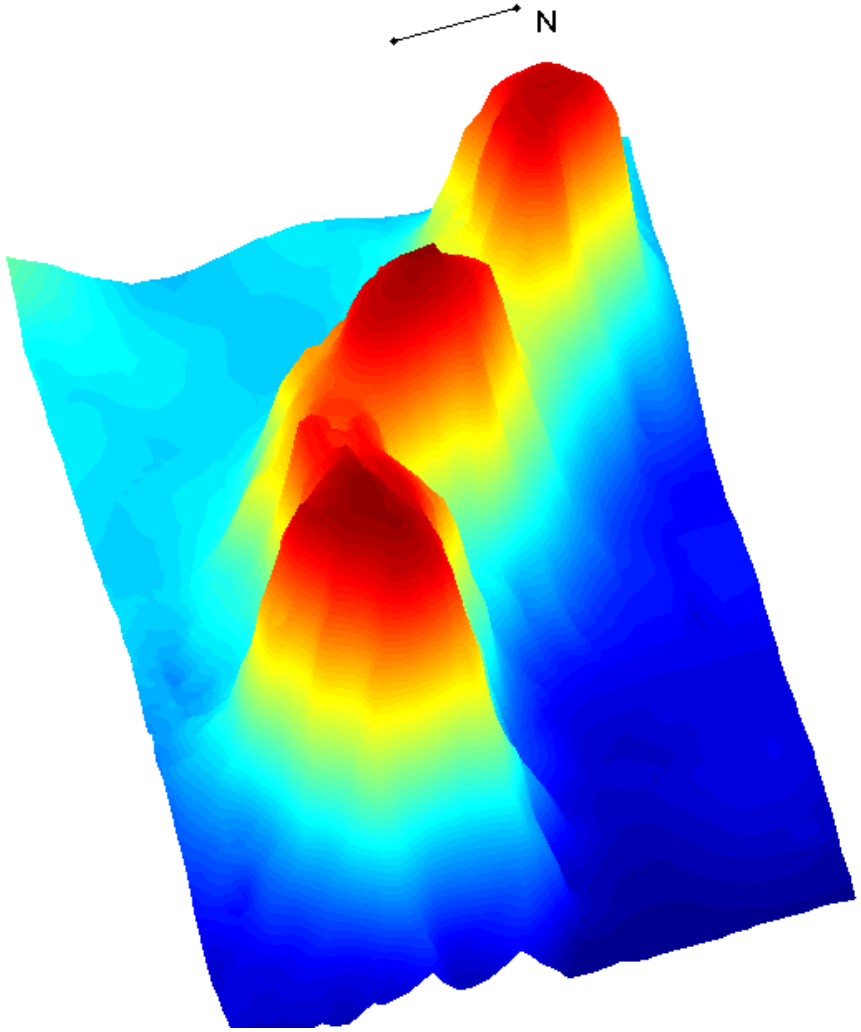
Fishery and conservation efforts at seamounts in the OSPAR area, North-East Atlantic

Bernd Christiansen, Universität Hamburg, Germany



Smt fishery and conservation

Fishery and seamounts

- threat of fishery to seamount ecosystems
  - slow growth, late maturity
  - isolation of stocks
- ICES (International Council for the Exploration of the Sea) recognized impact of fishery on seamount ecosystem by various fishing methods for the NE Atlantic

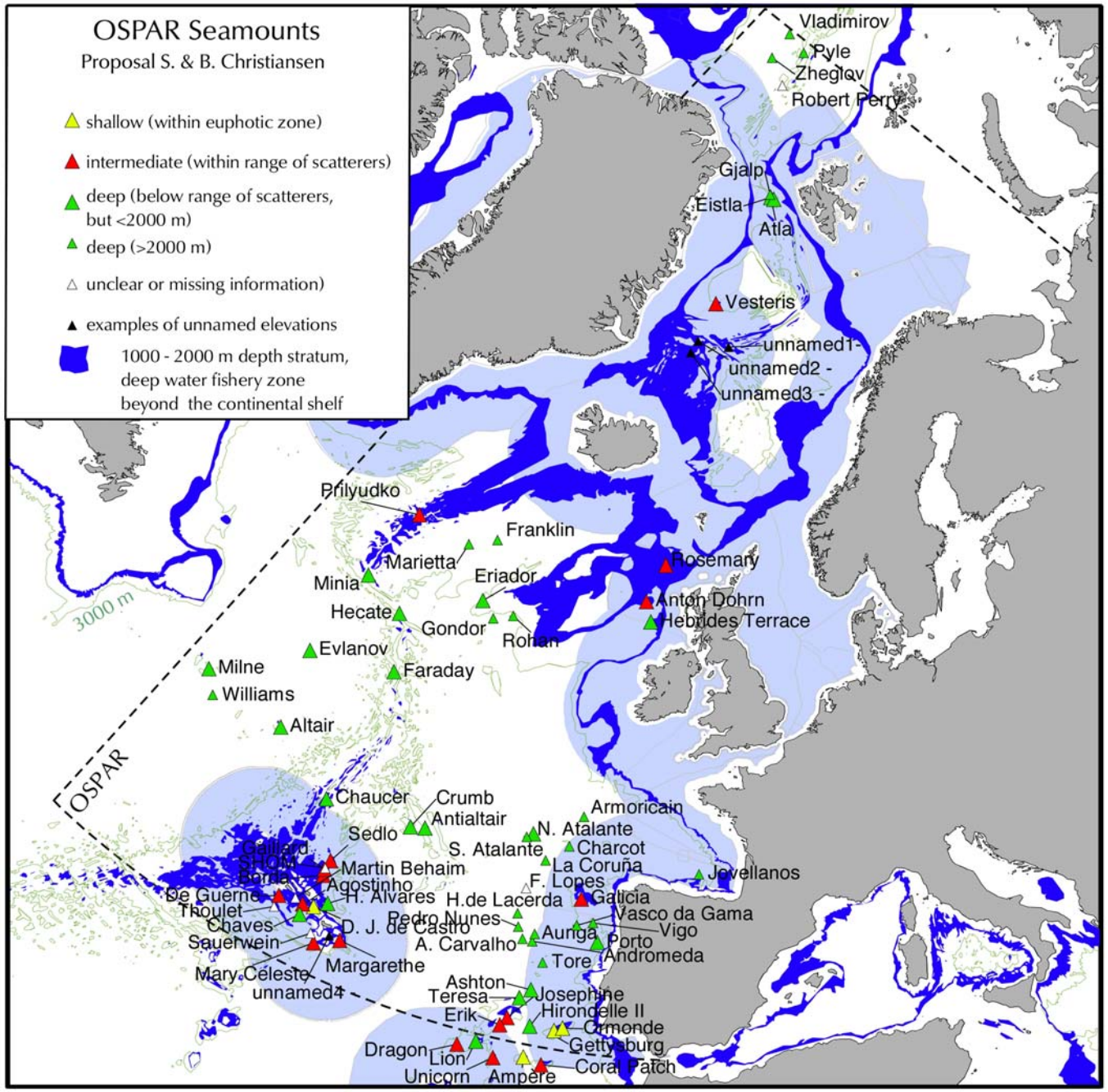
Contents

- OSPAR and seamounts in the OSPAR area
- Target species
- Fishing effort
- Conservation efforts
- Management and conservation in OASIS

OSPAR

- OSPAR Convention for the environmental protection of the NE Atlantic
- covers the sea area between 36°N - 90°N and 42°W - 50°E

Seamounts in the OSPAR area



Universität Hamburg

OASIS

Smt fishery and conservation

Target species at seamounts

- Black scabbard fish (*Aphanopus carbo*)
- Orange roughy (*Hoplosthetus atlanticus*)
- Alfonsino (*Beryx splendens*)
- Roundnose grenadier (*Coryphaenoides rupestris*)
- pelagic species: tuna, swordfish, sharks

Foto: G.Menezes

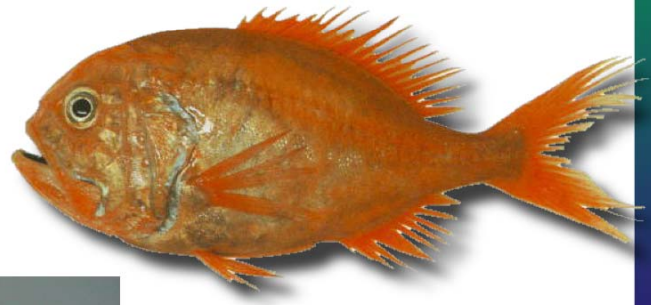
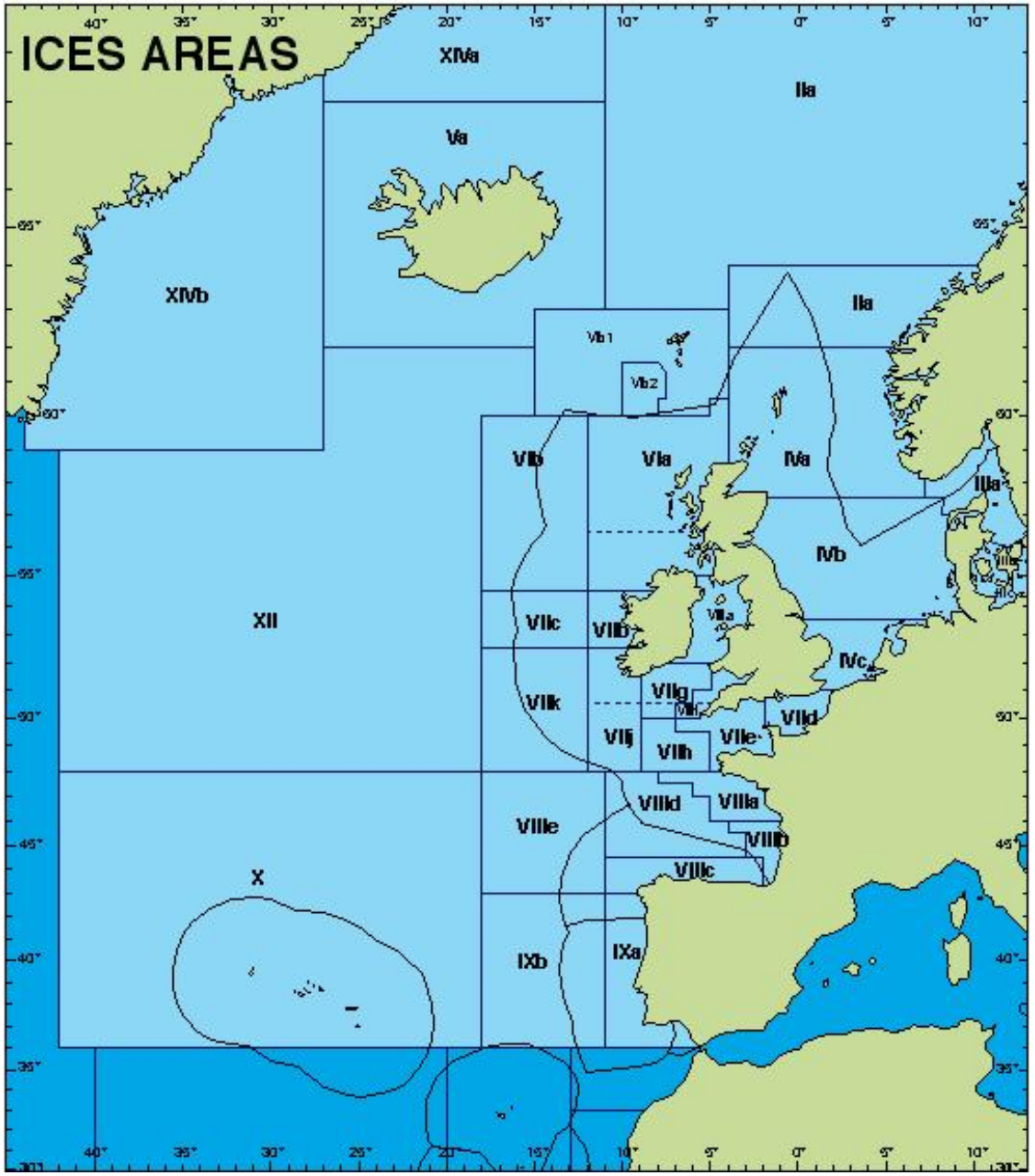


Foto: SeaFIC

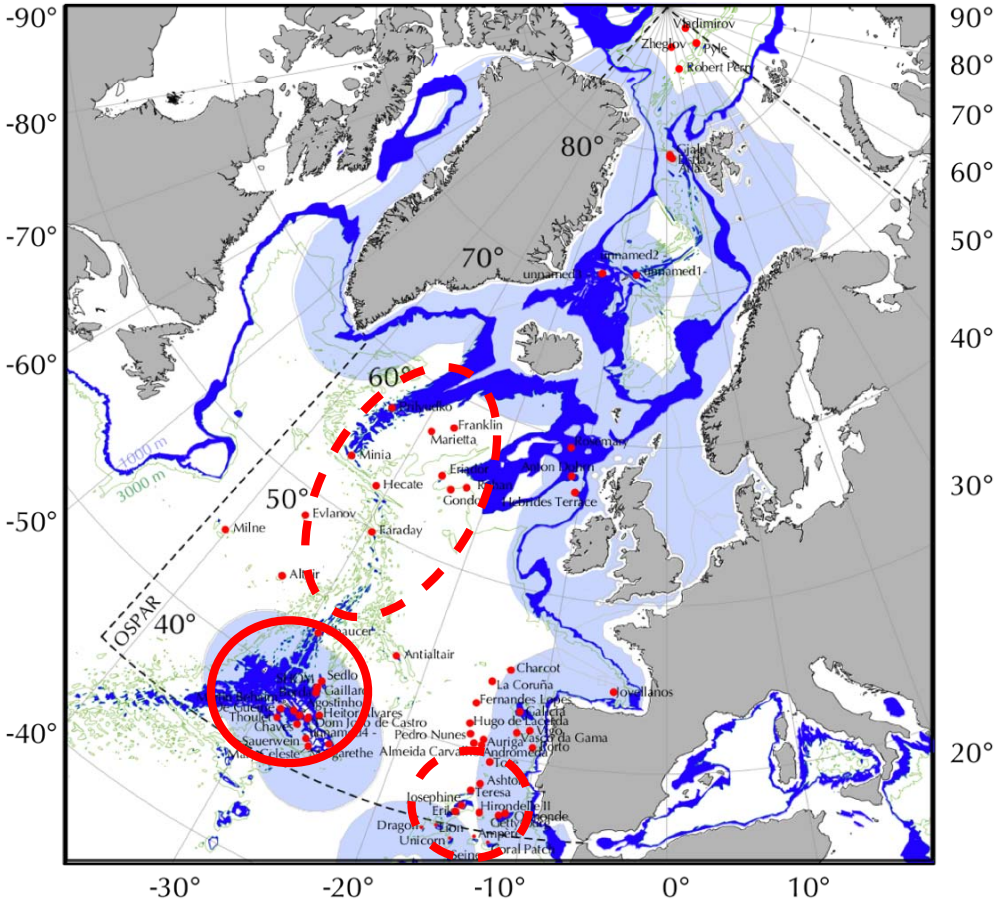
Fishing sites and effort



Smt fishery and conservation

Fishing sites and effort

- Azores region: only artisanal longlining, 90%: 200-600 m
- Lusitanian seamounts: ?
- Midatlantic Ridge: ?



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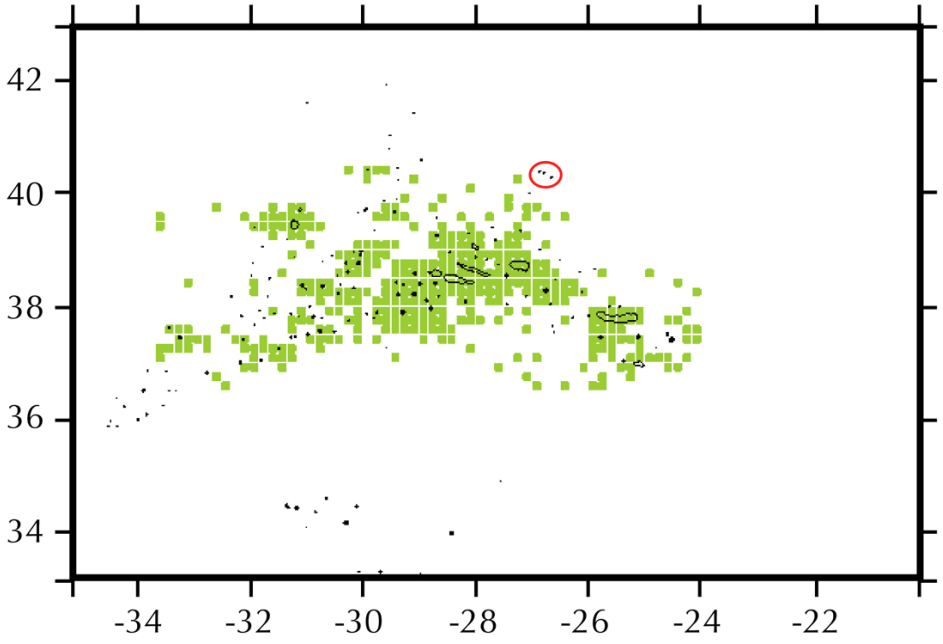

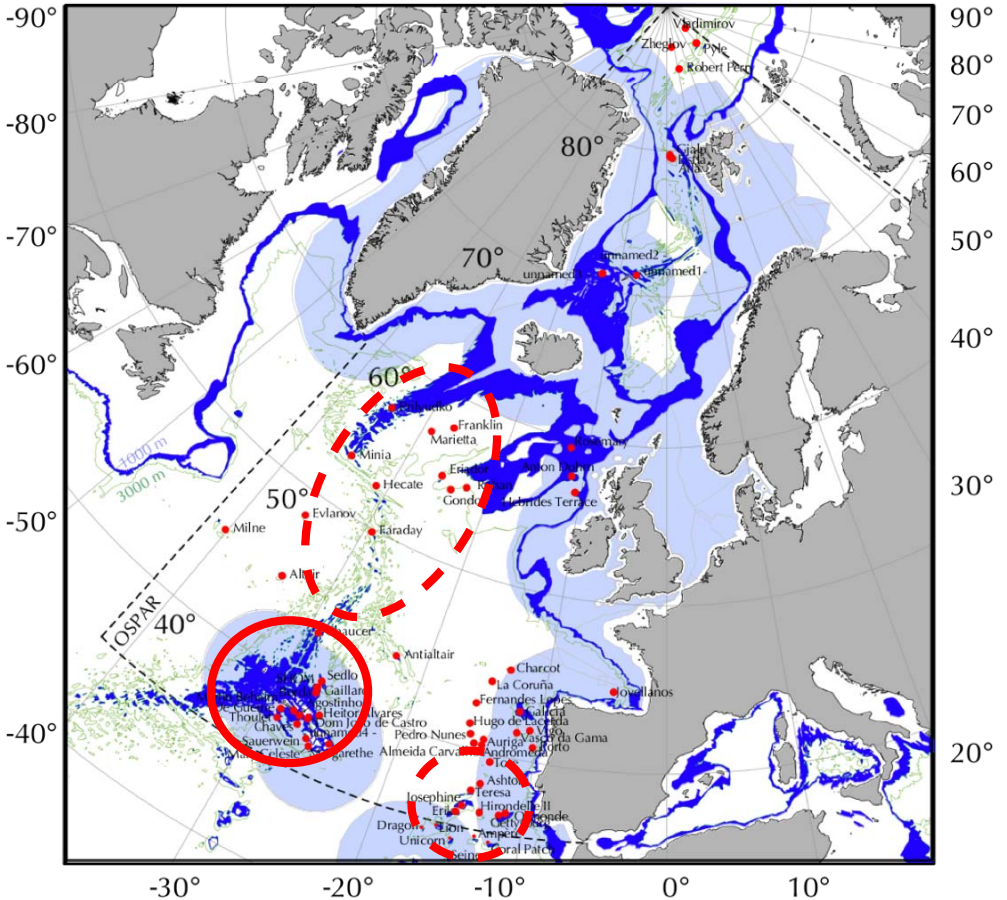

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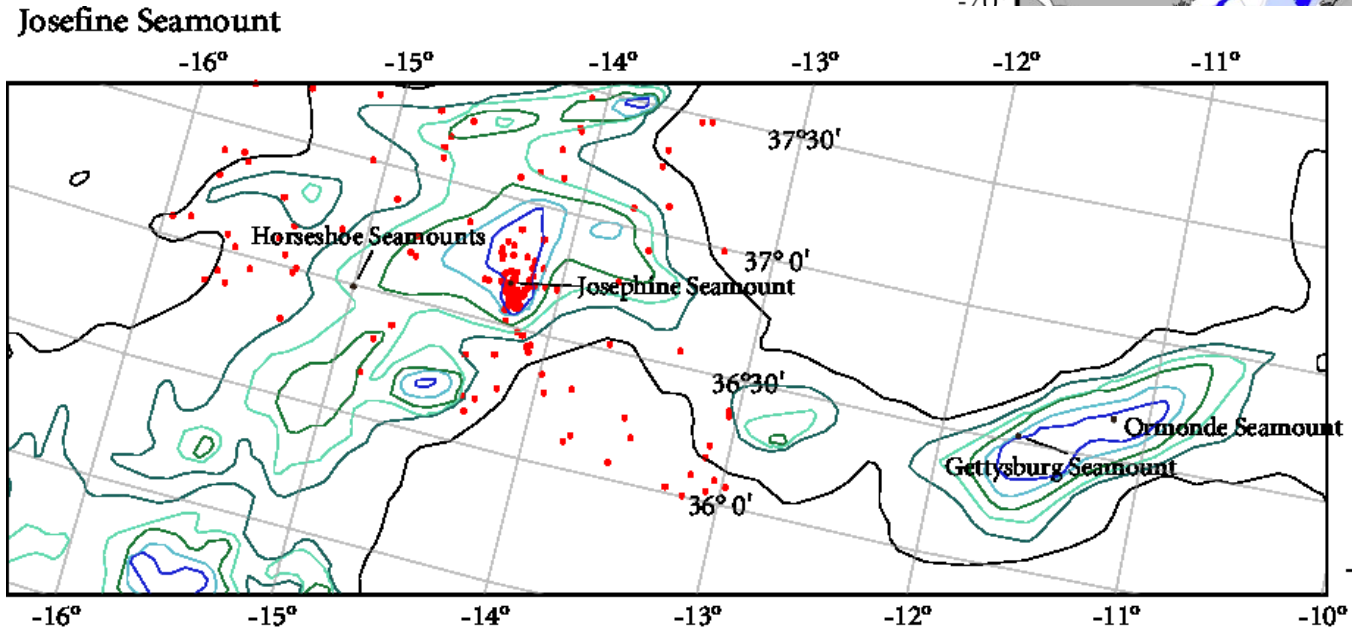

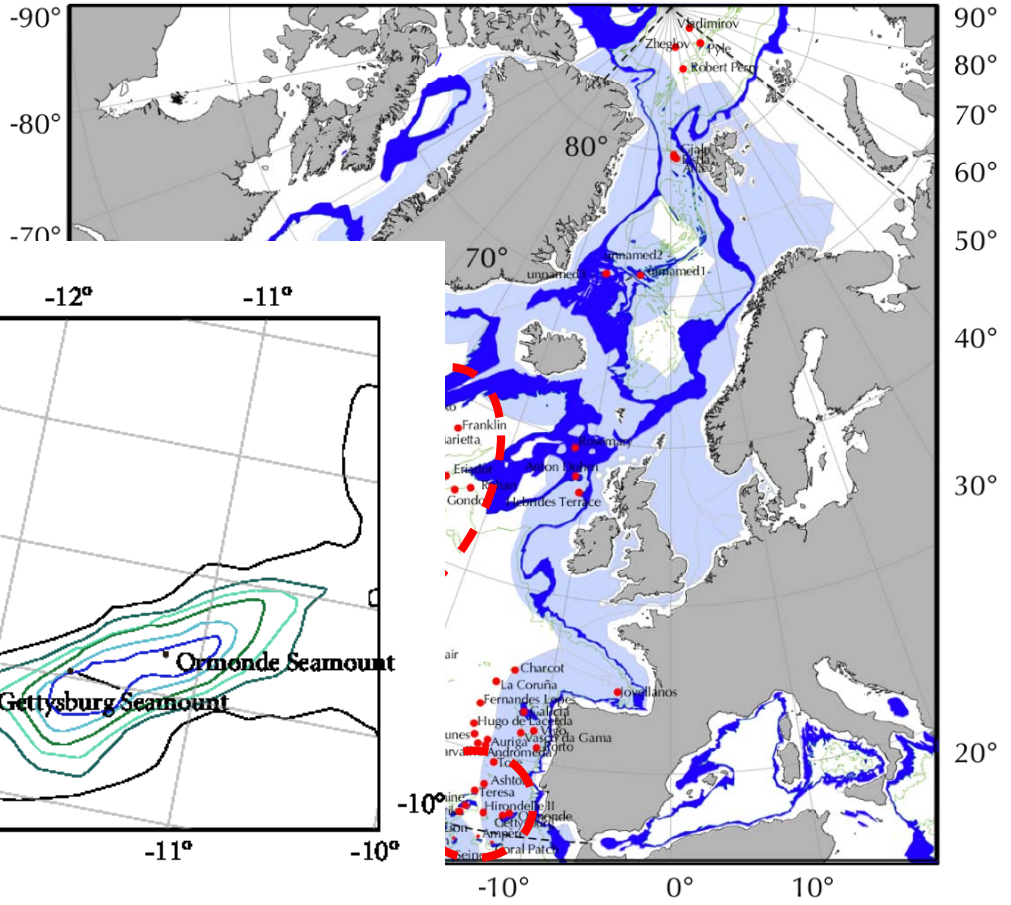

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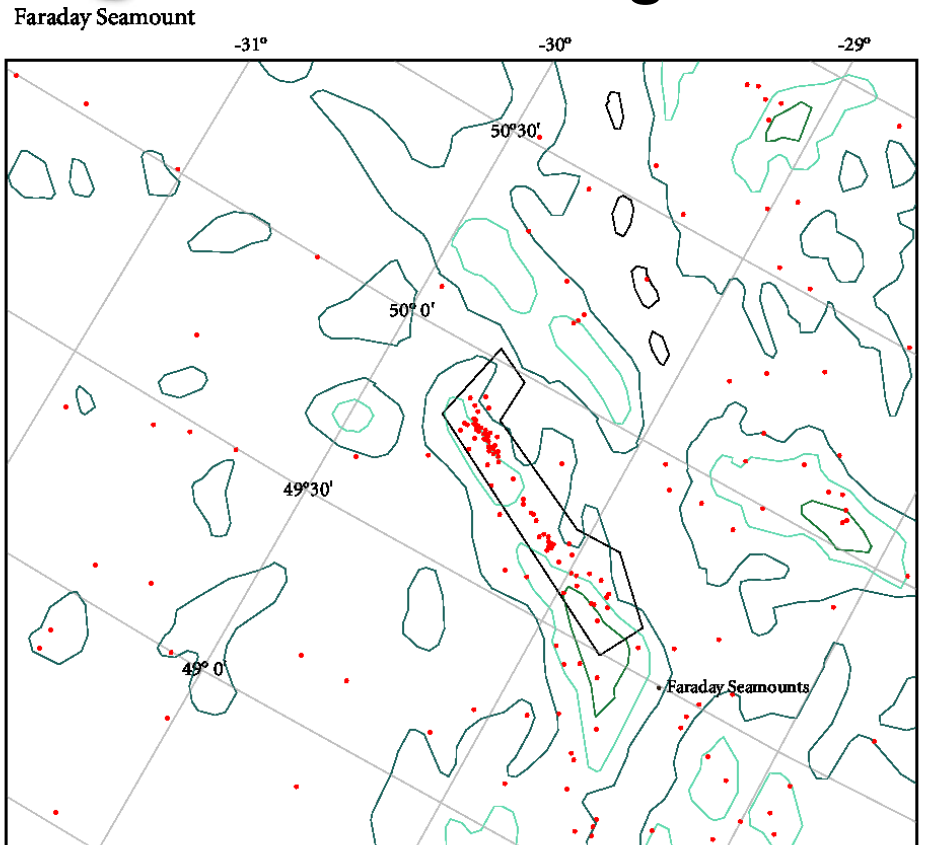
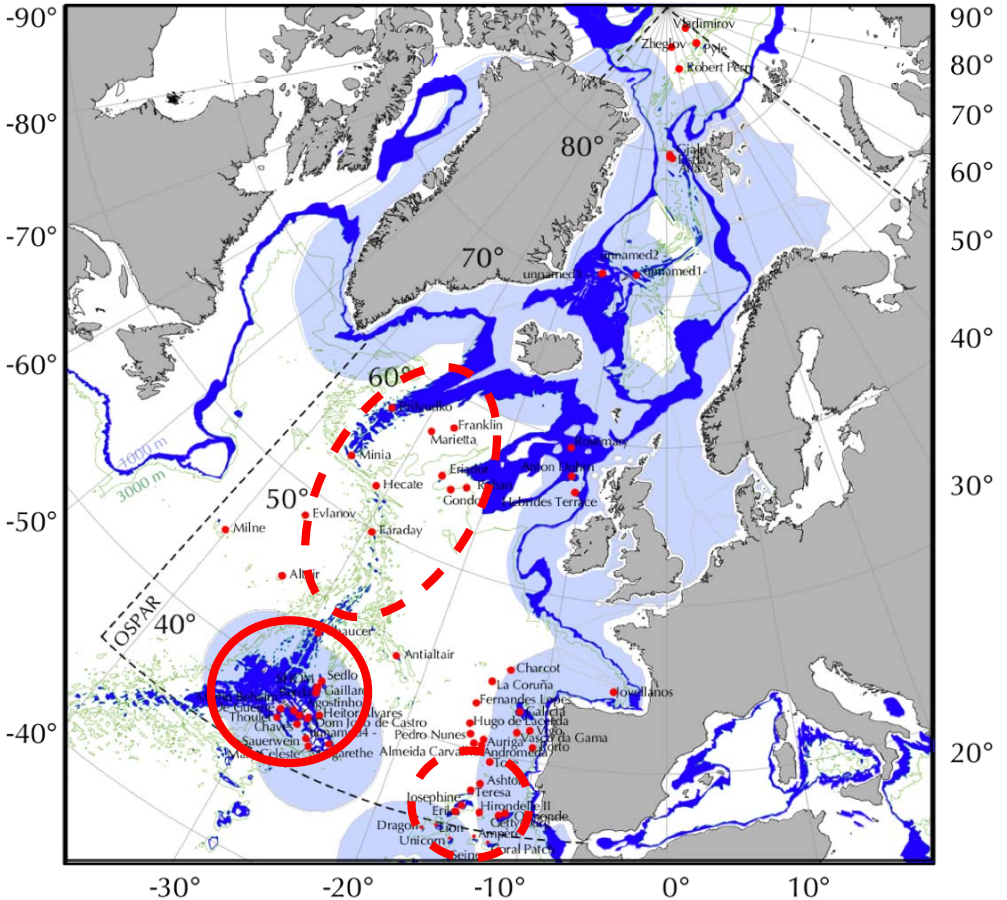
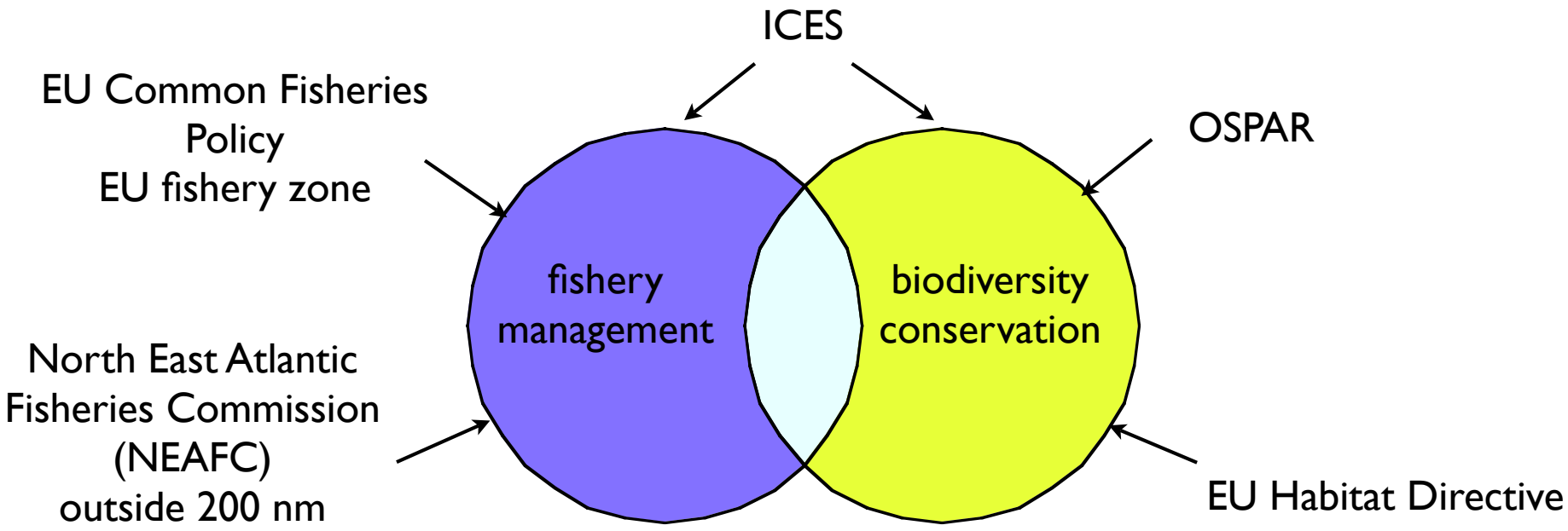




Smt fishery and conservation

Conservation efforts



Conservation efforts

OSPAR list of threatened and declining species and habitats

- OSPAR adopted binding criteria for the selection of species and habitats and the initial list of threatened and/or declining species and habitats (2003)
- The list includes a number of commercial fish species, e.g. Orange Roughy, and many offshore features such as coral reefs, hydrothermal vents and seamounts.
- Features on this list are of priority concern for the implementation of management measures, including the designation of marine protected areas (MPA) in the future.

Conservation efforts

OSPAR network of Marine Protected Areas (MPA)

- OSPAR adopted the goal to implement an "ecologically coherent network of well-managed MPAs" (2003)
- This will include a representative selection of seamounts inside and outside national jurisdiction.

Conservation efforts

EU Habitats Directive

- All European Member States have to implement the EU Habitats Directive up to the outer boundary of their 200 nm zone
- The hard substrate habitats of seamounts ("reefs") are then subject to conservation measures such as protected areas – 30 to 60 % of the total habitat will have to figure in an EU-wide so-called Natura 2000 network of protected sites..
- Currently, only 2 NEA seamounts are protected as MPAs, both in the Azores where another seamount will be designated as a nature reserve soon

Conservation efforts

European Council (EC) Regulation No 1568/2005

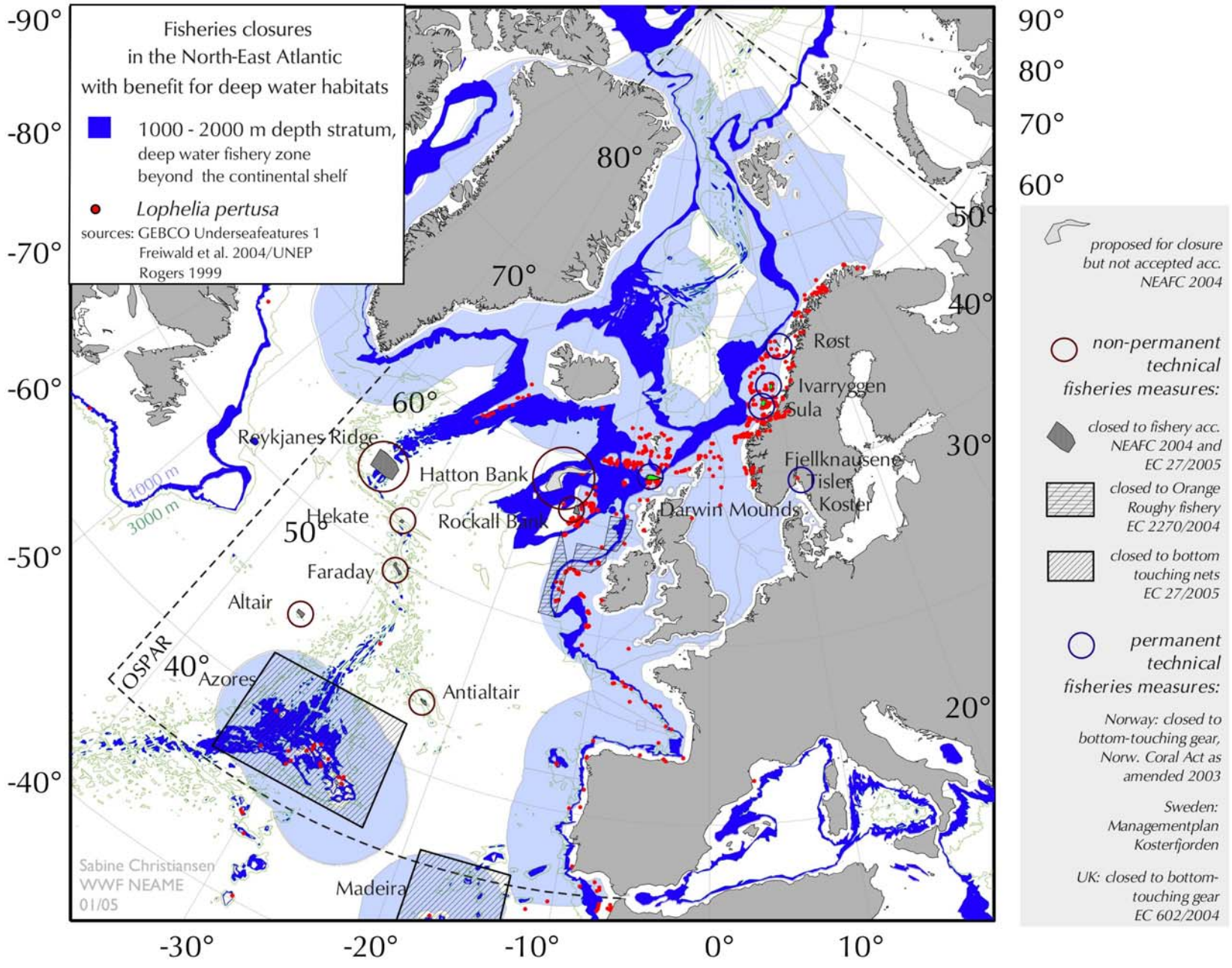
- In implementing the objective of an ecosystem approach to fisheries management of the reformed Common Fisheries Policy, in September 2005 a regulation was adopted for the protection of deep-water coral reefs from the effects of fishing in large sea areas including all seamounts around the Azores, Madeira and Canary Islands
- This regulation provides permanent protection from the damage caused by gillnet, trammel net, and bottom trawling

Conservation efforts

NEAFC decision to establish fishery closures around some seamounts in its Convention area (high seas) 2004

- Subsequent to the UN ICP meeting in June 2004, the Norwegian Minister of Fisheries embarked on the issue of destructive bottom trawling on the High Seas and called for measures to close off certain vulnerable sites in the High Seas area of the North-East Atlantic which are under the regime of the North-East Atlantic Fisheries Commission (NEAFC)
- NEAFC decided to close 5 seamounts and a section of the Rejkjanes Ridge to bottom touching gear for 3 years, when a revision would take place

Current management measures



Smt fishery and conservation

Management and conservation in OASIS

The project OASIS aims at describing the functioning characteristics of seamount ecosystems.

Objective 1: Physical oceanography

To identify and describe the physical forcing mechanisms effecting seamount systems

Objective 2: Biogeochemistry

To assess the origin, quality and dynamics of particulate organic material within the water column and surface sediment at seamounts.

Objective 3: Biology

To describe aspects of the biodiversity and the ecology of seamount biota, to assess their dynamics and the maintenance of their production.

Objective 4: Modelling

Modelling the trophic ecology of seamount ecosystems.

Objective 5: Conservation

Application of scientific knowledge to practical conservation.

The OASIS position statement

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Institut für Hydrobiologie und Fischereiwissenschaft
Zeiseweg 9, D-22765 Hamburg, Germany

OASIS

Oceanic Seamounts: an Integrated Study

A research project supported by the European Commission under the Fifth Framework Programme.
Contract n°: EVK3-CT-2002-00073-OASIS

Co-ordinator: Dr. Bernd Christiansen
bchristiansen@uni-hamburg.de

The OASIS position statement

Seamounts are underwater offshore mountains rising from the abyssal plains in all oceans. Special current conditions create a unique environment at each seamount and provide the basis for an abundance of fish and invertebrates, making the waters important breeding and feeding grounds for vast numbers of pelagic and demersal fish.

Many species at seamounts grow very slowly and some fish reproduce first at the age of 25 years and more and reach a maximum age of more than 100 years[1]. Due to their isolated locations in the open ocean, seamounts have been found to host a high level of endemism[2] and local populations of fish. These factors make seamount ecosystems very sensitive to disturbance from human activities.

As seamounts are rich in fish and other natural resources, they provide lucrative fishing grounds and potential mining sites for metals, etc. Plummeting fish stocks in shallower waters now push fishing fleets further out at sea, and offshore seamount fish stocks are already being exploited by several NE Atlantic fleets[3]. Due to lack of governance of the high seas, management of seamounts in international waters is non-existent, causing the destruction of habitats and decline in fish populations.

The dragging of trawls over seamounts and the removal of large parts of resident fish populations have negative consequences for the biodiversity of seamounts and other underwater environments in various parts of the world. In New Zealand, for example, there is evidence of decline in fish stocks associated with seamount fishing[4], and in the NE Atlantic, large areas of cold water coral reefs have been destroyed by trawling[5]. When unregulated, even smaller-scale fishing can disturb these sensitive environments, such as in the Azores, where artisanal fishing at seamounts has caused the decline in important fish stocks[6].

Today, due to lack of well-funded research, little is known of seamount ecosystems in the NE Atlantic, as well as of the impact of human activities upon these unique oceanic ecosystems. The OASIS project (OceAnic Seamounts: an Integrated Study), funded by the European Commission, is the first European seamount study integrating physical, biogeochemical and biological research.

Sustainable fisheries are dependent upon well-functioning ecosystems. In order to ensure a sustainable fishery and viable fishing communities, an ecosystem-based management approach is crucial for seamounts and other important oceanic ecosystems, regulating human activities and ensuring a sustainable exploitation of marine resources. One of the scopes of OASIS is therefore to produce comprehensive and science-based management guidelines for seamounts in deep sea areas.

Finally, until we know more about these fragile ecosystems and the long-term impacts of fishing and other human activities, we in the OASIS group believe that it is necessary to apply the precautionary principle to seamounts to ensure their necessary protection and management.

References

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Management and conservation in OASIS

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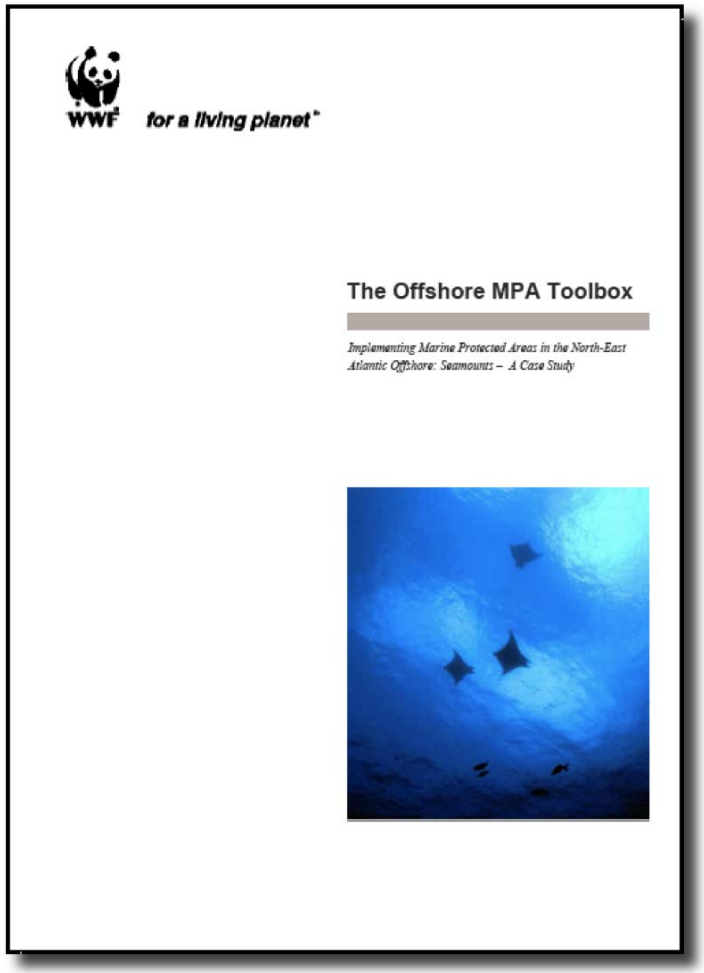
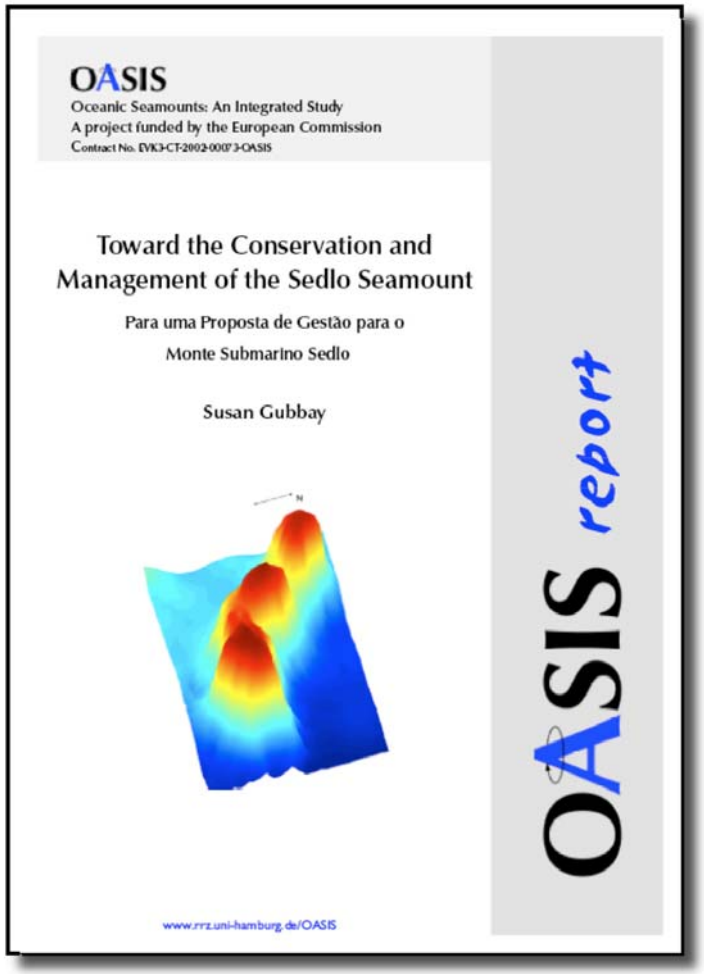


Management and conservation in OASIS

Toward the Conservation and Management of the Sedlo Seamount



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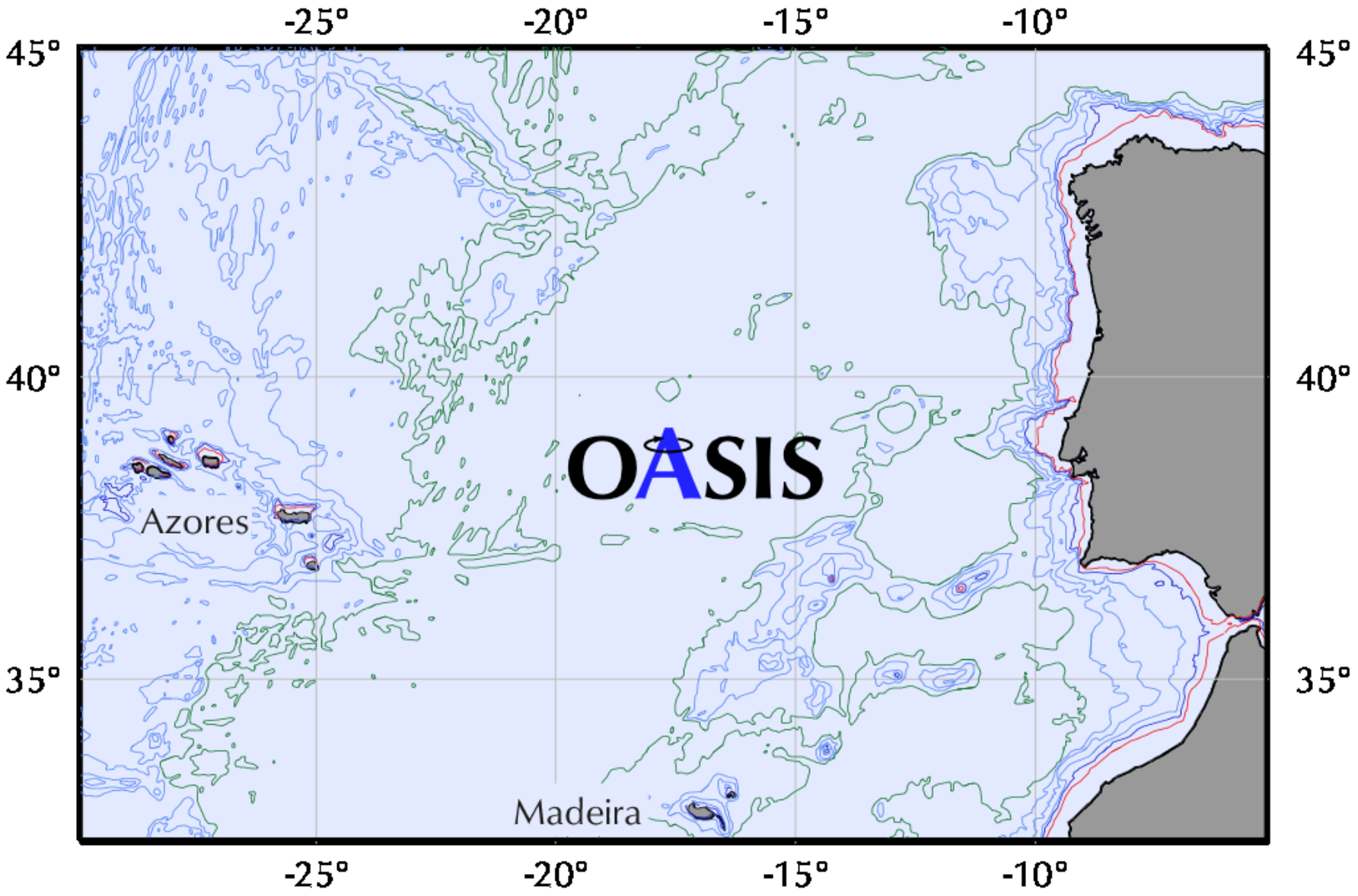

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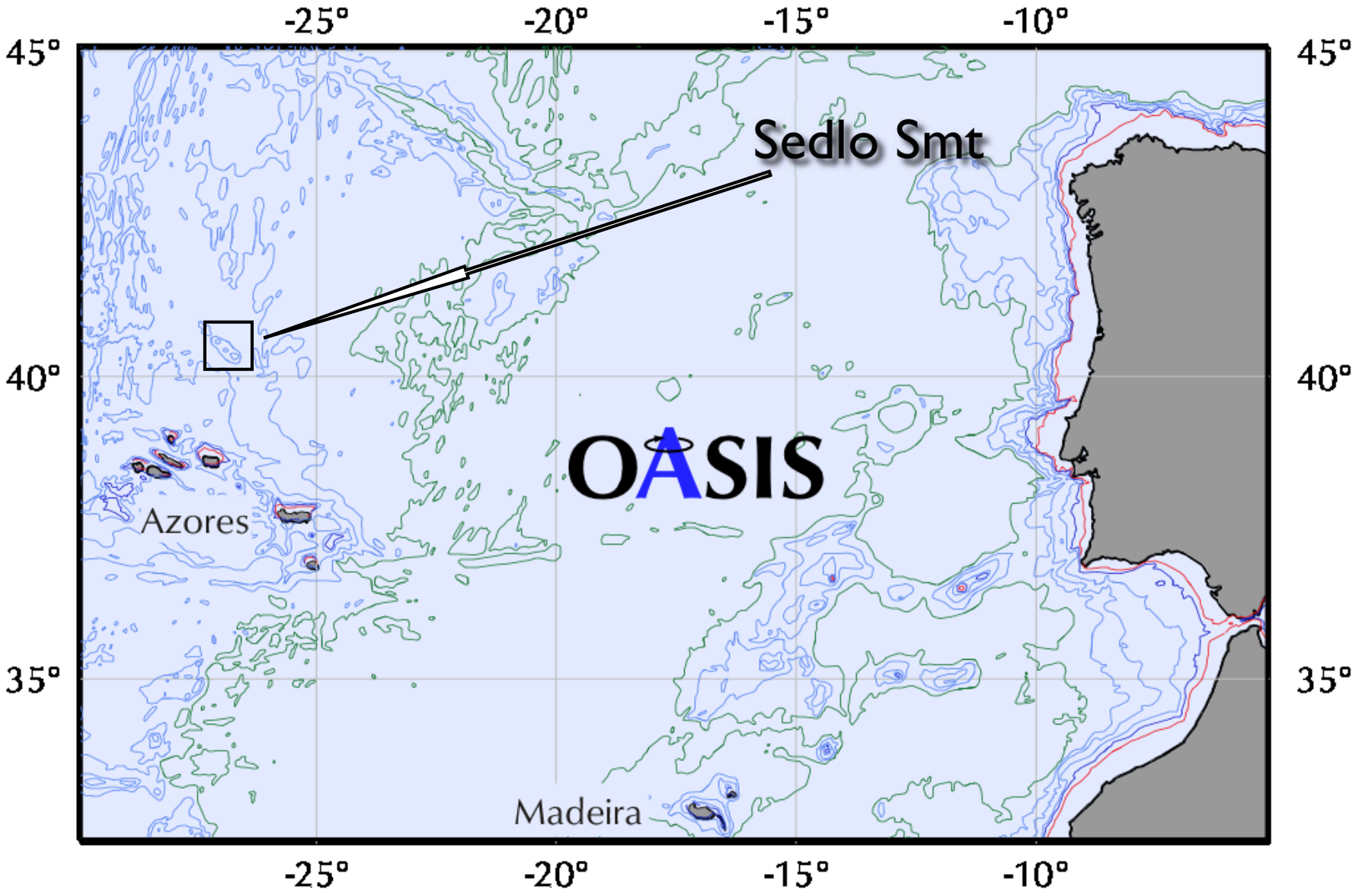

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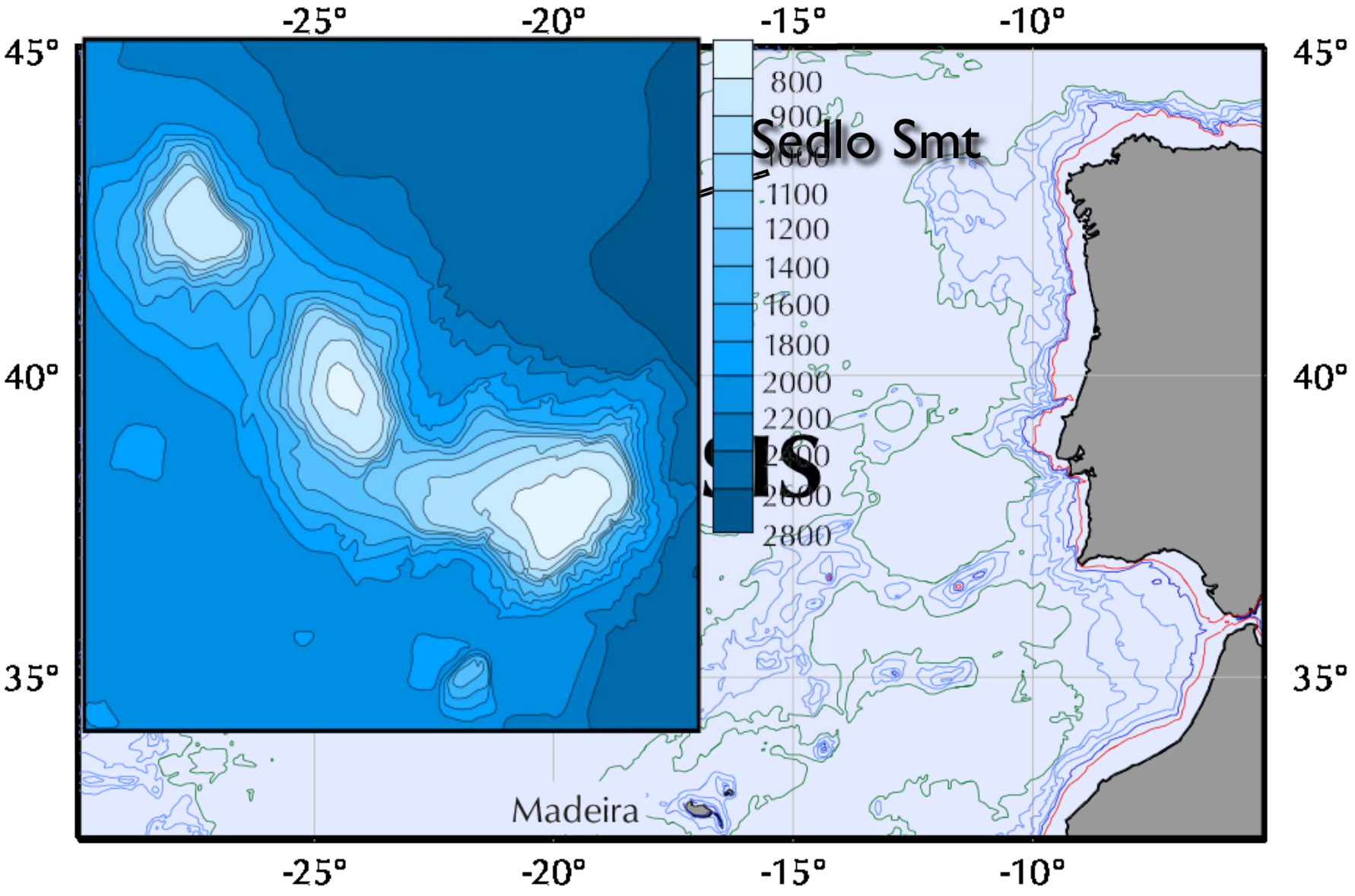
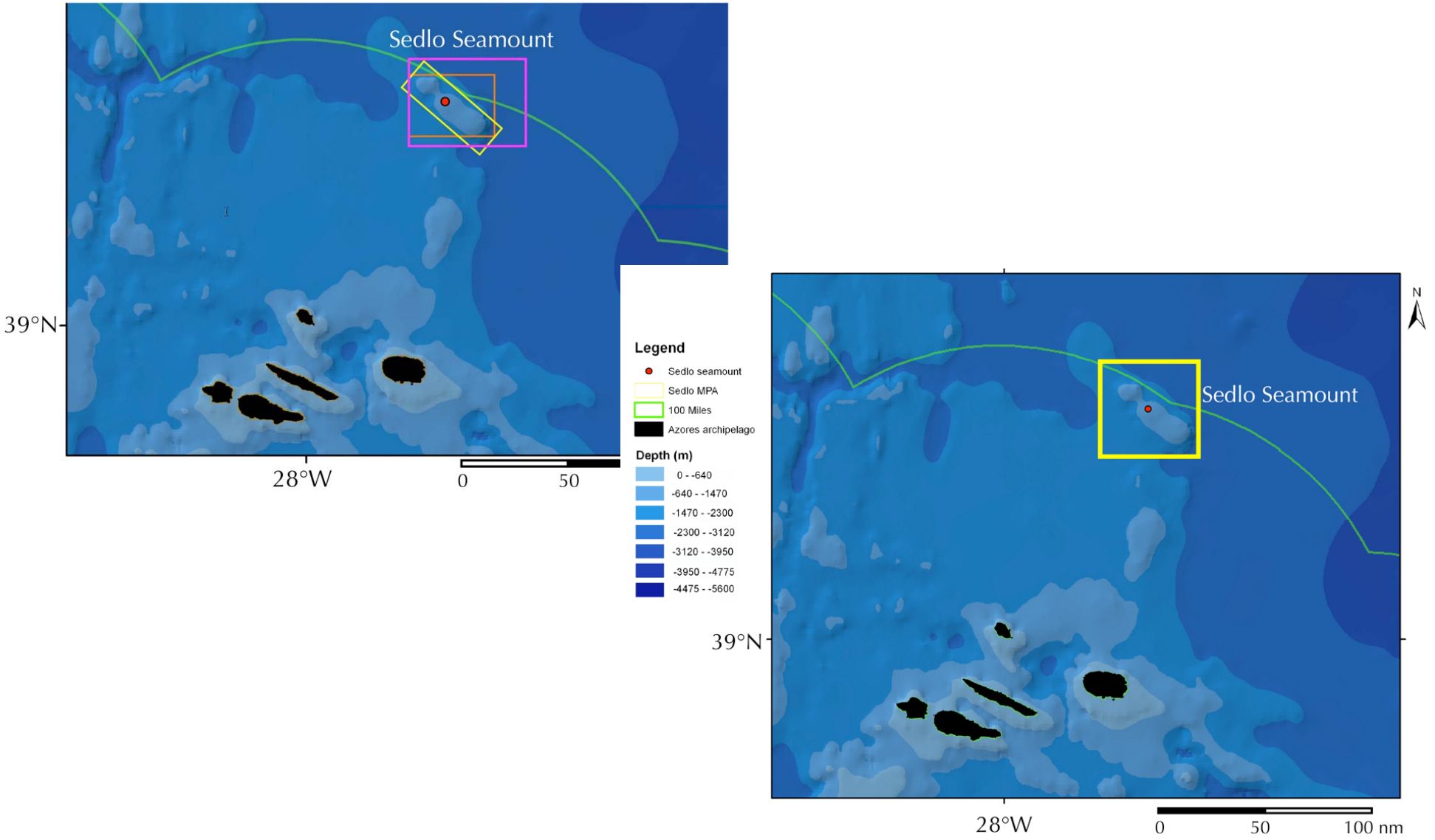


Smt fishery and conservation

Management and conservation efforts in OASIS



Smt fishery and conservation

Management and conservation efforts in OASIS

Activity	Status in MPA	Regulatory requirements	Comment
NAVIGATION			
Shipping	YES	No change	Not on shipping route. May be some occasional vessel traffic
RECREATION			
Boating	YES	No change	Low activity level due to distance from nearest land.
Sports fishing	NO	Regional Government will need to introduce **regulation**	None at present
STRUCTURES			
Cables	Presumption against	Regional Government Policy needs to be agreed	Terrain unsuitable and not on any likely routeing for cables or pipelines
Pipelines	Presumption against	Regional Government Policy needs to be agreed	
WASTE DISPOSAL			
Garbage	NO	No change	Prohibition on the dumping of wastes and presumption against ballast water exchange under MARPOL.
Ballast water	NO	No change	
Other	Presumption against	Regional Government Policy needs to be agreed	
MINERAL EXTRACTION			
Oil & gas	Presumption against	Regional Government Policy needs to be agreed	No known mineral resources, no current extraction activities, and no proposed mineral extraction in the area
Surface deposits	NO	Regional Government will need to introduce **regulation**	
Aggregate	NO	Regional Government will need to introduce **regulation**	
FISHERIES			
Hand lines	NO	Regional Government will need to introduce **regulation**	Most handlining close to coasts and less than 600m depth; bottom longliners could operate in the area but generally work between 200-800m. Some pelagic longlining for swordfish (& tuna) No pelagic trawling. Bottom trawling is already prohibited As is deep-water gillnetting (and trammel netting,
Bottom longlines	NO	Regional Government will need to introduce **regulation.** EC regulation outside the 100nm zone	
Pole & line	NO	Regional Government will need to introduce **regulation**	
Surface longlines	NO	Regional Government will need to introduce **regulation.** EC regulation outside the 100nm zone. ICCATT agreement?	
Mid-water trawling	NO	Regional Government Policy needs to be agreed. EC regulation outside the 100nm zone	
Bottom trawling deep-water gill nets trammel netts	NO	Permanent ban already agreed by European Commission	
Traps	NO	Regional Government will need to introduce **regulation**	Trap fisheries not known to operate in the area at present
RESEARCH			
Observational (non-invasive)	YES	Regional Government will need to introduce **regulation**	Small number of research cruises conducted as part of OASIS project and demersal cruise by DOP/UAç - Observational and sampling, no seismic studies.
Sampling (invasive)	Under license	Regional Government will need to **specify license conditions**	
Seismic	NO	Regional Government will need to introduce **regulation**	

Smt fishery and conservation