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Marine Reserves for the Mediterranean Sea

Executive summary

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Introduction

This Greenpeace report sets out the argument for the urgent establishment of a network of marine reserves across the Mediterranean Sea to safeguard its productivity, its marine life and its ecosystems for the many millions of people who rely on it for their health and well being - now and in the future.

The Mediterranean Sea is a rich and diverse environment, home to many unique species and important ecosystems. Because the majority of the Mediterranean is "high seas" - beyond the control of any one country - it truly represents a shared resource, and a shared responsibility, for the region.

The Mediterranean Sea is threatened by many damaging human impacts, including over-fishing, destructive fishing techniques, pollution and climate change. Steadily, these are degrading the shared resource and treasure that the Mediterranean Sea represents.

A network of large scale marine reserves will represent a shift in the balance of human impacts, from damage and harm to protection and conservation. This network must cover a representative range of marine ecosystems, both in coastal waters and on the high seas. Greenpeace believes that in the face of the damage that has been done to the Mediterranean, this network of marine reserves must cover around 40% of the Mediterranean Sea in order to protect it for generations to come.

Because it is virtually enclosed and its habitats inter-connected, the Mediterranean Sea is a prime example of why marine management must take account of whole ecosystems, not single species or areas. A marine reserve network will create a sound basis upon which to build sustainable, precautionary and ecosystem-based management of the Mediterranean's marine resources.

Experience of marine reserves around the world has shown an increase in the number, size and diversity of species within the reserves. They therefore represent our most valuable tool in conserving biodiversity and making ecosystems more resilient to change or damage. This, combined with sustainable management, also brings benefits of precaution and insurance to fisheries management for the surrounding seas. Marine reserves also have many other positive benefits for science, education and recreation.

Although agreements and commitments have been made at international, regional and national levels to protect the Mediterranean Sea, progress towards developing a network of marine reserves is still lacking. Agreements and commitments are meaningless without action, and action towards a network of marine reserves requires political will. Mediterranean countries must work together to protect the Mediterranean, our shared resource and treasure.

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Threats to the Mediterranean

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Overfishing and other fisheries impacts

A declining catch

Total catches in both the Mediterranean and Black Seas have been around 1,500,000 tonnes in recent years. That's more than double the 700,000 tonnes landed in 1950, but is far below the maximum 2 million tonnes reached between 1982 and 1988. Catches of many species reached peaks between the late 80's and the early 90's, but have decreased since.[1]

Fisheries management in the region

The management of Mediterranean fisheries leaves much to be desired. For the majority of stocks, there is not even a proper assessment of their status. The European Environment Agency found that 80% of commercially exploited stocks in the Mediterranean have no robust assessment of their status exists. Where the status of stocks has been assessed, around 60% of commercially important stocks are being fished outside of safe biological limits.[2]

Overfishing is resulting in the targeting and landing of increasingly smaller fish, in some cases in spite of the fact that size restrictions exist. The protection of fish populations through marine reserves in breeding areas and minimum size limits is critical to the sustainable management of Mediterranean fisheries.

By-catch is another considerable problem. Trawl fisheries discard between 20 and 70% of the catch depending on the depth trawled.[3]

Large migratory species: a common resource under threat

Large migratory fishes such as tuna and swordfish swim throughout the Mediterranean, and have been shared as a common resource by fishing communities in this region for thousands of years.

The case of the bluefin tuna is well known: in May 1999 Greenpeace published a report publicly exposing the depletion of this population in the Mediterranean Sea.[4] The amount of adult bluefin tunas had decreased 80% over the previous 20 years. Huge numbers of

juvenile tuna were caught every season, further compromising the ability of the stock to regenerate from these historically low levels. Pirate fishing boats were also depleting the stock. It was abundantly clear at the time of the Greenpeace report that drastic measures were needed to allow the bluefin tuna population to recover. Since then, however, the situation has deteriorated. The increasing threat to bluefin tuna in the Mediterranean has prompted Greenpeace to take action against this fishery in 2006.

Illegal, Unregulated and Unreported fishing

Worldwide, illegal, unregulated and unreported (IUU) fishing is a major problem, linked to the lack of effective management systems and also to increased commercial pressure on dwindling fisheries resources. The Mediterranean is no exception to this problem. An example is the extensive use of driftnets, which continues despite their prohibition in the Mediterranean.

Driftnetting

The impact of driftnets, often 10-12 kilometres in length, has long been under scrutiny due to the by-catch associated with it. There is no doubt that drift netting continues to exert a huge impact in the Mediterranean. In the Alboran Sea, driftnets threaten the last healthy population of common dolphins in the Mediterranean. There is a wide consensus about the negative impacts of drift netting on cetaceans as a whole.

Bluefin tuna ranching: A recipe for disaster

The capture, transport and fattening of tuna in cages all along the Mediterranean coast is known as "tuna ranching". Industrial purse seiners sweep the whole region in search of tuna, assisted by a flotilla of aircrafts able to find schools of tuna, despite their dwindling numbers. The practice has also resulted in an increase in the catch of juvenile tuna. A recent report has also highlighted the risk of introducing diseases to local fish species from the fish bait that is used in tuna ranching, as has previously occurred in tuna fattening operations in Australia.[5]

Aquaculture

Aquaculture - the farming of marine animals and plants - is an expanding industry worldwide, and the Mediterranean Sea is no exception.

Mediterranean coastal areas are already subject to extremely high human pressure, and pristine areas are more and more difficult to find. The aquaculture sector is in many cases adding to this pressure in search of areas of high water quality in order to set up their farms. The installation of fish farms close to vulnerable and important habitats such as seagrass meadows is particularly concerning. Concerns have been raised about aquaculture production in the Mediterranean, including disease problems, biodiversity concerns due to the introduction of new species in the region, the impact of the farms' effluents on the surrounding environment, competition for good quality coastal areas and competition with other coastal users.

Oil

The Mediterranean Sea is an area in which the oil industry is highly active. At any one time in the Mediterranean Sea around two thousand vessels are in transit of which approximately 200 to 300 are tankers transporting oil and petroleum products. Around 370 million tonnes of oil is transported through the Mediterranean on an annual basis, representing 20% of global oil shipping.[6] In turn, this creates an increased risk of oil pollution incidents - on average there are around 60 incidents a year. The United Nations Environment Programme (UNEP) estimated in 2002 that over the previous fifteen years some 55,000 tonnes of oil had been accidentally spilled in the Mediterranean with three major accidents accounting for 75% of the total.[7]

Shipping

It is estimated that the Mediterranean accounts for around one third of the world's total merchant shipping.[8] Many of the goods transported by ships are hazardous and the loss of hazardous cargo can result in severe damage to the marine environment. Even leaving aside the potential for accidents, the discharge of chemical tank washings and oily wastes including oil contaminated ballast and wash waters represent a significant source of marine pollution.

Pollution

The Mediterranean suffers from pollution from industry, agriculture and urban centres and these pollution sources are regarded as major environmental problems in a large majority of countries in the region.[9] Limited water exchange makes the Mediterranean very sensitive to the build-up of pollutants. In addition to coastal point sources, other sources are situated inland and the pollutants are carried by the many rivers that drain into the Mediterranean. Generation of sewage effluents from coastal cities, which are then discharged untreated or partially treated into the sea is a major problem along Mediterranean coastlines themselves, but also creates a serious health risk in a region where fish is an integral part of the regional diet and many people depend on the sea for a living.

Tourism

Tourism, despite providing economic benefits to the region, has had a major role in the degradation of the coastal and marine environment. This rapid and uncontained urban development has caused serious erosion problems in many places along the Mediterranean coasts. The great seasonality of Mediterranean tourism means that the majority of visitors are present during the summer months, producing large amounts of solid waste and wastewater which can not be properly treated due to inadequate infrastructure of small coastal towns and villages, the services of which were originally built to serve only a small permanent population. Tourism is often concentrated in areas of high natural wealth, causing a serious threat to natural habitats of endangered Mediterranean species such as sea turtles and monk seals.

Climate change

The potential impacts of climate change within the various European regions have been recently assessed.[10] Sea level rise is likely to cause an increase in storm surges and floods. Coastal erosion is likely to increase, while estuaries and coastal groundwater may become more saline. Coastal water tables may rise and drainage of such land areas will be impeded. It has been predicted that the number of people living in Mediterranean coastal areas affected by flooding could rise dramatically by the 2080s.[11]

Alien species

Introduced or "alien" species can have serious impacts in the marine environment, competing with native species for food and for space, and altering the structure of communities and habitats. Alien species may be introduced from one marine area to another either by intentional release or by accident. To date, over 600 exotic species have been recorded from the Mediterranean Sea.[12]

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Solutions

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Greenpeace is campaigning for the protection of forty percent of the Mediterranean Sea in marine reserves:

High seas large-scale marine reserves

Large-scale marine reserves are areas that are closed to all extractive uses, such as fishing and mining, as well as to disposal activities. Within these areas there may be core zones where no human activities are allowed, for instance areas that act as scientific reference areas or areas where there are particularly sensitive habitats or species. Marine reserves have demonstrated clear benefits for conserving the plants, animals and habitats of the sea, and for the sustainability of the fisheries beyond the boundaries of the reserve.

Marine reserves are primarily a tool for conservation, and despite the additional benefits they bring for fisheries, recreation and other uses of the marine environment their conservation benefits alone are important enough to warrant the creation of a global marine reserve network. It is unthinkable that on land, an entire region would be utilised for urban development, industry and agriculture, without making a provision for wild spaces to ensure the survival of natural ecosystems. Likewise, this must be the case for the oceans.

Coastal zone small scale marine reserves

The coastal marine reserve network needs to be established in consultation with local communities and in association with well-managed, sustainable fishing areas within the coastal zone. This will ensure that small-scale features are protected, while equitable access to fishing resources is maintained. The benefits that marine reserves bring for education, research, leisure and tourism will also be shared between coastal communities. They can also benefit small-scale fisheries in surrounding areas.

Ensuring that the rules are followed in marine reserves is vital to their success. In a study of two Mediterranean marine reserves, one had a biomass of commercial species 4 times higher after 10 years, while the other had only 0.2 times more - this was attributed to poaching from that reserve.[13] The realization of benefits from marine reserves, including to the productivity of surrounding fisheries, makes coastal communities a powerful ally in ensuring that marine reserves are well managed and their rules enforced. A series of

marine reserves in Egypt's Red Sea were established in 1995, giving an increase of over 60% in the catch per unit effort of a surrounding fishery after only five years of protection.[14]

The Greenpeace proposal

Greenpeace has gathered information on the values and threats to the Mediterranean Sea, and the existing and proposed protected areas within the Sea. This data has been used to develop a proposed network of marine reserves. This proposed network includes examples of the different habitats found in the region, as well as areas known to be important spawning and nursery grounds, which are necessary for proper functioning of the ecosystem.

Greenpeace believes that establishing a network of marine reserves is fundamental to protecting natural resources and providing a sustainable future for many economic activities in the Mediterranean, and to ensure a high quality of life for the people living close to the Mediterranean Sea. Greenpeace recognizes the crucial importance of further refinement and the effective engagement of different stakeholders and in particular the coastal communities, in the process of designating a marine reserve network for the Mediterranean.

Caring for the rest of the sea

The benefits of marine reserves are equally dependent upon or enhanced by ecologically sensible management of the surrounding sea. To ensure that the majority of the Sea - the sixty percent outside of marine reserves - is managed in a sustainable and equitable way, some fundamental changes in management are needed:

Freedom for The Seas

The current oceans governance regime is based on the principle of "freedom of the seas"; the outdated concept that the high seas (which the Mediterranean is largely comprised of) should be open to all nations to freely exploit. This concept originated in the days when the resources of the ocean were considered inexhaustible, yet today it is clear that this is simply not true. Modern oceans governance needs to fundamentally change to recognise that our oceans resources are finite, and that what we need to strive for instead is freedom for the seas.

So freedom for the seas recognises that there are limits on what can be absorbed by and what can be taken from our oceans, and requires the sustainable and equitable management of the high seas for the benefit of all of humankind, for now and for the future.

Freedom for the seas also means that impacts on the entire ecosystem are taken into account before any activity is allowed to take place, and that precaution lies at the core of the management regime - those who wish to use this common resource are responsible for any harm that they may cause and must minimise the risks of their planned activities on the environment. In addition, it means:

Adoption of ecosystem based management

No species exists in isolation, and fisheries management is fundamentally flawed if it does not account for its impacts on the surrounding habitat. The disastrous results of managing fisheries while destroying their critical breeding habitats through bottom trawling, for example, demonstrates the need to manage ecosystems, not single stocks or species.

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Practicing the precautionary principle

Precaution means that a lack of knowledge does not excuse decision-makers from taking action, but rather that they err on the side of caution. To do this, the burden of proof must be placed on those who want to undertake activities such as fishing or coastal development to show that they will not harm the marine environment, before they are allowed to do so. This will encourage sustainable development and fisheries, while ending destructive practices.

Elimination of destructive fishing practices

Fishing practices that clearly fail the test of sustainability must be prohibited. An example is the use of driftnets, which have unacceptably high levels of by-catch and as a result have been banned from the Mediterranean. The ban on driftnets must now be enforced.

Elimination of pirate fishing

The management of fisheries and the marine environment is only as good as its enforcement. Illegal, unregulated and unreported (IUU) fishing threatens the marine environment and the livelihoods of those who fish legitimately. Loopholes in fisheries management, lax attitudes allowing the proliferation of flags of convenience and poor enforcement of regulations must be addressed.

Reduction of fishing overcapacity

The continued expansion of fishing capacity presents an obstacle to achieving equitable and sustainable use of marine resources. Fishing capacity must be adjusted to a level that the sea can sustain, and subsidies encouraging over-capacity must be eliminated.

End of pollution

The sea is not a waste dump. Unfortunately the Mediterranean Sea, like most other seas and oceans, has been treated as such. There are many agreements to protect the Mediterranean from pollution, however, what is needed is a fundamental change in attitude. Out of sight does not mean out of mind, and using the sea as a sewer, trash heap or toxic dumping ground is simply not acceptable.

A call to action

Although agreements and commitments have been made at international, regional and national levels to protect the Mediterranean Sea, progress towards developing a network of marine reserves is still lacking. Agreements and commitments are meaningless without action, and action towards a network of marine reserves requires political will. Mediterranean countries must work together to protect the Mediterranean, our shared resource and treasure.

It's Our Sea - let's protect it.

Defending Our Mediterranean

"Greenpeace is committed to defending the health of the world's oceans and the plants, animals and people that depend upon them."

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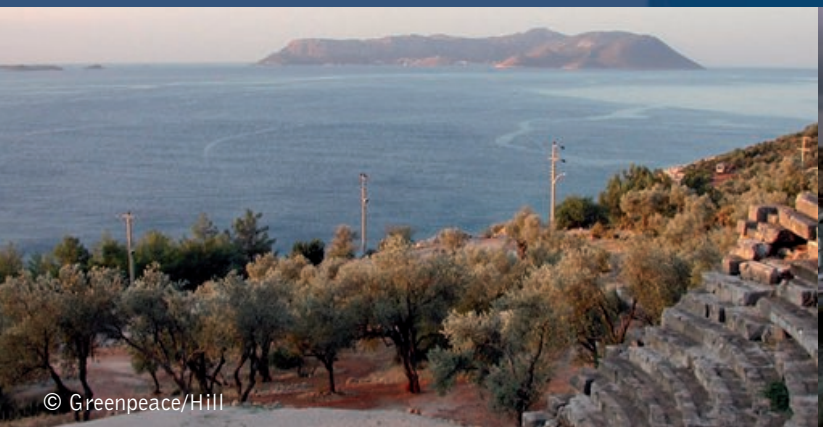

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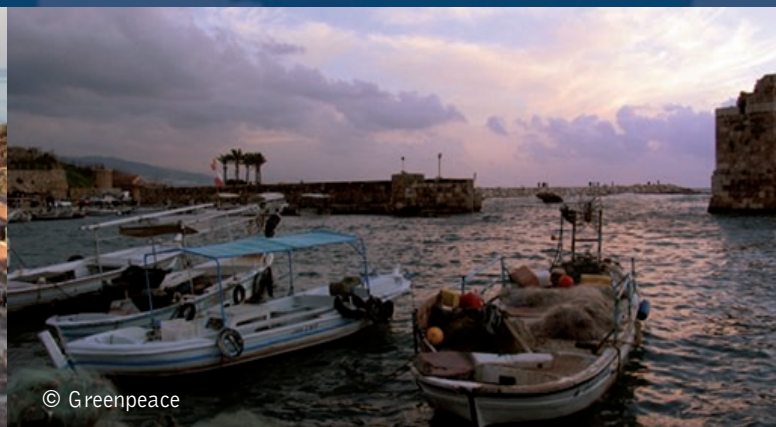

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Greenpeace is an independent, campaigning organisation which uses non-violent, creative confrontation to expose global environmental problems and to force solutions essential to a green and peaceful future.

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