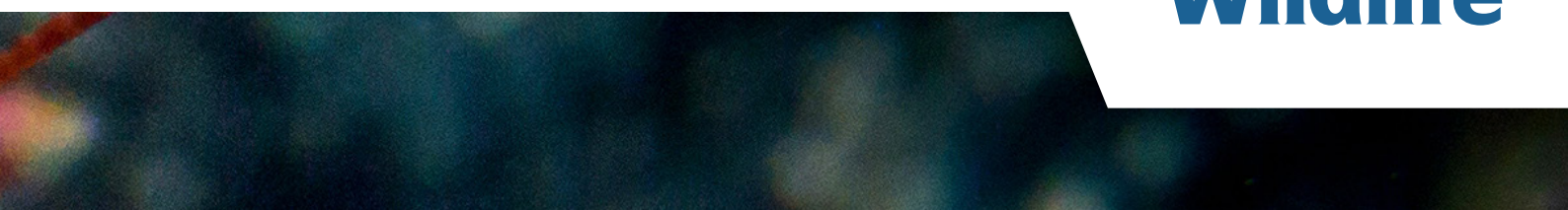
**Prawn** © A Davidson

# LIVING SEAS ACTIVITY PACK

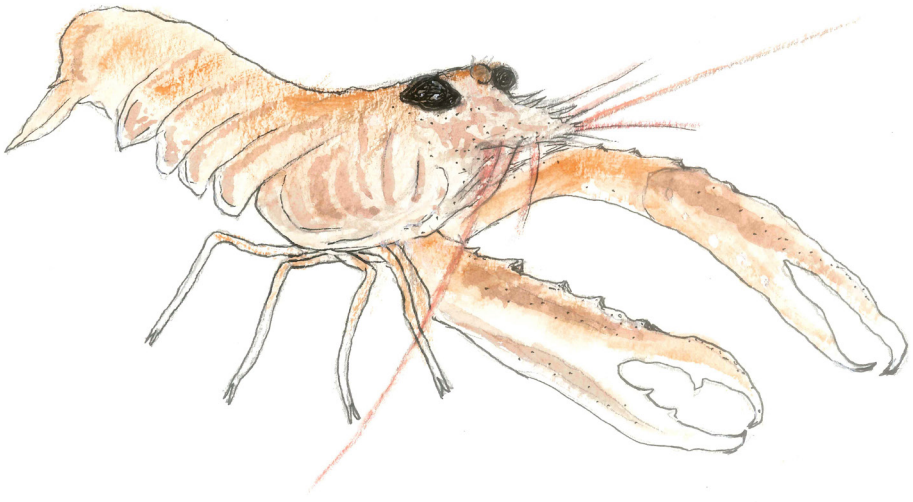
Ulster Wildlife



**Boy with spiny starfish** © J A Welsh

# What's Inside





**Dublin Bay prawn** © Shirley Whiteside

# 1. Introduction

## Ulster Wildlife is your local wildlife charity. We've been champions of nature for over 35 years and are working hard to ensure that wildlife has a future in Northern Ireland.

We work with local people to secure space for nature in our countryside, towns, coastlines and seas. Our work is guided by our two key themes of Living Landscapes and Living Seas.

Ulster Wildlife is one of 47 independent Wildlife Trusts across the UK. The Wildlife Trusts partnership is the largest UK voluntary movement dedicated to protecting the full range of our native habitats and species.

## Ulster Wildlife's vision for our local seas.

Living Seas is Ulster Wildlife's vision for the future of Northern Ireland's seas. Within Living Sea's wildlife thrives, from the depths of the ocean to our coastal shallows.

Although the seas around Northern Ireland are full of amazing creatures, sadly there are not as many as there used to be. Thankfully, it is not too late to turn around this decline. Our seas and the life within them have a remarkable capacity to recover – but only if we give them the chance.

If we act now, Living Seas are within our grasp. Ulster Wildlife sees this as a marine decade, a real chance for us all to protect our local seas for now and for future generations.

Ulster Wildlife is working to –

- Inspire people about our local sea life and to value the sea for the many ways in which it supports our quality of life, through education and public events.
- Secure a network of marine protected areas as part of a long-term solution to the management of healthy seas.
- Ensure developments and activities in our seas are sustainable by influencing the marine planning process.
- Ensure our seas and sea life are properly protected through fit-for-purpose marine and fisheries legislation and practice

In Northern Ireland we are never more than 35 miles from the sea yet many of us are not aware of the wealth of nature that lives in and visits our local seas and shores. Much of this world is hidden beneath the waves, and Ulster Wildlife is working to raise awareness of our hidden gems and why they are worth protecting.

### Why we created this resource.

In order to stimulate a change in the perceptions of local people living in Northern Ireland toward our seas it is important to engage with the education sector as this helps to ensure the sustainability of the message.

It is also ideal for community groups and local youth groups to dip into as an inspiration for activities.

Ultimately, future generations may be inspired by their interaction with this topic area and respond with a desire to become the environmental stewards of the future.

It is anticipated that this pack will be used throughout Northern Ireland to aid in both formal and informal education and engagement with our local marine environment. It can be used a resource to create and implement follow up sessions after a 'Living Seas' workshop is delivered by Ulster Wildlife, such as 'Ocean Giant's', 'Experiencing Our Seas' or 'Love Our Living Seaweeds' and directly links into the same themes with supplementary information and activity ideas.

As these education workshops and the Living Seas Activity Pack have strong links to KS1 and KS2 curriculum, it is hoped that the following information will stimulate the interest of teachers and group leaders in activity ideas and subject areas and provide support in communicating the importance of the wildlife we have in our seas around Northern Ireland.

## Ulster Wildlife's Living Seas Education Sessions include:

### Ocean Giants:
Using life-sized inflatable marine creatures these sessions are focused on the grey and common seal, the harbour porpoise, the bottlenose dolphin and the basking shark.

### Experiencing Our Seas:
Bringing the rocky shore into the classroom this interactive session uses a touch tank of intertidal creatures to bring the secrets of the sea into school.

### Love Our Living Seaweeds:
Our seas are home to a wealth of different seaweeds, around 500 different varieties can be found locally! Learn more with this session which also includes seaweed pressing.

Contact our Discovery and Learning Team to find out more or to book a session - you will find details on our website - www.ulsterwildlife.org/discover-learn

# 2. Links to the Curriculum (Key Stage 1 & 2)

## The *Living Seas* education sessions and supporting information within this booklet are extensively linked to KS1 and KS2 'The World Around Us', offering elements across all four strands including:

| | |
|---|---|
| **Strand 1: Interdependence**<br><br>What else is living?<br>How do living things survive?<br><br>· plants and animals rely on each other within the natural world<br>· there is a variety of plant and animal life in the world<br>· the effect of people on the natural environment over time<br>· human waste can be harmful for living things in the environment<br>· interdependence of people, plants, animals and place<br>· people's actions can affect plants, animals and places<br>· living things rely on each other within the natural world<br>· the interdependency that exists in simple food chains and webs | **Strand 3: Place**<br><br>What is in my world?<br><br>· seasonal change causes animals to move<br>· we share our world with other living things<br>· similarities and differences among plants and animals in their locality<br>· positive and negative effects of natural and human events upon place over time<br>· the importance of recycling and its benefits<br>· the ways in which people may conserve and change the environment both locally and globally |
| **Strand 2: Movement & Energy**<br><br>Why do people and animals move?<br><br>· reasons why people and animals move from place to place<br>· animals move in a variety of ways<br>· seasonal change causes animals to move<br>· changes to the environment can cause people and animals to move | **Strand 4: Change Over Time**<br><br>How do things change?<br>How can we make change happen?<br><br>· change is a feature of the human and natural world and may have consequences for our lives and the world around us<br>· organisations work to protect the environment and wildlife<br>· long or short term climatic changes are impacting on our environment<br>· the effect of positive and negative changes globally and how we contribute to some of these changes<br>· the importance of conserving the environment including protection of habitats and wildlife |

# 3. Living Seas

**The following is a brief introduction for teachers and group leaders to our local Living Seas covering local habitats, biodiversity and ecosystems. Themes and topics are related to interactive learning where possible so look out for the relevant activity symbols at the bottom of each page:**

## 3.1. Habitats

Northern Ireland's diverse coastline extends over 400 miles, from dramatic headlands and rocky shores to sheltered bays, through five sea loughs to wide sandy beaches and dunes. The sea itself consists of a dynamic merging of warm southern ocean water and cooler northern ocean water creating a marine environment home to some of our most fascinating wildlife, including grey seals, puffins and dolphins.

Along our shores, rockpools teem with anemones and starfish, while further offshore, underwater mud plains, which may appear to be barren and lifeless, host complex seabed communities including bristle worms, spidercrabs and lobsters. Colourful reefs, seagrass meadows and dramatic kelp forests make up just a fraction of the wealth of extraordinary marine habitats in the seas around Northern Ireland, which support a huge diversity of plants and animals. Why not watch our Living Seas film? Find it at www.ulsterwildlife.org/livingseas/livingseas-film

**Some of our unique marine habitats include:**

- The reefs and sea caves of Rathlin Island which are home to sponges, soft corals and anemones; many of which are found nowhere else in the world.
- The intertidal mud flats and saltmarshes of Strangford Lough, which are the winter home for many waterfowl including the light-bellied brent geese that travel all the way from Canada.
- The reefs which the horse mussel has formed on the bottom of Strangford Lough which are made up of living plants and animals rather than rock or chalk.
- The coral-like algae (maerl) beds off the East Antrim coast, built upon fossil beds that are up to 6000 years old! The beds harbour a rich diversity of animals which are an important nursery ground for scallops, and other key commercial species
- The dynamic coastline of rugged cliffs, geological formations and secluded bays carved by the Atlantic waves, which together create the magnificent views at the Giant's Causeway and Causeway Coast World Heritage Site.
- The kelp forests which hug the coast of Northern Ireland. An extremely important habitat, kelp forests provide food, shelter and nursery grounds for fish and other animals living in the ocean.

**Horse mussel** © B Picton

**Kelp** © R Spray

## 3.2. Biodiversity & Ecosystems

Biodiversity is the short term used for 'biological diversity', which is the total variety of life on earth including all living plants and animals, and the habitats in which they live. When we talk of marine biodiversity we are considering everything, from tiny microorganisms to the huge, awe-inspiring basking shark. Scientists guess that there are around ten million different species in the natural world and most species have yet to be discovered, some may even become extinct without us ever having known they existed!

Everything in the natural world is connected. An ecosystem is a community of living and non-living things that work together in a natural system. Just like food webs, ecosystems have no set size; they can be as large as a rainforest or sea lough or as small as a tree or a puddle. In ocean ecosystems the water, water temperature, salinity, plants, animals, air and light all work together to ensure the proper balance.

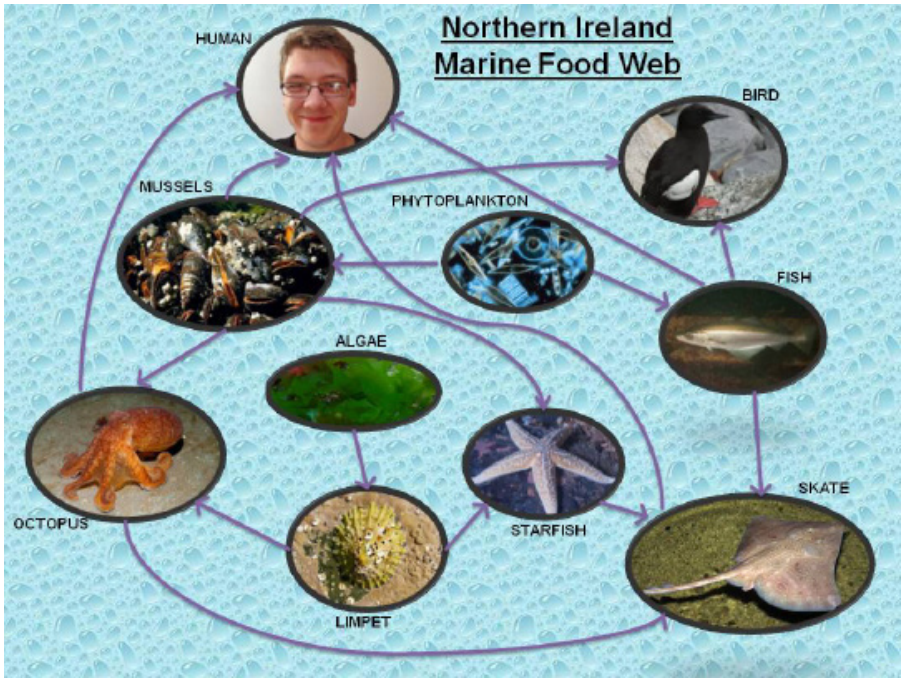
If there isn't enough light or water, seaweeds and tiny 'plants' known as phytoplankton will die or decrease in numbers. Despite the small size of phytoplankton, these microscopic creatures transform energy from the sun which is vital to our ocean's productivity.

They are at the base of the marine food web; meaning that there can be negative cascading effects on a whole ecosystem if there aren't phytoplankton-rich seas. This helps us understand that we should care for all species in an ecosystem, not just the large, charismatic species.

Our marine biodiversity is important for sustaining healthy marine ecosystems as each individual organism has an (environmental) role to play on which other species depend. In fact many creatures have what is known as a 'symbiotic relationship' with one another, meaning that they depend on each other to provide certain benefits such as shelter, camouflage, protection from predators and even personal hygiene benefits.

## 3.3. Food Webs and Food Chains

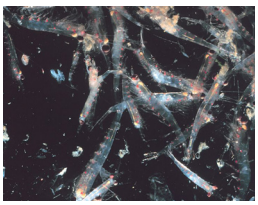
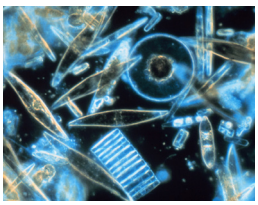
The organisms that live within various marine ecosystems are as diverse as the ecosystems themselves and with this level of complexity it can be daunting to teach principles of biodiversity and ecosystems to KS1 and KS2, but there are simple ways to condense these complex messages.




Photos provided for the food web by: P. Naylor, B. Picton, P. Kay, G. Taylor, C. Goodwin, F. Lacey, A. Guthrie.

Using food chains and food webs helps to bring ecosystems into perspective a little better. A food chain is a simple model for who eats what; a good marine example could look like this:

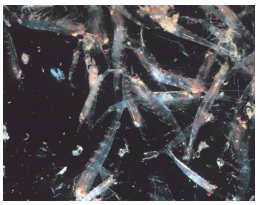
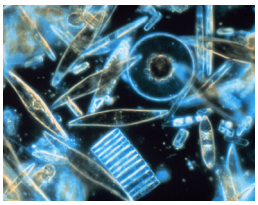


**Orca (Killer Whale)** eats> **Seal** eats> **Cuttlefish** eats> **Krill** eats> **Phytoplankton**

Humans have a role to play in marine food chains also, for example:



**Human** eats> **Cod** eats> **Cuttlefish** eats> **Krill** eats> **Phytoplankton**

Photos provided for the food chain by: G. Day, T. McDonnell, P. Naylor, J. Hall, G. Taylor

Food chains and food webs show the flow of energy through an ecosystem. Food chains are a more simple display of energy flow, while food webs show the multiple interactions among the different types of plants and animals. Food webs are generally a more realistic portrayal of the energy flow in the system as most organisms eat more than one type of food and can be eaten by more than one type of predator.

In fact, through the process of recycling, food webs are never ending; top predators die producing detritus which detritivores such as hermit crabs feed on and the entire chain of energy flow begins again.

The seas aren't just important for wildlife however; they provide significant value to society also, known as 'ecosystem services'. The ocean provides food from fish and shellfish to seaweed; a space for transport; recreational activities and it also gives us opportunity for human development through education and research.

Most importantly, the ocean provides oxygen in the air that we breathe. Phytoplankton has the same job that rainforests have on land in balancing and maintaining the earth's climate. In fact, rainforests provide about half of the oxygen in the air we breathe and phytoplankton in our seas provides the other half.

## 3.4. Threats & Protection Measures

Unfortunately, there are many threats which currently face our seas today. These include the impacts of climate change, over-fishing, pollution and litter, aggregate extraction and coastal development.

Overfishing both from commercial fishing, recreational fishing and illegal unregulated or unreported fishing is a huge threat to the health and diversity of our oceans. A controversial issue related to fishing practices is also 'bycatch', which is when other animals that were not targeted or intended as catch are killed in the process of fishing. Throughout the oceans fish stocks are critically over-exploited and once abundant species are now smaller and less common.

Particular fishing practices can also cause habitat damage, as fishing gear can damage the seabed and destroy habitats. Coastal development for housing, industry and coastal protection works are also causing coastal habitat loss along with mining of marine sand and gravel beds for use in building and road construction. Gravel beds are some of our richest wildlife habitats and are spawning grounds for important commercial species such as herring.

Pollution is one of the most serious threats to marine life, and the seas around the UK are among the busiest in the world. This includes high levels of chemical runoff from the land and plastic litter which can entangle wildlife and is often mistaken for food (e.g. leatherback turtles, which have been found visiting our local waters, often consume plastic bags confusing them for jellyfish, their main source of food). The ocean is also subject to noise pollution from development, to hazardous and radioactive substances and discarded fishing gear.

Currently less than 1% of the world's oceans are fully protected from all damaging activities. In Northern Ireland, approximately 14% of our waters are afforded some kind of legal protection based on a network of protected areas including Special Areas of Conservation (SAC), Special Protection Areas (SPA). Now with the new Marine Act (Northern Ireland) 2013 we also have Marine Conservation Zones (MCZs) – Strangford Lough has been designated as the first local MCZ and more will be following over the next few years.

Our seas are busier than ever, with increasing use of their resources from fishing to renewable energy developments, recreational opportunities to communications cables being laid. Ulster Wildlife wants future generations to be able to enjoy the riches of our seas, such as local seafood, but to do this we need to make sure we get the balance right. Ensuring this means that we will have healthy and abundant seas for our future.

**Strangford Lough** © M Hartwell

# 4. Species Spotlight

## Here in Northern Ireland we have a fascinating variety of animals that visit or make a home in our local waters.

Teachers and group leaders can use the following **species profiles** alongside the Sea Life Wall Chart as a focus and/or source of supplementary information.

Remember to look out for the Activity Symbol beside certain species for associated activity ideas and further learning: .

Another useful resource is Ulster Wildlife's interactive coastal map. You will find out more about the species that live in, on and around our seas at **www.ulsterwildlife.org/living-seas/interactive-map**

# Basking Shark

*Cetorhinus maximus*

Ulster Wildlife

© JP Trenque

**About**

Basking sharks belong to the fish family and although they are sharks, they have no teeth. They have a huge mouth which they use to filter in food. They are the second largest fish in the world after the whale shark. They swim when feeding with their fins above the surface of the water and their mouths open wide.

**Where**

Generally lives in open waters for most of the year but migrates towards the shore in summer. Can be spotted all around Ireland, especially the west coast.

**Local Hotspots**

Portrush, Torr Head, Ballycastle, Malin Head.

**Size**

Up to around 7 metres long and weighing up to 7 tonnes.

**Lifespan**

Approximately 50 years.

**Diet**

The basking shark feeds mostly on zooplankton, tiny animals that it filters through special gills. These are like bristles that catch the food as the water is passed through the mouth and over the gills.

**Did you know?**

- The basking shark can filter 2000 tonnes of sea water per hour.
- Its huge liver makes up 25% of its body weight.
- The basking shark was once heavily targeted for its liver oil, meat and fins, the last UK fishing operation ceased only in the mid-1990s.
- The basking shark is a unique filter-feeding shark as it is the only one that feeds entirely passively by swimming through water with its mouth open rather than actively sucking in water for filtering.

**Recorded distribution of Basking Sharks:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Horse Mussel

*Modiolus modiolus*

Ulster Wildlife

© Bernard Picton

**About**

Horse mussels are related to the blue mussels that we normally eat but they are larger and are not edible. Young mussels provide an easy meal for starfish and crabs; however when adult horse mussels join up together in clumps they are more difficult to break apart. They range in colour depending on their age from light blue and darkening to dark brown in older species.

**Where**

Horse mussels are extremely important creatures that create homes for other animals to live on by forming clumps or extensive reefs on the sea bed. They provide small crevices which are used by young animals as places to hide from predators.

**Local Hotspots**

Strangford Lough, Ards Peninsula.

**Size**

Between 3.5cm and 20cm.

**Lifespan**

It isn't uncommon to find horse mussels over 25 years old in waters around the UK. It is estimated that they live to over 50 years.

**Diet**

Horse mussels are active suspension feeders meaning that they pump water through openings in their body and filter out food particles such as tiny plants and bacteria suspended in the water.

**Did you know?**

- Its ability to form reefs in soft sediment means it can provide an invaluable habitat for other marine life. The horse mussel reefs in Strangford Lough provide a home for over 270 other species.
- Strangford Lough used to be a popular home for horse mussels, but they have been heavily damaged.

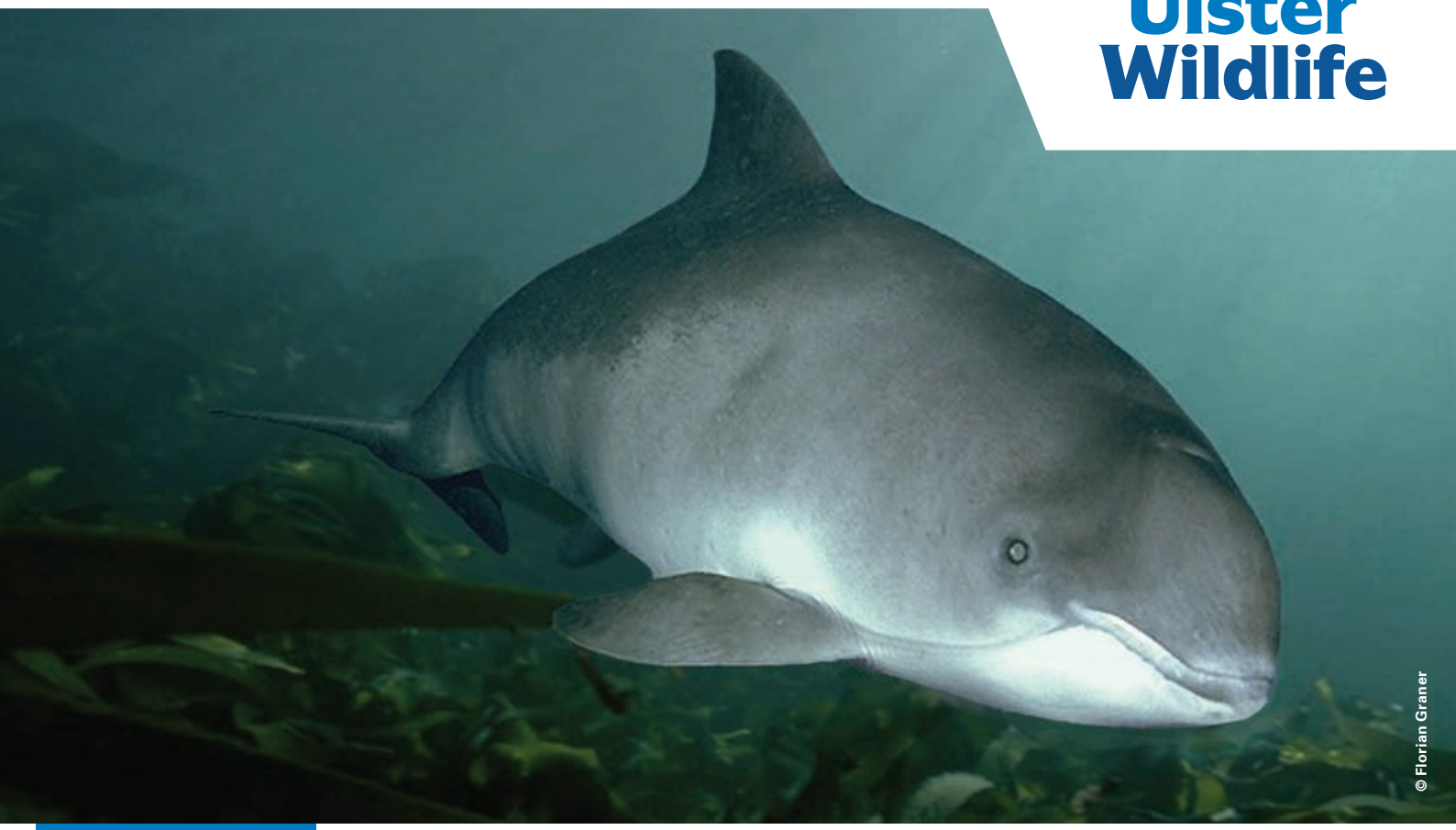
**Recorded distribution of Horse Mussel:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Harbour Porpoise

*Phocoena phocoena*

Ulster Wildlife



© Florian Graner

**About**

The harbour porpoise is one of the smallest marine mammals with a blunt beak and mouth that turns up like a smile at the edges. Its back and sides are dark grey fading to a pale coloured belly. They are a sociable animal often seen in groups ranging between two and eight.

**Where**

Found all around the coast of Ireland. Can be spotted close to the shore, in harbours or sometimes even ventures up rivers.

**Local Hotspots**

Skerries near Portrush, Maidens (off Islandmagee), Belfast harbour, Strangford Lough.

**Size**

Average length 1.5m.

**Lifespan**

10–20 years.

**Diet**

Fish such as herring, mackerel, sprat and pollock make up the bulk of the harbour porpoise's diet with an occasional squid or octopus. When they capture their prey the harbour porpoise turns it around so that it can be swallowed head first. This ensures that the bones don't get stuck in their throat.

**Did you know?**

- Feeding seabirds may help pinpoint harbour porpoises' location, when looking for the species.
- The Skerries near Portrush is the first Special Area of Conservation (SAC) in the UK to include the harbour porpoise as a qualifying feature for protection.

**Recorded distribution of Harbour Porpoise:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Bottlenose Dolphin

*Tursiops truncates*

Ulster Wildlife

© Doug Perrine

**About**

A curious and friendly dolphin with a fairly short beak, a rounded forehead and a sharp crease between the beak and forehead. It has a grey body and white belly with a tall, slender sickle-shaped dorsal fin. They sometimes travel in groups of up to 30 individuals together known as a pod.

**Where**

Wide range of habitats from rivers, shallow seas and deeper water, in coastal waters and shipping routes.

**Local Hotspots**

All along the north coast.

**Size**

Adult length ranges between 2m and 4m and weighs 400kg on average.

**Lifespan**

Average life span 25 years.

**Diet**

Dolphins use echolocation to search for prey. Similar to sonar, they emit clicking sounds and listen for the return echoes to locate the whereabouts of potential prey. They usually hunt in groups, feeding on bottom-dwelling fish, shrimp and squid.

**Did you know?**

- Bottlenose dolphins use sound for communication, including squeaks and whistles emitted from the blowhole and sounds emitted through behaviour, such as leaping from the water and slapping their tails on the water surface.
- They sometimes follow fishing boats in the hope of getting leftovers.
- They have been known to reach over 18 miles an hour when swimming.

**Recorded distribution of Bottlenose Dolphin:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Thornback Ray

*Raja clavata*

Ulster Wildlife


**About**

A diamond shaped ray with large, wing-like pectoral fins. It is covered with numerous prickles along its back giving the thornback ray its name. The colour of the thornback ray can be variable; commonly greenish grey with a marbled pattern which helps to provide camouflage on the sea bed.

**Where**

Can be found around Northern Ireland's coast, usually on sandy, muddy or shingle sea beds.

**Local Hotspots**

North Coast, Dundrum Bay, Strangford Lough.

**Size**

Up to 1m.

**Lifespan**

Average 20 years.

**Diet**

The thornback ray likes to eat bottom-feeding creatures with crabs and shrimp being its primary source of food, however it will also eat small fish such as herring, sprat and sand eels.

**Did you know?**

- The thornback ray covers itself with sand on the sea floor to hide itself, with two breathing holes behind the ray's eyes allowing it to breathe while covered.
- The thornback ray spends the winter in deeper water, migrating inshore to breed and lay eggs during the spring and summer.

**Recorded distribution of Thornback Ray:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Common Seal

*Phoca vitulina*

Ulster Wildlife

© Jamie Hall

**About**

The common seal, also known as the harbour seal, is the smaller of the two species of seal in our waters. It has a round yet streamlined body with a layer of blubber and a short coat to provide insulation against cold sea temperatures. Common seals have a wide, pronounced snout, large eyes and no external ears; the common seal does not have the sloping forehead of the grey seal and is described as more dog-like in appearance.

**Where**

Compared with grey seals, common seal distribution is more coastal and they are often seen in estuaries (river mouths) and may even venture upstream.

**Local Hotspots**

Minerstown, Skerries and Causeway, the Maidens, Strangford Lough.

**Size**

When fully grown, adult males may be only slightly larger than females: males can grow to 1.9 metres long and weigh 170 kg whereas females can reach up to 1.7 metres in length and weigh around 130 kg.

**Lifespan**

20 to 30 years.

**Diet**

Common seals feed on a varied diet of sand eels, cod, herring, sprat, flatfish, octopus and squid.

**Recorded distribution of Common Seal:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**Did you know?**

- A commonly recorded behaviour of seals is that of 'bottling', which refers to the seal resting vertically in the sea with just its head above the surface.
- Common seals favour sheltered rocky shores and sandbanks.
- Common seal pups are born in June and July in shallow water or on land.

**www.ulsterwildlife.org**

# Grey Seal

*Halichoerus grypus*

Ulster Wildlife

© David Martin

**About**

This is the larger of the two seals native to our waters. Over 40% the world's population of grey seals are found around the coasts of Britain and Ireland, and their numbers continue to increase. They are medium sized, with a big body. Their coat is dark grey on top and light grey underneath, with a pattern of spots over the whole body.

**Where**

Grey seals inhabit most coastal regions around Ireland; including many harbours, piers and marinas, although they prefer more remote, exposed rocky locations for coming on land.

**Local Hotspots**

Dundrum Bay, Skerries and Causeway, the Maidens, Strangford Lough.

**Size**

The male bull can reach over 2.5m in length and weigh up to around 350kg. It is much larger than the female cow which can reach almost 2m in length and weighs on average between 150–200kg.

**Lifespan**

20 – 30 years.

**Diet**

Grey seals feed from the ocean floor to the surface and in between, they even like to eat seabirds. Their prey includes smelt, skate, lumpfish, plaice, salmon, cephalopods and molluscs.

**Did you know?**

- They are the biggest land breeding mammal in the UK.
- They have two layers of thick fur and fat to keep them warm.
- The young pups have a white coat when born.

**Recorded distribution of Grey Seal:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Cuckoo Wrasse

*Labrus mixtus*

Ulster Wildlife

© Paul Kay

**About**

This colourful fish may look like it belongs in the tropics but it can be commonly found off the coast of Northern Ireland. Males have a striking blue head with blue lines and patches interspersed among beautiful orange and gold running the length of its body. Females are rosy pink and display a row of black and white blotches near the tail.

**Where**

Can be commonly found around the coasts of Britain and Ireland, the cuckoo wrasse favours rocky or hard ground and lives at an average depth of between 20m–80m.

**Local Hotspots**

Maidens, Red Bay, Rathlin Island.

**Size**

Up to 35cm for males and 30cm for females.

**Lifespan**

Up to 20 years.

**Diet**

They feed on crustaceans such as crabs, shrimps and barnacles.

**Did you know?**

- All wrasse are born female and are then able to change sex and become male.
- Male cuckoo wrasse are territorial and will follow divers around.
- The cuckoo wrasse breeds from May until July, with the nest being constructed by both the male and female.
- Females lay about 1000 eggs in a nest of seaweed, the nest is usually guarded by the male.

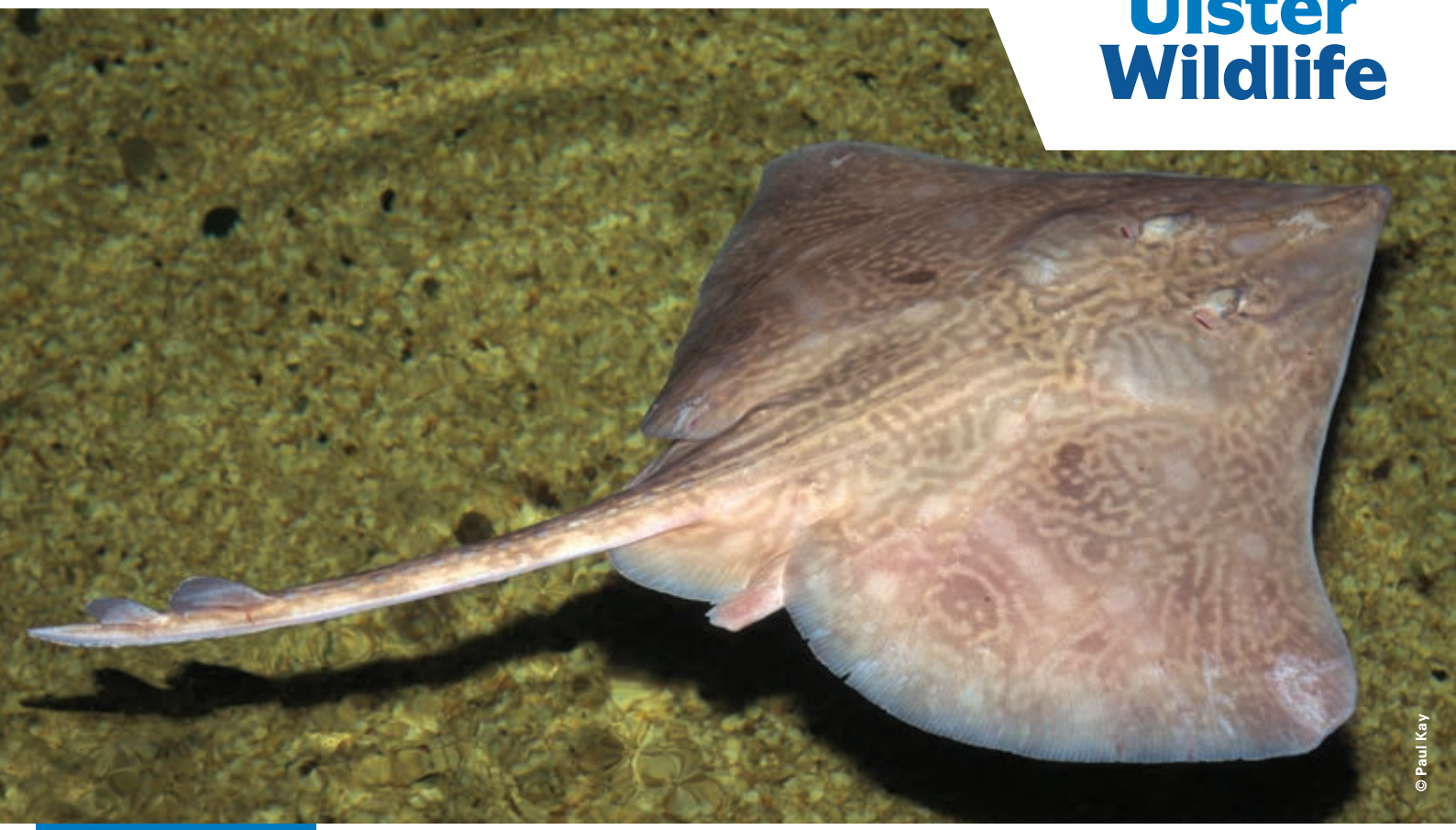
**Recorded distribution of Cuckoo Wrasse:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Common Skate

*Dipturus batis*

Ulster Wildlife




**About**

The common skate is a large skate with a long pointed snout. It can be identified by its brownish green topside which is covered with a scattering of lighter coloured dots and a grey underside.

**Where**

Sandy and muddy sea beds are where the skate is commonly found with the older members of the species living much deeper than the young.

**Local Hotspots**

The Maidens, Dundrum Bay, Strangford Lough. Rathlin Island and North Coast.

**Size**

1–2m commonly but females can grow to almost 3m making them the largest skate found in European waters.

**Lifespan**

5–100

**Diet**

The common skate is a very active hunter with a wide diet, it feeds on other skate as well as dogfish, anglerfish, gurnards, herring and also lobsters and crabs. They have between 40 and 56 rows of teeth to gnash with!

**Did you know?**

- In Northern Ireland the common skate is a Priority Species. It was one of the first fish species to be brought to the brink of extinction by overfishing and is now very rare in our waters.
- It is globally listed as Critically Endangered, one step below extinction in the wild, this means its protection is of paramount importance.

**Recorded distribution of Common Skate:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

# Conger Eel

*Conger conger*

Ulster Wildlife


**About**

A large powerful snakelike fish, the conger eel has no scales but smooth blue grey skin. Unlike most fish which have separate back and tail fins, the conger eel's fin is fused forming a fringe around its body.

**Where**

During the day time conger eels take refuge in crevices, nooks and crannies, and artificial environments such as shipwrecks. Conger eels can be found at incredible depths, 500m below the ocean but can descend further down to 4000m to spawn.

**Local Hotspots**

In rocky reefs all around our coast.

**Size**

Commonly around 2m but can reach 2.75m.

**Lifespan**

Around 15 years.

**Diet**

Hunts at night and preys upon other fish including smaller conger eels. They have strong jaws which are used to catch prey such as crabs and lobsters, which they then crack against rocks before devouring them.

**Did you know?**

- They spend their entire life in marine waters.
- They only spawn once and then die, before spawning they travel into warmer waters and undergo a gruesome transformation which includes changing colour and losing their teeth.
- The conger eel is famous for living within the wrecks of old ships, boats and within the nooks and crannies of steep sided cliff faces.
- They can be found at incredible depths, 500m below the ocean but can descend further down to 4000m to spawn.

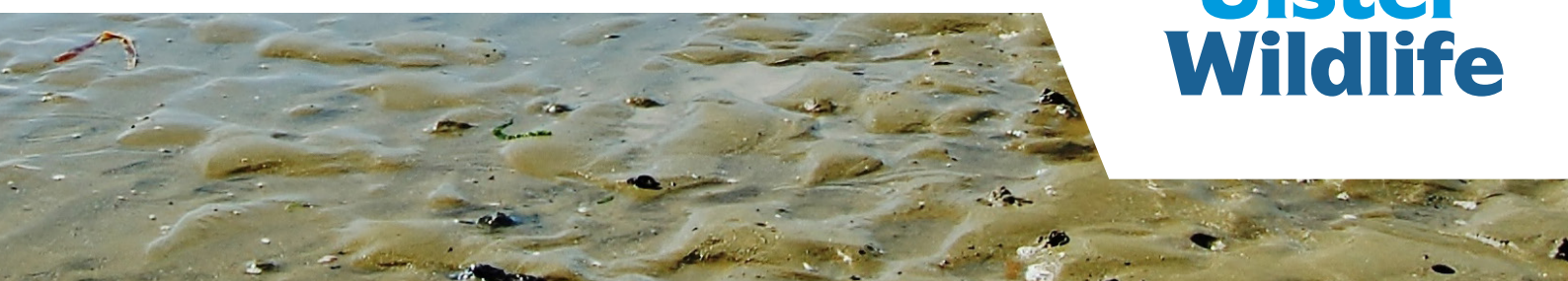
**Recorded distribution of Conger Eel:**
Data source: The Marine Life Information Network – www.marlin.ac.uk

**www.ulsterwildlife.org**

**Kids at Tyrella** © P Soult

# 5. ACTIVITY IDEAS

Ulster Wildlife



Activity 1

# Build Your Own Rockpool

Ulster Wildlife

## Duration: 2 hours

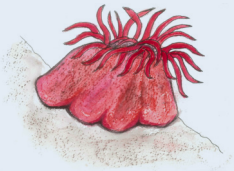
## Instructions

- Pre purchase a pond mould which acts as a perfect 'miniature rock pool'.
- Start off the session by sitting in a large circle and distributing pictures of rocky shore animals and seaweeds, describing their features and where on the rocky shore you would be likely to find them.
- Once you have discussed all the various rocky shore creatures then move into arts and crafts and make the animals and seaweeds from your chosen materials.
- Then finally place them into the rock pool.
- With the knowledge of where they live on the shore encourage the participants to correctly place the animals and seaweeds into the rock pool.'

**Limpet:** You will find these mostly on exposed rocks and boulders stuck very tightly to the surface with their sucker 'foot'.

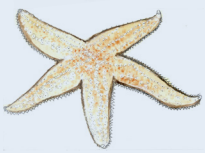
**Hermit Crab:** Look within shallow rockpools and disguised in the empty shell of a mollusc (sea snail) you may find hermit crabs. Turn over the shell to try and spot the little claws hiding within.

**Anemone:** Look into the cracks and crevices of rocks and boulders to find these 'jelly-like' blobs and also into rockpools where they look like flowers when they have their tentacles out.



**Blenny:** Search patiently underneath large rocks and in rockpools on the lower shore for this small fish.

**Starfish:** Carefully lift up the rocks on the lower shore (and always put them back the way you found them) to find common and cushion varieties of starfish.



## Materials

- Pictures of rock pool creatures and seaweeds.
- Dry sea creatures, e.g. shells, and dried seaweeds (for illustrative purposes).
- Arts and crafts materials e.g. play dough, plasticine, paper, egg cartons, pipe cleaners,felt tips, scissors, selotape, blu-tack, etc.

## Objectives

To understand the variety of life that lives on our rocky shores and the kinds of pressures that determine the distribution of rocky shore animals and seaweeds.

Activity 2

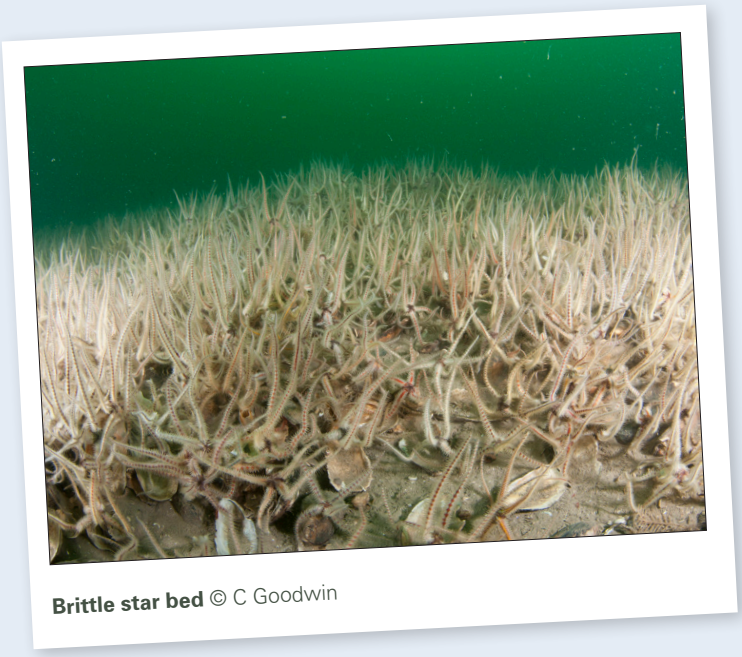
# Brittle Star Battle

Ulster Wildlife

## Duration: 15 minutes

## Instructions

- Nominate players to be 'brittle stars' and 'food particles'.
- Line up the brittle stars fairly close together but with enough space to run in between some of them.
- Brittle star players need to crouch on their knees and use their arms to wave in the air representing the brittle star legs which are used for catching food.
- Attach velcro tags to the 'food particles'.
- The food particles have to get through the line of brittle stars without getting their tags taken off.



**Brittle star bed** © C Goodwin

## Materials

- Velcro Tags

## Objectives

This activity helps to understand the behaviour of animals and how live and interact closely with each other for their own benefits.

Some animals join together to form large colonies which support other species living within them and even support whole ecosystems (the Horse Mussel reef in Strangford Lough is a great example of this kind of community which is described as a 'biogenic reef').

Anemones, tubeworms, urchins, crabs, fish and star fish such as brittle stars all thrive in and around these habitats where they are guaranteed lots of tasty morsels of food.

Activity 3

# Seaweed Pressing

Ulster Wildlife

## Duration: flexible

## Instructions

- Have a scavenge on a rocky shore for seaweeds, concentrate on the low water mark to look for delicate red seaweeds.
- Also pick up any snippets of larger brown seaweeds and green seaweeds that you come across, remove any animals that may be living on the seaweed.
- Using your white trays separate the seaweed out into species piles as best as possible and distribute them around the group evenly.
- Pat dry with blue roll and begin arranging your display on white paper.
- Once the pupils have their display arranged ask them to sign their artist name in the corner and place another white page on top.
- Then place inside a folded newspaper and press a heavy book ontop.
- Leave in a warm room for around one week and then come back to the pressings
- Carefully peel pack the paper to reveal the pressings
- Either keep simple and frame or use them as inspiration to create a watery underworld scene.

## Materials

- Local varieties of seaweeds
- White trays
- Mini microscopes
- Blue roll
- White paper
- Felt tip pens
- Newspaper
- Heavy books

## Objectives

Learn about the variety of local seaweeds and the intricate differences between red seaweeds.

Go to www.seaweed.ie to find out more about local seaweeds

Activity 4

# Hermit Crab Hustle

Ulster Wildlife

## Duration: 20 minutes

## Instructions

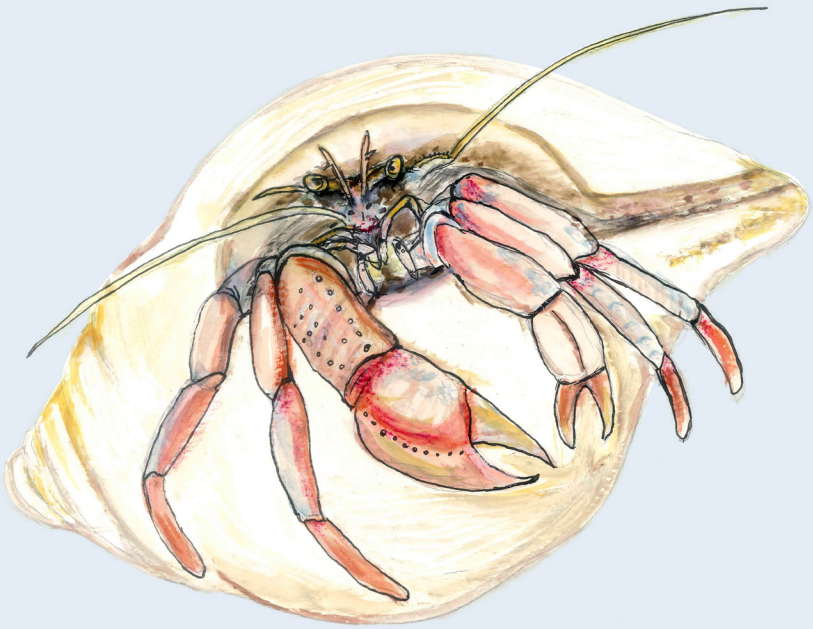
- Prepare by shredding coloured paper to represent pieces of carrion (dead meat) and alive creatures which the hermit crabs will be running toward.
- Nominate birds and hermit crabs, around 2/3 of the groups should be hermit crabs and the other 1/3 birds.
- Line the crabs up at one end of the room and explain that when they are crouched down they are protected in their shells and the birds can't nibble their soft bodies but they need to come out of their shells to run to the other side of the room and pick up scraps of food.
- If they get caught by a bird and they are not crouched down then they have been eaten and need to sit out.

## Materials

- Coloured Paper

## Objectives

The natural world is all about competition and fighting off your deadliest predators. Life can be particularly harsh in the intertidal zone, as not only are you faced with ocean predators but also terrestrial predators including hungry birds! It's survival of the fittest!



**Hermit crab** © Shirley Whiteside

Activity 5

# Octopus Tentacles

Ulster Wildlife

## Duration: 20 minutes

## Instructions

- In this game the children pretend to be fish trying to escape from a big octopus.
- Designate the "ocean" area – this is the area safe for the children to run within.
- Choose one player to be the octopus.
- The other children are the fish and must swim from one end of the ocean to the other.
- All the children start at one end of the playing area, and the octopus yells, "Swim fish!"
- The fish try to swim across the ocean without being tagged by the octopus.
- If a fish gets through, it is safe.
- Fish that are tagged become the octopus's tentacles and must help catch the other fish.
- The tentacles join hands to make the octopus grow.
- Younger children can be given a few minutes to practise miming fish and octopuses to help them understand how these animals move.
- In larger groups you can start with more than one octopus.

**Curled octopus** © B Picton

## Materials

None required but ensure you have an open and safe space to run, as would be needed to play tag.

## Objectives

To learn about the behaviour of the octopus and share interesting facts such as the most common octopus here in Northern Ireland waters is the 'curled octopus'. Explain that the octopus uses 'jet propulsion' to move through water and can squeeze into very small cracks and holes and can change colours to blend into their surroundings. When octopuses need to make a quick exit they use ink stored in their bodies to create a black cloud in the water, blinding predators while they escape. The really are the clever masters of the ocean!

Activity 6

# Food Web Game

Ulster Wildlife

**Duration: 30 minutes**

## Instructions

- Organise the pupils into a circle
- Each pupil represents a living thing in your local sea and is given a label.
- One pupil will represent the sun and will start by holding the ball of wool
- 'The sun' will start by saying 'I am the sun and my energy goes to...'
- The pupil will then select an appropriate living thing i.e. one of the plants and will unravel the wool to reach that pupil.
- The next pupil may say 'I am the seaweed and my energy goes to...'. Again the pupil will select an appropriate living thing and unravel the wool to reach that pupil
- This continues until the end of a food chain has been reached. The ball of wool then goes back to the sun and another food chain is started.
- The game finished when all children have become part of the food web - some may be holding two bits of wool
- Ensure that they keep tight hold of the wool whilst you talk about some scenarios.

## Materials

- A bag of wool
- Stickers with names of plants and animals
- Plenty of space to form a large web

## Objectives

The following game helps pupils to understand how plants and animals are connected in many different ways to survive and that if one element is removed, it can affect the whole web.

**Wrasse** © P Naylor

Activity 7

# Seaweed Hand-Spa

Ulster Wildlife

## Duration: flexible

## Instructions

- Collect drift seaweeds (the larger brown ones are best).
- Ensure that you remove any little creatures from the seaweed when you take it from the beach.
- Add a good handful of seaweeds to hot water in a container.
- Dip your hands into the seaweed and leave to soak for 5 minutes.
- Pat your hands dry and feel how soft they are (repeat as many times as you like).
- Compost your seaweed after use.
- If you are running this event with large numbers ensure the surrounding area is kept dry and the water is not too hot for health & safety reasons*.

**Seaweed** © G de Gouveia

## Materials

- Drift seaweed freshly collected from local shore
- Container (e.g. ceramic pot)
- Hot water

## Objectives

Linking people to the natural health benefits of seaweeds (an ecosystem service!) and sharing knowledge of local seaweed species.

Seaweed is extremely high in anti-oxidant content and is a rich source of various vitamins and minerals such as Vitamin B complex, Vitamin C, Folate, Magnesium, Iodine, Calcium, Potassium, and others.

* Check with your group for allergies

Activity 8

# Gravel Bed Gamble

Ulster Wildlife

## Duration: 20 minutes

## Instructions

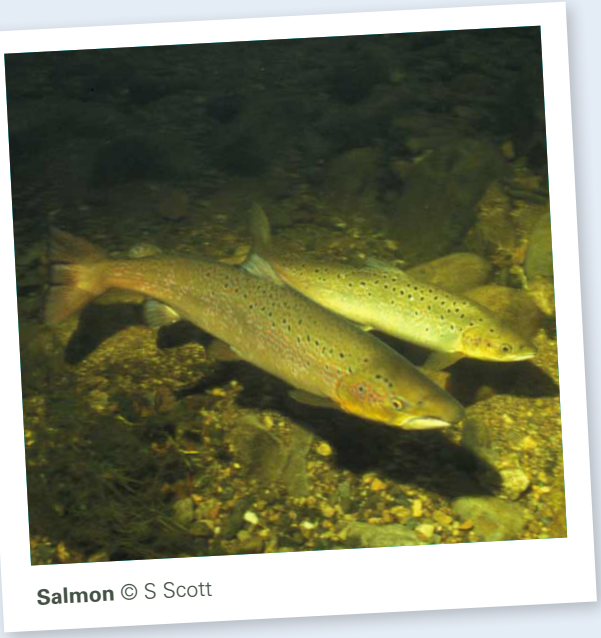
- This is a variation of 'musical chairs'. Put out 'spawning grounds' (pieces of paper) on the floor - one for each person - these are safe gravel beds where the fish can go and lay their eggs.
- Get the group to 'swim' around the room.
- When you shout 'spawn' the fish have to rush to a gravel bed and lay eggs.
- Take away one gravel bed, explaining that it has been dredged up to make concrete, then start the game again.
- This time when you shout out 'spawn' one fish will be unable to breed, and has to drop out.
- Continue until there is only one fish left alive - which can't breed by itself!

## Materials

- Paper/Newspaper

## Objectives

To explain the loss of habitat and habitat damage, to marine species such as herring caused by human actions such dredging gravel to be used for building purposes.



**Salmon** © S Scott

Activity 9

# Beach Litter Survey

Ulster Wildlife

## Duration: 2 hours

## Instructions

- Your group can undertake a litter survey (and optional clean-up depending on group) to find out what kind of litter washes up on the beach.
- Before the survey, get the group to predict what kind of materials they might find on the beach and where the materials may have come from.
- Together, draw up two different survey forms: one which records the litter by type (plastic cup, plastic bottle etc), and one which records it by where it came from (left on the beach, thrown off a boat).
- When you arrive at the beach, divide the group into teams of four, and give each team one copy of each of the forms.
- Within a clearly defined area of beach, send the teams off to record the litter they find.
- They should not touch any litter and should leave it where it is. Back inside; go through the results of the survey.

## Materials

- Clipboards
- Paper and pens
- Photocopier
- Anti-bacterial hand-gel
- Gloves
- Litter pickers (optional)
- Bin bags (optional)

## Objectives

To help with understanding where litter washes up and to identify the most common pieces of marine litter. Cleaning up is optional (but encouraged for older groups).

Activity 10

# How Much is Too Much?

Ulster Wildlife

**Duration: 20 minutes**

## Instructions

- Get the children to set up the sea by marking out a boundary for the children to sit around and laying out the marine creatures and seaweeds within the sea onto a blue sheet. Sit children down in circle around the sea. Explain that the area marked off represents the sea and there are lots of different creatures and plants within it.
- Tell the children they have ten seconds to try and get as many of the creatures and seaweeds as possible. Say GO! Then count to ten at which point they have to sit back down around the edge and keep what they have collected.
- Then repeat - they will try and gather up any remaining scraps but there will be nothing left. Explain that people have been using resources from the oceans for thousands of years. It is important that we don't take too much so that the seas can replenish themselves.
- Ask the children to think about ways they can protect some of the sealife so there is still some left for other people in the future. Get the children to come up with ideas and test them out using the marine creatures and the rope e.g. sectioning off 'no-take' zones.

## Materials

- Dry Sea Creatures (e.g. shells)/seaweed/bones
- Laminated pictures of fish and other creatures
- 'Sea area' (a large blue plastic sheet for example)
- Way of marking off an area e.g. long rope
- Way of separating the area up (could be the same long rope)

## Objectives

To understand how what we take impacts on the sea and to introduce the concept of 'no-take' marine reserves and other protection measures. This activity also brings in the concept of sustainability - living things need to be present in sufficient amounts to replenish themselves or we will not be able to use them.

Activity 11

# Marine Mammal Interviews

Ulster Wildlife

## Duration: flexible

## Instructions

Get someone up to do a role play interview with the seals using cue cards to prompt the questions and answers and video footage from the Interactive Map to help illustrate answers.

### Common Seal

**Q: How do you breathe?**
A: I have to come up to the surface to breathe.

**Q: How do you move?**
A: In the sea I propel myself by moving my hind flippers sideways and for turning I use my front flippers which are held tight to my body. On land it doesn't come as naturally to me, but I hop myself along and if the rocks are slippery enough I can move quite fast!

**Q: How many times a day do you dive?**
A: Lots! I spend about 85% of my day diving , I like to forage, to rest at the seafloor and to drift with currents and the tide.

**Q: How come I often only see your head on the sea surface?**
A: This is an activity I like to do a lot and it is called 'bottling'. I rest vertically in the sea with just my head popping above the surface.

**Q: How do you keep warm out in the ocean?**
A: My blubber helps to keep me warm, as a pup I am covered in fur but then I lose this fur and start to increase the amount of blubber I have around my body, this allows me to put up with pretty cold conditions.

### Grey Seal

**Q: How long do you normally live for?**
A: Around 25 years.

**Q: How long do you carry your babies for?**
A: 11.5 months (we then feed our young milk for only 3 weeks).

**Q: What do you like to eat?**
A: I have a very wide diet. I like to eat fish, squid, sea snails and crabs.

**Q: How deep can you dive?**
A: 300 metres.

**Q: What is your average dive depth?**
A: 60 metres.

**Q: How long can you hold your breath for?**
A: up to 30 minutes!

**Q: Do you like to stay in a big group?**
A: On land we do but in the water we like to hunt alone, we're great hunters.

**Q: What does your Latin or scientific name mean?**
A: Hooked-nose sea pig.

### Materials

- Access to a large screen and the internet to play video clips from www.ulsterwildlife.org/living-seas/interactive-map

### Objectives

To introduce some marine creatures which make a home in or visit our local Northern Irish waters.

Activity 12

# Harbour Porpoise Echolocation

Ulster Wildlife

## Duration: 15 minutes

## Instructions

- Nominate a harbour porpoise - everyone else is to be a fish.
- Gather in a wide circle with the porpoise standing in the middle of the circle.
- The harbour porpoise shouts out 'porpoise' and the nearest fish shouts a return 'fish'.
- Blindfolded, the harbour porpoise has to use only his/her hearing to catch the fish one by one until the last fish is left standing (they can then be the porpoise in the next round).

## Materials

- A blind-fold

## Objectives

To introduce the hunting and communication technique of echolocation which harbour porpoise and other cetacean's (dolphins, whales and porpoise) use in the ocean.

* You can also play this game using 'dolphins'

**Harbour porpoise** © F Graner

Activity 13

# How to build a Basking Shark

Ulster Wildlife

**Duration: 20 minutes**

## Instructions

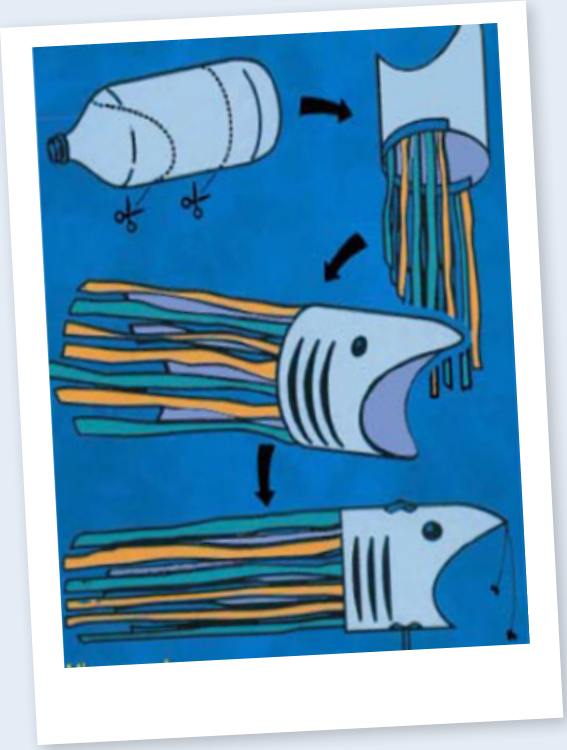
- Get an adult to cut out the ends of a plastic bottle and shape the sharks head.
- Draw on eyes and gill slits and cut up carrier bags into long strips of different colours and lengths.
- Tape the strips to the back of the sharks head creating layers.
- Ask an adult to help poke a hole through the top and bottom and push the stick through, keeping it in place.
- Take it for a swim!

## Materials

- Plastic bottle
- Sticky tape
- Carrier bags
- Marker pen
- Scissors
- Stick (twig)

## Objectives

To learn a little more about the second largest fish in the whole ocean that visits Northern Ireland's waters regularly.



Activity 14

# The Wrasse Race

Ulster Wildlife

**Duration: 30-60 minutes**

## Instructions

- In this game, teams of corkwing wrasse have to decorate a den as attractively as they can.
- Divide the group into teams, nominating one person to be the female wrasse, who is excused from the nest building. Give each team a cardboard box as their den.
- Scatter fabric pieces all around the room, over the floor and furniture.
- When you say 'go' one member of each team has to collect a piece of fabric and place it on or in the den, moving like a wrasse all the while (elbows tucked into waist, flapping the forearms back and forth in a rowing motion).
- The rest of the team can offer verbal help but may not touch the den. When the first team member has finished, the next team member does the same.
- Time the nest-building for three minutes and then stop the teams. The female wrasse now has to visit all of the dens and choose the best one.
- You can run this game through several times, with a different female each time.
- Alternatively, you could build team nests and elect a 'female' from each team to choose the best of the other teams' efforts.
- You could also play a mini version with individual boxes, and a vote for the group favourite.

## Materials

- Hundreds of small fabric scraps
- Medium or large cardboard boxes (any shape will do)

## Objectives

In some fish, such as the corkwing wrasse, the male makes a den and decorates it with pieces of seaweed and other things in order to attract a mate.
The female checks out the nests of several males, chooses one and then lays her eggs inside it. The male then looks after the eggs.

**Cuckoo wrasse** © C Goodwin

Activity 15

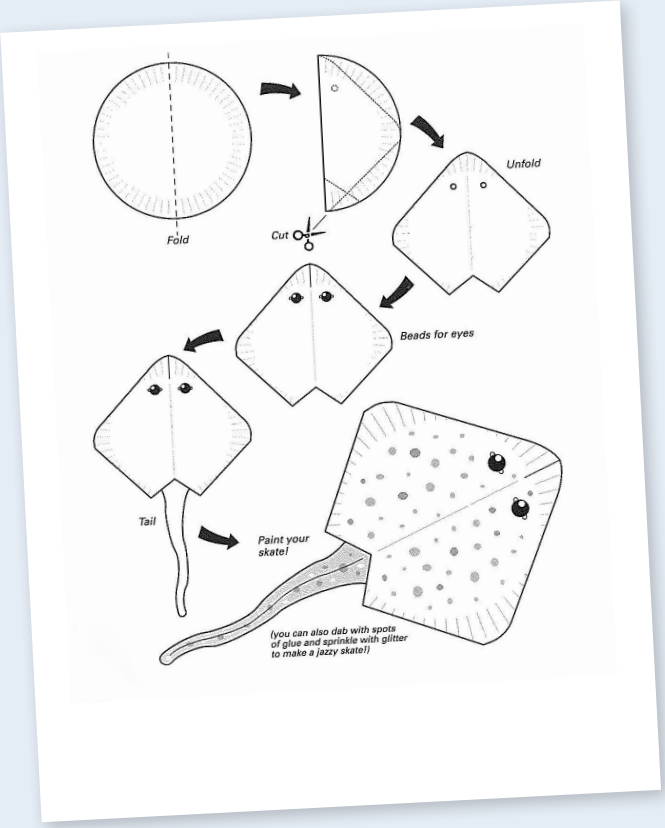
# Make a Skate

Ulster Wildlife

## Duration: 30 minutes

## Instructions

- Fold a paper plate in half and cut a straight edge on either side.
- Cut a V-shaped notch two cm from one end of the plate (the rear of the skate) and 2 eyeholes at the other end.
- To make the eyes, thread 2 beads onto the end of a pipe cleaner and feed through the eyehole. Pinch the nose and secure the eye and nose with tape.
- Cut the tail shape from a cereal box and glue it to the body or attach it with a split pin.
- Stick a second paper plate onto the bottom of the body and trim around the edges to make the plates the same shape.
- Paint the skate.




## Materials

- Paper plates
- Empty cereal boxes
- Beads
- Pipe cleaners
- Paint
- Sticky tape (preferably of the paintable variety)
- Glue
- Scissors

## Objectives

To learn a little more about one of our endangered species.

Talk of how it glides through the ocean with its 'wings' and how it is related to sharks and rays.

* You can also use this template to 'Make a Ray'.

Activity 16

# A World Without Sea...

Ulster Wildlife

## Duration: 15 minutes

## Instructions

- Sit the group in a circle.
- Discuss some of the things that the sea provides for us.
- Ask the first child to start the game by saying 'If the sea were to dry up tomorrow, I...'
- Some examples are 'wouldn't have any more fish and chips', 'couldn't go fishing', 'couldn't hunt through rock-pools', 'couldn't take my dog for a walk along the beach'
- The next person has to say the first statement and then add their own, e.g. 'If the sea were to dry up tomorrow, I wouldn't have any more fish and chips and I couldn't go fishing'
- The next person has to add their suggestion and so on.
- Keep on going as long as you can, if someone gets stuck they drop out.
- Finish up when there is one winner.

## Materials

- None required

## Objectives

To learn about how we are connected to the sea in so many ways and rely on it for fun and recreation but also for essential services like fresh air and seafood.

**Flying fifteens** © A McBroom

# 6. Ways to support the work of Ulster Wildlife

As a charity, Ulster Wildlife relies greatly on the generous contributions made by our many supporters which help us carry out our environmental activities. Without this support, we would not be able to achieve our vision of a healthy, well cared for natural environment which contributes to enjoyment, quality of life, prosperity, health and well-being. We hope you will take this opportunity to choose to help us to protect what's important to you.

### Personal membership of Ulster Wildlife

Ulster Wildlife currently has nearly 12,000 local members who make a regular financial contribution to support our work. Members get enjoy receiving regular editions of our membership magazines, information on our extensive calendar of nature events and free access to our nature reserves.

- Individual adult membership – starts at only £30 per year.
- Joint adult membership – starts at only £36 per year.
- Family membership (2 adults & up to 4 children) – starts at only £45 per year.
- Junior only membership (up to 4 children) – starts at only £18 per year.
- Student membership - £20 per year.

### School/Group/Corporate membership of Ulster Wildlife

Ulster Wildlife also has a number of local schools, groups and companies who make regular annual contributions to help us protect local wildlife and wild spaces. We work in partnership with these supporters to help increase their capacity to engage with and protect our natural assets.

- School/Group membership – only £150 per year (including a free discovery & learning session).
- Corporate membership – choose to give £300, £500, £1000, £2000 or £5000 per year.

### Other ways to support Ulster Wildlife

Ulster Wildlife's work can also be supported by:-

- Volunteering at our nature reserves, in our office or at our awareness events.
- Corporate sponsorship of our operations and education programmes.
- Organising a fundraising event or taking part in a sponsored event such as a marathon or trek.
- Choosing to leave us a gift in your will or giving a donation in lieu of funeral flowers.

### Please act now

If you would like to support Ulster Wildlife in one of the ways shown above, please act now to show your care and regard for our local wildlife. To do so, please go to our website **www.ulsterwildlife.org** to find out how to sign up as a member, volunteer or fundraiser. Alternatively you can telephone us on 028 4483 0282 and speak to the Marketing Team for further information. Thank you.

**Common Dolphins** © J O'Brien

This Activity Pack was funded by the Bombardier Foundation and NI Environment Agency

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NIEA Northern Ireland Environment Agency
www.doeni.gov.uk/niea

An Agency within the Department of the Environment
www.doeni.gov.uk

**For further information,**
**visit www.ulsterwildlife.org**
**or E-mail: info@ulsterwildlife.org**

Ulster Wildlife