



OSPAR
COMMISSION

Background Document on the Antialtair Seamount Marine Protected Area

OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Union and Spain

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par l'Union européenne et l'Espagne

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Contents

Executive summary	3
Récapitulatif	3
A. General information	4
1. Area	4
2. Aim of MPA – Conservation Objectives	4
2.1 Conservation Vision	4
2.2 General Conservation Objectives	4
2.3 Specific Conservation Objectives	5
3. Status of the location	6
4. Marine region	6
5. Biogeographic region	6
6. Location	6
7. Size	6
8. Characteristics of the area	7
B Selection criteria	8
1. Ecological criteria/considerations	8
1.1 Threatened and/or declining species and habitats	8
1.2 Important species and habitats	8
1.3 Ecological significance	8
1.4 High natural biological diversity	8
1.5 Representativity	9
1.6 Sensitivity	9
1.7 Naturalness	9
2. Practical criteria/considerations	9
2.1 Potential for restoration	9
2.2 Degree of acceptance	9
2.3 Potential for success of management measures	9
2.4 Potential damage to the area by human activities	10
2.5 Scientific value	10
C. Proposed management and protection status	11
1. Proposed management	11
2. Any existing or proposed legal status	11
References	12
Annex 1	14
Species and habitats of special interest for the Antialtair Seamount-MPA	14
A. Habitats	14
B. Species	14
Threatened and/or declining Species	14

Executive summary

The Antialtair seamount is found just northeast of the Azores Exclusive Economic Zone. Scientific exploration of this seamount has been sporadic and little information is available, however based on the understanding of seamounts, it is anticipated that this seamount supports a large number of species, many of which may be endemic and include important fish populations.

In 2003, the OSPAR Commission agreed to establish a network of Marine Protected Areas (MPAs) with the aim that this should become an ecologically coherent network of well-managed sites. OSPAR agreed that the OSPAR Network of MPAs should comprise sites that are established as MPAs within the jurisdiction of OSPAR Contracting Parties as well as sites in the maritime area outside the jurisdiction of the Contracting Parties (area beyond national jurisdiction ABNJ). In the OSPAR Biodiversity and Ecosystems Strategy, OSPAR agreed to identify, on the basis of reports from Contracting Parties and observer organisations, possible components of the OSPAR Network in areas beyond national jurisdiction in order to achieve the purposes of the network.

This background document makes available the information which has been compiled and evaluated within the OSPAR framework on the biodiversity and ecosystems of the Antialtair Seamount, which was proposed to OSPAR as a potential MPA in ABNJ in 2009. On the basis of this information, the 2010 Ministerial Meeting of the OSPAR Commission adopted OSPAR Decision 2010/4 on the establishment of the Antialtair Seamount High Seas MPA to protect the biodiversity of the waters superjacent to the seabed of the Antialtair Seamount. In parallel the government of Portugal have established an MPA covering the seabed of the Antialtair Seamount, which is the subject of a submission by Portugal to the Commission on the limits of the Continental Shelf. This document also includes conservation objectives developed within the OSPAR framework for application to an MPA in the Antialtair Seamount High Seas MPA which have been formalised in OSPAR Recommendation 2010/15 on the management of the Antialtair Seamount High Seas MPA.

Récapitulatif

Le mont sous-marin Antialtair se trouve au nord-est de la zone économique exclusive des Açores. L'exploration scientifique de ce mont sous-marin a été sporadique et l'on dispose de peu d'informations. On prévoit cependant, en se fondant sur la compréhension des monts sous-marins, que celui-ci héberge de nombreuses espèces, dont un grand nombre pourraient être endémiques et notamment d'importantes populations halieutiques.

La Commission OSPAR est convenue, en 2003, de créer un réseau de zones marines protégées (ZMP) afin que celui-ci devienne un réseau de sites écologiquement cohérent et bien géré. OSPAR est convenue que le réseau OSPAR de ZMP devra englober les sites créés à titre de ZMP situés dans la juridiction des Parties contractantes OSPAR ainsi que les sites de la zone maritime situés au-delà de la juridiction des Parties contractantes (zone au-delà de la juridiction nationale (ABNJ)). OSPAR est convenue, dans sa Stratégie biodiversité et écosystèmes, de déterminer, en se fondant sur des rapports des Parties contractantes et d'organisations observatrices, des composantes éventuelles du réseau OSPAR situées dans des zones au-delà de la juridiction nationale afin de parvenir aux objectifs du réseau.

Le présent document de fond comporte les informations qui ont été recueillies et évaluées dans le cadre de travail d'OSPAR et portant sur la biodiversité et les écosystèmes du mont sous-marin Antialtair qui a été proposé à OSPAR à titre de ZMP potentielle dans une ABNJ en 2009. La réunion ministérielle de 2010 de la Commission OSPAR a adopté, en se fondant sur ces informations, la

Décision OSPAR 2010/4 sur la création de la ZMP du mont sous-marin Antialtair haute mer pour protéger la biodiversité des eaux superjacentes au fond marin du mont sous-marin Antialtair. Parallèlement, le gouvernement du Portugal a créé une ZMP couvrant le fond marin du mont sous-marin Antialtair, qui fait l'objet d'une communication du Portugal à la Commission sur les limites du plateau continental. Ce document comporte également des objectifs de conservation développés au sein du cadre de travail d'OSPAR à appliquer à une ZMP située dans la ZMP du mont sous-marin Antialtair haute mer. Ces objectifs de conservation ont été officialisés dans la Recommandation OSPAR 2010/15 sur la gestion de la ZMP du mont sous-marin Antialtair haute mer.

A. General information

1. Area

Antialtair Seamount

2. Aim of MPA – Conservation Objectives

2.1 Conservation Vision¹

Maintenance and, where appropriate, restoration of the integrity of the functions and biodiversity of the various ecosystems of the Antialtair Seamount-MPA so they are the result of natural environmental quality and ecological processes².

Cooperation between competent authorities, stakeholder participation, scientific progress and public learning are essential prerequisites to realize the vision and to establish a Marine Protected Area subject to adequate regulations, good governance and sustainable utilization. Best available scientific knowledge and the precautionary principle form the basis for conservation.

2.2 General Conservation Objectives^{3 4}

- (1) To **protect and conserve** the range of habitats and ecosystems including the water column of the Antialtair Seamount MPA for resident, visiting and migratory species as well as the marine communities associated with key habitats.
- (2) To **prevent** loss of biodiversity, and promote its recovery where practicable, so as to maintain the natural richness and resilience of the ecosystems and habitats, and to enable populations of species, both known and unknown, to maintain or recover natural population densities and population age structures.
- (3) To **prevent** degradation of, and damage to, species, habitats and ecological processes, in order to maintain the structure and functions - including the productivity - of the ecosystems.
- (4) To **restore** the naturalness and richness of key ecosystems and habitats, in particular those hosting high natural biodiversity.
- (5) To provide a refuge for wildlife within which there is minimal human influence and impact.

¹ The conservation vision describes a desired long-term conservation condition and function for the ecosystems in the entire Antialtair Seamount MPA. The vision aims to encourage relevant stakeholders to collaborate and contribute to reach the objectives set for the area.

² Recognizing that species abundances and community composition will change over time due to natural processes.

³ Conservation objectives are meant to realize the vision. Conservation objectives are related to the entire Antialtair Seamount MPA or, if it is decided to subdivide, for a zone or subdivision of the area, respectively.

⁴ It is recognized that climate change may have effects in the area, and that the MPA may serve as a reference site to study these effects.

2.3. Specific Conservation Objectives ^{5 6}

2.3.1 Water Column

- a. To prevent deterioration of the environmental quality of the bathypelagic and epipelagic water column (e.g. toxic and non-toxic contamination⁷) from levels characteristic of the ambient ecosystems, and where degradation from these levels has already occurred, to recover environmental quality to levels characteristic of the ambient ecosystems.
- b. To prevent other physical disturbance (e.g. acoustic).
- c. To protect, maintain and, where in the past impacts have occurred, restore where appropriate the epipelagic and bathypelagic ecosystems, including their functions for resident, visiting and migratory species, such as: cetaceans, and mesopelagic and bathypelagic fish populations.

2.3.2 Benthopelagic Layer

To protect, maintain and, where in the past impacts have occurred, restore where appropriate:

- a. Historically exploited **fish populations** (target and bycatch species) at/to levels corresponding to population sizes above safe biological limits⁸ with special attention also given to **deep water elasmobranch species**, including threatened and/or declining species.
- b. Benthopelagic habitats and associated communities to levels characteristic of natural ecosystems.

2.3.3 Benthos

To protect, maintain and, where in the past impacts have occurred, restore where appropriate to levels characteristic of natural ecosystems:

- a. The epibenthos and its hard and soft sediment habitats, including threatened and/or declining species and habitats such as seamounts and coral gardens.
- b. The infauna of the soft sediment benthos, including threatened and/or declining species and habitats.
- c. The habitats associated with seamount structures.

2.3.4 Habitats and species of specific concern

Those species and habitats of special interest for the Antialtair Seamount-MPA, which could also give an indication of specific management approaches, are listed at Annex 1.

⁵ Specific Conservation Objectives shall relate to a particular feature and define the conditions required to satisfy the general conservation objectives. Each of these specific conservation objectives will have to be supported by more management orientated, achievable, measurable and time bound targets.

⁶ Norway has a reservation on Section 2.3 "Specific Conservation Objectives".

⁷ This includes synthetic compounds (e.g. PCBs and chemical discharge), solid synthetic waste and other litter (e.g. plastic) and non-synthetic compounds (e.g. heavy metals and oil).

⁸ "Safe biological limits" used in the following context: "Populations are maintained above safe biological limits by ensuring the long-term conservation and sustainable use of marine living resources in the deep-seas and preventing significant adverse impacts on Vulnerable Marine Ecosystems (FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas, 2008).

3. Status of the location

The designated area is located beyond the limits of national jurisdiction of the coastal states in the OSPAR Maritime Area.

On 11 May 2009 the Portuguese Republic submitted to the Commission on the Limits of the Continental Shelf (UN CLCS), information on the limits of the Portuguese continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, in accordance with Article 76, paragraph 8, of the Convention of the Law of the Sea. These claims submitted by Portugal – if approved by the UN CLCS - would encompass the seabed in the area of the Antialtair Seamount MPA.

The water column in the area of Antialtair Seamount MPA is located beyond the limits of national jurisdiction of the coastal states in the OSPAR Maritime Area. The international legal regime that is applicable to this area is comprised of, *inter alia*, the UNCLOS, the Convention on Biological Diversity, the OSPAR Convention and other rules of international law. This regime contains, among other things, rights and obligations for states on the utilization, protection and preservation of the marine environment and the utilization and conservation of marine living resources and biodiversity as well as specifications of the competence of relevant international organizations.

4. Marine region

OSPAR Region V; Atlantic Ocean

5. Biogeographic region

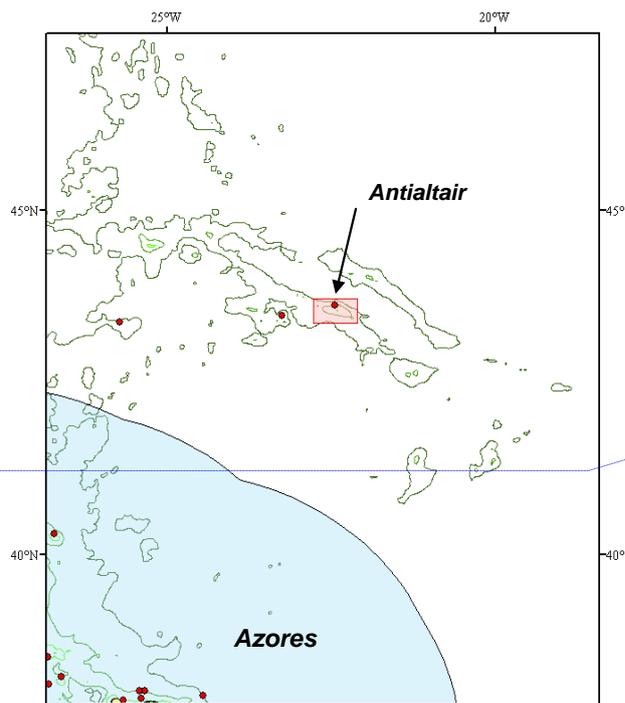
Atlantic Subregion; Warm-temperate waters

6. Location

The marine protected area (Figure 1) incorporates and extends the existing NEAFC fishery closure over Antialtair Seamount.

Boundary co-ordinates

Latitude	Longitude
43.82°N	22.78°W
43.82°N	22.10°W
43.36°N	22.10°W
43.36°N	22.78°W



Comment [EC1]: Checked against decision 10/4

Figure 1. Marine protected area boundaries, shown in red and location. Red circles are known seamount locations and the blue shaded area is the Azores Exclusive Economic Zone.

7. Size

2207.68km²

8. Characteristics of the area

Antialtair seamount is found in the North Atlantic just northeast of the Azores Exclusive Economic Zone. Very little information is available about this seamount and as is common with many seamounts scientific exploration has been sporadic (Brewin et al, 2007). One study conducted using a Spanish freezer trawler specially adapted for trawling along rough terrain, found that the main species caught over Antialtair was Orange roughy (*Hoplostethus atlanticus*) (Durán Muñoz et al, 2000). Nearby seamounts and banks trawled during the same investigation also found Orange roughy (*H. atlanticus*) to be the most common species caught (Durán Muñoz et al, 2000). It is therefore likely that Orange roughy is the summit-living species of Antialtair seamount, however further investigations are required to confirm this. Orange roughy (*H. atlanticus*) is known to be highly sensitive to the effects of fishing and has been described as threatened or declining by the OSPAR Commission (Hareide & Garnes, 2001). It is likely that the seamount community found on Antialtair is representative of those found on seamounts near the southern OSPAR boundary. Given that Antialtair is older than the seamounts of the Mid-Atlantic Ridge, which is still an active seafloor spreading centre (Epp & Smoot, 1989; Dinter, 2001), it is also possible that a greater number of endemic species will be present in comparison to Mid-Atlantic Ridge Seamounts.

Antialtair seamount has been protected by a NEAFC fishery closure since 2005, in effect until the 31st December 2008 (ICES, 2007). The designated marine protected area incorporates and extends the NEAFC closure (see Figure 2). This was done for two main reasons, firstly it makes the boundaries easier to manage and comply with. Secondly it incorporates a greater proportion of the fishable area around Antialtair seamount. As there is very little information about the biology of this seamount it seems prudent to apply the Precautionary Principle and have a larger rather than smaller marine protected area.

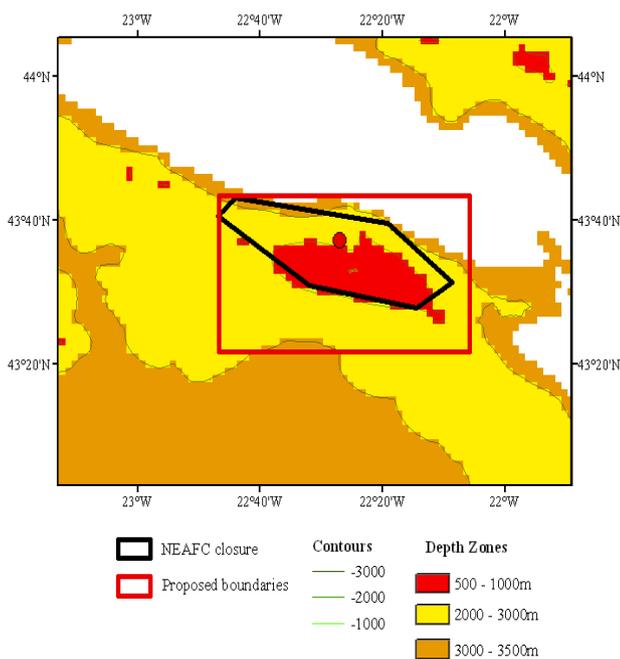


Figure 2. MPA boundaries shown with current NEAFC fishery closure and the depth zones around Antialtair seamount.

B Selection criteria

1. Ecological criteria/considerations

1.1 Threatened and/or declining species and habitats

The designated area includes seamount habitat, which is listed as priority threatened or declining habitat by OSPAR (OSPAR Commission, 2003). It includes seamount and potentially cold-water coral and sponge reef habitats that qualify as Vulnerable Marine Ecosystems in relation to high seas fisheries according to criteria developed by FAO (FAO, 2007; Rogers et al, 2008). It also contains seamount communities listed as examples of ecologically or biological significant marine areas according to criteria developed by the CBD for identifying candidate sites for protection on the high seas (UNEP, 2007).

In addition to the above mentioned habitats, *Hoplostethus atlanticus* (Orange roughy), which has been listed as a threatened and/or declining species by OSPAR (OSPAR Commission, 2003) has been caught on this seamount (Durán Muñoz *et al* 2000). Although the total amount of this species caught is lower than other locations surveyed, the yield is the second highest (474kg/hour) only beaten by the nearby Olympus-Antialtair seamount (Durán Muñoz *et al* 2000).

1.2. Important species and habitats

In view of the limited scientific information about Antialtair seamount a precautionary approach to protection is recommended. The area has already been afforded temporary protection through NEAFC fishery closures, which will be in place till the 31st December 2008. Antialtair seamount is classified as seamount habitat, which is recognised as threatened or declining habitat by OSPAR (OSPAR Commission, 2003; see Threatened and/or declining species and habitats criterion above).

1.3. Ecological significance

The nearest topographic feature to the Antialtair seamount is the section of the Mid-Atlantic Ridge between the Azores and Charlie-Gibbs Fracture Zone. This part of the Mid-Atlantic Ridge has the highest concentration of seamounts found in the north Atlantic (Epp & Smoot, 1989). The Mid-Atlantic Ridge is an active seafloor-spreading centre, separating the Eurasian and American plates (Epp & Smoot, 1989; Dinter, 2001). The Antialtair seamount is therefore older than the seamounts of the Mid-Atlantic Ridge and as such may potentially support a greater number of endemic species, although this remains to be proven through surveys. In addition to this seamount communities in general have been identified as ecological significant marine areas according to criteria developed by the CBD for identifying candidate sites for protection on the high seas (UNEP, 2007).

1.4. High natural biological diversity

There is very little site-specific information available about the biological diversity of Antialtair seamount. Logan (1998) found that the Brachipod fauna of the seamount did not differ significantly from six other seamounts or the nearby continental margin. Seamounts in general are known to support a large and diverse fish fauna, with as many as 798 species found on and around seamounts (Clarke et al, 2006). Food availability is often higher on and above seamounts, supporting a rich fauna in comparison to the surrounding open ocean (Clarke et al, 2006). This fauna can include highly vulnerable pelagic predators, spawning aggregations of commercially important species, cold water coral and sponge communities that are slow-growing and highly vulnerable to fishing and a great variety of associated invertebrates (Koslow et al, 2001; Lack et al, 2003; Worm et al, 2003; Clarke et al, 2006).

1.5. Representativity

There is no site-specific information available about the biology and ecology of Antialtair seamount. It is thought that this seamount is a representative example of seamounts of the OSPAR high seas area not found to the east of the Mid-Atlantic Ridge.

1.6. Sensitivity

Seamounts have been identified as both threatened or declining habitat by OSPAR and Vulnerable Marine Ecosystems in relation to high seas fisheries by the FAO (OSPAR Commission, 2003; FAO, 2007). In addition the sensitivity of Altair seamount has been recognised by NEAFC with the current temporary fishing closure. In view of the recognition of the vulnerability of seamounts by the UN, CBD, NEAFC and OSPAR it is recommended that the protection afforded Antialtair seamount is extended to marine protected area status.

1.7. Naturalness

In 2004 VMS data showed that fishing vessels moving at bottom trawling speed were present over Antialtair seamount (ICES, 2007). Following the establishment of the NEAFC fishing closures in 2005 bottom fishing effort increased over Antialtair seamount, showing a clear targeting of this area by fishing vessels (ICES, 2007). This indicates that the area may have already been impacted by fishing activity and that the NEAFC closures are not entirely effective. However, despite this recorded effort it is likely that this seamount may still have a high degree of naturalness as compared to other more heavily fished areas (ICES pers. comm.). Durán Muñoz *et al* (2000) found that only a few areas within the boundaries were suitable for bottom trawl fishing.

2. Practical criteria/considerations

2.1. Potential for restoration

Given the lack of mapping effort in the area there is little detailed knowledge of benthic structures that exist within the designated area or their present condition. Given the evidence of increasing fishing activity in recent years (see Naturalness criterion), it is likely that any species affected will take time to recover from past impacts. However, it is impossible to evaluate this criterion without more information about the site.

2.2. Degree of acceptance

As noted earlier, the designated area includes seamount habitat, which is listed as priority threatened or declining habitat by OSPAR (OSPAR Commission 2003). Seamount habitat qualifies as a Vulnerable Marine Ecosystems in relation to high seas fisheries according to criteria developed by FAO (FAO 2007, Rogers et al, 2008). Seamount habitat is also listed as an example of ecologically or biological significant marine areas according to criteria developed by the CBD for identifying candidate sites for protection on the high seas (UNEP 2007). Therefore there are strong scientific grounds warranting protection of the area.

The designated area incorporates an existing NEAFC fishery closure, which has been in effect since 2005 (ICES, 2007). However, there is evidence that the year following this closure fishing activity increased (ICES, 2007). Therefore it is likely to be accepted by NEAFC and the fishing community but monitoring of the area and enforcement of regulations will be required to prevent non-compliance.

2.3. Potential for success of management measures

On the one hand, high seas marine protection will be more difficult to implement than in places closer to land, where patrols and enforcement measures can be easily administered. The NEAFC fishery closure that exists in the area did not prevent bottom fishing activity within the closure in the year following its implementation (ICES, 2007). However, on the other hand, protection may be easier to

achieve because the number of users of the areas is much more limited, and their activities can be monitored remotely and in a cost effective way by Vessel Monitoring Systems and satellites (Kourti et al., 2001; Marr and Hall-Spencer, 2002; Deng et al., 2005; Kourti et al., 2005; Murawski et al., 2005; Davies et al., 2007; Rogers et al., 2008). The challenge will be to bring illegal and unregulated fishing under control although some progress is being made on this within the NEAFC region. Because the area incorporates the current NEAFC closures the management or at least enforcement of measures may be easier. If OSPAR protection is implemented that incorporates these closures, management measures may succeed better than if the areas were in addition to the NEAFC closures.

2.4. Potential damage to the area by human activities

For seamount habitats, the most damaging industry operating in the North East Atlantic is deep sea and high seas fishing (OSPAR, 2007). Seamount related fisheries represent a significant proportion of the total high seas fish catch. Of all the deep-sea fisheries, most target species are associated with seamounts (Brewin et al., 2007). Historically seamount research has lagged behind, or at best paralleled seamount exploitation (Brewin et al., 2007). This is clearly shown by the fact that there is no available information about the biology of Antialtair seamount. There is a real threat that as shallower fish stocks are depleted, the focus will turn to further exploitation of the deep ocean and the seamounts of the high seas (Roberts, 2002; Clark et al., 2007). Antialtair has already been targeted by fishers in the area and therefore fishing is a significant threat despite the presence of the NEAFC closure (ICES, 2007).

Bioprospecting on seamounts for possible sources of biotechnology (for example bacteria on hydrothermal vents) may occur in the future (Gubbay, 2003). However, no information is known about bioprospecting within the designated area and it seems more likely that this will occur around hydrothermal vents in the near future (Synnes, 2007).

There is no information about mining within or near the marine protected area. In the future, exploitation of seamounts by humans could expand in scope. A possible threat could be mineral exploitation and mining their deeper cobalt crusts, (Probert, 1999).

2.5. Scientific value

As has already been mentioned scientific research on seamounts often lags far behind their exploitation (Brewin et al., 2007). Scientific knowledge of seamounts in general is poorer than for many other marine habitats (Gubbay, 2003). At present there is no information about the biological community within the marine protected area. As a seamount, which may potentially support more endemics than the younger seamounts of the Mid-Atlantic Ridge, this area has high scientific value. The severe lack of knowledge about this area means that it should be protected now, using the Precautionary Principle and then a basis for study and monitoring of the area should be developed, which will inform future decisions regarding spatial protection of similar habitats.

Much of the current focus of seamount research in the OSPAR region is on the Mid-Atlantic Ridge in the form of the MAR-ECO project (see Bergstad et al., 2008 for a description). Other seamount research programmes include the European Commission's fifth framework program called OASIS (Oceanic Seamounts: An Integrated Study) that sponsored a series of expeditions to North Atlantic seamounts (primarily the Sedlo and Seine seamounts) (Brewin et al., 2007). The OASIS project concluded its fieldwork phase in 2005; however a more recent program began called EuroDEEP (under the European Commission initiative called EuroCores) that will include seamounts in their study of deep-sea habitats (Brewin et al., 2007). The Census of Marine Life also launched a programme in 2005 that focused on seamounts, the Census of Marine Life on Seamounts (CenSeam) (Brewin et al., 2007). The CenSeam programme has several goals including the co-ordination and expansion of existing research through developing standard methods and reporting and also to aggregate existing

data by further developing the SeamountsOnline (<http://seamounts.sdsc.edu/>) an open-access portal for seamount data (Brewin et al, 2007).

C. Proposed management and protection status

1. Proposed management

The following actual or potential human activities taking place in the area will or might need regulation through a management plan:

- Deep sea and high seas fishing using fixed and mobile gears (both at the seabed and in the water column)
- Vessel traffic
- Seabed mining or other resource exploitation
- Bioprospecting
- Cable laying
- Military sonar

2. Any existing or proposed legal status

- I National legal status (e.g., nature reserve, national park):
N/A High seas area

- II Other international legal status (e.g., NATURA 2000, Ramsar):
NEAFC fishery closure (until 31st December 2008)

Presented by

Contracting Party: Portugal (Government of the Azores)

Organisation: Dept of Oceanography and Fisheries, (Contact person: Ricardo Serrão Santos),
University of the Azores (on behalf of the Government of the Azores)

Date: 10 May 2010

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Annex 1

Species and habitats of special interest for the Antialtair Seamount-MPA

A. Habitats

Threatened and/or declining Habitats⁹

- Seamounts
- Coral Gardens

Other Features of special concern

- Deepwater and epipelagic ecosystems, including their function for migratory species
- Habitats associated with seamount structures, including their function as recruitment and spawning areas
- Benthopelagic habitats and associated communities, including commercially fished species
- Hard substrate habitats and associated epibenthos, including cold water corals and sponges
- Soft sediment habitats and associated benthos, including "coral gardens" of non-scleractinian corals

B. Species

Threatened and/or declining Species¹⁰

- Orange roughy (*Hoplostethus atlanticus*)

Other Species of special concern

- Cetaceans
- Deep water sharks
- Oceanic seabirds like Cory's Shearwater

⁹ According to the OSPAR List of threatened and/or declining Species and Habitats (OSPAR Ref. No.: 2008-6)

¹⁰ Based on their known geographic distributions and habitat associations, the presence of threatened species, including Leatherback turtle (*Dermochelys coriacea*), Loggerhead turtle (*Caretta caretta*), Portuguese dogfish (*Centroscymnus coelolepis*), Gulper shark (*Centrophorus granulosus*), and Leafscale gulper shark (*Centrophorus squamosus*), is strongly suspected, but remains to be proven by direct observation.



New Court
48 Carey Street
London WC2A 2JQ
United Kingdom

t: +44 (0)20 7430 5200
f: +44 (0)20 7430 5225
e: secretariat@ospar.org
www.ospar.org

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