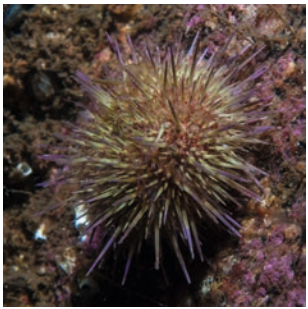
An introduction to recording rocky shore life in Northern Ireland



CEDaR Centre for Environmental Data and Recording

NIEA Northern Ireland Environment Agency
www.daera-ni.gov.uk

An Agency within the Department of Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk


Rathlin Island
Portrush
Lough Foyle
Larne Lough
Belfast Lough
Strangford Lough
Dundrum Bay
Carlingford Lough

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Introduction to rocky shore recording

Rocky shores support a diverse range of plants and animals that are adapted to survive in this interface between the land and the sea. Along the Northern Ireland coast we have a wide variety of rocky shores from the sheltered, tide-swept shores in places such as Strangford Lough to the wave exposed shores on our north coast in places such as Portrush. We also have a diversity of rock types; the species of animals and plants found on our shores are influenced by these factors.

In Northern Ireland we are at an interface where some southern species are reaching the northern limit of their distributrion and some northern species are at or near the southern limits of their range. This makes the coast of Northern Ireland an ideal place for monitoring changes in distribution of species that are sensitive to climate change.

The aim of this guide is to provide an identification resource that can be used by anyone exploring the rocky shore. The idea being to promote citizen science and biological recording from rocky shore habitats around our coast. The species included represent those that can readily be identified by the non-specialist or those that a specialist can identify from a good quality photograph.

Reporting

- Please submit records with an accompanying date and location to CEDaR Online Recording: www2.habitas.org.uk/records/home
- Include a photograph to assist with species verification
- An assigned verifier will review your record on submission. All confirmed records will be collated on CEDaR's database and will appear on the NBN Atlas Northern Ireland: northernireland.nbnatlas.org

- You can submit records using the iRecord App. Contribute your species sightings with GPS acquired coordinates, descriptions and other information: irecord.org.uk/app
- You can also submit records using the iNaturalist App. If you have used a mobile phone or camera with an inbuilt GPS, the App will automatically take data on coordinates, site name and date from the photograph. iNaturalist also gives the option of suggesting an identification for the species using artificial intelligence. The App will try and match the species in your photograph to those that are already in the database.

Good rocky shore practices

- Wear safe footwear with a good tread, wellington boots are ideal.
- A x10 magnifying loupe is really useful for getting up close to many of the smaller animals and plants and seeing some of the features that will help with identification.
- Leave boulders and stones as you found them. If you move any rocks, lower them carefully into the same spot to avoid crushing animals that are living on the undersides.
- Remember that animals living below boulders are sensitive to light and desiccation and will most likely die if the boulders are not turned back.

Information on tides

The rocky shore is the area of rocky coast between the highest level that the sea reaches on a high tide and the lowest level when the tide is out. The tides are mainly controlled by the gravitational pull of the sun and the moon. Twice a month, at new moon and at full moon, the sun and moon are pulling together creating a greater tidal range, these are known as spring tides. The tidal range then decreases for seven days to a minimum, known as neap tides. Shore height is measured in metres above chart datum, this is the lowest tide in that area.

In Belfast Lough, for example, extreme highwater spring tide (EHWS) is approximately 4 m above chart datum. Mean high water neap tide (MHWN) is 2.9 m, mean low water neap tide (MLWN) is 1.1 m and extreme low water spring tide (ELWS) is chart datum (0 m).

These boundaries are used to divide the shore into different zones:

- The uppermost zone is never immersed by the sea but is frequently splashed by it, this is known as the splash zone.
- The zone between extreme highwater spring tides and mean high water neap tides is called the upper shore. The area between high and low water neap tides is known as the mid shore.
- The area below low water neap tides down to extreme low water spring tides is called the low shore.

Information on tidal times around the coast can be found at various websites e.g. https://www.tidetimes.org.uk/belfast-tide-times, by downloading the following App https://apps.apple.com/gb/app/my-tide-times-pro-tide-chart/id804031883, or from Belfast Harbour Tide Tables which are available at local chandlers.

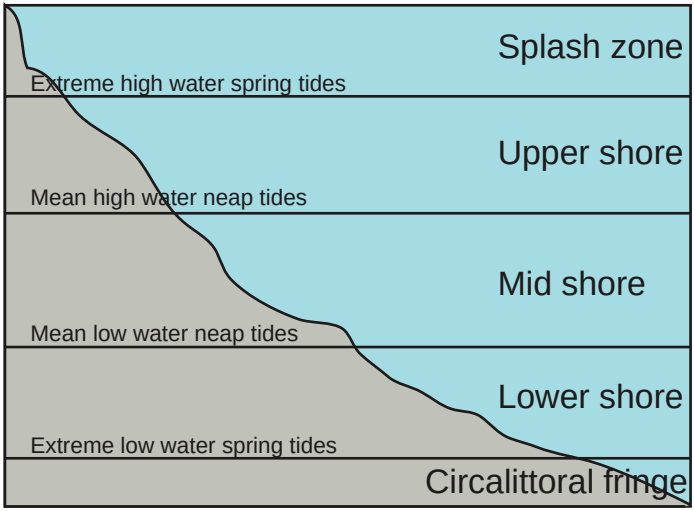


Figure 1. The main zones on a rocky shore.

Yellow foliose lichen - *Xanthoria parietina*

Size: 2–10 cm (patch width).
Colour: Yellowish-green in shade to bright orange-yellow in exposed sites.
Similar species: This is the most common yellow lichen on shores in Northern Ireland forming rounded lobes at the edge. Several other orange and yellow lichens are also very common but form more regular patches and do not have a structure of overlapping leafy blades.
Key identification features:

- Foliose structure loosely attached and overlapping

Habitat: On rocks in the splash zone.
Distribution: Common on all coasts.

Size: 2–10 cm (patch width).
Colour: Dark brown, almost black.
Similar species: No similar species.
Key identification features:

- Low mounds of thin foliose blades

Habitat: On rocks below high water on exposed coasts.
Distribution: Common on all exposed shores.

Sea ivory - *Ramalina siliquosa*

Size: 3–7 cm long.
Colour: Grey green.
Similar species: *Ramalina subfarinacea* is similar but has spore producing discs at edges of branches.
Key identification features:
- Spore-producing discs on very short stalks are common

Habitat: On siliceous rocks in splash zone.
Distribution: Common on all coasts.

Size: patches 5–10 cm (patch width).
Colour: White-light grey.
Similar species: One of several white lichens which are common on most shores.
Key identification features:

- Edge of patch is like a series of breaking waves
- Pale pink discs with swollen white edges are clustered towards the centre of the patches which look like crab's eyes, hence the common name

Habitat: Splash zone, above high water mark.
Distribution: Common on all coasts.

Channelled wrack - *Pelvetia canaliculata*

Size: Up to 15 cm long.
Colour: Olive green to dark brown or black when very dry.
Similar species: This is the only brown seaweed on the upper shore that has in-rolled fronds.
Key identification features:

- The edges of the fronds curl inwards forming a channel or canal
- Fronds are evenly forked
- Dark yellow, knobbly reproductive structures may be present at ends of fronds (photo inset)

Habitat: Attached to rocks on the upper shore, just above the spiral wrack (*Fucus spiralis*).
Distribution: Common all around our coasts.

Size: Up to 20 cm long.
Colour: Olive green to light brown.
Similar species: Could be confused with *Fucus guiryi* and *Fucus vesiculosus* however these both occur lower on the shore. *F. guiryi* has a rim around the reproductive receptacles and *F. vesiculosus* has paired, balloon-like air bladders.
Key identification features:

- Fronds are flat and wavy with a conspicuous midrib
- Fronds have a characteristic twist or spiral
- Fronds are evenly forked
- Dark yellow, swollen reproductive structures may be present at ends of fronds depending on time of year

Habitat: Attached to rocks on the upper shore, just below the channelled wrack (*Pelvetia canaliculata*).
Distribution: Common all around our coasts.

Size: 15–90 cm long.
Colour: Olive-green to light brown.
Similar species: Could be confused with *Fucus guiryi* and *Fucus spiralis* but the paired, circular air bladders are diagnostic. In *Fucus serratus* (also in photograph) the fronds have a serrated margin.
Key identification features:

- Fronds are flat with a conspicuous midrib
- Fronds have rounded air bladders arranged in pairs either side of the midrib, the number of bladders depends on exposure
- Fronds are evenly forked.
- Yellowish oval or forked reproductive structures may be present at ends of fronds

Habitat: Attached to rocks on the mid to low shore, below the spiralled wrack (*Fucus vesiculosus*).
Distribution: Common all around our coasts.

Size: Up to 60 cm long.
Colour: Olive green to light brown.
Similar species: Unlikely to be confused with other species
Key identification features:

- Fronds are flat with a conspicuous midrib
- Fronds have a distinctive toothed or serrated edge
- Fronds are evenly forked
- Reproductive structures towards the ends of fronds give them a bumpy texture

Habitat: Attached to rocks on the low shore, also low shore rock pools.
Distribution: Common all around our coasts.

Egg wrack or knotted wrack - *Ascophyllum nodosum*

Size: 30–150 cm long.
Colour: Olive green to light brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Tough leather fronds
- Egg-shaped air bladders at intervals along main stem and side branches

Habitat: Attached to rocks and boulders on the low shore, prefers sheltered sites.
Distribution: Common all around our coasts.

Size: Up to 100 cm long.
Colour: Olive-green to light brown.
Similar species: Could be confused with mermaid's tresses (*Chorda filum*) however in this species the long, bootlace-like fronds are covered in short hairs and it doesn't have a button-like base.
Key identification features:

- Distinctive long, strap-like fronds
- Fronds arise from a small button-like base

Habitat: Attached to rocks on the low shore.
Distribution: Common all around our coasts.

Oar weed - *Laminaria digitata*

Size: Up to 150 cm long.
Colour: Shiny brown.
Similar species: Could be confused with forest kelp (*Laminaria hyperborea*) however this species has a roughened stem which it holds erect at low tide whereas oar weed is bowed over.
Key identification features:

- Frond is broad and divided into finger-like segments
- Fronds lack a midrib
- The stem is smooth and flexible and slightly flattened
- Stem usually free of epiphytes
- Claw-like holdfast

Habitat: Attached to rocks and boulders on the low shore, usually only exposed during spring tides.
Distribution: Common all around our coasts.

Size: Usually 2 m tall but can be up to 3.6 m.
Colour: Shiny brown.
Similar species: Could be confused with oar weed (*Laminaria digitata*) however *L. hyperborea* has a roughened stem which it holds erect at low tide whereas oar weed is bowed over.
Key identification features:

- Frond is broad and divided into finger-like segments
- Fronds lack a midrib
- The stem is rough and stiff, often with epiphytes
- Claw-like holdfast

Habitat: Attached to rocks and boulders on the low shore, usually only exposed during extreme spring tides.
Distribution: Common all around our coasts.

Furbellows - *Saccorhiza polyschides*

Size: Usually 2 – 2.5 m long.
Colour: Light brown.
Similar species: Can look similar to *Laminaria digitata* and *L. hyperborea* however the flattened stipe and bulbous base are diagnostic.
Key identification features:

- Flattened stipe with frilled edges
- Wide, divided frond without a midrib
- Large, bulbous holdfast covered in warts

Habitat: Attached to rocks and boulders, usually only exposed during extreme low water spring tides.
Distribution: Widely distributed on all coasts.

Size: Up to 150 cm long.
Colour: Light to dark brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- A single, long flattened frond narrowing towards the tip
- Frond has a distinctive uneven surface and a frilly margin
- Frond lacks a midrib
- Smooth, thin stem
- Claw-like holdfast

Habitat: Attached to rocks, boulders and stones on the low shore, prefers sheltered shores.
Distribution: Common all around our coasts.
(formerly *Laminaria saccharina*)

Dabberlocks - *Alaria esculenta*

Size: Up to 150 cm long.
Colour: Light to dark brown.
Similar species: Could be confused with the invasive wakame (*Undaria pinnatifida*) however in wakame the base of the stem has a wavy edge and the frond has lateral, finger-like processes.
Key identification features:

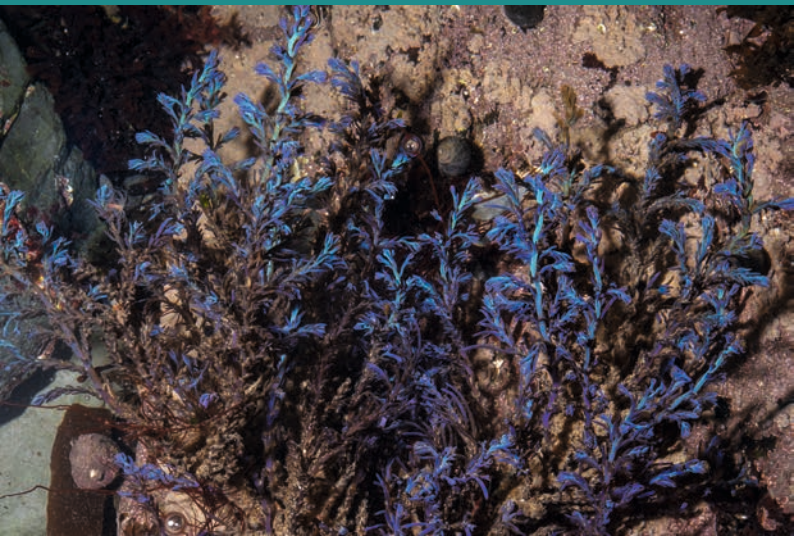
- Spear-shaped frond with a distinctive midrib
- Frond is thin, delicate and easily torn
- Short, flexible stipe
- Claw-like holdfast

Habitat: On exposed rocky shores, usually only visible from the shore on low spring tides.
Distribution: Common on exposed shores all around our coasts.

Size: 30–120 cm long.
Colour: Olive-green to brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Main stem and branches are flattened
- Stems branch alternately
- Stems have oblong air bladders
- Tough and leathery texture

Habitat: Mid shore rock pools and lower shore.
Distribution: Common on all coasts.



Size: Usually 40-50 cm long but can be up to 100 cm.
Colour: Brown, usually with bright blue irridescence in water.
Similar species: Could be confused with several species of *Cystoseira* that are found in NI and also the invasive wireweed (*Sargassum muticum*).
Key identification features:

- Bright blue irridescence
- Branched and bushy
- Main branches and side branches are narrow (<1 cm)
- Small air bladders may be present

Habitat: Mid and low shore rock pools.
Distribution: Strangford Lough and north coast from Ballintoy to Portrush.

Size: Up to 200 cm long.
Colour: Olive green to dark brown.
Similar species: Could be confused with bushy wracks (*Cystoseira* species) and sea oak (*Halidrys siliqua*) which are also found in rock pools, however in wireweed the air bladders are attached to a stalk extending out from the stem.
Key identification features:

- Large, bushy brown seaweed
- Small, spherical air bladders on stalks are diagnostic
- Flat, oval branchlets

Habitat: Intertidally it is usually found in rock pools, can tolerate estuarine conditions.
Distribution: An invasive species, first reported from Northern Ireland in 1995. Now widespread on all coasts.

Common coral weed - *Corallina officinalis*

Size: Up to 12 cm long.
Colour: Greyish pink to pinkish-purple.
Similar species: Could be confused with the much rarer elongate coral weed (*Ellisolandia elongata*) and *Corallina ferreyrae.*
Key identification features:

- A calcareous branching seaweed
- Composed of jointed, pink chalky segments
- Outer tips of branches usually white

Habitat: Forms dense tufted growths in rock pools and damp places on the mid to low shore.
Distribution: Common on all coasts.

Size: 8 cm long.
Colour: Purple to brownish-red.
Similar species: There are 4 species of *Osmundea* which have a flattened frond, pepper dulse can be distinguished by its habitat preference for open rock on the mid shore.
Key identification features:
- Flattened, fern-like fronds
- Roughly pyramidal outline

Habitat: Can form extensive carpet-like growths on damp sloping rock on the mid and low shore.
Distribution: Common on all coasts.

Size: Usually 5–10 cm long but can be up to 22 cm.
Colour: Dark red to purplish-brown, young parts of plant can have iridescence, bleached plants are yellow (inset).
Similar species: Very similar to false Irish moss (*Mastocarpus stellatus*).
Key identification features:

- Attached to rock by a disc-like holdfast
- Fronds have a smooth and slippery feel
- Flattened stem (not channelled)
- Fan-like blade with forked branching (inset)
- Younger, growing parts of plants have blue iridescence (see photograph)

Habitat: Common on mid to low shore rocky surfaces and in rock pools.
Distribution: Common on all coasts.

Size: Usually 5–10 cm long, rarely up to 17 cm.
Colour: Reddish-brown to dark, purplish-black.
Similar species: Can be confused with Irish moss (*Chondrus crispus*), the main features separating the two species are the channelled fronds and grape pip-like papillae on mature plants. False Irish moss is harsh to the touch whilst Irish moss is more slippery.

Key identification features:

- Arises from a small, disc-like holdfast
- One or more channelled fronds with a thickened edge
- Channelling more distinct at base of frond
- Branching is repeatedly forked
- Mature plants have grape pip-like growths on the fronds (inset)

Habitat: Usually found on low shore rock and rock pools.
Distribution: Common on all coasts.

Sea lettuce - *Ulva lactuca*

Size: Variable 2–100 cm long.
Colour: Light-dark green.
Similar species: Difficult to differentiate from other sea lettuces (*Ulva* spp.).
Key identification features:
- Large, translucent green sheets
- Membranous texture
- Often has holes in the fronds

Habitat: On a wide variety of surfaces from the mid to low shore, also in brackish conditions.
Distribution: Common on all coasts.

Size: Up to 30 cm long.
Colour: Dark green.
Similar species: Could be confused with other species of *Codium.*
Key identification features:

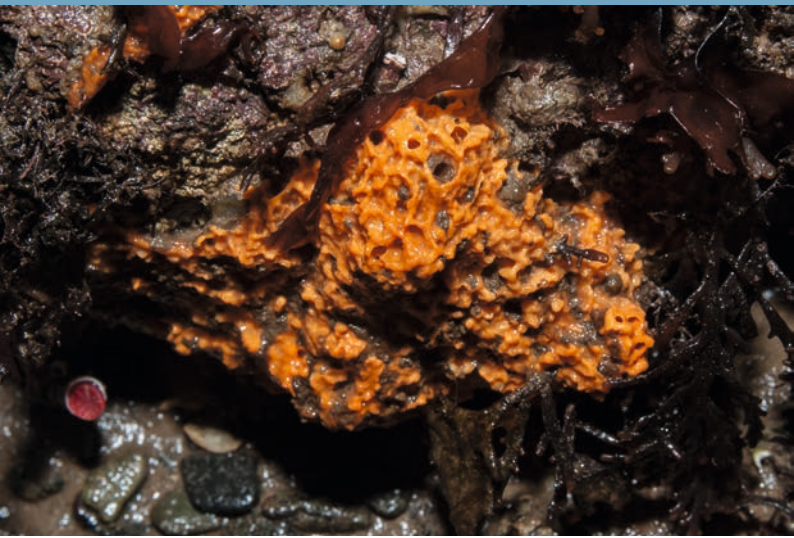
- Spongy texture
- Branches are regularly forked
- Cylindrical branches
- Disc-shaped holdfast

Habitat: Mid to low shore rock pools and damp places such as gullies.
Distribution: Frequent on all coasts.

Size: Variable, from small crust 1-2 cm across to massive forms up to 60 cm across.
Colour: Greenish-yellow in well-lit areas, yellow in more shaded sites.
Similar species: Similar to *Halichondria bowerbanki.*
Key identification features:

- Greenish coloured sponge
- Smooth, glassy appearance
- Exhalant openings (oscules) are large and circular and often raised on conules

Habitat: Common under rocky overhangs, under boulders and on seaweeds on the mid to low shore.
Distribution: Common on all coasts.



Size: Variable, from small patches 1–2 cm across to massive turreted forms.
Colour: Pale orange to orange-red, often with dullish-green patches.
Similar species: Unlikely to be confused with other shore species.
Key identification features:
- The most common sponge on our rocky shores
- Only massive orange species in the intertidal
- Can tolerate sunlight

Habitat: Occurs in a wide variety of habitats from the mid to low shore.
Distribution: Common on all coasts.

Size: 2–6 cm long.
Colour: Creamish-white.
Similar species: Similar to the purse sponge *Sycon ciliatum.*
Key identification features:

- Small, flattened body with a very short stalk
- Open at on end (this is the exhalant canal)
- Smooth, clean surface
- May be composed of multiple, flattened lobes

Habitat: Under overhangs in rocks, under boulders and also on seaweed on the low shore.
Distribution: Common on all coasts.

Size: Typically 1–3 cm long.
Colour: Off-white to grey.
Similar species: Sometimes confused with the flattened purse sponge (*Grantia compressa*).
Key identification features:
- Single tubular sponge
- Hairy appearance
- Crown of glass-like spines surround the open end
- (NB This may be a composite of more than one species)

Habitat: Beneath overhangs or attached to seaweeds on the low shore.
Distribution: Common on all coasts.

Size: Can be up to 6 cm across.
Colour: Usually dark red but can also be green, orange or brown.
Similar species: Colour forms with green spots on the base can be mistaken for the strawberry anemone (*Actinia fragacea*) which doesn't occur in NI.
Key identification features:

- Broad, jelly-like base
- Up to 192 thick, short tentacles
- Tentacles retract quickly disturbed or when anemone is out of water
- Bright blue wart-like spots are sometimes present just beneath the outer row of tentacles

Habitat: Common on rocks, crevices and rock pools from the mid to low shore.
Distribution: The most common anemone on intertidal rock, common on all coasts.

Size: Base typically 5 cm long but may be up to 10 cm.
Colour: Variable – grey, light brown or brilliant green, tentacles similar with or without pinkish-purple tips.
Similar species: Unlikely to be confused with other species in NI.
Key identification features:

- About 170 long wavy tentacles
- Tentacles cannot fully retract
- Often there are white lines running from opposite sides of the disc to the mouth
- Base is smooth

Habitat: Usually found in rock pools or on seaweeds from the mid to the low shore.
Distribution: Common on all coasts.

Size: Usually 1–4 cm tall.
Colour: Translucent yellowish-brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- A small hydroid
- Grows on brown seaweeds especially serrated wrack
- Upright stems arise from a creeping stolon
- Stems have distinctive, saw-tooth appearance

Habitat: Usually found on seaweeds such as wracks from the mid to low shore.
Distribution: Common on all coasts.

Size: 3-4 cm long.
Colour: Chalky-white tube.
Similar species: *Spirobranchus lamarcki* has 3 longitudinal ridges on tube.
Key identification features:

- White, smooth calcareous tube 3 mm wide by 2–5 cm long
- Tube irregularly curved into sinuous and spiral forms
- Tube has a distinctive ridge in the middle resembling a ship's keel
- The opening of the tube has a small, round plug

Habitat: Grows on stones, rocks and shells on the low shore
Distribution: Common on all coasts.
N.B. Formerly *Pomatoceros triqueter.*

Size: 8–15 cm long.
Colour: Body and tentacles are pinkish-red.
Similar species: Unlikely to be confused with any other species.
Key identification features:

- Builds a tube of gravel, sand and shell held together by mucous
- Numerous, long, pinkish-red tentacles with white or yellow spots
- Thick, soft, segmented, pinkish-red body

Habitat: Under boulders on the low shore, usually at sheltered sites with strong currents.
Distribution: Found on all coasts.

Size: Very small, usually 2–3 mm long.
C**olour:** Chalky white.
Similar species: Other species of *Spirorbis.*
Key identification feature:

- Tiny, white, calcareous tube
- Tube coiled into a small clockwise spiral
- Encrusts seaweeds (particularly serrated wrack), shells and rocks

Habitat: Mid to low shore.
Distribution: Common on all coasts.

Size: Forms large colonies, capable of covering rocky reefs.
Colour: Composed of sand grains.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Lives in tubes composed of sand
- Tubes aggregate to form honeycomb-like structures
- Reefs may be extremely large and up to a metre deep

Habitat: On mid to low shore bedrock and boulders on exposed, open coasts that have nearby sand.
Distribution: This is primarily a southern species with only a few scattered records in NI, primarily from the south east coast.

Size: Up to 9 cm long.
Colour: Semi-transparent white, yellow orange or grey, sometimes with horizontal brown and white bands (see photo).
Similar species: Unlikely to be confused with other species.
Key identification features:

- 18 pairs of soft, overlapping, semi-transparent scales
- Gelatinous appearance
- Flattened body
- Fast moving when disturbed

Habitat: Under boulders on the low shore.
Distribution: Scattered records from all around NI but most records are from Strangford Lough.

Size: Usually 6–8 cm but can grow to 11 cm.
Colour: Transparent body with red and yellow markings.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Translucent body with reddish-brown and yellow lines
- Legs have reddish-brown and yellow bands
- Body is round in cross-section

Habitat: Usually found in rock pools on the mid or low shore.
Distribution: Common on all coasts.

Size: Shell up to 4 cm.
Colour: Reddish-brown.
Similar species: This is the only species of hermit crab likely to be found on the shore.
Key identification features:

- A large hermit crab
- Lives inside empty sea snail shells
- 1st pair of legs have large, unequal, pincers
- Pincers are bumpy with rows of larger spines
- Right hand pincer much larger than left
- 2nd and 3rd pairs of legs are used for walking
- 4th and 5th pairs of legs are tiny and inside the snail shell

Habitat: Found on rocky and sandy shores from the mid to low shore, especially in rock pools.
Distribution: Common on all coasts.

Size: shell less than 1 cm across.
Colour: Reddish-orange to reddish-brown, often there is a large patch of white on the shell.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Porcelain crabs are not 'true' crabs, but closely related to squat lobsters and hermit crabs
- Small crab, shell <1 cm
- Rounded shell
- Long, conspicuous antennae
- First pair of legs are long pincers
- Only 3 pairs of walking legs
- 5th pair of legs are tiny and often hidden
- Not hairy, has a clean appearance

Habitat: Beneath boulders and stones on the low shore and also in kelp holdfasts.
Distribution: Common on all coasts.

Size: Shell up to 1.5 cm long.
Colour: Dirty greyish-brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Not a 'true' crab, the presence of long antennae and tiny 5th pair of legs are indicators that they are more closely related to squat lobsters and hermit crabs
- 1st pair of legs around 2 cm long with thick, flattened pincers which are hairy on the outer edges
- Only 3 pairs of walking legs
- 5th pair of legs are tiny
- All of the legs are hairy

Habitat: Under boulders and stones from the mid to low shore, especially in muddy gravel places.
Distribution: Common on all coasts.

Size: Shell up to 25 cm across although usually only small, juveniles are found on the shore (5 mm–10 cm across).
Colour: Reddish-brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Tips of claws are black
- Wide, oblong-shaped, domed shell
- 9 rounded lobes on each side of shell resemble a piecrust

Habitat: Beneath boulders and seaweeds on the low shore.
Distribution: Common on all coasts.

Size: Shell usually 4 cm across but can be up to 8 cm.
Colour: Shell olive,dark green or brown on top, underside is yellow-green.
Similar species: Unlikely to be confused with other species.
Key identification features:

- 5 sharp teeth on either side of the shell
- 3 rounded teeth between the eyes
- first pair of legs have well developed pincers
- The end segments of the legs are pointed

Habitat: Wide range of habitats from the high shore to the subtidal, usually found underneath boulders or seaweeds. Also common in estuaries.
Distribution: Common on all coasts.

Size: Shell up to 8 cm across.
Colour: Dark blue to brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- The bright red eyes are diagnostic for this species
- 5th pair of legs flattened into paddles for swimming
- Velvety appearance to shell
- Underside is hairy

Habitat: Found amongst rocks and stones on the low shore at sheltered sites.
Distribution: Frequent on all coasts.

Size: Shell up to 3 cm across.
Colour: Brownish-red.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Whole crab is hairy
- Shell broader than long
- 5 teeth on edge outside the eyes
- 1st pair of legs are large, strong, unequal pincers
- Pincers have black tips

Habitat: Under boulders and amongst rocks and seaweeds on the low shore.
Distribution: Recorded from all coasts.

Size: Shell about 2 cm across.
Colour: Shell is variable – white, yellow, brown, green or red-brown.
Similar species: *Xantho pilipes.*
Key identification features:

- Shell much broader than long
- Shell broad in front tapering towards the rear
- Conspicuous groove runs from between the eyes
- 2 indentations on each side of shell
- 1st pair of legs have large, unequal pincers
- Pincers have black tips
- Other legs become shorter towards the rear

Habitat: Amongst sand, gravel and stones on the low shore.
Distribution: Most records are from Rathlin Island and the north east coast.

Size: Shell about 2–3 cm across.
Colour: Shell is variable: whitish-yellow with dark red patches and mottling
Similar species: *Xantho hydrophilus.*
Key identification features:

- Shell much broader than long
- Shell broad in front tapering towards the rear
- Shell flat with a smooth surface
- 2 broad lobes between the eyes
- 1st pair of legs have stout, slightly unequal pincers
- Pincers have conspicuous black tips
- Other legs become shorter towards the rear
- Legs and underside of shell are hairy

Habitat: On the low shore underneath stones or boulders on sand or gravel.
Distribution: Most records are from Rathlin Island and the north coast.

Size: Up to 15 mm in diameter.
Colour: Chalky white.
Similar species: Can be difficult to differentiate from other acorn barnacles, especially older individuals with interlinked plates.
Key identification features:

- The most widespread intertidal barnacle
- 6 outer plates, the extra plates when compared with *Austrominius* are narrower
- The lower and lateral plates are large and broad, the 3 top plates are much narrower
- Diamond-shaped opercular opening

Habitat: Found from the upper shore to the low shore on all coasts.
Distribution: Common on all coasts.

Size: 5–10 mm in diameter.
Colour: Juveniles are opalescent greyish-white, older barnacles are greyish-brown.
Similar species: Can be difficult to differentiate from other acorn barnacles.
Key identification features:

- A small barnacle (5–10 mm across)
- Only 4 outer shell plates
- Low profile
- Diamond-shaped opercular opening

Habitat: Found from the upper shore to the low shore on open rock and on the tops of boulders, fouls the shells of other organisms and artificial surfaces.
Distribution: Common on all coasts.

Size: Up to 6 cm x 5 cm wide x 3 cm tall.
Colour: Greyish-white often with a yellow tinge.
Similar species: Similar to the china limpet (*Patella ulyssiponensis*), however the china limpet is nearly always in rock pools whereas the common limpet is usually out of water at low tide (see photograph).
Key identification features:

- Conical shell
- Firmly attached to rocks by way of a sucker-like foot
- Radiating ridges from the top point of the shell
- Interior of shell is yellowish-grey
- The colour of the foot is diagnostic, it is yellowish-orange with a greyish tinge

Habitat: Abundant on all rocky shores from the high to low shore, usually out of water.
Distribution: Common on all coasts.

Size: Up to 6 cm in length.
Colour: Outside surface of shell is greyish-white, interior is white
Similar species: Similar to the common limpet (*Patella vulgata* - inset right).
Key identification features:

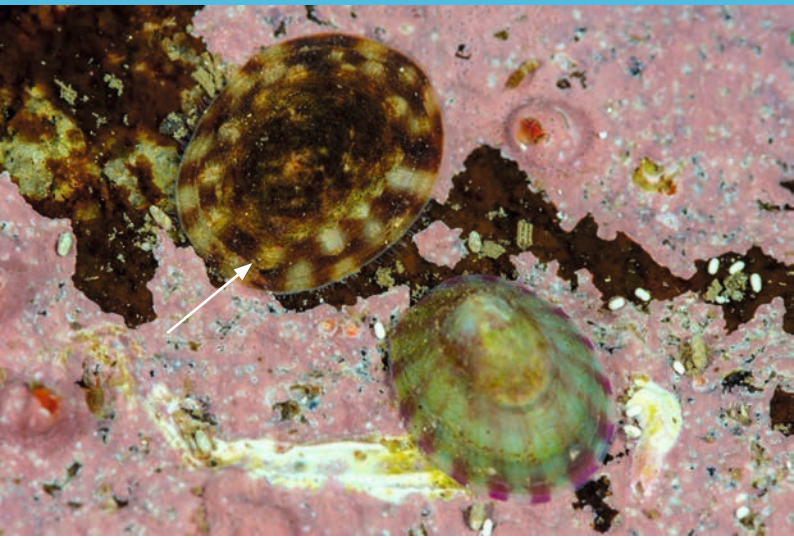
- Low cone with conspicuous ridges that project around edge of shell
- Apex of shell (point) is off-centre
- Often has seaweeds growing on shell
- Sole of the foot is an even pale yellow-orange (left-hand inset) whereas it is yellowish-grey in *Patella vulgata* (right-hand inset)

Habitat: On exposed and semi-exposed coasts, usually in mid or low-shore rock pools.
Distribution: Recorded from all coasts but rarer than the common limpet.

Size: Up to 2 cm long.
Colour: Translucent brownish-yellow with iridescent blue rays.
Similar species: Unlike any other species.
Key identification features:

- Small, smooth, translucent yellow-brown limpet
- 2–8 rays of broken beautiful blue lines are diagnostic

Habitat: Usually on blades and holdfasts of kelp on the extreme low shore.
Distribution: Occurs on all coasts.



Size: Up to 2.5 cm.
Colour: Greyish-white with dark reddish-brown tortoiseshell markings (arrow points to tortoiseshell limpet).
Similar species: Unlikely to be confused with other species.
Key identification features:
- Small, limpet-like shell
- Tortoiseshell pattern radiating from apex of shell
- Shell with very fine, radiating ribs

Habitat: On bedrock and boulders on mid to low shore.
Distribution: Present on most coasts but not yet reported from Lough Foyle or Larne Lough. This is a northern species, whose distribution in NI may be impacted by climate change.
N.B. The shell in the foreground is the white tortoiseshell limpet *Tectura virginea.*

Common periwinkle - *Littorina littorea*

Size: Shell up to 5 cm high but usually 2.5 cm.
Colour: Black, dark brown or grey occasionally with paler colour bands.
Similar species: Juveniles with spiral ridges on the shell could be confused with the rough periwinkle.
Key identification features:

- Shell sharply conical with pointed apex
- Shell has surface sculpturing
- Shell patterned with concentric darker lines
- Central axis of shell is white

Habitat: On rocks, stones and seaweed on the mid to low shore.
Distribution: Common on all coasts.

Size: Shell about 0.8 cm high.
Colour: Shell variable – yellowish-white, greenish, reddish, brown, black.
Similar species: Could be confused with juveniles of the common periwinkle. *Littorina nigrolineata* is now considered as the same species.
Key identification features:
- 6–9 whorls separated by deep grooves
- Grooves make shell rough to the touch

Habitat: In cracks and crevices in rock on the upper and mid shore.
Distribution: Common on all coasts.

Size: Shell up to 1 cm high.
Colour: Shell variable – yellow, red, brown, olive green, sometimes banded.
Similar species: Could be confused with *Littorina fabalis*, however in *L. fabalis* the shell opening is larger than the body whorl and the spire is flatter.
Key identification features:

- Flattened spire
- Large opening
- Body whorl slightly larger than shell opening
- Shell smooth to naked eye but fine sculpturing can be seen with a hand lens

Habitat: On seaweeds especially bladder wrack and egg wrack from the mid to low shore.
Distribution: Common on all coasts.

Size: Shell about 2.5 cm high.
Colour: Usually yellowish-pink with darker pink or red stripes, a pure white form is common in Strangford Lough.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Shell conical with distinctive straight sides
- Shell with a sharp point on top and a broad base
- Shell with regular spiral grooves and ridges
- The shell is usually very clean
- The foot of the animal is pinkish-orange with flecks of reddish pigment

Habitat: On seaweeds and beneath boulders and stones on the low shore.
Distribution: Frequent on all coasts.

Size: Up to 1.5 cm high x 2.2 cm across.
Colour: Grey with purple stripes.
Similar species: Could be confused with the grey topshell (*Steromphala cineraria*).
Key identification features:

- A small topshell, broader than tall
- Conspicuous broad purple diagonal stripes
- Large round hole (umbilicus) above aperture of shell

Habitat: On rocks in the middle shore and the upper part of the low shore.
Distribution: Frequent on all coasts, but absent from within Strangford Lough until 1999.
N.B. Previously known as *Gibbula umbilicalis.*

Size: Up to 1.5 cm high and similar width.
Colour: Greyish shell with very narrow reddish purple bands.
Similar species: Could be confused with the flat topshell (*Steromphala umbilicalis*) however this species has a larger, more rounded umbilicus above the aperture.
Key identification features:

- Grey shell with narrow bands of reddish purple
- Small oval-shaped hole (umbilicus) above aperture of shell
- Shell has 5–7 whorls

Habitat: Under stones and on seaweeds on the low shore.
Distribution: Frequent on all coasts.
N.B. Previously known as *Gibbula cineraria.*

Thick topshell - *Phorcus lineatus*

Size: up to 3 cm high by 3 cm at base of shell.
Colour: Greyish with purplish zigzag markings.
Similar species: Could be confused with *Steromphala cinerea* and *Steromphala umbilicalis* but this is a taller shell.
Key identification features:

- Thicker and heavier than other topshells
- Distinctive tooth on inner side of aperture
- Inside of shell is pearly-white
- Outer rim of aperture has a contrasting broad, black margin

Habitat: On the mid shore of moderately exposed coasts.
Distribution: This is a southern species in NI, it is quite common on the east coast, south of Strangford Lough but has recently become established within the lough and the outer Ards peninsula. It is also found on the north coast, near Portrush.

Size: Usually 3 cm high x 2 cm wide.
Colour: Varies but is usually cream to greyish-white.
Similar species: Juveniles with sculptured shells could be confused with *Littorina saxatilis* however the siphonal canal on the underside of the shell is characteristic for the dog whelk.
Key identification features:

- Heavy shell
- Shell has 5 large whorls
- Outer lip of shell is thick and toothed in adults
- A short canal-like groove runs from the base of aperture to outer margin of shell.

Habitat: On rocky shores from mid to low shore, feeds on barnacles.
Distribution: Common on all coasts.

Size: Shell about 10 mm long.
Colour: The shell is pale brown with white ridges but no black spots. The proboscis is pale translucent yellow and there are yellow spots on the tentacles and foot.
Similar species: The spotted cowrie (*Trivia monacha*) is similar but the body of that animal is more brightly coloured, with an orange proboscis and 3 black spots on the shell.
Key identification features:

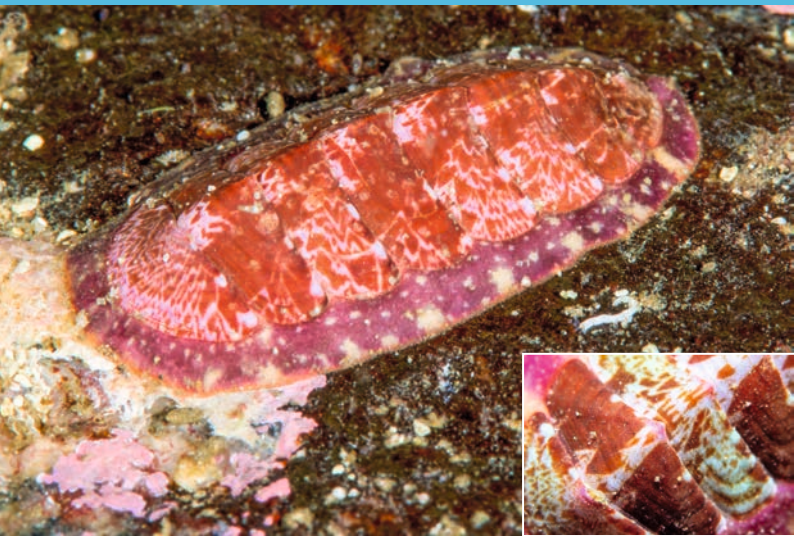
- Oval cowry shell with transverse ridges
- No spots on shell
- Edge of mantle (tissue wrapped around the shell) has dark spots

Habitat: Found under boulders on the low shore, usually with sea squirts on which it feeds.
Distribution: Occasional on all coasts.

Size: Up to 12 mm long x 8 mm wide.
Colour: Shell is white with brown horizontal stripes, heat, tentacles, foot and siphon are bright orange.
Similar species: Similar to the arctic cowrie (*Trivia arctica)* but distinguished by the presence of 3 dark spots on the shell.
Key identification features:

- Small oval shell with distinctive horizontal ridges
- 3 reddish-brown spots on top of shell are diagnostic
- Shell has a glossy appearance
- Underside of shell has a long, narrow and tooted aperture
- When alive, there is a colourful mantle of tissue wrapped around the shell and a long, orange siphon pointing forwards

Habitat: On the low shore beneath boulders and stones, it feeds on colonial sea squirts and also lays its eggs in the sea squirt mass.
Distribution: Occasional on all coasts.



Size: A relatively large chiton, up to 4 cm long.
Colour: Shell plates are pinkish-brown with white marbling.
Similar species: Difficult to distinguish from *Tonicella rubra*, however *T. rubra* only grows to 2 cm.
Key identification features:

- In chitons the shell is made up of 8 interlocking plates
- Marbled shell plates
- The girdle that surrounds the shell plates is broad and leathery with granules
- Shell plates have a distinct beak

Habitat: Undersides of rocks and beneath boulders on the low shore.
Distribution: A northern species, reported from the east and north east coast of NI.

Size: Usually 5–7 cm but can be up to 20 cm.
Colour: Variable, usually dark red or brown.
Similar species: No similar species.
Key identification features:

- 2 rolled head tentacles
- 2 rolled oral tentacles
- Humped back
- Thin shell, hidden by lateral flaps

Habitat: Amongst red or green seaweeds on which it feeds.
Distribution: Frequent in rock pools on all coasts.

Size: Up to 12 cm long.
Colour: Variable – yellow, pink, orange or brown mottling.
Similar species: *Geitodoris planata* is similar but is much flatter with paler star-shaped markings on the mantle.
Key identification features:

- A large sea slug
- Two sizes of wart-like tubercles on topside of animal
- Circle of 8–9 feather-like gills towards the back of animal
- Gills and head tentacles can be retracted when disturbed

Habitat: Underneath boulders on the low shore – feeds on the breadcrumb sponge *Halichondria panicea.*
Distribution: Frequent on all coasts.

Size: Up to 12 cm long.
Colour: Translucent white with scattered freckles of grey or brown.
Similar species: Until 2016 this was called *Aeolidia papillosa* but *A. papillosa* doesn't have the white Y-mark on its head and is usually found in the subtidal.
Key identification features:
- Y-shaped white mark on front of head
- Back of animal covered in finger-like processes (cerata)

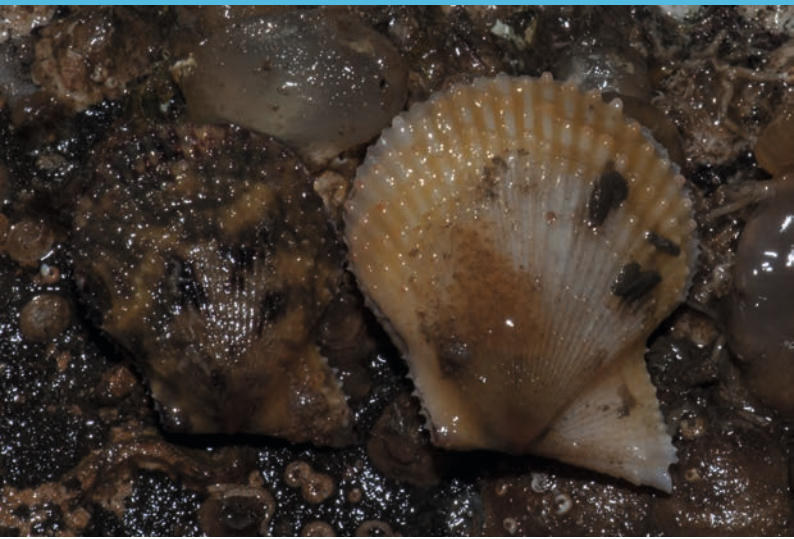
Habitat: Underneath boulders and in rock pools on the low shore – feeds on the beadlet sea anemone (*Actinia equina*).
Distribution: Frequent on all coasts.

Blue mussel - *Mytilus edulis*

Size: Usually 1–10 cm long but may reach 20 cm.
Colour: Shell is brown-blue-black.
Similar species: Unlikely to be confused with other species in NI.
Key identification features:

- Blue-black mussel
- Firmly attaches to rocks and stones by a mass of strong, cartilaginous threads
- Inside of shell is pearly-white

Habitat: On rocks and stones from the high shore to the low shore – small juveniles occupy crevices in rock.
Distribution: Common on all coasts.



Size: Shell up to 6 cm long.
Colour: Variable, purple, red, white, yellow, brown, often patterned. Photograph shows patterned shell on left and white shell on right.
Similar species: Similar to the queen scallop, *Aequipecten opercularis* however this is usually a subtidal species and the auricles are almost equal in size.
Key identification features:

- Oval-shaped bivalve
- Both shells are convex
- 25–35 ribs on each shell which have small, spiny teeth
- Auricles (at hinge of shell) markedly unequal

Habitat: Attached to the underside of boulders on the low shore.
Distribution: Occurs on all coasts.

Size: Usually 10–30 cm across but can be up to 52 cm.
Colour: pale orange or orange-brown.
Similar species: Juveniles could be confused with the northern starfish *Leptasterias muelleri*, however in *A. rubens* the central row of white spines on each arm distinguishes these two species.
Key identification features:

- Body plump and rounded
- Soft, floppy texture in large individuals
- 5 tapering arms
- Central row of white spines on each arm
- Body very flexible
- Upper surface covered with irregularly arranged spines

Habitat: Usually on the low shore under overhanging rocks, seaweeds and boulders.
Distribution: This is the most common starfish in our region and can be found on all coasts.

Size: Usually less than 6 cm in diameter.
Colour: Varies, can be pink, violet, green, grey or brown.
Similar species: Could be confused with juvenile common starfish (*Asterias rubens*).
Key identification features:

- A small, spiny starfish, usually < 6 cm across
- 5 arms that are broad at the base and taper towards the tips
- Upper surface with many knobby spines arranged in rows

Habitat: Underneath boulders and in rock pools from the mid shore down to the low shore.
Distribution: Occurs on all coasts.

Common cushion star - *Asterina gibbosa*

Size: Up to 5 cm.
Colour: Usually green with yellowish-orange spines.
Similar species: Similar to the tiny cushion star - *Asterina phylactica.*
Key identification features:

- A small starfish
- Body star-shaped with 5 short, stubby arms
- Topside is humped, underside is flat
- Small juveniles are males but as they increase in size they develop into females

Habitat: Under rocks and stones on the low shore.
Distribution: Common on all coasts.

Size: Up to 1.5 cm in diameter.
Colour: Green and orange.
Similar species: Similar to the common cushion star - *Asterina gibbosa.*
Key identification features:

- A tiny cushion star
- Star-shaped body with 5 very short arms
- Distinctive dark orange star-shape at the centre of the upper surface

Habitat: Under boulders and also in rock pools on the low shore.
Distribution: This species was only described in 1979, prior to that it was mistaken for juveniles of *Asterina gibbosa*. So far there are records from Strangford Lough, Rathlin Island, the north coast and one record from Kearney, Co Down.

Common brittlestar - *Ophiothrix fragilis*

Size: Disc up to 2 cm across.
Colour: Variable - bright red, brown, purple, blue or banded.
Similar species: Unlikely to be confused with any other intertidal brittlestar.
Key identification features:

- 5 long, spiny arms
- Disc is pentagonal
- Arms are often banded
- Arms are very fragile and break easily

Habitat: Under boulders and stones on the low shore, more common in tideswept areas.
Distribution: Common on all coasts.

Size: Disc up to 3 cm across.
Colour: Usually dark brown or black.
Similar species: Unlikely to be confused with any other species
Key identification features:

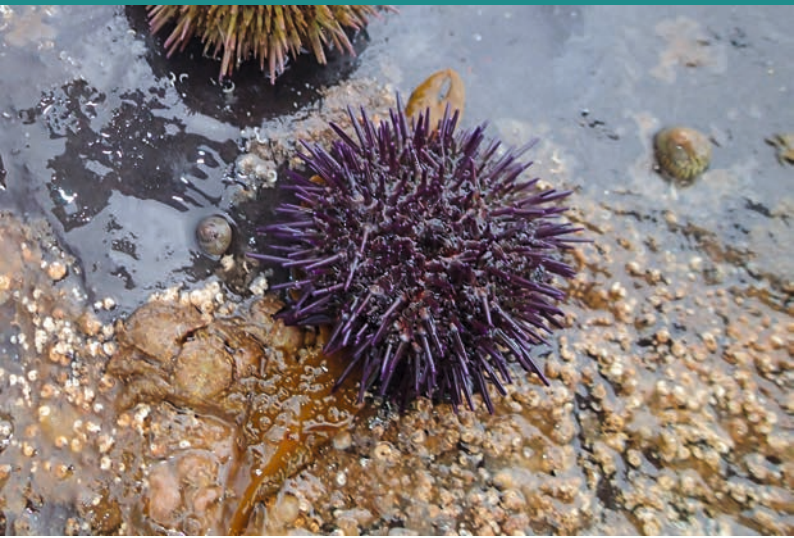
- Central disc is round and flatish
- 5 long, tapering arms
- Usually dark brown or black
- Arms have a row of small, even spines down each side

Habitat: Amongst boulders, bedrock and gravel on the low shore.
Distribution: Frequent on all coasts.

Size: Usually 3.5 cm across but can be up to 5.7 cm.
Colour: Green shell, spines have purple tips.
Similar species: Could be confused with the northern sea urchin (*Strongylocentrotus*) or the purple sea urchin (*Paracentrotus*) but neither of these species have green spines with purple tips.
Key identification features:

- Roundish sea urchin, broader than tall
- Fine, tapering spines arranged in neat longitudinal rows
- Greenish colour, purple tips to spines

Habitat: Beneath boulders and seaweeds on the low shore.
Distribution: Widespread on all coasts.



Size: 6–7 cm across.
Colour: Dark purple to dark green.
Similar species: Paler specimens are sometimes confused with the green sea urchin (upper specimen in this photograph).
Key identification features:

- Round, flattened shell
- Smooth, solid spines, more irregular than green sea urchin
- Spines are long and sharp

Habitat: Found in low shore rock pools on exposed coasts where it uses its spines and teeth to excavate burrows in limestone.
Distribution: A south western species, common on the western coasts of Ireland but in Northern Ireland it has only been recorded from the north west coast, close to Portrush.

Edible sea urchin - *Echinus esculentus*

Size: Usually around 10 cm but can be up to 16 cm in diameter.
Colour: Shell is brick red, brown or purple, spines are white, often with purple tips.
Similar species: Unlikely to be confused with any other species.
Key identification features:

- The large size (10–16 cm)
- Bright brick-red colour with white spines

Habitat: Usually a subtidal species can be found amongst kelp on extreme low tides.
Distribution: Common on all coasts.

Size: 5–15 cm long.
Colour: White.
Similar species: the feeding tentacles are similar to the sea cucumber *Aslia lefevrei* however the white body with tube-feet in rows is diagnostic.
Key identification features:

- Long, cylindrical body
- 5 longitudinal rows of long, white tubercles (tube feet)
- Feeding tentacles (when expanded in water) are black with transparent white patches

Habitat: Beneath boulders that are lying in water and in crevices in rock on the low shore.
Distribution: Occasional on all coasts.

Size: Up to 6 cm.
Colour: Translucent yellowish-green.
Similar species: Could be confused with greyish *Ascidia mentula* or *Ciona intestinalis.*
Key identification features:
- Elongate, oval shaped body
- One siphon is at the top of the body, the second is two-thirds of the way down the body.

Habitat: Under boulders and in crevices on the low shore
Distribution: Common on all coasts.

Size: Sheet forming colonies made up of individual zooids that are 2-4 mm across.
Colour: Very variable, can be red, white, yellow, blue, brown or violet.
Similar species: Can be confused with *Botrylloides* species.
Key identification features:
- Fleshy, gelatinous sheet
- Zooids are arranged in star-shaped formations

Habitat: Found growing under boulders and attached to seaweed on the low shore mainly in sheltered locations.
Distribution: Common on all coasts.

Size: Up to 25 cm long.
Colour: Mottled brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Eel-like body that is flattened from side to side
- Row of 12 conspicuous dark spots that have white outer ring
- One long dorsal fin on back
- Head smaller than body
- Very slippery to hold, hence the name ‘butterfish’.

Habitat: Beneath boulders and amongst seaweed on the low shore and in mid shore rock pools, often out of water.
Distribution: Common on all coasts.

Size: Up to 12 cm long.
Colour: Mottled brown.
Similar species:
Key identification features:

- Rounded head
- Large eyes on top of head
- 2 dorsal fins
- Pale band on first and second dorsal fins

Habitat: Usually found on shores that have a lot of seaweed, under stones and in rock pools on the low shore.
Distribution: Most records are from Strangford Lough but there are occasional records from Belfast Lough and Larne Lough.

Connemara clingfish - *Lepadogaster candollii*

Size: Up to 7.5 cm long.
Colour: Females are usually yellowish-green, males are reddish-brown, sometimes mottled or banded.
Similar species: Two-spotted clingfish (*Diplecogaster bimaculata*).
Key identification features:

- Flattened pear-shaped head
- Large rounded snout
- Pelvic fins form a sucker on the underside of body

Habitat: Under boulders and seaweeds on the low shore.
Distribution: So far the only records are from Strangford Lough and one record from Portrush.

Size: Up to 6 cm long.
Colour: Light brown.
Similar species: Could be confused with the striped sea snail *Liparis liparis* and juvenile lumpsuckers.
Key identification features:

- Soft, slimy fish
- Large, blunt, rounded head
- Smooth tapering body
- Sucker on underside
- Single long dorsal and anal fin

Habitat: Under boulders and rocks on the low shore.
Distribution: So far only recorded from Strangford Lough, Belfast Lough and the entrance to Larne lough.

Worm pipefish - *Nerophis lumbriciformis*

Size: Up to 15 cm long.
Colour: Dark brown.
Similar species: Unlikely to be confused with other species.
Key identification features:

- Long, slender, worm-like body
- Short, upturned snout similar to a sea-horse
- No pectoral, anal or tail fins
- 1 small dorsal fin

Habitat: Under boulders and seaweeds on the low shore, often out of water.
Distribution: Common on all coasts.

Size: Up to 16 cm long but typically 10–12 cm.
Colour: Mottled grey and brown to dark brown.
Similar species: Unlikely to be confused with other shore fish.
Key identification features:

- Large head
- Elongate body
- Large eyes on sides of head
- No head tentacles
- Slimy skin without scales
- A notch separates the dorsal fin into two parts

Habitat: Under boulders and seaweeds on the low shore, often out of water.
Distribution: Common on all coasts.

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Sinistral spiral worm 39
Snakelocks anemone 35
Spiral wrack 11
Spirobranchus lamarcki 37
Spirobranchus triqueter 37
Spirorbis borealis 39
Spotted Cowrie 67
Star sea squirt 85
Steromphala cineraria 63
Steromphala umbilicalis 62
Strawberry worm 38
Sugar kelp 19
Sycon ciliatum 33

T

Testudinalia testudinalis 57
Thick topshell 64
Thong weed 15
Tiny cushion star 77
Tonicella marmorea 68
Tortoiseshell limpet 57
Trivia arctica 66
Trivia monacha 67

U

Ulva lactuca 28
Undaria pinnatifida 20

V

Variegated scallop 73
Velvet swimming crab 48

W

Wireweed 23
Worm pipefish 90

X

Xantho hydrophilus 50
Xantho pilipes 51
Xanthoria parietina 6

Y

Yellow foliose lichen 6


0 cm 1 2 3 4 5 6 7 8 9 10 11 12 13 14