

# Definition of reefs' categories

## Deliverable 3.1.1

Work package 3 – Mapping of Adriatic reefs from  
different perspective

Activity 3.1 - Reefs' Classification in the  
cooperation area

## Contents

|   |    |
|---|----|
| 1. Introduction.....  | 4  |
| 2. International conventions .....  | 5  |
| 2.1 The United Nations Convention on the Law of the Sea (1982).....   | 5  |
| 2.2 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter - London Convention (1972).....                | 6  |
| 2.3 International Convention for the Prevention of Pollution from Ships of 1973 - Protocol of 1978 (73/78).....                           | 7  |
| 2.4 The Convention on Biological Diversity (CBD) (1993) .....   | 7  |
| 2.5 Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) .....  | 8  |
| 2.6 The Ramsar Convention of Wetlands (1975) .....  | 8  |
| 2.7 The United Nations Convention Concerning the Protection of the World Cultural and Natural Heritage (1972).....                        | 9  |
| 2.8 Convention on the Protection of the Black Sea against Pollution - Bucharest Convention (1992).....                                    | 9  |
| 2.9 The Convention for the Protection of the Marine Environment of the North East Atlantic - OSPAR (1998).....                            | 10 |
| 2.10 Convention for Protection of the Mediterranean Sea against Pollution - Barcelona Convention (1976).....                              | 11 |
| 3. International and national guidelines and national legislation .....   | 12 |
| 3.1 The Guidelines for Integrated Management of Coastal and Marine Areas (1994).....  | 12 |
| 3.2 Guidelines for the placement at sea of matter for purpose other than the mere disposal (construction of artificial reefs) (2005)..... | 12 |
| 3.3 Code of Conduct for Responsible Fisheries (1995).....   | 13 |
| 3.4 Strategic Action Plan for the Rehabilitation of the Black Sea (2009).....   | 13 |

|   |    |
|---|----|
| 3.5 Practical Guidelines for the use of Artificial Reefs in the Mediterranean and the Black Sea (2015).....   | 14 |
| 3.6 Guidelines for the Establishment of the Natura 2000 Network in the Marine Environment (2007).....   | 14 |
| 3.7 Guidelines and management practices for artificial reef siting, use, construction, and anchoring in Southeast Florida (2011) .....                  | 15 |
| 3.8 European Artificial Reef Research Network (EARRN) (1995) .....  | 16 |
| 3.9 The National Fishing Enhancement Act – NFEA (1984).....   | 16 |
| 3.10 National Oceanic and Atmospheric Administration (NOAA).....  | 16 |
| 3.11 The New South Wales Department of Primary Industries (DPI) .....   | 17 |
| 3.12 US Code Title 33 – Navigation and Navigable Waters Chapter 35 – Artificial Reefs.....  | 17 |
| 3.13 El Real Decreto 3448/2000, de 22 de diciembre, por el que se establece la normativa básica de las ayudas estructurales en el sector pesquero ..... | 17 |
| 3.14 Recfishwest 2017 - Artificial Reefs in Australia: A Guide to Developing Aquatic Habitat Enhancement Structures .....                               | 18 |
| 4. ADRIREEF .....   | 19 |

## 1. Introduction

Reefs are generally recognized as one of the biologically most valuable ecosystems. They provide food, jobs, income, and protection not only to people living in neighbouring areas but also to people living far away. At the same time, reefs provide a safe habitat for a wide variety of fish and marine invertebrates but also protect shores against erosion. As such, reefs are recognized as marine areas deserving the highest level of environmental protection.

Consequently, up to now several international and/or regional agreements have been concluded, requiring their signatories to take actions that either directly or indirectly address reef protection. These agreements fall into a variety of categories and cover diverse subject matters such as protection of threatened species, prevention of marine pollution, designation and preservation of specific natural areas or sites, etc. It has to be noted that these agreements have very diverse legal power and acceptance. Therefore, in the following text the most relevant international, regional and national documents that directly or indirectly refer to reefs, are reported.

## 2. International conventions

In the following chapter, definitions of reefs found in various internationally binding documents are presented.

### 2.1 The United Nations Convention on the Law of the Sea (1982)

The 1982 United Nations Convention on the Law of the Sea (known as the “UNCLOS”) is the most important international convention regarding various uses of oceans and their resources. UNCLOS defines the rights and responsibilities of nations with respect to their use of the world's oceans, establishing guidelines for exploitation of the oceans, the environment, and the management of marine natural resources. Relevant obligations to signatories are:

- to protect and preserve the marine environment in general,
- to take measures to prevent pollution of the ocean from any source, including vessels, dumping, seabed exploration, land-based sources and the air,
- to ensure the maintenance of living resources within their jurisdiction.

UNCLOS does not directly address reefs and does not provide a legally binding definition of reefs, either natural or artificial. However, in Part XVII, entitled *Protection and preservation of the marine environment* (art.194.5), it provides that “States have the obligation to protect and preserve the marine environment”, including “rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life”.<sup>1</sup> This general obligation applies to ecosystems such as reefs.

According to the aforementioned, in 2001 the American Branch of the International Law Association Law studied the Convention, and recognized terms that are not defined in Convention but may be quite important for the uniform and harmonized implementation of the Convention itself. Even more, they proposed definitions for all missing terms. The results of the study, including a number of definitions, have been published by Walker and Noyes in “Definitions for the 1982 Law of the Sea Convention”.<sup>2</sup> According to the aforementioned document reef is defined as follows:

---

<sup>1</sup> Text of the UNCLOS available online: [http://www.un.org/depts/los/convention\\_agreements/texts/unclos/unclos.pdf](http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos.pdf) (last consultation in August 2016)

<sup>2</sup> Walker and Noyes: Definitions for the 1982 Law of the Sea Convention--Part II, Published by CWSL Scholarly Commons, 2002.

*The term reef refers to a mass of rock or coral which either reaches close to the sea surface or is exposed at low tide. That part of a reef which is above water at low tide but submerged at high tide is a “drying reef”.*

This definition closely responds to common understanding of the reef as an obstacle to navigation. It applies to natural reef, and may be taken into consideration accordingly.

## 2.2 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter - London Convention (1972)

Second important international convention is the *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter - 1972*, so-called London Convention 1972. It regulates the various aspects of dumping of various materials originating from the land into the sea.

The Convention does not provide a definition of reef. However, in 2008 the *Guidelines for the placement of Artificial Reefs* were developed within the context of the London Convention and Protocol (London Convention and Protocol/UNEP, 2009) containing the definition of an artificial reef as follows:

*„An artificial reef is a submerged structure deliberately constructed or placed on the seabed to emulate some functions of a natural reef such as protecting, regenerating, concentrating, and/or enhancing populations of living marine resources. Objectives of an artificial reef may also include the protection, restoration and regeneration of aquatic habitats, and the promotion of research, recreational opportunities, and educational use of the area. The term does not include submerged structures deliberately placed to perform functions not related to those of a natural reef - such as breakwaters, mooring, cables, pipelines, marine research devices or platforms - even if they incidentally imitate some functions of a natural reef.“<sup>3</sup>*

Definition is quite extensive, more technical than legal. It covers not only definition *per se* but also the functions, possible uses and objectives of an artificial reef. It also clearly emphasizes similar objects that are excluded.

---

<sup>3</sup> Guidelines for the Placement of Artificial Reefs  
([http://www.imo.org/en/OurWork/Environment/LCLP/Publications/Documents/London\\_convention\\_UNEP\\_Low-res-Artificial%20Reefs.pdf](http://www.imo.org/en/OurWork/Environment/LCLP/Publications/Documents/London_convention_UNEP_Low-res-Artificial%20Reefs.pdf))

## 2.3 International Convention for the Prevention of Pollution from Ships of 1973 - Protocol of 1978 (73/78)

Another significant international convention is the International Convention for the Prevention of Pollution from Ships of 1973, as modified by the Protocol of 1978 (MARPOL). In the Convention *the technical regulations to prevent pollution from accidents or everyday operations of vessels, including measures to prevent the discharge of oil and other noxious liquids, and other harmful substances* <sup>4</sup> are presented.

MARPOL defines certain sea areas as "special areas" in which, for technical reasons relating to their oceanographic and ecological conditions as well as to sea traffic, the adoption of special mandatory measures for the prevention of sea pollution is required. Under the Convention, these special areas are provided with a higher level of protection than other marine areas. This Convention indirectly refers to reefs but does not provide any definition.

One of the recognized measures to protect environment and clearly connected with MARPOL Convention is Particularly Sensitive Sea Areas (PSSAs). The guidelines dealing with different aspects of PSSA are contained in the *Resolution A.982(24) Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas* adopted in 2005. The Guidelines refer to reefs in a context of protection from ship-related pollution and do not provide a definition of reef.

## 2.4 The Convention on Biological Diversity (CBD) (1993)

The Convention on Biological Diversity (CBD) entered into force in 1993. It has three main objectives:

- conservation of biological diversity,
- sustainable use of the components of biological diversity and
- fair and equitable sharing of the benefits arising out of the utilization of genetic resources. <sup>5</sup>

It is important to note that this legal instrument focuses on "equitable sharing of the benefits" emphasizing the human uses of the marine resources. The Convention on Biological Diversity refers to reefs through the adopted work programme on marine and coastal biodiversity that promotes action on coral reefs. It does not provide a definition of reef.

---

<sup>4</sup> Official website of International Maritime Organization  
(<http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Pages/Default.aspx>)

<sup>5</sup> Official website of Convention on Biological Diversity (<https://www.cbd.int/intro/default.shtml>)

## 2.5 Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)

The Convention on International Trade in Endangered Species of Wild Fauna and Flora entered into force in 1973 (CITES). Its main goal is to ensure that international trade does not threaten the survival of any wild animal and plant species. Relevant obligations of signatories are:

- to prohibit the international trade (import, export, and re-export) of any species that is listed in an appendix to the Convention (which includes many coral species), except under certain limited circumstances,
- to take measures to “penalize the trade in, or possession of” specimens of listed species, and
- to “provide for the confiscation or return to the State” of export of such specimens.<sup>6</sup>

Convention refers to reefs through monitoring international trade in corals and giant clams, which are listed under Appendix II of the Convention, but it does not provide a definition of reef.

## 2.6 The Ramsar Convention of Wetlands (1975)

The Ramsar Convention of Wetlands entered into force in 1975. Since its adoption, the Ramsar Convention has been modified in two occasions: by a protocol (a new treaty amending the original treaty) in December 1982, and by a series of amendments to the original treaty, known as the "Regina Amendments" of 1987.<sup>7</sup>

The Convention is an intergovernmental treaty that provides the framework for national actions and international cooperation for the conservation and wise use of wetlands and their resources. The Convention uses a broad definition of the types of wetlands, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans.<sup>8</sup>

The Convention facilitates the conservation of coral reefs within marine protected areas, but it does not provide a definition of reef.

---

<sup>6</sup> Official websites of Convention on International Trade in Endangered Species of Wild Fauna and Flora (<https://www.cites.org/eng/disc/text.php>)

<sup>7</sup> Official websites of the Ramsar Convention of Wetlands ([http://archive.ramsar.org/cda/en/ramsar-cop12-logo-homeindex/main/ramsar/1%5E26530\\_4000\\_0\\_](http://archive.ramsar.org/cda/en/ramsar-cop12-logo-homeindex/main/ramsar/1%5E26530_4000_0_))

<sup>8</sup> Ibid

## 2.7 The United Nations Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)

The United Nations Convention Concerning the Protection of the World Cultural and Natural Heritage entered into force in 1972. The main goal of the Convention is to ensure the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage. The term “Natural heritage” includes natural features, formations, or sites that are “of outstanding value from the aesthetic or scientific point of view,” that “constitute the habitat of threatened species of animals or plants of outstanding universal value from the point of view of science or conservation”.<sup>9</sup>

Placing reefs on lists of international or national heritage sites makes an important public statement: their unique ecology is worthy of careful stewardship for the benefit of future generations. It also imposes obligations on governments to take action to protect them. Some of the world’s largest reefs, including Australia’s Great Barrier Reef, Cabo Pulmo (located in Baja California Sur, Mexico) and the Belize Barrier Reef Reserve Systems, have been designated as the World Heritage Sites under the UNESCO World Heritage Convention.<sup>10</sup>

This Convention refers to the reefs in relation to aspects of protection and conservation, but it does not provide a definition of reef.

## 2.8 Convention on the Protection of the Black Sea against Pollution - Bucharest Convention (1992)

The 1992 Convention on the Protection of the Black Sea against Pollution (known as the “Bucharest Convention”) was ratified by the six Black Sea States and entered into force in 1994. The Convention has four Protocols, as follows:

- the Protocol on the Protection of the Marine Black Sea Environment against Pollution from Land Based Sources,
- the Protocol on Cooperation in Combating Pollution of the Black Sea Marine Environment by Oil and other Harmful Substances in Emergency Situations (also known as the „Emergency Response Protocol“),

---

<sup>9</sup> Official website of the United Nations Educational, Scientific and Cultural Organization (UNESCO) (<http://whc.unesco.org/en/conventiontext/>)

<sup>10</sup> Ibid

- the Protocol on the Protection of the Black Sea Marine Environment Against Pollution by Dumping (also known as the “Dumping Protocol”), and
- The Black Sea Biodiversity and Landscape Conservation Protocol to the Convention on the Protection of the Black Sea against Pollution (also known as the “CBD Protocol”).<sup>11</sup>

Article 8 in the Dumping Protocol applies to artificial reefs. This Convention refers to reefs in relation to aspects of protection and preservation of the marine environment, but it does not provide a definition of reef.

## 2.9 The Convention for the Protection of the Marine Environment of the North East Atlantic - OSPAR (1998)

The Convention for the Protection of the Marine Environment of the North East Atlantic (known as “OSPAR Convention”) entered into force in 1998. The Convention replaced the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircrafts (Oslo Convention). The Convention refers to reefs in relation to aspects of habitat protection.

In 1999, OSPAR issued Guidelines on artificial reefs in relation to Living Marine Resources. The purpose of the Guidelines is to assist Contracting Parties in considering the consequences for the marine environment in case of placement of artificial reefs on the seabed. Construction of artificial reefs is one example of ‘placement’ and the Guidelines contain elements that are relevant for a wide range of other coastal and offshore developments that have potential to cause adverse effects in the marine environment and that, therefore, should fall under the control of appropriate national authorities.<sup>12</sup>

The Guidelines provide a definition of artificial reef as follows:

*An artificial reef is a submerged structure with a deliberate placement on the sea bed to imitate some of the characteristics of a natural reef. Some parts of the reef can be partially exposed in different tidal situations.*<sup>13</sup>

This definition, by referring to characteristics of a natural reef, suggests that it refers to reefs with some sort of biological purpose, as opposed to structures that are established for, for example, reducing coastal

---

<sup>11</sup> Official website of The Commission on the Protection of the Black Sea Against Pollution ([http://www.blacksea-commission.org/\\_convention-fulltext.asp](http://www.blacksea-commission.org/_convention-fulltext.asp))

<sup>12</sup> OSPAR Guidelines on Artificial Reefs in relation to Living Marine Resources

<sup>13</sup> Ibid

erosion. However, the list of purposes of artificial reefs in the Guidelines includes, for example, structures for reduction of flooding and coastal erosion.

## 2.10 Convention for Protection of the Mediterranean Sea against Pollution - Barcelona Convention (1976)

The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, originally the Convention for Protection of the Mediterranean Sea against Pollution, and often simply referred to as the Barcelona Convention, is a regional convention adopted in 1976 to prevent and abate pollution from ships, aircraft and land-based sources in the Mediterranean Sea. The Convention was adopted in 1976 and amended in 1995.

In conformity with the decisions of the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992, the Barcelona Convention was revised in 1995 to include coastal areas as well as the marine environment. The aim of sustainable development, increased public participation and environmental impact assessment were integrated into the Convention and its Protocols. In this context, the revised Convention was renamed as “The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean” and entered into force in 9 June 2004.<sup>14</sup>

The main goal of the Convention is to reduce pollution in the Mediterranean Sea and to protect and improve the marine environment in the area. The Convention refers to reefs as a coastal resource in the context of resource management, but it does not provide a definition of reef.

---

<sup>14</sup> Official site United Nations Environment Programme  
([http://wedocs.unep.org/bitstream/handle/20.500.11822/7096/Consolidated\\_BC95\\_Eng.pdf?sequence=1&isAllowed=y](http://wedocs.unep.org/bitstream/handle/20.500.11822/7096/Consolidated_BC95_Eng.pdf?sequence=1&isAllowed=y))

### 3. International and national guidelines and national legislation

International and guidelines as well as selected national legislation are presented in the following paragraphs.

#### 3.1 The Guidelines for Integrated Management of Coastal and Marine Areas (1994)

The Guidelines for Integrated Management of Coastal and Marine Areas (with special reference to the Mediterranean Basin) was adopted in 1994. The document is intended:

- to provide, within the context of the Barcelona Convention, general guidelines for national policy-makers, managers and professionals involved in the development and implementation of integrated coastal and marine areas management (ICAM) programmes aiming at achieving sustainable development of coastal and marine areas, including exclusive economic zones; and
- to assist in development of national guidelines for integrated coastal area management and development, and thus contribute to the implementation of principles and recommendations adopted by the United Nations Conference on Environment and Development.<sup>15</sup>

The Guidelines refer to an artificial reef in the context of sustainable resource management, but they do not provide a definition of artificial reef.

#### 3.2 Guidelines for the placement at sea of matter for purpose other than the mere disposal (construction of artificial reefs) (2005)

In 2005, United Nation Environment Programme issued *Guidelines for the placement at sea of matter for purpose other than the mere disposal (construction of artificial reefs)*. The Guidelines refer to artificial reefs as structures specifically built for protecting, regenerating, concentrating and/or increasing the production of living marine resources, whether for fisheries or nature conservation. This includes the protection and regeneration of habitats. The Guidelines provide definition of artificial reef as follows:

---

<sup>15</sup> The Guidelines for Integrated Management of Coastal and Marine Areas (<https://papthecoastcentre.org/pdfs/ICAMguidelines.pdf9>)

*An artificial reef is a submerged structure placed on the seabed deliberately, to mimic some characteristics of a natural reef. It could be partly exposed at some stages of the tide.<sup>16</sup>*

### 3.3 Code of Conduct for Responsible Fisheries (1995)

The Code of Conduct for Responsible Fisheries was adopted by the Food and Agricultural Organization of the United Nations Conference (FAO) and entered into force in 1995. The Code sets out principles and international standards of behaviour for responsible practices with a view to ensuring the effective conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity.<sup>17</sup>

The Code refers to artificial reefs in a context of economically valuable ecosystem but it does not provide a definition of reef.

### 3.4 Strategic Action Plan for the Rehabilitation of the Black Sea (2009)

The Strategic Action Plan for the Rehabilitation of the Black Sea was adopted in 2009. The document represents an agreement between the six Black Sea coastal states (Bulgaria, Georgia, Romania, the Russian Federation, Turkey and Ukraine) to act in concert to assist in the continued recovery of the Black Sea.

The document provides a brief overview of the current status of the Black Sea, based largely on information contained within the 2007 Black Sea Transboundary Diagnostic Analysis (BS TDA), and taking into account progress with achieving the aims of the original (1996) Black Sea Strategic Action Plan (BS SAP).<sup>18</sup> This SAP builds upon BS SAP signed in 1996 (updated in 2002), by reorganising the priorities and actions there in considering the progress in the region and the current state of the environment. This updated (2009) version of the BS SAP describes the policy actions required to meet the major environmental challenges now facing the Sea, and includes a series of management targets. Black Sea SAP will adhere to three key environmental management approaches: Integrated Coastal Zone Management (ICZM); The Ecosystem Approach; and Integrated River Basin Management (IRBM).

---

<sup>16</sup> Guidelines for the placement at sea of matter for purpose other than the mere disposal (construction of artificial reefs) ([https://www.miteco.gob.es/es/costas/temas/proteccion-medio-marino/Barcelona%20placement%20at%20sea%20of%20matter%20eng%20final\\_tcm30-157011.pdf](https://www.miteco.gob.es/es/costas/temas/proteccion-medio-marino/Barcelona%20placement%20at%20sea%20of%20matter%20eng%20final_tcm30-157011.pdf))

<sup>17</sup> Official website of the Food and Agricultural Organization of the United Nations (FAO) (<http://www.fao.org/3/v9878e/V9878E.pdf>)

<sup>18</sup> Official site of The Commission on the Protection of the Black Sea Against Pollution ([http://www.blacksea-commission.org/\\_bssap2009.asp](http://www.blacksea-commission.org/_bssap2009.asp))

The Plan refers to reefs in the context of biodiversity protection and conservation, but it does not provide a definition of reef.

### 3.5 Practical Guidelines for the use of Artificial Reefs in the Mediterranean and the Black Sea (2015)

In 2015, FAO General Fisheries Commission for the Mediterranean issued the Practical Guidelines for the use of Artificial Reefs in the Mediterranean and the Black Sea. The main purpose of the Guidelines is to give direction to management practices for artificial reef planning, siting, construction, anchoring and monitoring in the Mediterranean and Black Sea area. The Guidelines provide a definition of artificial reefs as follows:

*An artificial reef is a submerged (or partly exposed to tides) structure deliberately placed on the seabed to mimic some functions of a natural reef, such as protecting, regenerating, concentrating and/or enhancing populations of living marine resources. This includes the protection and regeneration of habitats. It will serve as habitat that functions as part of the natural ecosystem while doing “no harm”.*

The term excludes artificial islands, cables, pipelines, platforms, mooring, and structures for coastal defence (e.g. breakwaters, dikes, etc.) which are primarily constructed for other purposes, as well as the Fish Aggregation Devices (FADs) employed merely to attract fish in certain fishing areas.<sup>19</sup>

The definition is appropriate for the term “artificial reef”.

### 3.6 Guidelines for the Establishment of the Natura 2000 Network in the Marine Environment (2007)

In 2007, the European Commission (Habitats Committee) issued the *Guidelines for the Establishment of the Natura 2000 Network in the Marine Environment, Application of the Habitats and Birds Directives*. The primary focus of the Guidelines is on marine species and habitat types that are covered by the site-based provisions of the Birds and Habitats Directives. These are the habitat types listed in Annex I and species listed in Annexes II of the Habitats Directive (92/43/EEC) and bird species listed in Annex I as well as migratory bird species covered by the Birds Directive (2009/147/EC) for which marine Natura 2000 sites

---

<sup>19</sup> The Practical Guidelines for Artificial Reefs in Mediterranean and Black Sea (<http://www.fao.org/3/a-i4879e.pdf>)

need to be designated, protected and managed. The Guidelines refer to reefs as a habitat and provide a definition, which includes different types of reefs as follows:

*Reefs can be either biogenic concretions or of geogenic origin. They are hard compact substrata on solid and soft bottoms, which arise from the sea floor in the sublittoral and littoral zone. Reefs may support a zonation of benthic communities of algae and animal species as well as concretions and corallogenic concretions.* <sup>20</sup>

The definition refers to natural reefs. Its main purpose is to promote protection of the reefs.

### 3.7 Guidelines and management practices for artificial reef siting, use, construction, and anchoring in Southeast Florida (2011)

In 2011, Lindberg, W.J. and Seaman, W. issued the *Guidelines and management practices for artificial reef siting, use, construction, and anchoring in Southeast Florida*. This document describes artificial reef technology and some of the science behind it, as a means of assisting practitioners with varied backgrounds, skills and experience in achieving responsible and sustainable reef development. Its goal is to present best and acceptable guidelines and management practices for artificial reef planning, siting, construction, anchoring and monitoring in southeast Florida. It provides essential information and guidance to resource users, managers and planners on the most effective methods for protecting natural reefs and other natural resources, such as “soft bottom” (e.g., seagrass beds) habitats, during the establishment of artificial reefs. This information directly applies to use of artificial reefs for mitigation and restoration of coral habitats.

The Guidelines provide definition of artificial reef as follows:

*An artificial reef is a structure intentionally placed on the ocean bottom to achieve biological but also socio-economic or engineering purposes of one or more stakeholders. The structure may be of natural or manmade materials, deployed at one time or over a long period, and ideally will serve as habitat that functions as part of the natural ecosystem, while doing “no harm”.* <sup>21</sup>

---

<sup>20</sup> Guidelines for the establishment of the Natura 2000 network in the marine environment, Application of the Habitats and Birds Directives ([http://ec.europa.eu/environment/nature/natura2000/marine/docs/marine\\_guidelines.pdf](http://ec.europa.eu/environment/nature/natura2000/marine/docs/marine_guidelines.pdf))

<sup>21</sup> Guidelines and management practices for artificial reef siting, use, construction, and anchoring in Southeast Florida (<http://edis.ifas.ufl.edu/pdf/files/sg/sg10100.pdf>)

### 3.8 European Artificial Reef Research Network (EARRN) (1995)

The European Artificial Reef Research Network (EARRN) was formed in 1995 within the European Commission Agriculture and Fisheries programme. The formal network consists of 51 scientist and 50 associates from 36 laboratories within European Union who were active in artificial reef research. EARRN was formed to provide advice on the direction of future artificial reef deployment in European waters. EARRN defines an artificial reef as:

*A submerged structure deliberately placed on the substratum (seabed) to mimic some characteristics of a natural reef.*

This definition is in line with the OSPAR Guidelines.

### 3.9 The National Fishing Enhancement Act – NFEA (1984)

The National Fishing Enhancement Act of 1984 (NFEA) defines an artificial reef as „*a structure which is constructed or placed in waters ... for the express purpose of enhancing fishery resources and commercial and recreational fishing opportunities.*”<sup>22</sup>

### 3.10 National Oceanic and Atmospheric Administration (NOAA)

The National Oceanic and Atmospheric Administration (NOAA) U.S. Department of Commerce defines artificial reefs as follows:

*An artificial reef is a manmade structure that may mimic some of the characteristics of a natural reef.*<sup>23</sup>

---

<sup>22</sup> National Fishing Enhancement Act of 1984, Title 11. Artificial Reefs (P.L.98-623)  
(<https://www.bsee.gov/sites/bsee.gov/files/reports/nationalfishingenhancementactof1984.pdf>)

<sup>23</sup> Official websites of (<https://oceanservice.noaa.gov/facts/artificial-reef.html>)

### 3.11 The New South Wales Department of Primary Industries (DPI)

The New South Wales Department of Primary Industries (DPI) defines artificial reefs as *any material purposely placed in the marine environment to influence physical, biological, or socio-economic processes related to living marine organisms*.<sup>24</sup>

### 3.12 US Code Title 33 – Navigation and Navigable Waters Chapter 35 – Artificial Reefs

US Code Title 33 – Navigation and Navigable Waters Chapter 35 – Artificial Reefs (Pub. L. 98–623, title II, §206, 1984, 98 Stat. 3397) defines artificial reef as:

*The term "artificial reef" means a structure which is constructed or placed in waters covered under this chapter for the purpose of enhancing fishery resources and commercial and recreational fishing opportunities.* <sup>25</sup>

### 3.13 El Real Decreto 3448/2000, de 22 de diciembre, por el que se establece la normativa básica de las ayudas estructurales en el sector pesquero

The RD 3448/2000 defines the reef as follows:<sup>26</sup>

*El conjunto de elementos, constituidos por diversos materiales inertes y con diversas formas, o bien, los cascos de buques pesqueros de madera específicamente adaptados para este fin, que se distribuyen sobre una superficie delimitada del lecho marino con objeto de proteger, regenerar y desarrollar las poblaciones de especies de interés pesquero.*

---

<sup>24</sup> Official website of The New South Wales Department of Primary Industries (DPI) (<https://tenders.nsw.gov.au/?event=public.RFT.downloadSummary&rftuuid=9A3ABF61-0DA1-0EFB-460413880FD043CC>)

<sup>25</sup> Text of the Code (<http://uscode.house.gov/statviewer.htm?volume=98&page=3397>)

<sup>26</sup> Cited from the Guía metodológica para la instalación de arrecifes artificiales, Gobierno De España, Ministerio de Medio Ambiente, 2008

### 3.14 Recfishwest 2017 - Artificial Reefs in Australia: A Guide to Developing Aquatic Habitat Enhancement Structures

The document defines the reef as follows:

*An artificial reef is any man-made or altered material placed into an aquatic environment to mimic certain characteristics of a natural reef. Artificial reefs are often used to create new fishing and diving opportunities, and to shift pressure from other popular locations.*

## 4. ADRIREEF

Considering whole spectrum of available definitions of the terms “natural and artificial reef”, for the purpose of the ADRIREEF project, the following definition should apply for the natural reef:

**Natural reefs are either biogenic or geogenic formations protruding from the solid or soft seabed with distinctive living marine resources.**

The definition does not specify the size of the formation, and in that respect, it covers very large formations as well as very small ones. However, taking into account that the main goal of the project is to promote Blue Economy, only those areas that can be reasonably exploited will be considered.

The definition includes occasionally submerged but also permanently submerged reefs and it is not strictly related to the safety of navigation.

For the purposes of the project, natural reefs may be categorized as follows:

- High profile reef:** the reef protruding more than 20 meters from the base substratum
- Low profile reef:** the reef protruding less than 20 meters from the base substratum
- Ledges:** vertical reef face characterized by visible crevices
- Boulder:** boulder structure elevating from the flat seabed
- Patch reef:** sand bottom with reef structures protruding from the sediment

With regard to the artificial reefs, the definition adopted in the London Convention is considered as fully appropriate for the purpose of the project, implemented as follows:

***An artificial reef is a submerged natural or manmade structure deliberately constructed or placed on the seabed to emulate some functions of a natural reef such as protecting, regenerating, concentrating, and/or enhancing populations of living marine resources, while doing “no harm”.***

***Objectives of an artificial reef may also include the protection, restoration and regeneration of aquatic habitats, and the promotion of research, recreational opportunities, educational use, sustainable fisheries and aquaculture.***

*This definition also includes decommissioned structures, or parts of them, intentionally topped down to act as an artificial reef (e.g., rig-to-reefs, sunken ships).*

The term excludes operational artificial islands, cables, pipelines, extraction platforms, mooring, structures for coastal defence (e.g. breakwaters, dikes, etc.), wind farms, etc. primarily constructed for other purposes. The term also excludes the Fish Aggregation Devices (FADs), employed to attract fish in certain fishing areas, and unless the submerged parts of such structures are not purposely planned and built to mimic some characteristics of the natural reefs, as a result of multi-actor joint eco-engineering aimed to optimize benefits from marine infrastructures and space according to the Blue Economy.