EARTHDIVE

"The health of our oceans is intrinsically linked to the future of life on this planet"

PRE-DIVE BRIEFING PACK

Eco-Region 6a

Europe - Temperate

Contents

1.0 General Information

This booklet is a **pre-dive briefing pack** for the **Europe - Temperate** eco-region. Please feel free to print it and take it with you as an 'aide memoir' for your dive. It contains all the information you need to contribute to the EARTHDIVE Global Dive Log.

1.1 Introduction

The EARTHDIVE **Global Dive Log** is a pioneering methodology that has been developed in partnership with **UNEP-WCMC** and marine scientists from around the world. These marine scientists helped establish thirty EARTHDIVE eco-regions - areas of water that share a relatively similar climate and contain a common assembly of natural habitats and species. They then identified key indicator species for each region - an important set of marine animals whose numbers and changing population can tell us a lot about the changing state of our oceans.

You can help observe and record sightings of these marine animals during a dive or snorkel trip and enter observations into the **Global Dive Log**. You can also record evidence of key anthropogenic pressures - changes in the marine environment brought about by human activity such as pollution and overfishing. Any data you enter onto the EARTHDIVE website can be viewed by you and other visitors.

The EARTHDIVE eco-regions span all of the world's oceans - not just those areas with warm water and coral reefs. Whether you are diving in Scotland or Saint Lucia, Connecticut or Cocos, Denmark or Dominica, your data collection is equally valid and valuable. So you don't have to wait for the next exotic dive trip - home waters are just as important!

Each eco-region also has its own types of megafauna, from dolphins to whale sharks, from whales to polar bears (if you like really cold water) and provision is also made in the Global Dive Log to record sightings of these exciting animals.

Collecting this valuable information for EARTHDIVE helps create a **Global Dive Log** - a valuable research tool.

This briefing pack lists the indicator species and anthropogenic pressures for the **Mediterranean** eco-region.

Thank you for recording scientific information for EARTHDIVE.

1.2 How to record your observations into the Global Dive Log

When recording scientific information for EARTHDIVE, divers are recommended to follow our 7 Point Plan. You will find the use of a slate or some other method of taking notes underwater, such as a laminated fish identification card, invaluable. Always try to transfer your data to the EARTHDIVE website as soon as possible following your dive. Let dive buddies and dive leaders know what you are measuring, as they may be able to help with some post-dive questions on identification.

1.2.1 Try and ensure that the time of the underwater recording session is accurately noted. The length of the session can be all of the dive or just a period during the dive e.g. 10 minutes. You may even spend periods of time recording different indicators. For example there may be a dense aggregation of drums, which you count for 10 or 15 minutes. On the other hand you may look for other species such as groupers for most of the dive. Whatever your choice, the data is important so try to add the recording time in the notes for each indicator.

1.2.2 When possible always record **actual** counts of indicator species. If this is too difficult on the dive then enter your data into the abundance scale in the Global Dive Log as an estimate.

1.2.3 Only record an indicator to species if you are 100% certain that it is that species. Otherwise record to genus or to family, e.g. an indicator for the sub-tropical Atlantic Coast of South America is the dusky grouper (*Epinephelus marginatus*). If you are uncertain of the species but recognise the genus, call it *Epinephelus sp*. If you do not have time to recognise it, or do not know it apart from that it is a grouper, then just record it as that - it's just as important!

1.2.4 Record as much background as possible in the notes section of the Global Dive Log for each indicator, i.e. depth of sighting, type of habitat (lower reef slope, kelp bed, sand with scattered rocky outcrops etc). Particular behaviour should also be noted - spawning behaviour in fish or invertebrates for example.

1.2.5 When recording always fin slowly and evenly with minimal sudden movements. Moving rapidly will disturb resident fish causing them to hide from view more quickly. By moving slowly and evenly you have more chance of seeing indicator species and recording their presence/absence more accurately. Always look carefully for particular indicators such as lobsters, which are often under overhangs or in crevices.

1.2.6 On your way to and from your dive site, record any observations you have made regarding the listed anthropogenic pressures for this eco-region.

1.2.7 Following your dive, make notes from your slate or memory and keep them in a safe place. Add any further comments within 24 hours before you lose some of the detail from your memory.

Thank you

2.0 The Europe - Temperate Eco-Region

This eco-region comprises the coastal waters of the following countries: Belgium, Denmark, Estonia, Faroe Islands, Finland, Germany, Ireland, Latvia, Lithuania, The Netherlands, Poland, Portugal, Spain, Sweden, and the mainland and Islands of the UK. The Atlantic coastlines of France and Spain are also included, as are the provinces (fylker) of Norway, Aust-Agder, Ostfold, Rogaland, Telemark, Vest-Agder and Vestfold

Temperate Continental Shelves and their seas are generally highly productive regions of great biological significance, hosting resident and migratory fauna during various stages of their life cycle. The relatively shallow waters lead to warmer temperatures and seasonal stratification of the water column based on temperature. Seasonal variation, combined with inflows of freshwater from coastal streams and tidal action, contribute to a variety of habitats and a high degree of biodiversity.

The Northeast Atlantic Shelf is no exception this general description. It is one of the most diverse and productive upwelling areas in the North Atlantic, as offshore currents drawing away warm surface water create an upward flow of cold, heavy deep-sea water. The deep-sea water of upwellings is generally rich in nutrients.

The North Sea is quite shallow and fed by several rivers, while the Norwegian Sea has deep trenches filled by particularly salty ocean water. In upwelling areas, the nutrient-rich water provides the basis for many fish communities. These ocean currents also make for rough seas and often contribute to strong storms. The Wadden Sea extends along a 500 km stretch of the Danish, German, Belgian and Dutch coasts, the largest intertidal mudflat area in Europe and one of the largest temperate mudflat ecosystems on Earth. It supports salt marshes, wet meadows, sand banks, sand dune systems, and reclaimed polders.

The Irish Sea with its semi-enclosed geography is one of the more recognizable and

ecologically distinct regional seas around the UK. It contains diverse habitats and species and hosts internationally important populations of sea birds, fish and cetaceans, particularly the bottlenose dolphin. The Irish Sea is a summer feeding area and ecological corridor for species such as basking shark and leatherback turtle. A number of commercial fish stocks in the Irish Sea such as cod, whiting and sole are over exploited and now considered by marine scientists to be outside safe biological limits. The Dublin Bay prawn (*Nephrops*) is the most valuable fishery in the Irish Sea but it is being harvested to capacity. There are increasing development pressures from industries such as oil and gas, transport, renewable energy, pollution, shipping and tourism.

Average seasonal temperatures in the region are notably higher than other geographical areas at comparable northerly latitudes in say Russia or Canada. This is largely due to the effects of the Gulf Stream. This warm, surface ocean current originates in the Gulf of Mexico and flows northeast across the Atlantic, driven by the prevailing southwesterly winds.. The North Atlantic Drift forms the extension to the Gulf Stream which flows past the south coast of Labrador towards the west coast of Europe It influences the climate of the UK and Northwest Europe by bringing with it humid mild air. Within the Gulf of Mexico, the Gulf Stream is very narrow, only 50 miles wide, and travels very fast at 3 mph, carrying water at about 25°C. The North Atlantic Drift widens considerably to several hundred miles, slows to less than 1 mph and splits into several sub-currents.

Species of marine animals and birds to be found in the region are legion, and include the harbour seal, grey seal, harbour porpoise, dark-bellied brent goose (Branta bernicla bernicla), barnacle goose (*Branta leucopsis*), European oystercatcher (*Haematopus ostralegus*), grey plover (*Pluvialis squatarola*), curlew (*Numenius arquata*), dunlin (*Calidris alpina*), wigeon (*Anas penelope*), grey and harbour seals live along the rocky coastlines, where they are often joined by Atlantic puffins and Arctic terns. Arctic cod, char, and capelin are just a few of the species that make the Northeast Atlantic Shelf such a rich fishing area. Several types of whales also call it home, including minkes, orcas, belugas, narwhals, bowheads, northern bottlenoses, and blues.

3.0 Indicator Species

What to look for and record in the **Europe - Temperate** eco-region:

All Marine Lobsters
Target of exploitation – Low numbers are targets of over-exploitation

All Marine Mussels (*Pelecypoda*)
High numbers are indicative of good eco-system health

John Dory (*Zeus faber*)
Low numbers are indicators of overfishing

Scallops (*Pecten maximus and Chlamys islandica*)
Low numbers are indicators of overfishing

European Plaice (*Pleuronectes platessa*)
Low numbers are indicators of overfishing

The International Union for Conservation of Nature and Natural Resources (IUCN) provides a listing of species that are at risk of global extinction. The 'IUCN Red List Categories and Criteria' are intended to be an easily and widely understood system and can be found at http://www.redlist.org The general aim of the system is to provide an explicit, objective framework for the classification of the broadest range of species according to their extinction risk. If any of the indicator species for this Eco-Region have been classified as Critically Endangered, Endangered or Vulnerable on the list, then we have included that information below.

3.1 All marine lobsters

Lobsters, like shrimps and crabs, are decapods - literally meaning 10 legs - and c in all of the world's tropical and sub-tropical seas as well as more temperate water are predatory, nocturnal animals with a vividly decorated coat. They are numerous locally; they linger in crevices (with their long antennae sticking out) during the day and hunt small benthic organisms at night, but they also feed on organic detritus whenever they happen across it. As with all crustaceans, the lobster moults or sheds its shell to grow.

Up until the end of the 19th century lobster was so plentiful that it was often used as fish bait. Sadly, with lobster's ever-increasing popularity those days are now gone forever. Lobsters have recently suffered a dramatic demographic decline; intensive fishing has annihilated entire populations, especially where tourism abounds.

The marine lobster families that you may encounter as you dive around the world are the spiny rock lobsters, *Palinuridae*, the slipper lobsters, *Scyllaridae*, the reef lobsters *Enoplometopus* and the 'true' or clawed lobsters, *Nephropidae*.

The true reef lobsters, *Nephropidae*, with their enlarged pincers on the first pair of legs, include the European or common lobster, *Homarus gammarus* which can be seen in the waters of the region. The first pair of walking legs carries large but slightly unequal pincers that can be both formidable and dangerous. Take care!

Slipper lobsters, also known as Spanish or shovelnose lobsters, live on stony ground, in caves, and can also be found on muddy bottoms. They use the large spade-like scales at the front of the head to burrow into mud, sand or gravel between and under stones. It lacks the large claws of a true lobster, or the long antennae of spiny lobster. Instead it sports very short antennae and two large hinged scales or plates at the front of the shell. The carapace has a rough consistency

The *Palinurus* genus (frequently transcribed as *Panulirus*) is represented by numerous species in all of the world's tropical and sub-tropical seas as well as more temperate waters. It is a predatory, nocturnal animal with a vividly decorated coat.

We are interested in monitoring numbers of all lobster species seen during your dive, and particularly the **Crawfish** or **Crayfish** (*Palinurus elephas*), which is also known as the European spiny lobster. This species is larger than the common lobster, growing to about 600mm in length. It has a stout, heavily armoured body. The carapace colour is usually orange with darker spines and white underneath but brown, sandy and purple specimens are occasionally found. It has numerous sharp spines on the carapace, over much of the abdomen and on the larger appendages. It has long antennae but small hook-like claws.

Crawfish are found on open exposed rock faces and rocky seabed in sub-tidal areas. Their numbers have been severely depleted on most coasts by tangle net fishing. Although this species was once widespread on western coasts of the British Isles, it is now becoming rather scarce.

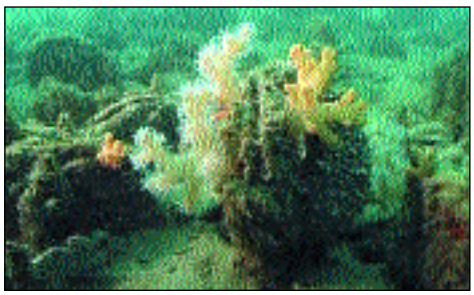
3.2 All Marine Mussels (*Pelecypoda*)

Mussels are marine molluscs of the class *Pelecypoda*, which means hatchet-foot. They are filter-feeding bivalves, having a shell consisting of two valves, or movable pieces, hinged by an elastic ligament. Within the shell there is a fleshy layer of tissue called the mantle with a cavity (the mantle cavity) between the mantle and the body wall proper. The mantle secretes the layers of the shell, including the inner nacreous, or pearly, layer. Nacreous layers can also be formed around a

foreign body in reaction to irritation. A muscular hatchet-shaped foot projects from the front end of the mollusc, between the valves. This foot is used for burrowing, and, in some bivalves (e.g., razor clams), to swim. Bivalves differ in their habits: some, such as the oysters and marine mussels, have a reduced foot and are permanently attached to a substratum. Most of the body consists of the reproductive organ – orange in females and white in males. During reproduction they shed enormous numbers of eggs and sperm into the water.

One of the rarer species that you may encounter is the Fan mussel (*Atrina fragilis*). This is one of the largest of the European bivalve molluscs, growing to 30-48 cm long. The shell colour graduates from a slight yellow-brown to darker brown or even chestnut. Fan mussels are, as their name suggests, triangular, thin and taper to a point, with the posterior (broad) end protruding from the surface whilst the anterior (pointed) end is embedded in sediment, fixed by fine byssal strands. These are a strong threadlike fibres produced by the mussel to attach itself to a solid surface or substrate. A series of fine, raised concentric lines run across the shell while 8 - 12 low, smooth, wavy ridges radiate from the beak or umbone. The interior of the shell is glossy with a smooth margin, although this is often fragmented at the posterior end. Fan mussels have also earned the alternative name of 'razorfish' due to their ability to cut the feet of unlucky bathers. The fan mussel is widespread, ranging from Northern Scotland to the Iberian Peninsula, but is scarce and is rarely encountered. It is often solitary but populations occur as small groups or patches of individuals form in small beds, at depths ranging from sub-tidal to as much as 400 m. Numbers may have declined as a result of demersal fishing activities and, in some areas, sand and gravel extraction. Whilst surveying, please remember that this species is somewhat rare, so don't necessarily expect to see them, or indeed confuse them with another species of mussel. Above all, if you are fortunate enough to spot one or more, do not remove them from their habitat!

The horse mussel (*Modiolus modiolus*) is another filter-feeding edible marine mollusc. Horse mussels can be found from the Arctic Ocean to Florida and California as well as in Europe. They form dense beds in moderately shallow water at depths of 5 -70 m in fully saline, often moderately tide - swept areas. Adults are usually up to 15cm in length, with some individuals as large as 22cm. Horse mussels live in moderately shallow water, partially buried in soft sediments or attached to hard substrata. They occur in clumps or extensive beds or reefs of many individuals. Although the species is widespread and common, true beds forming a distinctive 'biotope' - a well-defined geographical area, characterised by specific ecological conditions, which physically supports the organisms that live there - are relatively uncommon.



Modiolus modiolus can occur as relatively small, dense beds carpeting steep rocky surfaces, as in some Scottish sea lochs, but is more frequently recessed at least partly into mixed or muddy sediments in a variety of tidal regimes. The species is long-lived, with some individual animals within beds frequently 25 years old or more. The byssal threads secreted by the horse mussel have an important stabilising effect on the seabed, binding together living horse mussels, dead shells, and sediment. As *Modiolus modiolus* is a filter feeder, the accumulation of faeces and pseudofaeces (food particles embedded in mucus that are expelled by the mussels) provides a rich food source, which, together with the varied habitat, means that extremely rich and diverse associated faunas may occur on dense beds.

The horse mussel shell is solid, swollen, approximately oblong or irregularly triangular in shape. The colour is glossy yellow to dark brown in adults; in young animals the shell appears bluish. These should not be confused with the common

mussel (*Mytilus edulis*), which is smaller, with a pointed base and is bluish black in colour.

The common mussel is indeed common; particularly around the coast of the British Isles There are large commercial beds to be found in the Wash, Morecambe Bay, Conway Bay and the estuaries of southwest England, north Wales, and west Scotland.

Mytilus edulis occurs from the high intertidal to the shallow subtidal areas, attaching their byssal threads suitable substrata such as rocks and crevices, as well as in sheltered harbours and estuaries, often occurring as dense masses. The shell is smooth with a sculpting of concentric lines and is roughly triangular, although the shape can vary as a result of the prevailing conditions. Individual specimens usually range in size from 5 -10 cm although some populations never attain more than 2-3 cm, whilst the largest specimens may reach 15-20 cm.

3.3 John Dory (*Zeus faber*)

The John Dory (*Zeus faber*) is a distinctive fish with a worldwide distribution. In the Eastern Atlantic it can be found from Norway to South Africa and also in the Mediterranean and Black Seas. In the Western Pacific it occurs in the waters of Japan, Korea, Australia and New Zealand.

These thin, deep-bodied predatory fish are weak swimmers, with an oval flat body and large spiny head. Their normal strategy is to stalk their prey head on, using their thinness to their advantage, before extending their large oblique a mouth to suck in an unwary victim.

This species is dark brown as juveniles and silvery as adults. There is a large dark grey blotch ringed with white on the side of the body. This blotch gives rise to one of the common names for this species, St Peter's fish. This name refers to the "thumbprint" on the side of the fish supposedly left by St Peter when he caught the fish. In its mouth was a coin to pay the temple tax collectors. It grows up to 66cm and is a highly regarded table fish, fetching high market prices.

The John Dory is found in areas close to the seabed and is generally solitary. It feeds mainly on schooling bony fishes, occasionally on cephalopods and crustaceans.

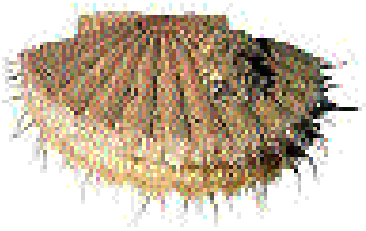
3.4 Scallops (*Pecten maximus* and *Chlamys islandica*)

Scallops are bivalve molluscs with scalloped, fan-shaped shells (valves) whose shape and colour have inspired artists, architects and designers for centuries.

The shells are further characterized by radiating ribs or grooves and concentric growth rings. Near the hinge, where the two valves (shells) meet, the shell flares out on each side to form small "wings". Just inside each valve along the edge of the mantle there a row of short sensory tentacles and a row of small blue eyes.

A single adductor muscle, sometimes called the ‘eye’ in culinary circles, opens and closes the two valves. Because they are active swimmers, the adductor muscle is more developed in the scallop than in oysters and clams. The muscular snapping of the shells togethers generates the propulsion needed for movement through the water. They feed on microscopic plants and animals.

The great scallop, also known as the king scallop or Coquille St Jacques, has thick, solid shells, with 16 radiating ribs. The left valve is flat and the right shell is quite convex. The right valve is off-white, yellowish, or light brown in colour, often with

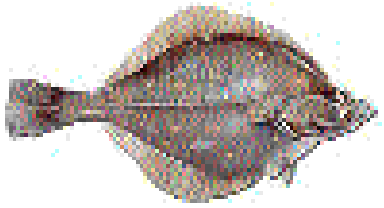


bands or spots of darker pigment. The left valve is light pink to reddish brown. It rests on the right valve in a depression in sand or fine gravel, from just offshore, to depths of 100 metres. The king scallop can grow up to 15 cm long.

The Icelandic scallop (*Chlamys islandica*), also known as Queenies, range in colour from brilliant red, purple, orange or yellow to white. The normal habitat is a hard sea bottom at depths of 15-80 m and they are most abundant in fairly strong nutrient rich currents. Queenies grow rather slowly and mainly in the spring and summer months. Ten-year-old scallops measure 6.5-8.5 cm in height. It differs from the king scallop in that it is smaller, with more pronounced grooves.

Low numbers of scallops are, unsurprisingly, are indicative of overfishing

3.5 European Plaice (*Pleuronectes platessa*)



The European Plaice (*Pleuronectes platessa*) is a member of the order of *Pleuronectiformes* (flatfish), which also includes soles and other flounders. It is generally recognised as the most important flatfish for commercial fisheries in Europe. Widely distributed in the Northeast Atlantic, it can be found from Greenland and Norway in the North to Morocco in the south, in temperate waters ranging from 2 - 15°C, with the Wadden Sea being reported as an excellent nursery area.

This species lives on mixed bottoms, tending to go deeper as it ages, with smaller individuals being encountered on bathing beaches. It is active at night, in shallow water, feeding on thin-shelled mollusks and polychaetes (marine worms), spending the day buried in the sand. It is one of the commonest flatfish encountered by divers and snorkellers.

Adult fish are not bilaterally symmetrical, as one eye migrates to the other side of the head, allowing the fish to see whilst partially hidden in the sand. They can grow to a maximum size of 100 cm, but is usually between 50-60cm in length. It is diamond-shaped in outline and both eyes are on the right hand side of the body the upper side, Colouring is brown or greenish brown with irregularly distributed bright red or orange spots. The underside is white and there is a bony ridge behind the eyes and although it can change colour to match that of the surrounding seabed, the orange spots are always distinct. The scales are smooth, unlike those of a flounder, which are rough.

Note: Many species of fish and plants are known by different names in different locations. Where appropriate, we provide the recognised scientific name, but in the case of common names, for the sake of consistency, we have used the common names as they appear in the fishbase.org database as our default name.

4.0 Anthropogenic pressures

EARTHDIVE is recording five different types of anthropogenic pressures (effects resulting from the actions of humans). Collection of this data enables us to establish an ever-evolving **Global Snapshot** of our oceans.

The types of anthropogenic pressures are the same for each region and are:

- Surface Pressures — paper, wood, plastic and any other man-made debris
- Boat Activity — pleasure, fishing, commercial
- Subsurface Pressures — litter, sediment, physical damage

- Evidence of Fishing — pots, traps, discarded nets, blast damage, cyanide damage, other etc.
- Coastal Development — resorts, villages, towns, distance from the dive sites etc.

Please note any information you feel is relevant and record the data in the notes section for each impact in the Global Dive Log.

Thank you.

5.0 eCORD

EARTHDIVE asks all scuba divers to subscribe to the principles of **eCORD** - the **EARTHDIVE** Code of Responsible Diving - and to encourage others to practice them. **eCORD** is a straightforward 7 Point Plan which will help divers to limit the anthropogenic impact of recreational diving - while at the same time making their diving experiences more rewarding and enjoyable. Be sure to incorporate the 7 points in your dive planning!

1. Know your limits.
Every dive is different and every diver is different. Always ensure that you dive within the limits of your training and experience, whilst taking due account of the prevailing conditions. Take the opportunity to advance and extend your skills whenever that opportunity arises. In particular, buoyancy skills can become a little rusty after any prolonged absence from the water. If you can't get pool or confined water practice before your trip, get your buoyancy control checked out by a qualified instructor on your first dive! There are many national and international dive training organisations which offer a comprehensive range of courses and instructional material beyond basic skills level. Take advantage of them!

2. Be aware of the marine environment and dive with care.
Not surprisingly, many dive sites are located where the reefs and walls play host to the most beautiful corals, sponges and fish - fragile aquatic ecosystems! Starting with your point of entry, be aware of your surroundings: never enter the water where there are living corals, water plants or reeds. Once underwater, it only takes one unguarded moment - a careless kick with a fin, an outstretched hand, a dragging gauge or octopus - to destroy part of this fragile ecosystem. Even fin kicks too close to the reef or sand can have an adverse effect - so dive with the utmost care. Photographers in particular need to take greater care as they strive for that best-yet shot! Don't let your dive become an adverse anthropogenic impact! And remember that these rules apply just as much to 'hard' dive sites - such as wrecks, which have become the home of diverse marine life - as well as fresh-water and other sites.

3. Understand and respect marine flora and fauna.
A large part of the joy of diving is in learning more about the plants and animals who live in this unique underwater environment. In order to survive and thrive, many living creatures disguise themselves to look like plants and inanimate objects, or develop defence mechanisms such as stings. Some even do both! (Have you seen a stonefish lately?) The **EARTHDIVE** briefing packs (available by download only) provide information about indicator species for the region in which you are planning to dive. In addition, dive training organisations run marine naturalist and identification courses. The more that you learn, the more that you will see, the more that you will derive pleasure from your underwater experience - and the safer you will be for yourself, other divers and the marine environment!

4. Don't interfere.
First and foremost, be an observer in the underwater environment. As a general rule, look don't touch. Remember that polyps can be destroyed by even the gentlest contact. Never stand on coral even if it looks solid and robust.

Always resist the temptation to feed fish and discourage others from doing so. You may interfere with their normal feeding habits, damage their health and encourage

aggressive behaviour. Leave only your bubbles!

5. Take only what you need.
The marine environment is a valuable source of food for mankind and it is important that it remains so into the future. If you are among those divers who enjoy taking food from the sea, observe some simple rules:

- Obtain any necessary permits or licenses.
- Comply with all relevant fish and game regulations. These are designed to protect and preserve fish stocks, the environment and other users.
- Only take what you can eat. If you catch it and can't eat it, put it back.
- Never kill for the sake of 'sport'.
- Avoid spear fishing in areas populated by other divers or visitors to the area, or where you might cause collateral damage.

Don't be tempted to collect shells, corals or other mementos of your dive. If you want a souvenir, take a photograph!

6. Observe and report.
As an EARTHDIVE member, you will be in a unique position to monitor and report on the health, biodiversity and any obvious damage to dive sites using the EARTHDIVE Global Dive Log. In addition, we would encourage you to report anything unusual to the appropriate local marine and environmental authorities, or if this is difficult, get your dive centre to do it for you. They have a vested interest in a healthy marine environment, and will normally be more than willing to help. Always be on the lookout for physical damage, fish stock depletion, pollution and other environmental disturbances. If the dive operation itself is causing damage -say by anchoring to the reef - then let them know how you feel in no uncertain terms!

7. Get involved.
No matter where you are diving or snorkelling, be it at home or abroad, there will be at least one (and often many more) marine conservation bodies who are active in the area. Don't be afraid to approach them for information, to offer help, or just to find out what they have to offer. You will receive an enthusiastic welcome! They will provide you with lots of opportunities to contribute to marine conservation.

6.0 Appendices

Post Dive Recording Sheet - **General Data** (complete/add/delete/tick as applicable)

Dive No: ☐☐☐☐ **Dive Site Name:** ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

GPS: N/S: ☐☐•☐☐☐☐☐☐ E/W: ☐☐•☐☐☐☐☐☐ (Decimal Degrees up to 7 decimal points)

Date: ☐☐/☐☐/☐☐☐☐ **Boat** ☐ **Shore** ☐ **Water Type:** Salt ☐/Brackish☐/Fresh☐

Dive Type: Recreational ☐ Technical ☐ Training ☐ Drift ☐ Search ☐ Wreck ☐ Drift ☐ Night ☐ Other ☐☐

Time In: ☐☐:☐☐ **Time Out:** ☐☐:☐☐ (24 hour clock) **Dive Time:** ☐:☐☐ (hr:mins)

Air/Nitrox Start: ☐☐☐ End: ☐☐☐ (psi or bar) **Max Depth** ☐☐☐ (ft/m)

Visibility: ☐☐☐ ft/m **Temperatures: water**: ☐☐°C/☐☐°F **air**: ☐☐°C/☐☐☐°F

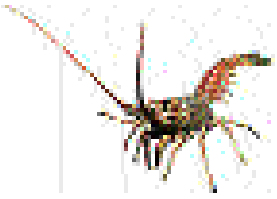
Current: None ☐ Light ☐ Medium ☐ Strong ☐ (tick)

Surface Conditions: Cloudy ☐ Sunny ☐ Partly Cloudy ☐ Rain ☐ Variable ☐ other

IF DIVING WITH A CLUB/DIVE CENTRE/LIVEABOARD OR RESORT, WERE YOU GIVEN AN ENVIRONMENTAL BRIEFING: YES ☐ NO ☐

Please record any other information you normally record immediately following a dive. Add this data to the **earthdive** website via your control panel as soon as possible. **Thank you**

Post Dive Recording Sheet - **Indicator Species**
Important Note: If you allocated some time to looking for one of the indicator species, but didn't find any, please make sure that you record a **0 (zero)** count in the appropriate box, and record how much time you spent looking for the indicator.



All Marine Lobsters

How many Lobsters did you see? (tick box and/or record actual number)

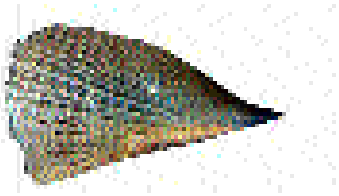
0 ☐ 1 - 5 ☐ 6 - 20 ☐ 20 - 50 ☐ 51 - 250 ☐ >250 ☐

Actual Number ☐☐☐ (write actual number)

How long were you looking for this indicator? ☐☐ (minutes)

Add your additional information here. In what type of habitat did you see this indicator? What was it doing? At what depth did you see it/them? Were you able to identify the species?

Additional Information:



All Marine Mussels (*Pelecypoda*)
How many Mussels did you see? (tick box and/or record actual number)

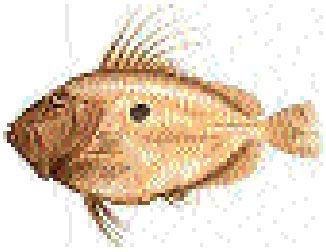
0 ☐ 1 - 5 ☐ 6 - 20 ☐ 20 - 50 ☐ 51 - 250 ☐ >250 ☐

Actual Number ☐☐☐ (write actual number)

How long were you looking for this indicator? ☐☐ (minutes)

Add your additional information here. In what type of habitat did you see this indicator? At what depth did you see it/them? Were you able to identify the individual species? If the mussels were in beds, It would be helpful if you note over how large an area each bed was spread, and how many beds there were.

Additional Information:



John Dory (*Zeus faber*)
How many John Dory did you see? (tick box and/or record actual number)

0 ☐ 1 - 5 ☐ 6 - 20 ☐ 20 - 50 ☐ 51 - 250 ☐ >250 ☐

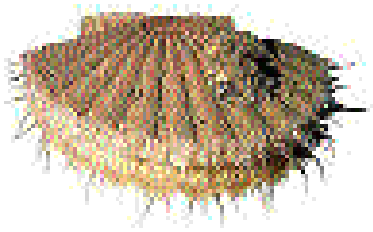
Actual Number ☐☐☐ (write actual number)

How long were you looking for this indicator? ☐☐ (minutes)

Add your additional information here. In what type of habitat did you see this indicator? What was it doing? At what depth did you see it/them?

Additional Information:

EARTHDIVE



Scallops (*Pecten maximus* and *Chlamys islandica*)
How many Scallops did you see? (tick box and/or record actual number)

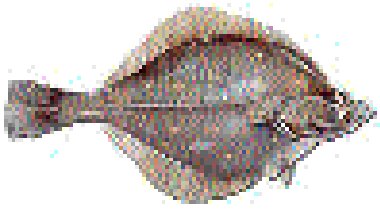
0 ☐ 1 - 5 ☐ 6 - 20 ☐ 20 - 50 ☐ 51 - 250 ☐ >250 ☐

Actual Number ☐☐☐ (write actual number)

How long were you looking for this indicator? ☐☐ (minutes)

Add your additional information here. In what type of habitat did you see this indicator? At what depth did you see it/them? It would be helpful if you note over how large an area each bed was spread (m^2). Were you able to identify the species?

Additional Information:



European Plaice (*Pleuronectes platessa*)
How many Plaice did you see? (tick box and/or record actual number)

0 ☐ 1 - 5 ☐ 6 - 20 ☐ 20 - 50 ☐ 51 - 250 ☐ >250 ☐

Actual Number ☐☐☐ (write actual number)

How long were you looking for this indicator? ☐☐ (minutes)

Add your additional information here. In what type of habitat did you see this indicator? What was it doing? At what depth did you see it/them?

Additional Information:

Post Dive Recording Sheet - **Anthropogenic Pressures**

Surface Pressures

Did you see any Surface Litter? (tick box)

Yes ☐ No ☐ Dont Know ☐

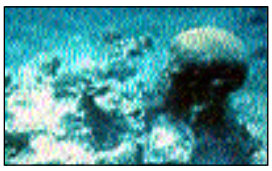
If yes please record any details (plastic, wood, paper, other etc.) Please record quantity and any other relevant information.

Boat Activity

Did you see any Boat Activity? (tick box)

Yes ☐ No ☐ Dont Know ☐

If yes please record any details (i.e fishing boats, pleasure boats, commercial vessels any other etc)



Subsurface Pressures

Did you see any Surface Litter? (tick box)

Yes ☐ No ☐ Dont Know ☐

If yes please record any details (litter, sediment, physical damage, coral bleaching other etc).

Evidence of Fishing

Did you see any Surface Litter? (tick box)

Yes ☐ No ☐ Dont Know ☐

If yes please record any details (pots, traps, discarded nets, blast damage, cynanide damage, other etc).

Evidence of Coastal Development

Did you see any evidence of Coastal Development? (tick box)

Yes ☐ No ☐ Dont Know ☐

If yes please record any details (resorts, villages, towns, distance form the dives site etc).

Evidence of the illegal trade in endangered species

Any observations you make below and record in the Global Dive Log will be passed onto **TRAFFIC**, the world's wildlife trade monitoring network.

TRAFFIC works to ensure that the trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). **TRAFFIC** is a joint programme of WWF and IUCN-The World Conservation Union.

© **Elizabeth Fleming**
Turtle shell ornaments on display

Evidence of the illegal trade in endangered species

Did you find any evidence at any time during your holiday/dive trip of the illegal trade of endangered species. (tick box)

Yes ☐ No ☐ Dont Know ☐

If yes please record any details (the species, sale location, and any other available information). Please refer to the **TRAFFIC** Guide for more information concerning species identification, local laws, and contact information of **TRAFFIC** to report offences.

TRAFFIC