



**UNIVERSITÉ
DE GENÈVE**

**The Legal Regime for the Arctic and the Application of
the Continental Shelf Regime to the Seabed of the
Arctic Ocean**

Andrea Graber

Professor Robert Kolb

Geneva, 20 August 2016

Address : Galeggeweg 4
5034 Suhr
Switzerland

Table of Contents

1. Introduction.....	2
2. The Legal Regime for the Arctic	3
2.1 Defining the Arctic.....	3
2.2 Arctic Governance Framework.....	4
2.3 Sector Theory and State Practice	4
2.4 The Ice Theories	6
2.5 The United Nations Convention on the Law of the Sea	8
3. Maritime Zones and the Continental Shelf Regime.....	8
3.1 Maritime Zones under the United Nations Convention on the Law of the Sea.....	8
3.2 The Continental Shelf Regime	10
3.2.1 Development of the Continental Shelf Regime	10
3.2.2 Delineation of the Continental Shelf under the United Nations Convention on the Law of the Sea.....	11
3.2.3 The Commission on the Limits of the Continental Shelf.....	12
3.2.4 Delimitation of the Continental Shelf between States	14
3.2.5 The Legal Status of the Continental Shelf.....	15
4. Defining the Boundaries of the Continental Shelf in the Arctic.....	15
4.1 Submissions by Arctic Coastal States to the CLCS and Other Potential Continental Shelf Claims of the Five Arctic Coastal States	15
4.2 Maritime Boundary Agreements in the Arctic Ocean in Areas Beyond 200 nm from the Baselines.....	19
4.3 Anticipated Legal Arguments for the Delimitation of Overlapping Continental Shelf Claims in the Arctic	19
5. Conclusion	21
Annexes	23
Bibliography	27

1. Introduction

Today profound changes are taking place in the Arctic. According to the 2004 Arctic Climate Impact Assessment, climate changes have a particularly intense impact in the Arctic.¹ The near-surface temperatures in the Arctic have risen almost twice the amount of the global average in recent decades. This phenomenon is called “Arctic amplification”.² Although the exact underlying causes of Arctic amplification remain uncertain, it is widely accepted that diminishing snow and sea ice enhance warming in the Arctic due to Arctic-specific positive feedback loops.³ In the Arctic the increase in the average annual temperatures accelerates ice melt. Highly reflective sea ice thus turns into dark, heat-absorbing open ocean which causes further temperature increases.⁴ The European Space Agency reported in 2007 that the area covered by sea ice in the Arctic had shrunk to the lowest level ever measured since satellite records began in 1978⁵ and according to forecast models, summer sea ice extent will continue to decrease.⁶ Reduced sea ice extent and thickness will unlock hitherto nearly impenetrable shipping routes. The Northwest Passage, a sea route through the Arctic Ocean that considerably shortens the length of a voyage between the Atlantic and Pacific in relation to currently used routes, is becoming more accessible to maritime traffic. This has heightened the sovereignty dispute over the Passage. As all routes through the Northwest Passage run between the islands of the Canadian Arctic Archipelago, Canada claims the Northwest Passage as being part of its internal waters. The United States and other States claim that the Passage is an international strait, which would include a right of free passage.⁷ Furthermore the melting of sea ice also facilitates the exploration and exploitation of the natural resources present in the seabed of the Arctic Ocean and increases the economic opportunities for the Arctic coastal States.⁸ Less ice and the development of new exploitation technologies allow States to forge into areas that were until now largely inaccessible.⁹ According to an assessment made by U.S. Geological Survey in 2008, “the extensive Arctic continental shelves may constitute the geographically largest unexplored prospective area for petroleum remaining on Earth”.¹⁰ This is why control of the region is at the centre of several controversies between Arctic coastal States. In fact, there remains very little dispute over the title to Arctic lands. What still needs to be decided, is who has the sovereign rights to exploit the natural resources of the Arctic Ocean seabed beyond 200 nm from the Arctic coastal States coastlines. This is regulated by the continental shelf regime set out in the United Nation Convention on the Law of the Sea.

¹ The 2004 Arctic Climate Impact Assessment is a report prepared by the Arctic Council and the International Arctic Science Committee on climate change and its consequences in the Arctic. ACIA (2004), at 8.

² SCREEN & SIMMODS (2010), at 1334.

³ *Ibid.*, See also: BYERS (2013), at 2.

⁴ BYERS (2013), at 2.

⁵ EUROPEAN SPACE AGENCY (2007). Online : http://www.esa.int/esaCP/SEMYTC13J6F_index_0.html (accessed 3.8.2016).

⁶ POTTS & SCHOFIELD (2008), at 153.

⁷ ELLIOT-MEISEL (2009), at 375-376.

⁸ CALIGIURI (2007), at 274.

⁹ TYLER et al. (2013), at 322.

¹⁰ BIRD et al. (2008), at 1.

Far from being exhaustive this analysis aims to depict the legal regime for the Arctic and especially the application of the continental shelf regime to the seabed of the Arctic Ocean. In the first part we will start with setting the context by defining the Arctic and looking at the role of the Arctic Council, the main political body for cooperation in the Arctic. In view of the fact that the first Arctic sovereignty claims were based on the Sector theory, we will review the development of this theory and its application. Furthermore, as big parts of the Arctic Ocean are covered with ice, we need to examine if this changes the law applicable to the Arctic Ocean. We will therefore analyse the legal status of ice in international law. In the second part we will outline the most important rules governing the different maritime zones under the United Nation Convention on the Law of the Sea, before analysing in more detail the continental shelf regime and the work of the Commission on the Limits of the Continental Shelf. Once having established the rules applicable to the Arctic Ocean, we will then in the third part, determine the different continental shelf claims of the Arctic coastal States and examine possible legal arguments for resolving overlapping continental shelf disputes in the Arctic.

2. The Legal Regime for the Arctic

2.1 Defining the Arctic

There are several competing definitions of the southern limits of the Arctic region. The 10°C summer isotherm line is often used to delimit the Arctic based on climatic conditions.¹¹ According to this definition, the Arctic includes the area around the North pole where the average temperature of the warmest month is below 10°C. As climate is changing over time, the 10°C summer isotherm line is subject to considerable variation and therefore does not produce a stable definition of the Arctic.¹² The “tree line” – a line north of which there are no high-growing trees or bushes – is another natural boundary often referred to. But its use for the delimitation of the Arctic is problematic, as it cannot be applied to the ocean and the seas.¹³ Most commonly the Arctic is defined as the area lying north of the Arctic Circle, an imaginary line that circles the globe at 66°33' N.¹⁴ The Arctic Circle demarks the zone where for at least one day per year, the sun does not set and does not rise.¹⁵ This last definition provides a firm base for an Arctic boundary line and will be adopted for the purpose of this study. The polar region hereafter referred to as the Arctic therefore encompasses territory of the following eight States: Russia, Canada, Norway, Denmark (Greenland), the United States, Iceland, Finland and Sweden. The first five of those mentioned are coastal States to the Arctic Ocean.¹⁶

¹¹ ROTHWELL (1996), at 23.

¹² MEYENHOFER (2014), at 26.

¹³ HOUGH (2013), at 5.

¹⁴ TUERK (2013), at 115.

¹⁵ HOUGH (2013), at 5.

¹⁶ TUERK (2013), at 115.

2.2 Arctic Governance Framework

Although the Arctic environment presents unique features, there is no Arctic treaty as it exists for Antarctica which is subject to the 1959 Antarctic Treaty and its Environmental Protocol.¹⁷ There are ongoing discussions between Arctic commentators on the need for a formal multilateral legal instrument for the Arctic.¹⁸ The five Arctic coastal States issued the Ilulissat Declaration in 2008 which states that there is “no need to develop a new comprehensive international legal regime to govern the Arctic Ocean”.¹⁹ Some authors criticize that this allows the Arctic Ocean to remain generally unregulated and they emphasize that a comprehensive Arctic treaty is needed to properly address the challenges faced in the Arctic.²⁰ But a majority of legal writers support the view that the law of the sea provides a solid foundation for governing the Arctic.²¹

The main body for cooperation in the Arctic is the Arctic Council. It was established in 1996 by the eight Arctic States on the basis of the Ottawa Declaration.²² Its mandate is to promote “cooperation, coordination and interaction among the Arctic States with the involvement of the Arctic indigenous communities [...] on common Arctic issues”, with the exception of security matters.²³ The Arctic Council is an intergovernmental forum and not an international organization – it doesn’t have a legal personality.²⁴ Six different Arctic organizations of indigenous people are currently Permanent Participants in the Arctic Council. Even though Permanent Participant have no right to vote, the Arctic Council’s composition of States and indigenous peoples around the same table is unique in multilateral fora.²⁵ The Arctic Council takes decisions by consensus of the eight member States.²⁶ The work of the Arctic Council is carried out in six different working groups which address a range of topics, in particular issues of environmental protection and sustainable development.²⁷

2.3 Sector Theory and State Practice

At the beginning of the 20th century, countries increasingly began to claim sovereignty over Arctic territories as a reaction to the ongoing development of scientific and economic activities in the polar regions.²⁸ Some Arctic States relied on the sector theory as a legal justification for their sovereignty claims in the Arctic.²⁹ The sector theory is based on the contiguity doctrine. Principles of International Law for the acquisition of sovereignty over new territories require the fulfilment of two conditions: the intent to occupy and the actual

¹⁷ TUERK (2013), at 119.

¹⁸ See for example CASPER (2009).

¹⁹ The Ilulissat Declaration (2008), at 2.

²⁰ See for example HARDERS (1987), PHARAND (1992), VERHAAG (2003), CASPER (2009) for support for a comprehensive Arctic treaty.

²¹ JABOUR (2015), at 87.

²² BAKER (2013), at 37.

²³ Declaration on the Establishment of the Arctic Council (1996), at 1.

²⁴ BAKER (2013), at 37.

²⁵ *Ibid.*, at 39.

²⁶ Declaration on the Establishment of the Arctic Council (1996), at 2.

²⁷ BAKER (2013), at 39.

²⁸ TIMTCHENKO (1997), at 30.

²⁹ ROTHWELL (1996), at 62.

occupation of a well-defined territory.³⁰ The contiguity doctrine has been used for sovereignty claims over new territories, where due to the physical environment the criteria of actual occupation cannot be respected.³¹ It states that effective occupation of a territory gives title to the proximate unoccupied territory which can be considered as a natural prolongation of the occupied portion.³² According to the sector theory, the coastal States to the Arctic Ocean are sovereign over all the territories that are situated in their sector. A sector is formed by a triangle, the basis of which constitutes of the coastline, the summit of the North pole and the sides of the meridians connecting the North pole to the most eastern and most western point of the coastline.³³

Meridians to mark delimitation of territorial claims have been used at least since the 15th century.³⁴ But it's only in 1907 that the sector theory was first invoked as a basis for sovereignty claims in the Arctic. In that year, Canada's Senator Pascal Poirier, in a speech to the Canadian Senate, referred to the sector theory to delimit Canada's claim to lands and islands lying between its northern coast and the North Pole.³⁵ Poirier argued that "a country whose possession today goes up to the Arctic regions [...] has a right to all the lands that are to be found in the waters between a line extending from its eastern extremity north, and another line extending from the western extremity north. All the lands between the two lines up to the North Pole should belong and do belong to the country whose territory abuts up there."³⁶ Since Poirier's speech, Canada has taken a number of official steps indicating reliance on the sector theory. In 1909 Canadian Captain J. E. Bernier took formal possession of the Arctic Archipelago by depositing a plaque at Parry's Rock on Melville Island, which describes the Canadian sector.³⁷ In 1926 Canada created the "Arctic Islands Preserve" which was delimited in the sector form.³⁸ In the following decades, different Canadian Government ministers and officials repeatedly invoked the sector theory at various occasions.³⁹ In addition, since 1904 Canada has been publishing maps showing Canada's boundaries in the Arctic as following the sector lines up to the North Pole.⁴⁰

The other Arctic State who has claimed sovereignty over Arctic territories based on the sector theory is the Soviet Union (today Russia). In a diplomatic note of 1924, the Soviet Union for the first time referred to the sector theory.⁴¹ In 1926 the Soviet Union issued a formal Decree providing that "all lands and islands situated in the Arctic to the North, between the coastline of the USSR and the North Pole [...] which at the time of the publication of the present decree are not recognised by the government of the USSR as the territory of any foreign State are

³⁰ PHARAND (1988), at 28.

³¹ DAILLIER, FORTEAU & PELLET (2009), at 594.

³² PHARAND (1988), at 28.

³³ DAILLIER, FORTEAU & PELLET (2009), at 594.

³⁴ PHARAND (1988), at 11.

³⁵ *Ibid.*, at 8.

³⁶ Debates of the Senate of the Dominion of Canada 1906-7 (1907), at 271.

³⁷ PHARAND (1988), at 46.

³⁸ *Ibid.*, at 51.

³⁹ *Ibid.*, at 76.

⁴⁰ *Ibid.*, at 77.

⁴¹ *Ibid.*, at 30.

[hereby] declared territory of the Union.⁴² The 1924 Note and 1926 Decree constitute the Soviet Union's main official assertions of a sector claim.⁴³ A number of legal writers have argued that the sector theory is also applicable to Arctic waters, but no official claims have been made to maritime territory in the Arctic based on the sector principle, neither by Russia nor by Canada. As stated before, both States have limited their claims to lands and islands within their sector. However, they invoked the sector theory in several maritime boundary negotiations as one of the principles on which maritime boundaries should be delimited.⁴⁴ The other three Arctic coastal States (Denmark, Norway and the United States) never relied on the sector theory and even opposed its use expressly on several occasions.⁴⁵

In conclusion the legal status of the sector theory has been controversial since it was first invoked by Canada.⁴⁶ According to the authoritative Canadian international jurist D. Pharand the contiguity theory, which is the basic element of the sector concept, is not sufficient to serve as a legal basis for the acquisition of territorial sovereignty.⁴⁷ Furthermore he states that the practice of the five Arctic coastal States has not been "sufficiently uniform and received the necessary degree of acceptance to have resulted in a rule of regional customary law binding on all Arctic States".⁴⁸

2.4 The Ice Theories

Another difficulty that adds to the problem of sovereignty delimitation in the Arctic is the unclear legal status of ice in international law.⁴⁹ Wide parts of the Arctic Ocean are covered with ice for most of the year.⁵⁰ In the Arctic some forms of ice are relatively permanent and immobile.⁵¹ These ice formations are used by indigenous peoples for hunting and for transport and by local authorities as platforms for scientific research and the landing of aircrafts. The question arises if ice should be regarded as Arctic waters or as Arctic land territory and hence if the presence of ice changes the legal status of the Arctic Ocean. On the basis of this problem, two theories of law have developed: the ice-is-land theory and the ice-is-water theory.⁵²

Supporters of the ice-is-land theory claim that ice is fundamentally different from water. Ice is a solid substance with definite limits and has been settled on by indigenous people for generations. The laws that apply to the sea on the other hand evolved for a liquid substance.⁵³ For example the basic arguments in favour of freedom of the high seas, one of the fundamental principles of the law of the sea, all rest on the liquid quality of the sea.⁵⁴

⁴² Decree of the Presidium of the Central Executive Committee of the URSS, 16 April 1926 ; cited CHURCHILL (2001), at 122.

⁴³ PHARAND (1988), at 66.

⁴⁴ CHURCHILL (2001), at 122-123.

⁴⁵ PHARAND (1988), at 79. See PHARAND (1988), at 67-69 for more information.

⁴⁶ ROTHWELL (1996), at 166.

⁴⁷ PHARAND (1996), at 42.

⁴⁸ *Ibid.*, at 78.

⁴⁹ JOYNER (2001), at 23.

⁵⁰ HOLMES (2008), at 326.

⁵¹ ROTHWELL (1996), at 263.

⁵² OSTRENG (2013), at 258.

⁵³ *Ibid.*

⁵⁴ HEAD (1963), at 222-223.

Supporters of the ice-is-land theory argue therefore, that rules which apply to water do not necessarily apply to ice and in certain circumstances, ice may be subject to territorial sovereignty claims.⁵⁵

The proponents of the ice-is-water theory on the other hand emphasize that in international law only an object that is of a permanent and stable structure can be subject to sovereignty claims. Ice formations on the sea, due to their constantly changing appearance and position, do not fulfil this condition and thus cannot be an object of sovereign possession. Even though ice can be occupied and used for human purposes, this occupation is of temporary nature as the ice could always melt and disappear. In sum, according to the ice-is-water theory, ice is nothing else than water in a different state of aggregation and water expanses are already regulated by the international law of the sea.⁵⁶

Today there is still no specific international legal regime which determines the legal status of ice in its various forms.⁵⁷ Under contemporary international law, the status of ice depends on its form, longevity and location.⁵⁸ Generally three different forms of ice are distinguished: sheet ice, shelf ice and sea ice. Sheet ice or glacial ice is located on land and classified as equivalent to terra firma.⁵⁹ Sovereignty over sheet ice follows sovereignty over the land underneath it.⁶⁰ Shelf ice is formed by glaciers extending beyond the land margin into the ocean. There exist two different types of shelf ice. The most common type is shelf ice that is attached to the continental shelf or sea floor. But shelf ice can also occur as a floating structure on the ocean surface. The legal status of shelf ice is controversial among legal writers.⁶¹ According to many legal commentators shelf ice should be equated to land as it presents similar physical and utilitarian properties.⁶² Shelf ice is often several hundred meters thick, durable and generally impenetrable by ships.⁶³ Joyner in his study about the status of ice in international law argues that the two different types of shelf ice should have a different legal status. The floating shelf ice that is not firmly fixed to the sea floor should be legally regarded as having high seas status. Shelf ice that is solidly connected to the sea floor beneath and constitutes an impenetrable ice barrier should be accorded status of land.⁶⁴ Sea ice, also called pack ice, consists of frozen seawater. It drifts unattached to the land and is kept in constant motion due to ocean movements. Unlike shelf ice, which generally builds a solid and firm unit, sea ice is criss-crossed by channels and often consists of an accumulation of ice floes.⁶⁵ Substantial agreement exists in international law, that sea ice does not form an enough solid and permanent structure to be susceptible to sovereignty claims. It is considered as part of the sea and thus subject to the law of the sea regime.⁶⁶ This means that the legal status of sea ice depends on its location. Within a coastal State's jurisdictional zones, sea ice is subject

⁵⁵ *Ibid.*, at 221.

⁵⁶ OSTRENG (2013), at 258.

⁵⁷ JOYNER (2001), at 23.

⁵⁸ *Ibid.*, at 24

⁵⁹ ROTHWELL (1996), at 262.

⁶⁰ JOYNER (2001), at 29.

⁶¹ *Ibid.*, at 32-33.

⁶² ROTHWELL (1996), at 263.

⁶³ JOYNER (2001), at 32.

⁶⁴ *Ibid.*, at 34.

⁶⁵ *Ibid.*, at 29.

⁶⁶ ROTHWELL (1996), at 267.

to the jurisdiction of the coastal State. Sea ice in areas beyond national jurisdiction forms part of the high seas and is thus open for use by all States.⁶⁷ The Arctic polar ice cap is mainly composed of sea ice.⁶⁸ Therefore it can be concluded, that in the Arctic the presence of ice does not change the legal status of the Arctic Ocean and thus, as any other ocean, the Arctic Ocean is governed by the rules of the law of the sea.⁶⁹

2.5 The United Nations Convention on the Law of the Sea

The rules of the law of the sea, which were developed through centuries of state practice and opinion juris, are codified in the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which entered into force on 16 November 1994.⁷⁰ The “UNCLOS primary functions are to define maritime zones that divide jurisdictional responsibilities amongst coastal, flag, and port states; to protect the marine environment; to preserve freedom of navigation; and to provide guidelines for the use of marine resources.”⁷¹ With the exception of the United States, all Arctic coastal States are parties to the UNCLOS.⁷² Furthermore many of the substantial norms of the UNCLOS are generally recognized as a codification of international customary sea law.⁷³

3. Maritime Zones and the Continental Shelf Regime

3.1 Maritime Zones under the United Nations Convention on the Law of the Sea

The UNCLOS determines the spatial extent of the coastal States jurisdiction over the oceans by dividing the ocean into several maritime zones where States have different rights and obligations.⁷⁴ The main maritime zones recognized under international law include internal waters, the territorial sea, the contiguous zone, the exclusive economic zone, the continental shelf, the high seas and the Area (see Annex I).⁷⁵

The scope of these zones is determined on the basis of distance from the coast.⁷⁶ The line from which the outer limits of the marine spaces under the national jurisdiction of the coastal State are measured is called the baseline. In principle the baseline is the low-water line along the coast.⁷⁷ There are several special rules that have evolved for the case where the geography of a state’s coast is such as to cause problems when using the low-water line as the baseline, which are not further discussed here.⁷⁸ The baseline also distinguishes internal waters from

⁶⁷ JOYNER (2001), at 30.

⁶⁸ *Ibid.*, at 29.

⁶⁹ JOYNER (2001), at 30.

⁷⁰ BYERS (2013), at 5-6.

⁷¹ CASPER (2009), at 843.

⁷² The UNCLOS has been ratified by Norway on 24 June 1996, by Russia on 12 March 1997, by Canada on 7 November 2003 and by Denmark on 16 November 2004. DIVISION FOR OCEAN AFFAIRES AND THE LAW OF THE SEA (2016). Online : http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm (accessed 8.8.2016).

⁷³ BYERS (2013), at 5-6.

⁷⁴ CASPER (2009), at 843.

⁷⁵ *Ibid.*

⁷⁶ UNCLOS, art. 3,33,57,76(1).

⁷⁷ UNCLOS, art. 5.

⁷⁸ See UNCLOS, art. 7,9,10.

the territorial sea.⁷⁹ Internal waters are located on the landward side of the baseline.⁸⁰ Internal waters form part of the coastal States territory and every coastal State enjoys full sovereignty over its internal waters.⁸¹ The coastal State does not have any obligation to permit foreign vessels access to its internal waters (with the exception of the access to a port of refuge for ships in distress).⁸² This is different in the territorial sea, which extends 12 nautical miles from the baseline and where a right of innocent passage for foreign vessels exists.⁸³ The coastal State exercises sovereignty over its territorial sea, the air space above it, and the seabed and subsoil beneath it.⁸⁴ The contiguous zone is a marine space contiguous to the territorial sea, which a coastal state can proclaim.⁸⁵ In this zone “the coastal state may exercise the control necessary to prevent [and punish] infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea”.⁸⁶ This means that the coastal State may exercise only enforcement and not legislative jurisdiction within the contiguous zone.⁸⁷ The maximum extension of the contiguous zone is 24 nm from the baseline.⁸⁸ A coastal State can also claim an exclusive economic zone (EEZ).⁸⁹ This area beyond and adjacent to the territorial sea can extend up to 200 nm from the baseline.⁹⁰ Hence if a coastal State establishes its EEZ, the contiguous zone is part of the EEZ. If not, the contiguous zone is part of the high seas.⁹¹ Article 56(1)a of the UNCLOS states that “in the EEZ, the coastal State has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone such as the production of energy from the water, currents and winds”.⁹² Accordingly the sovereign rights of a coastal State over the EEZ are limited in their material scope (limitation *ratione materiae*). So the territorial sovereignty of the coastal State does extend to internal waters and the territorial sea, but not to the EEZ.⁹³ Furthermore, in the EEZ all States enjoy the freedom of navigation, overflight and the laying of submarine cables and pipelines.⁹⁴ The continental shelf comprises the seabed and subsoil of the submarine areas that extend beyond the territorial sea. The continental shelf regime is described more in detail in the following section. The high seas and the Area are marine spaces beyond national jurisdiction.⁹⁵ The high seas are governed by the principle of the freedom of the high seas, which provides that each State has the right to use this zone in

⁷⁹ TANAKA (2015), at 44-45.

⁸⁰ UNCLOS, art. 8.

⁸¹ UNCLOS, art. 2(1).

⁸² PROELSS (2013), at 376.

⁸³ UNCLOS, art. 3,17.

⁸⁴ TANAKA (2015), at 84.

⁸⁵ PROELSS (2013), at 382.

⁸⁶ UNCLOS, art. 33(1).

⁸⁷ TANAKA (2015), at 125.

⁸⁸ UNCLOS, art. 33(2).

⁸⁹ UNCLOS, art. 55.

⁹⁰ UNCLOS, art. 57.

⁹¹ TANAKA (2015), at 124.

⁹² UNCLOS, art. 56(1)a.

⁹³ TANAKA (2015), at 130.

⁹⁴ UNCLOS, art. 58(1).

⁹⁵ TANAKA (2015), at 154.

conformity with international law for navigation, overflight, fishing, scientific research as well as to lay submarine cables and pipelines and to construct artificial islands and other installations permitted under international law.⁹⁶ The high seas include “all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State “. ⁹⁷ Thus the landward limit of the high seas is the seaward limit of the EEZ and where the continental shelf extends beyond the limit of 200 nm, the superjacent waters and the airspace above those waters are part of the high seas.⁹⁸ Legal order on the high seas is ensured primarily by the principle of the exclusive jurisdiction of the flag State⁹⁹.¹⁰⁰ The seabed and subsoil beyond the outer limits of the continental shelf are called the Area.¹⁰¹ The Area and its resources are governed by the principle of the common heritage of mankind, of which the core element is that the activities in the Area shall be carried out for the benefit of mankind as a whole.¹⁰² Article 137(2) of the UNCLOS confers upon the International Seabed Authority the right to manage the resources of the Area.¹⁰³

3.2 The Continental Shelf Regime

3.2.1 Development of the Continental Shelf Regime

According to International Law, coastal States have acquired the sovereign right to exploit the natural resources on their continental shelf.¹⁰⁴ The 1945 Truman Proclamation on the Continental Shelf¹⁰⁵ is the beginning of the extension of the coastal States’ authority over the continental shelf.¹⁰⁶ In this Proclamation the former US president Truman claimed that a coastal State has exclusive rights to the resources of the continental shelf offshore its territory.¹⁰⁷ After 1945 many coastal States made similar claims and within a decade a consistent and general State practice had developed in this field.¹⁰⁸ In the 1958 Geneva Convention on the Continental Shelf, the scope of the continental shelf regime was determined for the first time by an act of international legislation.¹⁰⁹ According to Article 1 of the 1958 Geneva Convention on the Continental Shelf, the continental shelf of a coastal State consists of the seabed and subsoil of a submarine area adjacent to the coast that extends up to a depth of 200 meters or to a point, where the depth of the water admits of the exploitation of

⁹⁶ UNCLOS, art. 87(1).

⁹⁷ UNCLOS, art. 86.

⁹⁸ UNCLOS, art. 78.

⁹⁹ According to the principle of the exclusive jurisdiction of the flag State, the State, which has granted a ship the right to sail under its flag, has the exclusive jurisdiction over the vessel and has to ensure that the vessel complies with relevant rules of international law. The principle is well established in customary international law and also stated in article 92(1) of the UNCLOS. TANAKA (2015), at 157,193.

¹⁰⁰ TANAKA (2015), at 154.

¹⁰¹ UNCLOS, art. 1(1)1.

¹⁰² UNCLOS, art. 136,140(1).

¹⁰³ UNCLOS, art. 137(2).

¹⁰⁴ RUDOLF (2010), at 291.

¹⁰⁵ Policy of the US with Respect to the Natural Resources of the Subsoil & Seabed of the Continental Shelf, Available at : <http://www.presidency.ucsb.edu/ws/index.php?pid=12332>

¹⁰⁶ BYERS (2013), at 93.

¹⁰⁷ BYERS (2013), at 94.

¹⁰⁸ HEIDAR (2004), at 21.

¹⁰⁹ YOUNG (1958), at 733.

the natural resources.¹¹⁰ Furthermore Article 2 of the 1958 Convention on the Continental Shelf states that “the coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources”.¹¹¹ The underlying rationale for conceding sovereign rights over the resources of their continental shelf to coastal States is to be found in the fact, that the continental shelf is considered a natural prolongation of the continental masses.¹¹² The continental shelf is considered a natural prolongation of the land territory of the coastal State under the seas because the seafloor sediments, of which the continental shelf consists, are the same as the mainland sediments.¹¹³ Accordingly in the 1969 North Sea Continental Shelf Cases the International Court of Justice provided that “what confers the ipso jure title which international law attributes to the coastal State in respect of its continental shelf, is the fact that the submarine areas concerned may be deemed to be actually part of the territory over which the coastal State already has dominion, - in the sense that although covered with water, they are a prolongation or continuation of that territory, an extension of it under the sea.”¹¹⁴

3.2.2 Delineation of the Continental Shelf under the United Nations Convention on the Law of the Sea

The current legal regime of the continental shelf is set out in Part VI of the UNCLOS. In the UNCLOS, clear outer limits of the continental shelf were established. Article 76(1) of the UNCLOS states that “the continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.”¹¹⁵ Hence the continental shelf of a coastal State extends in any case to a minimum distance of 200 nm from its territorial sea baselines and if the outer edge of the continental margin extends beyond that distance, the coastal State may claim an even broader continental shelf. As in the 1958 Convention on Continental Shelf, in the UNCLOS the continental shelf is conceptualized as a continuous geomorphological structure.¹¹⁶ The continental margin is defined as the submerged prolongation of the land mass of the coastal State and consists of the continental shallows, the continental slope and the continental rise.¹¹⁷ It encompasses the part of the seafloor that steeply descends from the coast to the deep ocean floor.¹¹⁸ According to art. 76(4)a of the UNCLOS, the outer limits of the continental margin, wherever it extends beyond 200 nm from the territorial sea baseline, are fixed on the basis of either (1) sediment

¹¹⁰ 1958 Convention on the Continental Shelf, art. 1.

¹¹¹ 1958 Convention on the Continental Shelf, art. 2.

¹¹² RUDOLF (2010), at 291 & BYERS (2013), at 94.

¹¹³ RUDOLF (2010), at 291.

¹¹⁴ ICJ, North Sea Continental Shelf Cases (1969), para. 43.

¹¹⁵ UNCLOS, art. 76(1).

¹¹⁶ BYERS (2013), at 95.

¹¹⁷ UNCLOS, art. 76(3).

¹¹⁸ RUDOLF (2010), at 289.

thickness or (2) the distance from the foot of the continental slope¹¹⁹. More precisely, to mark the outer limits of the continental margin, fixed points are established at which either (1) the thickness of sediments is at least 1% of the distance from such a point back to the foot of the continental slope or (2) the distance to the foot of the continental slope is no more than 60 nm (see Annex II).¹²⁰ The fixed points are connected by straight lines, that are no longer than 60 nm, to determine the demarcation of the outer limits of the continental shelf.¹²¹ A state can choose either formula at any given point. Additionally, article 76 of the UNCLOS contains two constraint lines. A coastal States' continental shelf shall not extend further than 350 nm from the territorial sea baselines or shall not exceed 100 nm from the 2500 meter isobaths (see Annex III).¹²² These constraints may be used alternatively and only one of them has to be respected at any given point of the continental shelf.¹²³ There is one exception to this rule which is stated in article 76(6) of the UNCLOS. Article 76(6) of the UNLCOS makes a distinction between submarine ridges and submarine elevations which are natural components of the continental margin. For submarine ridges, the maximum limit from the territorial sea baselines is fixed at 350 nm, whereas for submarine elevations the two constraint lines may be used alternatively.¹²⁴

The rules agreed on in the 1982 UNCLOS have led to a legally valid expansion of the coastal States authority over enormous submarine areas. The continental shelf, as defined in the 1958 Geneva Convention on the Continental Shelf, includes by definition a much smaller area than the continental shelf as defined in the UNCLOS.¹²⁵

3.2.3 The Commission on the Limits of the Continental Shelf

A coastal State that wants to extend its continental shelf beyond the 200 nm zone from the territorial sea baselines has to submit scientific data concerning its proposed limits of the continental shelf to the Commission on the Limits of the Continental Shelf (CLCS).¹²⁶ This Commission was set up under Annex II of the UNCLOS in order to issue "recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf".¹²⁷ The CLCS consists of experts in the field of geology, geophysics or hydrography.¹²⁸ A state has to submit information to the CLCS within ten years of the entry into force of the UNCLOS for this particular State.¹²⁹ At the eleventh Meeting of the State Parties to the UNCLOS held in 2001, the ten-year period was changed for States for which the Convention has entered into force prior to 13 May 1999. For all these States, the ten-year period starts on 13 May 1999, the day that the Commission adopted the Scientific and Technical

¹¹⁹ Unless there is evidence to the contrary, the foot of the slope is defined as the point of maximum change in gradient at its base. UNCLOS, art. 76(4)b.

¹²⁰ UNCLOS, art. 76(4)a.

¹²¹ UNCLOS, art. 76(7).

¹²² UNCLOS, art. 76(5).

¹²³ HEIDAR (2004), at 28

¹²⁴ UNCLOS, art. 76(6).

¹²⁵ RUDOLF (2010), at 297.

¹²⁶ UNCLOS, art. 76(8).

¹²⁷ UNCLOS, art 76(8).

¹²⁸ UNCLOS, art. 2(1) of Annex II.

¹²⁹ UNCLOS, art. 4 of Annex II.

Guidelines¹³⁰.¹³¹ If a coastal State disagrees with the recommendations of the CLCS, it can make a new or revised submission to the Commission.¹³² The CLCS cannot impose any of its conclusions on a coastal State, as it has only recommendatory powers.¹³³ It is the coastal State that has the sovereign rights to establish the outer limits of the continental shelf on the basis of the recommendations.¹³⁴ To complete the process of establishment of the outer limits of the continental shelf, a coastal State has to deposit charts and relevant information describing the outer limits of the continental shelf with the Secretary-General of the United Nations.¹³⁵ Once a coastal State has done so, the limits are “final and binding”.¹³⁶ The words final and binding each have a separate meaning. “The reference to ‘final’ entails that the outer limit line shall no longer be subject to change but becomes permanently fixed. The reference to ‘binding’ implies an obligation to accept the outer limit line concerned.”¹³⁷ There is some debate as to whom the limits become final and binding. Some authors argue that this obligation only concerns the submitting coastal State, others support that the limits also become final and binding for other State Parties to the UNCLOS or even for the international community as a whole. Most legal scholars state that non-Parties are not bound by the recommendations of the UNCLOS as a consequence of the *pacta tertiis* rule¹³⁸.¹³⁹ According to the International Law Association Committee on the Outer Continental Shelf with respect to other State Parties to the Convention two situations should be distinguished: a situation where the outer limits of the continental shelf border the Area and an outer limit of the continental shelf in an area where it overlaps with a continental shelf claim of another State.¹⁴⁰ In the first case “if the outer limits of the continental shelf have been established in accordance with the substantive and procedural requirements of Article 76 they will be binding on other States parties to the Convention”.¹⁴¹ On the other hand, if there exists an overlapping continental shelf claim, an outer limit line cannot become final and binding because Article 76(10) of the UNCLOS states that the provisions of article 76 “are without prejudice to the question of delimitation of the continental shelf between States with opposite or adjacent coasts”.¹⁴² Nevertheless, in practical terms, it will depend on the presence or absence of State protest if the established outer limits of the continental shelf are accepted as final and binding. If following a reasonable time period after the limits are established on the basis of the recommendations and information thereof submitted to the Secretary-General there is no protest or objection

¹³⁰ Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf, Available at : http://www.un.org/depts/los/clcs_new/commission_guidelines.htm

¹³¹ See UN DOC. SPLOS/72 (2001).

¹³² UNCLOS, art. 8 of Annex II.

¹³³ HEIDAR (2004), at 31.

¹³⁴ Ibid.

¹³⁵ UNCLOS, art. 76(9).

¹³⁶ UNCLOS, art. 76(8).

¹³⁷ ILA COMMITTEE ON THE OUTER CONTINENTAL SHELF (2004), at 23.

¹³⁸ The *pacta tertiis* rule is a principle of customary international law and is codified in Article 34 of the 1969 Vienna Convention on the Law of Treaties which states that “a treaty does not create either obligations or rights for a third State without their consent”. Vienna Convention on the Law of Treaties, art. 34.

¹³⁹ See for example CALIGIURI (2007), at 290 or HEIDAR (2004), at 32.

¹⁴⁰ ILA COMMITTEE ON THE OUTER CONTINENTAL SHELF (2004), at 23.

¹⁴¹ Ibid., at 24.

¹⁴² UNCLOS, art. 76(10).

from other States, then the outer continental shelf limits can be said to be final and binding erga omnes.¹⁴³

The purpose of Article 76 of the UNCLOS and the procedure before the CLCS is to determine the boundary line between a coastal States' continental shelf and the Area. This process is called the delineation of the continental shelf.¹⁴⁴ It is important to note that the Commission can issue recommendations on the establishment of the outer limits of the continental shelf, but does not have the mandate to resolve potential overlaps of continental shelf claims of neighbouring states.¹⁴⁵ The role of the CLCS is thus one of verification of the correctness of a coastal State's submitted outer limits of the continental shelf in the light of the UNCLOS provisions and not one of dispute solving.¹⁴⁶ Or in other words "the CLCS will not decide which of the States has the better right to the area but will look only at whether each State's submission meets the threshold test of falling within its own primary entitlement."¹⁴⁷

3.2.4 Delimitation of the Continental Shelf between States

In case of overlapping continental shelf claims of two or more coastal States it is article 83 of the UNCLOS that is applicable.¹⁴⁸ Article 83(1) of the UNCLOS provides that "the delimitation of the continental shelf between States with opposite or adjacent coasts shall be effected by agreement on the basis of international law, as referred to in Article 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution".¹⁴⁹ This formula allows States to take into consideration the relevant legal rules codified in treaties, customary international law, as well as general principles of international law and decisions of international courts and tribunals to define the boundary line of their continental shelf.¹⁵⁰ The International Court of Justice notes in *Libya v. Malta* that the UNCLOS sets a goal to be achieved - an equitable solution -, but does not provide a method to attain it.¹⁵¹ Furthermore, according to article 83(2) of the UNCLOS, if the States cannot reach an agreement within a reasonable period of time, they shall resort to the procedures of peaceful settlement contained in Part XV of the UNLCOS.¹⁵² Part XV of the UNCLOS provides means for the settlement of disputes which eventually result in a binding decision of an international tribunal.¹⁵³ However, article 298(1) of the UNCLOS allows a State Party to exclude the application of the compulsory binding procedures for the settlement of disputes concerning the interpretation or application of article 83 of the UNCLOS relating to sea boundary delimitations.¹⁵⁴ Canada, Denmark and Russia have indicated that they do not accept any binding dispute resolution

¹⁴³ ROTHWELL & STEPHENS (2010), at 115 & MCDORMAN (2002), at 316-317.

¹⁴⁴ MAGNUSSON (2015), at 18, 136.

¹⁴⁵ BYERS (2013), at 7 & UNCLOS, art.9 Annex II.

¹⁴⁶ GOLITSYN (2009), at 407.

¹⁴⁷ SERDY (2015), at 431.

¹⁴⁸ ILC COMMITTEE ON THE OUTER CONTINENTAL SHELF (2004), at 23.

¹⁴⁹ UNCLOS, art. 83(1).

¹⁵⁰ Arbitration Tribunal, In the Matter of an Arbitration between Barbados and the Republic of Trinidad and Tobago (2006), para. 222.

¹⁵¹ ICJ, Case Concerning the Continental Shelf (1985), para. 28.

¹⁵² UNCLOS, art 83(2).

¹⁵³ UNCLOS, art. 296.

¹⁵⁴ UNCLOS, art 298(1).

provisions for disputes arising under article 83 of the UNCLOS.¹⁵⁵ Hence disputes on overlapping continental shelf claims between Arctic coastal States will likely fall under the article 298 exception, which means that UNCLOS does not provide any mandatory method of resolution for those disputes.¹⁵⁶

3.2.5 The Legal Status of the Continental Shelf

Coastal States do not exercise full sovereignty over the continental shelf. They have specific functional rights and jurisdiction over the continental shelf, which are described in articles 77 to 85 of the UNCLOS.¹⁵⁷ Article 77 of the UNCLOS states the arguably most important right of a coastal State concerning the continental shelf: “The coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources.”¹⁵⁸ Natural resources of the continental shelf are defined as the mineral resources and other non-living resources of the seabed and subsoil together with sedentary species.¹⁵⁹ Furthermore a coastal State also has the right to construct artificial islands, installations and other structures and to authorize and regulate drilling on the continental shelf.¹⁶⁰ The sovereign rights of a coastal State are exclusive and if the coastal State does not explore and exploit its natural resources another State may only undertake these activities with the express consent of the coastal State.¹⁶¹ According to article 246(1) of the UNCLOS a coastal State also has jurisdiction over marine scientific research on its continental shelf.¹⁶² It is important to note that the continental shelf only includes the seabed and subsoil and that coastal States have no special rights over the superjacent waters or the air space above those waters.¹⁶³ It is explicitly stated in article 78 of the UNCLOS that the rights over the continental shelf do not affect the legal status of those areas.¹⁶⁴

4. Defining the Boundaries of the Continental Shelf in the Arctic

4.1 Submissions by Arctic Coastal States to the CLCS and Other Potential Continental Shelf Claims of the Five Arctic Coastal States

The Arctic coastal States have made full use of their rights under the UNCLOS and have delimited their internal waters, contiguous zone and EEZ.¹⁶⁵ On the contrary the outer limits of the continental shelf still remain to be established in most parts of the Arctic Ocean. The structure of the Arctic Ocean seabed is complex. About 50% of the Arctic Ocean seabed is continental shelf, which is the highest percentage of any ocean. The deep central basin of the

¹⁵⁵ See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2013) Online : http://www.un.org/depts/los/convention_agreements/convention_declarations.htm#Russian%20Federation%20Upon%20signature (accessed 9.8.2016).

¹⁵⁶ HOLMES (2008), at 339-340.

¹⁵⁷ See UNCLOS, art. 77 to art. 85.

¹⁵⁸ UNCLOS, art. 77(1).

¹⁵⁹ UNCLOS, art. 77(4).

¹⁶⁰ UNCLOS, art. 80 & art. 81.

¹⁶¹ UNCLOS, art. 77(2).

¹⁶² UNCLOS, art. 246(1).

¹⁶³ UNCLOS, art. 78(1).

¹⁶⁴ UNCLOS, art. 78(1).

¹⁶⁵ CALIGIURI (2007), at 278.

Arctic Ocean is divided by three main submarine ridge systems (see Annex IV).¹⁶⁶ The Lomonosov Ridge runs through the Arctic Ocean from the margin of Siberia to Ellesmere Island, an island that lies between the mainland of Canada and Greenland.¹⁶⁷ It splits the Arctic Ocean into two main basins, the Eurasia Basin and the Amerasia Basin.¹⁶⁸ The Eurasia Basin is further subdivided by the Gakkel Ridge (also known as Arctic Mid Ocean Ridge or Nansen Ridge) into the Nansen Basin and the Amundsen Basin.¹⁶⁹ The Alpha-Mendelev Ridge is the third submarine ridge and spreads through the Amerasia Basin from the Canadian and Greenland continental margins to the Siberian shelf.¹⁷⁰

Currently all five coastal States are engaged in collecting the scientific data which are required to determine the outer limits of the continental shelf beyond 200 nm in accordance with article 76 of the UNCLOS. So far three of the five Arctic coastal States have made a submission to the CLCS concerning the delimitation of the outer limits of the continental shelf, namely Russia, Norway and Denmark.¹⁷¹

Russia was the first Arctic coastal State to make a submission in 2001. In its submission Russia claimed that the Lomonosov Ridge and the Alpha-Mendelev Ridge System are natural prolongations of the Siberian shelf and hence constitute a part of the Russian continental shelf.¹⁷² Russia's delineation is thus based on the postulation that both of those ridges are submarine elevations and not submarine ridges, so that the 350 nm distance limit of article 76(6) of the UNLCOS does not apply.¹⁷³ Norway, Canada and the United States reacted to the Russian claim and emphasised that the Russian report lacks data to convincingly support the claim.¹⁷⁴ In its recommendations to Russia the CLCS stated that according to the materials provided in the submission and the current state of scientific knowledge, the Lomonosov Ridge and the Alpha-Mendelev Ridge Complex cannot be considered a submarine elevation under the Convention.¹⁷⁵ Furthermore it recommended that Russia hands in a revised submission in respect of its extended continental shelf in the Central Arctic Ocean.¹⁷⁶ In 2015 Russia submitted a partially revised submission to the CLCS in which it continues to claim that the Lomonosov Ridge and the Alpha-Mendelev Ridge Complex have "continental origin and belong to submarine elevations that are natural components of the continental margin under paragraph 6 of Article 75 of the Convention,

¹⁶⁶ HOSSAIN (2010), at 145.

¹⁶⁷ Ibid.

¹⁶⁸ WEBER (2009), at 658.

¹⁶⁹ Ibid.

¹⁷⁰ Ibid., at 659.

¹⁷¹ See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2016) Online : http://www.un.org/Depts/los/cles_new/commission_submissions.htm (accessed 9.8.2016).

¹⁷² CALIGIURI (2007), at 285.

¹⁷³ HOSSAIN (2010), at 146.

¹⁷⁴ RUDOLF (2010), at 294.

¹⁷⁵ Partial Revised Submission of the Russian Federation to the Commission on the Limits of the Continental Shelf in Respect of the Continental Shelf of the Russian Federation in the Arctic: Executive Summary (2015), at 5.

¹⁷⁶ CALIGIURI (2007), at 285-286.

which are not subject to distance limit of 350 nm from the baselines”.¹⁷⁷ The CLCS has not yet adopted a recommendation based on this revised submission.

Norway was the second Arctic coastal State that made a submission to the CLCS on 27 November 2006.¹⁷⁸ Norway claimed that its continental shelf extends beyond 200 nm in three distinct areas: the Banana Hole¹⁷⁹ in the Norwegian and Greenland Seas, the Loophole¹⁸⁰ in the Barents Sea and the Western Nansen Basin in the Arctic Ocean.¹⁸¹ The Commission adopted its recommendations to Norway in 2009. It generally agreed with the outer limits that Norway has established in the Banana Hole and the Loophole area. In the Loophole the entire seabed is considered as forming part of the Norwegian continental shelf.¹⁸² In the westernmost parts of the Nansen Basin there are overlapping claims to the seabed related to Denmark.¹⁸³ Norway and Denmark have established a boundary line of the continental shelf within 200 nm¹⁸⁴ but they still have to agree on the delimitation of the continental shelf beyond 200 nm.¹⁸⁵

Denmark has so far made three partial submissions to the CLCS concerning the outer limits of the Southern (2012), North-Eastern (2013) and Northern (2014) continental shelf of Greenland.¹⁸⁶ The limit proposed in the 2013 submission includes an area of approximately 140 square nm that overlaps with the continental shelf of Norway as recommended by the CLCS.¹⁸⁷ In its submission of 2014 Denmark argues that “the Lomonosov Ridge is both morphologically and geologically an integral part of the Northern Continental Margin of Greenland.”¹⁸⁸ On this basis Denmark has defined a continental shelf limit, which extends up to the outer limit of the Russian exclusive economic zone. The continental shelf defined by Denmark overlaps with the continental shelf areas beyond 200 nm submitted to the CLCS by

¹⁷⁷ Partial Revised Submission of the Russian Federation to the Commission on the Limits of the Continental Shelf in Respect of the Continental Shelf of the Russian Federation in the Arctic: Executive Summary (2015), at 6.

¹⁷⁸ See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2016) Online : http://www.un.org/Depts/los/clcs_new/commission_submissions.htm (accessed 9.8.2016).

¹⁷⁹ The Banana Hole is a high seas area surrounded by the economic zones of Norway, Iceland, the Faroe Islands and Greenland and the fishery protection zone around Svalbard. NORWAY MINISTRY OF FOREIGN AFFAIRS (2013), Online : <https://www.barentswatch.no/en/Tema/Law-of-the-sea/Sea-borders/The-Loophole-and-the-Banana-Hole/> (accessed 7.8.2016).

¹⁸⁰ The Loophole is a high seas area surrounded by the Norwegian economic zone, the fishery protection zone around Svalbard and the Russian economic zone. *Ibid.*

¹⁸¹ JENSEN (2014), at 235.

¹⁸² *Ibid.*

¹⁸³ *Ibid.*, at 236.

¹⁸⁴ See Agreement between the Government of the Kingdom of Norway on the one hand, and the Government of the Kingdom of Denmark together with the Home Rule Government of Greenland on the other hand, concerning the delimitation of the continental shelf and the fisheries zones in the area between Greenland and Svalbard (Copenhagen, 20 February 2006). The agreement entered into force on 2 June 2006. Available at : http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=083275&database=FAOLEX&search_type=link&table=result&lang=eng&format_name=@ERALL

¹⁸⁵ CALIGIURI (2007), at 287.

¹⁸⁶ See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2016) Online : http://www.un.org/Depts/los/clcs_new/commission_submissions.htm (accessed 9.8.2016).

¹⁸⁷ IBRU: CENTER FOR BORDER RESEARCH (2015) Online : <https://www.dur.ac.uk/ibru/resources/arctic/> (accessed 9.8.2016).

¹⁸⁸ Partial Submission of the Government of the Kingdom of Denmark together with the Government of Greenland to the Commission on the Limits of the Continental Shelf, The Northern Continental Shelf of Greenland: Executive Summary (2014), at 12.

Norway and Russia.¹⁸⁹ These States have both signed non-objection agreements that allow the CLCS to consider the submission of Denmark. These non-objection agreements also state that the recommendations of the CLCS are without prejudice to the future delimitation of the continental shelf between the two States.¹⁹⁰ The CLCS has not yet adopted recommendations on any of the three submissions of Denmark.¹⁹¹

Canada has not yet made a submission to the CLCS but it submitted preliminary information concerning the outer limit of its continental shelf in the Arctic Ocean in December 2013. Canada potentially has a significant area of continental shelf beyond 200 nm in the Arctic Ocean. According to the submitted document “the continental margin of Canada in the Arctic Ocean is part of a morphologically continuous continental margin around the Canada Basin and along the Amundsen Basin. It comprises a number of seafloor elevations (Lomonosov Ridge and Alpha Ridge) and forms the submerged prolongation of the land mass of Canada.”¹⁹² Canada continues to gather information on its continental shelf beyond 200 nm through its „Extended Continental Shelf Program“ with the aim of making a submission to the CLCS in the near future.¹⁹³

The United States has signed the UNCLOS in 1994 but the US Senate has not yet ratified the Convention, so the UNCLOS is not legally binding on the United States.¹⁹⁴ Although the US military, the US Chamber of Commerce and all Secretaries of State support a ratification of the UNCLOS, the US Senate until now refused to ratify the Convention. Conservative critics argue that UNCLOS is a threat to US sovereignty and that it is an unacceptable form of global collectivism. Nevertheless the United States pursue a policy consistent with the UNCLOS.¹⁹⁵ In 1987 the United States published a statement of policy announcing that it will use paragraphs 1 to 7 of article 76 of the UNCLOS to delineate the outer limits of its continental shelf.¹⁹⁶ The United States considers the provisions of article 76 of the UNCLOS as reflecting the applicable customary international law.¹⁹⁷ In 2012 in the *Nicaragua v. Colombia* Case the International Court has confirmed that article 76(1) of the UNCLOS represents customary international law.¹⁹⁸ Yet as a non-party to the UNCLOS the United States is not required to make a submission to the CLCS.¹⁹⁹ The United States has not yet determined the outer limits of its continental shelf in the Arctic but it has been collecting and analysing geomorphological

¹⁸⁹ IBRU: CENTER FOR BORDER RESEARCH (2015) Online : <https://www.dur.ac.uk/ibru/resources/arctic/> (accessed 9.8.2016).

¹⁹⁰ Partial Submission of the Government of the Kingdom of Denmark together with the Government of Greenland to the Commission on the Limits of the Continental Shelf, *The Northern Continental Shelf of Greenland: Executive Summary* (2014), at 18.

¹⁹¹ See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2016) Online : http://www.un.org/Depts/los/clcs_new/commission_submissions.htm (accessed 9.8.2016).

¹⁹² Preliminary Information concerning the outer limits of the continental shelf of Canada in the Arctic Ocean (2013), at 2.

¹⁹³ For more information see Canada’s Extended Continental Shelf Program, Available at : <http://www.science.gc.ca/default.asp?lang=En&n=98773CA7-1>

¹⁹⁴ HOLMES (2008), at 331.

¹⁹⁵ POTTS & SCHOFIELD (2008), at 159.

¹⁹⁶ United States Policy Governing the Continental Shelf of the United States of America, 11 November 1987 ; cited ROACH & SMITH (2012), at 189.

¹⁹⁷ ROACH & SMITH (2012), at 187.

¹⁹⁸ ICJ, *Territorial and Maritime Dispute* (2012), para. 118.

¹⁹⁹ GOLITSYN (2009), at 405.

data since 2001. The United States potential continental shelf claims in the Arctic are likely to include the Barrow margin and extend across the Chukchi Borderland, possibly as far as the Alpha-Mendeleev Ridge system.²⁰⁰ (See Annex V for a map illustrating the continental shelf claims of the Arctic coastal States.)

4.2 Maritime Boundary Agreements in the Arctic Ocean in Areas Beyond 200 nm from the Baselines

To this day there exist two maritime boundary agreements which include the continental shelf beyond 200 nm from the territorial baselines in the Arctic Ocean.²⁰¹ In 1990 the Soviet Union and the United States concluded a maritime boundary agreement which delimits the continental shelf beyond 200 nm from the territorial baselines along the 168° 58' 37" W. meridian.²⁰² The boundary agreed upon is based on the historic division set out in the 1867 Convention by which the United States purchased Alaska from the Russian Tsar.²⁰³ The 1990 Agreement is applied provisionally. It has not entered into force yet because the Russian parliament has not given its approval to ratification.²⁰⁴ Russia has applied this boundary for the definition of the outer limits of its continental shelf in its submissions to the CLCS.²⁰⁵ Russia and Norway concluded in 2010 the “Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean” in which they defined a single maritime boundary that divides their continental shelves and EEZ in the Barents Sea and the Arctic Ocean.²⁰⁶ The treaty entered into force on 7 July 2011. Concerning the delimitation method, it is interesting to note that the delimitation line divides the overall disputed area into two parts of approximately the same size and that according to the two States the delimitation line was drawn on the basis of international law in order to achieve an equitable solution.²⁰⁷

4.3 Anticipated Legal Arguments for the Delimitation of Overlapping Continental Shelf Claims in the Arctic

The brief overview of the actual and potential extended continental shelf claims of the coastal States in the Arctic Ocean shows that there are several areas of overlapping claims and only two relevant maritime boundary agreements. As Arctic coastal States are close together and are likely to have connected continental shelves, several countries may be in the position to prove the fulfilment of the criteria of article 76 of the UNCLOS for the same areas. For example, Russia and Denmark have already claimed the Lomonosov Ridge as forming part of their continental shelf and Canada has expressed its intention to do so. As previously

²⁰⁰ HAYES (2010), at 469.

²⁰¹ ELFERINK (2013), at 73-74.

²⁰² Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary (1990), art. 2(1).

²⁰³ See Treaty concerning the Cession of the Russian Possessions in North America by his Majesty the Emperor of all the Russias to the United States of America (1867).

²⁰⁴ ELFERINK (2001), at 183.

²⁰⁵ ELFERINK (2013), at 73.

²⁰⁶ Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean (2010).

²⁰⁷ MAGNUSSON (2015), at 202.

discussed in Section 3.2.3 and 3.2.4 the CLCS is not competent to resolve overlapping continental shelf disputes.²⁰⁸ Article 83 of the UNCLOS states that countries should agree on a boundary and if no agreement can be found in a “reasonable period of time”, they should resort to the remedial provisions of the UNCLOS.²⁰⁹ But Canada, Denmark and Russia have made use of the exception of article 298(1) of the UNCLOS and thus no binding dispute resolution provisions of the UNCLOS apply for overlapping continental shelf disputes involving those countries.²¹⁰ Disputes on overlapping continental shelf claims in the Arctic will have to be resolved through bilateral or multilateral negotiation. We will now consider some of the different legal arguments that Arctic coastal States might put forward in the future to assert their continental shelf claims.

A State might advance historical practice as a valid legal argument. It might argue that its use of a portion of the Arctic Ocean seabed in the past without the other country protesting, proves that the other country has acquiesced to a boundary line.²¹¹ Historical rationales were typically applied by the International Court of Justice in earlier continental shelf cases.²¹² This kind of argument could be challenged by emphasising that on contrary to article 15 of the UNCLOS which allows for “historic title or other special circumstances” to be used in delimiting the territorial sea between countries with opposite or adjacent coasts, article 83 of the UNCLOS does not state that historic title should be taken into account when negotiating an agreement.²¹³

Canada and Russia are likely to call on the sector theory to delimit overlapping continental shelf claims. The two States have already invoked the sector principle in other maritime boundary negotiations in the Arctic.²¹⁴ They have long coastlines so the sector theory is favourable for them to argue for a larger share of the continental shelf. The other Arctic coastal States that reject the sector theory may argue for its limited application.²¹⁵

The Arctic coastal States may also invoke the equidistance/relevant circumstances approach as a method of delimitation. This approach consists basically of two stages: the drawing of an equidistance line and its adoption to relevant circumstances.²¹⁶ The equidistance line is defined in article 15 of the UNLCOS as the line “every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each two States is measured”.²¹⁷ According to Magnusson, equidistance is “the most commonly used method of continental shelf delimitations and is highly regarded by the International Court of Justice.”²¹⁸ The International Court of Justice often uses the equidistance line as a starting

²⁰⁸ BYERS (2013), at 7 & UNCLOS, art.9 Annex II.

²⁰⁹ UNCLOS, art. 83.

²¹⁰ See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2013) Online : http://www.un.org/depts/los/convention_agreements/convention_declarations.htm#Russian%20Federation%20Upon%20signature (accessed 9.8.2016).

²¹¹ HOLMES (2008), at 342.

²¹² *Ibid.*, at 343.

²¹³ *Ibid.* & UNLCOS, art.15, 83.

²¹⁴ CHURCHILL (2001), at 122-123.

²¹⁵ *Ibid.* at 123 & HOLMES (2008), at 345.

²¹⁶ MAGNUSSON (2015), at 129.

²¹⁷ UNCLOS, art. 15.

²¹⁸ MAGNUSSON (2015), at 130.

point to analyse overlapping continental shelf disputes.²¹⁹ When applying the equidistance/relevant circumstances method, initially a provisional equidistance line is plotted on “strictly geometrical criteria on the basis of objective data” in the disputed area.²²⁰ Then, the equity of this line is assessed by examining “whether there are factors calling for the adjustment or shifting of the provisional equidistance line in order to achieve an equitable result”.²²¹ These factors can for example be coastal geography, seabed geology and geomorphology, seabed resources, living resources and ecology, economic factors and the practice of the parties.²²² Finally, the equidistance line is either confirmed or adjusted to take into account any of these factors.²²³

5. Conclusion

We have seen that in the past Canada and Russia have relied on the sector theory as a legal justification for their sovereignty claims over Arctic territory.²²⁴ However, the other three Arctic coastal States have constantly expressed their opposition to the application of the sector theory to the Arctic and today the prevailing doctrine holds the opinion that the sector theory cannot provide a legal basis for asserting sovereign claims over Arctic territory.²²⁵ But Canada and Russia continue to invoke the sector theory in maritime boundary negotiations as a method of delimitation.²²⁶ Furthermore, the short analysis of the legal status of ice in international law has shown that even though large parts of the Arctic Ocean are covered with ice, no special legal regime applies and the Arctic Ocean is governed by the UNCLOS. Within 200 nm from the territorial baselines, the Arctic coastal States have made full use of their rights under the UNCLOS and have delimited their internal waters, contiguous zone and EEZ.²²⁷ However, the outer limits of the continental shelf still remain to be established in most parts of the Arctic Ocean. Article 76 of the UNCLOS provides clear formula for the delineation of the outer limits of the continental shelf.²²⁸ Arctic coastal States have to collect scientific data to prove that their continental shelf claims fulfil the criteria of article 76 of the UNCLOS and have to make a submission to the CLCS. The CLCS will then verify the correctness of a coastal State’s submitted outer limits of the continental shelf in the light of the UNCLOS provisions and issue its recommendations.²²⁹ Norway has already completed this procedure and the other Arctic coastal States (except the United States) are in the process of doing so.²³⁰ However, due to the circular arrangement of the coastal States around the Arctic Ocean there exist large areas where continental shelf claims of one or more Arctic

²¹⁹ HOLMES (2008), at 344.

²²⁰ ICJ, *Maritime Delimitation in the Black Sea* (2009), para. 118.

²²¹ *Ibid.*, para. 120.

²²² MAGNUSSON (2015), at 159.

²²³ *Ibid.*, at 130.

²²⁴ ROTHWELL (1996), at 62.

²²⁵ PHARAND (1988), at 79.

²²⁶ CHURHCILL (2001), at 122-123.

²²⁷ CALIGIURI (2007), at 278.

²²⁸ UNCLOS, art. 76(1) - 76(7).

²²⁹ UNCLOS, art. 76(8).

²³⁰ See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2016) Online : http://www.un.org/Depts/los/clcs_new/commission_submissions.htm (accessed 9.8.2016).

coastal State overlap. The CLCS does not have the mandate to resolve overlapping continental shelf claims and the language of the UNCLOS is not clear about how to decide these overlapping claims.²³¹ Moreover, Russia, Canada and Denmark have all declared that they do not accept any binding dispute resolution provisions of the UNLCOS for the settlement of disputes relating to the delimitation of the continental shelf between States with opposite or adjacent coasts.²³² Hence the UNCLOS does not provide any binding method of dispute resolution for overlapping continental shelf claims in the Arctic Ocean. Disputes on overlapping continental shelf claims in the Arctic will have to be resolved through bilateral or multilateral negotiation and Arctic coastal States might advance different legal arguments to assert their extended continental shelf claims.

²³¹ ROTHWELL & STEPHENS (2010), at 115 & MCDORMAN (2002), at 316-317.

²³² See DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA (2013) Online : http://www.un.org/depts/los/convention_agreements/convention_declarations.htm#Russian%20Federation%20Upon%20signature (accessed 9.8.2016).

Annexes

Annex I

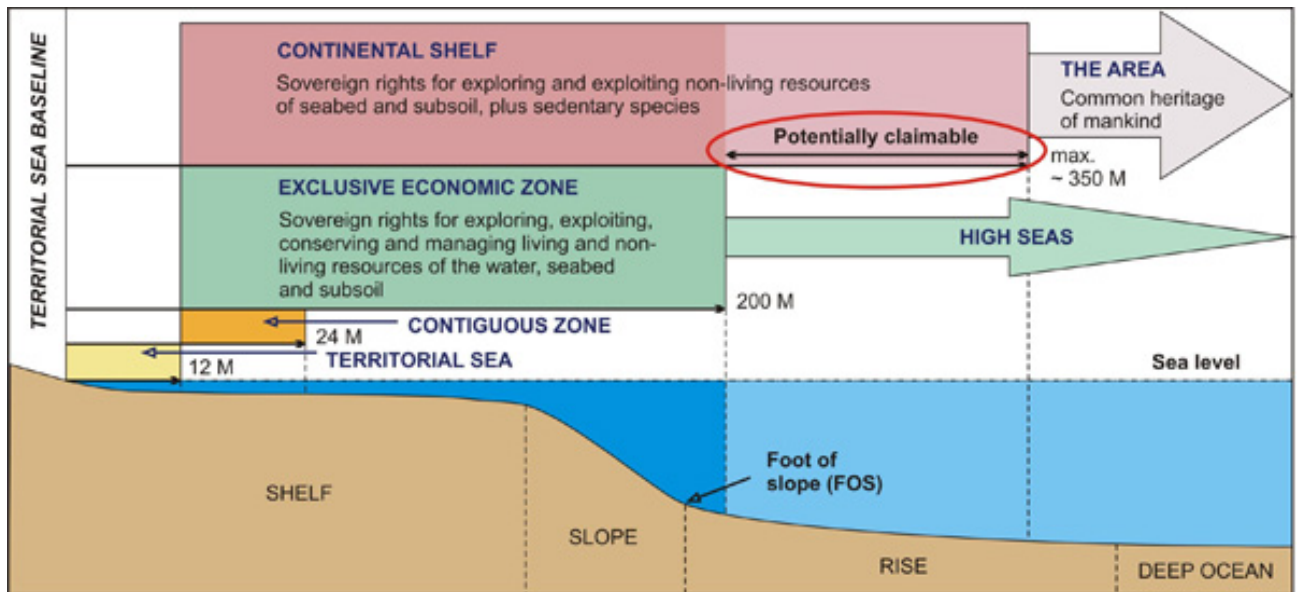


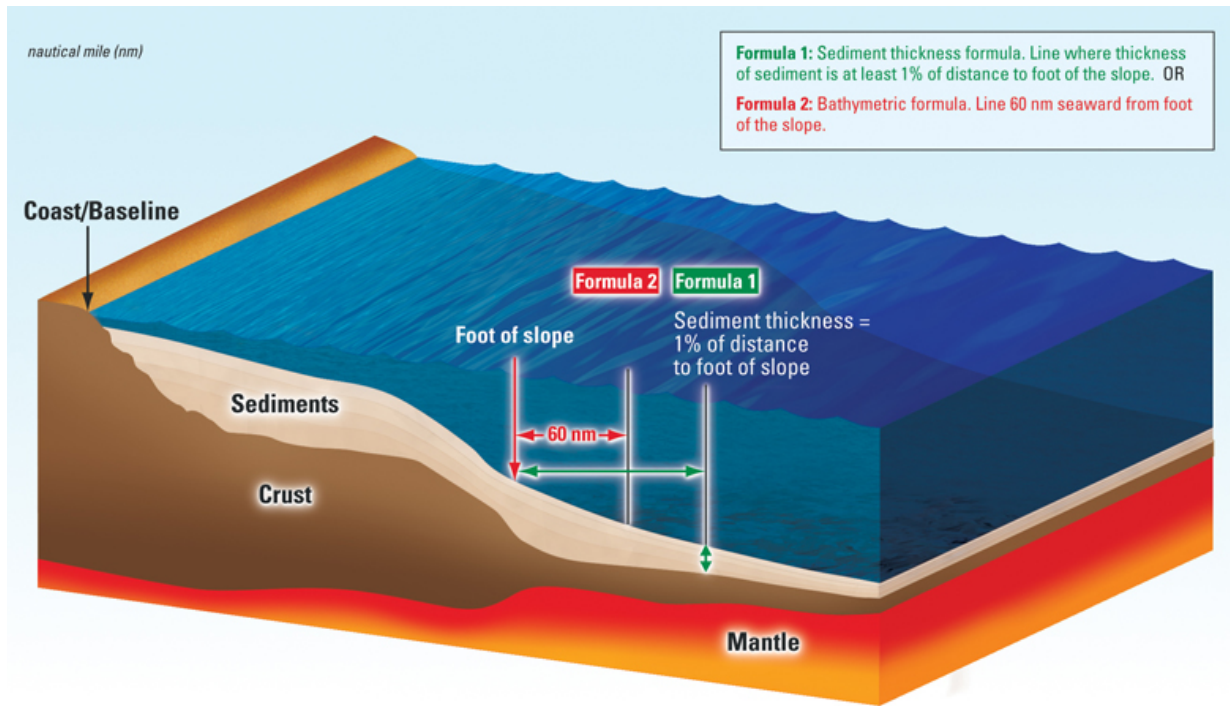
Illustration of the maritime zones under the UNCLOS²³³

²³³ BUNDESANSTALT FUER GEOWISSENSCHAFTEN UND ROHSTOFFE (2016)

Online:

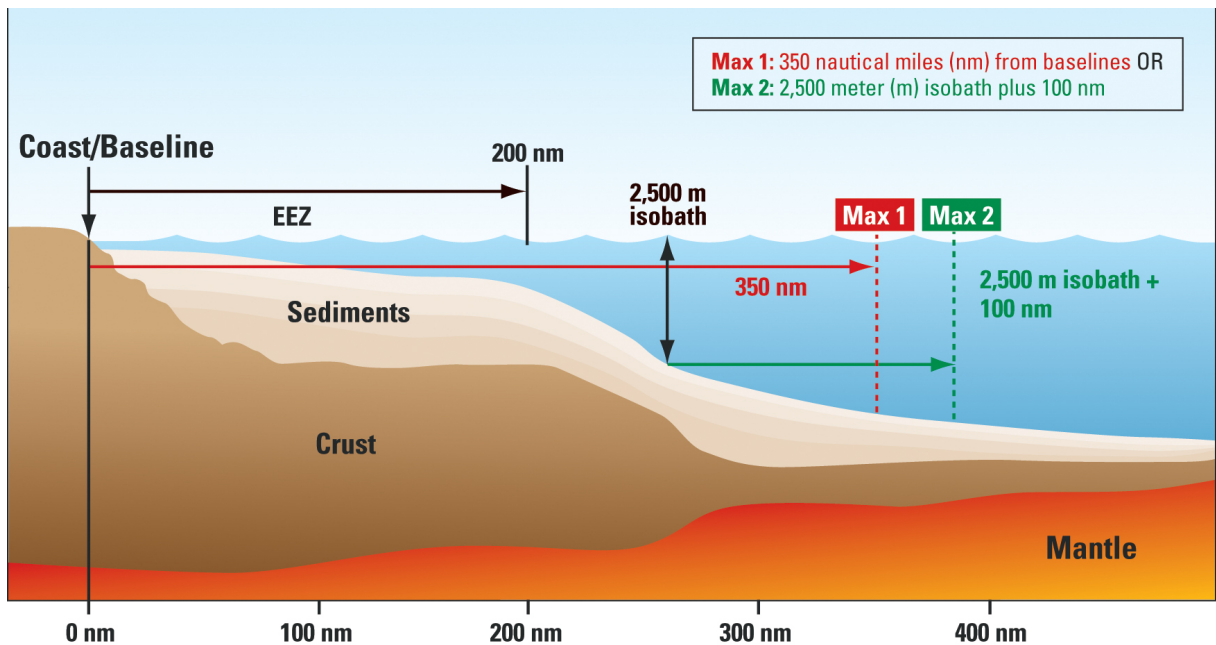
http://www.bgr.bund.de/EN/Themen/Zusammenarbeit/TechnZusammenarb/UNCLOS/UNCLOS_Article76/UNCLOS_Article76_node_en.html (accessed 10.8.2016)

Annex II



Extended Continental Shelf Formula Lines²³⁴

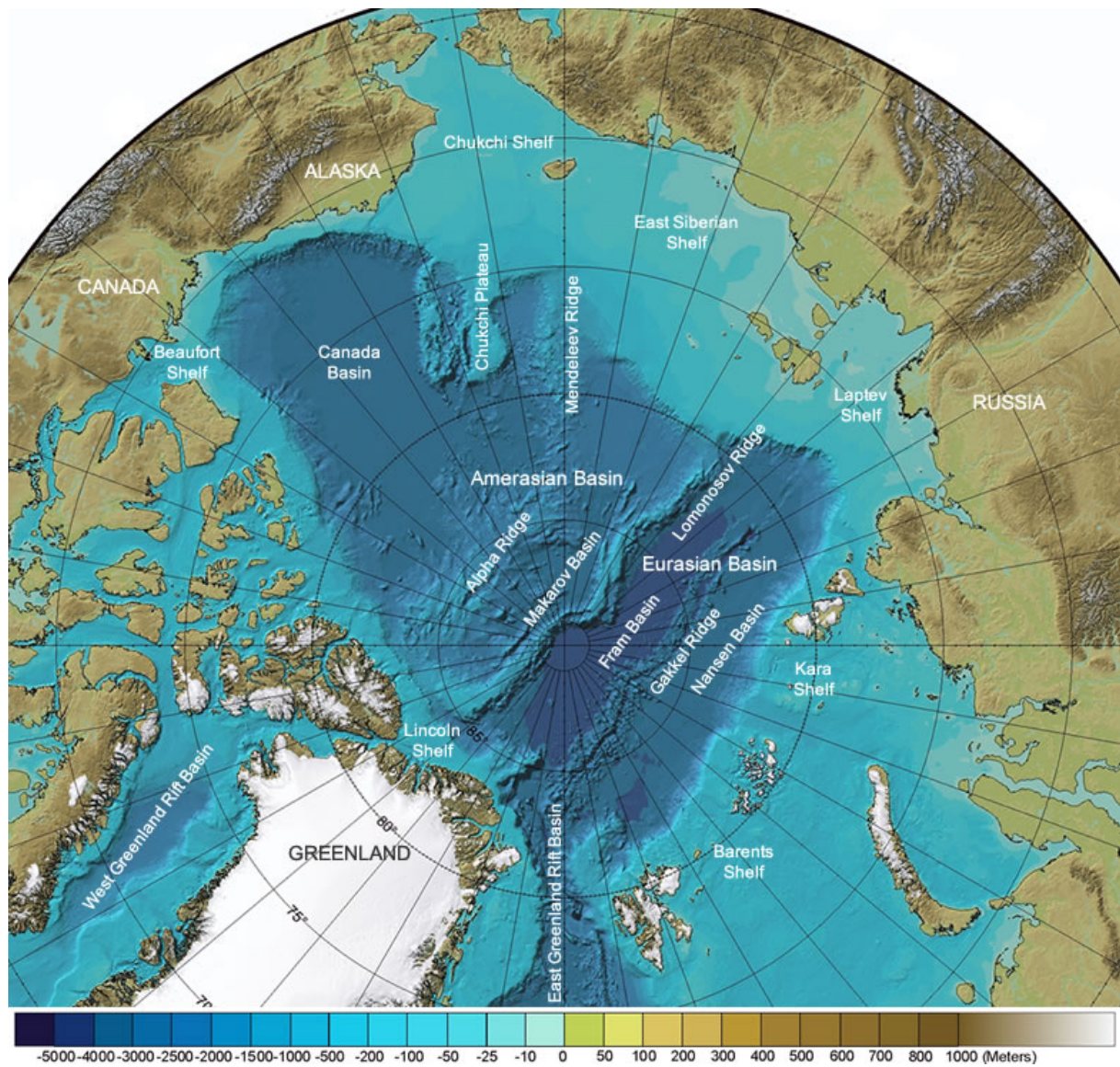
Annex III



Extended Continental Shelf Constraint Lines²³⁵

²³⁴ DEPARTMENT OF GEOLOGY SAN JOSE STATE UNIVERSITY (2010) Online : http://oceansjsu.com/images/GS1B/Arctic/formula_lines-3D_800.jpg (accessed 10.8.2016)

Annex IV

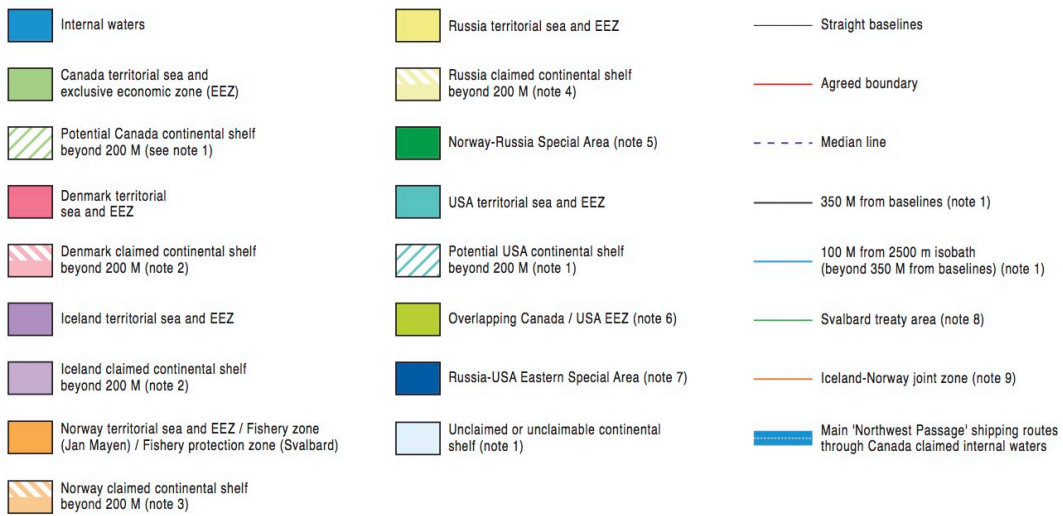
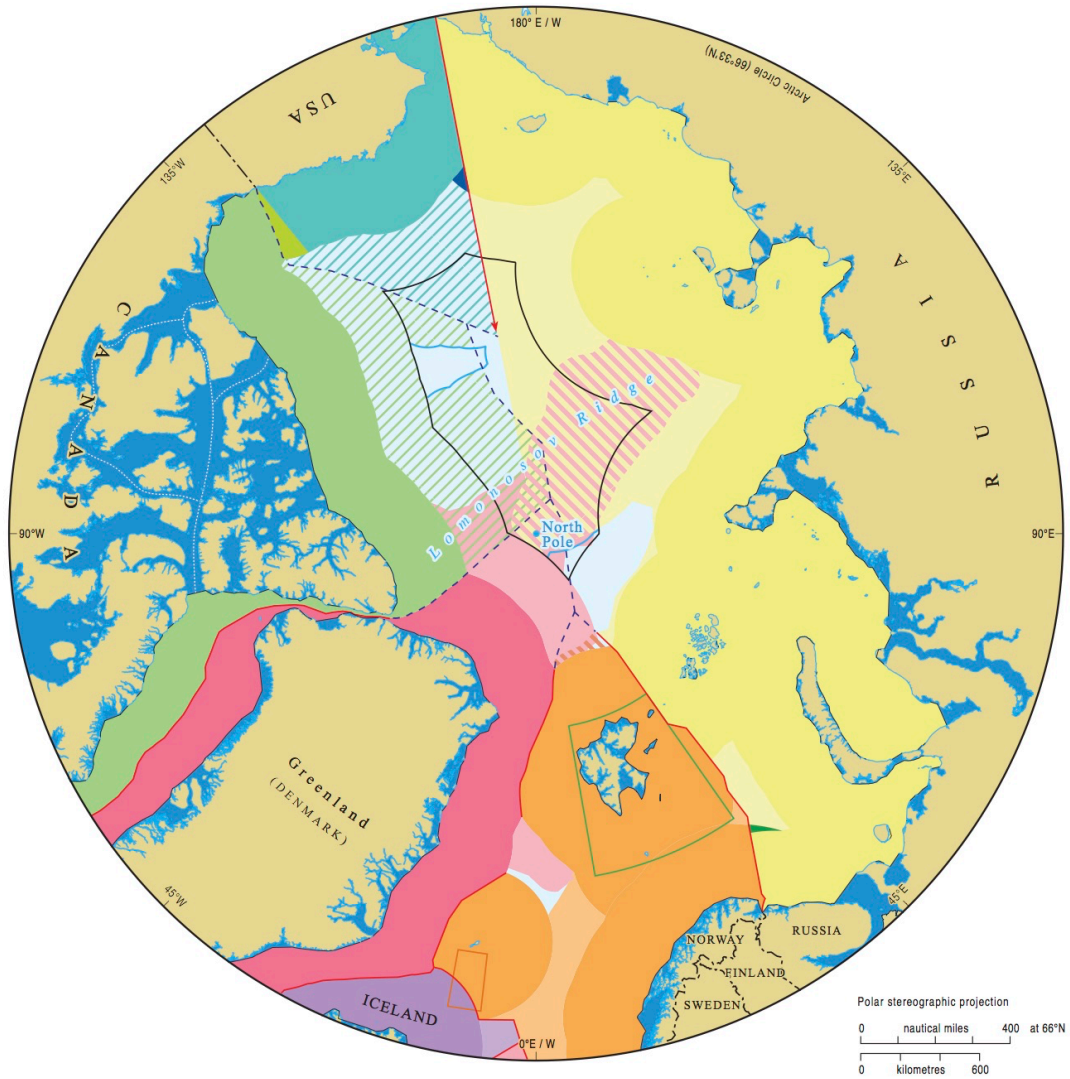


Structure of the Arctic Ocean seabed²³⁶

²³⁵ NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (2009) Online : <http://www.noanews.noaa.gov/stories2009/images/arctic3.jpg> (accessed 10.8.2016)

²³⁶ KING (2016) Online : <http://geology.com/articles/arctic-ocean-features/>

Annex V



Maritime Jurisdiction and Boundaries in the Arctic Ocean²³⁷

²³⁷ IBRU: CENTER FOR BORDER RESEARCH (2015) Online : <https://www.dur.ac.uk/ibru/resources/arctic/> (accessed 9.8.2016).

Bibliography

Textbooks

BYERS, Michael. *International Law and the Arctic*. New York : Cambridge University Press, 2013.

DAILLIER, Patrick, FORTEAU, Mathias & PELLET, Alain. *Droit International Public*. 8th ed. Paris : LGDJ, 2009.

HOUGH, Peter. *International Politics of the Arctic : Coming in from the cold*. Abingdon : Routledge, 2013.

JENSEN, Oystein. *The Commission on the Limits of the Continental Shelf : Law and Legitimacy*. Leiden : Brill, 2014.

MAGNUSSON, Bjarni Mar. *The Continental Shelf Beyond 200 Nautical Miles : Delineation, Delimitation and Dispute Settlement*. Leiden : Brill, 2015.

MEYENHOFER, Nadia. *Law, Climate Change and the Arctic : Legal Governance of Climate Change Induced Risks in the Arctic Ecosystems*. Norderstedt : Books on Demand, 2014.

OSTRENG, Willy, et al. *Shipping in Arctic Waters: A Comparison of the Northeast, Northwest and Transpolar Passage*. Heidelberg : Springer, 2013.

PHARAND, Donat. *Canada's Arctic Waters in International Law*. Cambridge : Cambridge University Press, 1988.

ROACH J. Ashley and SMITH Robert W. *Excessive Maritime Claims*. 3rd ed. Leiden : Martinus Nijhoff Publishers, 2012.

ROTHWELL, Donald R.. *The Polar Regions and the Development of International Law*. Cambridge : Cambridge University Press, 1996.

ROTHWELL, Donald R. & STEPHENS, Tim. *The International Law of the Sea*. Oxford : Hart Publishing, 2010.

TANAKA, Yoshifumi. *The International Law of the Sea : Second Edition*. Cambridge : Cambridge University Press, 2015.

Book Chapters

BAKER, Betsy. The Developing Regional Regime for the Marine Arctic. In : MOLENAAR, Erik J., ELFERINK, Alex G. Oude & ROTHWELL, Donald R. (Eds.). *The Law of the Sea and the Polar Regions: Interactions between Global and Regional Regimes*. Leiden : Martinus Nijhoff Publishers, 2013. p. 35-59.

CALIGIURI, Andrea. Les Revendications des Etats Côtiers de l'Océan Arctique sur le Plateau Continental au-delà de 200 Milles Marins. In : LUCCHINI, Laurent, BEER-GABEL, Josette & VOELCKEL, Michel (Eds.). *Annuaire du Droit de la Mer : Tome XII*. Paris : Pedone, 2007. p. 273-294.

CHURCHILL, Robin R. Claims to Maritime Zones in the Arctic – Law of the Sea Normality or Polar Peculiarity?. In : OUDE ELFERINK, Alex G. & ROTHWELL, Donald R. (Eds.). *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*. The Hague : Martinus Nijhoff Publishers, 2001. p. 105-124.

ELFERINK, Alex. G. Oude. The Outer Limits of the Continental Shelf in the Polar Regions. In : MOLENAAR, Erik J., ELFERINK, Alex G. Oude & ROTHWELL, Donald R. (Eds.). *The Law of the Sea and the Polar Regions: Interactions between Global and Regional Regimes*. Leiden : Martinus Nijhoff Publishers, 2013. p. 61-84.

ELLIOT-MEISEL, Elizabeth B. Canada, the United States and the Northwest Passage. In : CARON, David D. & SCHEIBER, Harry N. (Eds.). *The Oceans in the Nuclear Age : Legacies and Risks*. Leiden : Martinus Nijhoff Publishers, 2009. p. 371-392.

HAYES, Margaret F. US Continental Shelf Policy. In : NORDQUIST, Myron H., HEIDAR, Tomas H. & MOORE, John Norton (Eds.). *Changes in the Arctic Environment and the Law of the Sea*. Leiden : Martinus Nijhoff Publishers, 2010, p. 469-476.

HEIDAR, Tomas H. Legal Aspects of Continental Shelf Limits. In : NORDQUIST, Myron H., MOORE Jon Norton & HEIDAR Tomas H. (Eds.). *Legal and Scientific Aspects of Continental Shelf Limits*. Leiden : Martinus Nijhoff Publishers, 2004. p. 19-39.

HOSSAIN, Kamrul. International Governance in the Arctic: The Law of the Sea Convention with a Special Focus on Offshore Oil and Gas. In : ALFREDSSON, Gudmundur, KOIVUROVA, Timo & LOUKACHEVA, Natalia (Eds.). *The Yearbook of Polar Law*. Leiden : Martinus Nijhoff Publishers, 2010. p.139-169.

JABOUR, Julia. Pharand's Arctic Treaty : Would an Antarctic Treaty-Style Model Work in the Arctic?. In : LALONDE, Suzanne & MCDORMAN, Ted L. (Eds.). *International Law and Politics of the Arctic Ocean : Essays in Honor of Donat Pharand*. Leiden : Brill, 2015. p. 87-107.

JOYNER, Christopher C. The Status of Ice in International Law. In : OUDE ELFERINK, Alex G. & ROTHWELL, Donald R. (Eds.). *The Law of the Sea and the Polar Maritime Delimitation and Jurisdiction*. The Hague : Martinus Nijhoff Publishers, 2001, p. 23-48.

PROELSS, Alexander. Raum und Umwelt im Völkerrecht. In : VITZTHUM, W. & PROELSS, A. (Eds.). *Völkerrecht*. 6th ed. Berlin : De Gruyter, 2013. p. 351-438.

RUDOLF, Davorin. The Russian Continental Shelf beyond the 200-mile Zone in the Arctic Ocean. In : VUKAS, Budislav & SOSIC, Trpimir M. (Eds.). *International Law: New Actors, New Concepts – Continuing Dilemmas : Liber Amicorum Božidar Bakotić*. The Hague : Martinus Nijhoff Publishers, 2010. p. 287-300.

SERDY, Andrew. Delineation of the Outer Limits of Canada's Arctic Ocean Continental Shelf and its Delimitation with Neighboring States: Does It Matter Which Comes First?. In : LALONDE, Suzanne & MCDORMAN, Ted L. (Eds.). *International Law and Politics of the Arctic Ocean : Essays in Honor of Donat Pharand*. Leiden : Brill, 2015. p. 415-433.

TUERK, Helmut. The Arctic and the Modern Law of the Sea. In : VAN DYKE, Jon M., et al. (Eds.). *Governing Ocean Resources : New Challenges and Emerging Regimes : A Tribute to Judge Choon-Ho Park*. Leiden : Martinus Nijhoff Publishers, 2013. p. 115-137.

TYLER, Timothy J., et al.. Developing Arctic Hydrocarbon Resources : Delineating and Delimiting Boundaries for Field development in the Arctic. In : NORDQUIST, Myron H., et al. (Eds.). *The Regulation of Continental Shelf Development : Rethinking International Standards*. Leiden : Martinus Nijhoff Publishers, 2013. p. 319-351.

Articles

CASPER, Kristin Noelle. Oil and Gas Development in the Arctic : Softening of Ice Demands Hardening of International Law. *Natural Resources Journal*, 2009, 49, p. 825-882.

GOLITSYN, Vladimir. Continental Shelf Claims in the Arctic Ocean : A Commentary. *The International Journal of Marine and Coastal Law*, 2009, 24, p. 401-408.

HARDERS, Enno J. In quest of an Arctic legal regime : Marine regionalism – a concept of international law evaluated. *Marine Policy*, 1987, 11(4), p. 285-298.

HEAD, Ivan L., Canadian Claims to Territorial Sovereignty in the Arctic Regions. *McGill Law Journal*, 1963, 9(3), p. 200-226.

HOLMES, Stephanie. Breaking the Ice: Emerging Legal Issues in Arctic Sovereignty. *Chicago Journal of International Law*, 2008, 9(1), p. 323-351.

MCDORMAN, Ted L. The Role of the Commission on the Limits of the Continental Shelf: A Technical Body in a Political World. *The International Journal of Marine and Coastal Law*, 2002, 17(3), p. 301-324.

PHARAND, Donat. The Case for an Arctic Region Council and a Treaty Proposal. *Revue générale de droit*, 1992, 23, p. 163-195.

POTTS, Tavis & SCHOFIELD, Clive. Current Legal Developments : The Arctic. *The International Journal of Marine and Coastal Law*, 2008, 23, p. 151-176.

SCREEN, James A. & SIMMONDS, Ian. The central role of diminishing sea ice in recent Arctic temperature amplification. *Nature*, 2010, 464, p. 1334-1337.

TIMTCHENKO, Leonid. The Russian Arctic Sectoral Concept: Past and Present. *ARCTIC*, 1997, 50(1), p. 29-35.

VARHAAG, Melissa. It is Not Too Late: The Need for a Comprehensive International Treaty to Protect the Arctic Environment. *Georgetown International Environmental Law Review*, 2003, 15, p. 555-579.

WEBER, Mel. Defining the Outer Limits of the Continental Shelf across the Arctic Basin: The Russian Submission, States' Rights, Boundary Delimitation and Arctic Regional Cooperation. *The International Journal of Marine and Coastal Law*, 2009, 24, p. 653-681.

YOUNG, Richard. The Geneva Convention on the Continental Shelf: A First Impression. *The American Journal of International Law*, 1958, 52(4), p. 733-738.

International Treaties

Multilateral Treaties

United Nations Convention on the Law of the Sea, adopted on 10 December 1982 in Montego Bay, entered into force on 16 November 1994.

Vienna Convention on the Law of the Treaties, adopted on 23 May 1969 in Vienna, entered into force on 27 January 1980.

1958 Convention on the Continental Shelf, adopted on 29 April 1958 in Geneva, entered into force on 10 June 1964.

Bilateral Treaties

Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, signed on 1 June 1990 in Washington. Available at : <http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/USA-RUS1990MB.PDF>

Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, signed on 15 September 2010 in Murmansk, entered into force on 7 July 2011. Available at : <http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/NOR-RUS2010.PDF>

Treaty concerning the Cession of the Russian Possessions in North America by his Majesty the Emperor of all the Russias to the United States of America, signed on 30 March 1867 in Washington, entered into force on 20 June 1867. Available at : http://avalon.law.yale.edu/19th_century/treatywi.asp

International Declarations

The Ilulissat Declaration, adopted on 28 May 2008 in Ilulissat. Available at : http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf

Declaration on the Establishment of the Arctic Council, adopted on 19 September 1996 in Ottawa. Available at : https://oaarchive.arctic-council.org/bitstream/handle/11374/85/00_ottawa_decl_1996_signed%20%284%29.pdf?sequence=1&isAllowed=y

International Jurisprudence

Arbitration Tribunal, *In the Matter of an Arbitration between Barbados and the Republic of Trinidad and Tobago (Barbados v. Republic of Trinidad & Tobago)*, 11 April 2006. Available at : http://legal.un.org/riaa/cases/vol_XXVII/147-251.pdf

International Court of Justice, *Case Concerning the Continental Shelf (Libya v. Malta)*, 3 June 1985. Available at : <http://www.icj-cij.org/docket/files/68/6415.pdf>

International Court of Justice, *Maritime Delimitation in the Black Sea (Romania v. Ukraine)*, 3 February 2009. Available at : <http://www.icj-cij.org/docket/files/132/14987.pdf>

International Court of Justice, *North Sea Continental Shelf Cases (Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands)*, 20 February 1969. Available at: <http://www.icj-cij.org/docket/files/52/5561.pdf>

International Court of Justice, *Territorial and Maritime Dispute (Nicaragua v. Colombia)*, 19 November 2012. Available at : <http://www.icj-cij.org/docket/files/124/17164.pdf>

Documents of International Organisations

ACIA, *Impacts of A Warming Arctic: Arctic Climate Impact Assessment*. Cambridge : Cambridge University Press, 2004. Available at : <http://www.amap.no/documents/doc/impacts-of-a-warming-arctic-2004/786>

BIRD, Kenneth J. et al.. *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle: U.S. Geological Survey Fact Sheet 2008-3049*, 2008. Available at : <http://pubs.usgs.gov/fs/2008/3049/>

ILA COMMITTEE ON THE OUTER CONTINENTAL SHELF, *Conference Report Berlin: Legal Issues of the Outer Continental Shelf*, 2004. Available at : <http://www.ila-hq.org/en/committees/index.cfm/cid/33>

UN DOC. SPLOS/72. *Decision regarding the date of commencement of the ten-year period for making submissions to the Commission on the Limits of the Continental Shelf set out in article 4 of Annex II to the United Convention on the Law of the Sea*, 2001. Available at : <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N01/387/64/PDF/N0138764.pdf?OpenElement>

National Documents

Debates of the Senate of the Dominion of Canada 1906-7 : 10th Parliament : 3rd Session : Vol.1. Ottawa : S.E. Dawson, 1907. Available at : http://parl.canadiana.ca/view/oop.debates_SOC1003_01/274?r=0&s=3

Submissions to the Commission on the Limits of the Continental Shelf

Canada, *Preliminary Information concerning the outer limits of the continental shelf of Canada in the Arctic Ocean*, 2013. Available at : http://www.un.org/depts/los/clcs_new/submissions_files/preliminary/can_pi_en.pdf

Denmark, *Partial Submission of the Government of the Kingdom of Denmark together with the Government of Greenland to the Commission on the Limits of the Continental Shelf, The Northern Continental Shelf of Greenland: Executive Summary*, 2014. Available at : http://www.un.org/depts/los/clcs_new/submissions_files/dnk76_14/dnk2014_es.pdf

Russian Federation, *Partial Revised Submission of the Russian Federation to the Commission on the Limits of the Continental Shelf in Respect of the Continental Shelf of the Russian Federation in the Arctic: Executive Summary*, 2015. Available at : http://www.un.org/depts/los/clcs_new/submissions_files/rus01_rev15/2015_08_03_Exec_Summary_English.pdf

Websites

BUNDESANSTALT FUER GEOWISSENSCHAFTEN UND ROHSTOFFE, *UNCLOS and Article 76* [online]. 2016. http://www.bgr.bund.de/EN/Themen/Zusammenarbeit/TechnZusammenarb/UNCLOS/UNCL OS_Article76/UNCLOS_Article76_node_en.html (accessed 10.8.2016)

DEPARTMENT OF GEOLOGY SAN JOSE STATE UNIVERSITY, *Case Study: Mapping the Arctic: 8. The Scientific Meeting* [online]. 2010. http://oceansjsu.com/images/GS1B/Arctic/formula_lines-3D_800.jpg (accessed 10.8.2016)

DIVISION FOR OCEAN AFFAIRES AND THE LAW OF THE SEA, *Chronological lists of ratifications of, accessions and successions to the Convention and the related Agreements* [online]. 2016. http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm (accessed 8.8.2016)

DIVISION FOR OCEAN AFFAIRES AND THE LAW OF THE SEA, *Declarations and statements* [online]. 2013. http://www.un.org/depts/los/convention_agreements/convention_declarations.htm#Russian%20Federation%20Upon%20signature (accessed 9.8.2016)

DIVISION FOR OCEAN AFFAIRES AND THE LAW OF THE SEA, *Submissions, through the Secretary-General of the United Nations, to the Commission on the Limits of the Continental Shelf, pursuant to article 76, paragraph 8, of the United Nations Convention on the Law of the Sea of 10 December 1982* [online]. 2016. http://www.un.org/Depts/los/clcs_new/commission_submissions.htm (accessed 9.8.2016)

EUROPEAN SPACE AGENCY, *Satellites Witness Lowest Arctic Ice Coverage in History* [online]. 2007. http://www.esa.int/Our_Activities/Observing_the_Earth/Envisat/Satellites_witness_lowest_Arctic_ice_coverage_in_history (accessed 3.8.2016)

IBRU: CENTER FOR BORDER RESEARCH, *Maritime jurisdiction and boundaries in the Arctic region* [online]. 2015. <https://www.dur.ac.uk/ibru/resources/arctic/> (accessed 9.8.2016)

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, *NOAA Joins Other U.S. Agencies and Canada to Survey the Arctic Continental Shelf* [online]. 2009. <http://www.noaanews.noaa.gov/stories2009/images/arctic3.jpg> (accessed 10.8.2016)

NORWAY MINISTRY OF FOREIGN AFFAIRS, *The Loophole and the Banana Hole* [online]. 2013. <https://www.barentswatch.no/en/Tema/Law-of-the-sea/Sea-borders/The-Loophole-and-the-Banana-Hole/> (accessed 7.8.2016)

KING, Hobert, *Arctic Ocean Seafloor Features Map : Major Basins, Ridges, Shelves and Bathymetry* [online]. 2016. <http://geology.com/articles/arctic-ocean-features/> (accessed 10.8.2016)