

OCEANOGRAPHY AND MARINE BIOLOGY SERIES

SEAS AND OCEANS SET



Governance of Seas and Oceans

**Edited by
André Monaco and Patrick Prouzet**

ISTE

WILEY

Foreword

We have been asked by ISTE to stimulate work in the area of the environment. Therefore, we are proud to present the “Seas and Oceans” set of books, edited by André Monaco and Patrick Prouzet.

Both the content and the organization of this collection have largely been inspired by the reflection, initiatives and prospective works of a wide variety of national, European and international organizations in the field of the environment.

The “oceanographic” community, in France and internationally – which is recognized for the academic quality of the work it produces, and is determined that its research should be founded on a solid effort in the area of training and knowledge dissemination – was quick to respond to our call, and now offers this set of books, compiled under the skilled supervision of the two editing authors.

Within this community, there is a consensus about the need to promote an interdisciplinary “science of systems” – specifically in reference to the Earth’s own “system” – in an all-encompassing approach, with the aim of providing answers about the planet’s state, the way it works and the threats it faces, before going on to construct scenarios and lay down the elementary foundations needed for long-term, sustainable environment management, and for societies to adapt as required. This approach facilitates the shift of attention from this fundamental science of systems (based on the analysis of the processes at play, and the way in which they interact at all levels and between all the constituent parts making up the global system) to a

“public” type of science, which is finalizable and participative, open to decision-makers, managers and all those who are interested in the future of our planet.

In this community, terms such as “vulnerability”, “adaptation” and “sustainability” are commonly employed. We speak of various concepts, approaches or technologies, such as the value of ecosystems, heritage, “green” technologies, “blue” chemistry and renewable energies. Another foray into the field of civilian science lies in the adaptation of research to scales which are compatible with the societal, economic and legal issues, from global to regional to local.

All these aspects contribute to an in-depth understanding of the concept of an ecosystemic approach, the aim of which is the sustainable usage of natural resources, without affecting the quality, the structure or the function of the ecosystems involved. This concept is akin to the “socio-ecosystem approach” as defined by the Millennium Assessment (<http://millenniumassessment.org>).

In this context, where the complexity of natural systems is compounded with the complexity of societies, it has been difficult (if only because of how specialized the experts are in fairly reduced fields) to take into account the whole of the terrestrial system. Hence, in this editorial domain, the works in the “Seas and Oceans” set are limited to fluid envelopes and their interfaces. In that context, “sea” must be understood in the generic sense, as a general definition of bodies of salt water, as an environment. This includes epicontinental seas, semi-enclosed seas, enclosed seas, or coastal lakes, all of which are home to significant biodiversity and are highly susceptible to environmental impacts. “Ocean”, on the other hand, denotes the environmental system, which has a crucial impact on the physical and biological operation of the terrestrial system –

particularly in terms of climate regulation, but also in terms of the enormous reservoir of resources they constitute, covering 71% of the planet's surface, with a volume of 1,370 million km³ of water.

This set of books covers all of these areas, examined from various aspects by specialists in the field: biological, physical or chemical function, biodiversity, vulnerability to climatic impacts, various uses, etc. The systemic approach and the emphasis placed on the available resources will guide readers to aspects of value-creation, governance and public policy. The long-term observation techniques used, new techniques and modeling are also taken into account; they are indispensable tools for the understanding of the dynamics and the integral functioning of the systems.

Finally, treatises will be included which are devoted to methodological or technical aspects.

The project thus conceived has been well received by numerous scientists renowned for their expertise. They belong to a wide variety of French national and international organizations, focusing on the environment.

These experts deserve our heartfelt thanks for committing to this effort in terms of putting their knowledge across and making it accessible, thus providing current students with the fundamentals of knowledge which will help open the door to the broad range of careers that the area of the environment holds. These books are also addressed to a wider audience, including local or national governors, players in the decision-making authorities, or indeed "ordinary" citizens looking to be informed by the most authoritative sources.

Our warmest thanks go to André Monaco and Patrick Prouzet for their devotion and perseverance in service of the success of this enterprise.

Finally, we must thank the CNRS and Ifremer for the interest they have shown in this collection and for their financial aid, and we are very grateful to the numerous universities and other organizations which, through their researchers and engineers, have made the results of their reflections and activities available to this instructional corpus.

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Transformations in International Law of the Sea: Governance of the “Space” or “Resources”?

Chapter written by Florence GALLETTI.

1.1. Introductory remarks

In researching primary legal issues, and the legal instruments promoted by them enabling the governance of seas and oceans, the International Law of the Sea occupies an extremely important place. In both its ancient and current forms, it represents a foundation of rules and solutions utilized by States with coastal borders to impose maritime controls on marine waters. This Law of the Sea has almost wholly determined the current structure of administrative and legal divisions traced on the waters by governments and certain organizations. In this exercise, the concept of “marine spaces”, and especially of “marine spaces” to which Law of the Sea is applicable, has been essential. A very large portion of governments’ rights to act on the surface and beneath the seas depends on these spaces ([section 1.2](#)), and, most often, what is done with resources located in the seas (living or mineral resources) is also a result of them ([section 1.3](#)). The link between these two aspects must be explained, as they are increasingly intertwined. It is a transformation that involves considerable concerns regarding marine resources.

1.2. The importance of marine spaces in International Law of the sea

It is advantageous for us to define Law of the Sea, which determines the legal governance of seas and oceans, ([section 1.2.1](#)). This will help us to show the difference instilled between “marine” zones and “maritime” zones ([section 1.2.2](#)) and, whether it is public or private intervention on the seas and oceans that is intended, this slight difference is a fully operational one. The evolution of the Law of the Sea and the usages made of it by governments reveals the ongoing legal hold of coastal States over marine spaces; this is practised in various, rhizomatic forms – that is spread out and sometimes creeping, but in which the distance to the coast (via the legal concept of the “baseline”) remains an essential point, and the horizontal division of marine waters both under the jurisdiction of States or beyond it, a strong constant ([section 1.2.3](#)).

1.2.1. Definitions of International Law of the sea: a keystone of the governance of maritime spaces

The question of governance of maritime spaces cannot be set without a definition exercise. In a restricted sense, it is a set of institutions, legal rules and processes enabling the adoption of an institutional and legal framework for action, and then the development of related public or private interventions, on the delineated space. Despite its importance, the International Law of the Sea is often poorly defined, or defined by default by differentiating it from other, more sector-specific legal disciplines pertaining to activity at sea. It is related in particular to maritime law, a very ancient concept used in the past to address issues arising both from private laws having to do with maritime

activity and international public law for marine activities [PON 97]. This has resulted in widespread (and quite understandable) confusion. Today, however, maritime law pertains mostly to the specific commercial activity of maritime shipping, and is defined as “all legal rules pertaining to navigation on the seas” [ROD 97] or as “all legal rules pertaining to private interests engaged at sea”¹ [SAL 01]. More rarely, some specialists attribute a broader definition to maritime law, seeing it, for example, as “all rules pertaining to the various relationships having to do with the utilization of the sea and the exploitation of its resources”² [LØP 82a], or study it in parallel with International Law of the sea³. However, the two subjects are separate. The International Law of the Sea addresses seafaring activities in a more complete manner; these naturally include navigation, but from another angle, which can bring the two types of law together and render them complementary. The International Law of the Sea, widely referred to as such since the first Geneva Conference on the Law of the Sea in 1958, is more relevant to matters of governance of spaces at sea. With it, oceans and seas are not without legal rules and arguments; on the contrary, a field of law is specifically dedicated to them [DAU 03].

One of its definitions presents it as “all rules of International Law pertaining to the determination and subsequent status of maritime spaces, and pertaining to the system of activities framed by the marine environment”⁴ [SAL 01]. A more geopolitically oriented definition presents it as “Law regulating relations between States concerning the utilization of the sea and the exercise of their power over maritime spaces”⁵ [LØP 82b]. Both of these definitions emphasize a *spatial* element that is highly determinative of the holding of rights by governments and of the exercise of these rights in relation to other governments.

The context of the Law of the Sea involves the pre-eminent position of the “State” in several senses. The central government is a favored subject in International Law, alongside the various international organizations in which this quality is recognized⁶ [DAI 02]. Because it is situated under the aegis of general International Law, the Law of the Sea obeys the same operating principles, those of an “international legal order” in which States remain vital actors but are very free for the creation of multilateral or bilateral legal rules. It results from this that the State is the vector of the rules making up a system of governance applied to its continental, applied to its continental or island territory, and to the marine spaces that are extensions of these (adjacent maritime spaces). It is vector directly influenced by International Law or by its own inventiveness and (most often) within the limits of action permissible by written (conventional) or customary International Law. Outside of these marine the vector spaces under State control, concepts such as “right to fly flag and flag law” or recourse to “nationality” are all forms of extension - on the high seas - of the national Law of a State (or an institution such as the European Union (EU)) over often far-flung waters which are no longer linked by geographic proximity and legal bonds “of sovereignty” or “of jurisdiction” between the State and these marine spaces.

1.2.2. Marine spaces considered by law: the interest of qualifying maritime zones

All marine spaces, as far as they are able to be distributed, identified and described by life sciences or biogeography, for example, are not all spaces considered by law. The existence of seas and oceans is a fact that can be understood scientifically, but the existence of a Law of the Sea associated with these bodies of water does not

necessarily follow from this. For this to occur, a shift is required between the term “marine zones” and the concept of “maritime zones”. In geographical terms, a “marine” or “maritime” zone – the terms are used almost interchangeably – may designate any part of the sea of some geographic sector in which a given activity takes place; this means that we see for example that gulfs, coastal areas, and shorelines are designated but without any legal consequence [LUC 03]⁷. When the desire or obligation for public intervention and regulation of an area of marine zones arises, legal definition exercises take place.

In legal terms, the concept of a “maritime zone” designates a marine zone or marine space to which a legal system is applicable. The legal term “maritime zone” is applicable only to marine spaces, each corresponding to its own legal system⁸ [LUC 03]. Thus, via various successive conventions and conferences on the Law of the Sea, a large number of maritime zones have been established by coastal States according to the legal marine spaces predefined in the conventions, of which the most recent and consequential was the United States Convention on the Law of the Sea (UNCLOS)⁹ of December 10, 1982, sometimes also known as the Montego Bay Convention (MBC). In addition to common maritime zones which have now become relatively classic, such as internal waters¹⁰, territorial seas¹¹, contiguous zones¹², exclusive economic zone (EEZ)¹³, continental shelves¹⁴, high seas¹⁵ and the international zone of seabed called “the Area”, there are now maritime zones arising from the first zones and thus from least ambitious rights of establishment according to the legal adage “he who can do more can do less”, such as fishing zones, ecological protection zones (EPZs), and possibly integrated management coastal zones (IMCZs) [GHE 13], etc. To all this, we must also add specific configurations of

marine spaces which the Law of the Sea has sanctioned and to which it has granted, subject to compliance with certain conditions, a legal status that gives rise to specific legal effects: islands¹⁶, bays¹⁷, straits¹⁸, international canals, low-tide elevations¹⁹, archipelagic waters²⁰, etc. (such as in the Philippines or Indonesia; see [Figure 1.1](#)). The definition of these marine spaces is not only a simple typology conveniently available for coastal States wishing to have them recognized or established for their own benefit; but, it is always accompanied by a legal system of rights and obligations regarding maritime zone x for the State concerned (coastal State, port State, flag-holding State, with adjacent coasts, etc.) [PAN 97]. These situations can be more complex; a double legal system can exist in one maritime space, with the typical case being that of territorial waters (or two adjoining territorial seas) containing a strait used for international navigation, such as the Strait of Bonifacio between France and Italy. If the analysis of spaces greatly affects the delimitation of fishing activity or navigation (two activities that are particularly highly developed and sanctioned in the Law of the Sea [LUC 90, LUC 96b]), the question of marine resources, their protection and their development also plays a role.

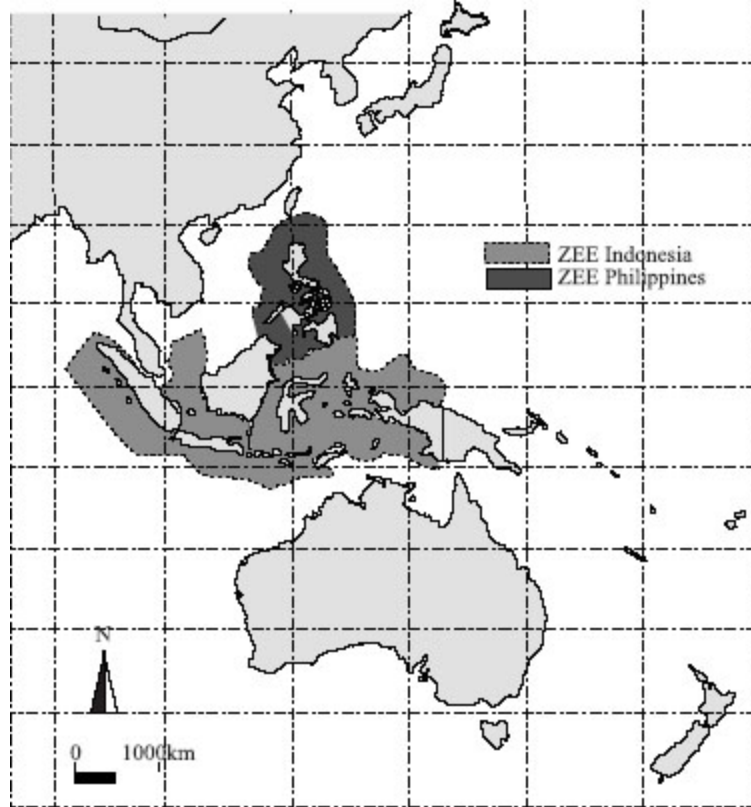


Figure 1.1. *Archipelagic waters and exterior limits of the two EEZs of two archipelagic States in the sense of International Law of the Sea (Indonesia and the Philippines, 2013)*

(source: www.vliz.be, adapted from Thema Map software, 2012, <https://themamap.greyc.fr>) (document does not presuppose any support for the claims of governments), from [GAL 15]

1.2.3. Development of legal control over certain marine spaces: a phenomenon both ancient and renewed

The Law of the Sea is a very ancient consideration, and a perennial discipline marked with key historic points. This historic link between the sea as a route of transport and the securitization of commercial activities was already present in the Roman period and is contained in the expression *Mare nostrum*; the end of the 15th Century saw intercessions centered on the sharing of the oceans (the

1494 Treaty of Tordesillas between Spain and Portugal, typically with an Atlantic partition), and spatial oppositions between protagonists concerning access and use of the seas; first in the 16th Century with Spanish authors, and the burgeoning 17th Century has remained notorious for its famously controversial proclamation by James I, King of England, prohibiting access to the North Sea for foreign vessels (a recurring problem in English seas), which was greeted by two opposing doctrines on the possible appropriation of sea spaces and the applicability of prohibitions of this type, Hugo De Groot's "Mare Liberum" in 1609 and John Selden's "Mare Clausum" in 1635. Though it did not prevent control over areas quite distant from the coasts (for example, the 18th Century Hovering Acts in England), the principle of freedom of the seas has been triumphant in relative terms (all States were given the minimum right to navigate and trade, as described in Philip Meadows's 1689 treatise) since the late 17th Century and remains in effect even today, as it is applied to modern activities conducted by countries and their nationals on the seas (the six freedoms of the high seas).

The 20th Century was characterized by the affirmation of the sovereignty of States over spaces and natural resources located further and further away from the coasts, a trend first seen in matters of customs, or what we would qualify as customs today (for example, the Liquor Treaties of the United States in the early 20th Century), and then more generally beginning in 1937, and clearly used by States after 1945. In the United States, President Truman's proclamation on American policy concerning the resources of the soil and subsoil of the continental shelf and in territorial waters (known as the Truman Proclamation and dated September 28, 1945) represented a public declaration of the maritime control that national governments could have, express and exercise [APO 81].

This was taken up and furthered by regionalist expansionist doctrines, so to speak, including those of several South American States, beginning in 1947 and continuing today. With decolonization, marine space, with its exploitable resources and consequent ability to guarantee the economic development of new States, has become a strategic concern for both developing and developed countries [GAL 11]. The latter are witnessing a reduction in maritime zones not under the jurisdiction of a government, and consequently must both rethink legal relationships controlling access to these spaces that have now been taken over by others, and step up their own controls over marine spaces situated in such a way as to be extensions of their land territory. The view, however, inexact in a legal sense, that maritime expansion is simply an extension of maritime territories as a prolongation of a state's sovereignty over its continental land holdings [QUE 97] has been used to justify tendencies toward ever-widening control. This, for water columns, involves an outside limit of a State's EEZ that has now reached 200 NM²¹ from the baseline and an outside limit of a State's EEZ outside limit of the continental shelf also set at 200 NM for general cases, barring (in a generalized manner) a request for extension of the continental shelf to 350 NM or even slightly more, in the event that certain geomorphological characteristics are present [TAS 13].

The appearance and development of interest in marine spaces beyond areas of national jurisdiction seem to be characteristic of the 21st Century so far; or perhaps it is more correct to say that the current century has reawakened them [DEM 09, MAR 14], particularly via questions regarding the effectiveness of collective governance measures undertaken for rezoning in maritime zones on the high seas for specific purposes (for example, fishery areas and the competence of institutions associated

with this zoning and this sector of activity overall), or having to do with the opportunity for the evolution of the Law of the sea in order to enable the future creation of new maritime zones within the high seas (zoning for the purposes of environmental protection). Yet, this focus on marine spaces beyond jurisdiction zones originated in the 1970s, with the initiative introduced by Arvid Pardo in the United States to include on the agenda for the 22nd session of the UN General Assembly, the question of the peaceful use of seabeds and their exploitation outside jurisdiction zones (August 17, 1967). This was followed by a number of transformations: the creation of the “International seabed zone” called the Area, mandate of the International Seabed Agency²², responsible for regulating this zone (the ISA is headquartered in Jamaica) and the legal system governing these seabeds and activities of exploration and later of exploitation that went along with it. These changes are sometimes later criticized by authors and practitioners of law of exploitation of the sea because they are fairly remote from the philosophy of the conservation, protection and development of common heritage of humankind, which was upheld at the start but of which little remains today. However, they are all part of this heritage, in which the consideration of spatial elements has taken priority of place to the detriment of other factors.

1.2.4. Maritime zones near and far from coasts: a distinction established between systems of sovereignty and those of jurisdiction

1.2.4.1. Origins

The impossibility of establishing a single legal system for the oceans has led to a fragmentation of spaces. This situation, described both above and below, is in part the product of so-called “customary” International Law, but

above all of the “conventional” International Law of the Sea. The conventional or written source, with the increase in international conventions and in the numbers of signatories to them, has supplanted the traditional source: in 2014, there were 166 States or organizations that had ratified or were adhering to the UNCLOS, for example. It remains the case that some States, and not the lesser ones in terms of their maritime capacity, still function for the most part under customary International Law (for example, the United States). The two sources of law have converged as a result of the effort made by written International Law to codify a number of practices and translate them into written provisions, and of efforts made in practice to comply with or move closer to the written provisions, which are becoming increasingly universal, pertaining to maritime zones, maritime delimitations, etc.

The process of codifying International Law was first undertaken in 1924 and continued by the Hague Conference in 1930. Subsequent benchmark events are well known; in the domain of the Law of the Sea and fishing, they occurred in 1958, 1960, 1973, 1982, 1994, etc., dates which correspond to the 1st United States Conference on the Law of the Sea, held from February 24 to April 27, 1958 in Geneva, and to the four associated international conventions signed on April 29, 1958: the 1958 Geneva Convention on Territorial Sea and Contiguous Zone (CTS)²³, the April 29, 1958 Geneva Conference on Fishing and the Conservation of Living Resources on the High Seas (CFCLR)²⁴, the 1958 Geneva Convention on the High Seas (CHS)²⁵ and the 1958 Geneva Convention on the Continental Shelf (CCS)²⁶. Subsequent dates correspond to the 2nd United States Conference on the Law of the Sea, held from March 16 to April 26, 1960, and to the 3rd United Nations Conference on the Law of the Sea, the highly exhaustive work of which, lasting from 1973 to 1982,

resulted after 9 years of exchanges between States in the United States Convention on the Law of the Sea of December 10, 1982 (UNCLOS), which did not become effective until November 16, 1994. This period from 1973 to 1982 corresponded to a rewriting of the Law of the Sea into a monumental text: the “Constitution of Oceans” (followed by related agreements). This shaped what has since usually been referred to as the “new Law of the Sea” [QUE 94].

1.2.4.2. Confirmation

This “new Law of the Sea”, which has been approved by a growing number of the world’s States, includes legal marine spaces [VIN 08] that have been rendered more uniform:

- concerning first coastal zones in the broad sense; these include “internal waters” and then “territorial sea” with a current maximum breadth of 12 NM, or 22.2 km, under the sovereign governance of a State. Sovereignty rights are attached to these two maritime zones and are recognized as belonging to coastal States; they include a wide range of powers allocated to governmental bodies competent in the maritime domain;
- possibly followed by the “contiguous zone”, the span of which toward the sea must not exceed 24 NM from the baseline²⁷, and, very commonly, the EEZ, the span of which toward the sea must not exceed 200 NM from the baseline (an EEZ must have a span - in the direction of the open sea - of 200 NM that is less than or equal to 370 km drawn from the baseline). These are the so-called waters “under jurisdiction”, subject to the recognized jurisdiction rights of coastal States. Fishing zones of x NM, ecological protection zones of x NM or zones of various appellations of x NM are thus

incorporated into waters under jurisdiction, provided that they are situated outside the exterior limit of territorial waters and within a distance of less than 200 NM toward the open sea, measured from the baseline ([Figure 1.2](#), in white). Here the challenges for coastal States in establishing and causing to be recognized a baseline²⁸ as far as possible from the coastline become understandable, as this means so much maritime mileage gained in the direction of the open sea when the baseline diverges from the coastline;

- next comes the “high seas”. This zone, in the hypothetical event of maximum maritime control exercised by a coastal States, begins after the exterior limit of the EEZ, at more than 370 km from the baseline. However, in the hypothetical event of maritime control reduced to simple territorial waters with no other zone established by the States as an extension, the high seas may begin immediately at the outside limit of the territorial waters, thus beginning very near the coast; distances between the baseline and the start of the high seas can thus be variable depending on the configuration of maritime coasts and the expansionist desires of States;

- the “(legal) continental shelf”²⁹, which is a separate configuration from the water column, can be considered a legal marine space. It has been progressively acknowledge that this can be recognized for up to 200 NM, thus generating sovereignty rights for the States that holds it - but only up to this maximum of 200 NM. It is of little importance that the geomorphological continental shelf extends beyond these 200 NM. In reality, the legal continental shelf begins after the outside limit of a territorial sea/territorial waters, which goes back to the statement that the soil and subsoil of territorial waters, while forming the start of a

geomorphological continental shelf, are not tied to the legal reasoning of the International Law of the Sea with regard to the legal continental shelf. This does not affect their fate because, since the soil and subsoil of territorial seas are in territorial waters, the State exercises incontestable sovereignty rights over them. Their legal system of internal law varies according to States³⁰. After territorial waters, the next part of the geomorphological shelf begins to be considered as the legal continental shelf, which initiates the application of the legal system of the continental shelf and the States's sovereignty rights over this shelf. In the end, there is, therefore, no break in the treatment of this geomorphological continental shelf of between 0 and 200 NM in span, because a system of sovereignty rights is applicable, from the start to the outside legal limit of this shelf, but the same fundamental legal principles are not used.



Figure 1.2. *View of territorial waters and EEZ (white) forming waters under sovereignty and under jurisdiction, as opposed to zones outside jurisdiction (light gray)*

(source: www.vliz.be, adapted from Thema Map software, 2012, <https://themamap.greyc.fr>). Document does not presuppose any support for the claims of governments, from [GAL 12]

A rarer situation is the one allowed by the new international Law of the Sea in which a state, or several states jointly, may request to extend its (or their) legal continental shelf to the outer edge of the continental margin (a geomorphological concept); that is up to 350 NM (= 648,200 km) measured from the baseline, or by 100 additional NM (= 185,200 km) calculated from the 2,500 m isobath linking all points situated at 2,500 m of depth. The system applied is still the one of sovereignty over the legal continental shelf. In the event of agreement granted by the Commission on the Limits of the Continental Shelf (CLCS) to several States following their joint request, all that remains for these States is to mark out among themselves the lateral portions of the shelf belonging to each of them.

1.2.4.3. Principles of more uniform outlines but with varying configurations

From the previous considerations, there results a marking-out of maritime spaces that is never exactly the same, if only because of the geography of coastlines and the skill needed to trace the baseline and to have this outline accepted by other States. It is chosen by the State, which remains free, but within the limits of the legal possibilities offered by current international Law of the Sea - as well as, importantly, the (geopolitical) risks arising from overly ambitious maritime claims. With regard to the definition of limits of territorial waters, States have generally extended the limit of their territorial seas from 3 NM or 6 NM to 12 NM, not hesitating to take advantage of the possibilities offered by 20th Century Law of the Sea. The end of the old system of narrow territorial seas was planned, but exceptions remain; Greece has a territorial sea of only 6 NM, as does Turkey. With regard to the contiguous zone, almost 75 States have claimed an extension of 24 NM measured from the baseline, with this zoning composed of

12 NM of territorial waters and 12 NM of the contiguous zone. Other States have proven less ambitious, such as Venezuela, whose territorial waters and contiguous zone do not exceed 15 NM in total, while others have taken greater spans (for the contiguous zone) or represent specific cases (notably, North Korea, with its military strip of 50 NM). As for the marking-out of the high seas, this always begins at a minimum distance from the coastline which varies depending on whether a state does or does not desire maritime zones outside its territorial waters. Finally, certain differences are due to the geographical and legal constraints provided for by the Law of the Sea itself; this is the case for semi-enclosed seas [GALL 15a], distinguished from large oceanic spaces in the UNCLOS text (articles 122 and 123). In article 122, semi-enclosed seas are those “surrounded by several states and linked to another sea or to an ocean by a narrow passage, or composed entirely or in part of territorial waters and the zones of economic exclusivity of multiple States” ([Figure 1.3](#)).



[Figure 1.3.](#) *Semi-enclosed seas in the sense of article 122 of the UNCLOS*

(source: Méditerranée et mer Noire, adapted from Demis NL software, 2014, www.demis.nl). Document does not presuppose any support for the claims of governments

In comparison to oceanic spaces adjoining the coasts of states that can claim them, here the particular characteristics of semi-enclosed seas have led to the consideration of legal systems better suited to the exercise of the competences of coastal States. Unilateral action on the sea by bordering states was allowed with increasingly frequency throughout the 20th Century. This has been combined with the idea of shared seas (which is not the sharing of seas). Sharing is not synonymous with appropriation that excludes use by others. In international texts, the idea of sharing has been maintained as a way of ensuring the freedom of a maximum number of users to develop activities. Today, sharing often means joint responsibility for deteriorations and for the instruments to be mobilized, two points underlying the International collaboration required from states and the ways in which they are required to participate in collective forms of marine resource management. Thus, cooperation between States is explicitly recommended by article 123: they “must cooperate with one another in the exercise of the rights and the execution of obligations belonging to them under the terms of the Convention”. In this context, bordering States and those with adjacent coasts have often limited themselves with regard to control, due to lack of space and in order not to relinquish the smallest share of space on the high seas. This attitude is in the process of changing, for example in the western Mediterranean, with the recent EEZ declared in 2012 by France and in 2013 by Spain [GAL 12], which have created significant legal problems (with regard to both the plotting of outlines and to rights) and are undoubtedly harbingers of an acceleration of this phenomenon, and the possibility of the disappearance of the high-seas maritime zone in the Mediterranean [ROS 12a]. This would be a revolution in the history of the theoretical conception and practice of the Law of the Sea; in the meantime, what is happening is a rebalancing, for

the benefit of States bordering semi-enclosed seas, spatial situations inherited from the 3rd United States Conference (1973-1982) and encouraged by it, which marked “the triumph of the oceanic State” [LUC 84].

This approach of the Law of the Sea using maritime space and zoning is vital. It has been so historically (as it has provided an opportunity for numerous full point developments), pacifically (as it goes back to the origins of tension among States and has contributed to the resolution of disputes between States³¹), and above all in relation to the more environmental forms of governance of activities at sea and to the consideration that will be given in future to marine ecosystems and marine resources.

1.3. Place accorded to resources located at sea in the International Law of the Sea

The question of natural resources is a difficult one to address in itself, somewhat like environmental law, the core of which is relatively easy to define but in which the difficulties begin when the outlines must be pinned down. This has to do with the variety of sea resources; the initial opposition in the Law of the Sea between mineral resources and living or biological resources constitutes the fundamental dichotomy ([section 1.3.1](#)). The challenges posed by the increasing scarcity of resources are conducive to detailing them. The analysis also becomes one of the intertwining of resources, even though they appear to be of the same nature. One trend in the analysis and evolution of law is to separate fishery resources from other living resources, or to differentiate – or even set against one another – targeted fishery resources from non-targeted species, or bycatch, resulting from an initial fishing

operation (single-species or multi-species) conducted as part of a legally defined fishing activity (deep-water fishing, tuna halieutic, etc.). Catch from non-targeted species or bycatch may make up products derived from fishery products. Finally, the analysis is one of (supposed) ease of exploitation, with differentiations according to simple biological resources (for access, consumption or development) or complex ones such as genetic resources, and for all resources necessitating highly specialized techniques (for example, fishing in extremely deep water and techniques for exploration and the exploitation of non-living resources).

1.3.1. Separate treatment for non-living marine resources and fished living marine resources

One of the fundamental principles of the Law of the Sea is that it ensures the contribution to economic development of states bordering marine spaces and holding marine and coastal resources susceptible to appropriation. It is this principle that has legitimized the Law of the Sea - legal discipline - and which explains the fact that it was massively followed in the 20th Century. The productivist nature of this discipline of law is highly marked, as it enables multiple expansions, such as those of strategic EEZ, to control the legal fate applied to pelagic and benthic resources in the water column and on the continental shelf. The advantage of this EEZ lies in the extension of territorial waters; the extent of the rights conferred on a coastal state by an EEZ is clear. The origin of the modern EEZ must not be forgotten. It began in the 1970s, spurred by two sources of pressure - one, the claim by seven Latin American States in favor of an exclusive exploitation zone of 200 NM (the Montevideo Declaration of 1970); and two, Kenya's claim in 1971 before the United States of an EEZ,

which marked the first time this new zone was referred to as such.

By declaring an EEZ, a State obtains for itself rights of sovereignty and jurisdiction, but not for the same interventions. Rights of sovereignty are acquired for the management of biological and non-biological resources (conservation art. 61 UNCLOS and details of exploitation art. 62 UNCLOS are relevant) in a water mass and on the bottom of the seabed and subsoil of the sea and for activities of exploration and exploitation (including economic exploitation), based on the currents and tides in the declared EEZ. Rights of jurisdiction are acquired in order to build artificial islands (criminal and civil jurisdictions); to set up or position establishments for fishing or energy production; to enable scientific research; to protect the environment and to establish security zones. These rights are not only civil in nature, but also criminal when they are caused to be respected, and often administrative in matters of authorizing access to and use of the sea floor and subfloor.

Because of this, and without focusing on the EEZ alone, because the legal continental shelf also represents a source of development well understood by States, it has become usual to consider mineral and biological resources separately. They are not at all of the same nature, and the questions they evoke are strongly opposed (even though they are now often grouped together due to the environmental impact inflicted by the exploitation of one on the other). In addition, since the early 2000s, the search for legal and operational manifestations of sustainable development has separated them even further given that the prescriptions for sustainability for non-renewable and renewable natural resources are laid out very differently in International Law and the internal/national law of individual State.

1.3.1.1. Consideration of certain living marine resources

The UNCLOS includes a lengthy part XII devoted to biological renewable resources, entitled “Protection and preservation of the marine environment” (art. 192 to 237, UNCLOS), which has influenced the situation of these resources to an extent. However, this part XII is oriented mostly toward questions of multiform pollution (art. 194, 195, 196, 199, 204 to 234 virtually) rather than toward biological resources themselves. One section, “Part VII - Section II - Conservation and management of biological resources on the high seas” is dedicated to these biological resources, and its provisions cover various maritime zones, including the high-seas zone. To the “triumph of the coastal nationalism” [ROS 14]³² it sanctions, UNCLOS also emphasizes the responsibility of states in the management and future fate of marine biological resources. The rights and obligations of individual states in this management are hammered home, and collective and cooperative ways of managing certain marine resources are specified, above and beyond the actions of one State alone.

An example of this may be seen in the text below, which is connected to the UNCLOS and considered an applicative text of it: “Agreement for the purposes of the application of the provisions of the United States Convention on the Law of the Sea of December 10, 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks³³”, from August 4, 1995 [MOM 95] and with an effective date of December 11, 2001. As of 2014, this accord had received 82 ratifications or cases of adherence.

In it, the legal obligation is mentioned to cooperate internationally or regionally by means of commissions and management organizations for certain halieutic activities

and marine spaces located partially or wholly outside zones of water under national jurisdiction (art. 197, UNCLOS). This is both a remit and a request:

- directed toward institutions; all competent international organizations are concerned, on both the regional and global levels, mandated in the areas of fishing, marine environmental protection or even navigation and maritime security; regional fisheries management organizations (RFMOs) are naturally wholly concerned, whatever the spatial jurisdiction (extent) of their competences or the number of species for which they are responsible (single-species or multi-species competence, or for all species) and depending on the strength of the competences they hold, whether they cover one or more marine spaces;

- directed toward conventions and agreements, whether they have access to institutions for the application of its provisions or not. This call for contribution to the application of the rules of UNCLOS to the seas and oceans, including by means of other conventions dedicated to the marine environment, fishing activities or maritime law, shows the superiority of UNCLOS over other legal instruments, which should be understood as complementary to it. Thus, conventions and institutions (instituted before or after UNCLOS) must be in accordance with its spirit, a requirement that is not without difficulties in terms of consistency and cohabitation [IND 13], but it is also equivalent to a sort of general delegation of application, giving the impression that the new Law of the Sea between 1982 and recent years has minimized its involvement in the marine environmental governance of seas and oceans. A significant reawakening on this subject is in progress, with a sort of academic and practical rediscovery of the

environmental potentialities of the UNCLOS text (320 articles) and the texts that have flowed it [AND 12, CAS 12].

1.3.1.2. *Consideration of mineral marine resources and the international seabed*

With regard to non-renewable resources, UNCLOS includes a long part XI entitled “The Zone” (art. 13 to 191, UNCLOS). The “Zone”, always written with a capital, is here an abbreviation for the International Seabottom Zone. Part XI begins with a definition (art. 133), according to which (1) “resources” are given to mean all *in situ* solid, liquid or gaseous mineral resources which, in the Zone, are found on seabeds or in their subsoil, including polymetallic nodules; (2) resources once extracted from the Zone are called “minerals”.

For countries, including some developing ones, the challenges of negotiations to create such a Zone legally and access it were double. On the one hand, it was necessary to allow access to mineral resources (ores, polymetallic modules, cobaltiferous encrustations on underwater mountains and polymetallic sulfurs in volcanic areas, and oceanic ridges marked by hydrothermal processes) and their reservation; and, on the other hand, access to living resources, such as organisms located on hydrothermal sources and in deep-sea trenches with implications for genetic engineering. Beginning in 1967, the fundamental tenets of a legal system for the Zone and the exploitation of seabeds were established.

The meaning of a Zone such as this, initially created to reduce imbalances in conditions between states, support the less endowed and redistribute the wealth, has developed over time. This system, first based on the concept of the common heritage of mankind and the

prevention of the appropriation of mineral resources by individual States, has been transformed. This has occurred through revised provisions (the Agreement of July 28, 1994, which prioritizes Part XI of UNCLOS); there are many authors who view this July 28, 1994 Agreement as a loss for developing countries of advances to their benefit, which promised them negotiations and disappeared from the final text. The adoption of this Agreement was accompanied by compromises making it possible to gather the number of signatories necessary for a text to become effective. Since 1994, the status of spaces *beneath* the high seas, situated beyond the 200 NM mark, has been considered in tandem with that of the Zone, with the International Seabed Authority (ISA) supervising and permitting prospecting activities for the future extraction of mineral, solid, liquid and gaseous resources. The controls provided by the Authority and the financial and technical constraints influencing the filing of requests have not prevented a competitive race to access and share these resources; this involves few requesting parties, but prospecting contracts have been signed since 2000 and their number is growing (in the Clarion-Clipperton fracture board zone, for example, as well as the Indian Ocean). The “Enterprise”, a mechanism of the Authority, is permitted to operate on behalf of developing countries and Least Developed Countries (LDC), but except for these cases, the possibilities for LDC remain highly theoretical, since they are always difficult in terms of access to technological transfer, or simply given the current cost of submitting a case for examination by the ISA (approximately \$500,000 in 2014).

The most urgent question concerns compatibility between activities exploiting mineral resources and the protection of the marine environment. If we look more closely at this issue, it becomes one involving the way in which the

Authority can and will ensure that compatibility measures are taken regarding activities involving ores and the protection of the fragile and little-understood marine environment by operators and requesting parties. This assumes that this compatibility, mentioned in article 145 of UNCLOS, is even possible, which is in no way certain when exploration/extraction and conservation of living organisms must be organized on the same site. Compatibility with other activities carried out in the marine environment (art. 147 UNCLOS) (maritime traffic, etc.) is another form of the question, though a less difficult one. The fact that the ISA has a direct mandate only for mineral resources and not for living resources directly is a complication, and the lack of legal status of marine biodiversity as a whole, are also real pitfall.

This lack does not affect only the field of the exploitation of mineral resources and its immediate and localized environmental consequences. The whole issue of the protection of marine biodiversity is burdened by this lack of legal regulations; above all, it is the portion of these activities qualified as fishery resources that is currently bound by, and its extractions regulated by, fishing laws. Moreover, only a very small fraction of marine flora and fauna species are listed and protected under environmental law on the protection of species.

1.3.2. Biological resources at the heart of the overlap between environmental law, biological diversity law, the Law of the Sea and fishing law

Since the Convention on Biological Diversity (CBD) came into effect, biological or living resources have been understood from very specific modern legal points of view ([section 1.3.2.1](#)). These do not sit in great harmony with an