



# SAVING THE TREASURES OF THE SEA

by creating  
networks of  
marine  
protected  
areas in the  
North-East  
Atlantic



# THE NORTH-EAST ATLANTIC OCEAN IS ONE OF THE WORLD'S RICHEST MARINE AREAS

Whales and turtles travel through its waters, and seals and seabirds, as well as many commercially important fish, find shelter, nursery and feeding grounds here. In places, the region also hosts exotic habitats, such as coral reefs and hydrothermal vents. Due to its wealth of habitats and resources, the North-East Atlantic plays a crucial role in the economy and social life for coastal communities and entire countries in western Europe. But the ever-increasing human pressure on the sea is now threatening these treasures and the very fabric of coastal communities depending upon them.

To safeguard the natural treasures and invaluable resources of the marine environment, our use of the sea must be managed. WWF works to restore and protect marine biodiversity in the North-East Atlantic. Our ultimate goal is:

**healthy seas and coasts that are cared for, understood and used wisely – today and for the future**

## HOW WE WORK

To reach our goal, we work closely with scientists and media, and through lobbying intergovernmental bodies such as the European Commission, the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic, the Wadden and the North Sea Conferences, etc.

### Our main objectives are to:

- Promote the establishment of a network of MPAs in the North-East Atlantic
- Halt and reverse the decline of marine habitats and species by reducing the impact of human activities on the marine environment
- Foster the application of the ecosystem-based approach to the management of human activities



©WWF-Canon/Fritz PÖLKLING

*Great black-backed gull (Larus marinus) is one of many species finding feeding grounds in the North-East Atlantic.*

## ECOSYSTEMS AND LIVELIHOODS AT RISK

Whereas some important European coastal and near-shore areas have been afforded protection through the European Union's Natura 2000 initiative (based on the EU Birds and Habitats Directives), precious little has yet been done to safeguard the offshore environment and its resources. We still know relatively little of offshore ecosystems and their function. Despite this, continental shelf and deep-water fisheries, and exploration and exploitation of offshore oil, gas, mineral and wind resources, are rapidly expanding – reaching increasingly deeper waters. The ever-growing transportation by ship of oil, chemicals and radioactive material is another cause of deep concern. Due to their huge scale and physical disturbance, chemical pollution and biological impact, these activities threaten to irreversibly alter the structure of marine ecosystems across the North-East Atlantic.

We must put the scale of exploitation in relation to the importance of what marine ecosystems provide for society, taking into account how this exploitation affects the availability of resources. Already today, mismanagement and over-exploitation of resources negatively affect human livelihoods and coastal communities, experienced for example in dwindling fish stocks and repeated catastrophic oil spills along the coasts of Europe.

*Galicia, Spain.  
November 2002.  
As the oil tanker  
Prestige sank,  
painting Spanish  
shores black with  
oil, this old woman  
lost her life-long  
money earner: she  
used to collect  
clams and mussels  
along the beach.*



©WWF-Canon/Raúl GARCÍA

**A few examples of peculiar and threatened habitats in the North-East Atlantic follow on the next two pages** .....

## THOUSAND YEAR OLD CORAL REEFS TURNED INTO RUBBLE

Unheard of ten years ago, cold water coral occurs all along the continental margin of the North-East Atlantic, at places forming magnificent reefs. Cold water coral differs from its tropical relatives in that it does not obtain nutrients from sunlight-dependent algae, but instead feeds by capturing food particles from the surrounding water, enabling it to occur at greater depths. The species richness at such reefs is comparable to that of tropical reefs and more than 800 species have been discovered on North-East Atlantic reefs so far. This tremendous number of species is due to the three-dimensional structure of the reefs, giving them an important role in maintaining ocean biodiversity, providing shelter for many animals, as well as nurseries for commercially important fish species, such as ling and redfish.

**Threats:** Because cold water coral grows slowly and has a delicate structure, it is very vulnerable to physical damage – it could take disturbed reefs hundreds of years to recover. Bottom-trawling with heavy gear has turned reefs outside Norway, Ireland and Scotland into rubble before they were even known to exist. In some areas, 30–50% of reefs have been reported damaged or destroyed. Oil and gas exploration and production in the vicinity of reefs is another major concern.

### WWF wants:

- An immediate ban of trawling at all cold water coral reefs in the North-East Atlantic
- Exclusion of oil and gas prospecting and development, including the laying of pipelines, at and in the vicinity of reefs designated for protection
- The network of marine protected areas (MPAs) to protect at least 60% of known cold water coral habitat in the North-East Atlantic by 2010

## SEAMOUNTS - THE NEW FRONTIER FOR FISHERIES

Seamounts are under-water mountains rising more than 1,000 metres from the abyssal plains of the open ocean. They support a great variety of hard and soft bottom fauna, such as coral, sponges, tube worms and shellfish, and provide important breeding and feeding grounds for seasonally aggregating open ocean fish. Many fish species at seamounts, such as orange roughy and alfonosinos, are large and slow-growing, some reaching the impressive age of over 30 years before even reproducing. Seamount communities differ from those in the surrounding deep sea. As they often stand isolated, they have a high level of endemism – hosting many species that are unique to one place on Earth.

**Threats:** Seamounts are even more sensitive to fishing and other human activities than continental shelf areas. As fishing fleets now advance further out to sea, seamounts turn into the new frontier for fisheries targeting seasonally aggregating fish. Due to the long and complex life cycles of these fish stocks, they are rapidly fished to commercial extinction.

### WWF wants:

- A moratorium on fishing at seamounts until more is known about the ecology at these underwater islands
- Designation of seamounts as part of the MPA network in the North-East Atlantic

*Cold water coral reefs can be thousands of years old, reach a height of over 30 meters and extend several kilometres. The main species making up the reefs in the North-East Atlantic is *Lophelia pertusa*. Here, an Atlantic catfish (*Anarhichas lupus*) resting on a Norwegian coral reef.*





©WWF-Catoni/Pieter LAGENDYK

*The waters surrounding seamounts often contain ample nutrients brought from the seafloor to the surface by upwelling currents. This creates an abundance of plankton that in turn attracts fish, but also whales, such as this blue whale (*Balaenoptera musculus*).*

## HYDROTHERMAL VENTS - VULNERABLE MIRACLES IN THE DEEP

Along the Mid-Atlantic Ridge, where continental plates meet and tectonic activity is high, up to 400°C hot, mineral-enriched water jets out in the surrounding seawater from fissures and tall, chimney-like structures – hydrothermal vents. Entire communities that do not exist anywhere else are found here, and it is thought that life on our planet might have originated at such vents. Myriads of bacteria capture the chemical energy present in the vent fluid, and are eaten by an abundance of mussels and worms, thus providing the backbone to an entire food chain in the deep, dark ocean.

**Threats:** At some hydrothermal vents, the fragile fauna has been affected by unregulated research activities, but the biggest threat to these particular habitats is the potential mining of polymetallic deposits in the vent structure.

### WWF wants:

- An international governance and management system for these features, as most vents lie outside areas of national jurisdiction
- Marine protected areas with management plans and/or code of conduct for research activities
- An ecosystem-based assessment of the potential impacts of mining activities on vent ecosystems prior to the start of exploration

*...up to 400°C hot, mineral-enriched water jets out in the surrounding seawater from fissures and tall, chimney-like structures...*



©ATOS/lframer

*Hydrothermal vents occur along the Mid-Atlantic Ridge. Seawater gets in contact with surface-lying magma, is superheated to 400°C and jets out into the surrounding water. Only animals specially adapted to the vents' extreme conditions can live here, such as these mussels and white crab.*



©WWF-Canon/Hartmut JUNGIUS

## TOOLS FOR HEALTHY SEAS

### MARINE PROTECTED AREAS

**WWF defines a marine protected area (MPA) as:**

*'An area designated to protect marine ecosystems, processes, habitats and species, including the essentials of marine biodiversity, and which can contribute to the restoration and replenishment of resources for social, economic and cultural enrichment.'*

MPAs can be managed and zoned in a number of ways to achieve ultimate conservation impact and ensure sustainable use of resources. For example, non-damaging, sustainable use of resources may be allowed in some zones, whereas others have stricter protection. The size of the designated area should depend on the individual requirements of the habitat and species to be protected.

*On top of pollution from land-based sources, fisheries, sand and gravel extraction, oil, gas and mineral exploitation, wind energy developments and shipping all have a substantial impact on the marine environment.*

### WHY MARINE PROTECTED AREAS?

The sea is affected by human activities in many ways. On top of pollution from land-based sources, fisheries, sand and gravel extraction, oil, gas and mineral exploitation, wind energy developments and shipping all have a substantial impact on the marine environment. The overarching aim of MPAs is to achieve the conservation of marine ecosystems. MPAs are used to prevent damaging human activities especially at vulnerable sites or to allow for recovery from previous impacts. By doing this, MPAs offer a range of benefits both for the marine environment and for fisheries and people.

#### MPAs safeguard marine resources by:

- Protecting and maintaining biodiversity
- Protecting vital marine habitats
- Providing a safe haven for depleted and vulnerable fish stocks to breed and recover

In the North-East Atlantic, MPAs can act as buffer areas preventing the complete degradation and irreversible change of the marine environment, by providing habitat conservation or regeneration zones, as well as refuges and stepping stones for species at risk.

*When planning marine resource use, the needs of the marine environment must be taken into account.*

## NETWORKS OF MARINE PROTECTED AREAS - THE WAY FORWARD

MPAs tend to be small and unconnected to each other. Because of this, individual MPAs are not enough for achieving the adequate protection of biodiversity, entire ecosystems and large-scale marine processes so crucial for coastal economies. Establishing networks of MPAs is a more effective approach to conservation – and a key ingredient in ecosystem-based management (EBM, see box). Such a network must comprise thoroughly selected key inshore and offshore habitats, ensuring protection for the full range of habitat types and species, including important sites for migratory species and ecological corridors across regional seas and ocean basins.

## WHAT ABOUT THE HIGH SEAS?

For any network of MPAs to be truly representative, it must also include high sea areas, i.e. the huge ocean surface outside national jurisdiction. However, until now there is no high sea MPA on the planet. The unregulated exploitation of living resources at oceanic features is possible due to the current lack of governance of the high seas, endorsed by the United Nations' Convention on the Law of the Sea (UNCLOS). WWF is working with scientists and experts in maritime law to create a framework legislation for these vast expanses. Such a framework would help prevent further destruction of our global commons, and safeguard their natural treasures for the future.

*...until now there is no high sea MPA on the planet*



*The rapidly expanding deep sea fishing industry targets fish stocks that rapidly can be depleted, such as this deep sea redfish (*Sebastes mentella*).*

## ECOSYSTEM-BASED MANAGEMENT - THE KEY TO THE FUTURE

The challenge today is to safeguard the marine environment while sustainably using the goods provided by marine ecosystems. Therefore, in order to keep human impact at a sustainable level, it is necessary to manage the multitude of human activities and interests across the entire North-East Atlantic against the objective to maintain or restore natural ecosystem structure. Ecosystem-based management (EBM) offers a range of measures that can be used to manage marine resource use, taking into consideration both social, economic and ecosystem objectives. It involves direct controls of activities as well as spatial planning as a tool to couple conservation with the needs of all users of the marine environment. The key to success is a vision for the environment shared by all stakeholders.

### **Ecosystem-based management:**

- Balances the interests of all users of the sea against the vulnerability of the ecosystem and eventual requirements for recovery from previous impacts
- Is based on the precautionary principle – minimising the risk of damage to species and habitats, in particular when knowledge is scarce or non-existent

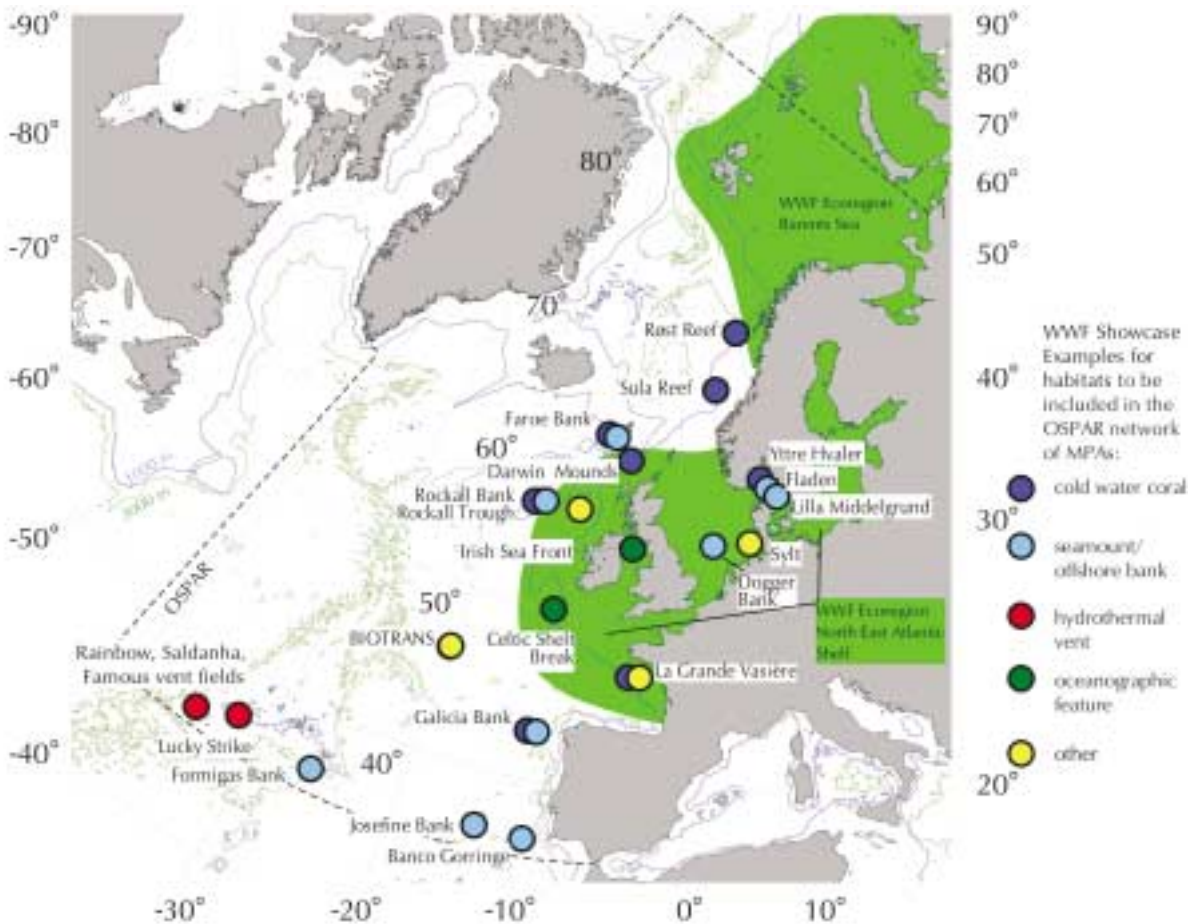
©WWF-Canon/Vladimir FILONOV



*Offshore oil and gas extraction threatens marine life and ecosystems. Harmful hydrocarbons leak out in the surrounding waters and drilling releases clouds of sediments that kill suspension feeders such as sponges and cold water coral.*

## **SPATIAL PLANNING OF OCEAN USE**

The need for spatial planning of our use of the sea is becoming increasingly acute, as pressure builds on marine resources and the oceans are being crowded with tankers, oil rigs, container ships, fishing vessels, offshore wind parks, ferries, etc. Disasters, such as the oil tanker Prestige in 2002, can be avoided by better regulating shipping, including identifying particularly sensitive sea areas (PSSAs), in line with the International Maritime Organisation (IMO) guidelines. In such areas, ships carrying heavy crude or fuel oil or hazardous chemicals, can for example, be routed away from ecologically important and fragile areas.



WWF has put forward a list of showcase MPAs to the OSPAR Commission. These are a selection of important marine habitats intended to show the huge diversity of the North-East Atlantic.

## TWO GLOBALLY IMPORTANT ECOREGIONS

WWF concentrates its efforts to conserve nature and ecological processes in 200 priority ecoregions worldwide – the Global 200 Ecoregions. The North-East Atlantic encompasses two such ecoregions: the North-East Atlantic Shelf and the Barents Sea – two of the richest and most productive regions in the Atlantic Ocean. Here, WWF uses an ecosystem-based approach assessing human impacts, looking for the root causes of environmental degradation and searching for holistic solutions to end destructive practices while conserving

both natural and cultural heritage. Cooperation with all stakeholders is an essential part of this approach, and we work closely with scientists, NGOs and intergovernmental institutions to create a real momentum for marine conservation.



©WWF-Canon/Edward PARKER

*The long-term survival of fishing communities such as Newlyn, the UK, depend upon a healthy marine environment.*

## TWO REGIONAL FRAMEWORKS

In the North-East Atlantic, two major frameworks coordinate the will of European governments to protect the marine environment:

- The North Sea Conference groups countries bordering the North Sea
- The OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic has been signed by all coastal and island states from Portugal to Norway, as well as by Switzerland, Luxembourg and Finland

## GOVERNMENTS' COMMITMENTS

Governments across the globe have committed themselves to marine protection at several international meetings. At the World Summit on Sustainable Development (WSSD) in Johannesburg 2002, governments agreed to create networks of marine protected areas before 2012. Also, all OSPAR countries (see box) have signed the Annex V to the Convention, ensuring the protection and conservation of ecosystems and biodiversity in the OSPAR maritime area. Environment Ministers from North Sea and OSPAR countries have also agreed to establish an ecologically coherent network of well-managed MPAs, including offshore sites, by 2010. Furthermore, EU countries have recently started designating Natura 2000 sites in offshore waters, for example the Darwin Mounds in the UK.

## DEMONSTRATING OFFSHORE DIVERSITY

However, despite positive government commitments, the implementation and realisation of these commitments into beneficial effects for the marine environment is far away. WWF will continue to actively support the processes leading towards successful implementation of government commitments in all fora. For example, in order to accelerate the designation of MPAs, WWF has put forward a list of more than 20 showcase sites to the OSPAR Commission. This list demonstrates the extraordinary diversity of offshore features and habitats in the North-East Atlantic region which will have to be considered when establishing a truly ecologically coherent network of marine protected areas. WWF has further published a study describing the main offshore habitats in the OSPAR area and an inventory of the offshore sandbanks and reefs in European waters, demonstrating the degree of knowledge available on the offshore environment. WWF is also taking part in a European scientific study of seamounts. And, to stimulate the development of MPA management plans, we have published blueprints for MPA management plans for the Dogger Banks and Darwin Mounds, among others.

## STEPS FORWARD

One of the first steps towards designating offshore and deep-sea MPAs was taken in June 2002, when the regional government of the Azores declared two hydrothermal vent fields as protected under national legislation. WWF brought together all stakeholders in a workshop before the nomination and helped design a management plan for the two sites.

Another important and commendable commitment to conservation was made in 1999, when the government of Norway banned the use of trawls in the vicinity of coral reefs in its waters. The world's largest coral reef, the Røst Reef, was protected in June 2003, excluding oil and gas exploration as well as trawling.

## HEALTHY SEAS AND COASTS - NOW AND IN THE FUTURE

In order to achieve our goal **'Healthy seas and coasts, cared for, understood and used wisely, now and in the future'**, we must all assume responsibility for the state of the sea. Organisations, governments, industry and individuals can all contribute to a wise use of the natural values the sea offers us, by designating marine protecting areas, accepting ecosystem-based management of marine resource use, and by choosing environmentally sustainable solutions – be it at the fish counter or when buying energy.

**LET'S WORK TOGETHER FOR A LIVING SEA!**





#### **The Endangered Seas Programme**

WWF's global Endangered Seas Programme is by far the world's largest marine conservation programme. To turn the tide from decline to healthy seas, WWF has set two global targets for the marine environment, to be reached before 2020:

- Create ecologically representative networks of well-managed marine protected areas, covering at least ten per cent of the world's oceans
- Stop overfishing and ensure that all fishing is sustainable

**Take action to save our oceans**



Published June 2003 by WWF-World Wide Fund For Nature (Formerly World Wildlife Fund), Gland Switzerland. Any reproduction in full or in part of this publication must mention the title and credit the above-mentioned publisher as the copyright owner. © text 2003 WWF. All rights reserved.

The material and the geographical designations in this report do not imply the expression of any opinion whatsoever on the part of WWF concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries.

#### **Contacts**

##### **Stephan Lutter**

International marine policy  
WWF Germany  
Am Guetpohl  
28757 Bremen  
Germany  
lutter@wwf.de  
www.wwfneap.org

##### **Endangered Seas Programme**

WWF International  
Avenue du Mont Blanc  
1196 Gland  
Switzerland  
pbryant@wwfint.org  
www.panda.org/endangeredseas

Funded by the Oak Foundation,  
Boston/Geneva