

## Molluscs: Soft muscular foot and shell

### Gastropods

#### Snail

**Description:** rounded shell, grey/brown/cream colours.

**Various sizes:** 5–30 mm

**Habitat:** sand or mudflats and mangroves

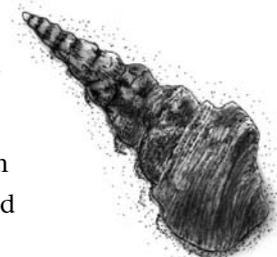


#### Whelk

**Description:** elongated shell, grey/brown/white colours and sizes.

**Maximum sizes:** 20–150 mm

**Habitat:** sand or mudflats and mangroves



### Bivalves: two shells

#### Cockle

**Description:** ribbed shell.

**Maximum size:** 50–80 mm

**Habitat:** sand



#### Razor shell clam

**Description:** purple/brown ribbed shell.

**Maximum size:** 65–120 mm

**Habitat:** mud and sand



#### Oyster

**Description:** outside grey; inside white.

**Maximum size:** up to 100 mm

**Habitat:** rocks and mangrove areas



#### Mussel

**Description:** purplish black and shiny, some hairy.

**Maximum size:** 50–120 mm or smaller varieties 30–50 mm

**Habitats:** pylons of jetties or where sand and rocks meet

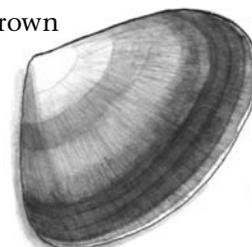


#### Pipi

**Description:** cream to pale brown and shiny white inside.

**Maximum size:** 40–60 mm

**Habitat:** sand



### Nudibranches (sea slugs)

**Description:** marine snails that have no shell, many colours.

**Maximum size:** 10–40 cm long

**Habitat:** seagrass



### Cephalopods

Cephalopod means 'head-foot'.

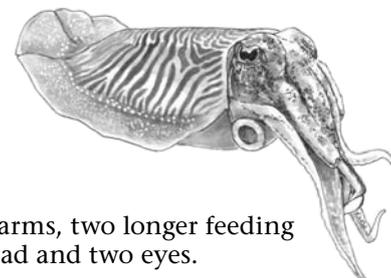
The foot of the cephalopod is a cluster of tentacles that connects directly to the head.

#### Cuttle fish

**Description:** eight arms, two tentacles and a soft body.

**Maximum Size:** 15-25 cm

**Habitat:** seagrass



#### Squid

**Description:** eight arms, two longer feeding tentacles, a large head and two eyes.

**Maximum Size:** 20 cm female and 30 cm male

**Habitat:** seagrass

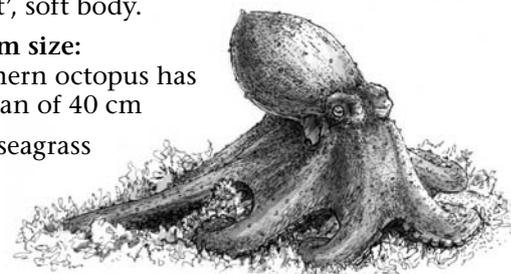


#### Octopus

**Description:** octopus means 'eight feet', soft body.

**Maximum size:** The southern octopus has an armspan of 40 cm

**Habitat:** seagrass



# Crustaceans: Hard shell, legs with joints

## Shrimp and prawns

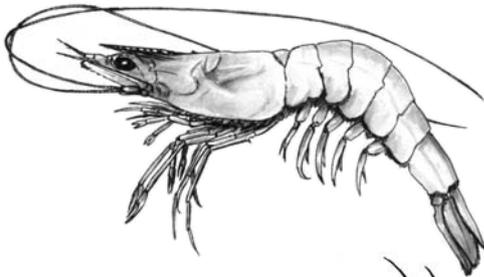
**Description:** shrimp and prawns have five pairs of walking legs, with the first pair modified to form pincers.

### Prawn

**Description:** pale green/brown/translucent with shell segments overlapping on one side only from the front.

**Maximum size:** 190 mm

**Habitat:** estuaries/seagrass

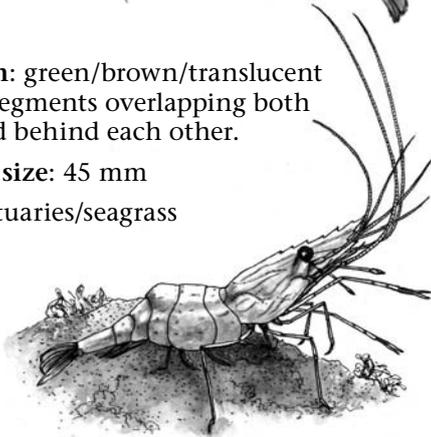


### Shrimp

**Description:** green/brown/translucent with shell segments overlapping both in front and behind each other.

**Maximum size:** 45 mm

**Habitat:** estuaries/seagrass

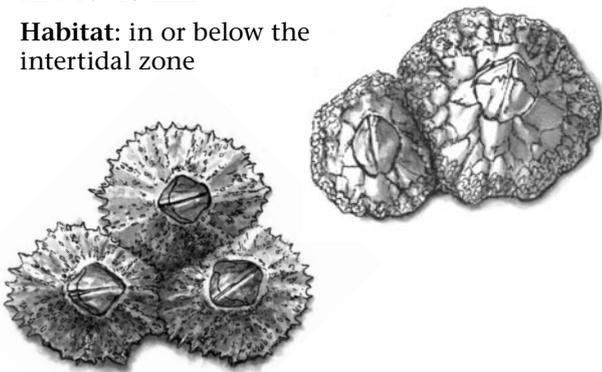


## Barnacles

**Description:** white to grey, attached in colonies.

**Maximum size:** varies with species 5–8 mm and 16–18 mm

**Habitat:** in or below the intertidal zone



## Isopods

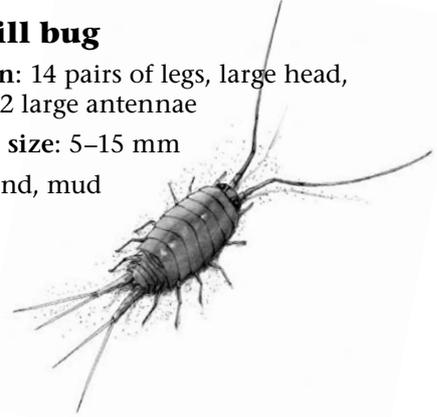
**Description:** flattened from the top.

### Slater/pill bug

**Description:** 14 pairs of legs, large head, 2 eyes and 2 large antennae

**Maximum size:** 5–15 mm

**Habitat:** sand, mud



## Amphipods

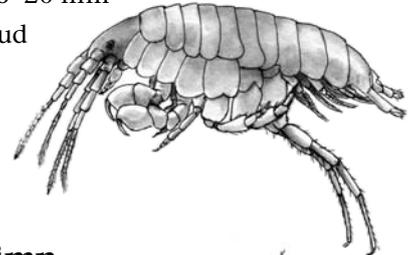
**Description:** appear pinched inwards.

### Sand hopper

**Description:** translucent, brown or grey.

**Maximum size:** 6–20 mm

**Habitat:** sand, mud

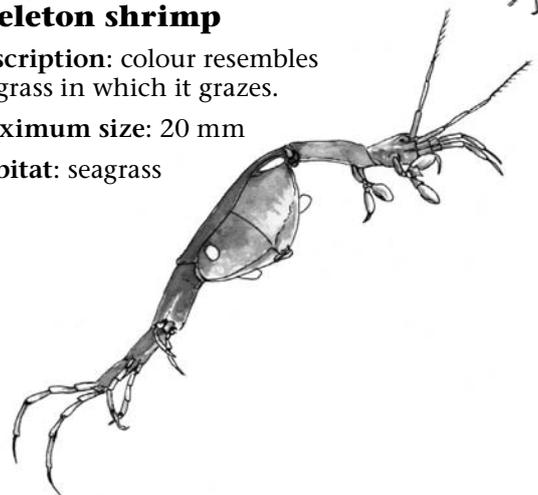


### Skeleton shrimp

**Description:** colour resembles seagrass in which it grazes.

**Maximum size:** 20 mm

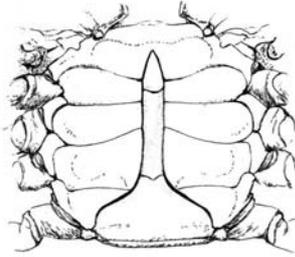
**Habitat:** seagrass



## Crabs

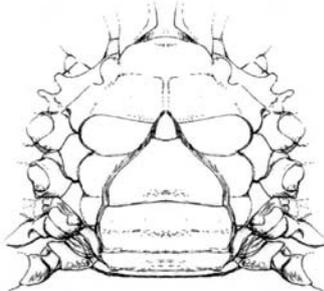
### Male Crab

Male crabs have a triangular inset on the underside.



### Female Crab

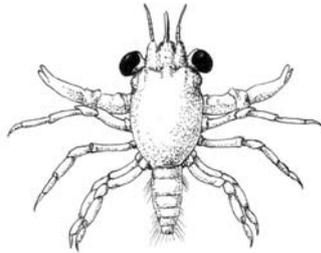
Females have a broad and round inset on the underside that is most obvious when the eggs are being carried.



### Crab larva

**Description:** larvae called zoea hatch from eggs and moult several times as they grow.

**Habitat:** swim in plankton



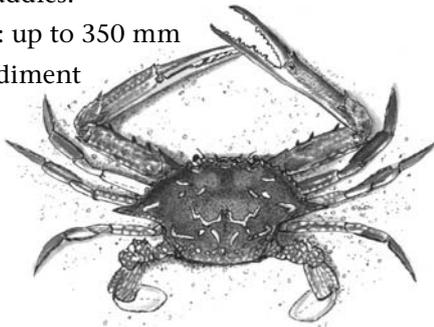
## LARGE SIZED CRABS

### Swimming crab, *Portunus pelagicus*

**Description:** their last pair of legs are modified as swimming paddles.

**Maximum size:** up to 350 mm

**Habitat:** soft sediment and mud

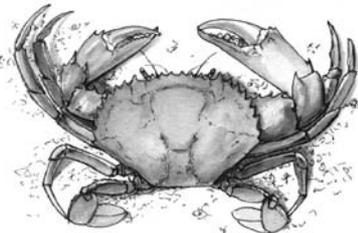


### Mud crab, *Scylla serrata*

**Description:** dark brown or dark green mottled crab.

**Size:** Large crab – can grow to more than 240 mm

**Habitat:** mud, mangroves



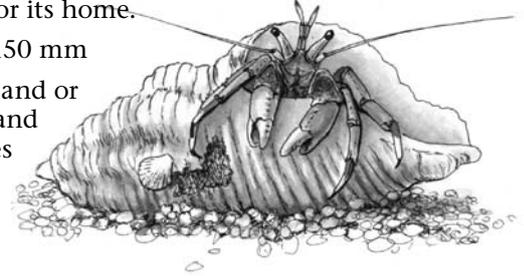
## MEDIUM SIZED CRABS

### Hermit crab, *Pagurus sinuatus*

**Description:** crab that uses the shell of another creature for its home.

**Size:** 80–150 mm

**Habitat:** sand or mudflats and mangroves

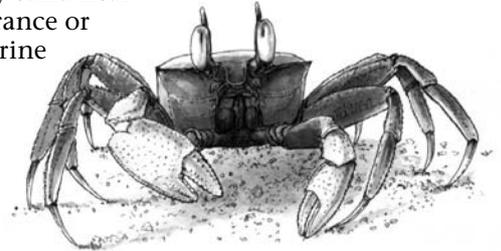


### Ghost crab, *Ocypode cordimana*

**Description:** light grey in colour, rounded shell, large eyes at the end of short eyestalks.

**Maximum size:** up to 35–50 mm

**Habitat:** dry sand near estuary entrance or sandy estuarine beaches

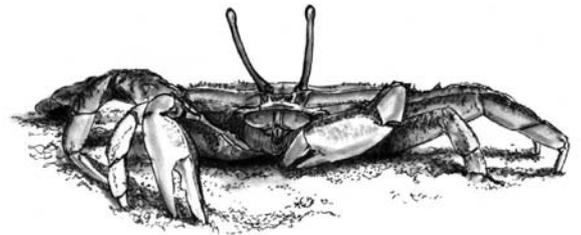


### Sentinel crab, *Macrophthalmus setosus*

**Description:** rectangular shaped crab, greenish grey with light coloured limbs.

**Maximum size:** 30–40 mm wide

**Habitat:** different species in mud, shallow pools, mangroves, seagrass

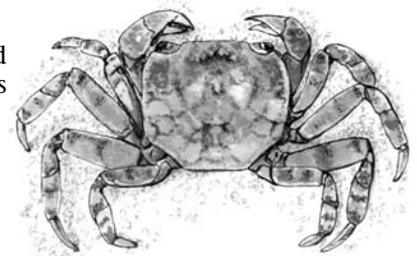


### Smooth shore crab, *Cyclograpsus granulatus*

**Description:** purple, dark grey or purplish grey, scavenger eats whatever is around.

**Size:** 30–40 mm

**Habitat:** sheltered bays and estuaries in mud areas and saltmarsh flats



**MEDIUM SIZED CRABS** (continued)

**Spotted smooth shore crab,  
*Paragrapsus gaiardii* (Grapsidae)**

**Description:** very large purple-brown claws and grey or yellow flecked carapace.

**Maximum size:** up to 30–35 mm

**Habitat:** mud; mangroves

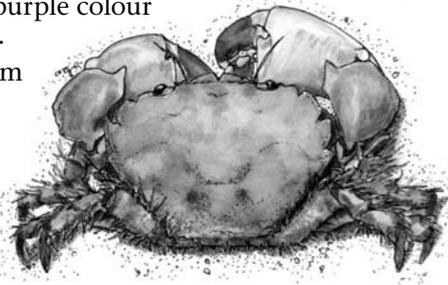


**Smooth handed crab,  
*Pilumnopus serratifrons***

**Description:** purple colour and hairy legs.

**Size:** 25–30 mm

**Habitat:** mud; mangroves

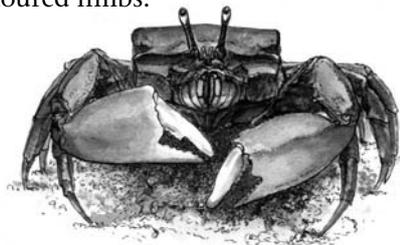


**Semaphore crab, *Heloecius cordiformis***

**Description:** rectangular shaped crab, greenish grey with light coloured limbs.

**Maximum size:** 30–40 mm wide

**Habitat:** different species in mud, shallow pools, mangroves, seagrass

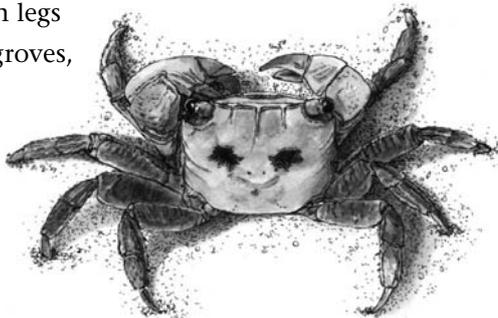


**Red fingered marsh crab,  
*Sesarma erythroductyla***

**Description:** green carapace and red-tipped claws.

**Maximum size:** 20–30 mm across with brown hairs on legs

**Habitat:** mangroves, saltmarsh and river banks



**SMALL SIZED CRABS**

**Soldier crab, *Mictyris longicarpus***

**Description:** small, round, blue body on long jointed legs with purple stripes. Lives in massive groups and burrows into sand in corkscrew manner if frightened.

**Maximum size:** 12–15 mm

**Habitat:** estuaries sand/mud

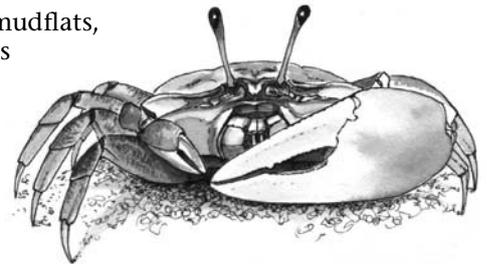


**Fiddler crab, *Uca* (order Decapoda)**

**Description:** males have one large white, orange, pink or red claw. Females have two small claws.

**Maximum size:** 20–30 mm

**Habitat:** mudflats, mangroves



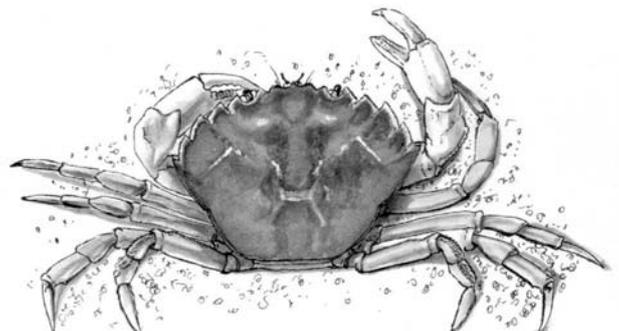
**INTRODUCED CRAB SPECIES**

**Green shore crab, *Carcinus maenas***

**Description:** green but tends to be red/orange on the under surface with five distinct spines on the outside edge of the carapace on either side of the eyes.

**Maximum size:** 60 mm across

**Habitat:** found in both the intertidal and shallow subtidal zones of bays and estuaries



# Worms: Soft bodied

## Annelids (segmented worms)

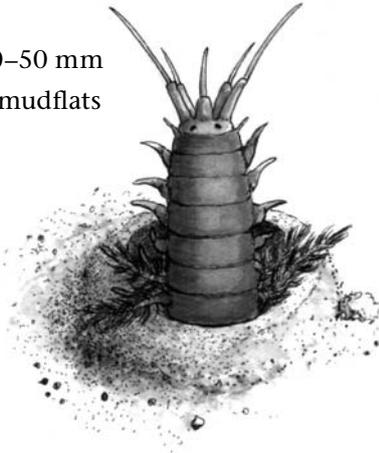
### POLYCHAETES (many bristles)

#### Tube worm

**Description:** lives in tubes cemented together in colonies.

**Maximum size:** 30–50 mm

**Habitat:** sand and mudflats

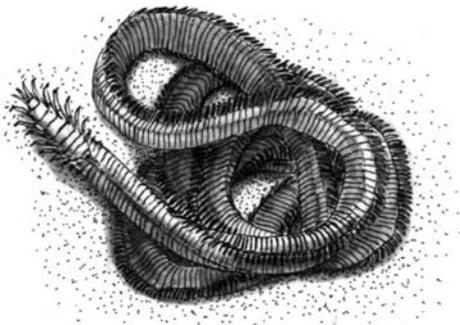


#### Beach worm

**Description:** long and thin with short tentacles near their head. Common species include *Australonuphis teres* (Kingworm or stumpy), *A. parateres* (slimy), *Hirsutonuphis mariahirsuta* (wiry).

**Maximum size:** 2.5 metres

**Habitat:** sandy beaches at low water mark where they build temporary burrows



## Platyhelminthes (unsegmented worms)

### NEMERTEANS

#### Ribbon worm

**Description:** an ability to stretch and contract, orange or brown.

**Maximum size:** 25–50 mm

**Habitat:** mudflats, estuaries

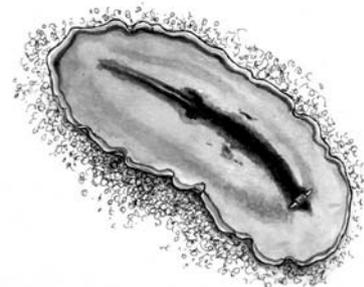


#### Flat worm

**Description:** flattened bodies that lack segmentation; colour varies.

**Maximum size:** 1–10 mm

**Habitat:** mudflats, estuaries



# Fish Identification

Fish species in estuaries will vary with location. Record any species identified in the estuary and add additional species found at your site.

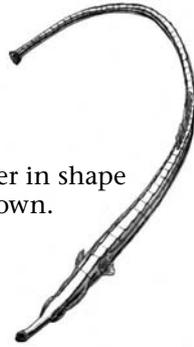
## Syngnathidae

### Pipe fish

**Description:** resemble a pipe cleaner in shape (long and thin) usually green or brown.

**Maximum size:** 27 cm long

**Habitat:** seagrass



### Seahorses/seadragons

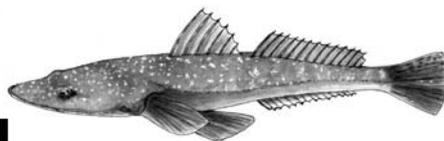
**Description:** seahorses and seadragons are classified as fish, have no scales, lack teeth, and do not have a stomach.

There are a number of types that can be identified by colour and features such as length of snout.

**Maximum size:** seadragons grow to 46 cm in length

**Maximum size:** seahorses are commonly 10–15 cm in length

**Habitat:** seagrass in coastal bays and estuaries



## Flathead

**Description:** ambush predator with crocodile like shape.

**Maximum size:** from 25–70 cm to 1.5 metres depending on species

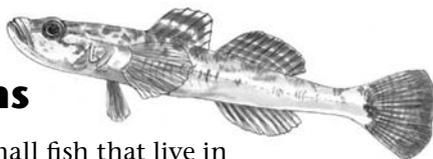
**Habitat:** lives on the bottom, of the estuary

## Gudgeons

**Description:** small fish that live in fresh and brackish water.

**Maximum size:** commonly 8 to 9 cm, up to 130 mm

**Habitat:** can live in coastal streams and estuaries



## Puffer fish (toad fish)

**Description:** round torpedo shaped body that can inflate when distressed (poisonous to eat).

**Maximum size:** 16 cm

**Habitat:** coastal bays and estuaries

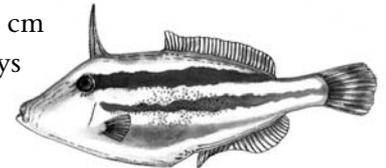


## Leatherjacket

**Description:** long spine above the eye and leathery skin, many species occur.

**Maximum size:** 33 cm

**Habitat:** coastal bays and estuaries

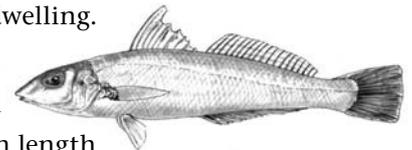


## Whiting

**Description:** pointed snout with small mouth, bottom dwelling.

**Maximum size:** there are many species that grow from 15–50 cm in length

**Habitat:** sandy bottoms of coastal bays and estuaries



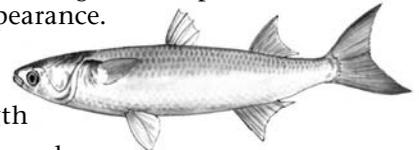
## Mullet

**Description:** often used as bait; found in shallow water and sometimes feeds near the surface.

Similar shape to whiting without pointed snout. Silvery appearance.

**Maximum size:** grows to about 45–75 cm in length

**Habitat:** estuaries and coastal bays



## Fortescue

**Description:** common species with blotchy white/black/grey markings.

*Note: this species has poisonous spines do not touch!*

**Maximum size:** grows to 14 cm in length

**Habitat:** rests on the bottom of coastal bays and estuaries

