

Determination of the Outer Continental Shelf Limits and the Role of the Commission on the Limits of the Continental Shelf

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Outline

Determination of the Outer Continental Shelf Limits and the Role of the Commission on the Limits of the Continental Shelf

1. UNCLOS 1982:

- Bodies established and their function (ITLOS, ISA, CLCS)

- Maritime zonation

- Art 76 and other important provisions regarding the Cont'l Shelf

- Submission procedures

- Current status

2. Situation in the Arctic Ocean

- Russian claim

- The other stake-holders

- Scenarios, ridge problem

- Ilulissat declaration

- Australian submission and related CLCS recommendation

- Possible consequences and open questions

3. Conclusions

- Economy, Ecology, Science

United Nations Convention on the Law of the Sea (UNCLOS) Adopted in 1982

One of its basic aims is to guarantee “the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment”

The Convention came into force on 16 November 1994.

Current status: 156 states have signed (USA is prepared to do so).

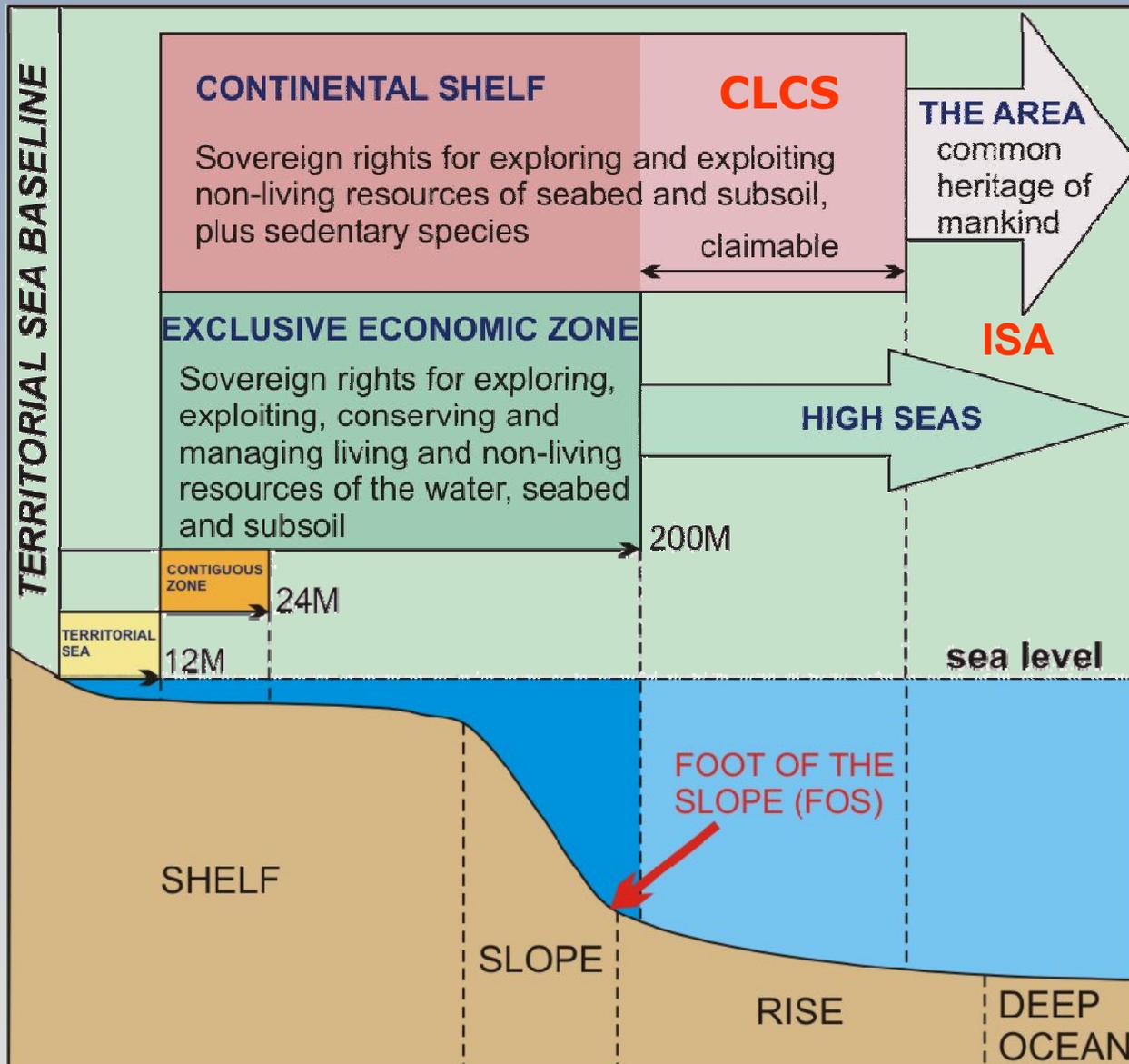
Three bodies are established by the convention:

- Commission on the Limits of the Continental Shelf (CLCS)
- International Seabed Authority (ISA)
- International Tribunal for the Law of the Sea (ITLOS)

Most coastal states have to document the status of their submission and their future procedure by May 12, 2009 to UN-CLCS

Basic reference: Scientific and Technical Guidelines issued by the CLCS

Maritime Zonation According to UNCLOS



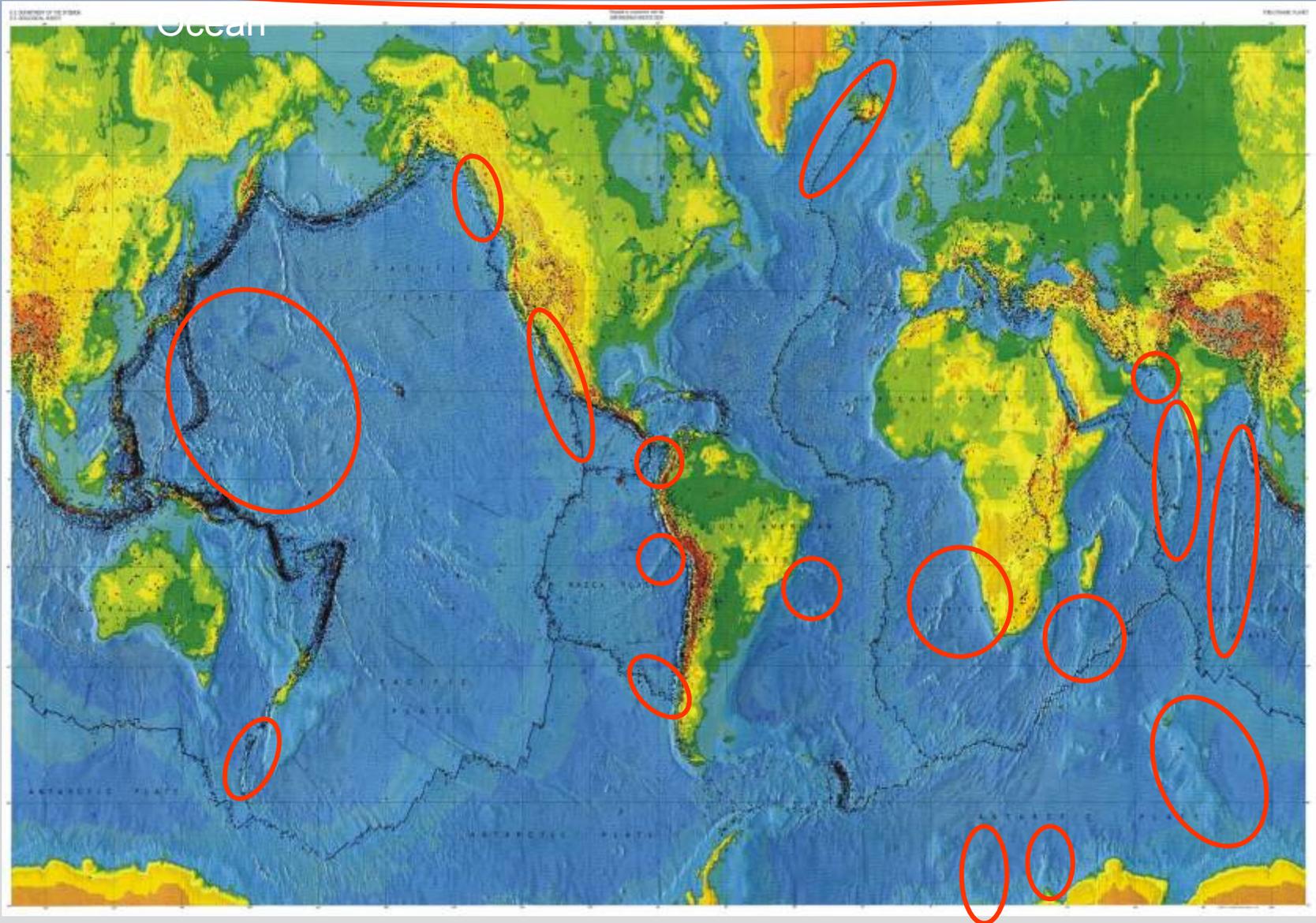
UNCLOS

Part VI Continental Shelf

Article 76

3. The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the seabed and subsoil of the shelf, the slope and the rise. **It does not include the deep ocean floor with its oceanic ridges** or the subsoil thereof.

Lomonossov and Alpha-Mendeleviev Ridges in the Arctic



Selection of areas critical with respect to the submarine ridge issue

UNCLOS

Part VI Continental Shelf

Article 76

4. (a) For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either:

(i) a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the **thickness of sedimentary rocks** is at least 1 per cent of the shortest distance from such point to the foot of the continental slope; or

(ii) a line delineated in accordance with paragraph 7 by reference to fixed points not more than **60 nautical miles from the foot of the continental slope**.

(b) **In the absence of evidence to the contrary**, the foot of the continental slope shall be determined as the point of **maximum change in the gradient at its base**.

UNCLOS

Part VI Continental Shelf

Article 76

5. The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a)(i) and (ii), either **shall not exceed 350 nautical miles from the baselines** from which the breadth of the territorial sea is measured **or shall not exceed 100 nautical miles from the 2,500 metre isobath**, which is a line connecting the depth of 2,500 metres.

UNCLOS

Part VI Continental Shelf

Article 76

6. Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs.

UNCLOS Article 76 (on CLCS)

8. Information on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured shall be submitted by the coastal State to the **Commission on the Limits of the Continental Shelf** set up under Annex II on the basis of equitable geographical representation. The Commission shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf. The limits of the shelf established by a coastal State on the basis of these **recommendations shall be final and binding.**

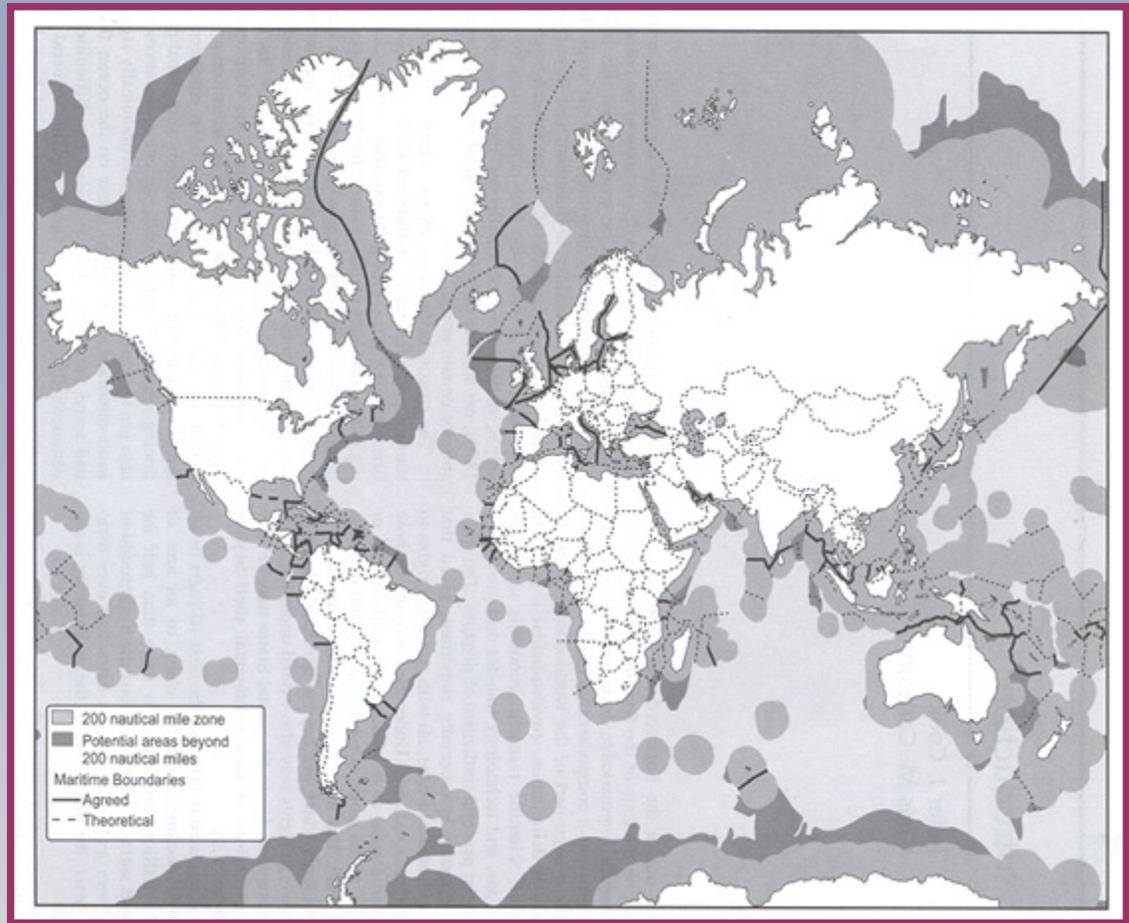
ANNEX II. COMMISSION ON THE LIMITS OF THE CONTINENTAL SHELF

Article 3

1. The functions of the Commission shall be:

- (a) to consider the data and other material submitted by coastal States concerning the outer limits of the continental shelf in areas where those limits extend beyond 200 nautical miles, and to make recommendations in accordance with article 76 and the Statement of Understanding adopted on 29 August 1980 by the Third United Nations Conference on the Law of the Sea;
- (b) to provide scientific and technical advice, if requested by the coastal State concerned during the preparation of the data referred to in subparagraph (a).

Legal Extension of the Limits of the Continental Shelves



- Under the Convention sovereign rights of some 140 coastal States cover ~ 60 Mio. km² (or 20% of the world oceans) within the 200 M limit.
- In the very next future, coastal States will lay claim to a surplus area of ~ 15 Mio. km².

UNCLOS

Part VI Continental Shelf

Article 82

Payments and contributions with respect to the exploitation of the continental shelf beyond 200 nautical miles

1. The coastal State shall make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.
2.(modalities on gradual increase of fee **up to 7% of gain**)
3. A developing State which is a **net importer** of a mineral resource produced from its continental shelf **is exempt from making such payments** or contributions in respect of that mineral resource.
4. The payments or contributions shall be made through the Authority, which shall distribute them to States Parties to this Convention, on the basis of equitable sharing criteria, **taking into account the interests and needs of developing States, particularly the least developed and the land-locked among them.**

International Seabed Area

UNCLOS - PART I (INTRODUCTION)

Article 1

Use of terms and scope

1. For the purposes of this Convention:

(1) "Area" means the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction;

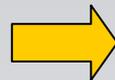
UNCLOS Bodies

- International Tribunal for the Law of the Sea (ITLOS)
- Commission on the Limits of the Continental Shelf (CLCS)
- and:



International Seabed Authority (ISA)
Kingston, Jamaica

Responsibility: Seabed of “The Area“



Controlling activities in “The Area“



Defining regulations for its usage

PART XI. SECTION 2. PRINCIPLES GOVERNING THE AREA

Article 136

Common heritage of mankind

The Area and its resources are the **common heritage of mankind**.

Article 140

Benefit of mankind

1. **Activities in the Area shall**, as specifically provided for in this Part, **be carried out for the benefit of mankind** as a whole, irrespective of the geographical location of States, whether coastal or land-locked, and **taking into particular consideration the interests and needs of developing States and of peoples who have not attained full independence or other self-governing status** recognized by the United Nations in accordance with General Assembly resolution 1514 (XV) and other relevant General Assembly resolutions.
2. The Authority shall provide for the **equitable sharing of financial and other economic benefits derived from activities in the Area** through any appropriate mechanism, on a non-discriminatory basis, **in accordance with article 160, paragraph 2(f)(i)**.

PART XI, Section 4

Article 160

2. In addition, the powers and functions of the Assembly shall be:

.....

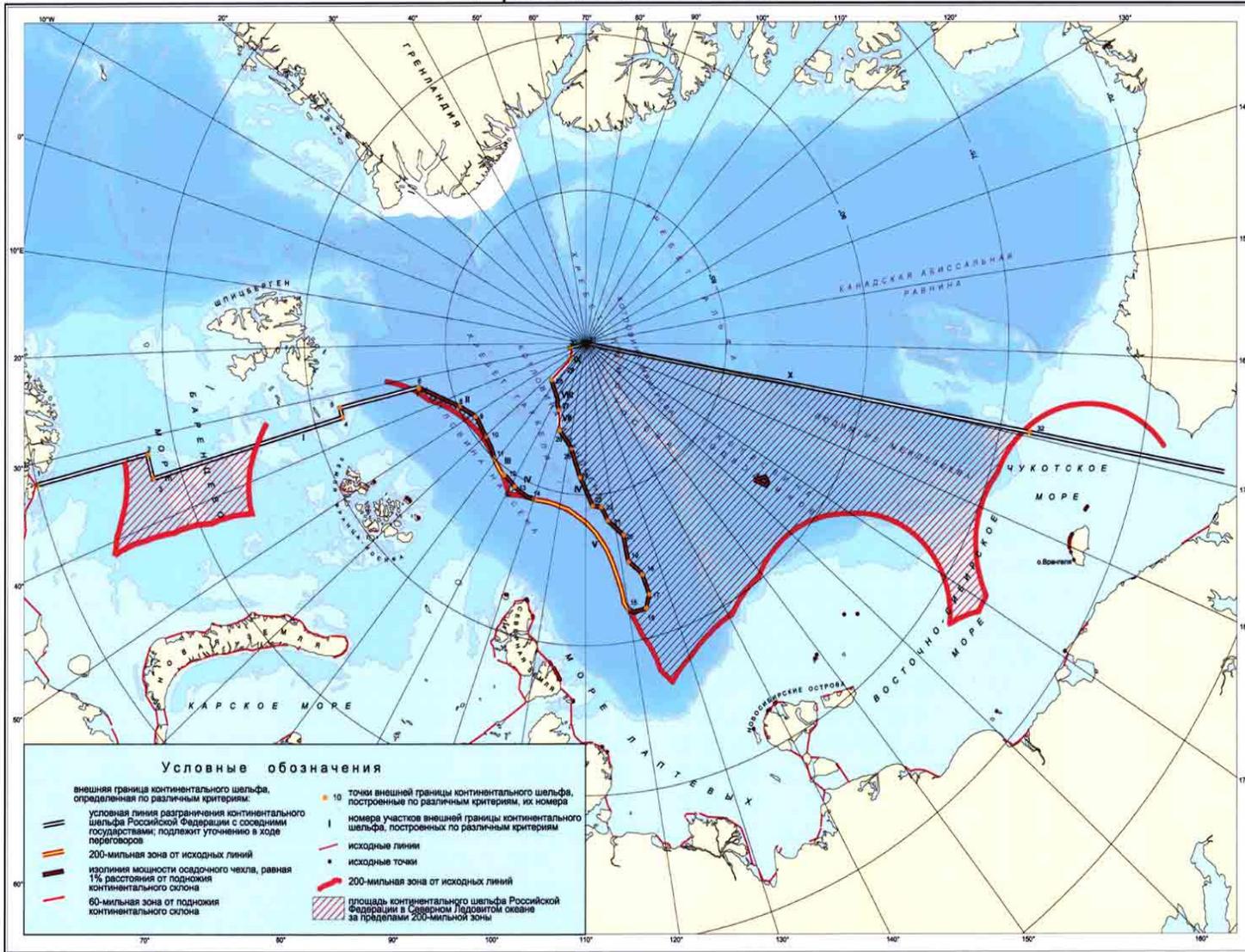
(f) (i) to consider and approve, upon the recommendation of the Council, the rules, regulations and procedures **on the equitable sharing of financial and other economic benefits derived from activities in the Area and the payments and contributions made pursuant to article 82**, taking into particular consideration the interests and needs of developing States and peoples who have not attained full independence or other self-governing status. If the Assembly does not approve the recommendations of the Council, the Assembly shall return them to the Council for reconsideration in the light of the views expressed by the Assembly;

ECS Submissions Made (present status)

1. **Russia (2001); the only submission in the Arctic Sea, so far**
2. Brazil (2004)
3. Australia (2004)
4. Ireland (2005)
5. New Zealand (2006)
6. France, Ireland, Spain, UK & Northern Ireland (2006)
7. Norway (2006)
8. France (2007)
9. Mexico (2007)
10. Barbados (2008)
11. UK & Northern Ireland (2008)
12. Indonesia (2008)

Some 65 submissions expected, in total

Площадь континентального шельфа Российской Федерации в Северном Ледовитом океане за пределами 200-мильной зоны



Масштаб 1 : 10 000 000

Map 2

On 20 December 2001, **the Russian Federation** made a submission

communications were received from Canada, Denmark, Japan, Norway and the United States of America

Problem: Lomonossov and Alpha-Mendelev Ridges as submarine elevation

CLCS recommendation on Central Arctic Ocean: Revised submission required

Russia and the Other Arctic Stake-holders



1 The median line method Proponents: Canada, Denmark, United Nations

The sea would be divided into areas proportional to the amount of coastline a country has.

The United States could claim this area.

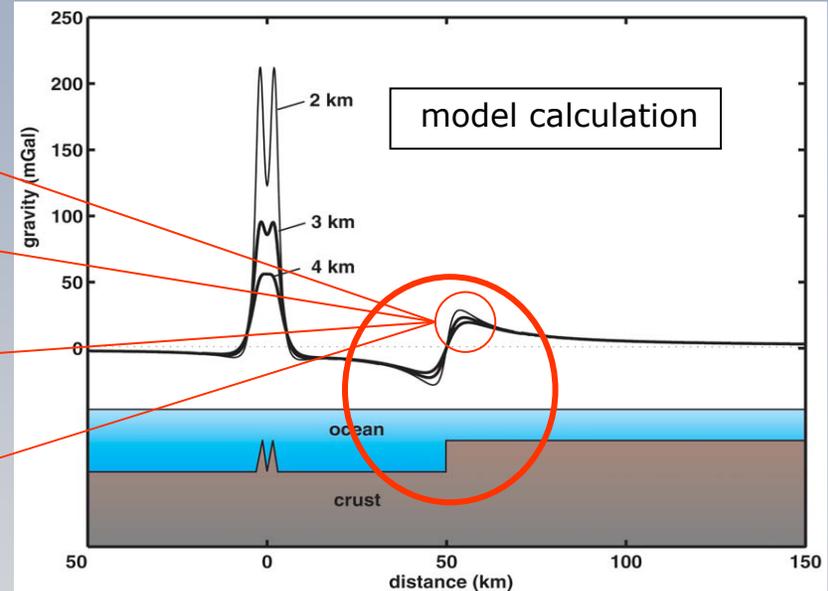
A treaty, the Law of the Sea, dictates that countries cannot claim the areas shaded in yellow because the areas lie too far from coasts or continental shelves.



Source: The NY Times

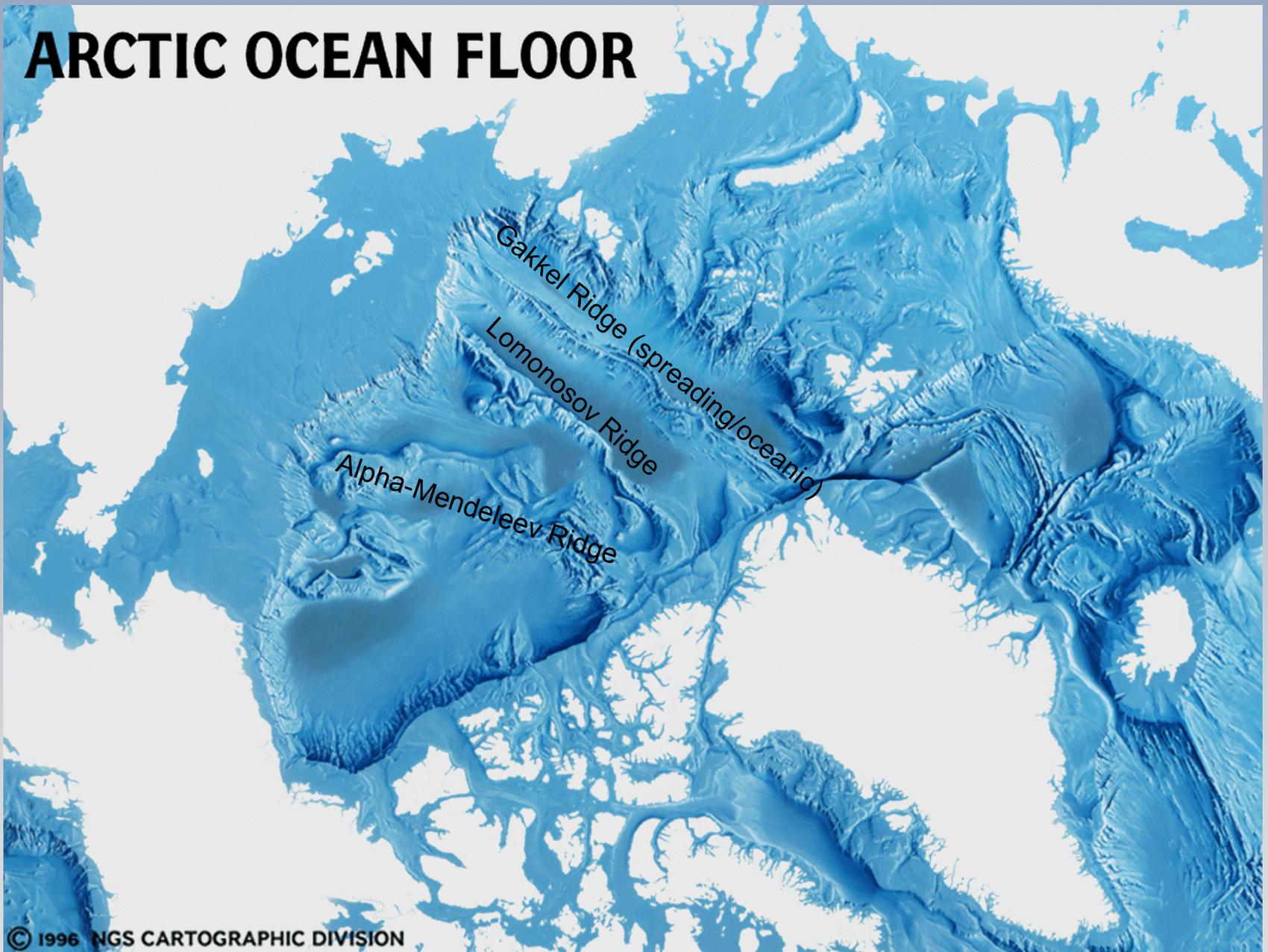
Gravity Edge Effect

indicator for continent-ocean boundary

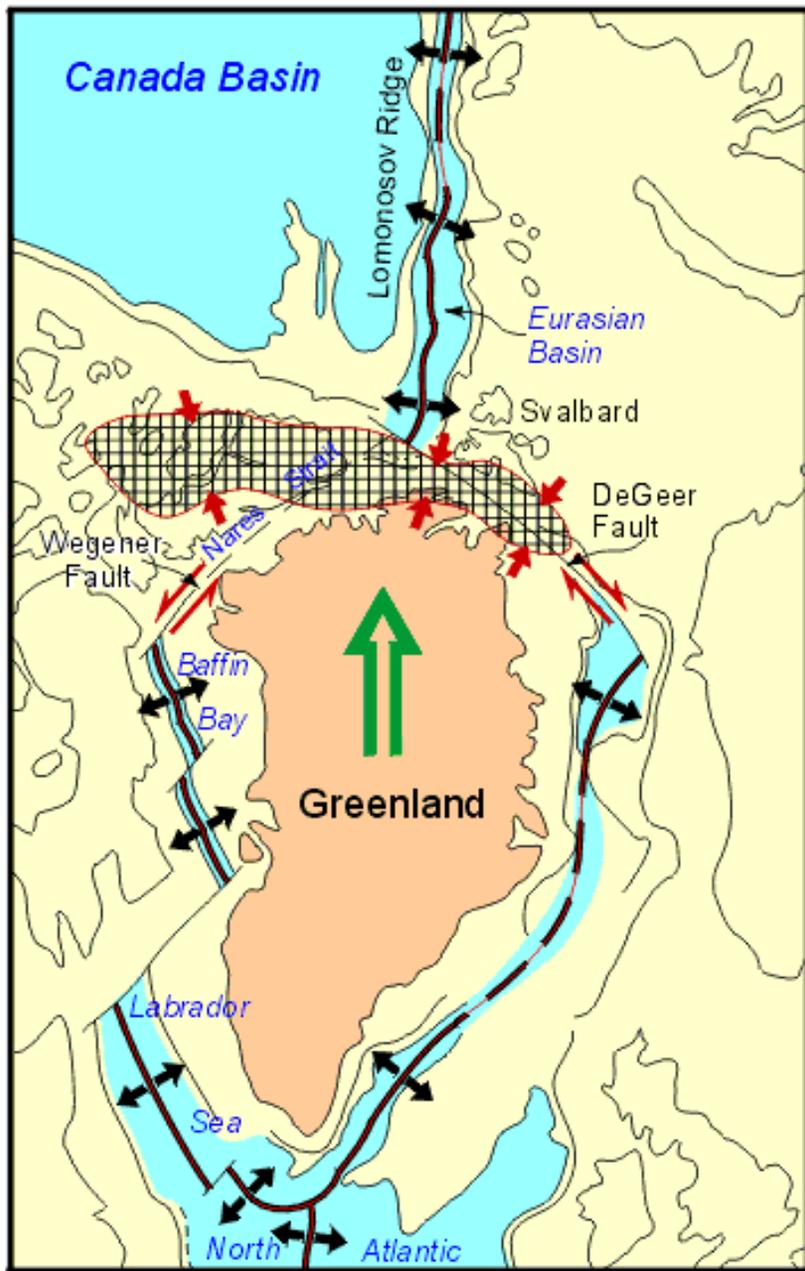


Grantz, 2004

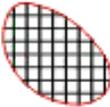
ARCTIC OCEAN FLOOR



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Reconstruction during anomaly 21 (50 Ma)

-  Continental crust
-  Oceanic crust
-  West Spitsbergen and Eureka Fold Belt
-  Active sea-floor spreading
-  Strike-slip motion
-  Compression
-  1.000 m Isobath
-  2.000 m Isobath

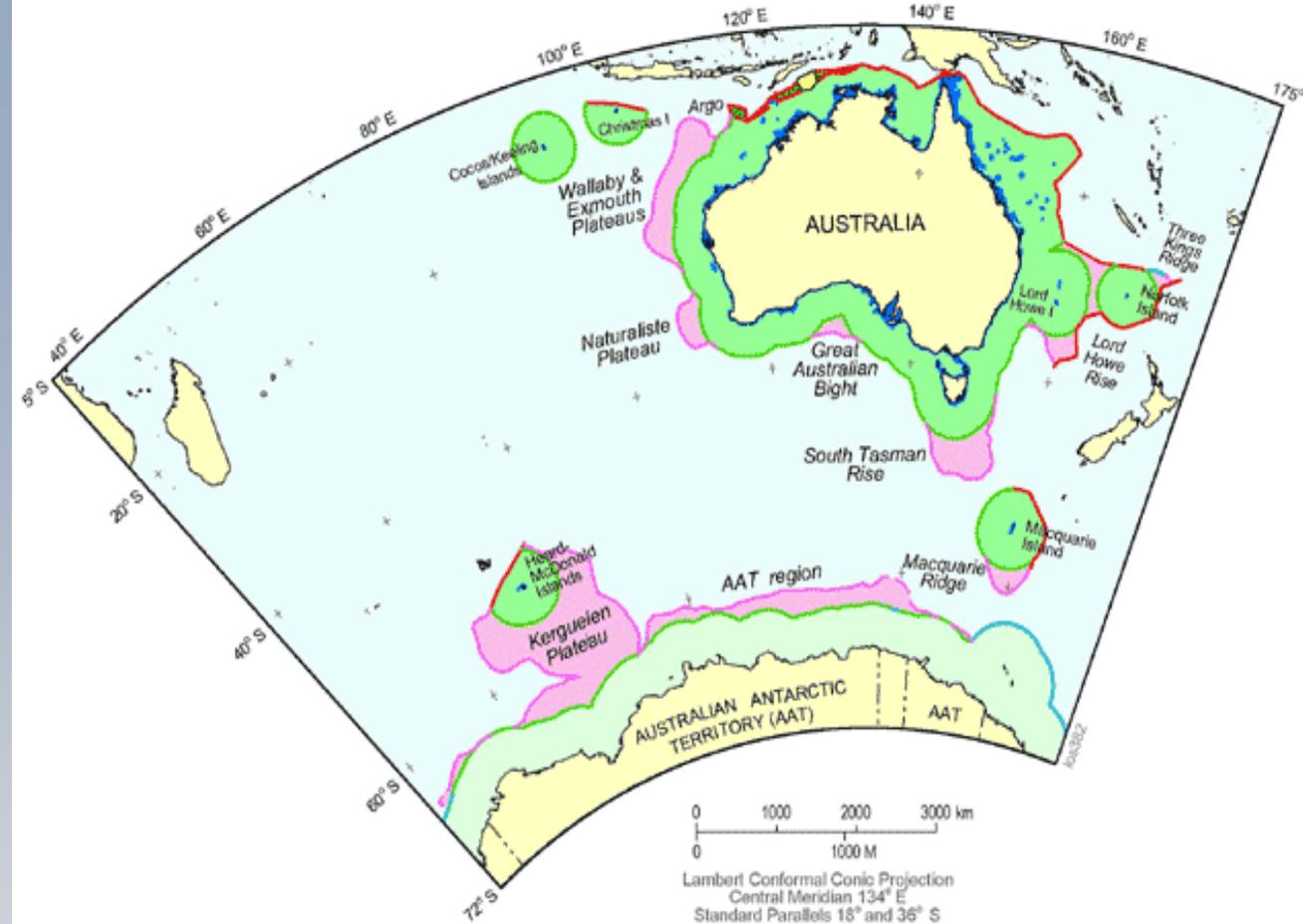
Position of the Lomonosov Ridge, 50 Ma ago

„...LR is not a solid continental sliver split off the Eurasian shelves. ...the ridge is broken and segmented along ... strike direction. (Jokat, 2005)“

On 15 November 2004, Australia made a submission. It is declared a partial submission due to the provisions of the Antarctic Treaty.

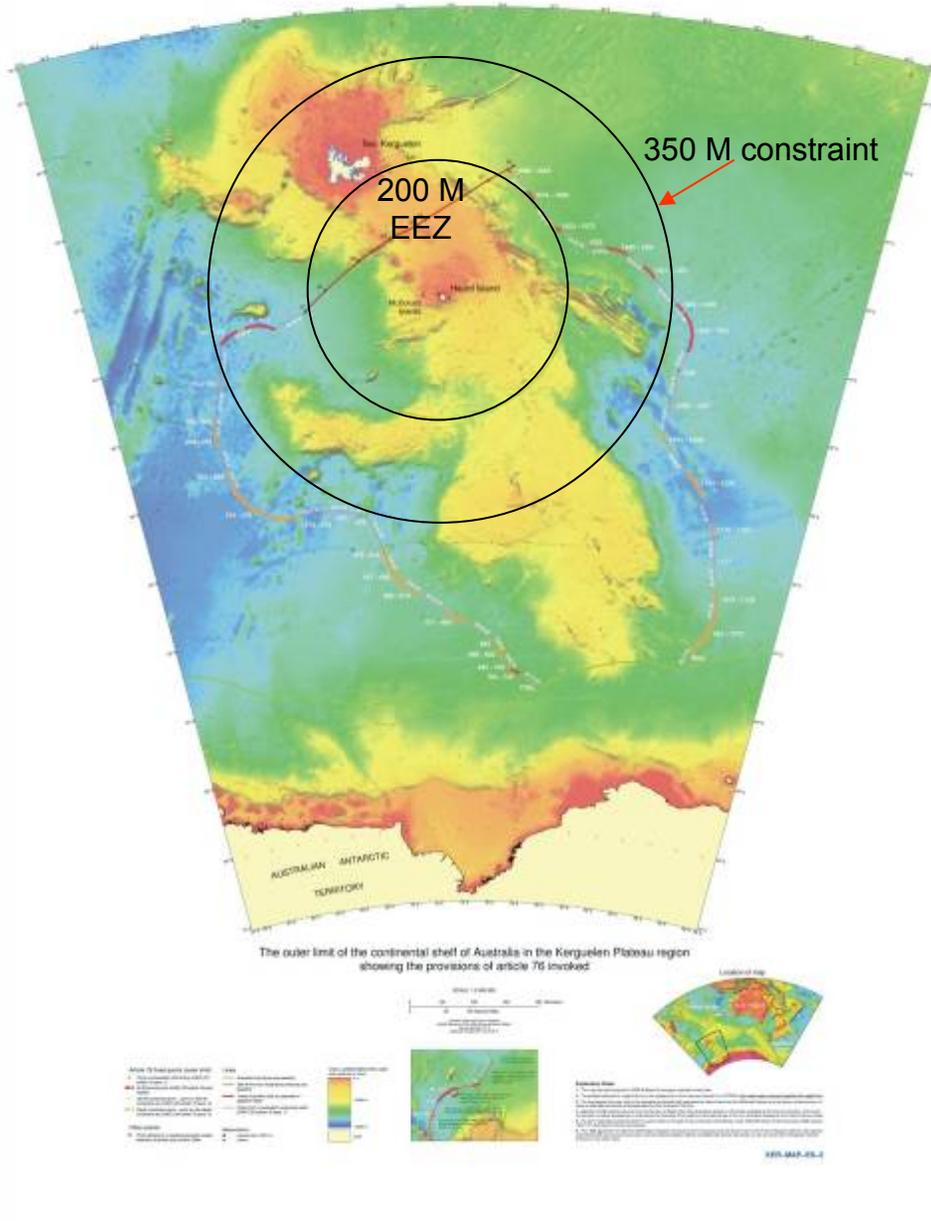
The Exclusive Economic Zone (EEZ) comprises 10 million square kilometres, considerably larger than the Australian continent (7.7 Mio square km). Claimed extension is more than three Mio square km.

Communications regarding the Antarctica portion were received from USA, Russ. Fed., Japan, Timor Leste, France, The Netherlands, Germany and India.



- | | | | | | |
|--|--|---|--|---|---|
|  | Territorial sea and internal waters |  | Area of Australia's extended continental shelf (i.e. shelf beyond 200 M) as submitted on 15 Nov 2004 to the UN Commission on the Limits of the Continental Shelf |  | 200 M line off Antarctica - in areas of potential delimitation |
|  | Areas where Australia exercises water column, seabed and subsoil jurisdiction |  | Joint Petroleum Development Area as defined in the Timor Sea Treaty between Australia and Timor-Leste |  | Treaty boundary with an opposite or adjacent State |
|  | Areas where Australia exercises seabed and subsoil jurisdiction only, or fisheries jurisdiction only, as defined in certain treaties |  | 200 M line from Australia's territorial sea baseline |  | Outer limit of extended continental shelf in areas of potential delimitation off Antarctica |
|  | Areas that lie within 200 M of Antarctica (including offshore islands) |  | 200 M line off an opposite or adjacent State | | |
- M nautical mile (1852m)

Australia's exclusive economic zone (AEEZ) consists of all of area 1, and parts of areas 2 and 3



Kerguelen region extension (McDonald and Heard Islands)

certain analogies

maximum scenario 1 Mio square km,
minimum scenario 250 K square km,
intermediate scenario 500 K sq. km.

Problems:

Quite different properties and formation ages of Northern, Central and Southern Kerguelen Plateau, and Elan Bank

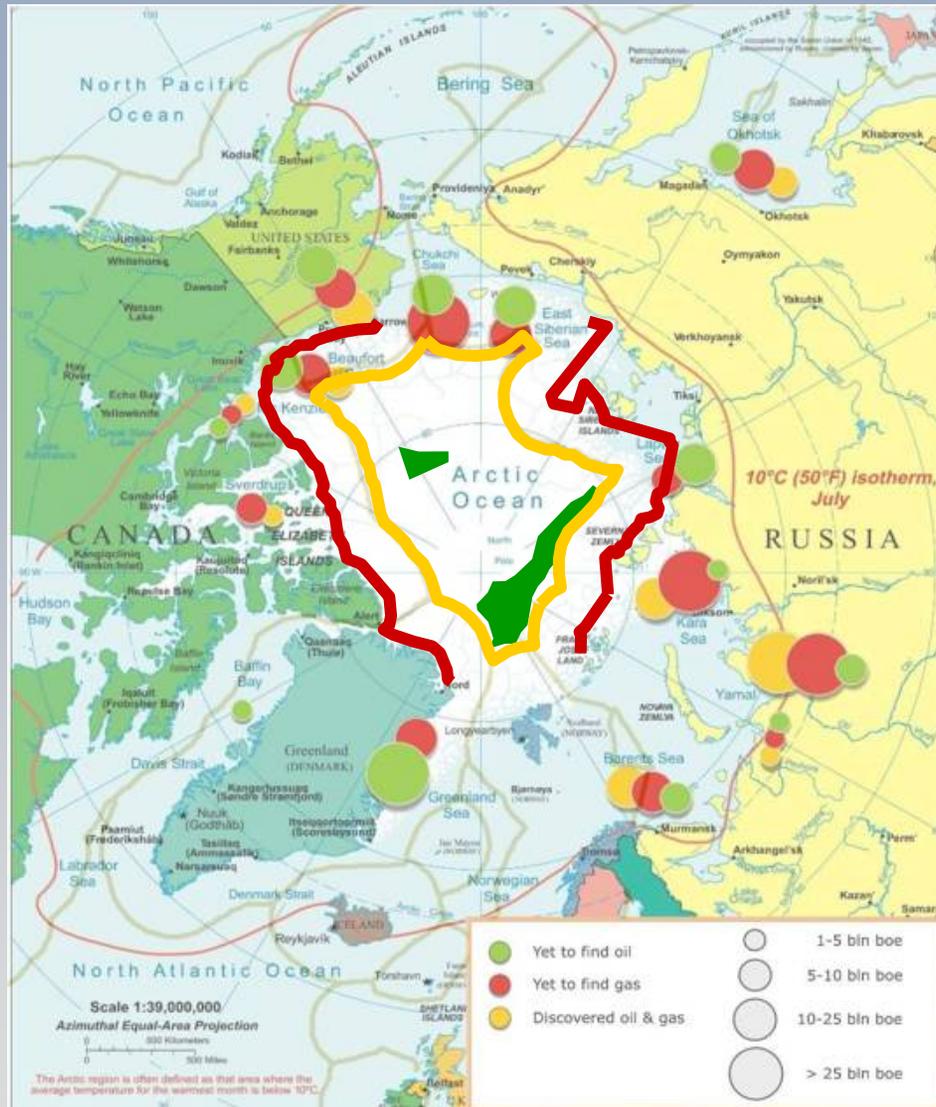
Moreover: Elan Bank is clearly separated from the rest by a bathymetric deep. **FOS problem.**

cf also USGS Open-File Report 2006-1073

Crucial Differentiation with strong consequences

- **Oceanic Ridges**
- **Submarine Ridges**
- **Submarine elevations that are natural components of the continental margin**

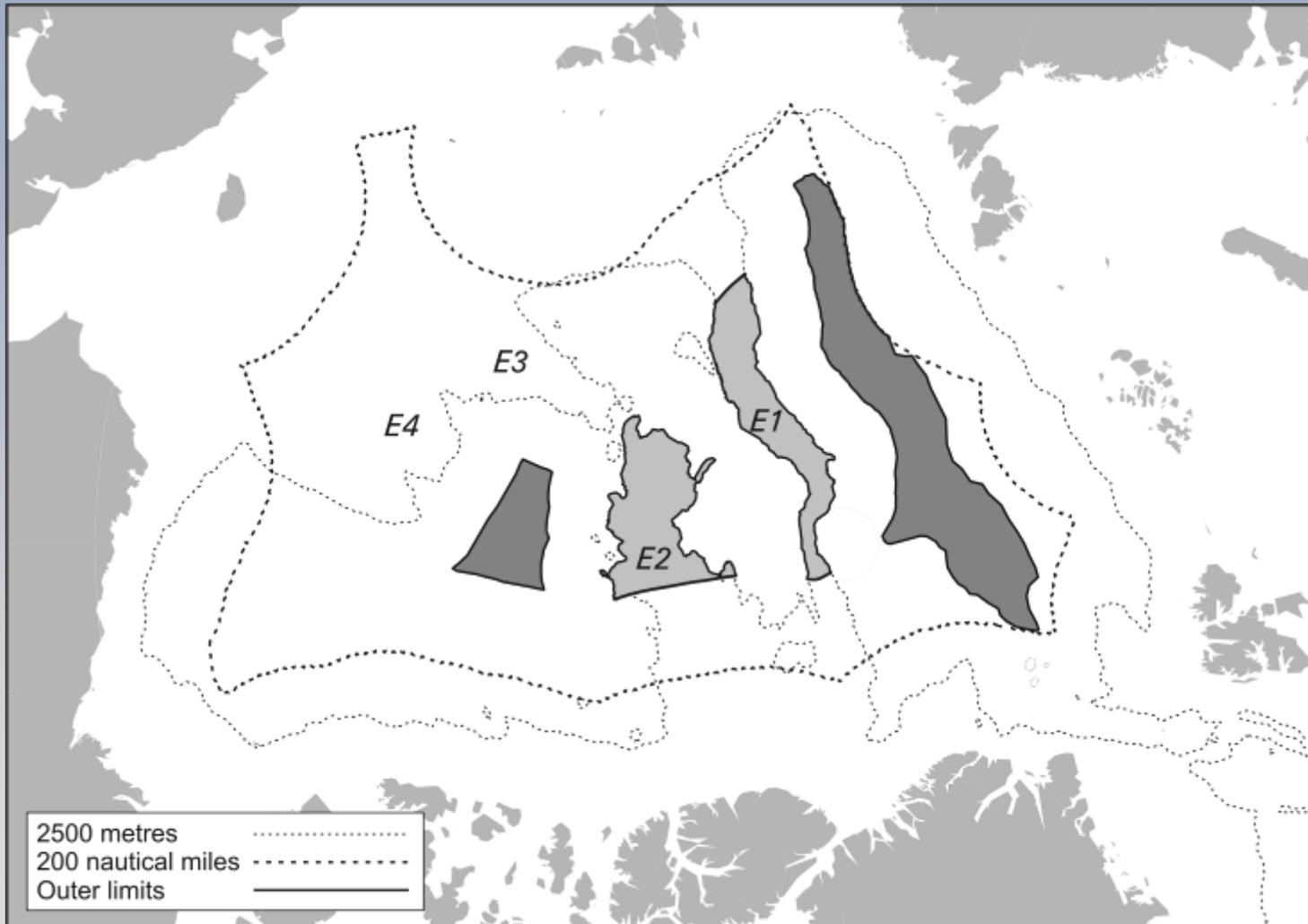
Extreme Case of Extended CS



Modification of McNab (2004) on the basis of submarine ridge argumentation creates two more donuts (350 M constraint applies)

Sources: Shell & modified USGS data; R. Macnab, 2001

EFFECT OF CLCS CONCERNS: REVISED OUTER LIMITS CREATE TWO NEW 'DONUT HOLES'?



Macnab, 2004

Hydrocarbon Potential of the Arctic



All discovered and YtF deposits are situated in the EEZ

Discovered Oil and Gas ●

Yet to Find ● ●

Oil Gas

Source: Shell & modified USGS data

Conclusions

- The majority of the arctic marine natural resources known so far or assessed, are located within the respective EEZ. Possible exceptions might be the mineral resources. However, the economic benefits in contrast to other known deposits are quite questionable. For the next decades no major commercial revenue seems feasible from the deep ocean.
- A valid legal frame for the Arctic ocean is established by UNCLOS. All arctic coastal states expressly comply with it (Ilulissat Declaration).
- The role of the ridges in the Arctic Ocean is still highly controversial with respect to the Art. 76 provisions of UNCLOS.
- Science has received a strong impetus, already. But, much more reliable knowledge still has to be generated by comprehensive and reproduceable data acquisition. This is very difficult and expensive in the arctic region.

Conclusions (ctd.)

- These scientific results are of utmost importance with respect to the implementation of UNCLOS. The outcome will form a precedent for further treatment of “ridge-like” submarine units.
- Arctica has a very sensitive environment. Careful measures have to be taken by all players in order to cope with the trade-off between economy and ecology.
- Having the spirit of UNCLOS in mind, equity and wise use of resources and environment for the benefit of mankind should always be promoted and should form the basis of all decisions with that far reaching character.



FINIS

Thank you for your attention