Around 250 introduced marine species have been discovered in Australian waters. As surveys continue, it is generally expected that even more will be discovered. These animals and plants range from microscopic dinoflagellates to large species of seaweed, jellyfish, shells, starfish and crabs.

Exotic marine species invade our waters in a number of ways. Most either hitch a ride by attaching to the underside of a ship’s hull, or are inadvertently carried in ballast water.

The more invasive introduced marine organisms achieve their status as marine pests by establishing self-sustaining populations, and competing with native species for habitat and food.

In the development of a nationwide system for the prevention and management of marine pests, a number of introduced marine pest species have been identified as pests of national concern, which means these animals and plants could seriously threaten the biodiversity of South Australian waters.

Three of these are not known to occur in South Australia but have been deemed likely to impact on the marine environment should they become established in the future as they have done elsewhere around the coast.

**Australian Invasions**

- **South Australia and New South Wales**

**Habitat**

Wide variety of substrates including rock, sand, mud and seagrass

**Depths of 3 to 25 metres**

**Habitat**

Protected bays, tidal creeks and estuaries

**Migrate between subtidal (to 6 metres) and intertidal areas**

**Seagrass, clear sand areas, mud or under rocks**

**Description**

- Bright green alga with creeping stolons (main stems) from which arise upright erect flat feather-like fronds

- Each stolon can grow to 3 metres in length and 2.5 cm in height

- Can be found as individual plants or dense blankets that may cover many hectares

**Description**

- Two claws and eight legs

- No flattened swimming flippers

- Three spines between the eyes and five spines either side of the eyes on the front edge of the carapace

- Colour green and black through to orange and red, although small juveniles can be much paler

**Description**

- Flexible semi-transparent tube up to 50 cm long

- Feather-like projections (radioles) extend from the tube, up to 20 cm long

- Crown with two different size lobes of radioles

- Forms large meadows obscuring the seafloor

**Description**

- Small in size, up to 3 cm in length

- Outer coating on shell surface is dull olive green in colour

- Shell usually has a pattern of up to 16 fine red lines

- Generally occurs just below low-tide level in aggregated clumps

**Description**

- Thin smooth shell

- Small in size, up to 3 cm in length

- Outer coating on shell surface is dull olive green in colour

- Shell usually has a pattern of up to 16 fine red lines

- Formed large meadows obscuring the seafloor

**Description**

- Live in soft or hard substrates, including jetty piles and seaweed

- Generally occurs just below low-tide level in aggregated clumps

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Help Stop the Spread of Introduced Marine Pests

Eradication of introduced marine pests is extremely difficult. Vital tools in controlling their distribution are early detection and monitoring.

If you find an introduced marine species:
- Record the location accurately, use GPS if possible.
- Record depth and type of bottom.
- Record how it was found – tangled in fishing tackle or anchor, drifting or sighted attached to the substrate.
- Collect a sample (except in an aquatic reserve) and store in a plastic bag.
- Don’t throw any suspicious animal or weed back in the water.
- Report all sightings to FISHWATCH.

More Information
PIRSA Fisheries: 08 8226 2874
SARDI Aquatic Sciences: 08 8200 2400

Internet Sites
PIRSA: www.pir.sa.gov.au/weeds
CSIRO: www.marine.csiro.au/crimp

Northern Pacific Seastar
* Asterias amurensis *

Australian Invasions
- Tasmania and Victoria

Habitat
- Subtidal to a depth of 200 metres
- Found on all subtidal surfaces
- Not found in exposed high wave energy areas

Description
- Five broad arms with upturned pointed ends
- Spines on upper surface are pointed and irregularly arranged along arms
- Spines in grooves on underside of arms have rough tips
- 40 to 50 cm in diameter (across from tip to tip)
- Main colour ranges from yellow through to orange, often with purple marbling

European Clam
* Varicorbula gibba *

Australian Invasions
- South Australia, Victoria and Tasmania

Habitat
- Shallow burrower in thick mud or sand
- Sometimes attaches to gravel and stones by a single byssal thread
- Tolerant of low oxygen levels and survives well in polluted environments

Description
- 15 to 20 cm in length
- The smaller valve (shell) fits into the larger valve.
- The larger valve has well developed, flat, concentric ridges which are widely spaced, whereas the smaller valve has finner, closely set, raised ridges
- Umbones (apex areas of outer shells) on both valves are high and curved with a single well defined cardinal tooth in each shell
- Shell colour usually cream/white with brown patches on bands

Japanese Seaweed or Wakeme
* Undaria pinnatifida *

Australian Invasions
- Tasmania and Victoria

Habitat
- Temperate waters
- Sheltered reef areas subject to oceanic influence
- Intertidal to subtidal zone (to 15 metres)

Description
- Up to 3 metres high
- Usually golden brown in colour
- Distinctive sporophyll at the base of the plant
- Strap-like midrib, full length of plant body, up to 3 cm wide
- Leaf blade terminates well short of base of plant
- Young fronds are simply a blade and have no distinct pinnae
- Holdfast (roots) attaches plant to reef substrate
- An annual species, difficult to detect in late summer and early autumn, can cover large areas of shallow reef in spring

Government of South Australia