FAR OUT and DEEP UNDER

Protecting deep sea life on the Mid-Atlantic Ridge

The Alps under water

Imagine the Alps under water: The Mid-Atlantic Ridge (MAR) meanders along the bottom of the Atlantic between Iceland and the Azores, creating a towering barrier between east and west. Some peaks of the ridge rise more than 3,500 metres above the Atlantic abyssal plain.

The very rugged ridge provides many ecological niches at a wide range of depths. Away from the continental shelves, the ridge supplies the only hard bottom and in some places the only shallow waters, relatively speaking, in the North Atlantic open ocean.

This diversity makes the MAR a haven for corals, sponges and other species living attached to rocky surfaces, as well as for fish, whales and sharks that feed or spawn by the shallower peaks, or use the canyons and depressions as refuge.

In a few areas, the huge ridge is cut through by profound east-west trenches, the deepest being the Charlie-Gibbs Fracture Zone. These trenches provide the only routes through which deep sea species can migrate from the abyssal plain on one side of the ridge to the other.

In order to preserve its unique species composition and habitats, WWF is proposing that a northern section of the MAR, including the Charlie-Gibbs Fracture Zone (see map), is established as a High Seas Marine Protected Area under the Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR).

A section of the Reykjanes Ridge and two smaller seamount areas, which have been closed to the destructive practice of bottom fishing since 2004 are also included.

Conservation priorities

The MAR area fits many criteria for conservation priorities set out by regional and international fora to be included in the global network of MPAs, such as OSPAR, the United Nations Food and Agriculture Organisation (FAO) and the Convention on Biological Diversity (CBD). (See box on next page)

Many habitats and vulnerable species

The fauna found north of the Charlie-Gibbs Fracture Zone is markedly different from that to the south. To the north, cold loving species like Greenland halibut and giant redfish are found, and to the south, more temperate roundnose grenadiers and alfonsinos dominate among the fish. This variation is due to a so-called subpolar front that flows over the fracture zone.

At the front, cool northern nutrient-rich water of the Labrador Sea meet warmer Gulf Stream water, yielding an area rich in plankton production that gives rise to a wealth of marine life both in terms of species and individuals - from plankton at the base of the food web to top predating sharks.
Seamounts The MAR provides the largest habitat for fishes aggregating to spawn at the current swept peaks of seamounts off the continental shelves of the OSPAR maritime area. Fishes that are known to reproduce here include orange roughy, alfonsinos, roundnose grenadier, redfish and other long lived and slow growing species.

Orange roughy The International Council for the Exploration of the Sea (ICES) considers orange roughy to be one of the most sensitive species to deep sea fishing due to its’ possible age (over 100 years) and late maturity (over 20 years). The MAR may provide an important habitat for maintaining the species’ global population in the face of overfishing.

Sharks Forty-four species of deep-water sharks, three of which are included in the OSPAR List 2008 (Portuguese dogfish, gulper shark and leafscale gulper shark), are known to the area. Deep-sea sharks are the top predators of the open ocean and are attracted to seamounts and ridge peaks by the abundance in fish. Their long life, late maturity and few offspring make them particularly vulnerable to overfishing. Living in the upper 2,000 metres of the ocean means that sharks occupy the very same depths at which fishing occurs.

Blue whale The blue whale is roaming all oceans and depends upon abundant plankton production, particularly during its migration from equatorial breeding grounds to the polar feeding grounds. Blue whales have been sighted in the vicinity of the MAR and the Charlie-Gibbs Fracture Zone and it is likely that they spend time in the productive sub-polar front included in the MPA proposal.

Cold water corals Many cold water coral species, including Lophelia pertusa, have been found in the area. The hard surface in combination with flowing currents provide an excellent and hard to come by habitat in this part of the ocean, probably making the MAR an important stepping stone for the spreading of cold water coral species in the North Atlantic.

Deep-water sponges Gardens of deep water sponges are documented at the Charlie-Gibbs Fracture Zone and associated seamounts down to 3,000 metres. Like coral reefs, sponge gardens can provide the habitat for hundreds of associated species.

Why a Marine Protected Area?
Marine Protected Areas (MPAs) are long term management tools designed to safeguard habitats and species. Adequately managed, MPAs provide protection from current and potential future threats such as fishing, CO₂ storage, waste dumping, mining of minerals, bioprospecting, etc.

The proposed MAR MPA is an excellent example of an offshore area which should become part of the envisaged global and regional network of MPAs, representing most of the values highlighted by OSPAR, CBD and FAO:

- It is important for declining and threatened species in the North East Atlantic
- It is representative of several biogeographic regions
- It is ecologically significant
- It hosts a region of particularly high abundance of fauna
- It hosts a high proportion of sensitive fauna
- It has a very high value for science
- It has been heavily impacted in parts by deep water fishing

OSPAR and the Mid-Atlantic Ridge
The proposed MPA on the Mid-Atlantic Ridge lies in the “area beyond national jurisdiction”, or high seas, comprising over 60% of the oceans. Here, few laws and instruments are established and enforced to protect biodiversity and habitats. In some high seas regions laws and regulations are only just developing, but for the North East Atlantic, the necessary international agreements are already in place. OSPAR is in the unique position to have a mission and mandate to establish a network of MPAs also in waters beyond national jurisdiction.

As of today, only one high seas MPA exists worldwide, placing a decision by OSPAR to designate the MAR area an MPA at the forefront of global marine conservation efforts. The Northeast Atlantic Fisheries Commission (NEAFC) is responsible for managing the fisheries in this area and therefore lends itself as a natural cooperation partner to turn global commitments into regional action.

WWF expects OSPAR and NEAFC to work together to ensure ecosystem-based management of all activities within and beyond the proposed MPA.

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