Keeping your boat & gear clean will

SAVE MONEY ON FUEL
INCREASE BOAT PERFORMANCE
STOP THE SPREAD OF MARINE PESTS

Australian Government

Natural Resources Advisory Council
New South Wales

CMA
Sydney Metropolitan
CATCHMENT MANAGEMENT AUTHORITY

NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Northern Pacific seastar

Keep your boat and fishing gear clean to help stop the spread of marine pests

NSW's marine life is under threat from introduced marine plants and animals. Marine pests can also have severe impacts on recreational boating and fishing and marine industries.

The pest seaweed *Caulerpa taxifolia* has already become established in Sydney and on the Central and South Coasts, and action needs to be taken to avoid other pest species arriving and becoming established in our estuaries. A recent study identified key pests which have a high risk of being transferred to Sydney's waterways by boating traffic from southern NSW and other states, such as the Asian bag mussel, Northern Pacific seastar, European/green shore crab and Japanese kelp.

Marine pests can affect your boat

- They damage the paint and hull where they attach
- They increase drag and therefore fuel costs
- They increase maintenance costs
- They clog pipes, motors or propellers causing engine overheating

Marine pests can affect your fishing

- They increase pressure on fish populations by competing for food, damaging their habitats, or preying on them
- A pest outbreak can result in fishing closures to stop the pests spreading further
- The Northern Pacific seastar can even steal your bait!

Meadow of *Caulerpa taxifolia*

How can I help?

Check and clean your boat regularly using the simple steps on pages 4 to 7, to make sure you are not spreading pests. Also, clean your fishing gear.

You may be carrying marine pests on your boat. You could unknowingly be spreading them to your favourite destinations. Cleaning your boat and gear will help stop the spread of marine pests. It will also reduce your fuel costs and increase the life of your boat.

Caulerpa taxifolia

Japanese kelp

Mussels on propeller

Learn to identify important existing or potential marine pests – see pages 8 to 39. If you see existing pests in new locations or new pests in NSW, please report them immediately.

NSW DPI's 24hr recorded hotline
(02) 4916 3877
email: **aquatic.pests@dpi.nsw.gov.au**

Note the location and take photos or collect a sample and freeze in a plastic bag to enable NSW DPI to confirm your sighting.

For more information, please visit:
www.dpi.nsw.gov.au/fisheries/pests-diseases
or phone 1300 550 474

Follow these simple steps to make sure pests aren't hitchhiking on your boat!

TRAILER BOATS, CANOES, KAYAKS, JETSKIS

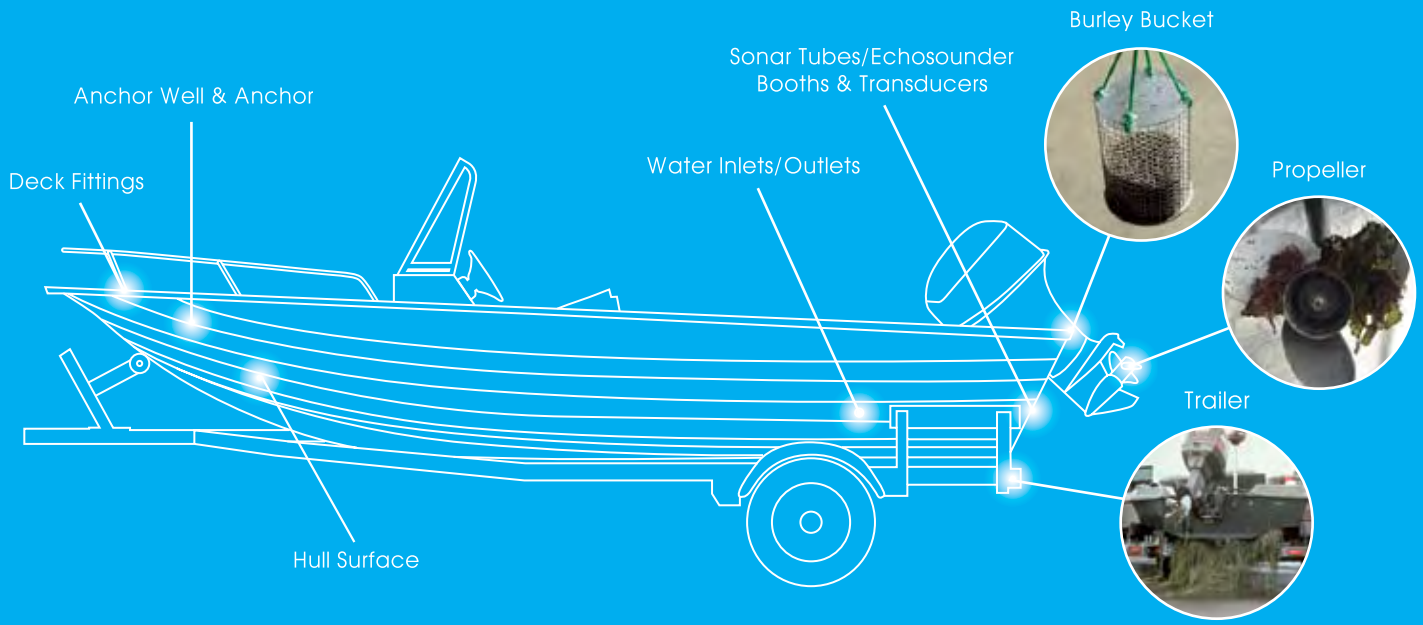
4 key steps to keep your boat and gear clean and dry. Target the areas shown in the diagram.

1. **Remove any weeds, animals or sediment from your boat, trailer and gear and put it in the bin** – NOT back in the water.

2. **After each trip rinse your boat, trailer and gear with fresh water,** in your yard or at a carwash. If you can't do this because of water restrictions go to the next step.

3. **Drain all the water from your boat and gear,** but don't let it drain back into the sea.

4. **Dry your boat and gear completely, including ropes and anchor.** Tiny eggs & plant spores can survive in a damp area for months.

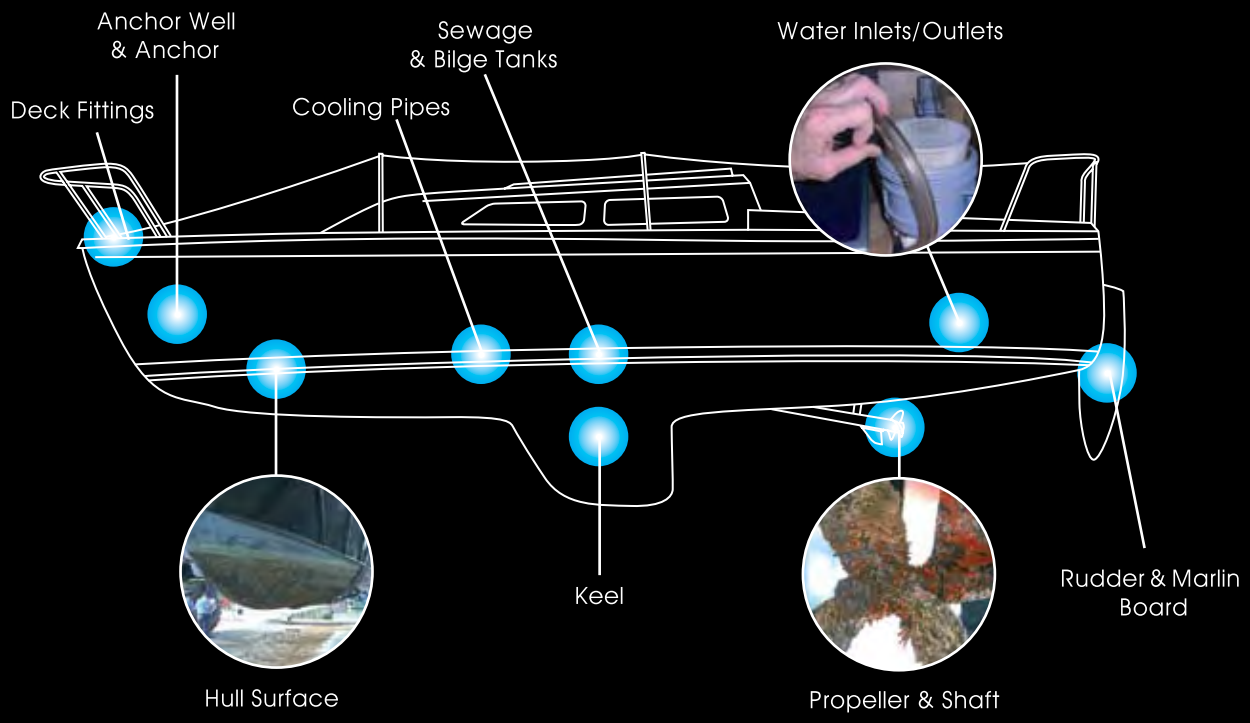


Follow these simple steps to make sure pests aren't hitchhiking on your boat!

MOORED BOATS

It's crucial to make sure your boat is clean before you move it. Follow these 5 key steps and target the areas shown in the diagram.

1. **Slip and clean your boat regularly,** at least every year and anytime there is a build up of fouling.
2. **Select an antifouling paint suited to your boat's activity, and apply it correctly following the manufacturer's advice.** Renew it when persistent fouling occurs.
3. **Check your boat for fouling every month** (any plants or animals attached to your hull, propellers, anchor, cables, fenders, cordage, tenders etc).
4. **Treat internal seawater systems regularly** – flush with fresh water or an approved treatment.
5. **Dispose of sewage and bilge water at an approved pump out facility.** Waste could contain marine pests, their eggs or plant spores.



MARINE PEST FOUND IN NSW

CAULERPA
Caulerpa taxifolia

Photo: NSW DPI

Frond height 3-25cm

Flattened fronds, bright green colour. Known to turn pale & white during winter in colder waters

Leaflets on fronds attach directly opposite each other, curve upwards

Leaflets constricted at base

KNOWN LOCATIONS:

Found in several NSW estuaries and coastal lakes including:

Lake Macquarie
Brisbane Water
Hawkesbury River
Pittwater
Port Jackson
Botany Bay
Port Hacking
St Georges Basin
Lake Conjola
Narrawallee Inlet
Burrill Lake
Durras Lake
Batemans Bay
Wallagoot Lake

Also found in SA

See NSW DPI website for up-to-date information www.dpi.nsw.gov.au

HABITAT:

- Sand or rock in sheltered and moderately exposed areas
- Has not been found in depths greater than 12m in NSW

IMPACTS:

- May compete with native seagrasses
- May adversely affect shellfish living in sediments
- Entangles in boat anchors, fishing nets and trawling gear

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

Photo: David Harasti

Caulerpa filiformis

KEY FEATURES:
Flattened strap-like fronds (not fern-like)

HABITAT:
Exposed and sheltered rocky reef and sandy areas, to 6m depth
Common between Port Stephens and Jervis Bay

Photo: John Huisman, Marine Plants of Australia

Caulerpa scalpelliformis

KEY FEATURES:
Fern-like fronds with leaflets either side of fronds not directly opposite each other

HABITAT:
Exposed rocky reef to 36m depth

Photo: John Huisman, Marine Plants of Australia

Caulerpa flexilis

KEY FEATURES:
Fern-like branchlets with secondary leaflets

HABITAT:
Exposed rocky reef to 40m depth
More common in deeper water

Photo: John Huisman, Marine Plants of Australia

Caulerpa cactoides

KEY FEATURES:
Short rounded club-like leaflets

HABITAT:
Sheltered and less exposed sand, mud and rock surfaces up to 38m depth

MARINE PEST FOUND IN NSW

EUROPEAN/GREEN SHORE CRAB
Carcinus maenas

Photo: © CSIRO

KNOWN LOCATIONS:

Found in several estuaries and coastal lakes along NSW southern coastline including:

Clyde River
Wagonga Inlet
Nangudga Lake
Bermagui River
Wapengo Lake
Nelson Lagoon
Merimbula Lake
Pambula Lake
Twofold Bay
Wonboyn Lake

Also found in SA, Vic, Tas

See NSW DPI website for up-to-date information www.dpi.nsw.gov.au

HABITAT:

- Shallow intertidal areas of bays and estuaries
- Typically amongst rocks with oysters or in mangroves

IMPACTS:

- Competes with native species
- Feeds on native shellfish and other crabs
- Potential impacts on aquaculture and fisheries

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

Photo: Graham Edgar, Australian Marine Life

Thalamita sima

KEY FEATURES:
Has swimming paddles
5 spines either side of eyes
Green/yellow colour

HABITAT:
Sheltered reef and sand up to 34m depth

Photo: Graham Edgar, Australian Marine Life

Surf crab/Sand crab
Ovalipes australiensis

KEY FEATURES:
Two red oval patches towards the rear
Light grey/sand colour

HABITAT:
Sandy beaches up to 34m depth

Photo: © Leon Altoff

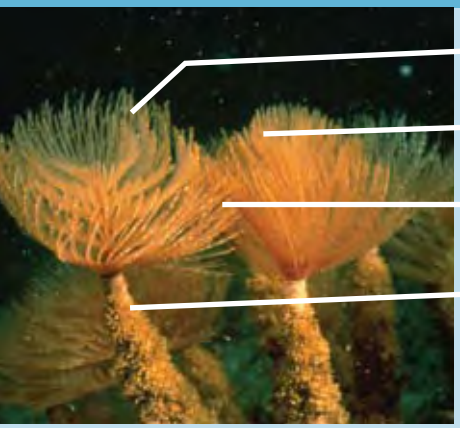
Red swimmer crab
Nectocarcinus integrifrons

KEY FEATURES:
Purple-red/brown colour
4 spines either side of eyes
Slightly hairy, claws black at tips, no swimming paddles

HABITAT:
Sheltered seagrass and seaweed up to 20m depth

MARINE PEST FOUND IN NSW

EUROPEAN FAN WORM
Sabella spallanzanii



Fan colour varies: white/orange/brown

Fan often has brightly banded colours

Feeding tentacles (radiole) form spiralled fan up to 20cm long

Flexible tube up to 40cm

Photo: © CSIRO

KNOWN LOCATIONS:

- Twofold Bay, NSW
- WA, SA, Vic, Tas

HABITAT:

- Sheltered waters up to 30m depth
- Soft sediments and hard surfaces such as wharf/marina piles, channel markers, submerged wrecks and pontoons

IMPACTS:

- Fouls man-made structures and soft sediments
- Competes for food and space with native species and can inhibit their settlement
- Clogs dredges and nets increasing sorting times for commercial fishers

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

Photo: Roger Steene

Feather-duster worm/ Banded fan worm/ Southern fan worm
Sabellastarte australiensis

KEY FEATURES:
Feeding tentacles not spiralled, up to 15cm diameter
Banded white and purple/brown

HABITAT:
Exposed rocky reefs up to 30m depth

Photo: David Harasti

Anemone horseshoe worm
Phoronis australis

KEY FEATURES:
Velvet black colour, tube length up to 20cm

HABITAT:
Silty/sandy sheltered areas, up to 30m depth

Photo: Mark Norman, Museum Victoria

Sabellastarte sp

KEY FEAURES:
Feeding tentacles not spiralled
Banded white/purple/ orange/brown
Shorter tube up to 5cm
Usually solitary not in clumps

HABITAT:
Exposed rocky reef and artificial structures in areas of good current flow, up to 200m depth

MARINE PEST FOUND IN NSW

NEW ZEALAND SCREW SHELL
Maoricolpus roseus

Smooth spiralled cone (no beads) up to 9cm long

Yellow/red-brown in colour, often marbled or streaked

Photo: © CSIRO

Photo: © CSIRO

KNOWN LOCATIONS:

- Twofold Bay and continental shelf off Merimbula and Bermagui
- Vic and Tas

HABITAT:

- Lying on, or partially buried in sand, mud or gravel
- Intertidal to subtidal
- From 1-130m depth

IMPACTS:

- Densely blankets sea floor with live and dead shells
- Can affect growth of scallops and displace native shellfish

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

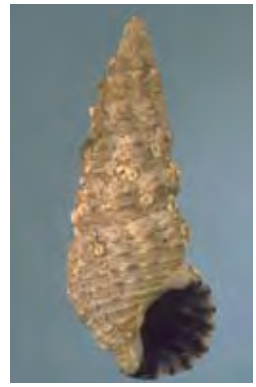


Photo: Patty Jansen, Australian Shells

Mud whelk
Velacumantus australis

KEY FEATURES:
Broader, rough spiralled shell up to 2-5cm long
Dull grey colour

HABITAT:
Soft sediments in sheltered waters, estuaries, mangroves, tidal flats, seagrasses

Photo: Holly Barlow, Australian Museum

Native screw shell
Gazameda gunnii

KEY FEATURES:
Shorter shell up to 5-6cm long
More mottled appearance, lighter colouration – white/light brown
Has fine beads forming ridges around the shell

HABITAT:
Inner continental shelf at depths to 140m

Photo: Patty Jansen, Australian Shells

Hercules club whelk/Mud whelk
Pyrazus ebeninus

KEY FEATURES:
Dark brown shell with flaring lip
Up to 11cm long

HABITAT:
Mudflats and mangrove swamps in estuaries

MARINE PEST FOUND IN AUSTRALIA

NORTHERN PACIFIC SEASTAR
Asterias amurensis

Five pointed arms with radius up to 23cm

Upturned tips, pointed spines (two rows on underside)

Juveniles are yellow with purple markings (adults more yellow)

Photo: © CSIRO

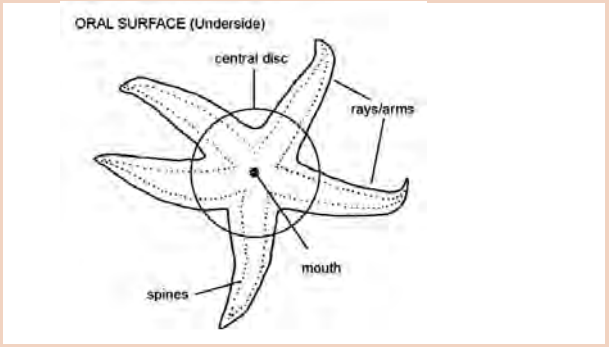


Diagram: © CSIRO

KNOWN LOCATIONS:

- Found in Vic and Tas
- Not known to occur in NSW

HABITAT:

- All surfaces such as mud, sand and rock in sheltered areas
- Intertidal zone up to 25m depth, occasionally to 200m depth

IMPACTS:

- Voracious predator, consumes many bivalves and other small invertebrates
- Impacts aquaculture and fisheries

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

Photo: Graham Edgar, Australian Marine Life

Irregular seastar
Smilasterias irregularis

KEY FEATURES:
Five arms with radius up to 6.5cm
Colour ranges pink/red/brown/grey
Pointed but no upturned tips

HABITAT:
Sheltered reef up to 30m depth
Southern NSW coastline

Photo: David Harasti

Granular/Zig zag seastar
Uniophora granifera

KEY FEATURES:
Five blunt tipped arms
Radius up to 12cm
Orange with purple spines

HABITAT:
Sheltered reef, silt, seagrass up to 30m depth
Entire NSW coastline

Photo: www.rling.com

Many-pored seastar
Fromia polypora

KEY FEATURES:
Five arms with radius up to 11cm
Bright orange/yellow with black pores

HABITAT:
Exposed reef up to 160m

MARINE PEST FOUND IN AUSTRALIA

JAPANESE SEAWEED
Undaria pinnatifida

Photo: © CSIRO

Photo: © CSIRO

KNOWN LOCATIONS:

- Tas and Vic
- Not known to occur in NSW

HABITAT:

- Sheltered temperate waters
- Intertidal to subtidal zone, usually found between 10-20m depth

IMPACTS:

- Can be highly invasive and grow rapidly into dense beds
- Overgrows and excludes native algal species

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

Photo: John Huisman, Marine Plants of Australia

Cray weed/Strap weed
Phyllospora comosa

KEY FEATURES:
No midrib or base
Long strand-like fronds with sawtooth edge, air sacks for floats
Up to 3m tall

HABITAT:
Exposed rocky reef up to 20m depth

Photo: John Huisman, Marine Plants of Australia

Common kelp
Ecklonia radiata

KEY FEATURES:
No midrib or base
Often has spines, brown fronds, up to 2m tall
Appearance varies with depth (longer, smoother fronds in deep water)

HABITAT:
Moderately exposed rocky reefs up to 44m depth

Photo: John Huisman, Marine Plants of Australia

Bull kelp
Durvillaea potatorum

KEY FEATURES:
No midrib or base
Large bulky fronds
Up to 8m tall

HABITAT:
Exposed rocky reef up to 30m depth

ASIAN DATE MUSSEL/BAG MUSSEL
Musculista senhousia

Smooth fragile shell up to 3cm long, olive green/brown colour

Shell has zigzag markings and iridescent radiating bands

Often in clumps of many individuals

Photo: courtesy Northern Territory Government

Photo: Graham Edgar, Australian Marine Life

KNOWN LOCATIONS:

- Found in Vic, SA, Tas and WA
- Not known to occur in NSW

HABITAT:

- Soft sediment or hard surfaces
- Occurs just below the low tide level in aggregated clumps

IMPACTS:

- Fouls man-made structures
- Forms dense mats competing with natives for food and space

REPORT NEW LOCATIONS

Photo: Graham Edgar, Australian Marine Life

Blue mussel
Mytilus galloprovincialis planulatus

KEY FEATURES:
Large fan shaped shell up to 12cm
Blue/black colour
Usually found in clumps

HABITAT:
Sheltered and moderately exposed reefs, pylons and pontoons
Up to 15m depth

Photo: Graham Edgar, Australian Marine Life

Brachidontes rostratus

KEY FEATURES:
Long flat shell up to 4cm
Purple colour, regular rounded ribs
Usually found in dense clumps

HABITAT:
Exposed rock platforms

Photo: Graham Edgar, Australian Marine Life

Hairy mussel
Trichomya hirsuta

KEY FEATURES:
Numerous hairs on lower half of shell
Up to 6cm

HABITAT:
Exposed reef up to 15m depth
Common intertidally and subtidally

Photo: Graham Edgar, Australian Marine Life

Little black horse mussel
Xenostrobus pulex

KEY FEATURES:
Small shiny inflated shell up to 2.5cm in length
Black colour
Forms dense clumps

HABITAT:
Exposed rocky shores
Mid intertidal

MARINE PEST FOUND IN AUSTRALIA

ASIAN GREEN MUSSEL
Perna viridis

Bright green juvenile shell and dark green to brown adult shell

Commonly 8-10cm in length, can reach up to 16cm in length

Smooth pearly shell

Photo: courtesy Northern Territory Government

Photo: Wayne Sheldon

KNOWN LOCATIONS:

- Cairns, QLD
- Not known to occur in NSW

HABITAT:

- Variety of hard surfaces, particularly floating, including vessels, wharves, buoys, intake pipes, aquaculture equipment
- Low tide to 42m depth, lower estuarine habitats to marine
- Tropical to warm waters but tolerates wide ranges of salinities and temperatures

IMPACTS:

- Fast growing, out competes native species
- Forms dense clumps, fouls man-made structures
- Accumulates toxins and is linked to shellfish poisoning in humans

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

Photo: Graham Edgar, Australian Marine Life

Blue mussel
Mytilus galloprovincialis planulatus

KEY FEATURES:
Blue/black colour
Large fan shaped shell up to 12cm

HABITAT:
Sheltered and moderately exposed reefs, pylons and pontoons, typically on floating surfaces
Can occur up to 15m depth

MARINE PEST FOUND IN AUSTRALIA

BLACK-STRIPED MUSSEL
Mytilopsis sallei

Small, fragile shell up to 2.5cm long with one side overlapping the other

Varied shell colour from black/brown-light grey/white

Some show light and dark zig zag pattern

Forms dense clusters, rarely seen as individuals

Photo: courtesy of Northern Territory Government

Photo: courtesy of Northern Territory Government

Photo: © CSIRO

KNOWN LOCATIONS:

- Not known to currently exist in Australia
- Eradicated from Darwin Harbour in 1999

HABITAT:

- Prefers shallow sheltered inshore estuarine habitats
- Tolerates wide range of salinities and temperatures
- Can attach to any hard surfaces, e.g. hulls, pylons

IMPACTS:

- Rapid growth forming dense clusters that exclude most other species
- Fouls man-made structures such as wharves, marinas, seawater systems, aquaculture equipment

REPORT NEW LOCATIONS

SIMILAR NATIVE SPECIES

Photo: Graham Edgar, Australian Marine Life

Brachidontes rostratus

KEY FEATURES:
Long flat shell up to 4cm
Purple colour

HABITAT:
Forms dense mats on exposed rock platforms

Photo: Graham Edgar, Australian Marine Life

Little black horse mussel
Xenostrobus pulex

KEY FEATURES:
Small shiny inflated shell up to 2.5cm in length
Black colour
Forms dense clumps

HABITAT:
Exposed rocky shores, mid intertidal

ASIAN PADDLE CRAB
Charybdis japonica

Photo: Museum of New Zealand Te Papa Tongarewa (CR. 009843)

KNOWN LOCATIONS:

- Single live male found in SA
- Not known to occur in NSW

HABITAT:

- Estuarine and marine habitats
- Subtidal to 10-15m depth

IMPACTS:

- Is host/carrier of the White Spot Syndrome Virus which can infect native and farmed prawns, crabs and lobsters

REPORT NEW LOCATIONS

Blue swimmer crab
Portunus pelagicus

KEY FEATURES:
No spines either side of eyes
Dark brown/bluish/ purple colour
Shell width up to 21cm

HABITAT:
Sheltered sand and seagrass habitat
Intertidal and subtidal up to 60-70m depth

Mud crab
Scylla serrata

KEY FEATURES:
9 spines either side of head
Dark brown to mottled green
Large robust claws
Shell up to 25cm wide

HABITAT:
Soft muddy bottoms in sheltered areas such as mangroves

Above illustrations: Pat Tully, NSW DPI

MARINE PEST FOUND OVERSEAS

ASIAN SHORE CRAB
Hemigrapsus sanguineus

Photo: Amy J Benson, U.S. Geological Survey

KNOWN LOCATIONS:

- Not recorded in Australia

HABITAT:

- Estuarine and marine habitats
- Intertidal shallow hard-bottom areas including under rocks, shells, debris and artificial structures

IMPACTS:

- Broad diet, competes with and preys upon native species

REPORT ANY SIGHTINGS

SIMILAR NATIVE SPECIES

Photo: Tim Glasby, NSW DPI

Swift-footed crab/Purple rock crab
Leptograpsus variegatus

KEY FEATURES:
Dark-olive green to dark purple
Shell up to 8cm wide
Purple claws with white tips
Three spines on either side of eyes

HABITAT:
Exposed rocky shores, intertidal

Photo: Michael Marmach, Museum Victoria

Smooth shore crab
Cyclograpsus audouinii

KEY FEATURES:
No spines either side of the eyes
Smooth rounded shell up to 4cm wide
Varied colours from red-brown/purple and yellow to purple, dark grey or brownish grey

HABITAT:
Under rocks on sheltered and moderately exposed shores

Photo: Tim Glasby, NSW DPI

Sowrie
Plagusia glabra

KEY FEATURES:
Smooth shell green-brown colour
4 distinct spines on either side of eyes, spines on legs

HABITAT:
Intertidal, exposed rock platforms or rock pools

Photo: © Leon Altoff

Spotted smooth shore crab
Paragrapsus laevis

KEY FEATURES:
Shell width up to 4cm
2 spines either side of eyes
First set of legs felted with hairs

HABITAT:
Intertidal, sheltered coastal bays and estuaries, prefers hiding under rocks, debris and in mangroves

MARINE PEST FOUND OVERSEAS

CHINESE MITTEN CRAB
Eriocheir sinensis

Photo: Lee Mecum, California Dept of Fish and Game

Photo: Stephan Gollasch GoConsult

KNOWN LOCATIONS:

- Not recorded in Australia

HABITAT:

- Tolerates a wide range of temperatures and modified habitats
- Prefers estuarine and coastal areas including lakes, wetlands and river banks

IMPACTS:

- Forms dense colonies that cause erosion by intense burrowing
- Opportunistic diet, out competes native species
- Can carry lung fluke that can infect humans

REPORT ANY SIGHTINGS

SIMILAR NATIVE SPECIES

Photo: Michael Marmach, Museum Victoria

Red bait crab
Plagusia chabrus

KEY FEATURES:
Hairy body and legs with spines on legs
Red/brown/orange colour
Shell up to 7cm wide
Deeply notched between the eyes

HABITAT:
Prefers subtidal reefs up to 8m depth

Photo: Tim Glasby, NSW DPI

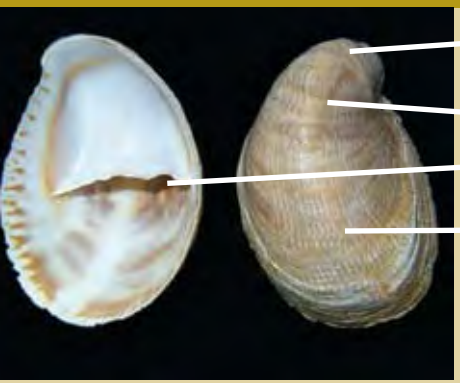
Swift-footed crab/Purple rock crab
Leptograpsus variegatus

KEY FEATURES:
Dark olive-green to dark purple
Shell up to 8cm wide
Purple claws with white tips
Three spines on either side of eyes

HABITAT:
Exposed rocky shores, intertidal

MARINE PEST FOUND OVERSEAS

SLIPPER LIMPET
Crepidula fornicata



Smooth oval shaped shell up to 5cm long

Irregular growth lines

Internal shelf extending half shell's length

White, yellow or pink with red/brown streaks

Commonly found in stacks

Photo: Bill Frank www.jaxshells.org

Photo: Sarah Longrigg

Slipper limpets showing stacking behaviour

KNOWN LOCATIONS:

- Not recorded in Australia

HABITAT:

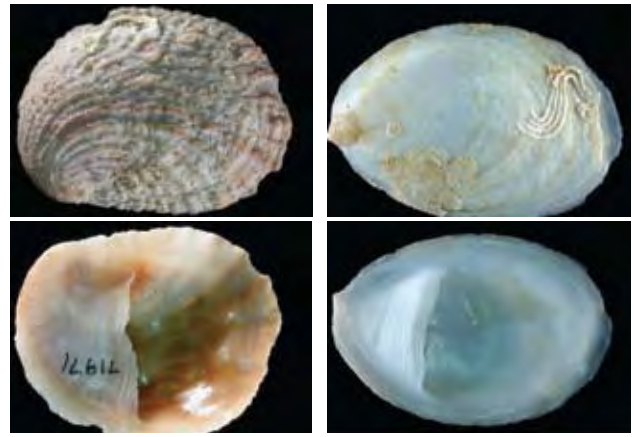
- Intertidal areas of estuaries and coastal bays
- Attached to other shells or hard surfaces in muddy/sandy/gravel/rocky areas

IMPACTS:

- Can compete with natives for food and space
- Can impact commercial oyster cultivation

REPORT ANY SIGHTINGS

SIMILAR NATIVE SPECIES



Photos: Des Beechey www.seashellsofnsw.org.au

Northern slipper limpet/ Spiny slipper limpet
Crepidula aculeata

KEY FEATURES:
Shell commonly 1-3cm (up to 4cm), has spines and bumps, white and brown colour

HABITAT:
Intertidal to subtidal, exposed rocky shores

Southern slipper limpet
Crepidula immersa

KEY FEATURES:
Flat/thin shell up to 5cm long with internal shelf
White to fawn/brown colour

HABITAT:
Subtidal up to 350m depth

Photo: © Leon Altoff

Limpet
Notoacmea mayi

KEY FEATURES:
Smooth shell, no internal shelf

HABITAT:
Exposed reef, high intertidal zone

MARINE PEST FOUND OVERSEAS

RAPA WHELK/VEINED WHELK
Rapana venosa

- Large heavy shell up to 18cm long with large opening
- Outside shell colour varies grey to red/ brown
- Black vein-like pattern over whole shell
- Distinctive deep orange interior

Photo: US Geological Survey Archives, United States

KNOWN LOCATIONS:

- Not recorded in Australia

HABITAT:

- Tolerates wide range of temperatures and salinities, polluted and oxygen-deficient waters
- Prefers sandy estuarine and marine habitats, can also colonise hard substrates

IMPACTS:

- Can prey heavily on native shellfish and aquaculture species
- Can affect bottom dwelling organisms

REPORT ANY SIGHTINGS

SIMILAR NATIVE SPECIES

Photo: © Leon Altoff

Cartrut shell
Dicathais orbita

KEY FEATURES:
Shell sculptured with grooves
White/grey/brown/ green colour
Shell height up to 7-8cm

HABITAT:
Reef up to 10m depth

Photo: Des Beechey www.seashellsofnsw.org.au

Helmet shell
Semicassis pyrum

KEY FEATURES:
Smooth shell
Cream with brown blotches
Shell height up to 7cm

HABITAT:
Exposed sand up to 480m depth

MARINE PEST FOUND OVERSEAS

BRUSH-CLAWED SHORE CRAB
Hemigrapsus takanoi

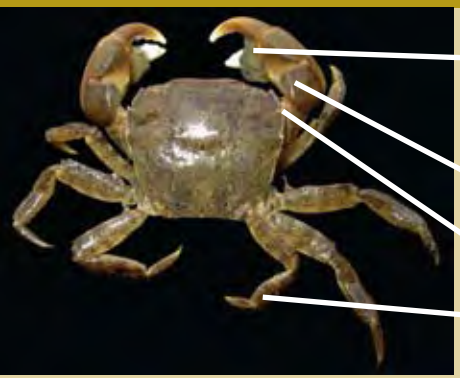


Photo: Hans Hillewaert

Light brown to yellow fur patches at base of pincers on male's claws

Small dark spots on claws

3 spines on either side of eyes

Light and dark banded legs

Most commonly orangey-brown in colour, can be green or maroon

Photo: Arjan Gittenberger

KNOWN LOCATIONS:

- Not recorded in Australia

HABITAT:

- Rocky intertidal habitats, but is also found in soft sediments

IMPACTS:

- Broad diet, competes with and preys upon native species

REPORT ANY SIGHTINGS

SIMILAR NATIVE SPECIES

Photo: Tim Glasby, NSW DPI

Swift-footed crab/Purple rock crab
Leptograpsus variegatus

KEY FEATURES:
Dark-olive green to dark purple
Shell up to 8cm wide
Purple claws with white tips
Three spines on either side of eyes

HABITAT:
Exposed rocky shores, intertidal

Photo: Michael Marmach, Museum Victoria

Smooth shore crab
Cyclograpsus audouinii

KEY FEATURES:
No spines either side of the eyes
Smooth rounded shell up to 4cm wide
Varied colours from red-brown/purple and yellow to purple, dark grey or brownish grey

HABITAT:
Under rocks on sheltered and moderately exposed shores

Photo: Tim Glasby, NSW DPI

Sowrie
Plagusia glabra

KEY FEATURES:
Smooth shell green-brown colour
4 distinct spines on either side of eyes, spines on legs

HABITAT:
Intertidal, exposed rock platforms or rock pools

Photo: © Leon Altoff

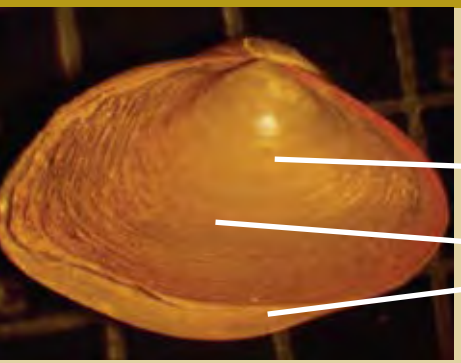
Spotted smooth shore crab
Paragrapsus laevis

KEY FEATURES:
Shell width up to 4cm
2 spines either side of eyes
First set of legs felted with hairs

HABITAT:
Intertidal, sheltered coastal bays and estuaries, prefers hiding under rocks, debris and in mangroves

MARINE PEST FOUND OVERSEAS

ASIAN CLAM
Potamocorbula amurensis



Thin smooth shell; older shells appear wrinkled on shell surface

White, tan or yellow in colour

2-3cm in length

Shell of unequal size – one side is larger than the other

Photo: Janet Thompson, US Geological Survey

KNOWN LOCATIONS:

- Not recorded in Australia

HABITAT:

- Mostly subtidal but also intertidal
- Can be found in marine, estuarine and freshwater habitats
- Occurs in all sediment types including mud, peat, clay, sand but most commonly found on mixed mud/sand bottoms

IMPACTS:

- Competes with native species for food and space
- Reduces planktonic food sources
- Can form dense layers

REPORT ANY SIGHTINGS

SIMILAR NATIVE SPECIES

Photo: John & Maria Grist

Narrow wedge shell/Shining wedge shell
***Paphies* species**

KEY FEATURES:
White/cream shell with brown covering
Interior of shell is white
Up to 2.5cm long

HABITAT:
Sandy intertidal

Photo: John & Maria Grist

Tellina semitorta

KEY FEATURES:
Shell usually white, but sometimes pink
Up to 1.6cm long

HABITAT:
Sandy intertidal

Northern Pacific seastar

Marine pests can:

- Damage your boat
- Increase your fuel and maintenance costs
- Impact on your fishing
- Destroy native habitats
- Threaten human health

Help prevent the spread of marine pests!

Check and clean your boat and fishing gear before you move

and

Report marine pests

24hr recorded hotline (02) 4916 3877
Email: aquatic.pests@dpi.nsw.gov.au

For more information:
www.dpi.nsw.gov.au/fisheries/pests-diseases
or phone 1300 550 474

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

BIA
Boating Industry Association

NSW MARITIME

COASTCARE

THE BOAT OWNERS ASSOCIATION OF NSW
BOA

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Photos on pages 1 -7 courtesy of BIA VIC, CSIRO, DAFF, Franz Grasser (VRFish), Michigan Sea Grant Archives, NSW DPI, Sandringham Yacht Club, VIC DSE, Yachting Victoria.