MARINE PEST IDENTIFICATION GUIDE

KEEP MARINE PESTS OUT OF AUSTRALIAN WATERS
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).

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See last page for full details on how to report an aquatic pest or disease.
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, trailors & 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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What you can do

Learn more

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Last revised August 2008
MARINE PEST:
Japanese seaweed or Wakame
*Undaria pinnatifida*

**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

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

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**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

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**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**
Read the national biofouling management guidelines for your sector.

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MARINE PEST: American slipper limpet
*Crepidula 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

See last page for full details on how to report an aquatic pest or disease.
What it is not
Native species that look similar to the pest

Northern slipper shell
Bostryxapalus pritzkeri
(formerly Crepidual 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

Learn more

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Last revised August 2008
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)

See last page for full details on how to report an aquatic pest or disease.
What it is not
Native species that look similar to the pest

Native screwshell
_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

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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Last revised August 2008

_THIS SPECIES IS THREATENED. DO NOT COLLECT SAMPLES_
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

See last page for full details on how to report an aquatic pest or disease.
What it is **not**
Native species that look similar to the pest

Carrot 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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_Last revised August 2008_
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

See last page for full details on how to report an aquatic pest or disease.
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
Read the national biofouling management guidelines for your sector.

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Last revised August 2008
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

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

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

**Habitat**
- Sandy intertidal

**Known Locations**
- South Qld to NSW; Vic; SA

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**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.

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Last revised August 2008
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

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

Read the national biofouling management guidelines for your sector.

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Reverse side: CSIRO, Marine and Atmospheric Research (top); Sarah Longrigg, UK Seashells http://www.fredandsarah.plus.com/ukseashells/ (bottom)
MARINE PEST:
Soft shell or long-necked clam
*Mya arenaria*

**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.

**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.

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

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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

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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

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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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Last revised August 2008
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

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

**Learn more**
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Last revised August 2008
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

See last page for full details on how to report an aquatic pest or disease.
What it is **not**
Native species that look similar to the pest

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### 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

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### 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

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### 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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### Learn more

Read the national biofouling management guidelines for your sector.

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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

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

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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

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

Paragrapus 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 integrifons_

**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

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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

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What it is **not**
Native species that look similar to the pest

**Pacific swimming crab**
*Charybdis helleri*

**Key Features**
- 4 spines on foreclaw
- 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

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**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.

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Photograph credits
This side: Darryl Felder, University of Louisiana USA (top); Keith Davey (centre & bottom)
Reverse side: All images provided by Aroha Millar, NIWA

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This collaborative effort is supported by the Australian Government, state and territory governments, marine industries, researchers and conservation groups.

*Last revised August 2008*
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

See last page for full details on how to report an aquatic pest or disease.
**What it is not**
Native species that look similar to the pest

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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

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**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.

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Photograph credits
This side: Michael Marmach, Museum Victoria
Reverse side: All images provided by Stephan Gollasch, GoConsult

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Last revised August 2008
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 & predates on native species (crabs, fish & shellfish)

**Known locations**
- Not yet in Australia

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

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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.

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Photograph credits

This side: All images provided by Michael Marmach, Museum Victoria
Reverse side: Amy Benson, US Geological Survey (top); Jerry Preszioso, NOAA/NMFS Narragansett Lab (bottom)

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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 Straight Tas; Port Phillip Bay Vic

Likely to establish

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

Read the national biofouling management guidelines for your sector.

Photograph credits
This side: Graham Edgar, University of Tasmania (top & third); Ingrid Holliday, Dept. Sustainability & Environment Vic (second & bottom)
Reverse side: Martina Doblin, University of Technology, Sydney (bottom right); all other images supplied by CSIRO Marine and Atmospheric Research

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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.

Further information

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