

Endeavor Hydrothermal vent,
Northeast Pacific Ocean.
Ocean network Canada 2016

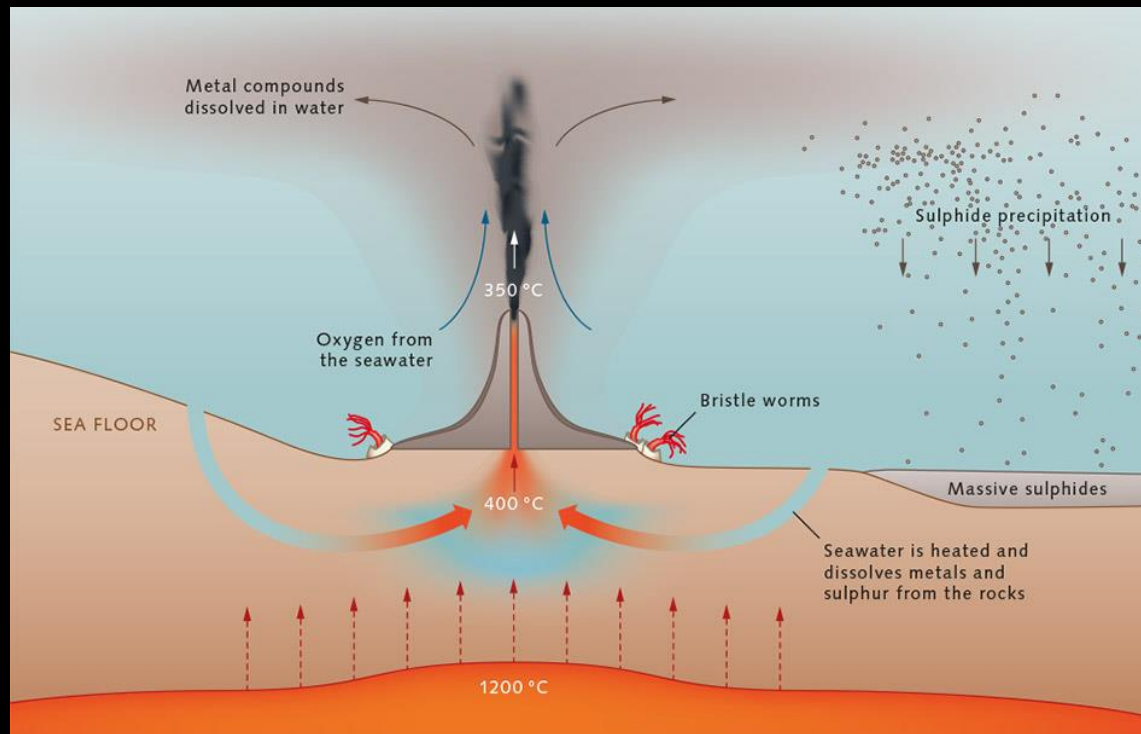
The Global Management of Deep-sea Hydrothermal Vents

Elisabetta Menini



Deep-sea Hydrothermal Vents

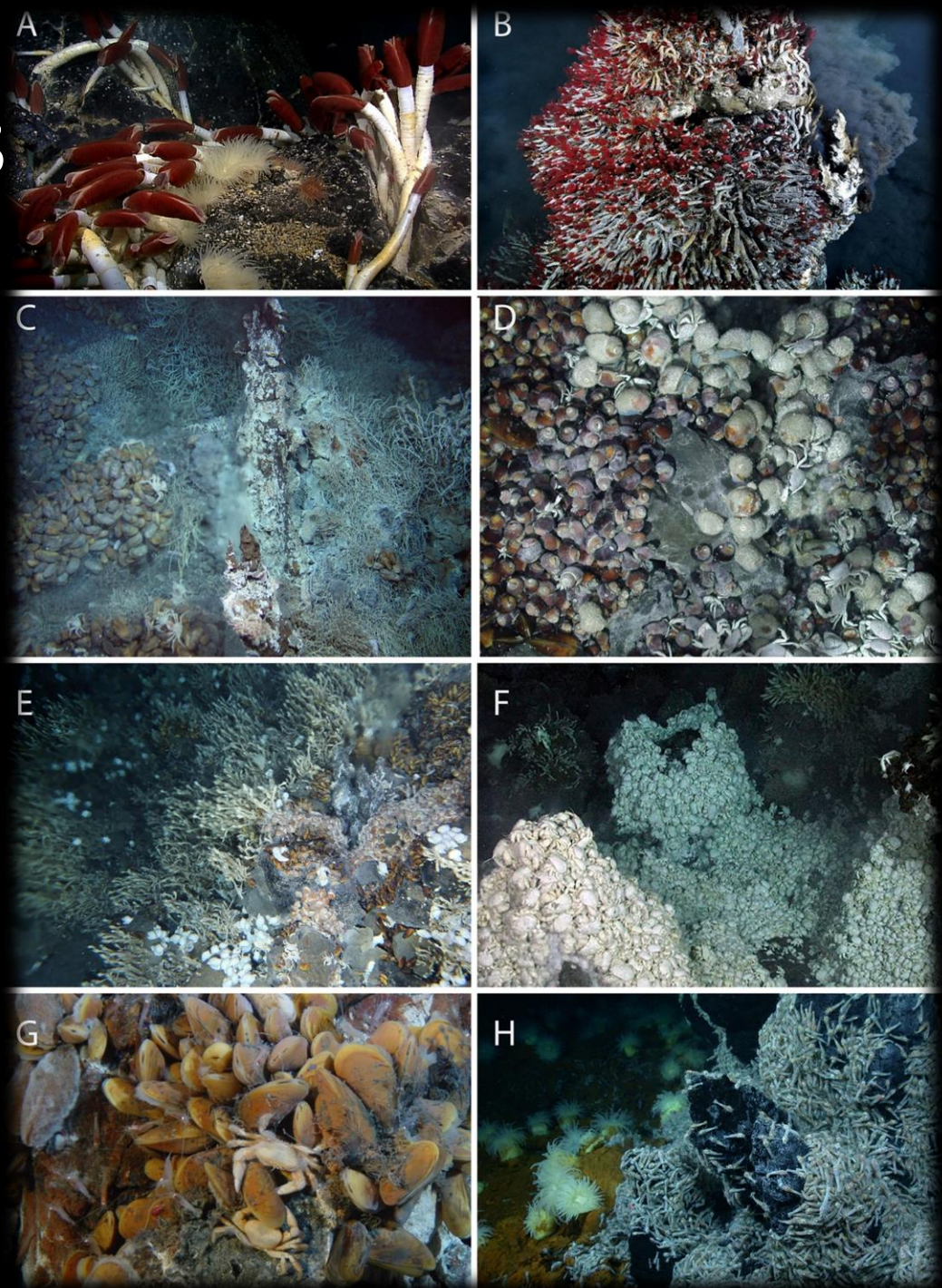
- Active Confirmed and Inferred under 200 m depth
- Geologically, geochemically, and biologically dynamic ecosystems [1]





Deep Hydrothermal Ecosystems

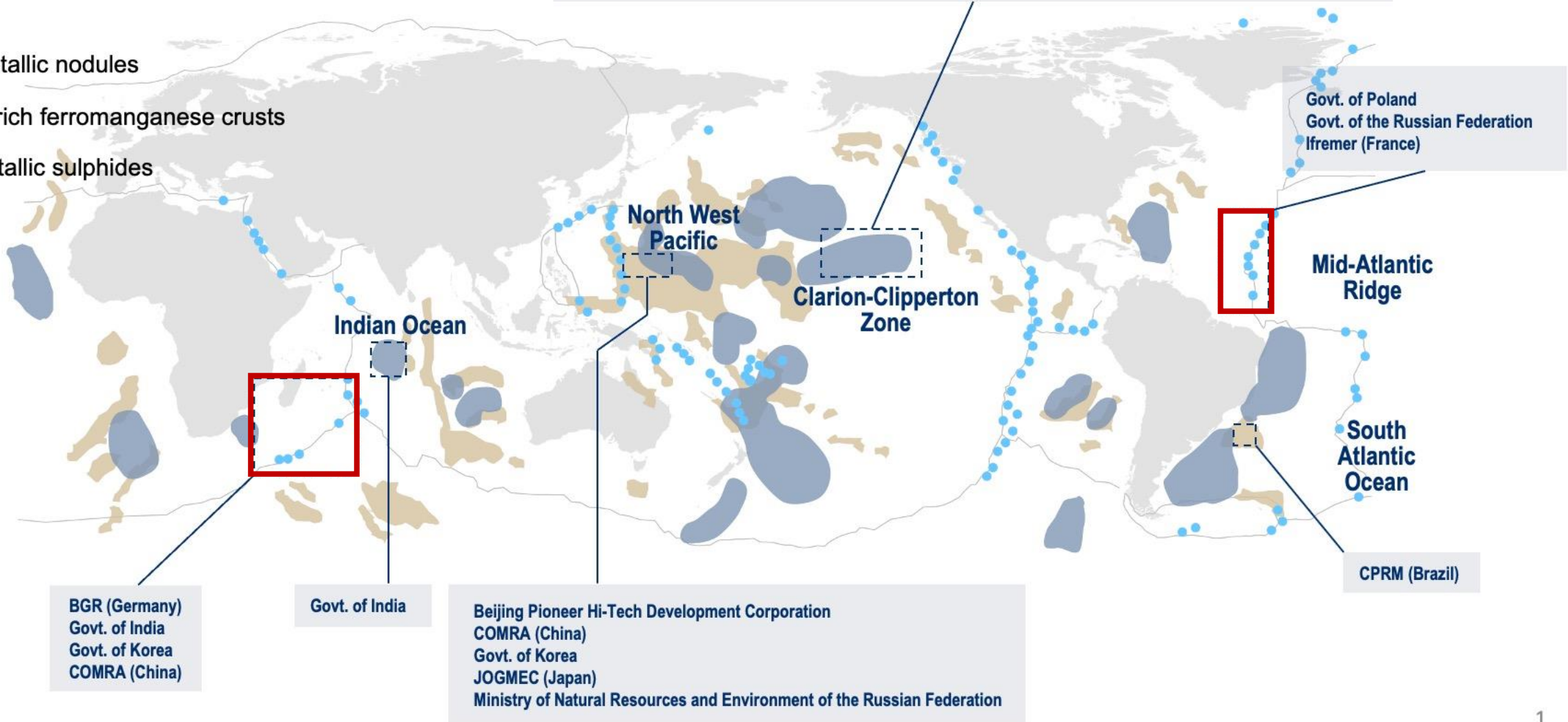
- Chemosynthetic environment
- Vents obligated endemic species
- Primary production on the deep sea
- One of the most ancient environment existed on the earth surface [2]
- At least 11 biogeographic regions [3]



Exploration for minerals in the Area

- BGR (Germany)
- BMJ (Jamaica)
- CIIC (Cook Islands)
- CMC (China)
- COMRA (China)
- DORD (Japan)
- GSR (Belgium)
- Government of Korea
- Ifremer (France)
- IOM (Bulgaria, Czech Republic, Poland, Russian Federation, Slovakia)
- Marawa (Kiribati)
- NORI (Nauru)
- OMS (Singapore)
- TOML (Tonga)
- UKSRL (UK)
- Yuzhmorgeologiya (Russian Federation)

- Polymetallic nodules
- Cobalt-rich ferromanganese crusts
- Polymetallic sulphides



Internationally recognized Criteria

- Uniqueness or Rarity
- Functionally Significance
- Fragility , Vulnerability
- Structural Complexity
- Biologically Diversity
- Productivity



Food and Agriculture
Organization of the
United Nations

Vulnerable Marine Ecosystem



Convention on
Biological Diversity

**Ecologically and Biologically Significant Marine
Area**

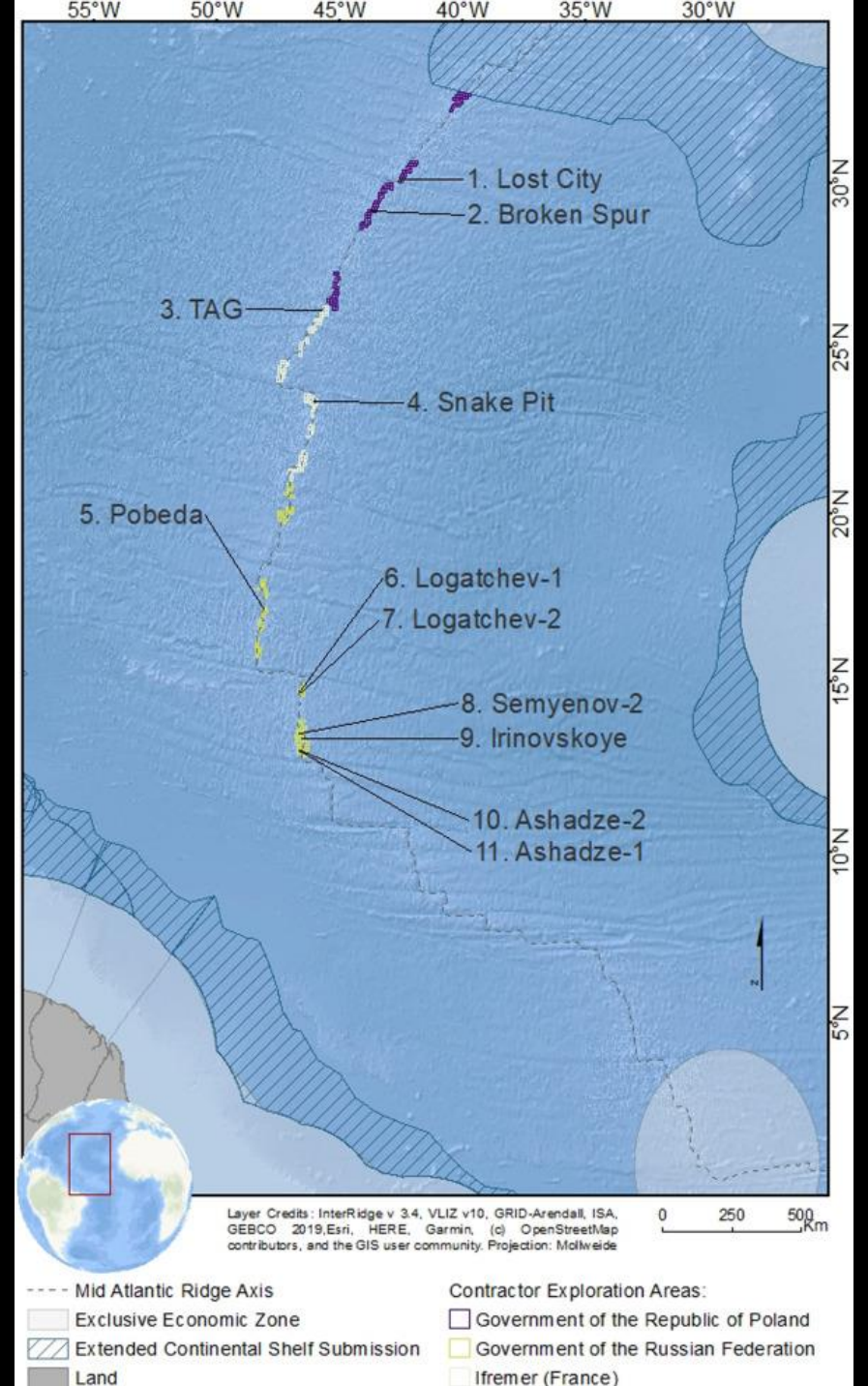


INTERNATIONAL
MARITIME
ORGANIZATION

Particularly Sensitive Sea Areas

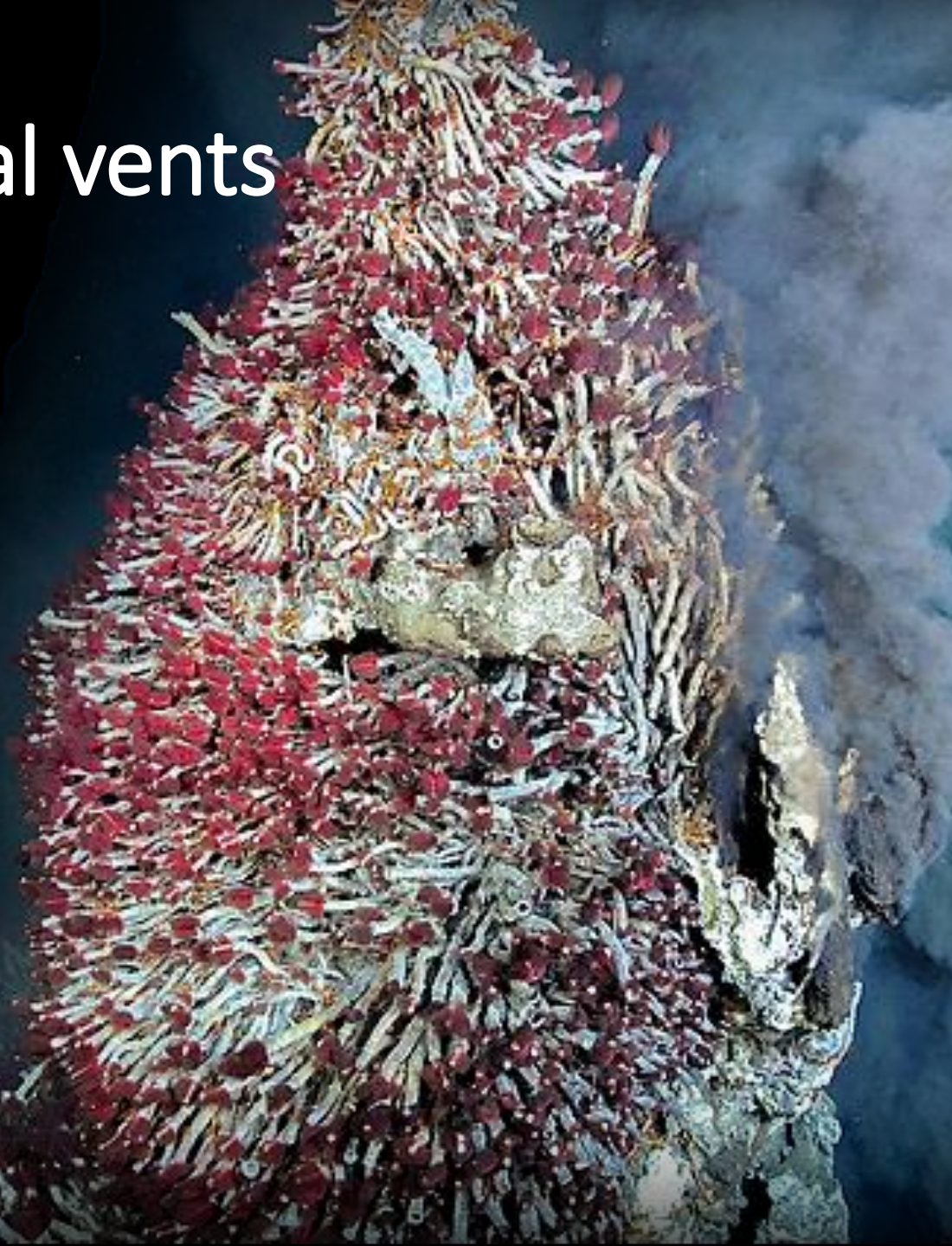
REMP MAR

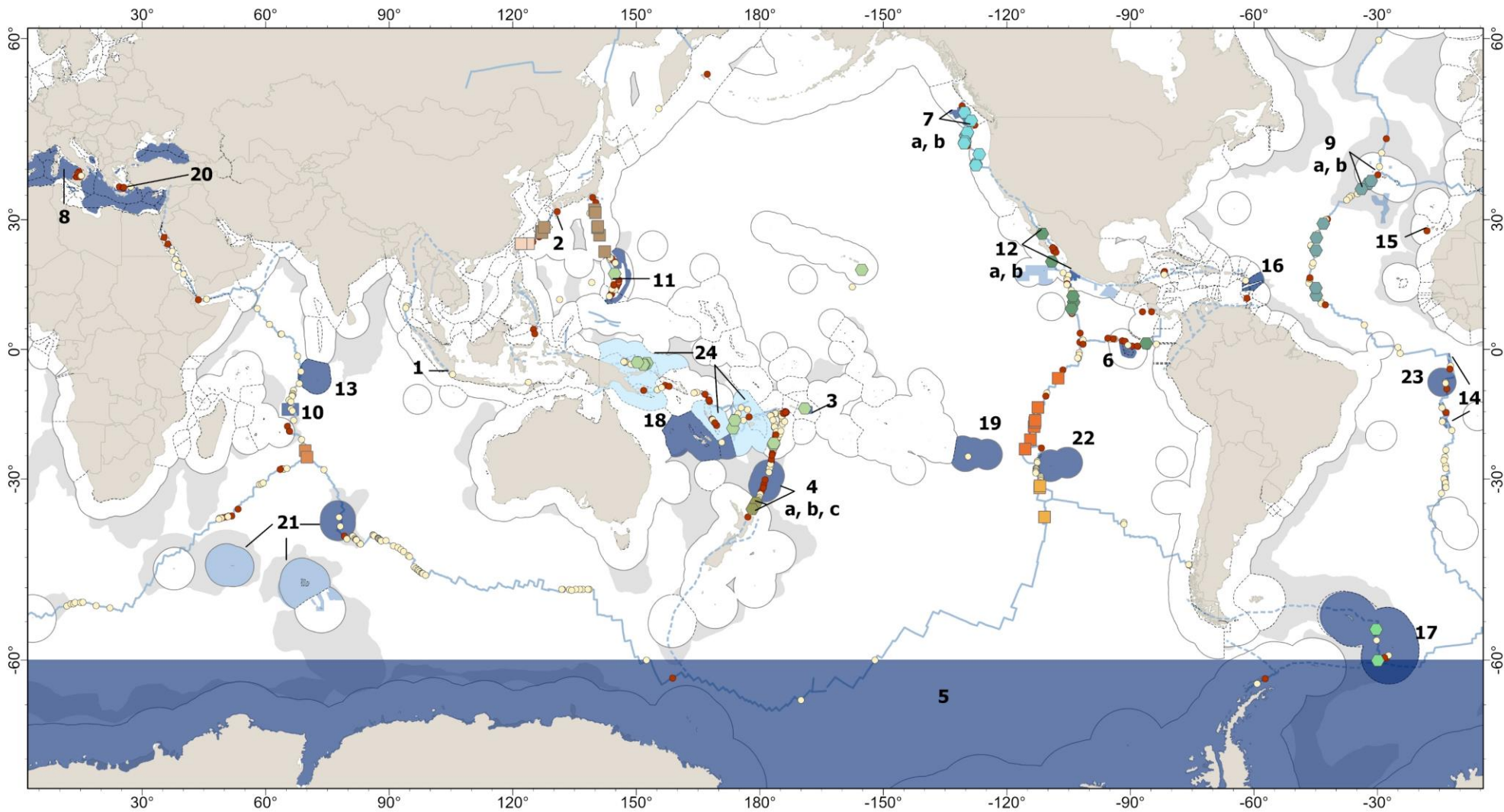
- Proposed Site in Need of Protection



Management of Hydrothermal vents

- Census and compare current conservation interventions
- ABMTs (Regional Management Organization closures, MPAs, Marine Reserves, fisheries closures...), Temporal Measures, Area Treaty
 - i) their level of protection,
 - ii) the process through which interventions were initiated,
 - iii) the distribution of these interventions across maritime jurisdictions, sovereignties, and territories
 - iv) the representation of the vents' biogeography within interventions.





Deep hydrothermal ecosystems

- Confirmed hydrothermally active
- Inferred hydrothermally active
- Ridges
- - - Transform Boundaries

Biogeographic provinces of DHEs:

Outside management measures

- Indian Ocean
- W Pacific
- NW Pacific
- S East Pacific Rise
- South Easter Microplate

Within management measures

- Central SW Pacific
- NE Pacific
- N East Pacific Rise
- East Scotia Ridge
- Kermadec Arc
- Mid-Atlantic Ridge

Jurisdictional boundaries

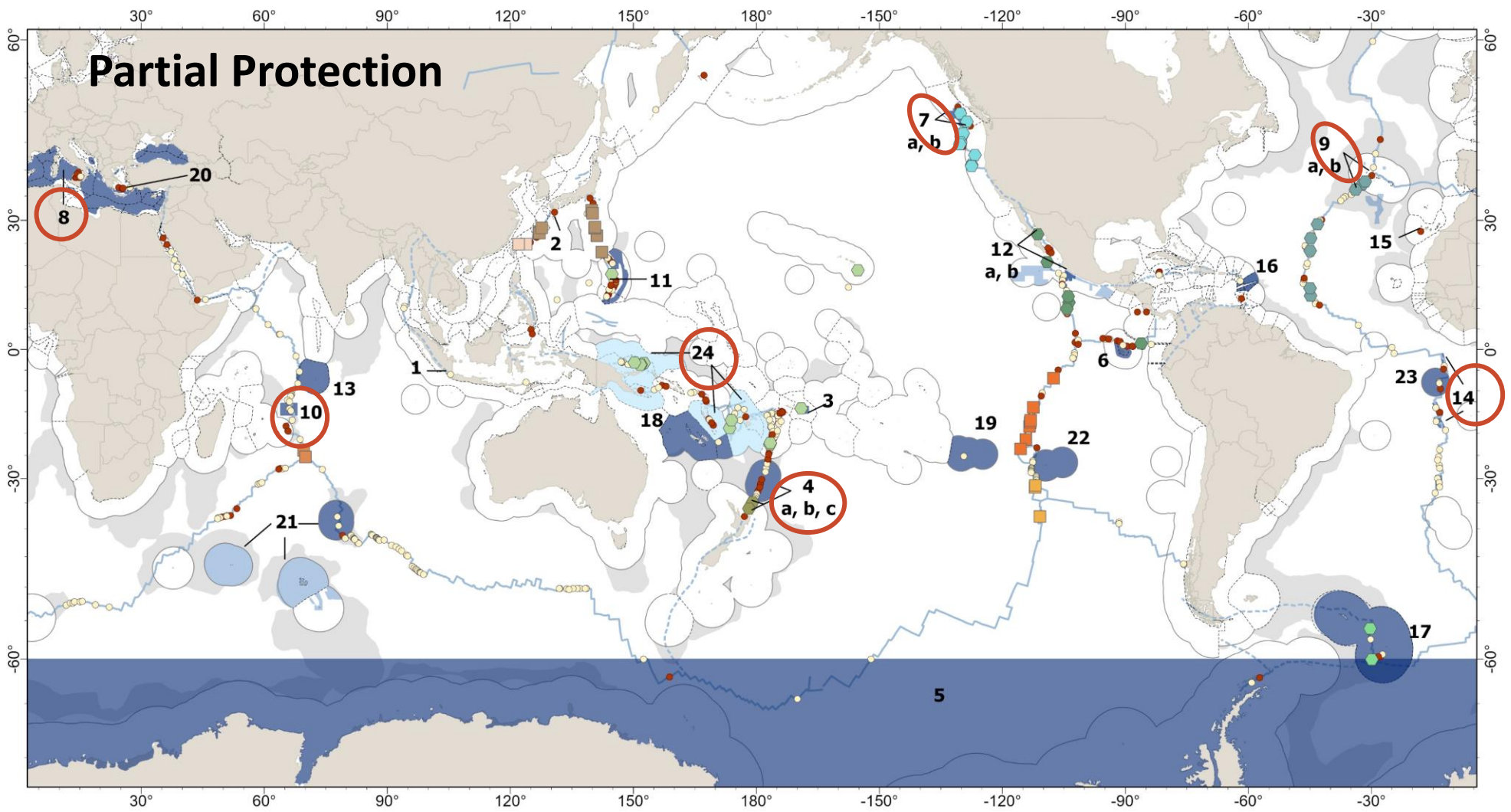
- 200 nm boundary
- - - EEZ boundaries
- ECSC (submissions and adopted)

Management measures

- ABMTs with DHE
- Part of area-network without DHE
- 10-year moratoria (2020-2030)

Spatial Reference: WGS 1984 Web Mercator Auxiliary Sphere 1; Central meridian: 180.00. Layer Credit: marineregion v11 2019, protectedplanet 2021, Interridge 3.4v 2021, Platesproject - UTIG 2012.

1. Palau Anak Krakatau Nature Reserve;
2. Kirishima- Kinkowan National Park;
3. National Marine Sanctuary of American Samoa;
4. A. Kermadec Marine Reserve and BPA, B. Seamount Closure 6B2a – 6B2b (SO), C. Tectonic Reach BPA (SO);
5. Antarctic Treaty Area (SO);
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18. Natural Park of the Coral Sea;
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20. Thalassia Periochi Koloumvo SCI (PO);
21. Protected Perimeter Around National Nature Reserve of the French Southern Lands - Saint Paul and Amsterdam Islands (SO);
22. Rapa Nui Multiple-Use Coastal MPA (SO);
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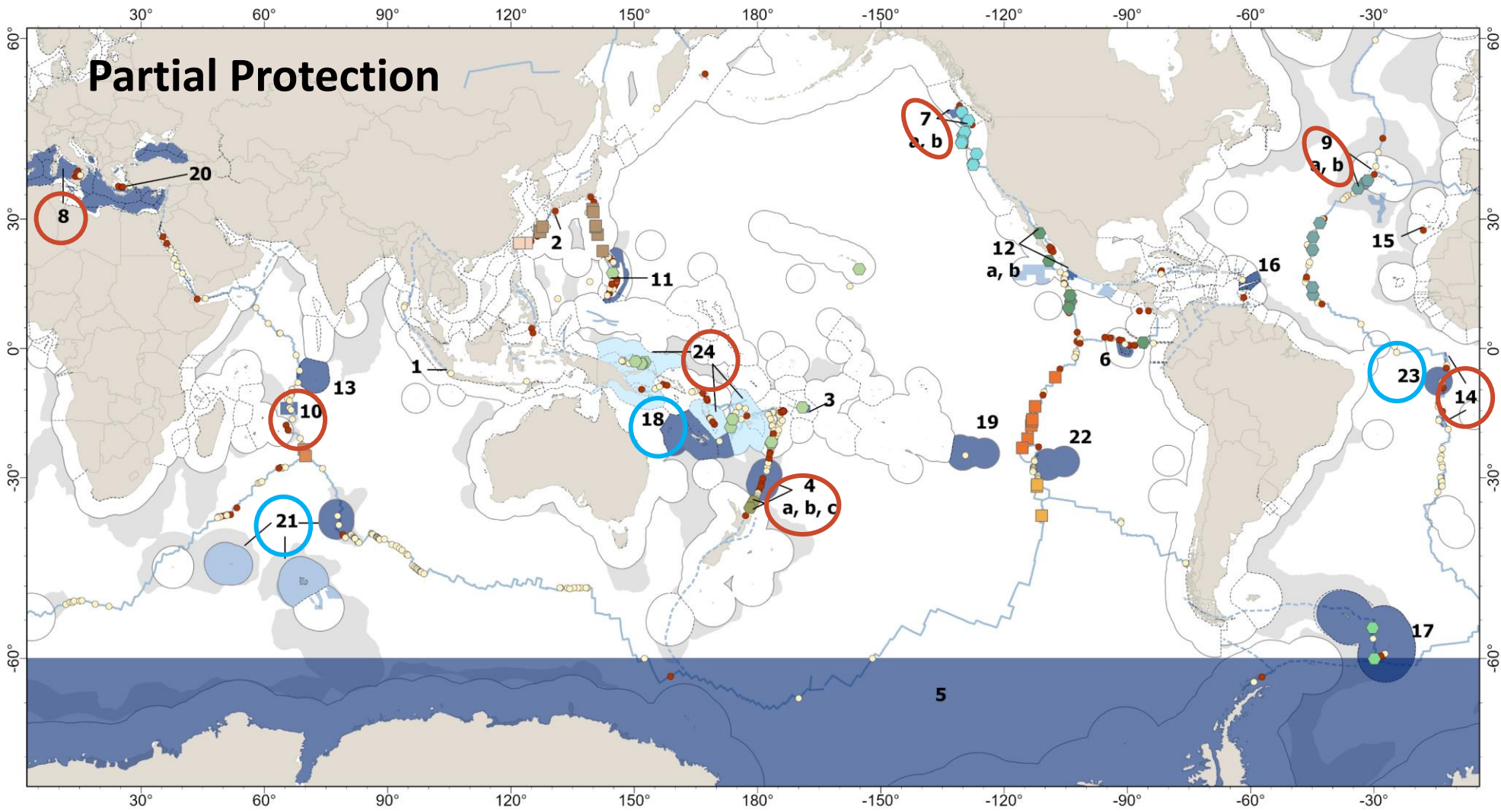
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- Seabed mining moratorium**



Partial Protection

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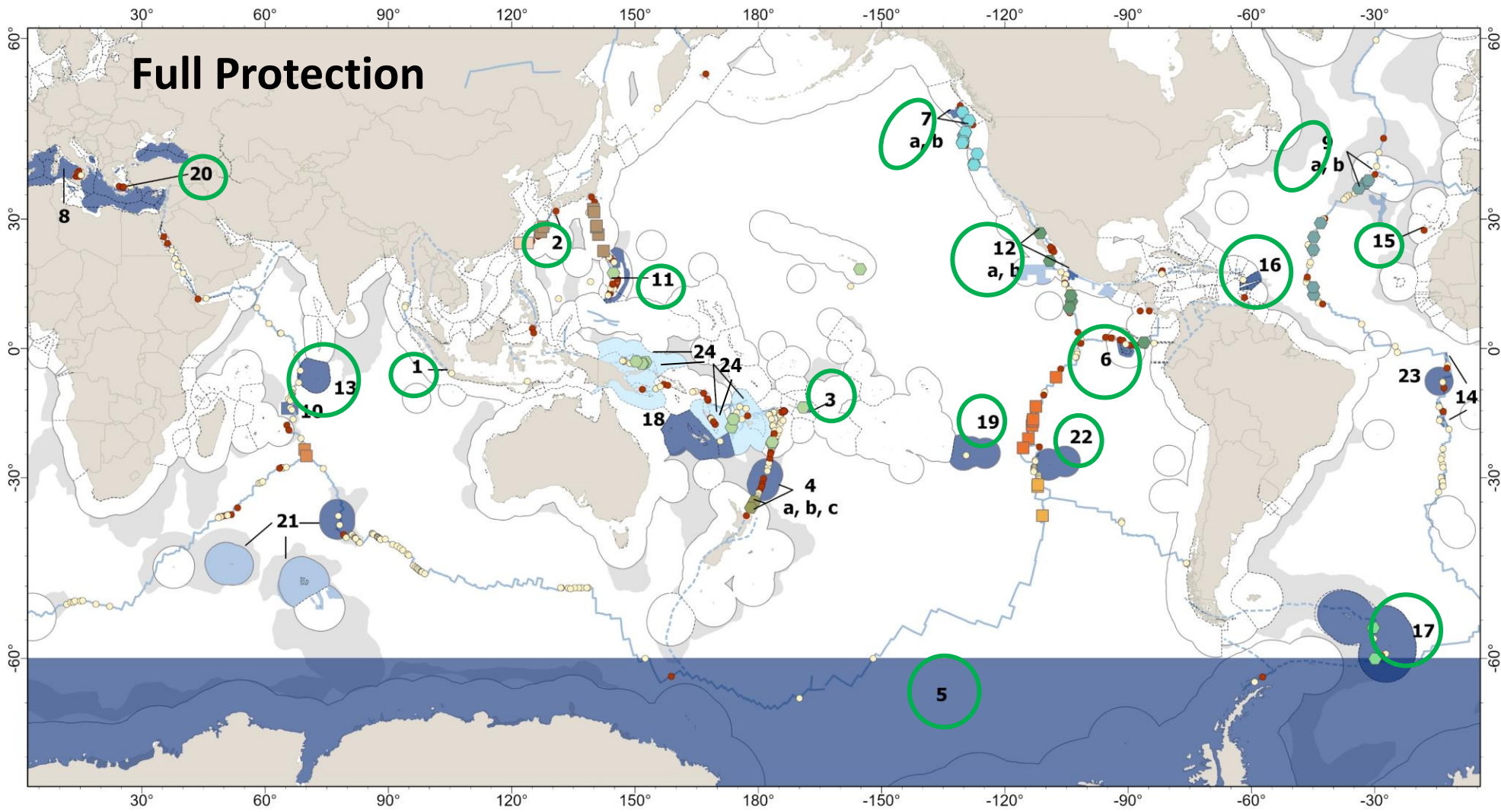
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Full Protection

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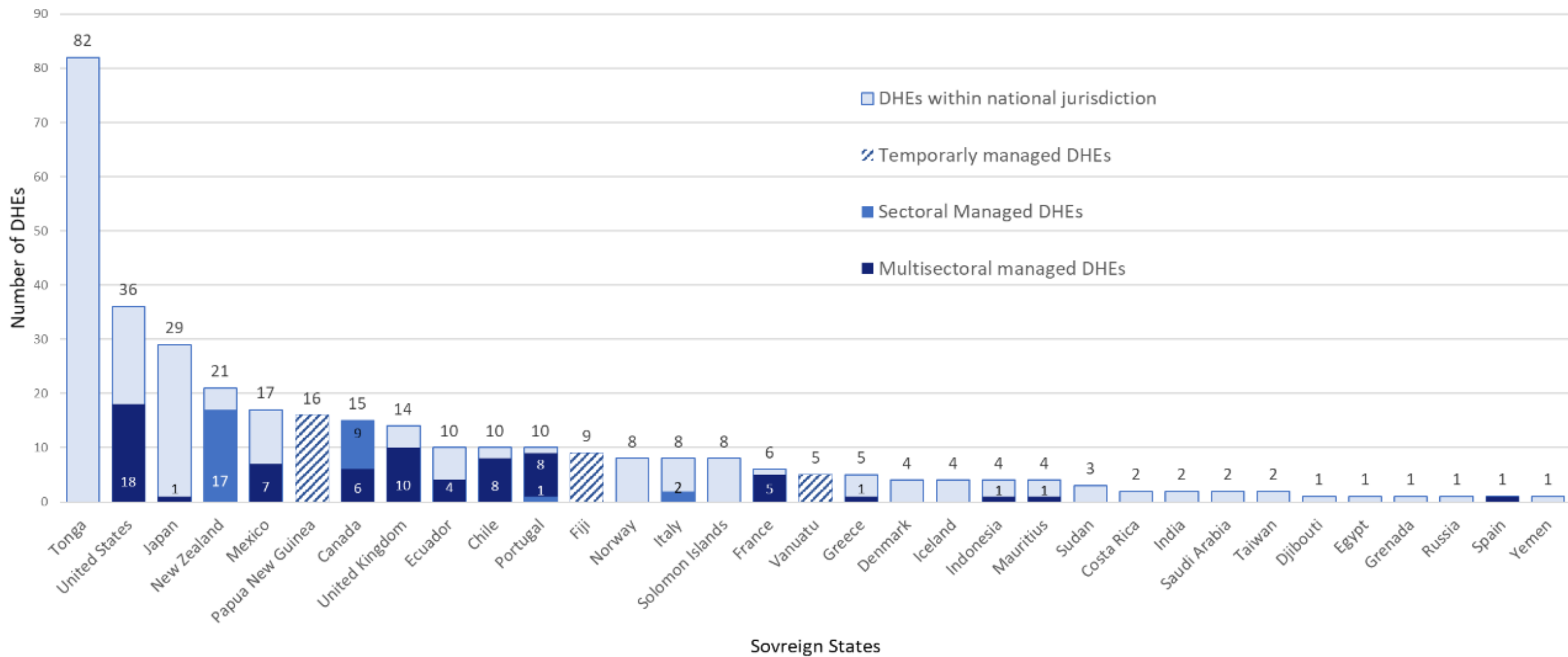
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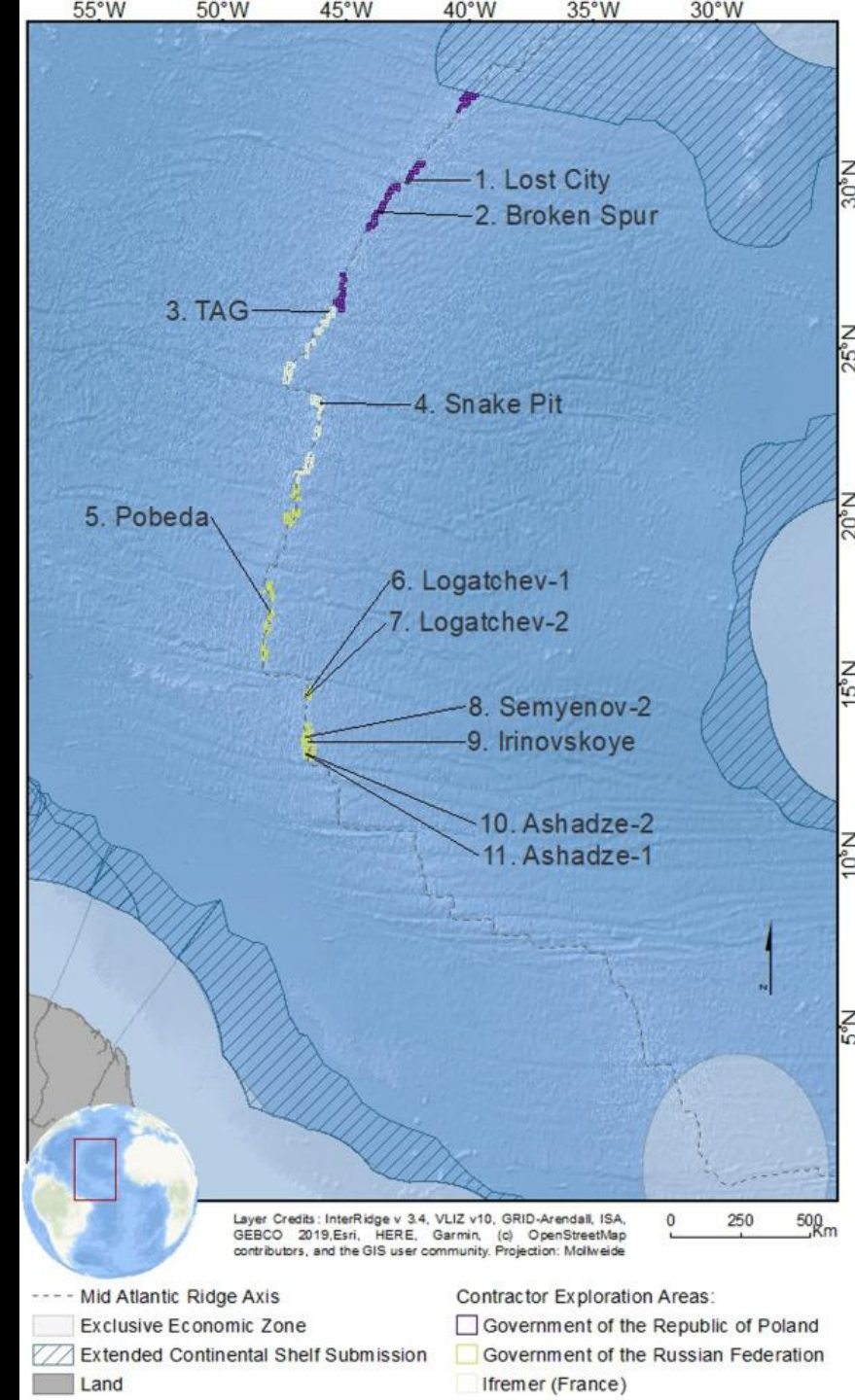
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In ABNJ..

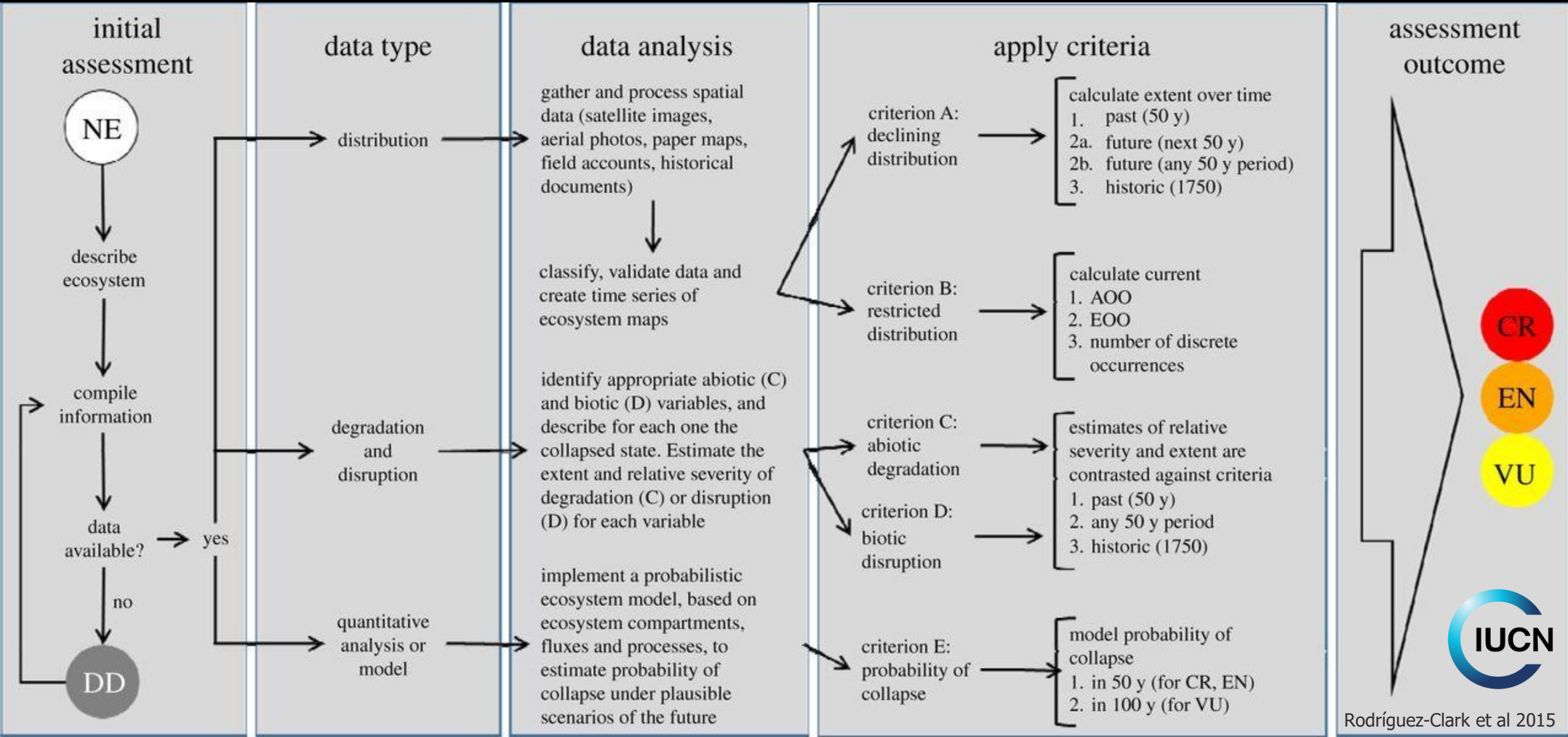
- sectoral management measures
- None of the biogeographic provinces currently represented within established ABMTs.
- Essential to improve the representativity of the biogeographical provinces



From fragmentation to a global strategy

- The use of existing criteria within the REMP workshop of the ISA open to possibility of synergies among regional and global governance actors.
- Approval of Site in Need of Protection
- Improve the representativity of the biogeographical provinces of hydrothermal vents in ABNJ
- In need of Multi-sectoral, uniform and holistic

IUCN red list of ecosystem





< **CRITICALLY
ENDANGERED** >

CR



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ENDANGERED** >
CR



Thank you for listening

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