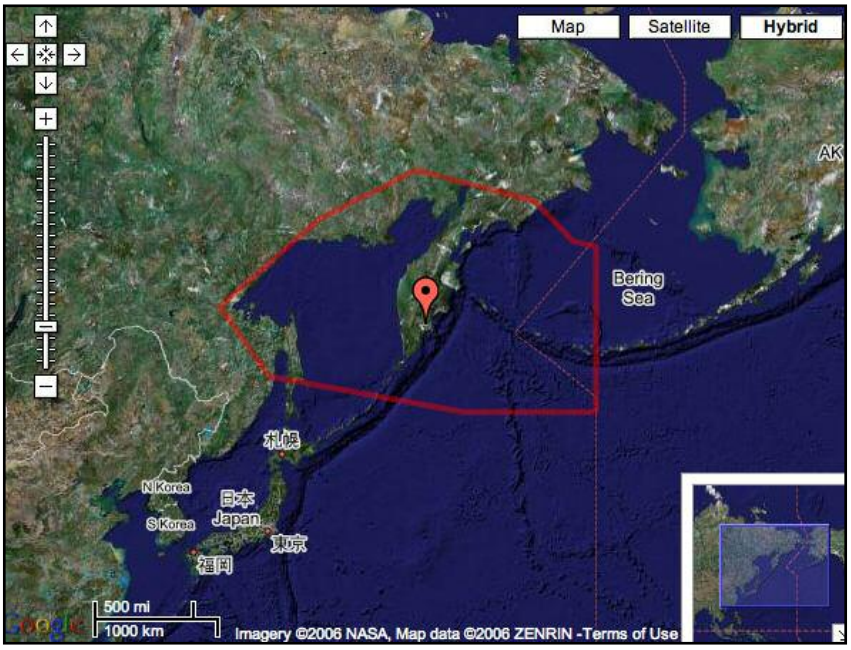
EARTHDIVE

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

PRE-DIVE BRIEFING PACK

Eco-Region 10c

Eastern Russia (Sea of Okhotsk) - Sub-polar



Contents

1.0 General Information

This booklet is a **pre-dive briefing pack** for the **East Russia (Sea of** Okhotsk) - **Sub-polar** 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.

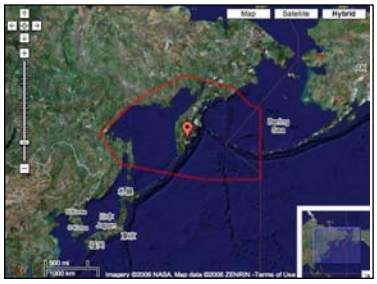
1.2.5 When recording always fin slowly and evenly with minimal sudden movements. Moving rapidly will disturb resident fish causing them to hide from view more quickly. By moving slowly and evenly you have more chance of seeing indicator species and recording their presence/absence more accurately. Always 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 East Russia (Sea of Okhotsk) - Sub-polar Eco-region



This eco-region comprises the waters off the east coast of Russia from the mouth of the Tumnin River, northeast along the shores of the Sea of Okhotsk, embracing the Kamchatka Peninsula and terminating northeast of the peninsula at the eastern limit of the Bay of Olyutorskiy in the Bering Sea. It also includes the northern part of Sakhalin Island from Makaro and Saritsa northward. The U.S. Aleutian Islands also fall into this region.

The **Sea of Okhotsk** is a semi-enclosed sea at the continental margin of Northern Japan and eastern Russia. The sea is shallow in the north and deep in the south, with a maximum depth of 3916 metres, and a mean depth of 891 metres. Although it is in a temperate zone, there are marked differences in climate within the area. Surface temperatures range from -1.5º to -1.8º C in the winter to 11 to 13 ºC in the summer. The current system is complex, with three large cyclonic spirals. At depths below 30-75 metres, the water temperature is persistently cold, with an approximate temperature of -1.7 ºC.

The Sea is highly productive, with thriving fisheries. The walleye pollock (*Theragra chalcogramma*) is the most abundant species, with a catch that exceeds the total catch of all the other fisheries. Other important commercial species include flounder, herring, halibut, Pacific sardine, cod, crab and shrimp. Stocks of Pacific salmon were historically abundant, but in the mid-1950s, they became depleted due to a deterioration of reproductive conditions in fresh water and the developing Japanese offshore fishery. Today, salmon stocks remain low. Overfishing affects most of the other major fish stocks. The cool but fertile waters of the region provide food for numerous birds, making the Sea of Okhotsk by far the richest of the Russian seas in terms of seabird numbers.

3.0 Indicator Species

What to look for and record in the **East Russia (Sea of** Okhotsk) **Sub-polar Eco-region**:

Snow Crab (*Chionoecetes opilio*)
Low numbers are indicators of overfishing

Abalone (*Haliotis discus hannai*)
Low numbers are indicators of overfishing

King Crab (*Paralithodes camtschatica*)
Low numbers are indicators of overfishing

Sea Urchins (*Strongylocentrotus nudus* and *S. intermedius*)
Indicators of rare habitat

North Pacific Giant Octopus (*Paractopus dofleini*)
Rare endemic species

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 Snow Crab (*Chionoecetes opilio*)

The snow crab (*Chionoecetes opilio*) belongs to class Crustacea, and order Decapoda and is one of the most important commercial species of Decapoda in the Russian Far Eastern Seas. (It is also the largest crab fishery in Alaska). Snow crabs inhabit the cold waters of the Sea of Japan east of the Korean Peninsula, the Sea of Okhotsk, the Bering Sea, and can be found in the northwest Atlantic, on sandy or muddy bottoms at temperatures ranging from -1 to 5oC and at depths varying between 20 and 420 m.

Because of its wide distribution, the snow crab has a number of other common names, including the spider crab and queen crab in English, crabe des neiges and crabe araignée in French, and zuwai gani in Japanese.

Crabs have broad, flattened, circular bodies that are covered by a hard shell or carapace, and grow by moulting their shell. It is believed that after the male crab becomes mature, they no longer possess the functioning Y-organs which provide the hormone that causes moulting. During moulting in immature specimens, the secreted hormone causes cuticle to be produced to replace the cuticular surface which has been moulted, or to replace damaged cuticle.

Snow crabs have circular bodies surrounded by five pairs of long, flat legs. Crabs caught for commercial purposes range in size from 9.5 to 15 cm in width, and weigh between 350 grams to 1.3 kilograms. Snow crabs are dimorphic (they exist in two distinct forms) with males growing much larger than females, and consequently account for most crabs caught commercially. Males may reach a maximum carapace width of 16.5 cm, a leg span of 90 cm and a weight of 1.35 kg. The female grows to a maximum carapace width of 9.5 cm, with a leg span of 38 cm and a weight of 0.45 kg. The abdomen of the male is quadrilateral in

shape (like a truncated pyramid), while the female has a circular abdomen

The snow crab diet is diverse and is composed primarily of algae, molluscs, small crustacea and marine worms.

3.2 Abalone (*Haliotis discus hannai*)

Haliotis discus hannai

Abalones are highly valued but slow growing, herbivorous marine snails. They belong to a large class of molluscs (Gastropoda) with single-structured shells. There are over 100 species worldwide in the single genus *Haliotis*, which means 'sea ear', a reflection of the flattened shape of the shell. It is no surprise then that it is called 'Oreille de Mer' in France. Abalone shells can be oval or rounded, with a row of respiratory pores and large dome towards one end. They are edible molluscs and considered a delicacy.). The inner shell of abalone, which has an iridescent green, blue, or pink sheen, is a source of mother-of-pearl

The strong, muscular foot generates enough suction to allow the abalone to fix itself firmly to rocky surfaces, and enables it to withstand the strong buffeting of the waves. They are found from the intertidal to the depth limit of marine plants, some 80 -100m, from tropical to cold waters.

The feed mostly on seaweed, which they trap by marginally raising the front end of the 'foot', and when a piece of seaweed drifts underneath, the foot clamps down on it.

Worldwide there are approximately 100 species of abalone, of which about 15 are harvested commercially.. Demand for this delicacy has outstripped the natural supply, with a resulting growth in mariculture. The principal countries producing cultured abalone are China, Taiwan and Japan. Several other countries including Australia, Chile, Iceland, Ireland, Mexico, New Zealand, South Africa, Thailand, and the United States are still developing significant abalone mariculture industries. The story of depletion of the ocean's abalone stocks is not encouraging in all of these countries, with reductions running from 50 to 95 percent in the commercial catch over the past twenty quarter century.

Called awabi in Japan, there are a number of species to be found in the waters of the region. Despite a large volume of imported species for local markets, there is a distinct preference in Japan for a local Japanese green abalone called ezo awabi (*Haliotis discus hannai)*, the only species eaten live locally. This species feeds on brown algae and is found on or under rocks from the inter-tidal zone to about 20m, the shell grows to 15cm, with 4-6 open, nearly circular perforations, with a spiral groove to the right of the perforations.

3.3 King Crab (*Paralithodes camtschatica*)

Originating from the Sea of Okhotsk in the Camchatca region of eastern Russia, the red king crab (*Paralithodes camtschatica*) was introduced to parts of the Russian waters of the Barents Sea in the 1960's. In the mid 1970's, individual specimens started to appear as bycatch on both sides of the shared Russian/Norwegian border. Since that time, bycatch numbers have increased significantly in that region.

The king crab is a valuable food source and is the most commercially important of all crabs. Whilst a number of studies have examined the optimum harvesting strategies for the species, very little has been done to understand the potential ecological impact that the species will have in non-native waters.

The crab's diet appears to include a wide range of organisms, especially polychaetes worms, small bivalves such as clams and echinoderms like sea urchins and starfish. It consumes large quantities of food relative to its body size; creating concern that

serious depletion of some benthic (bottom dwelling) species may occur where there are high concentrations of crabs in a limited area. The crab may well be a significant food competitor of bottom-feeding fishes.

The red king crab population is dramatically rising in numbers and spreading in distribution. The Barents Sea population has increased six-fold since 1995, with an estimated 12 million members of the species now resident, although within this region there are concerns that overfishing is bringing the population close to collapse.

The crabs can be found at depths ranging from the shoreline down to 400 metres, depending on size, age and season.

One of the largest crabs, in the Arctic it can grow up to 1.5m and weigh up to 10 kg. King crabs are unique in that they have only 6 legs while most crabs have 8. When alive, it is actually dark burgundy in colour.

There are two other species of king crab, the blue king crab (Paralithodes platypus) and the smaller brown or golden king crab (Lithodes aequispina.)

3.4 Sea Urchins (*Strongylocentrotus nudus* and *S. intermedius*)

Sea urchins are often used as indicator organisms in public aquaria to determine whether the system is functioning properly. These organisms are extremely sensitive to water conditions and are first to show signs of stress, seen when their spines are laid down or are shed.

Strongylocentrotus nudus

Warning! Some sea urchins are covered with sharp venom-filled spines that can easily penetrate and break off into the skin – even through a wetsuit. The DAN (Divers Alert Network) website contains useful information on how to handle the unfortunate effects of accidental brushes with these and other poisonous marine organisms. Check out http://www.diversalertnetwork.org/ for any information that you need.

Sea urchins (echinoderms) are a group of marine invertebrates that can be found in almost every major marine habitat from the poles to the equator and from the intertidal zone to depths of more than 5,000 metres. There are around 800 extant species and the group has a long and detailed fossil record stretching back many millions of years.

Strongylocentrotus intermedius

All echinoderms have tube-feet and these play a very important role in feeding and respiration. Echinoids move by means of spines and climb and cling on to hard substrata by means of their tube-feet. The spines also offer the primary means of defence. Sea urchins are principally herbivores and feed in a variety of ways. They have a powerful internal jaw and graze on algae or sedentary organisms, thanks to a complex system of teeth called the "lantern of Aristotle", first described by the Greek philosopher himself, over 2000 years ago. The sturdy skeleton of the urchin is called a test.

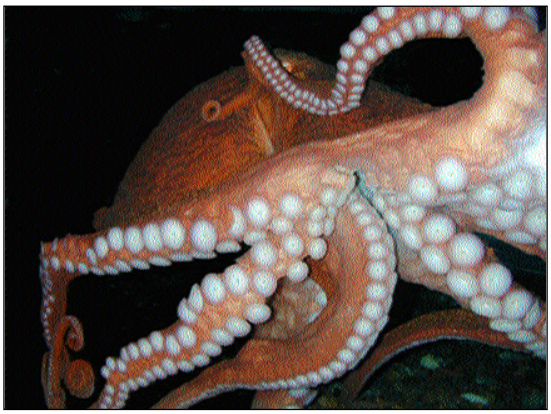
Intensive grazing by strongylocentrotid sea urchins sometimes causes drastic decreases of seaweed and subsequent maintenance of barren grounds. In northern Japan for example, the long-spined purple species, ***Strongylocentrotus nudus*** has been dominant on barren grounds along the Sea-of-Japan coast as well as the Pacific Coast. Prolonged barrens cause serious social problems. In these barren grounds, gradual elevation of sea water temperature, deficiency of nutrients and/or antifouling of encrusting coralline algae have been considered factors preventing recovery of seaweed beds. Recently, however, it was strongly suggested that intensive grazing by *S. nudus* is the major factor that keeps the region barren, based on detailed observations of barren bottoms, transplantation of kelp, removal of sea urchins and aquarium experiments in which corallines and herbivores coexist. Although the factors that initiated intensive grazing by the sea urchin have not been specified yet, two possibilities are

the enlarged harvest of kelp, and the decrease of solid organic matter, which caused a shortage of food for sea urchins or other animals and nutrients for kelp growth.

Strongylocentrotus intermedius is distributed along the Asian and Siberian coast of the Pacific. It is found on shallow rocky bottoms and is associated with kelp. The growth rate varies depending on species density and the level of available nutrition. In high growth conditions, individual specimens will reach 40 mm test diameter in 2 to 4 years and maximum sizes of over 55 mm at maximum ages of 6 to 10 years. Sexual maturity occurs at around 30 to 35 mm test diameter (2 years of age) and spawning occurs in spring and autumn.

Strongylocentrotus nudus occurs on the Pacific coast on north Asia and Siberia. It is found in the intertidal to subtidal rocky reefs and is also strongly associated with kelp communities. Overgrazing by S. nudus promotes the formation of coralline flats. Growth varies depending on nutrition. In kelp forests individuals reach 50 mm test diameter in 2 to 4 years, whilst this will take individuals 7 to 8 years on the nutrient deficient coralline flats. Maximum longevity is reported as 14 to 15 years. Sexual maturity is attained at 40 to 45 mm test diameter, and spawning takes place in autumn.

3.5 North Pacific Giant Octopus (*Paractopus dofleini*)



Although there are over 100 species of octopuses (*Genus Octopus*) in the world as well as numerous species of deep-water and pelagic octopuses (Order Octopoda), our knowledge of them comes almost entirely from just a few species. (*Octopus vulgaris, Octopus bimaculatus, Enteroctopus dofleini, Eledone cirrhosa*).

The Giant Pacific Octopus (*Octopus dofleini*) is the world's largest species of octopus, weighing in at 18-25 kg with a 9.5 m. arm span.. It has recently been re-classified as *Enteroctopus dofleini*. The genus *Enteroctopus* embraces the other giant octopuses of the world, viz. *E. dofleini* in the north Pacific, *E. megalocyathus* off S. America and *E. magnificus* off southern Africa. .

Octopuses are cephalopod molluscs characterized by having eight arms, no tentacles, and the internal shell common to other molluscs has been lost. Octopuses can camouflage themselves by changing the colour and texture of their skin in a matter of seconds. This helps them to both avoid predation and ambush prey. Colour change is also used as a form of communication with other octopuses

Enteroctopus dofleini occurs on the continental shelf of the North Pacific Ocean, where its range extends from southern California, north along the coastline of the Pacific Northwestern Americas, across the Aleutians, and south to Japan. It can be found at depths ranging from the intertidal to 750 m. and has a life span of 3-5 years.

Octopus dofleini usually mate only once. After mating, the male moves into deep water and die. The female lays up to 100,000 eggs on rocks or sandy bottoms at depths less than 50 metres over a period of several days. She will tend the eggs during the incubation period of 4 to 7 or more months, a period dictated by the ambient temperature. During this

period the female will abstain from feeding and will die soon after the eggs hatch.

The octopus diet consists mainly of crustaceans and molluscs, most often small crabs and scallops. Other bivalves, snails, fish and other octopus are also eaten.

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 (all available by download) 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.

Snow Crab (*Chionoecetes opilio*)
How many Snow Crabs 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:

King Crab (*Paralithodes camtschatika*)
How many King Crabs 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:

Abalone (*Haliotis discus hannai*)
How many Abalone did you see? (tick box and/or record actual number)

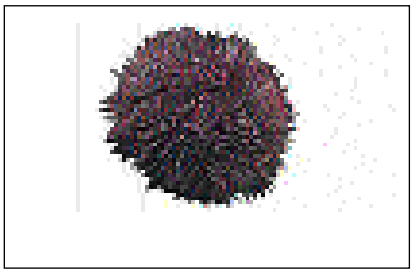
0 ☐ 1 - 5 ☐ 6 - 20 ☐ 20 - 50 ☐ 51 - 250 ☐ >250 ☐

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:



Sea Urchins (*Strongylocentrotus nudus* and *S. intermedius*)
How many Sea Urchins 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? Can you record its species? What was it doing? At what depth did you see it/them?

Additional Information:

North Pacific Giant Octopus (*Paractopus dofleini*)
How many North Pacific Giant Octopuses 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 ☐

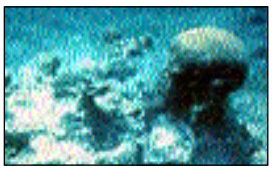
If yes please record any details (plastic, wood, paper, other etc.) Please record quantity and any other relevant information.

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