

**OPPORTUNITIES AND CHALLENGES IN THE GOVERNANCE OF THE PLANET OCEAN:**

**THE CANADA-US BOUNDARY DISPUTE IN THE BEAUFORT SEA:**

**EMPLOYING AN INTEGRATED LAW-AND-SCIENCE APPROACH TO  
RESOLVING MARITIME BOUNDARY DISPUTES IN ARCTIC WATERS**

**Dr. Pieter BEKKER, DUTCH**

**Founding Director, Dundee Ocean and Lake Frontiers Institute and Neutrals (DOLFIN),  
Professor and Chair in International Law, University of Dundee, UK; Partner, CMS UK  
p.bekker@dundee.ac.uk**

**Mr. Robert VAN DE POLL, CANADIAN**

**Global Director Law of the Sea, Fugro Canada  
Honorary Lecturer and Geology Director, DOLFIN, University of Dundee, UK  
rvandepoll@fugro.com**

**10<sup>th</sup> ABLOS Conference 2019**

**“OPPORTUNITIES AND CHALLENGES IN THE GOVERNANCE OF THE PLANET OCEAN”**

**International Hydrographic Bureau, Monaco**

**October 8 - 9, 2019**

# Disclaimer

- Every effort has been made to ensure the accuracy of the graphics/figures contained in this presentation and the accompanying paper.
- Nevertheless, these are necessarily:
  - Illustrative
  - Indicative
  - Independent
  - Preliminary
- It is requested that the figures contained in this paper are not quoted without the permission of the authors



BRILL  
NIJHOFF

THE INTERNATIONAL JOURNAL OF  
MARINE AND COASTAL LAW 34 (2019) 1–38



brill.com/estu

## Unlocking the Arctic's Resources Equitably: Using a Law-and-Science Approach to Fix the Beaufort Sea Boundary

*Pieter Bekker*

Chair in International Law, Centre for Energy, Petroleum and Mineral Law  
and Policy, University of Dundee, United Kingdom  
[p.bekker@dundee.ac.uk](mailto:p.bekker@dundee.ac.uk)

*Robert van de Poll*

Global Director Law of the Sea, Fugro, Canada  
[rvandepoll@fugro.com](mailto:rvandepoll@fugro.com)

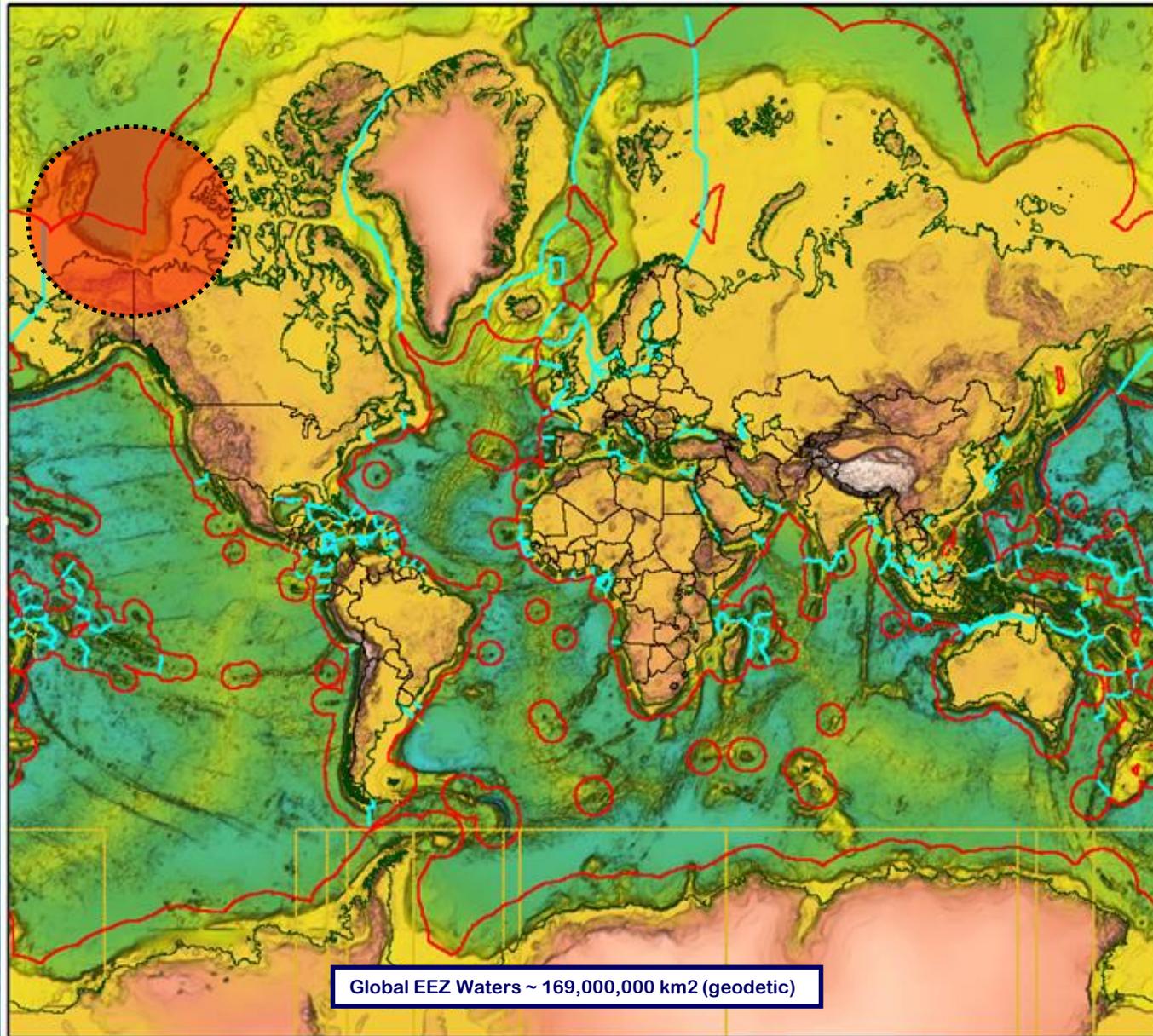
### Abstract

This article analyses the unresolved maritime boundary situated in Arctic waters in the Beaufort Sea, between Canada and the United States through an integrated law-and-science approach incorporating new imagery technology. Resolving the Canada-United States disagreement over the Beaufort Sea boundary based on modern geo-scientific technology and the three-step delimitation methodology developed in the jurisprudence of international courts and tribunals could serve as a catalyst for the peaceful and equitable resolution of all other unresolved boundaries in the Arctic Ocean. This includes the boundaries involving Russia, which can claim more than 40 per cent of the Arctic shoreline. Given that the United States is not a party to the United Nations Convention on the Law of the Sea, this article focuses on mechanisms available to Canada and the United States under general international law and by applying 'best law' and 'best science'.

### Keywords

Arctic Ocean – Beaufort Sea – equidistance – maritime boundaries – United Nations Convention on the Law of the Sea (LOSC)

# LOS: A Global Marine Mapping Application that Impacts 162 Countries in the World



**Law of the Sea Maritime Boundaries around the World (October 2019)?**

**What is the Status of Maritime Boundaries around the World Today?**

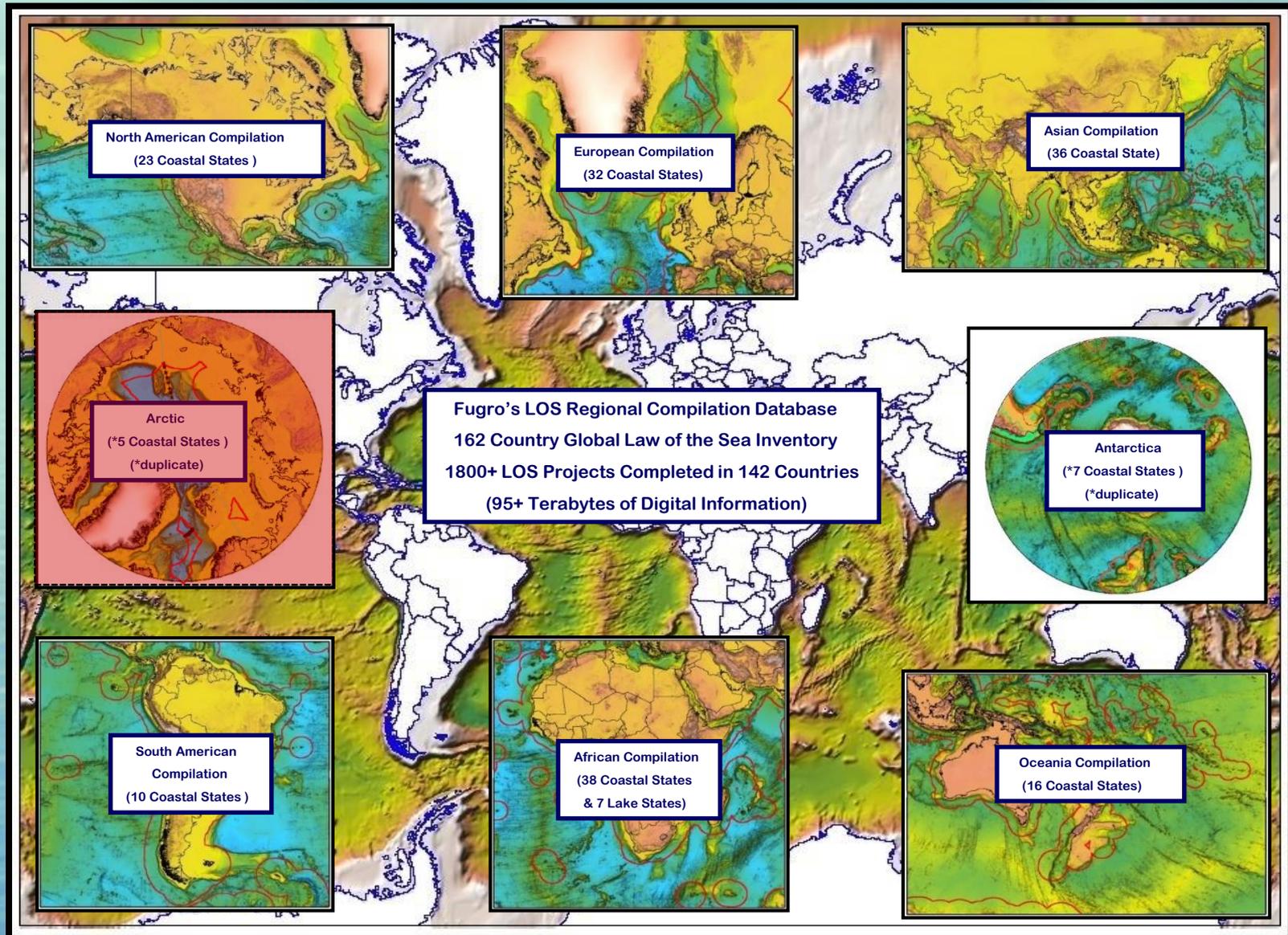
**There are approximately \*501 EEZ Maritime Boundaries in the World**

**250/501 of these are Signed and/or In Force (49.9% of the World) ....**

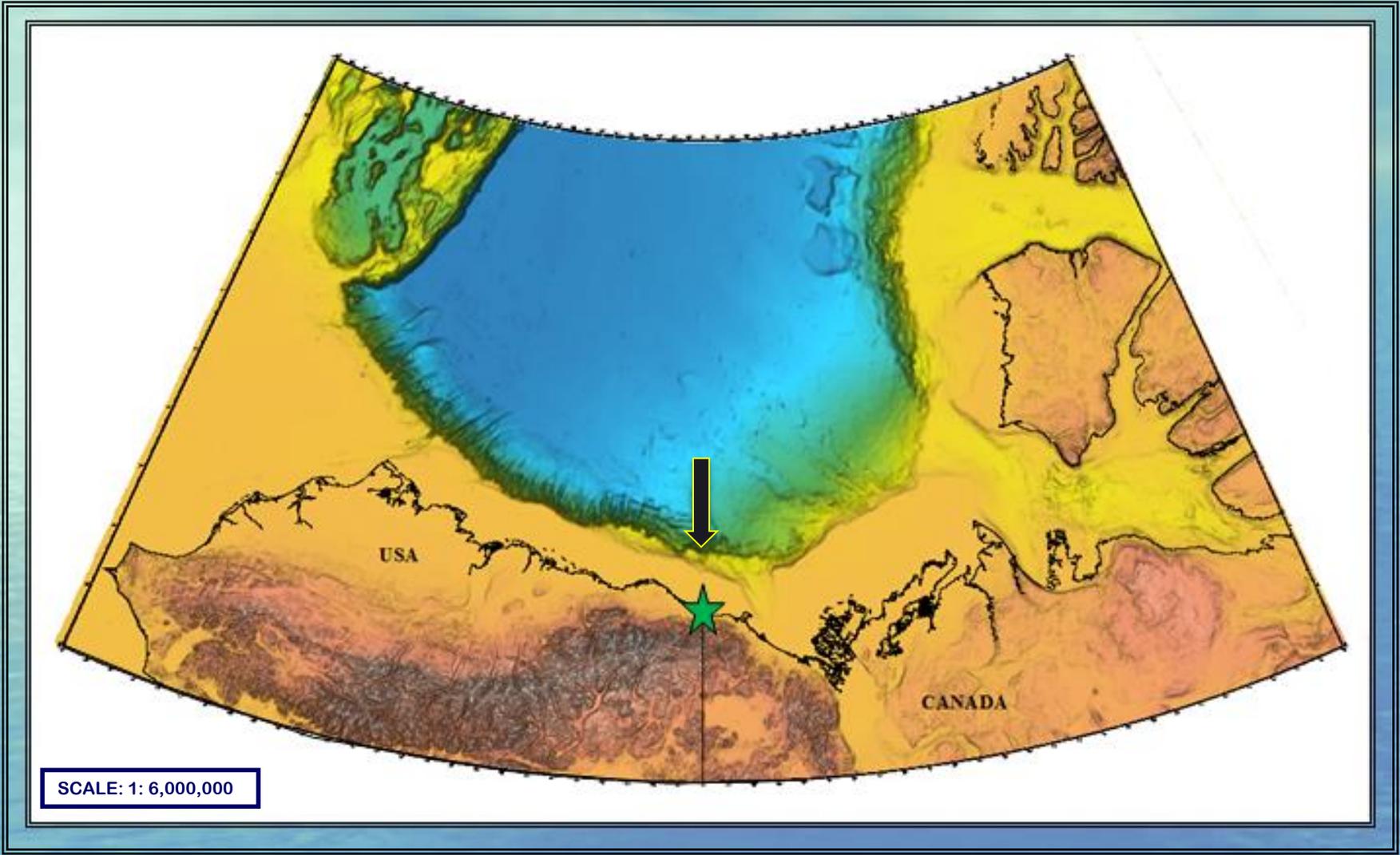
**This means 251/501 (50.1%) of all the World's offshore Maritime Boundaries remains "Un-resolved" or "In-Dispute" (within the EEZ's)....**

**So Today ..... 1 of every 2 Maritime Frontier Boundaries are disputed .....**

# A Global Mapping Application needs A Global Mapping Database (14 Years and 95+ TB of Data)



# The USA vs Canada disputed Maritime Boundary: The Arctic Area of Interest (AOI)



## The USA vs Canada disputed Maritime Boundary: Datasets used in the Desktop Study (LOSDTS)

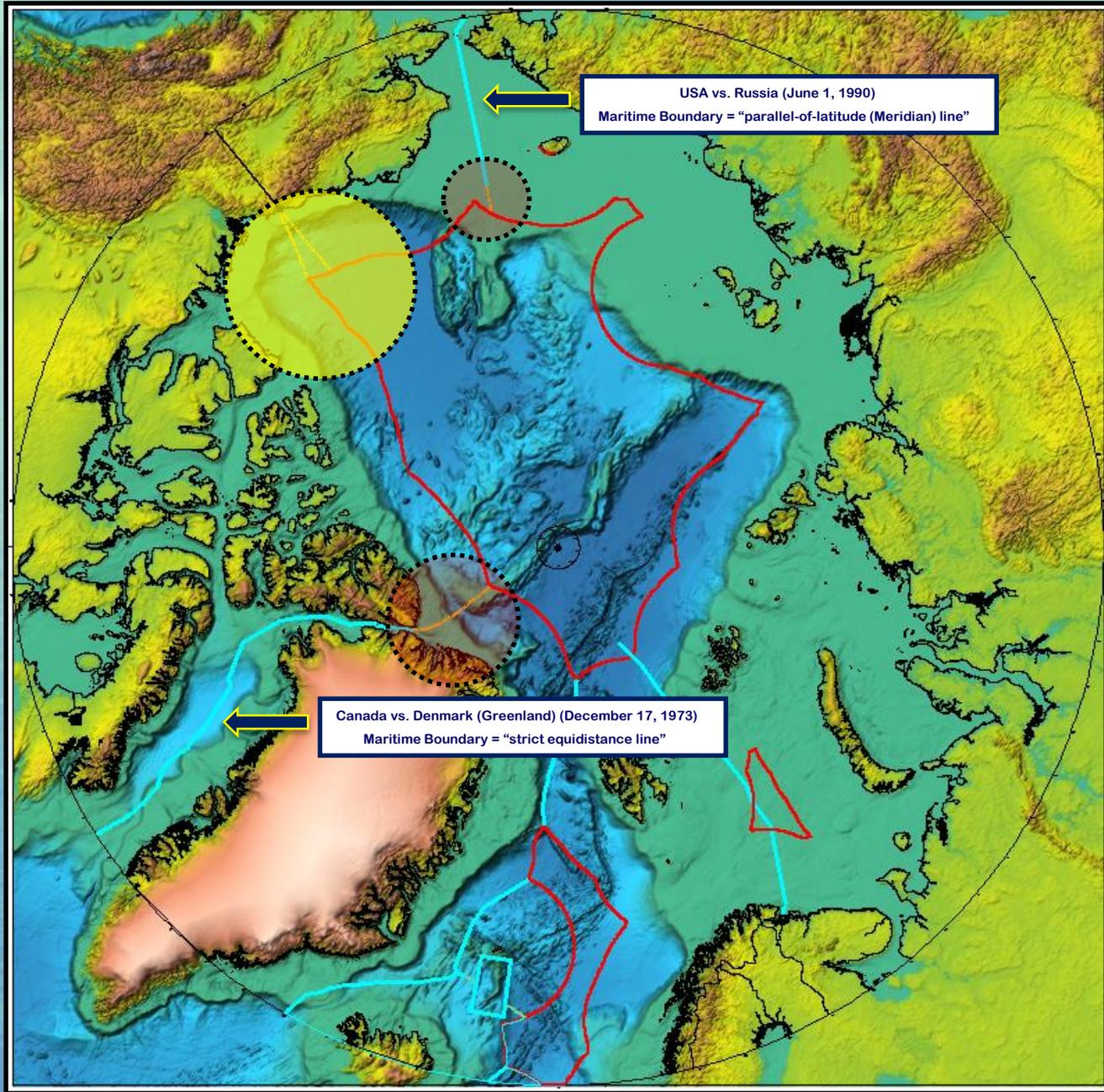
<b>A.</b>	<b>Coastlines</b>
i.	World Vector Shoreline (1994) <sup>10</sup> (positionally accurate +/- 1000 meters and worse in Arctic)
ii.	World Vector Shoreline II (2004) <sup>11</sup> (positionally accurate +/- 100 meters and worse in Arctic)
<b>B.</b>	<b>Coastal States' "Territorial Sea Baseline Model" ("TSBM")</b>
iii.	USA Territorial Sea Baseline Model, Not Published (Gazetted)
a.	USA: only uses "Normal Baselines" for all LOS mathematical measurements (only "source" possible is from NOAA Large-Scale Nautical Charts by digitizing coastlines)
iv.	Canadian Territorial Sea Baseline Model (published (Gazetted))
a.	Canada: uses combinations of both "Straight Baselines" and "Normal Baselines"
<b>C.</b>	<b>Law of the Sea "Legal Limits"</b>
a.	USA: 0-3 nautical miles (State Limit)
b.	USA: 3-12 nautical miles (Federal Territorial Sea)
c.	USA: 12-24 nautical miles (Federal Contiguous Zone)
d.	USA: 24-200 nautical miles (Federal EEZ)
e.	Canada: 0-12 nautical miles (Territorial Sea)
f.	Canada: 12-24 nautical miles (Contiguous Zone)
g.	Canada: 24-200 nautical miles (EEZ)
<b>D.</b>	<b>Law of the Sea: "Maritime Boundaries"</b>
a.	USA vs Russia (west of DTS AOI), Treaty of June 1, 1990
i.	Following the Maritime Boundary line principles of a "Meridian Line"
b.	Canada vs Denmark (Greenland) <sup>12</sup> (east of DTS AOI), Treaty of December 17, 1973
i.	Following the Maritime Boundary Line principles of a "Strict Equidistance Line"
c.	USA vs Canada (analysis for this DTS), unresolved and/or in dispute (USA Unilateral Line)
i.	Following the Maritime Boundary Line principles of a "Strict Equidistance Line"
d.	Canada vs USA (analysis for this DTS), unresolved and/or in dispute (Canada Unilateral Line)
i.	following the Maritime Boundary line principles of a "Meridian Line"
<b>E.</b>	<b>Law of the Sea: Land Terminus Point ("LTP")</b>
a.	USA: Source; <sup>13</sup> This Registry has Gazettted (Pulished) Geographic Coordinate (Datum NA27)
i.	WGS84 (corrected) = 69-38-48.68229N / 141-00-04.70677W
b.	Canada: Source; <sup>14</sup> The Official Canadian TSBM (1985) Geographic Coordinate (Datum NA27) (see Normal Baseline Area 7-1 Demarcation Point)
i.	WGS84 (corrected) = 69-38-45.80899N / 141-00-12.00993W
c.	1.0-meter Digital Globe 2018 (BING Maps)
i.	WGS84 = 69-38-47.10043N / 141-00-00.00000W <sup>15</sup>
<b>F.</b>	<b>Use of USA NOAA Nautical Charts<sup>16</sup></b>

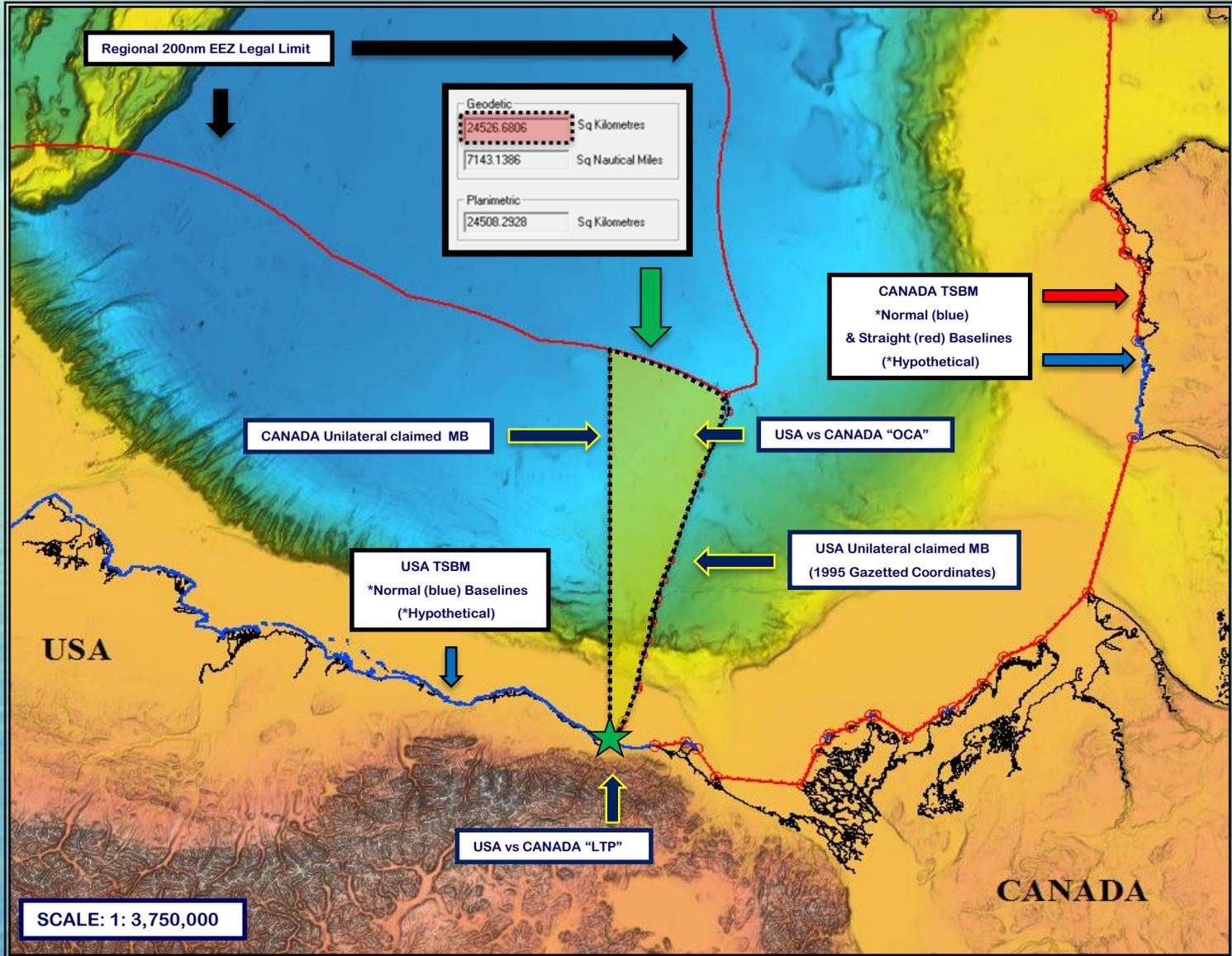
**“Background to the Beaufort Sea disagreement”**

**“Summary of Canada’s Position”**

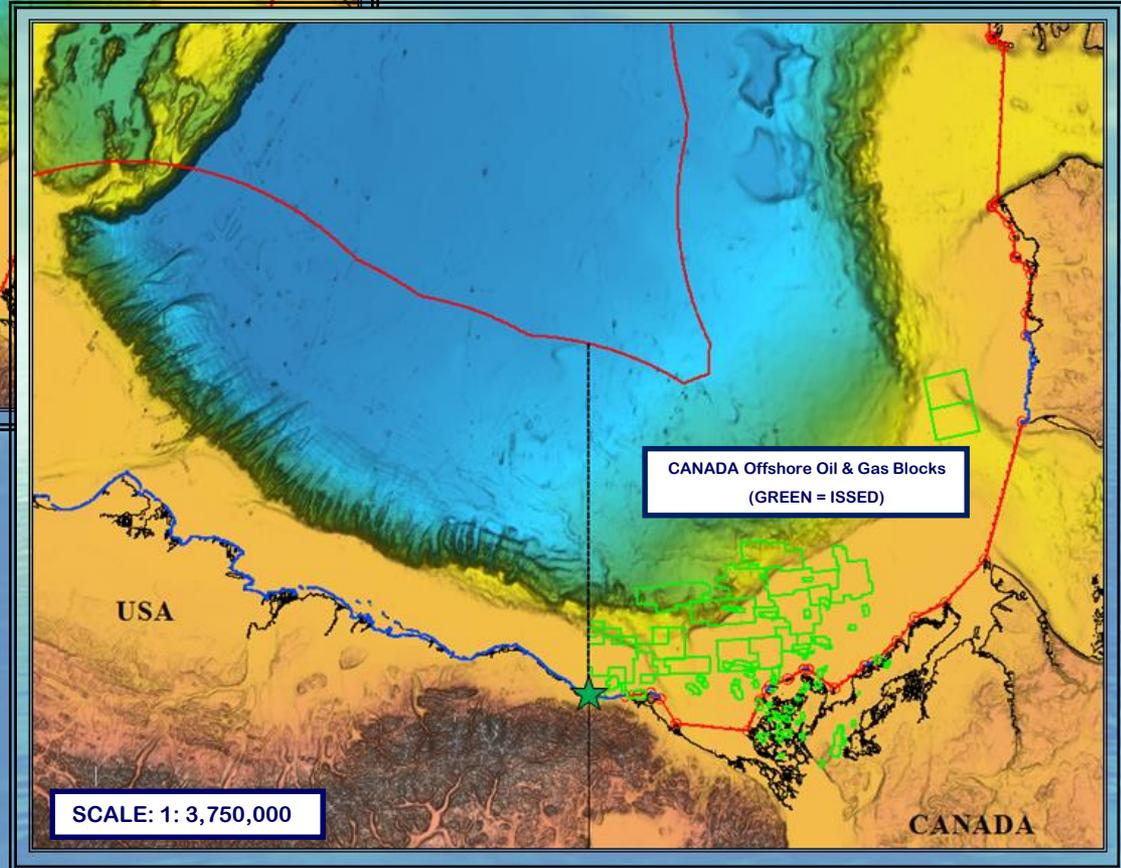
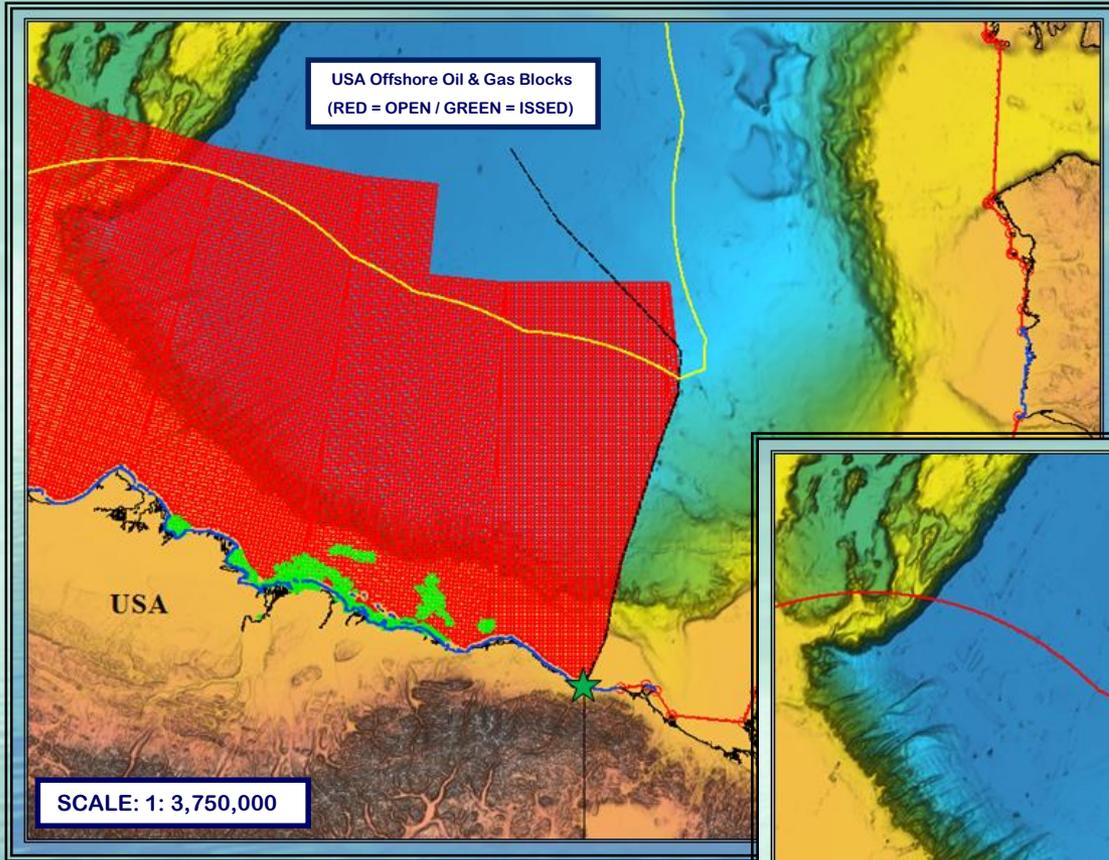
**“Summary of the United States’ Position”**

# “Regional Boundary Delimitations”

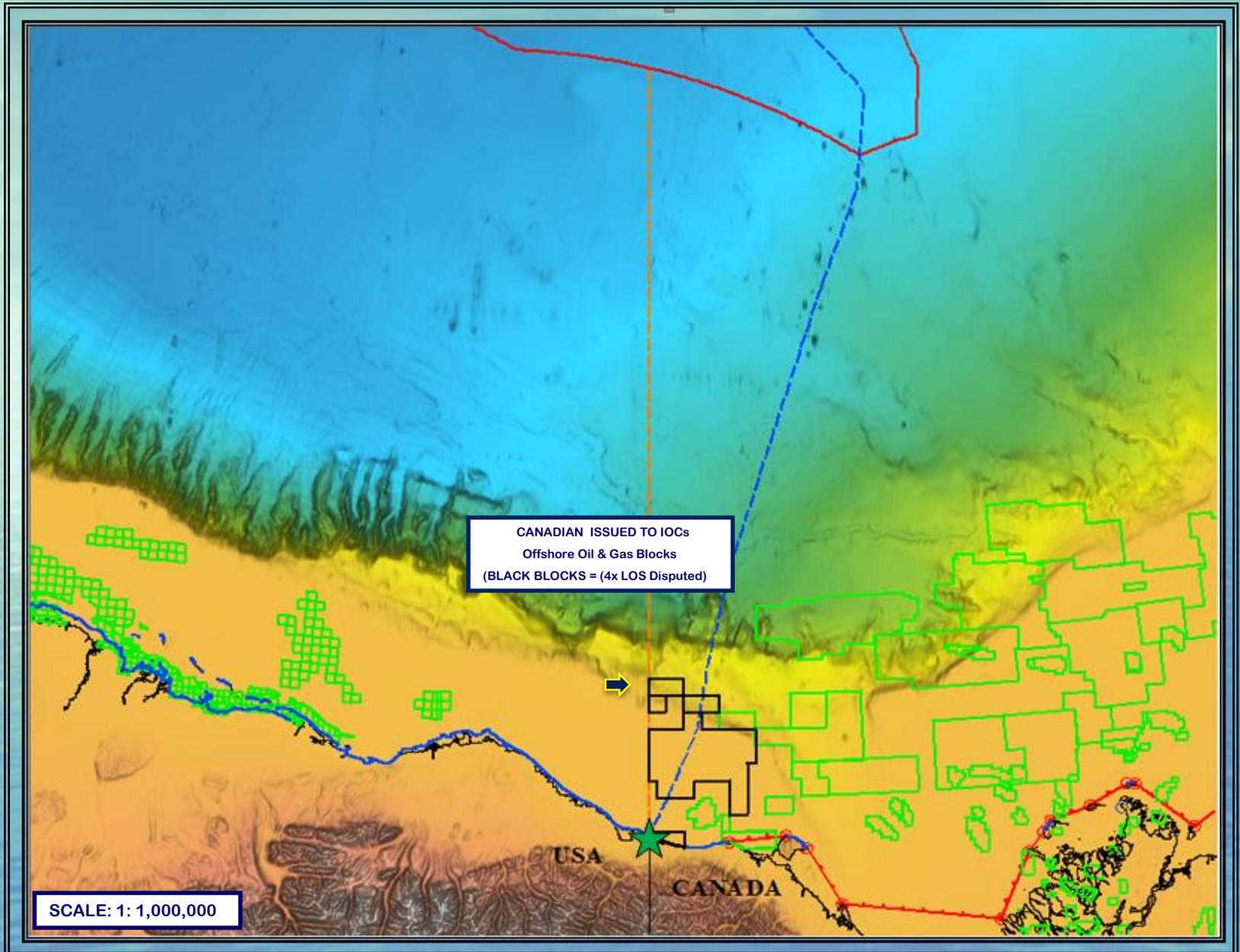




# Oil and Gas Blocks in the Area of "Overlapping Claims"



# Present day "Issued" Oil and Gas Blocks in the Area of "Overlapping Claims"



## Policy Options for Disputing Coastal States

- **Basic choice: Bilateral solution or third-party assistance**
  
- **Engage in cooperative development**
  - **Joint Development Zone (agree to disagree)**
  - **International Unitization**
  
- **Delimit the boundary**
  - **Negotiation/Mediation: non-binding**
  - **Arbitration/Adjudication: binding**
  
- **Unilateral “self-help”?**

## Reverse-engineering the Maritime Delimitation “jurisprudence”

- 25 decisions between 1969 and 2018
- 12 **World Court** (ICJ) judgments (1969-2018)
  - 69 months average duration (35-132)
- One **ITLOS** judgment (2012); One Special Chamber ruling (2017)
  - 27 months; 33 months
- Four **UNCLOS Annex VII** tribunal awards (2006-2016)
  - 43 months (26-60)
- Seven “pure” **Ad Hoc** tribunal awards (1977-1999; 2011-2017)
  - Beagle Channel Argentina/Chile (1977)
  - Croatia/Slovenia (2017): 66 months

## HOW: Three-step third-party delimitation

### Identification of the “relevant area”

= the area to be delimited (overlapping claims area)

- 1) Construction of a *provisional* delimitation line, usually based on the principle of **equidistance**
  
- 2) Examination of the provisional line in the light of equitable factors (“**relevant circumstances**”) so as to determine whether it is necessary to adjust or shift that line in order to produce an “**equitable solution**”
  - Geography rules!
  
- 3) Application of a final “disproportionality” check



## **Fugro 4DSSM (Satellite Seafloor Morphology) Image Analysis**

**A new Tool for Preliminary Shallow-water Site Investigations**

**\*maximum water depths = 25 meters**

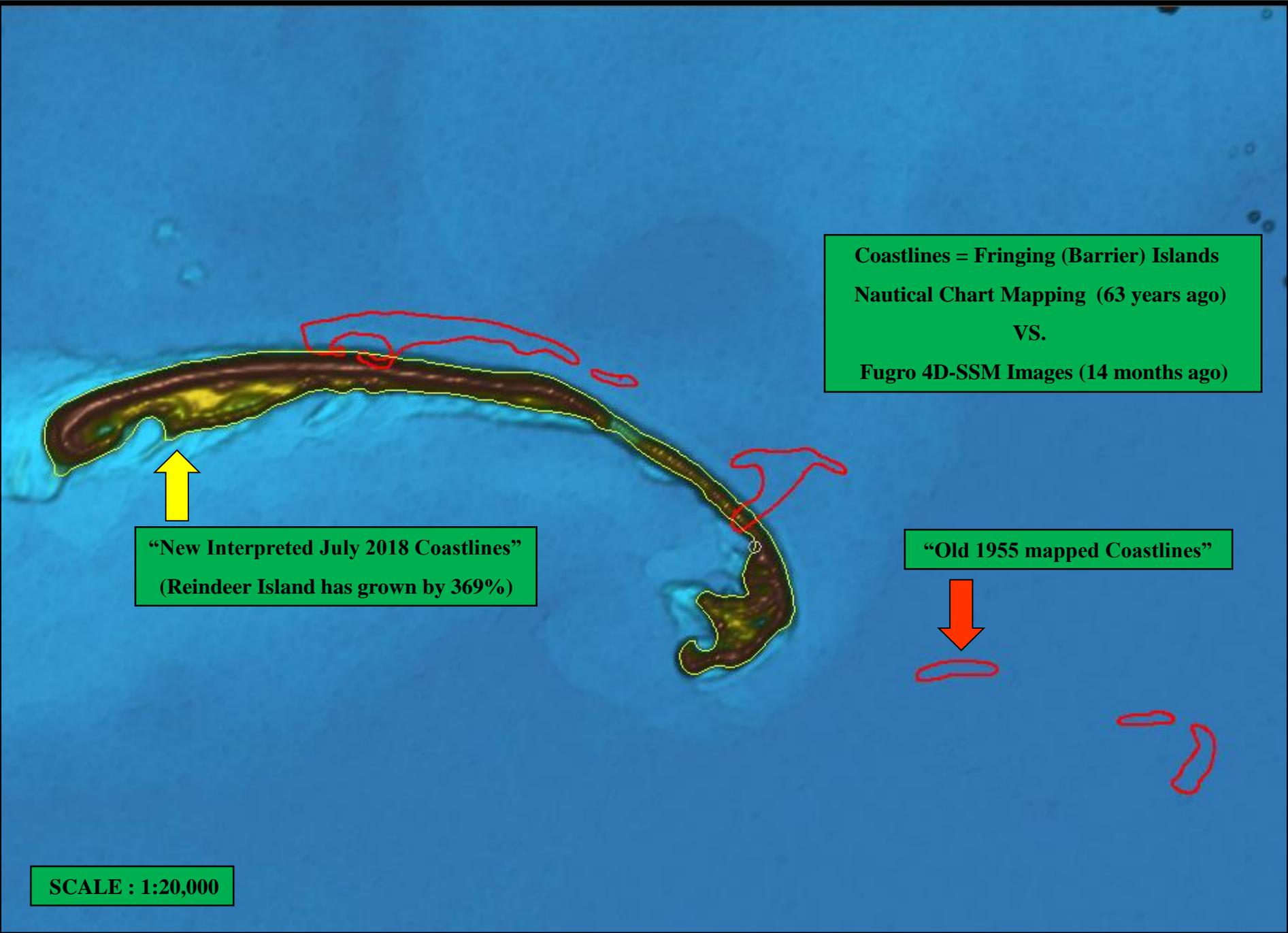
**(\*NOTE: Optical Image Technology ~ results dependent on Aerosol / Aquatic Conditions)**

Coastlines = Fringing (Barrier) Islands  
Nautical Chart Mapping (63 years ago)  
VS.  
Fugro 4D-SSM Images (14 months ago)

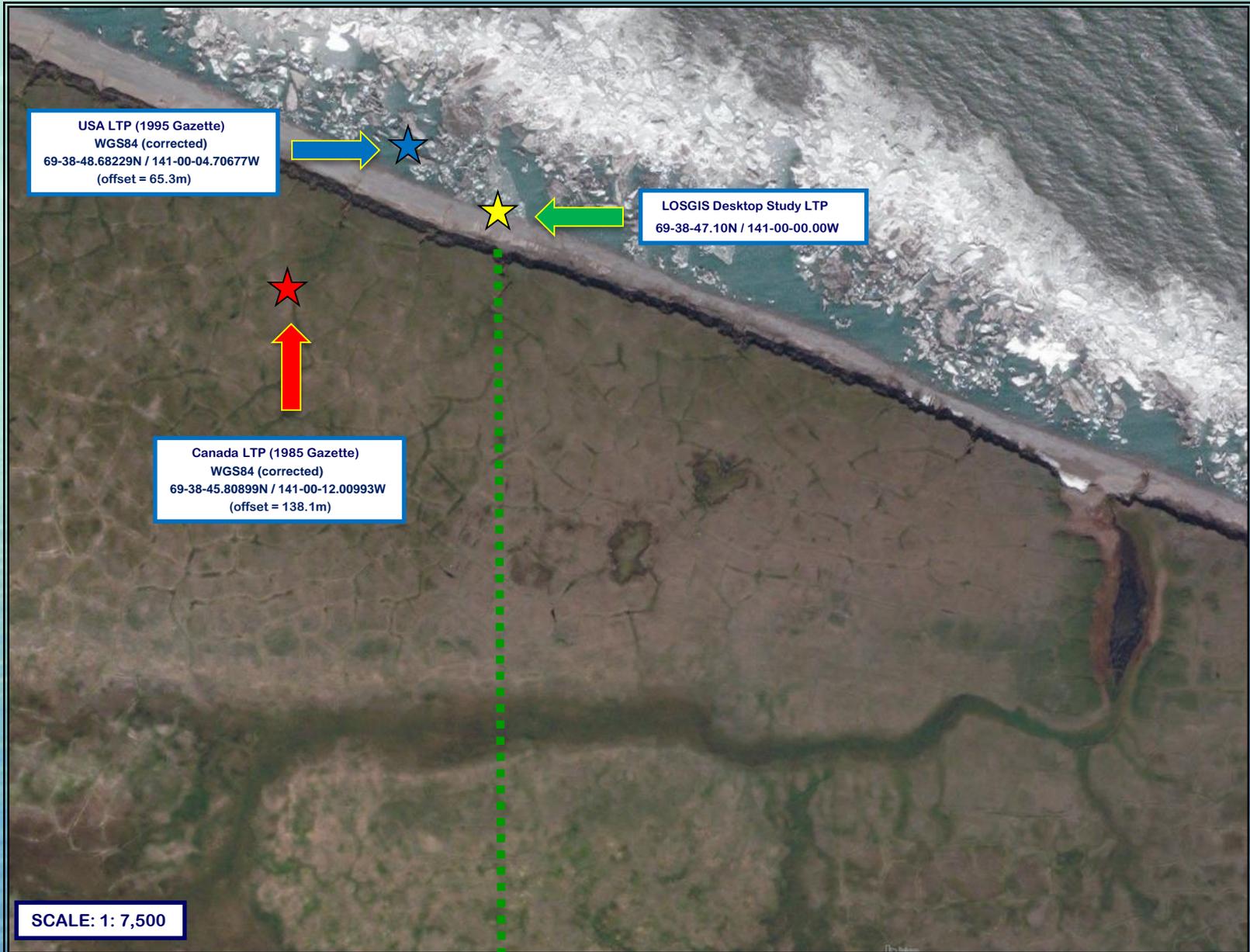
↑  
“New Interpreted July 2018 Coastlines”  
(Reindeer Island has grown by 369%)

↓  
“Old 1955 mapped Coastlines”

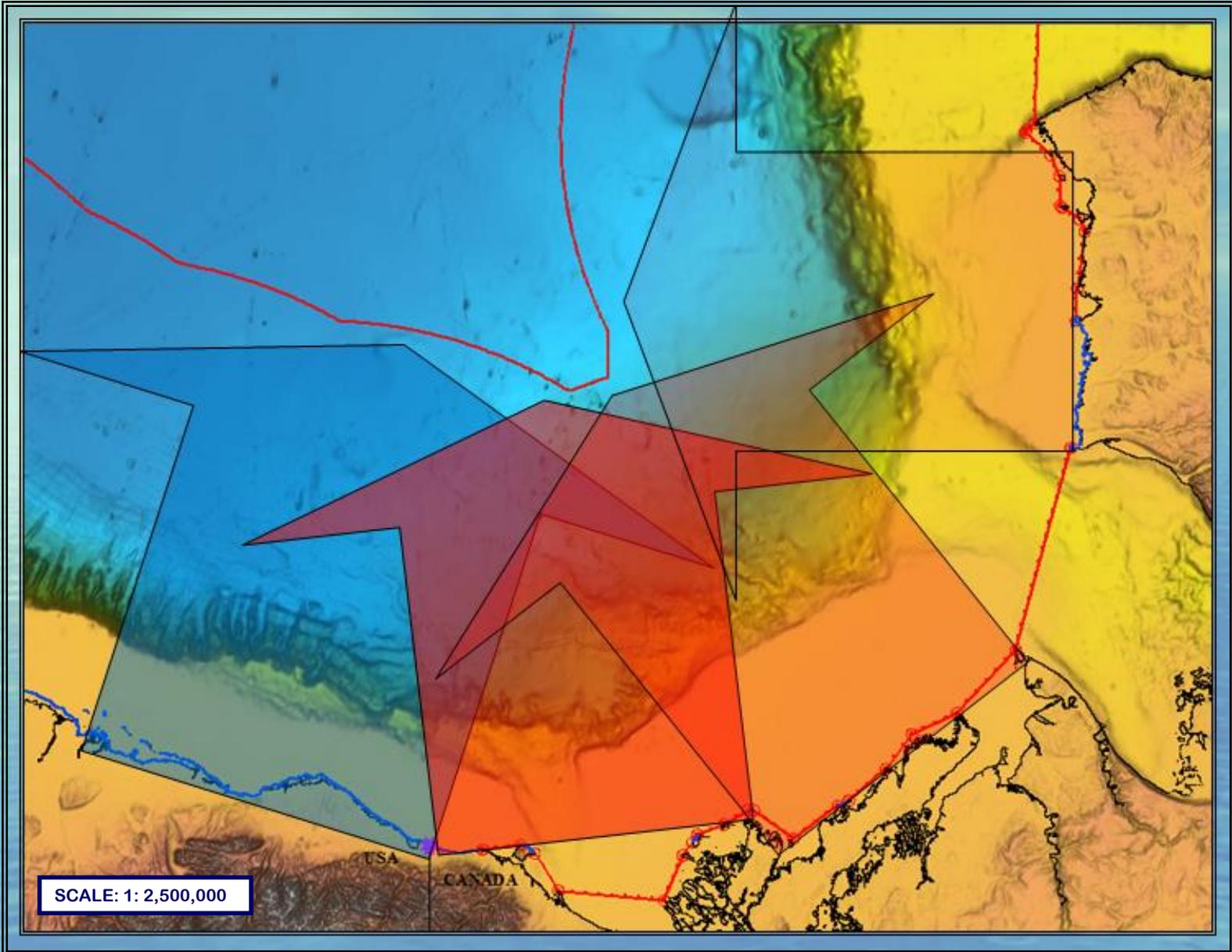
SCALE : 1:20,000



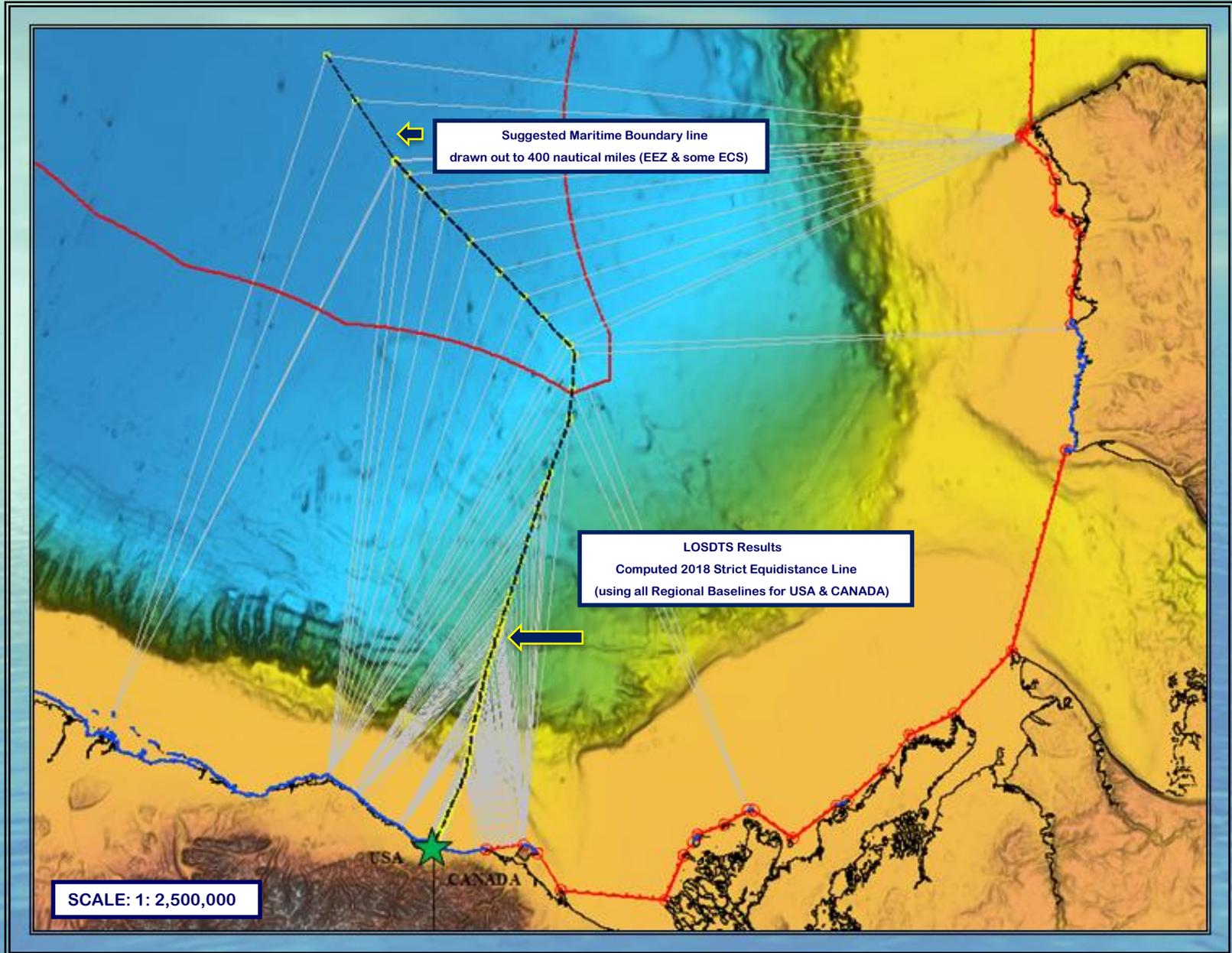
# Land Terminus Point: Both USA & Canada Positions are Incorrect

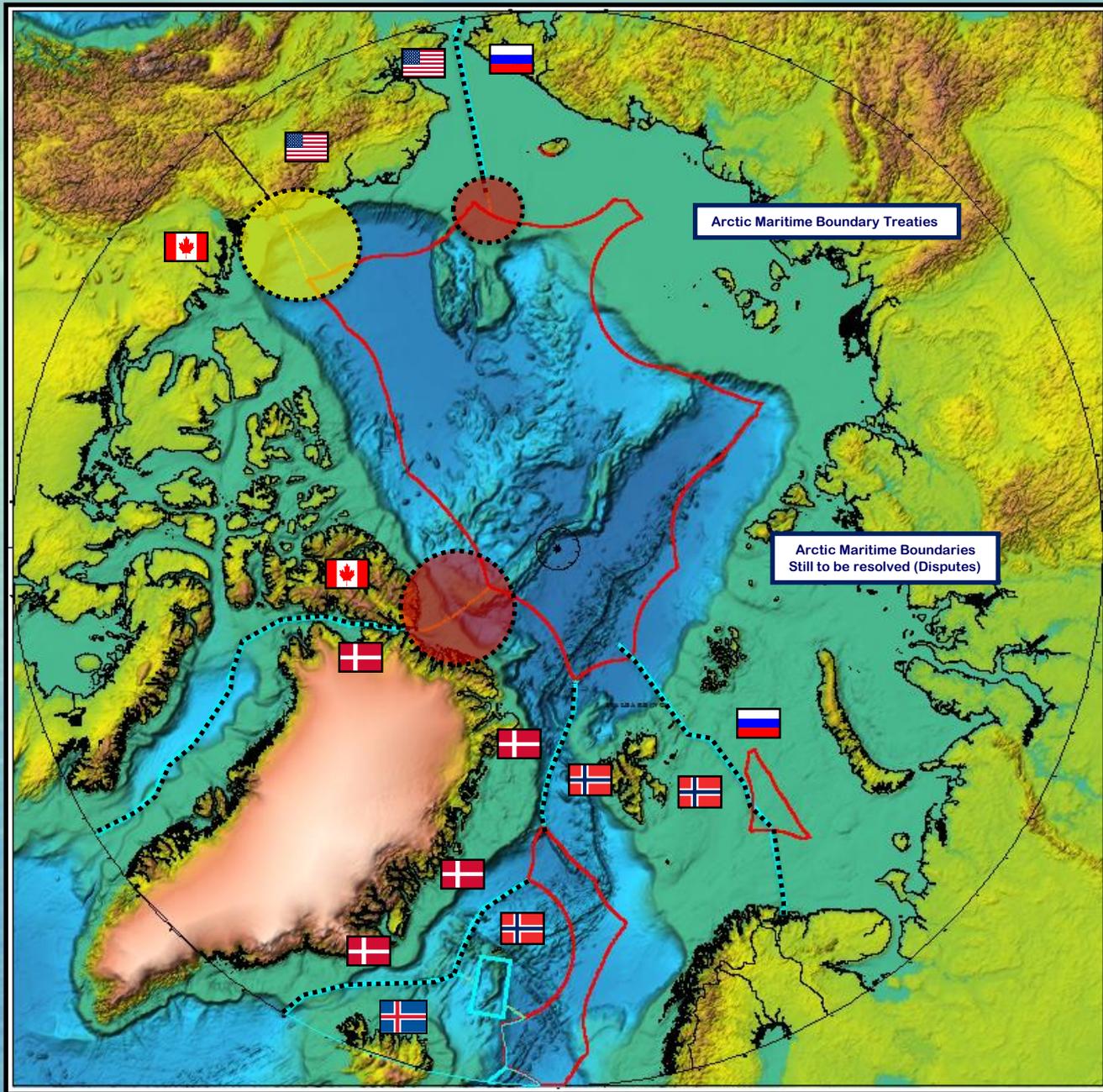


# The Relevant Coastlines: USA (Blue Arrow) / Canada (Red Arrows)



# LOSDTS computed "Strict Equidistance Line" (using USA (Normal) Baselines vs. Canada (Normal & Straight) Baselines)





# Thank You

**PIETER BEKKER**  
**CMS Law Firm & CEPMLP Dundee**  
**New York, USA**



**ROBERT VAN DE POLL**  
**Global Director Law of the Sea**  
**Fugro Canada**  
**[rvandepoll@fugro.com](mailto:rvandepoll@fugro.com)**

