MARINE NON-LIVING RESOURCES

SECTORAL SHEET

This publication was funded by the European Union. Its contents are the sole responsibility of the authors) and do not necessarily reflect the views of the European Union.

MSP4BIO

UCA Universidad de Cádiz

This sectoral sheet is part of a series covering five key sectors of the MSP4BIO Project: **Aquaculture, Fisheries, Marine Non-Living resources extraction, specifically focusing on deep-sea mining and dredging.**

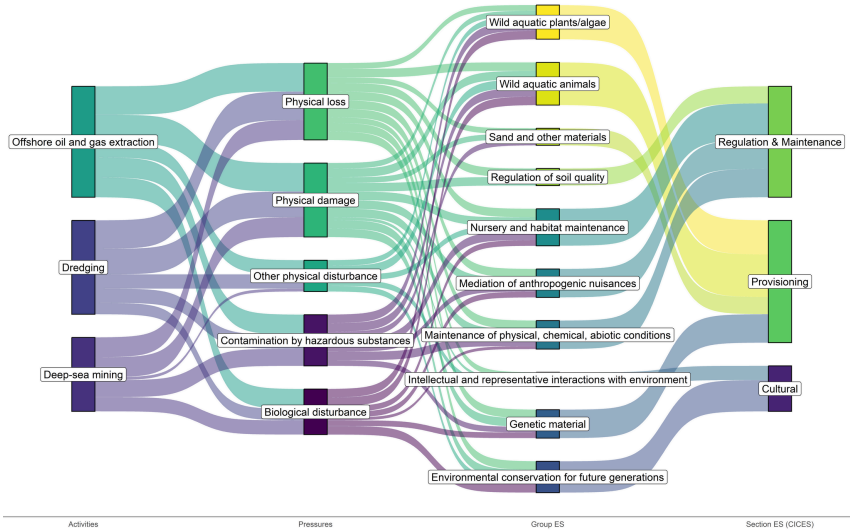
It guides MPA managers in addressing activities through an integrated approach and helps blue economy stakeholders understand sector impacts on ecosystem services.
The sheets outline Good Management Practices to **mitigate impacts and promote sustainable sector development.**

Designed as a resource for policymakers, they support trade-off analysis and address user conflicts.

Sector characteristics

Area-based marine conservation

This document outlines the ecosystem services affected by marine non-living resource extraction and associated pressures, focusing on successful management practices within MPAs. Notably, seabed mining poses a major threat to oceans due to limited knowledge of deep-sea environments and recovery potential. The IUCN advises against mineral extraction in protected areas (Categories I-IV) and calls for strict Environmental Impact Assessments for projects in Categories V and VI.



Deep-sea mining rises many concerns among the governments, environmentalists and researchers due to the lack of knowledge of the impacts it can cause in the marine environment. Many countries have taken measures to stop the development of this activity supporting a ban, moratorium or precautionary pause on deep sea mining, among others, Spain, Portugal, Germany, Ireland.

Ecosystem Services main dependencies:

- **Mineral substances used for nutrition, materials or energy (i.e. sand, industrial materials, gas, oil)**
- **Regulation of soil quality**

Activities

Offshore oil and gas extraction

Dredging

Deep-sea minig

GOOD MANAGEMENT PRACTICES

The graphs below highlight key Good Management Practices (GMP) for planning Marine non-living resources extraction, specifically focusing on deep-sea mining and dredging.Brief descriptions are included, with more details on the deliverable.

Deep-sea minig

- Establish protected areas before mining begins, e.g., APEIs in the Clarion-Clipperton Zone, protected two years prior to exploration.
- Develop legally binding environmental codes for marine mining.
- Create temporary reserves for natural repopulation, e.g., Papua New Guinea.
- Use Regional Environmental Management Plans (REMPs) to safeguard marine ecosystems.
- Require mining companies to study areas beyond their mining zones.
- Implement zoning schemes with core and buffer zones, e.g., MPAs in the Clarion-Clipperton Zone with 100 km buffers.
- Promote reuse, recycling, and sustainable product design for a Circular Economy.

Dredging

EMS Data Importance:

- Quantitative dredging impact analysis supports monitoring.
- Voluntary data sharing (industry & Crown Estate) every six months, with open access to reduce sector conflicts.

Annual EMS Reports:

- Summarize environmental performance and regional dredging patterns, aiding extraction management.

Seabed Mapping & Archaeology:

- Map seabeds pre-dredging to identify wrecks, debris, and prehistoric landscapes.
- Restrict dredging in areas with archaeological features and establish exclusion zones.
- Follow safe operation protocols: halt for findings, report to authorities, adjust operations, and create buffer zones.

Environmental Considerations:

- Promote species re-establishment, e.g., scallop shell seeding achieving 70% return in 7 months.
- Use exclusion zones to protect sensitive areas.

Offshore oil and gas extraction

Decommission:

- **U**se the oil and gas infrastructure to create artificial reefs. In the Guld of Mexico, oil and gas operator may choose to work with local government in a Rigs-to-Reef program minimizing decommissioning costs and improving biodiversity.

TO ACCESS THE FULL DELIVERABLE SCAN

LEGEND

- ORIENTED TOWARDS LIMITING THE ACTIVITY
- ORIENTED TO PROCESS MANAGEMENT
- GOOD PRACTICES FOR MPAS
- ORIENTED TO THE ACTIVITY DEVELOPMENT
- ORIENTED TO THE SOCIO ECOSYSTEM
- GOOD PRACTICES FOR MSP