SUBMARINE CABLES and the AREA BEYOND NATIONAL JURISDICTION

Lionel Carter

ICPC Environmental Advisor and Victoria University, New Zealand
What is the ABNJ?

1. Ocean Area = 71% of Earth
   Ocean Depth = 3688m
   High Seas = ~46% of Earth
   High Seas = >3688m

2. MPAs = 4% of Ocean

Source: Marine Regions.org
Reasonable knowledge of seabed/ocean

Source: D. Sandwell SIO
Limited knowledge of biology

Source: Ocean Biogeographic Information System 2016
Different seabed users have different effects

Contractors’ exploration areas Clarion - Clipperton Fracture Zone. Source: ISA.

Source: Geomar 2017
From expert opinion to evidence-based approach

~155 public papers/reports
ABNJ telecom cables – physical presence

- Cable high-grade polyethylene sheathing is chemically inert\textsuperscript{3,4}

- On shelf/upper slope (<1400m), protection from fishing/shipping means cables armoured (up to mm OD) and/or buried under seabed.

- Because of depth, ABNJ cables are typically unarmoured (17-21mm OD) & are laid on seabed thus minimising disturbance\textsuperscript{5,6}

- Electro-Magnetic Field (EMF) is less than lap-top computer
ABNJ telecom cables and biota

- No differences in faunal abundance and diversity near and distant from cables\(^7-10\)

- Modern cable design and laying prevent entangling whales\(^11\). Also ABNJ too deep for whales

- Fish can bite cables but cause <0.5% of all faults in 1959-2006 & no faults since\(^12\)

Monterey power/telecom cable resurveyed 4 times over 8 years showed no conclusive change in fauna that could be attributed to the cable. Source: Credit MBARI, 2005
ABNJ cables and natural hazards

- Cable damage in deep sea is mainly from landslides, turbidity currents and current abrasion.
- This occurs mainly where strong ocean currents and colliding tectonic plates [earthquakes, tsunami, floods] prevail, which is the continental margin most of which is in EEZs \(^{14-16}\)
- This localised damage means the ABNJ has few faults.
Telecommunications Cables - faults

Average No. of repairs per annum (for jurisdictions with one or more cable fault per year on average) by TW/EEZ

BBNJ Area

- Portugal
- Thailand
- Qatar
- Singapore
- Turkey
- Belgium
- India
- Vietnam
- Egypt
- Saudi Arabia
- South Africa
- Libya
- Greece
- United States
- Iran
- Spain
- France
- United Arab Emirates
- Philippines
- Malaysia
- Korea, South
- Japan
- Netherlands
- Italy
- Indonesia
- United Kingdom
- Taiwan
- China

Avg. No. of Repairs/yr
Synopsis

• ABNJ telecommunication cables occur outside hazardous zones thus damage is rare 4 faults pa

• Burial or armour are not required; thus cables are small, chemically inert objects laid on the seabed

• Cables have no statistically verified effect on the abundance and diversity of seabed organisms 7-9, 17

On the basis of present knowledge, telecommunications cables have little effect on the deep ocean environment 4, 8, 18, 19
**Synopsis**

**UNEP/WCMC- ICPC Cable Report 2009**

“as outlined in this report, the weight of evidence shows the environmental impact of fibre-optic cables is neutral to minor.”

**UNCLOS Report of UN Secretary General 2015**

“Submarine cables themselves are considered to have a low-carbon footprint and a small relative impact on the environment…”

**UN World Ocean Assessment 2015**

reviewed submarine telecommunications cables and concluded that they "have very limited environmental impacts".
References

References


