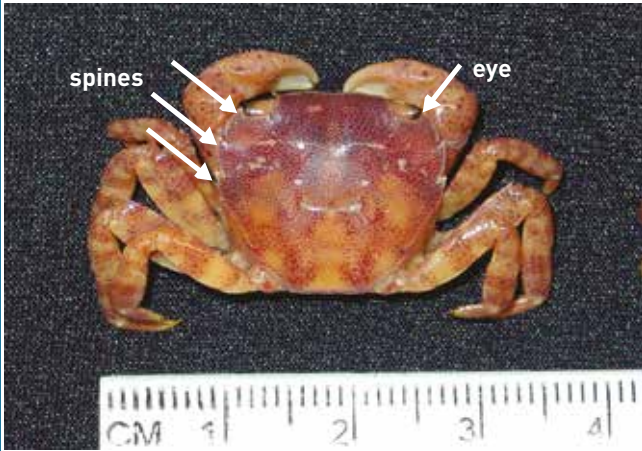
Impacts

- Broad diet, competes with & predated on native species (crabs, fish & shellfish)

Known locations

- Not yet in Australia

 Likely to establish



Live specimen of *H. sanguineus* under water

See last page for full details on how to report an aquatic pest or disease.



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What it is **not**

Native species that look similar to the pest



Cyclograpsus species

Key Features

- No spines on side of eyes
- Mottled red/brown/purple markings on yellow shell
- Shell up to 4 cm wide

Habitat

- Intertidal
- Sheltered, moderately exposed rocky & boulder covered shores

Known Locations

- NSW; Vic; Tas; SA; WA (north to Shark Bay); Qld



Paragrapsus species

Key Features

- 3 spines on each side of eyes
- First walking legs have felt patch on inner side
- Yellow/brown shell with dark red spots
- Shell up to 4.5 cm wide

Habitat

- Under stones & burrows in mud
- Intertidal to 1.5 m depth
- Estuaries & sheltered coasts

Known Locations

- South of Narooma, NSW; Vic; Tas; SA

What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location

Learn more

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Photograph credits

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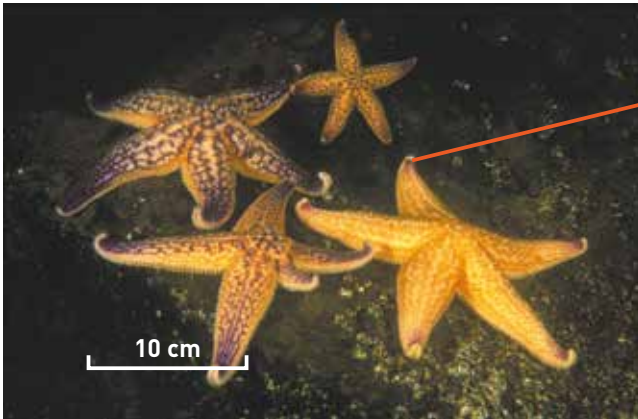
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Last revised August 2008

MARINE PEST:

Northern Pacific seastar

Asterias amurensis



Key features

- 5 arms with pointed upturned tips
- Yellow/orange with purple markings & yellow underneath
- Up to 50 cm across

Habitat


- Soft sediment; also artificial structures & rocky reefs
- Estuaries, bays, rock pools
- Intertidal to 200 m depth (usually <25 m depth)
- Prefers temperate but adapted to warmer waters

Impacts

- Aggressive predator of native species & economically important bivalves
- Impacts aquaculture & fisheries

Known locations

- South-east to north-east coasts from Recherche Bay to Binalong Bay and Banks Strait Tas; Port Phillip Bay Vic

 Likely to establish



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What it is **not**

Native species that look similar to the pest



Uniophora species

Key Features

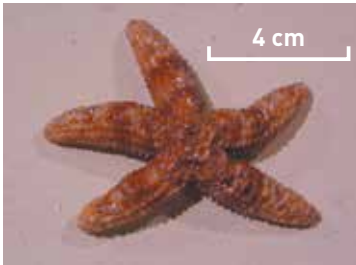
- 5 arms, rounded not pointed tips
- Up to 20 cm across

Habitat

- Rocky bottoms, seagrass beds
- Also mud or sand in sheltered areas
- Up to 143 m depth

Known Locations

- North-west Solitary Island, NSW to Great Australian Bight, SA; Bass Strait; around Tas



Coscinasterias muricata

Key Features

- 7–14 arms (usually 11), pointed tips not upturned
- Colour usually blue to brown
- Up to 50 cm across

Habitat

- Sheltered reefs & soft substrates
- Up to 140 m depth

Known Locations

- Port Denison, Qld, to Houtman Abrolhos, WA, incl. Great Australian Bight; Bass Strait; around Tas; Norfolk & Lord Howe Island



What you can do

- Inspect & clean niche areas & antifoul your vessel regularly
- Clean & dry equipment before transporting & using in a different location
- Check anchors & other equipment for tangled organisms

Learn more

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Photograph credits

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Last revised August 2008

Report immediately outside known locations!

If you think you have found or seen an aquatic pest or disease:

1. Make a note of when and where you found or saw it including GPS readings if possible.
2. Take photographs of the species as well as the location where you found it.
3. Please keep a sample of the species and contact FishWatch on **1800 815 507**, or via email to biosecurity@fish.wa.gov.au, or through the free WA PestWatch app, which can be downloaded from the App Store and Google Play Store.



WA PestWatch



Further information

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