

Bioprospecting in the Southern Ocean under International Law

A/Prof Donald R. Rothwell
Sydney Law School;
President, Australian New Zealand Society of Int'l Law

Bioprospecting



- "the search for and sourcing of organisms from the natural environment with the purpose of extraction of compounds for further investigation of their potential for development in therapeutic or industrial applications"
- Jones (1998) 5 *Australasian Journal of Natural Resources Law and Policy* 89

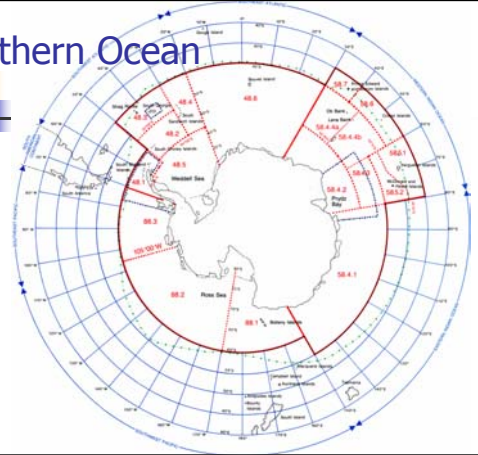
Southern Ocean



"The body of water surrounding the continent of Antarctica stretching north to the limits of the area regulated by the 1980 Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)" ... including

- Area covered by Antarctic Treaty, Protocol & CCAS
- Area covered by CCAMLR
- Continental marine areas and sub-Antarctic islands
- Much of the area up to the Antarctic Convergence

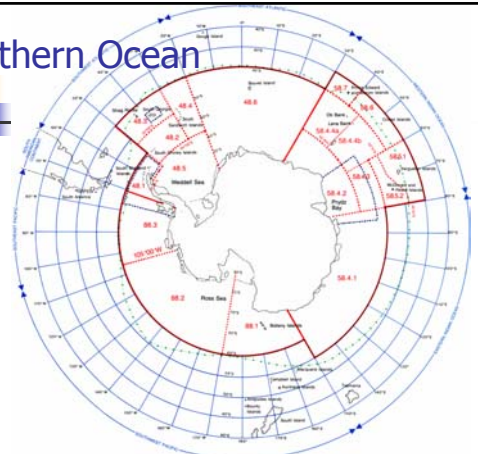
Southern Ocean



Southern Ocean Jurisdictional Zones

- Maritime Zones claimed by continental claimants
- Maritime Zones claimed by island claimants
- Area regulated by Antarctic Treaty
- Area regulated by CCAMLR
- Area potentially under control of International Sea-Bed Authority
- Genuine High Seas

Southern Ocean





International Law Framework

- A. International Environmental Law
- B. Antarctic Treaty regime
- C. Law of the Sea
- D. International Intellectual Property Law
 - TRIPS
 - WIPO
 - WTO



A. International Environmental Law

- 1992 Rio Declaration
- *Agenda 21* (1992)
- 1992 Convention on Biological Diversity
- 1946 International Convention for the Regulation of Whaling



B. Antarctic Treaty

- 1959 Antarctic Treaty
- 1972 Convention for the Conservation of Antarctic Seals (CCAS)
- 1980 Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- 1991 Madrid Protocol on Environmental Protection to the Antarctic Treaty



C. Law of the Sea

- 1958 Geneva Conventions on the Law of the Sea
 1. Territorial Sea & Contiguous Zone
 2. High Seas
 3. Continental Shelf
 4. Fishing and Conservation on the High Seas
- 1982 United Nations Convention on the Law of the Sea (LOSC)
 - Plus related instruments giving effect to LOSC



A. International Environmental Law

1992 Rio Declaration

- Created contemporary framework for international environmental principles
 - Sustainable Development
 - Precautionary Approach
 - Intergenerational Equity
 - Identified needs of developing countries and indigenous peoples
 - Sovereign right of States to "exploit their own resources": Principle 2

Agenda 21

- Builds on above principles and develops strategies for implementation in 21st Century



International Environmental Law

1992 Convention on Biological Diversity

- Objectives (Article 1)
 - Conservation of biological diversity
 - Sustainable use of biological diversity
 - Fair and equitable sharing of the benefits arising out of the utilization of genetic resources
 - Access to genetic resources
 - Transfer of appropriate technologies

1992 Convention on Biological Diversity and Bioprospecting

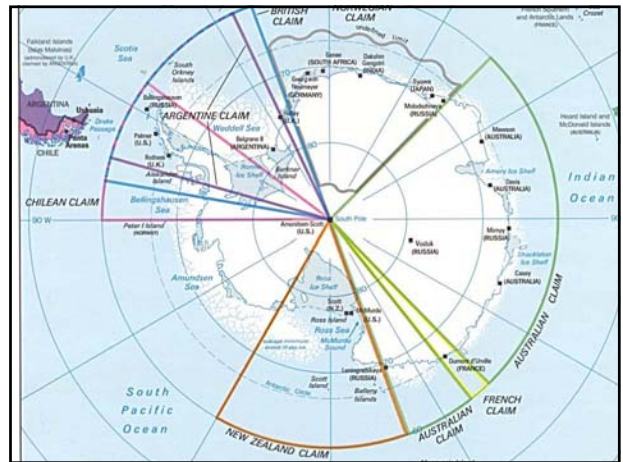
- Access to Genetic Resources (Art 15)
 - A sovereign right of States over their natural resources
 - Access can be granted on mutually agreed terms and prior informed consent
- Access to and Transfer of Technology (Art 16)
- Biotechnology research activities (Art 19)
 - Promotion of access to results and benefits from biotechnology
- How far does it extend to marine environment and Antarctica?

1946 Whaling Convention

- Seeks to globally regulate commercial whaling
- Currently a ban exists on commercial whaling
- Exemption for 'scientific' whaling by quota
- Capacity to undertake research into whale stocks
- Capacity for individual States to grant permits for scientific experimentation

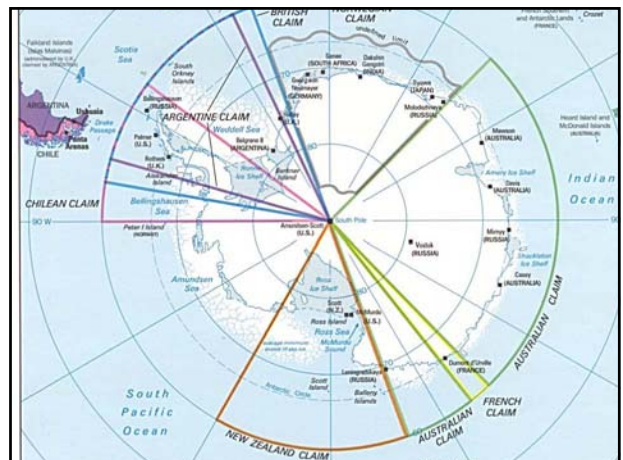
B. Antarctic Treaty regime - 1959 Antarctic Treaty

- Background
 - Negotiated in middle of the Cold War
 - Sought to resolve the sovereignty issue
 - Builds on success of the IGY and promotion of science
 - Involved 7 claimant States plus other States interested in Antarctica
 - US
 - USSR
 - Japan
 - Belgium
 - South Africa



1959 Antarctic Treaty

- Key Provisions
 - Promotion of scientific research and peaceful use of the continent (Art 1)
 - 'Freezing' of sovereignty and new territorial claims
 - For existing claimants (Australia, NZ et al)
 - For potential claimants (US, USSR)
 - For future claimants
 - Defined area of application
 - Continent plus ice shelves
 - Extends north to 60°N



1991 Madrid Protocol to the Antarctic Treaty

- Emerged following 1980s mining debate
- Reflects contemporary environmental management policies
 - Environmental Impact Assessment
 - Committee for Environmental Protection
- Protection of the Antarctic environment & dependent & associated ecosystems
- Prohibition on Mining
- Applies within Antarctic Treaty area

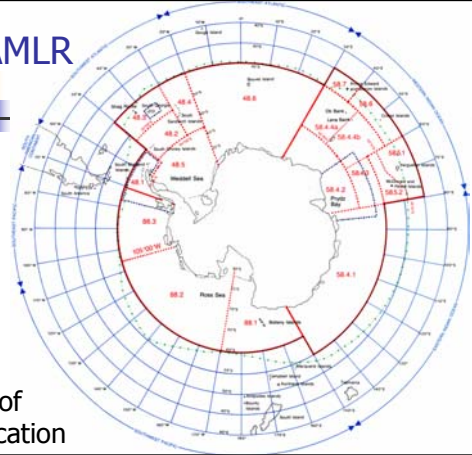
1972 CCAS

- Directed towards pelagic sealing
- Declares closed seasons for some sealing activities
- Requires licenses for commercial sealing activities
- Not been activated due to lack of commercial interest in sealing

1980 CCAMLR

- Regulates Southern Oceans Fishery Management
- Closely parallels the Antarctic Treaty regime
- Adopts an ecosystem approach to environmental management
- Regulates fisheries through the precautionary principle
- Adopts 'Conservation Measures' for management of fisheries
- Does not apply to Whales or Seals

CCAMLR



Area of Application

CCAMLR Commission

- Regular meetings at CCAMLR Secretariat (Hobart)
- Adopts Conservation Measures
- Designed to implement conservation practices consistent with Convention
 - Catch Seasons
 - Closure of Catch for certain stocks
 - Regulation of Fishing Activities
 - Catch Documentation & VMS Monitoring
 - Illegal, Unreported and Unregulated Fishing (IUU)

Southern Ocean IUU Fishing – Patagonian Toothfish

- Regulated under CCAMLR and A/NZ fishery laws
- Estimated value: \$500M (1997-2002)
- Australia has licensed operations within HIMI EEZ since 1997
- Australia responded to IUU Patagonian Toothfish fishing since 1997
- New Zealand responded to IUU Ross Sea Toothfish fishing since 1998
- Estimated Australian losses of \$260M

Patagonian Toothfish (*Dissostichus Eleginoides*)

World Wide Web ver., v. 01-09-96

RFE Team: Tenge, Barnett, Savary, Rogers, Dang
RFE Funding: OIG/CFSAN and CRA
RFE Contact: bteng@isaem.ssw.dnhs.gov
RFE WWW coord.: F. Fry (CFSAN)
Internet: frf@isaem.ssw.dnhs.gov



Species: *Dissostichus eleginoides* Smitt, 1898
Common Name: AFS-Patagonian Toothfish
RFE Code (this specimen): disseleg 04-001
Photographer: W. Savary (SAN-DC)
Date: 09-12-94
Image #: 267

Scanner: DTS-103AI Drum
Filename: pr0001.tif
Date: 08-09-95
Original File: 12Mb 400dpi
Orig. Image arch.: SEA-DO
Tissue arch.: SEA-DO/SAN-DO
Fish Provided by: USDC
No Authentication

IUU Arrests by Australia

- *Salvora/Aliza Glacial* – HMAS ANZAC (1997)
- *Big Star* – HMAS Newcastle (1998)
- *South Tomi* – Southern Supporter + ADF/SADF (2001)
- *Lena/Volga* – HMAS Canberra (2002)
- Numerous warning-off by RAN + Fisheries Patrols during 1997-2002
- French arrest of vessel illegally fishing in HIMI EEZ chased into French EEZ by Australian fishermen

Aliza Glacial



HMAS Canberra and *Volga*



C. The Law of the Sea Framework

1958 Geneva Conventions

- Recognised certain maritime zones
 - Territorial Sea
 - Continental Shelf
 - High Seas
- Guaranteed certain freedoms
 - Navigation
 - Fishing
- NO reference to marine scientific research
- Antarctic Treaty negotiated within this framework

The 1982 UN Convention on the Law of the Sea (LOSC)

- The Rights - Maritime Zones
 - 12 nm Territorial Sea
 - 24 nm Contiguous Zone
 - 200 nm Exclusive Economic Zone
 - 200 nm+ Continental Shelf
 - High Seas
 - The Deep Sea-Bed
- The Freedoms
 - Navigation
 - High Seas Fisheries
 - Marine Scientific Research

Coastal States Rights

- Sovereign right over 12nm territorial sea
- Resource sovereignty over water column and sea-bed/subsoil out to 200nm
- Resource sovereignty over continental shelf that extends beyond 200nm
- Capacity to regulate Marine Scientific Research within these waters

Deep Sea-Bed Regime

- Is the 'Area' beyond the limits of the continental shelf
 - Sea-bed, ocean floor and subsoil
- Controlled by the International Sea-Bed Authority (ISBA)
- To be exploited under LOSC for 'the common heritage of mankind'
- Exploration to be undertaken with consent of ISBA

Marine Scientific Research

- Territorial Sea:
 - Coastal States exclusively regulate
- EEZ/Continental Shelf
 - Access granted by consent of Coastal State
- Deep Sea-bed
 - All States have a right to conduct MSR
- Water column beyond 200nm
 - All States have a right to conduct MSR

Impact of LOSC for the Southern Ocean

1. Claimant State capacity to proclaim maritime zones
2. Claimant State sovereign rights to explore and exploit water column and sea-bed
3. The need for claimant States to determine continental shelf outer limits
4. Capacity of claimant states to regulate marine scientific research

Impact for the Southern Ocean

5. Potential for part of the Ocean to be considered 'deep sea-bed'
6. Interest of the International Sea-Bed Authority in Southern Ocean deep sea-bed
7. Need to resolve the status of the unclaimed sector
8. Potential Treaty clash
 - Limitations on new claims created by Antarctic Treaty
 - Even if claims are asserted can jurisdiction be exercised?



Treaty Interaction

- CBD and other Conventions: Art 22
- 1. The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from existing international agreements, except where the exercise of those rights and obligations would cause serious damage or threat to biological diversity

Therefore no impact on Antarctic Treaty obligations which are consistent with CBD objectives to not threaten Antarctic biodiversity



Treaty Interaction

- CBD and other Conventions: Art 22
- 2. Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea

Therefore Coastal State sovereignty and regulation of MSR plus Deep Sea-Bed and High Seas freedoms create the legal framework for CBD rights and obligations



A Legal Regime for Bioprospecting

1. By the Coastal State
 - Within designated maritime zones and recognized territory
2. By the Flag State
 - Consistent with laws of the Coastal State and own laws for its ships and nationals
3. By the International Community
 - Consistent with CBD and existing international management regimes
 - Deep Sea-Bed



Problems with the Regime in the Southern Ocean

1. Coastal States
 - Coastal States are not recognized by non-claimants
 - Unable to actively assert maritime claims under the Antarctic Treaty
 - Limited capacity to exercise jurisdiction over activities of non-nationals



Problems with the Regime in the Southern Ocean

2. Flag States
 - May not recognize Antarctic claims
 - May not recognize legitimacy of the Antarctic Treaty System
 - May seek to assert rights of access under CBD and LOSC



Problems with the Regime in the Southern Ocean

3. International Community
 - CBD and LOSC encourage bioprospecting
 - Antarctic Treaty regime has limited recognition
 - Antarctic Treaty instruments do not currently regulate bioprospecting
 - Potential for regime clash

Bioprospecting and Sub-Antarctic Islands

- Islands north of 60°S
- Many fall within CCAMLR zone
- Sovereignty is not contested
 - Heard and McDonald (Aust)
 - Kerguelen and Crozet (France)
 - Bouvetøya Island (Norway)
 - Prince Edward & Marion (S. Africa)
 - South Georgia and South Sandwich Is (UK)

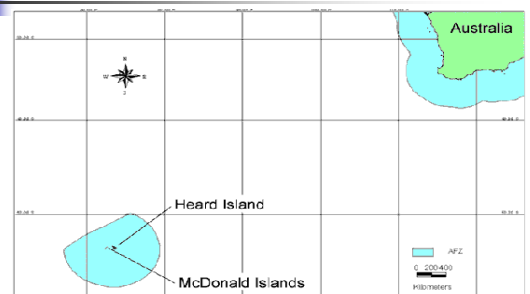
Sub-Antarctic Islands

- Can generate their own maritime zones
- Legitimacy of maritime zones not in doubt under the Antarctic Treaty
- Fisheries regulation consistent with CCAMLR
- Fisheries enforcement not constrained by Treaty limitations

Heard and McDonald Islands



Australian HIMI EEZ



Resolving the Legal Vacuum

- Need for active ATS regulation
- Regulation is consistent with ATS management of resources
 - Living and Non-Living
 - Genetic
- Individual claimants are legally weak
- If ATS does not regulate others may enter the field
 - ISBA
 - UN

The Issues for Resolution

- Which framework?
 - CCAMLR
 - Madrid Protocol
 - CRAMRA-style instrument
- What must be regulated?
 - The act of prospecting
 - Transfer of Technology
- Who has sovereign rights?
- Should freedom of science prevail?
- How will it be enforced?



Conclusion

- Bioprospecting generally consistent with freedom of science in Antarctica
- Law of the Sea promotes MSR consistent with CBD but has limited operation in Southern Ocean
- Current Antarctic Treaty framework for bioprospecting is inadequate
- Existing instruments could be adjusted
 - CCAMLR
 - Madrid Protocol
- An emerging challenge for the ATS



Acknowledgements

- Royal Australian Navy
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