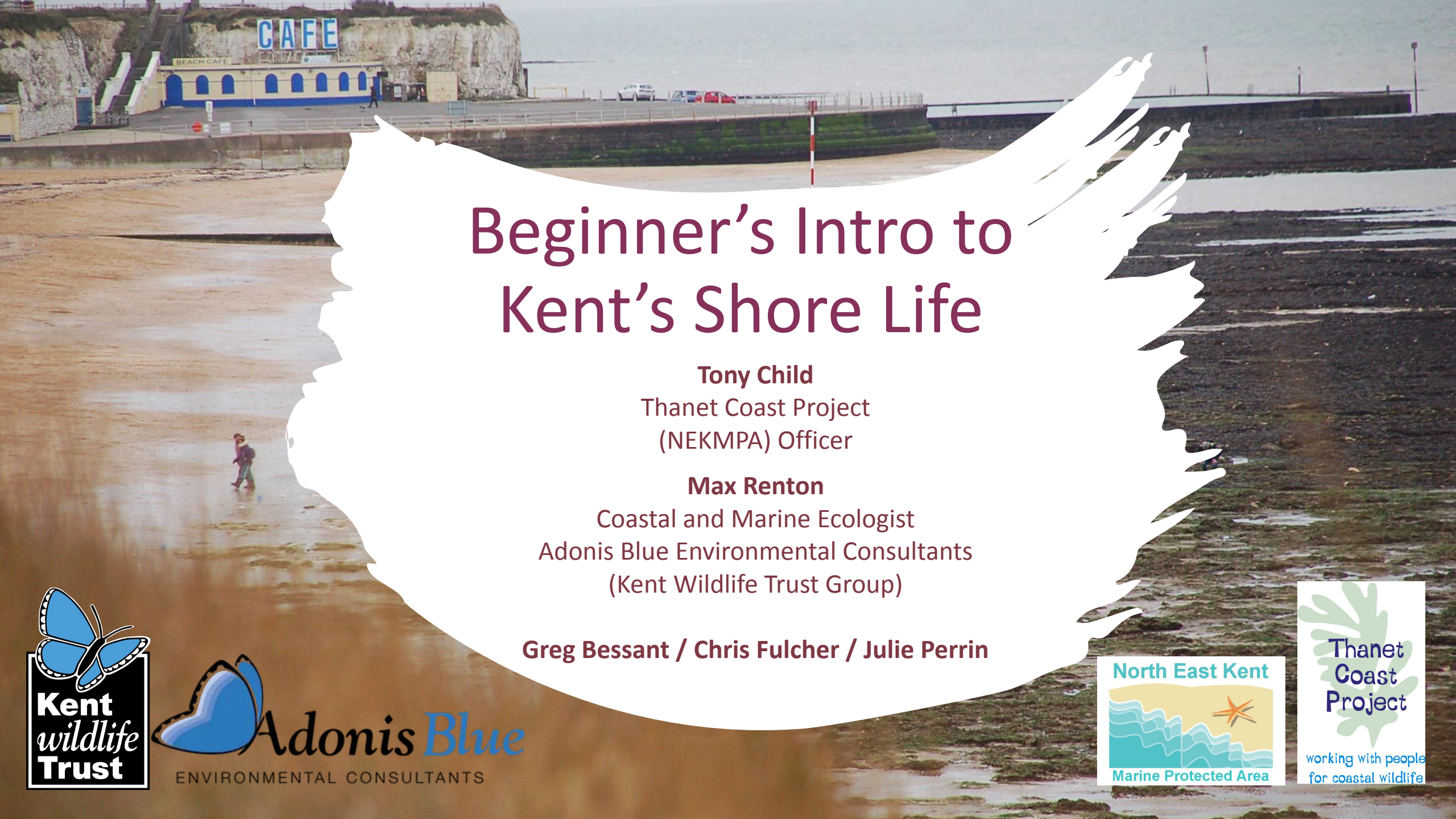


Beginner's Intro to Kent's Shore Life

Tony Child
Thanet Coast Project
(NEKMPA) Officer

Max Renton
Coastal and Marine Ecologist
Adonis Blue Environmental Consultants
(Kent Wildlife Trust Group)

Greg Bessant / Chris Fulcher / Julie Perrin

Kent wildlife Trust

Adonis Blue
ENVIRONMENTAL CONSULTANTS

North East Kent
Marine Protected Area

Thanet Coast Project
working with people for coastal wildlife

Agenda

- Introduction
- Main animal groups
- Tea Break
- Seaweeds
- Practical on the Shore
- Debrief

Health & Safety

Evacuation – fire exit/meeting point

First Aid

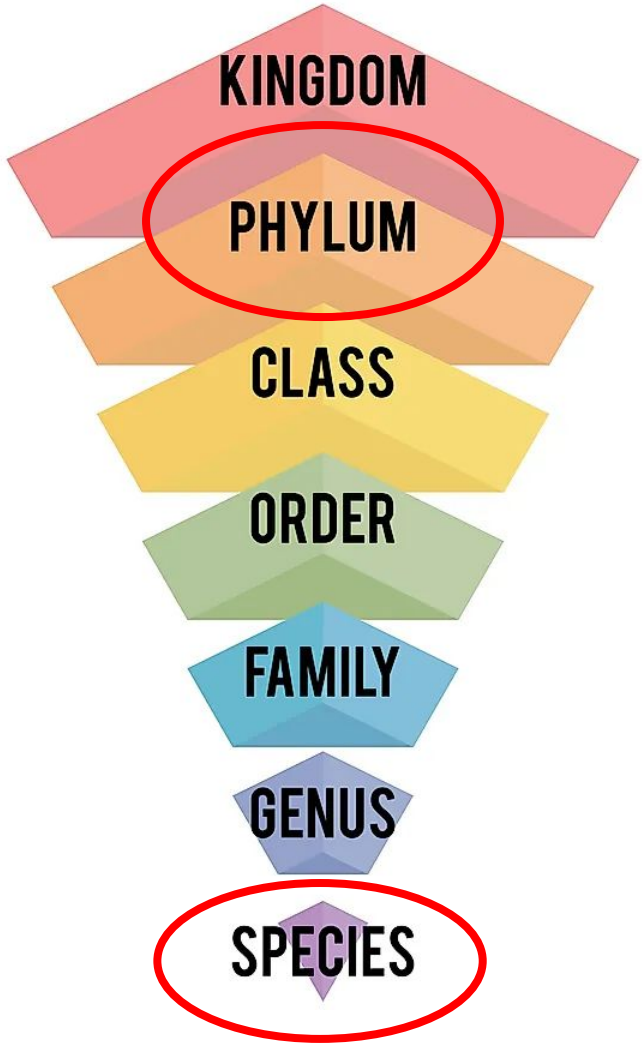
Toilet

Smoking – outside

Mobile phones – on silent please

Refreshments

HIERARCHY OF BIOLOGICAL CLASSIFICATION



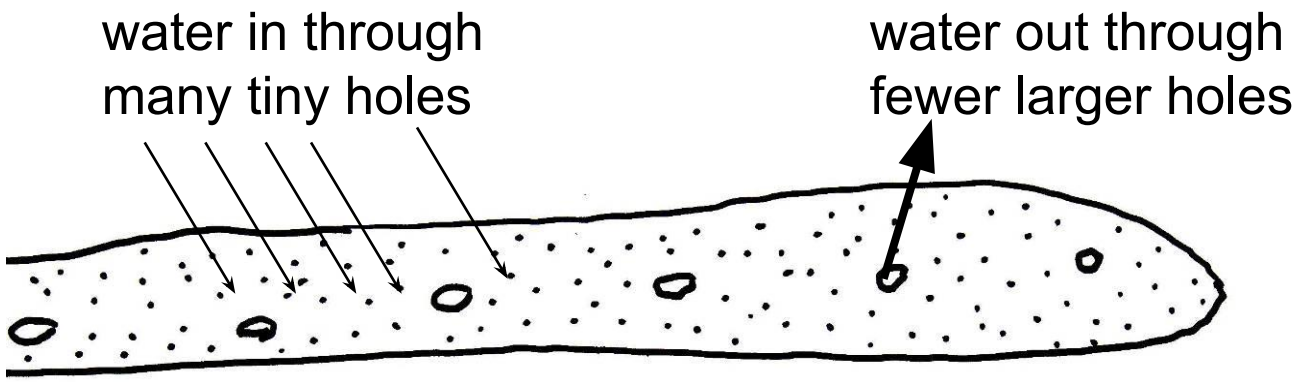
Main Groups of Marine Animals

- **Sponges** (Porifera)
- **Anemones, corals, hydroids, jellyfish** (Cnidaria)
- **Crabs, lobsters, prawns, barnacles** (Crustacea)
- **Segmented Worms** (Annelida)
- **Sea mats** (Bryozoa)
- **Starfish, brittle stars, sea urchins, sea cucumbers** (Echinodermata)
- **Sea snails, sea slugs, bivalves, cuttlefish** (Mollusca)
- **Fish** (Chordata, Pisces)

Sponges

Sponges

Phylum Porifera



Key ID Characteristics

- Simple, attached animals
- Occur in many different shapes and sizes and colours
- No distinctive body parts
- Spongy, porous texture

Feeding - filter tiny organisms from the water

- beating 'flagella' create water flow into sponge body
- draw water in through numerous tiny inlet holes
- flagella capture food
- water flows out through a few larger outlet holes

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Sponges

Phylum Porifera

Breadcrumb sponge

Halichondria panicea

Sponge identification – Tricky without a microscope

- Breadcrumb sponge - most commonly seen alive – low shore
- Width: Up to 1m, normally patches of 10-20cm

Sponges

Phylum Porifera

Mermaid's glove

Haliclona oculata

Sponge identification – Tricky without a microscope

- Mermaid's glove – often found in strandline
- 30 cm tall and numerous branches with a diameter of about 7 mm and are usually laterally compressed
- Velvety surface with a robust consistency but is easily compressible and very flexible

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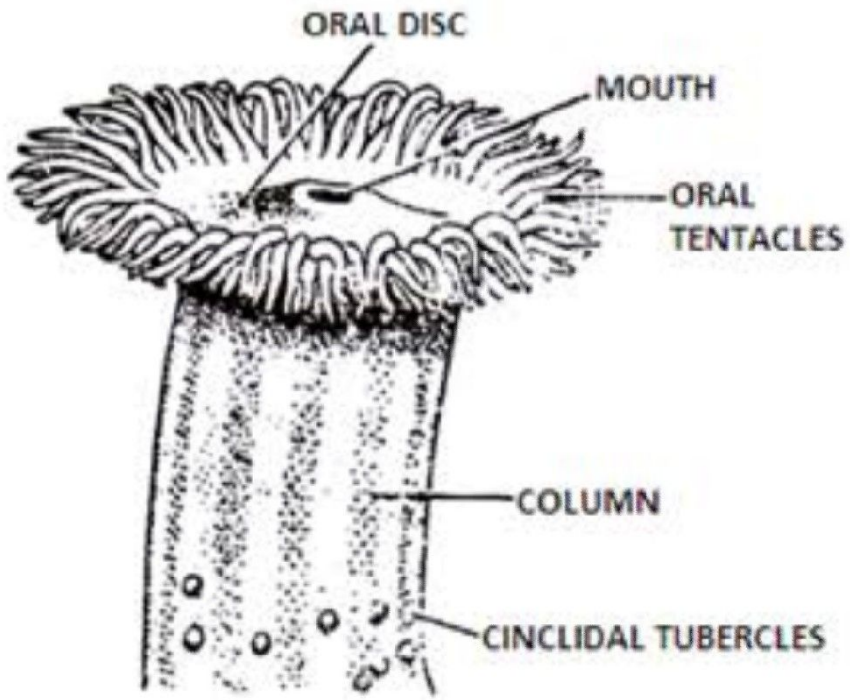
Anemones
Hydroids
Jellyfish

Cnidarians

Key ID Characteristics

- Radially symmetrical
- Column with a body cavity
- Single opening to cavity
- Catch food with stinging cells on tentacles around mouth
- Carnivorous, feeding on plankton or small animals



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Anemones on rocky shores

- all over shore - in damp locations
- withdraw tentacles into mouth when exposed to air
- sedentary, but can move position, or re-attach
- colour: red, green, brown, with blue beads
- Diameter: 5cm

Beadlet anemone

Actinia equina

Cnidarians

Anemones on rocky shores

- occasionally low on shore, in rockpools
- partially buried in sand or gravel
- colour bands on tentacles
- Diameter: up to 15cm

Dahlia anemone

Urticina felina

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Cnidarians

Phylum Cnidaria

Anemones and corals | Hydroids | Jellyfish

Burying Anemone

Sagartia troglodytes

- Various Sagartia species on the shore
- Some bury in sediment, attached to stone below
- Some attached to rocks

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Cnidarians

Phylum Cnidaria

Anemones and corals | **Hydroids** | Jellyfish

- Most live in colonies which form into different shapes
- Colony made of thousands of tiny inter-connected polyps
- Each polyp has stinging cells on tentacles to catch prey
- Usually up to 30-35 cm in length but can reach 50 cm

White weed hydroid *Sertularia cupressina*

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Cnidarians

- Many hydroid species wash up along the strandline

White weed hydroid

Sertularia cupressina

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Cnidarians

- A few small species occasionally found living on the shore
- growing attached to seaweeds or rocks

Hydroid

Dynamena pumila

Branched stems reach greater heights than non branched stems with a maximum of 7.5 cm and 3 cm respectively.

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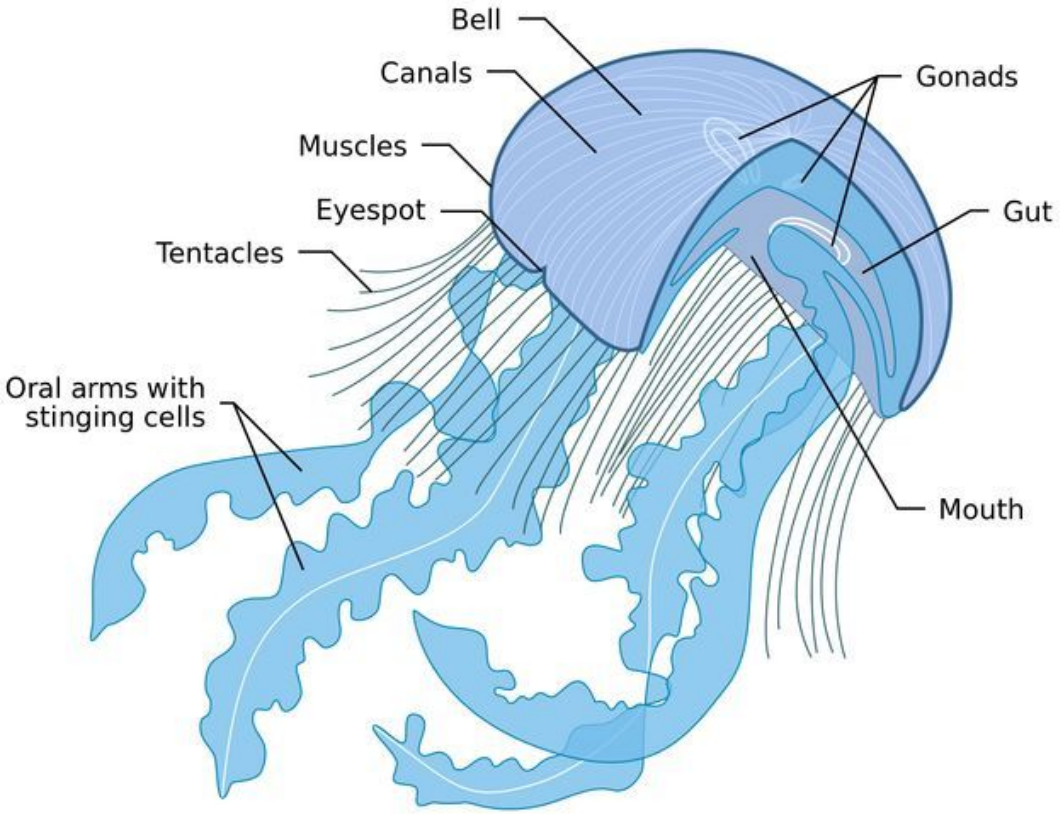
Cnidarians

Phylum Cnidaria

Anemones and corals | Hydroids | **Jellyfish**

- Same basic structure as anemones
- Not attached but hang upside-down, drifting in the currents



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Cnidarians

Phylum Cnidaria

Anemones and corals | Hydroids | **Jellyfish**

- A few species occasionally seen on the shore
- Usually brought in with rough weather and stranded
- Bell: up to 30cm across

Blue jellyfish

Cyanea lamarckii

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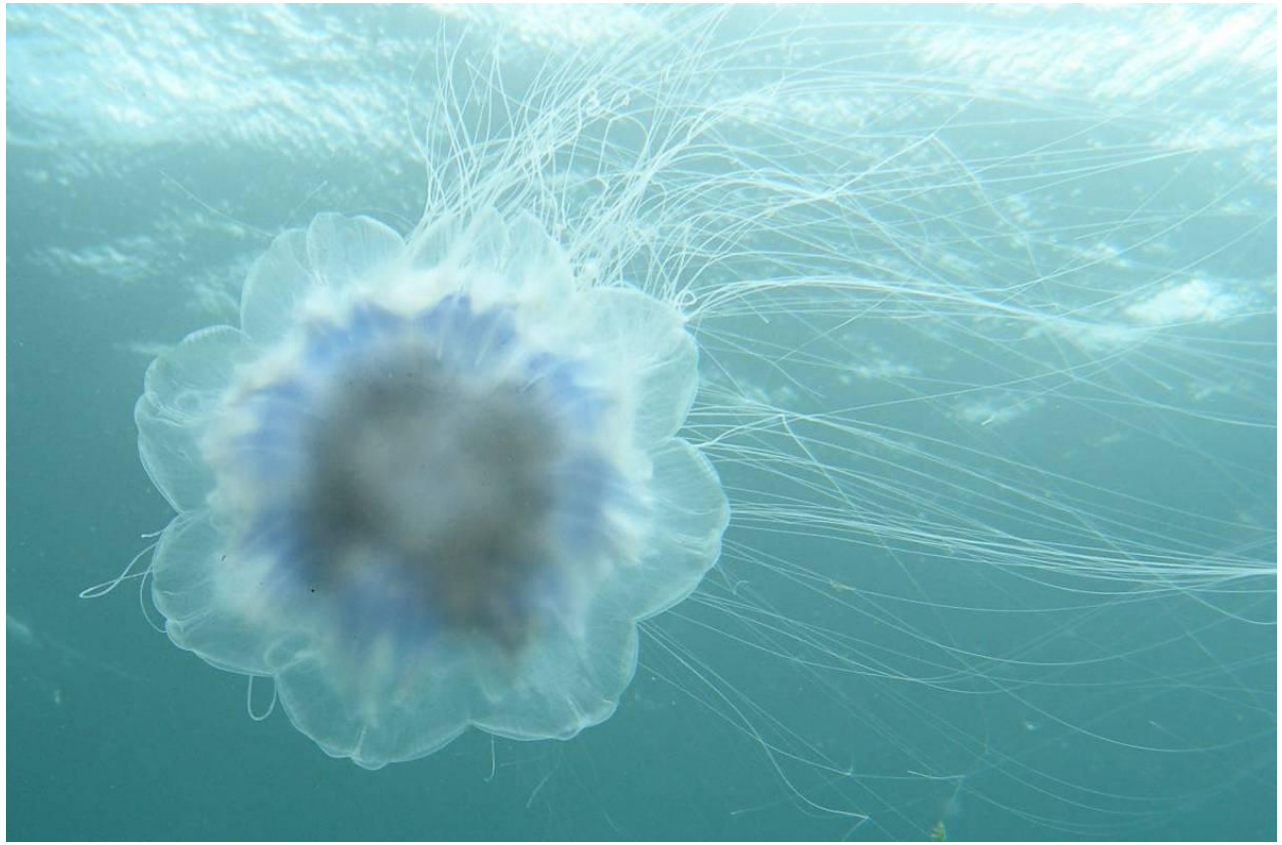
Cnidarians

Phylum Cnidaria

Anemones and corals | Hydroids | **Jellyfish**

Blue jellyfish *Cyanea lamarckii*



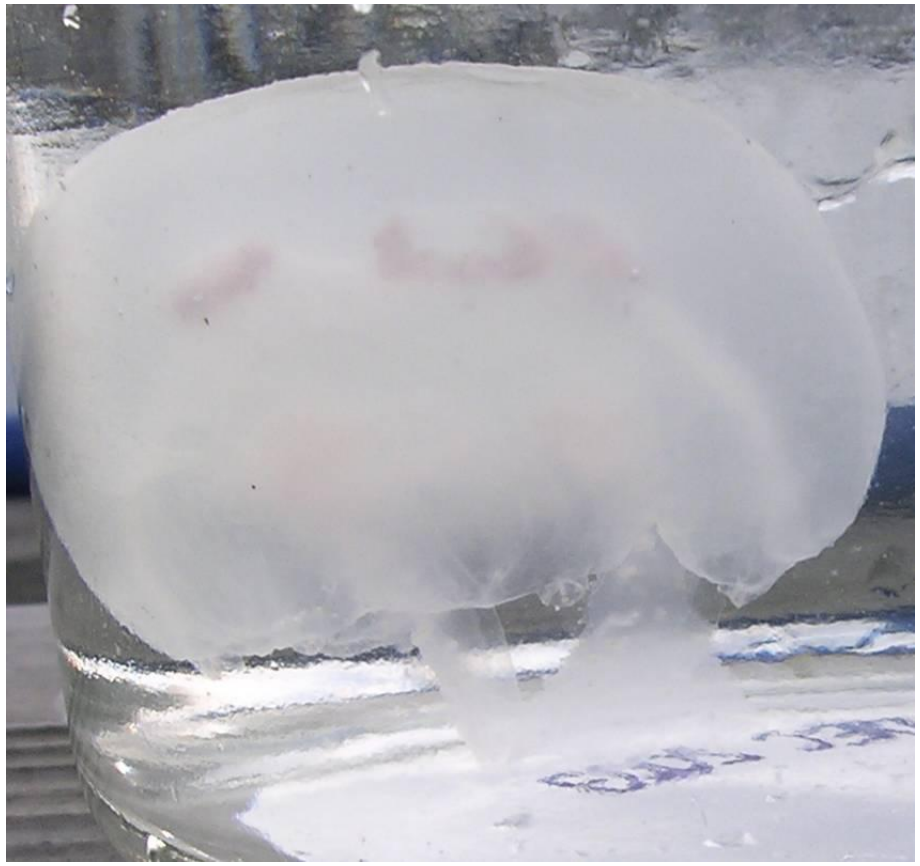
- Food for turtles around UK

Cnidarians

- Sometimes seen alive in sheltered water in marinas
- Diameter: 5 – 40 cm

Moon jellyfish

Aurelia aurita



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Cnidarians

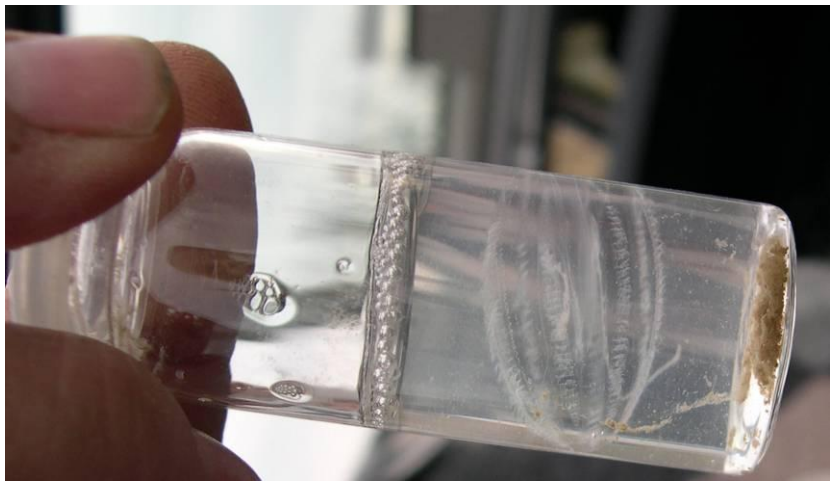
Phylum Cnidaria

Anemones and corals | Hydroids | **Jellyfish**

- All jellyfish have stinging cells to catch their prey
- Some are harmful to humans, but many are not

Blue jellyfish not very dangerous to humans, but closely related to Lion's Mane which is!

- Not to be confused with Comb Jelly / Sea Gooseberry (phylum Ctenophora)
- Similar looking gelatinous, transparent bodies, but with lines of tiny 'combs' and with sticky threads, not stinging cells on tentacles
- Range from a few millimeters to 1.5 m in size



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Crustaceans

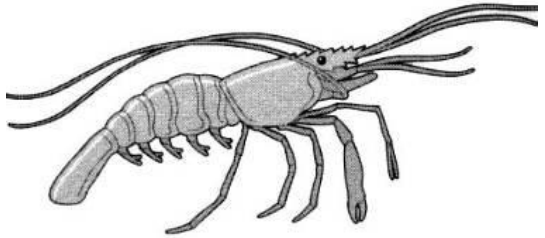
Crustaceans

Phylum Crustacea

Crabs, lobsters, shrimps and prawns

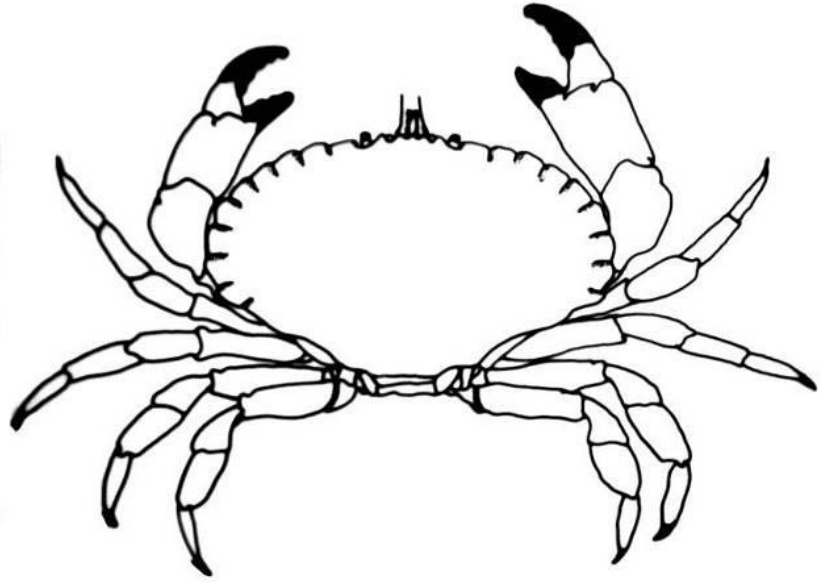
Barnacles

Key ID Characteristics



- Hard external skeleton, moulted to allow growth
- Three regions: head thorax abdomen (each segmented)
- Segments have appendages modified for various uses: jointed legs, gills, antennae, mouthparts, etc.

Largest group: **Decapoda** (= 10 legs)



- Five pairs of legs
- Hard 'carapace' covering head and thorax
- Tail
- Eyes obvious

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Crustaceans

Phylum Crustacea

Crabs, lobsters, shrimps and prawns

Barnacles

Movement

- All crustaceans have jointed legs
- Sideways walking is most effective for crabs

Shore crab *Carcinus maenas*

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Crustaceans

Phylum Crustacea

Crabs, lobsters, shrimps and prawns

Barnacles

Moulting

- All crustaceans have hard external skeleton
- Moulted several times during life, to allow growth

2 - 3 hours for moult

3 - 4 days to harden

Shore crab *Carcinus maenas*

Moulting

- Crab about one third larger after moult
- Moulting allows for regeneration of limbs
- Moults are more frequent when young (around 3 per year)

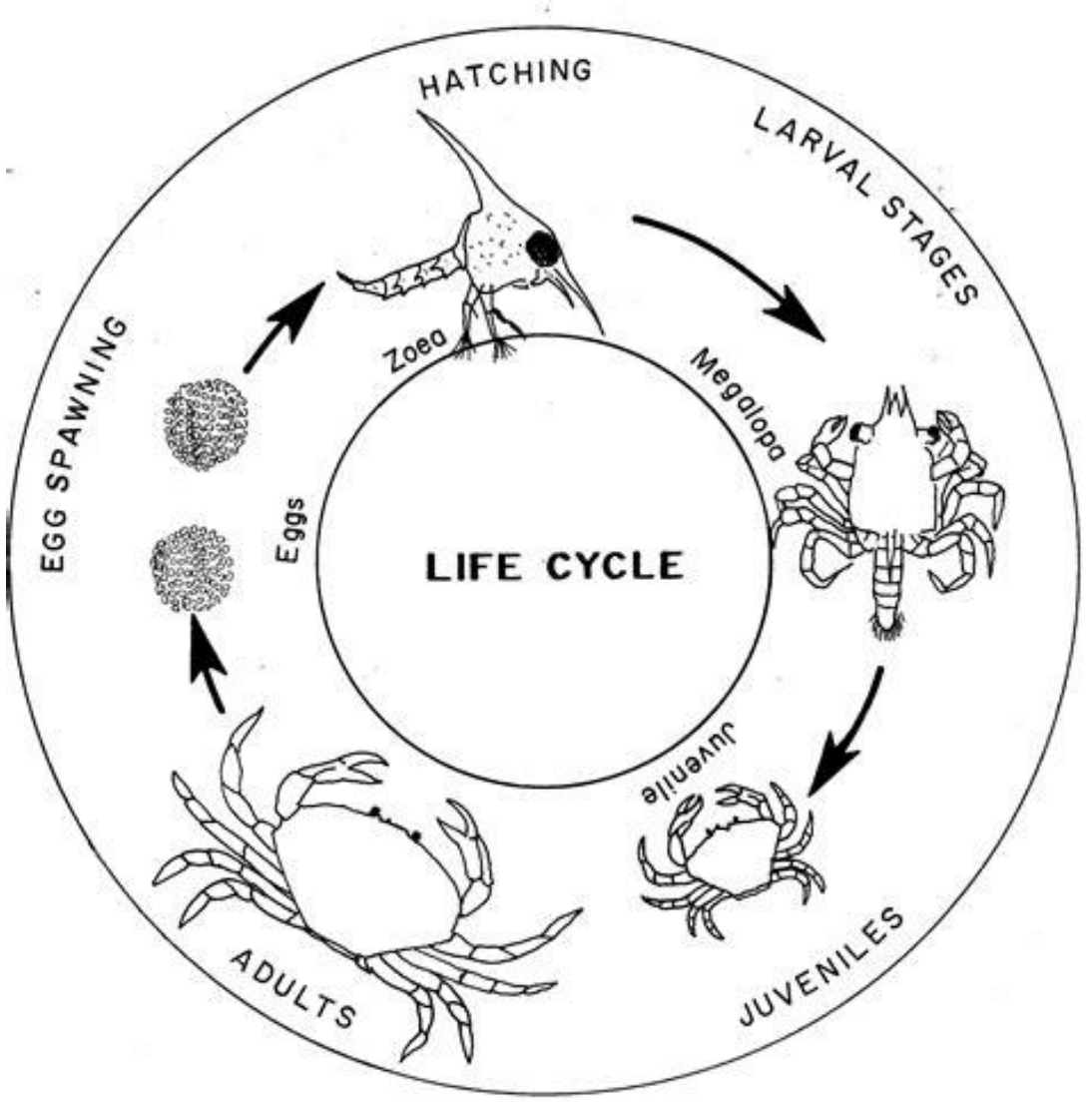
Edible crab & moulted carapace

Cancer pagurus

Crustaceans

Reproduction

- Sexes are separate
- In crabs, fertilisation is internal
- Male finds female and waits for her to moult, then mates
- Female carries eggs under tail flap for a few months
  - up to 185,000 in shore crabs
  - up to 2,000,000 in edible crabs
- Larvae in plankton for a few months, going through several stages to becoming a crablet



Crustaceans

Shore crab *Carcinus maenas*

- Mature in about one year; maximum size in four years
- Feeds on variety of small animals
- All types of shores
- Shell width: Up to 9cm

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Crustaceans

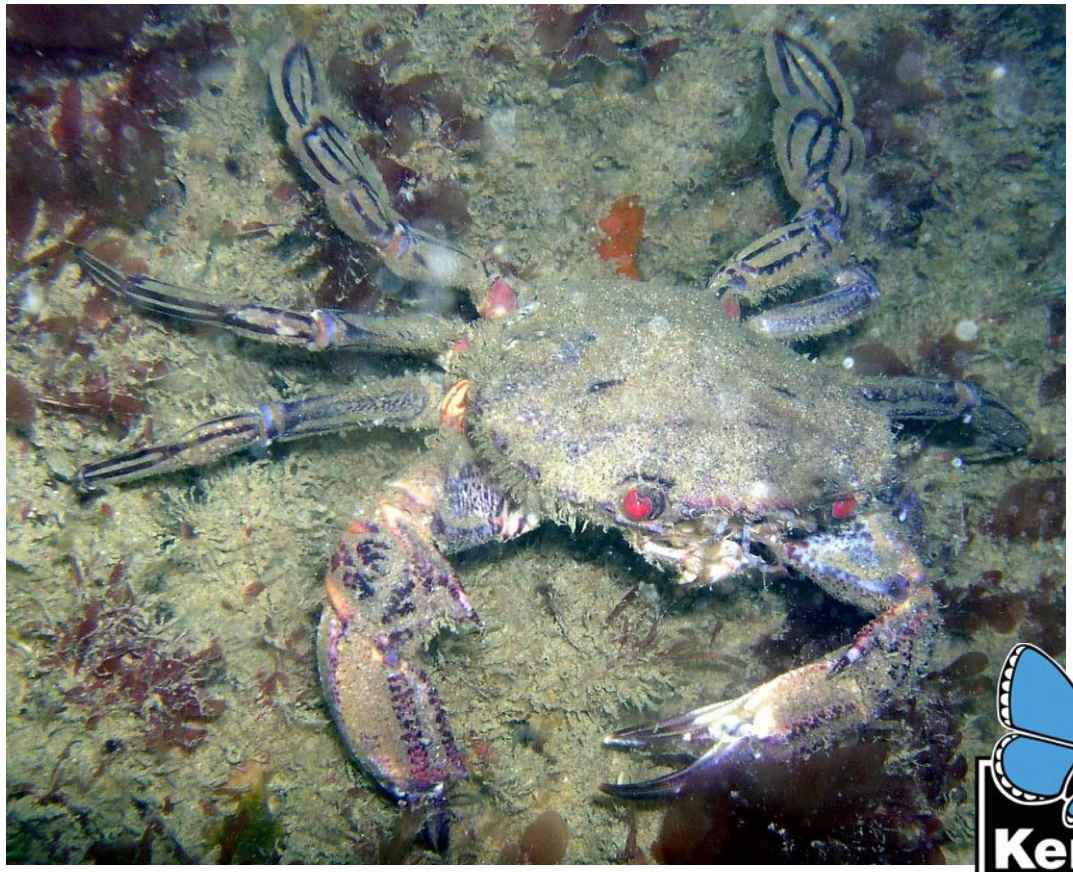
Phylum Crustacea

Crabs, lobsters, shrimps and prawns

Barnacles

Velvet swimming crab *Necora puber*

- Flat paddles make it a powerful swimmer
- Feeds on brown seaweeds, crustaceans and molluscs
- Shell width: up to 10cm across



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Crustaceans

Phylum Crustacea

Crabs, lobsters, shrimps and prawns

Barnacles

Edible crab *Cancer pagurus*

- Feed on various animals, including molluscs
- Mature at 3-5 years
- Can live 20 years
- Width of body: 10-20cm

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Crustaceans

Hermit Crabs *Pagurus* sp.

- Lives in empty mollusc shells – protect soft abdomen
- Head and thorax hard exoskeleton – moults as other crabs
- Also changes mollusc shell as crab grows
- Length of body: 3.5cm

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Crustaceans

Phylum Crustacea

Crabs, lobsters, shrimps and prawns

Barnacles

Spider Crabs

Triangular carapace

Spiny spider crab
Maja squinado

- Carapaces found on strandline
- Body: Up to 20cm long

Slender spider crab
Macropodia sp.

- Found live on shore
- Well camouflaged with seaweeds
- Shell length is *3.2 cm and the breadth *1.1 cm

Porcelain Crabs

- Rounded carapace, very long antennae, reduced hind legs
- Under stones on the shore
- Suspension feeders
- Length: 15mm

Broad-clawed porcelain crab

Porcellana platycheles

Long-clawed porcelain crab

Pisidia longicornis

Crustaceans

Squat lobsters

- Tail folded under body
- Small hind legs
- Mostly feeds by filtering
- Hide under rocks and in crevices
- Up to 10cm long (including tail)

Galathea squamifera

Galathea strigosa

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Crustaceans

Crabs, lobsters, shrimps and prawns

Lobster *Homarus gammarus*

- Mature at 5-6 years
- Can live more than 20 years
- Scavengers
- Occasionally see at very low water mark, or Walpole Bay Pool
- Length: usually up to 50cm

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Prawns and Shrimps

- Feed on a variety of small animals and plants
- Important prey species of many fish

Brown Shrimps (left) Common Prawn (right)

Prawns

- Common in rockpools
- Transparent body often with coloured markings
- Front two pairs of limbs with small nippers to pick up food
- Swim slowly forwards or quickly backwards with tail flick
- Rostrum
- Several long antennae

Common shore prawn

Palaemon elegans

Length: up to 11cm

Crustaceans

Phylum Crustacea

Crabs, lobsters, shrimps and prawns

Barnacles

Common prawn

Palaemon serratus

Common shore prawn

Palaemon elegans

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Crustaceans

Shrimps

- Common on, or buried in, sand below water
- Mottled brown, semi-transparent
- Head and body flattened downwards compared to prawn
- Front pair of limbs with claws to pick up food
- Swim slowly forwards or quickly backwards
- No rostrum. Long antennae

Brown shrimp

Crangon crangon

Length: Up to 8cm

Barnacles

- Shrimp-like animal inside hard calcium case
- Filter food from water
- Close plates when exposed to air
- Hermaphrodite (both male and female gametes), but cross-fertilise

Non-native barnacle with 4 plates
Austrominius modestus
5-10 mm in diameter

Native barnacle with 6 plates
Semibalanus balanoides
Length of shell: 2cm

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Barnacles


Worms

Segmented Worms

Phylum Annelida

Key ID Characteristics

- Series of similar segments along body
- Gut runs through worm from mouth to anus

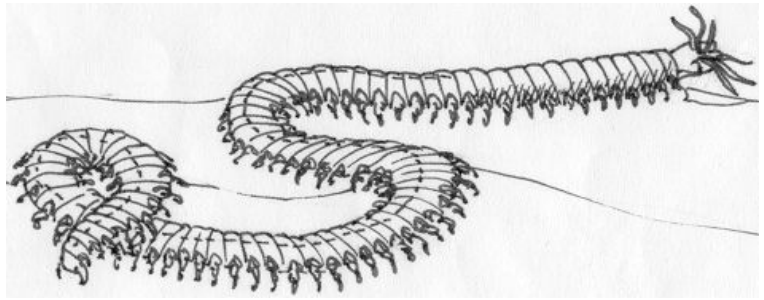
Bristle worms

Polychaetes

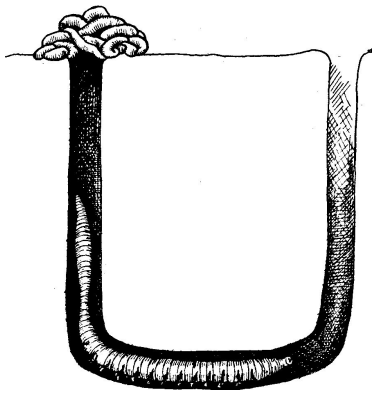
Most marine worms are bristle worms
Each segment has a pair of fleshy growths with bristles

Various lifestyles:

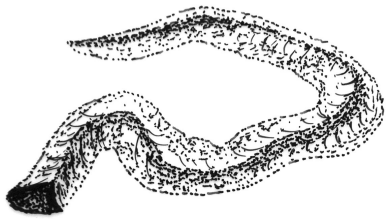
Free-living



Burrowing



Tube-dwelling



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Segmented Worms

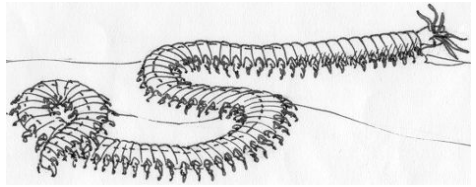
Phylum Annelida

Bristle worms

Polychaetes

- **Free-living**

Greenleaf worm *Eulalia viridis*



- Bright green, lives in rock crevices
- Scavenges on damaged barnacles/ mussels
- 5-15cm in length and up to 2.5cm width

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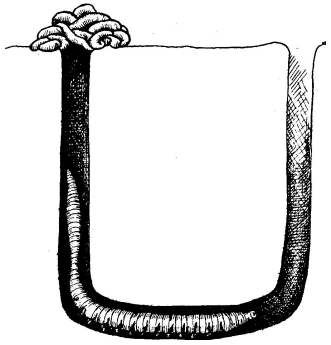
Segmented Worms

Phylum Annelida

Bristle worms

Polychaetes

- **Burrowing**



Lugworm *Arenicola marina*

- Lives in U-shaped burrows in muddy sand
- About 20cm below the surface
- Eats sediment and extracts organic material
- Waste material deposited in casts on sand
- Prized as fishing bait
- Length: 12-20cm

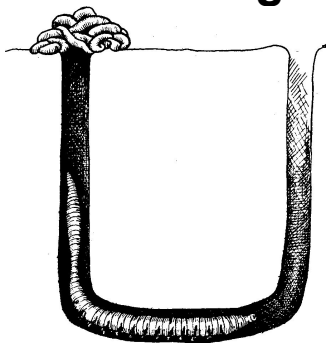
Segmented Worms

Phylum Annelida

Bristle worms

Polychaetes

- **Burrowing**



Rockworm *Marphysa sanguinea*

- Mucus-lined burrows in soft rock, mud or gravel
- Mostly carnivorous

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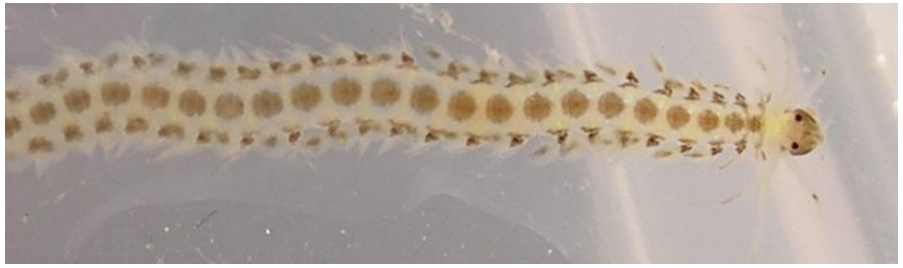
Segmented Worms

Phylum Annelida

Bristle worms

Polychaetes



A paddle worm *Phyllodoce* sp.

(Greenleaf worm has similar egg sacs)

Worm egg masses

A polychaete worm

Scoloplos armiger

Greenleaf worm

Eulalia viridis

Roughly 2 – 6 cm

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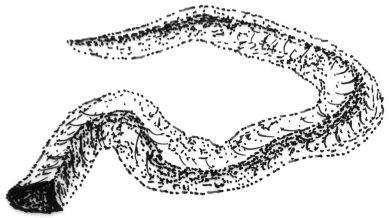
Segmented Worms

Phylum Annelida

Bristle worms

Polychaetes

- **Tube-dwelling**



Many worms create protective tubes

- Different species use different materials
- Tentacles emerge from end to filter food from water

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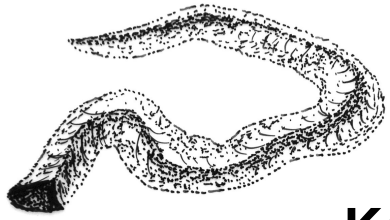
Segmented Worms

Phylum Annelida

Bristle worms

Polychaetes

- **Tube-dwelling**



Hard calcium tubes

Keel worms *Pomatoceros lamarkii*

Spiral worm *Spirorbis spirorbis*

Evenly coiled tube, 3-4 mm in diameter

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Segmented Worms

Phylum Annelida

Bristle worms

Polychaetes

- **Tube-dwelling**

Tubes of sand grains and shell fragments

Sand mason worms *Lanice conchilega*

Tube, length: 45cm

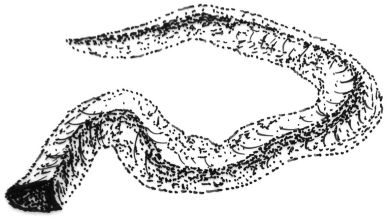
Segmented Worms

Phylum Annelida

Bristle worms

Polychaetes

- **Tube-dwelling**



Tubes of cemented sand grains
Colonies form reef structures, providing habitat

Honeycomb worm
Ross worm

Sabellaria sp.

20 - 30mm

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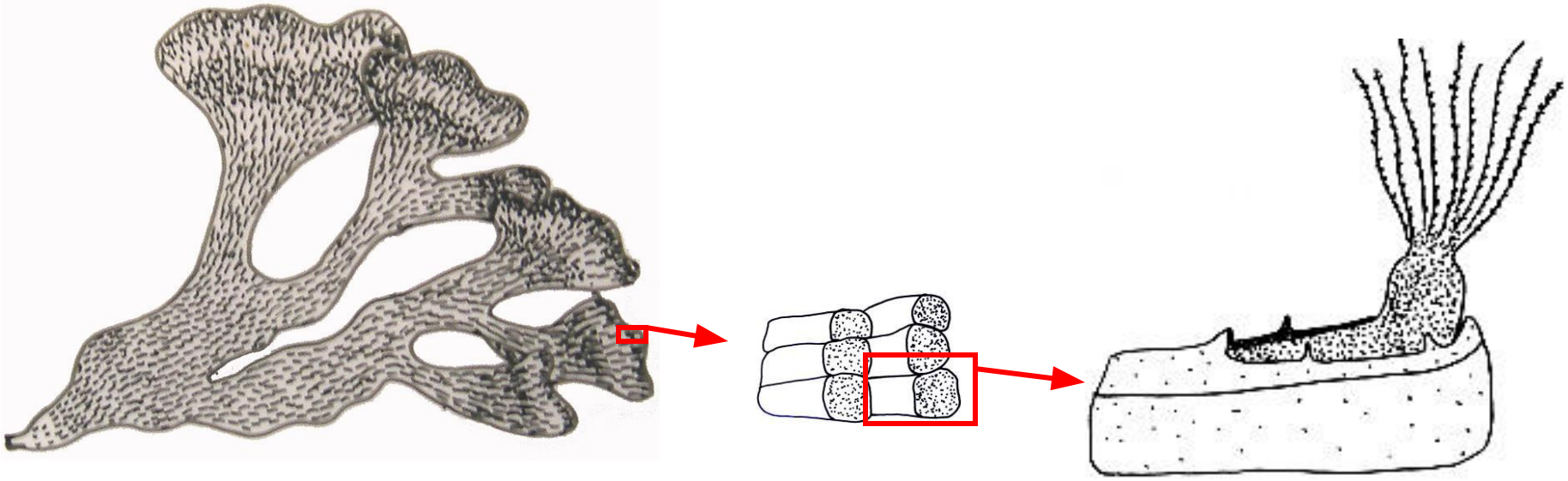
Bryozoans

Sea mats

Phylum Bryozoa



Key ID Characteristics

- Attached, colonial animals
- Hermaphrodite, sexual reproduction and brief plankton stage
- A larva settles and a colony is built rapidly by multiple budding
- Each animal (zooid) creates a protective compartment (gelatinous in some species, hard in others)
- Some species encrust over other surfaces, others stand erect
- Mostly subtidal – usually found as drift on the shore

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Sea mats

Leafy, erect bryozoan

Hornwrack

Flustra foliacea

6 -10 cm but occasionally 20 cm high

Sea mats

Gelatinous, erect bryozoan

Finger bryozoan / Sea chervil
Alcyonidium diaphanum

Drift specimens can harbour subtidal species

Up to 50 cm long but more usually 15 cm

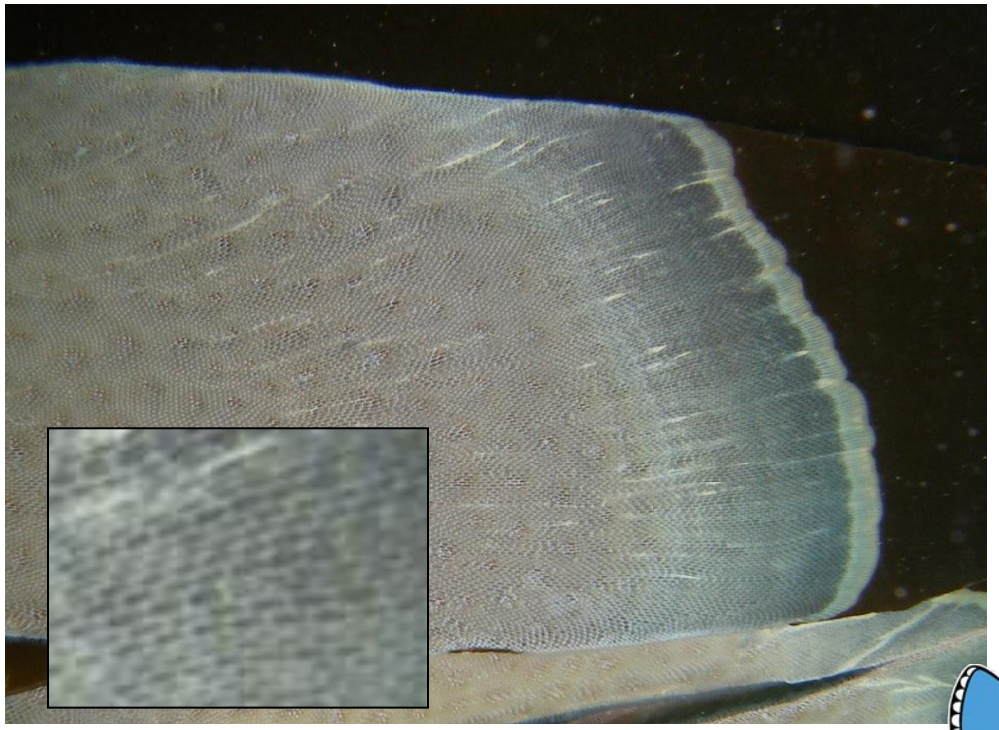
Sea mats

Encrusting bryozoans

Frosty Sea mat
Electra pilosa

- Encrusts over seaweeds
- Meandering expansion
- Oval compartments
- Spines around holes

Sea mat
Membranipora membranacea



- Encrusts over seaweeds, often kelps
- Expansion in a line
- Rectangular compartments

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Sea mats

Electra pilosa under the microscope

Sea mats vary in size, from a few cm across to covering whole seaweed fronds.

Encrusting bryozoans

- Great variety of species encrust over hard surfaces
- Tricky to identify without microscope
- Recorded as “encrusting bryozoan”

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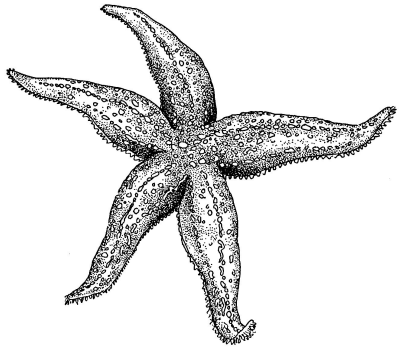
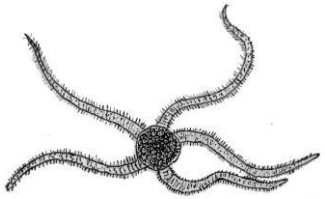
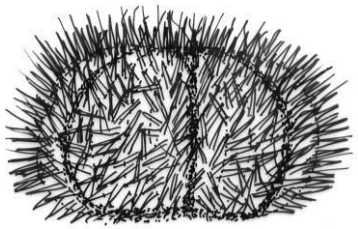
Echinoderms

Echoderms

Phylum Echinodermata

Starfish	Brittle stars	Feather stars	Sea urchins	Sea cucumbers




Key ID Characteristics

- Usually 5-rayed symmetry
- Distinctive body shapes in each group
- No head
- Hard, spiny covering of calcareous plates, and often spines

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Echinoderms

Phylum Echinodermata

Key ID Characteristics

- Water-filled canals and tube feet (used for movement, feeding, respiration)

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Echinoderms

Phylum Echinodermata

Starfish | Brittle stars | Feather stars | Sea urchins | Sea cucumbers

- Carnivorous - open bivalves, exude stomach, digest and reabsorb
- Sensitive to ‘smell’ of prey, predators and other starfish
- White dot (madreporite) manages pressure balance in water system
- Can re-grow lost arms
- Diameter: 10-30cm

Common starfish *Asterias rubens*

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Echinoderms

Phylum Echinodermata

Starfish | **Brittle stars** | Feather stars | Sea urchins | Sea cucumbers

- Smaller and more delicate
- Pronounced central disk and separate arms
- Feed on detritus, small dead or living animals
- Sensitive to light
- Readily cast off arms and regenerate them
- Brittlestars can occur in dense beds

Brittle star *Ophiura sp.*

The disc is up to about 3.5 cm in diameter

Brittle star *Ophiothrix sp.*

Diameter: up to 2cm

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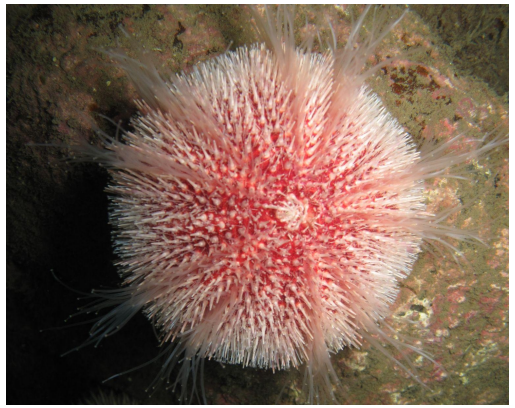
Echinoderms

Phylum Echinodermata

Starfish | Brittle stars | Feather stars | **Sea urchins** | Sea cucumbers

- Rigid ‘test’ (hard shell) and no arms, tube feet extend through test
- Spines attached with ball & socket joints – protection and movement
- ‘Aristotle’s lantern’ on underside with 5 ‘teeth’ – scraping & chewing
- Graze on algae and can tear larger seaweeds and animals
- Hide under stones low on shore



Common sea urchin (*Echinus esculentus*)

Sea potato (*Echinocardium cordatum*)

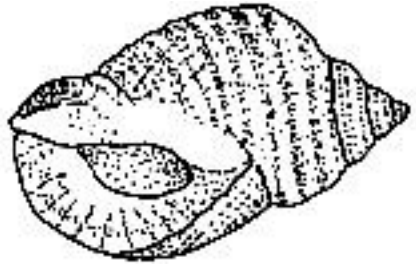
Up to 57 mm in diameter

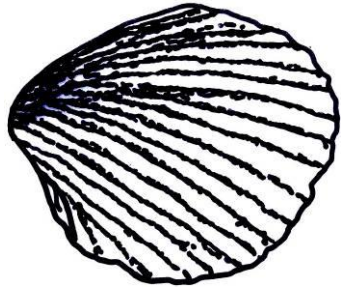

Molluscs

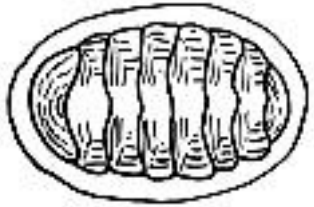
Molluscs

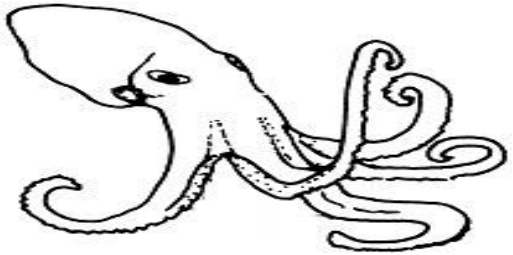
Phylum Mollusca

Sea snails, sea slugs, limpets | Bivalves | Chitons | Octopus, squid, cuttlefish









Key ID Characteristics

- Fleshy non-segmented body containing organs
- Muscular foot
- ’Mantle' or cloak of tissue over animal produces a hard shell in many molluscs
- Many species have a rasping tongue or ‘radula’
- Some grazers, some carnivores, a few filter-feeders

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Molluscs

Sea snails, sea slugs, limpets | Bivalves | Chitons | Octopus, squid, cuttlefish

- Cloak/ mantle over body, secretes shell in many molluscs

Common limpet

Patella vulgata

Length: 4cm

Molluscs

Sea snails, sea slugs, limpets | Bivalves | Chitons | Octopus, squid, cuttlefish

- Create home scar in rock
- Graze algae off rocks with rasping tongue (‘radula’)

Common limpet

Patella vulgata

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Molluscs

Chiton

- 8-plated shell (jointed limpet)
- Well camouflaged under side of smooth rocks
- Graze on algae and bryozoans
- Length: Up to 4cm

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Molluscs

More grazers – the winkles

- pear-shaped operculum

Flat winkle

Littorina obtusata

- Upper shore
- Small
- Flat spire
- Height: Up to 1.5cm

Edible winkle

Littorina littorea

- Low on shore
- Opening in line with shell
- Height: 3-5cm

Rough winkle

Littorina saxatilis

- Mid shore
- Opening at angle with shell
- Ridges
- Height: 1.8cm

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Molluscs

More grazers – the topshells

• circular operculum

Grey topshell

Gibbula cinerea

•Thin greyish lines on yellow
• Small umbilicus
•1.5 cm high

Purple(flat) topshell

Gibbula umbilicalis

•Thick purple lines on green
• Large umbilicus
• Sometimes flatter
•1.6cm high

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Molluscs

Phylum Mollusca

Sea snails, sea slugs, limpets | Bivalves | Chitons | Octopus, squid, cuttlefish

Carnivores – the whelks

- siphon channel, follow scent to food

Common whelk

Buccinum undatum

- Mainly subtidal
- Live food and scavenges (worms)
- Length: 5-10cm

Dog whelk

Nucella lapillus

- Mainly intertidal
- Teeth along opening
- Drills into molluscs
- Poisons barnacles
- Length: 3-6cm

Netted dog whelk

Hinia reticulata

- Reticulated shell
- Inter and sub-tidal
- Scavenges
- Up to 3cm in height

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Molluscs

Carnivores – the whelks

Common whelk

Buccinum undatum

Eggs

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Molluscs

Carnivores – the whelks

Dog whelks

Nucella lapillus

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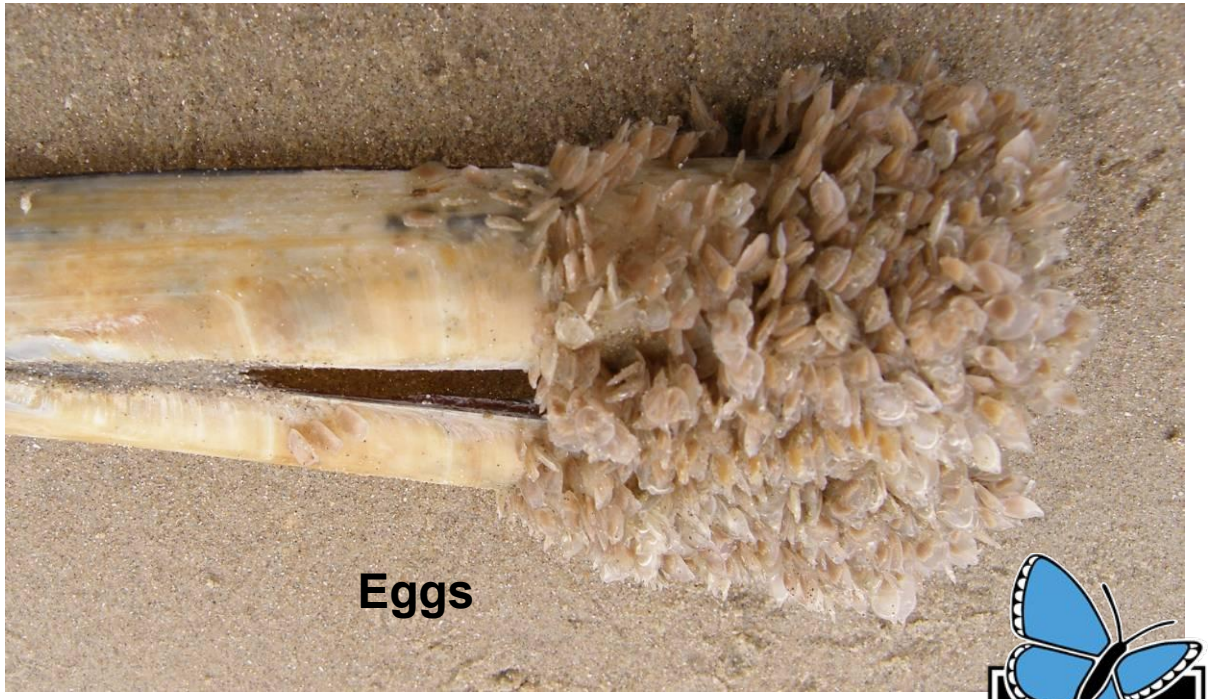
Molluscs

Carnivores – the whelks

Netted dog whelk
Hinia reticulata



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Molluscs

Filter feeders – slipper limpets

Slipper limpets *Crepidula fornicata*

- Sessile animal – water brings food
- Accidental introduction
- Very successful species
- Competes with other animals for space & food
- Length: 5cm

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Molluscs

Seaslugs (Nudibranchs)

- Carnivorous grazers (e.g. sponges, seasquirts, bryozoans, hydroids)
- Specialised diets, select a single group or species to eat
- Utilise toxins from prey in their own defence

Grey sea slug *Aeolidia papillosa*

Up to 12 cm in length

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Molluscs

Sea hare

- Uses radula to cut open algae to eat
- Chloroplasts continue to photosynthesise for several months
- Lower shore and shallow subtidal
- Below species up to 5 cm in length

Elysia viridis

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Molluscs

Phylum Mollusca

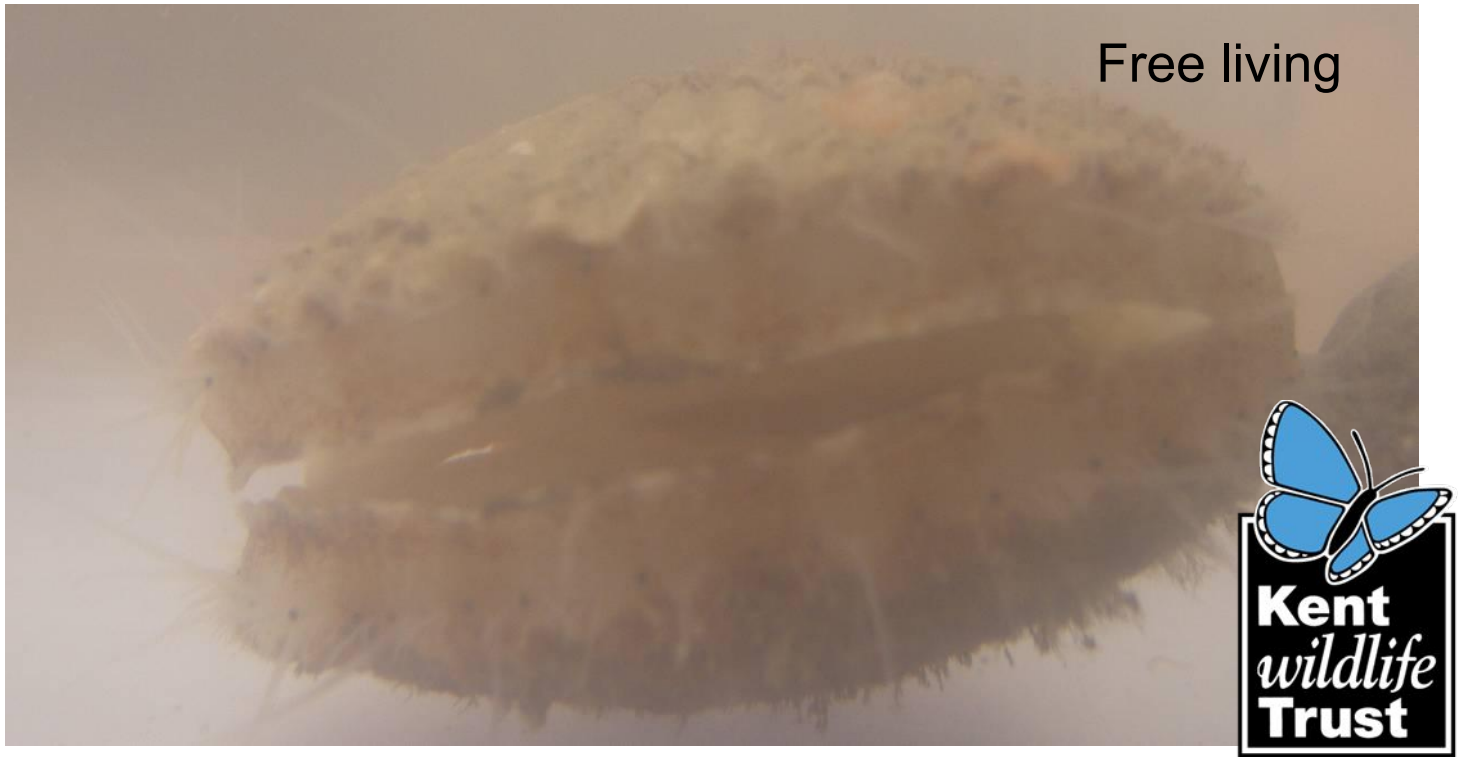
Sea snails, sea slugs, limpets | **Bivalves** | Chitons | Octopus, squid, cuttlefish

- Body enclosed within two shell valves
- Valves hinged and kept closed by powerful muscles
- Swim by jet propulsion using strong adductor muscles
- Filter-feed – trap plankton or particulates on gills (no radula)
- Siphons direct water in and out of mantle cavity over gills

Variegated scallop

Chlamys varia

Length: up to 6cm



Molluscs

Phylum Mollusca

Sea snails, sea slugs, limpets | **Bivalves** | Chitons | Octopus, squid, cuttlefish

- Majority of bivalves live buried in sand or mud
- Usually only empty shells seen
- Use foot to dig into sand

Bury in sand

Common cockle

Cerasoderma edule

Up to 5cm long

Bury in mud

Peppery Furrow Shell

Scrobicularia plana

Up to 6.5 cm in length

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Molluscs

Piddocks

- Bore holes into soft rock
- up to 12cm long

Common piddock
Pholas dactylus

Molluscs

Phylum Mollusca

Sea snails, sea slugs, limpets | **Bivalves** | Chitons | Octopus, squid, cuttlefish

Mussels

- Out in the open
- Byssal= threads secreted by foot attach mussels to rocks/each other
- Form into extensive beds creating a living habitat
- Normally 3-10cm long

Common mussels

Mytilus edulis

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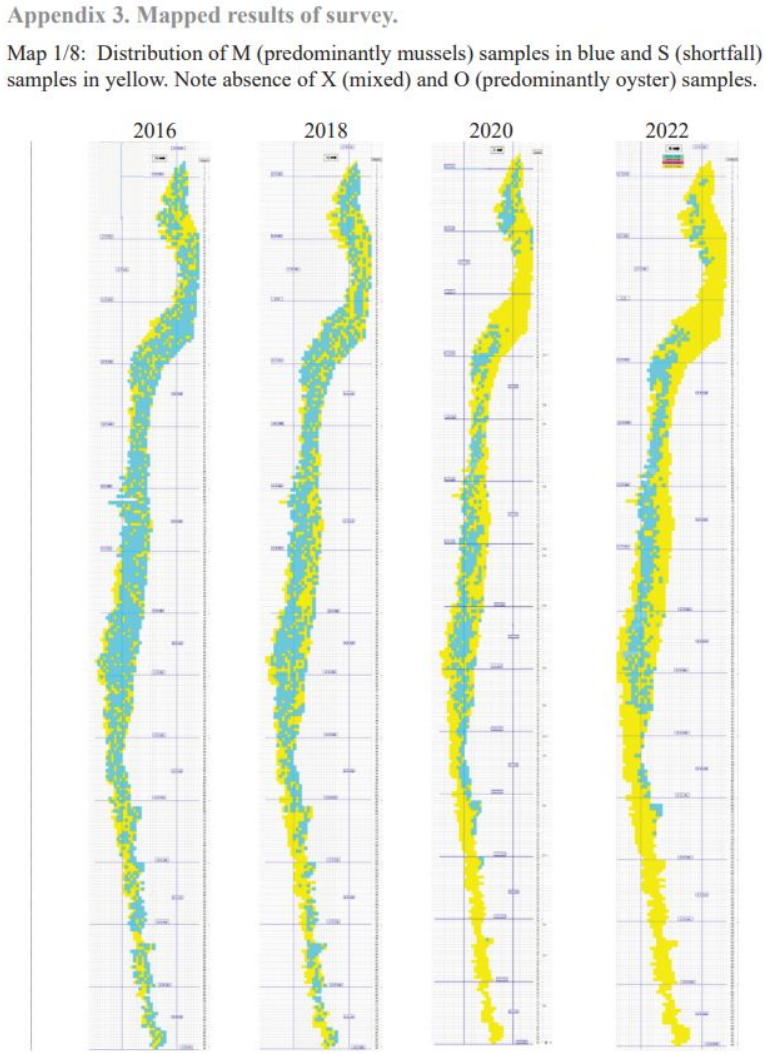
Molluscs

Phylum Mollusca

Sea snails, sea slugs, limpets | **Bivalves** | Chitons | Octopus, squid, cuttlefish

Mussels

- General decline in common mussels.
- Figure (right) shows decline in mussels at western undercliff
- Research done by Willie McKnight, published by the Kent Field Club



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Molluscs

Phylum Mollusca

Sea snails, sea slugs, limpets | **Bivalves** | Chitons | Octopus, squid, cuttlefish

Oysters

- Out in the open

Common / edible oyster *Ostrea edulis*

- Rounded shape
- Saucer and flat valves
- Subtidal
- Up to 11cm long

Pacific oyster

Crassostrea gigas

- Oval, and grow to shape of rock
- Wavy edged valves
- Purple blotches
- Intertidal & subtidal
- Up to18 cm long

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Molluscs

Pacific Oysters *Crassostrea gigas*

- Introduced to be farmed on racks
- Now breeding in the wild, becoming widespread and locally dominant (invasive non-native species)

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Molluscs

Cuttlefish

- Complex animals with sophisticated eyes
- Active predators
- Bone provides buoyancy control
- Camouflage experts
- Breed once, then die
- Up to 45cm long

Sepia officinalis

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Fish

Fish

Phylum Chordata

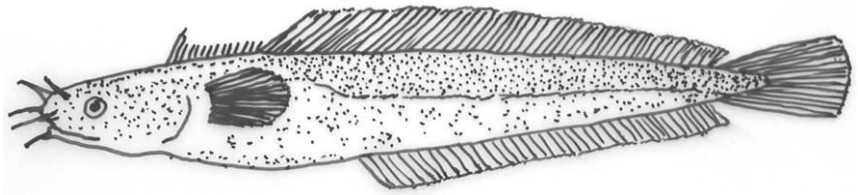
Subphylum Pisces

Key ID Characteristics

- Complex animals with spinal cord enclosed in a backbone
- Head with distinct mouth and eyes
- Pairs of fins and a tail

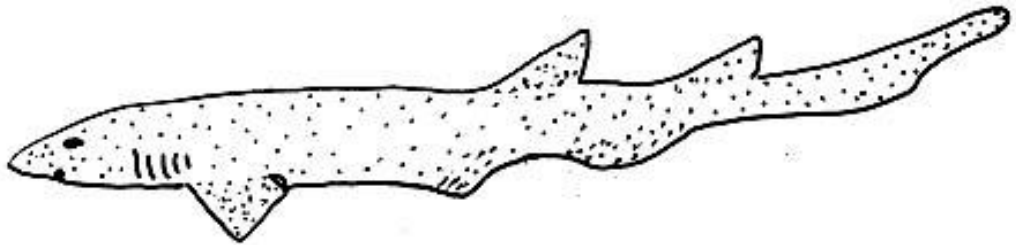
Bony fish (Teleost)

- Bone skeleton
- Bony plate covering gills
- Mouth pointing forward.
- Skin with scales (developed from bone)



Cartilaginous fish (Elasmobranch)

- Cartilage skeleton
- Gill slits
- Mouth normally on underside
- Skin rough with tiny ‘teeth’ called denticles
- No swim bladder



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Fish

Phylum Chordata

Subphylum Pisces

Bony fish

Cartilaginous fish (sharks and rays)

- Blennies – single dorsal fin
- Shanny - no head tentacles

Montagu's blenny

Coryphoblennius galerita

Up to 8cm

Shanny

Lipophrys pholis

Up to 17cm

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Fish

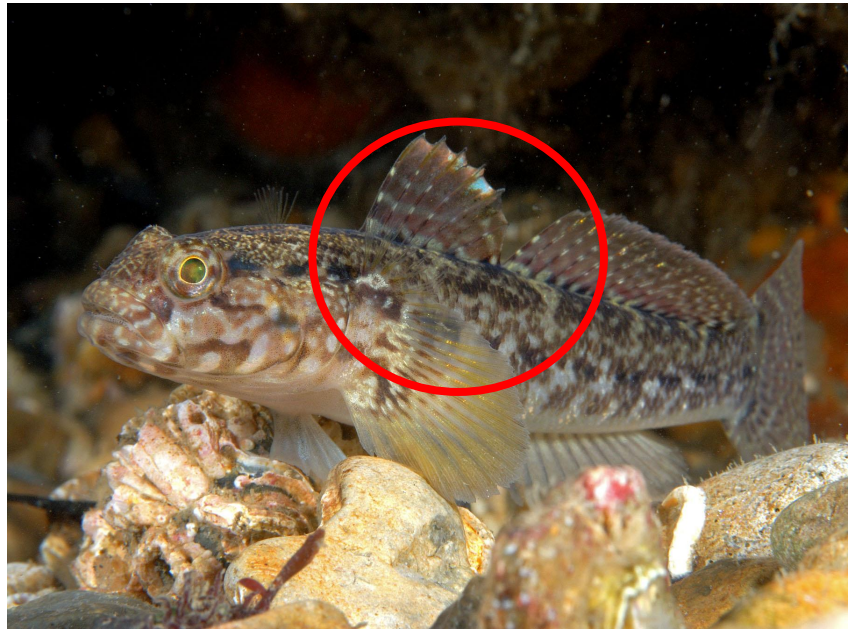
Phylum Chordata

Subphylum Pisces

Bony fish

Cartilaginous fish (sharks and rays)

- Gobies – two dorsal fins
- Fused pelvic fins for adhesive power



Rock goby

Gobius paganellus

Up to 12cm

Black goby

Gobius niger

Up to 17cm

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Fish

Phylum Chordata

Subphylum Pisces

Bony fish

Cartilaginous fish (sharks and rays)

Five-bearded rockling

- First dorsal fin sunken into groove
- 5 pointed ‘beards’ on front of head
- Up to 25 cm

Five-bearded rockling *Ciliata mustela*

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Fish

Phylum Chordata

Subphylum Pisces

Bony fish

Cartilaginous fish (sharks and rays)

Ray and eggcase

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Fish

Phylum Chordata

Subphylum Pisces

Bony fish

Cartilaginous fish (sharks and rays)

Small spotted catshark and eggcase

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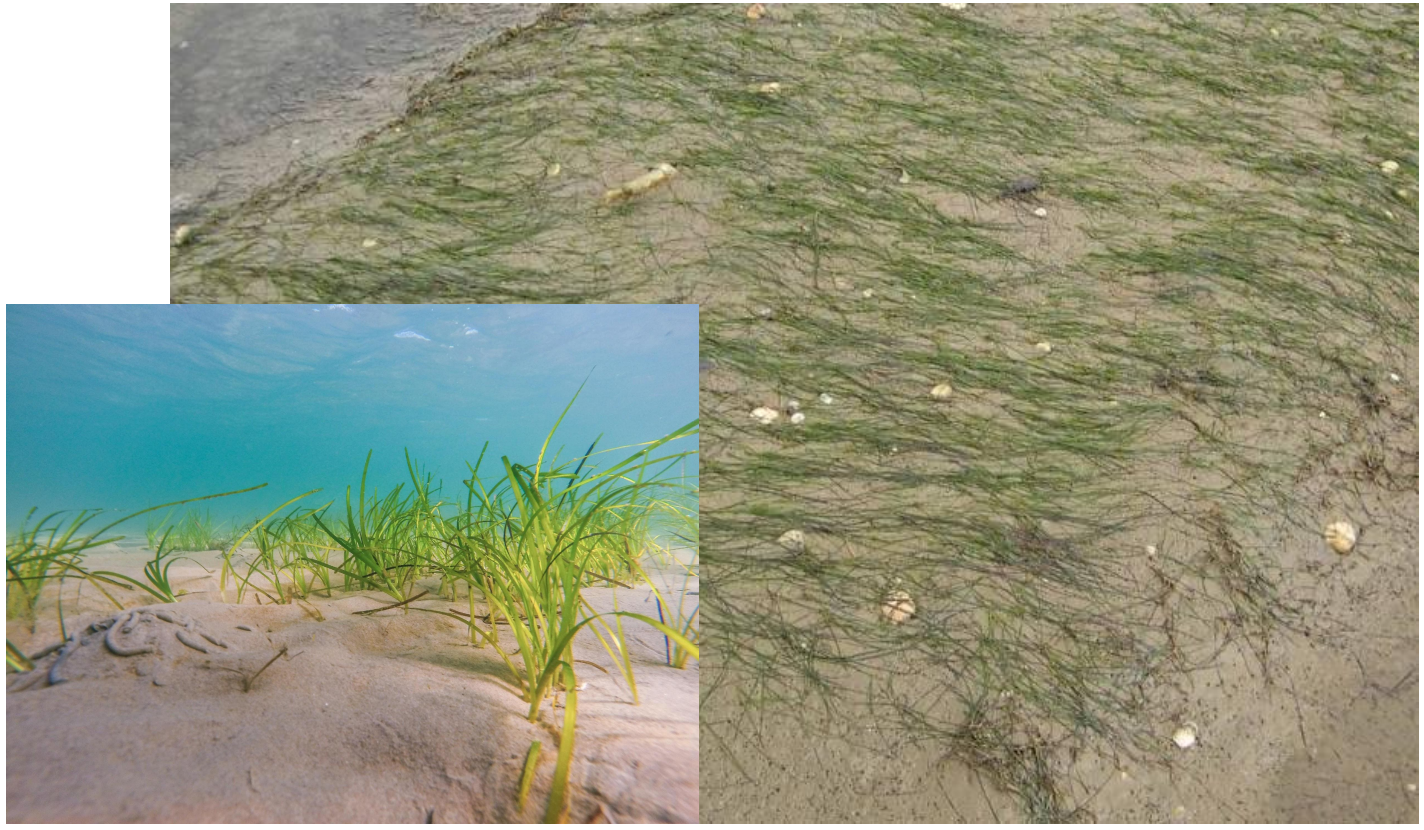
Groups of Marine Plants

Flowering Plants

- Seagrasses



Algae/Seaweeds

- Green algae
- Brown algae
- Red algae

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Seaweeds

Green algae | Brown algae | Red algae

Simple, non-flowering plants with a covering of mucus.

Variety of forms:

- **Leafy**
  - Flat leaf-like, or filamentous or feathery fronds
  - ‘Holdfast’ attaches plant to rocks/hard surfaces (no roots)
- **Hard**
  - Calcified
  - Often not attached
- **Encrusting**

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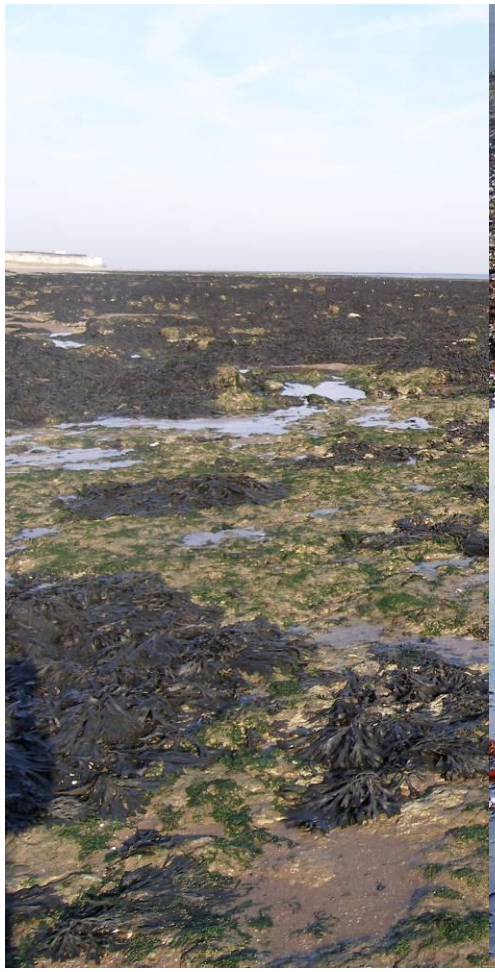
Seaweeds

Green algae | Brown algae | Red algae

3 groups: Green, Brown, Red

- each group thrives in different light conditions



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Seaweeds

Algae

Green algae

Brown algae

Red algae

Sea lettuce

Ulva lactuca

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Seaweeds

Green algae Brown algae Red algae

Gut weed

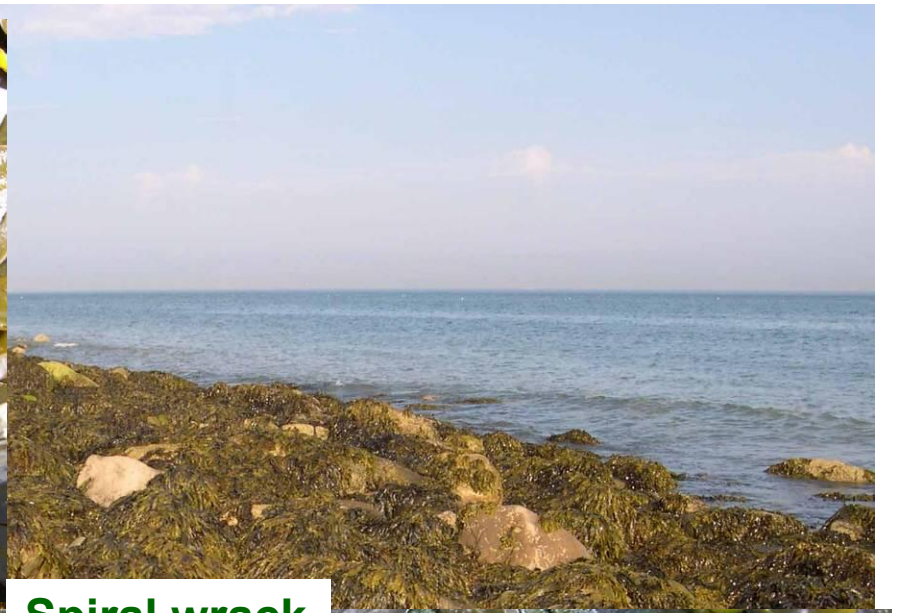
Ulva sp.

Seaweeds

Algae

Green algae | **Brown algae** | Red algae

Serrated wrack



Spiral wrack

Bladder wrack

Wracks

Fucus spp.

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Seaweeds

Algae

Green algae | **Brown algae** | Red algae

Kelp / Oarweed

Laminaria digitata

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Seaweeds

Green algae | **Brown algae** | Red algae

- Introduced (invasive non-native species)
- Spreading in rockpools

Wireweed

Sargassum muticum

Seaweeds

Green algae | Brown algae | **Red algae**

Irish moss / Carragheen

Chondrus crispus

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Seaweeds

Coral weed

Corallina officinalis

Seaweeds

Green algae | Brown algae | **Red algae**

Encrusting pink algae

Lithothamnion / Phymatolithon

Main Groups of Marine Animals and Plants

Animals

- Sponges (Porifera)
- Anemones, corals, hydroids, jellyfish (Cnidaria)
- Segmented Worms (Annelida)
- Crabs, lobsters, prawns, barnacles (Crustacea)
- Sea snails, sea slugs, bivalves, cuttlefish (Mollusca)
- Sea mats (Bryozoa)
- Starfish, sea urchins, etc. (Echinodermata)
- Sea squirts (Chordata – Ascidia)
- Fish (Chordata)

Plants

- Green seaweed
- Brown seaweed
- Red seaweed

- Seagrasses

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Tips

Recording in the field…

- Go to the lowest taxonomic level with certainty
- Take photos to be verified later

Taking photos to ID later…

- Put something in the photo for reference *e.g. ruler or finger*
- Leave the specimen in-situ
- Get the substrate the specimen was found on in the photo
- Take a photo of the general zone specimen was found in or feature it was found in *e.g. gully or rockpool*
- To ID some species 360^{o} photos may be necessary

Thank you!

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How you can get involved…

- Shoresearch
- Thanet Coast Project
- Coastbusters
- Great Eggcase Hunt
- MCS Beach Cleans
- Beneath the Water (22 species to report)
- …