TWAP
TRANSBOUNDARY WATERS ASSESSMENT PROGRAMME

The Open Ocean: Status and Trends

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UNEP
gef
UNEP-DHI PARTNERSHIP
Centre on Water and Environment
UNEP
DHI
United Nations Educational, Scientific and Cultural Organization
International Hydrological Programme
United Nations Educational, Scientific and Cultural Organization
Intergovernmental Oceanographic Commission
ILEC

The Open Ocean

The planet's largest transboundary space

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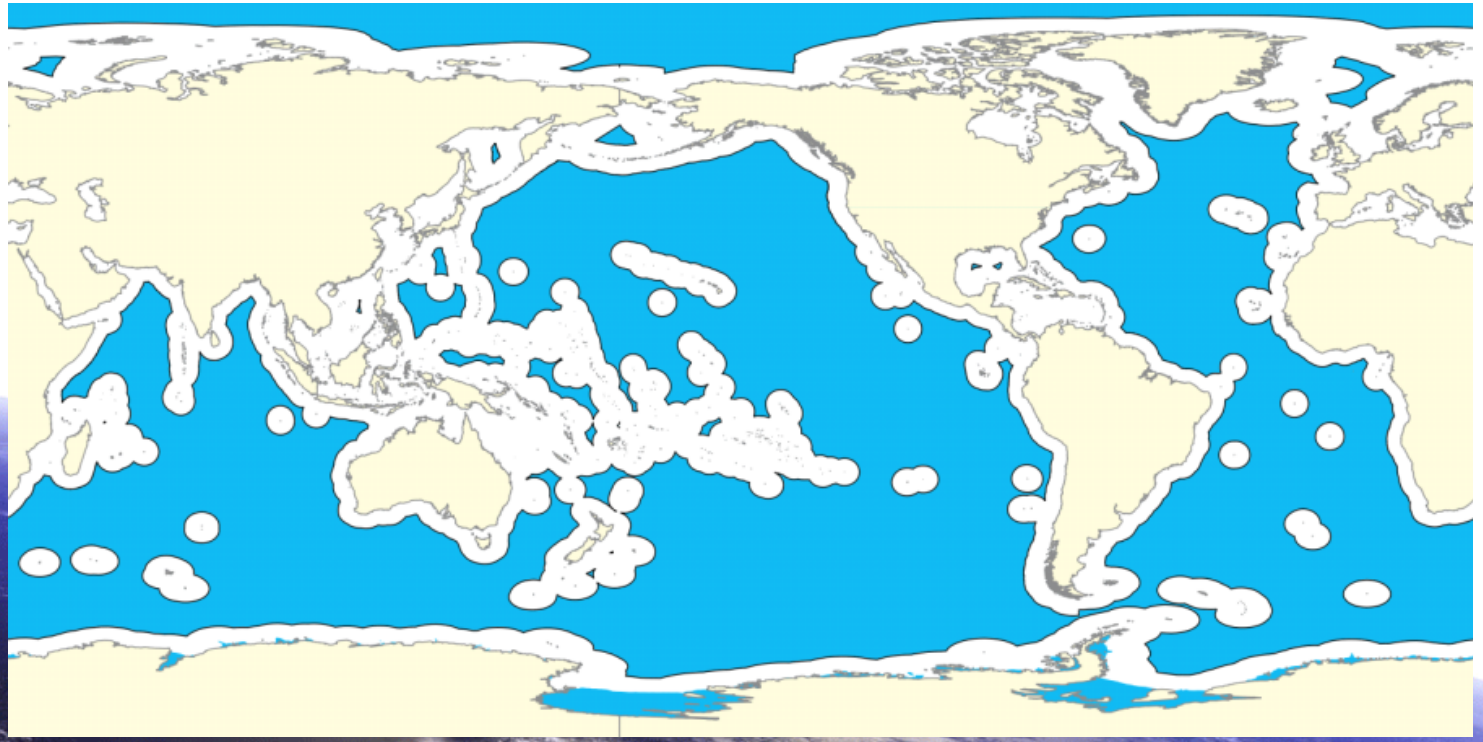


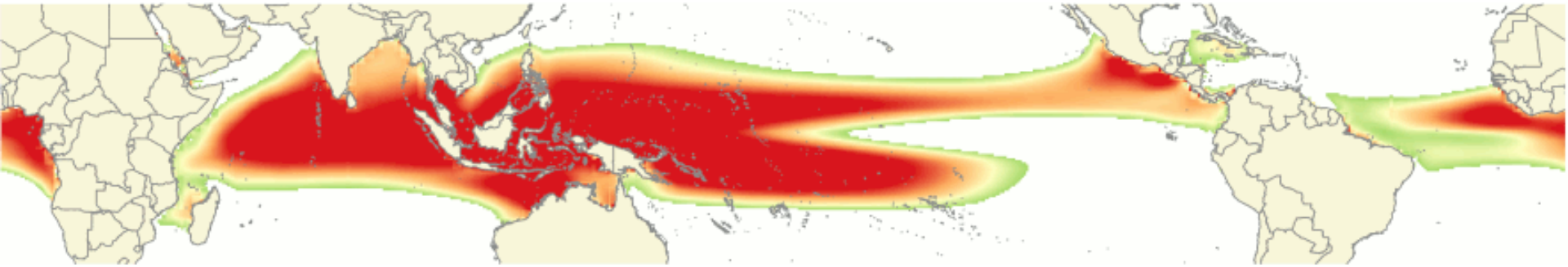
Assessment approach

Global ocean – local vulnerability

- **Climate** change, variability and impacts
- **Ecosystems**, habitats and biodiversity
- **Fisheries**, impact and sustainability
- **Pollution** and contaminants
- **Integrated assessment**
- **Governance**




Open ocean climate
Warming



Warm pool extent, RCP 8.5 'business as usual' scenario, present to 2060

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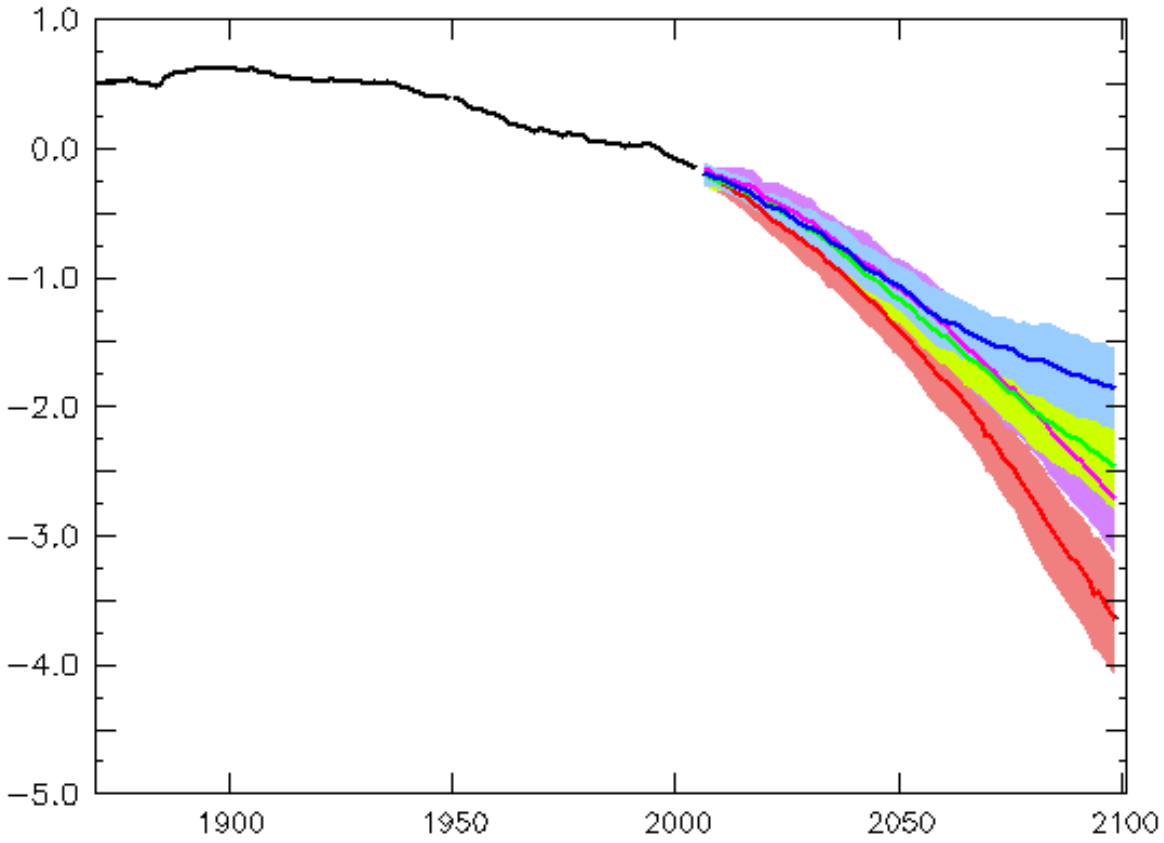
Open ocean climate

Oxygen is decreasing



Projected decrease in oxygen under different emissions scenarios

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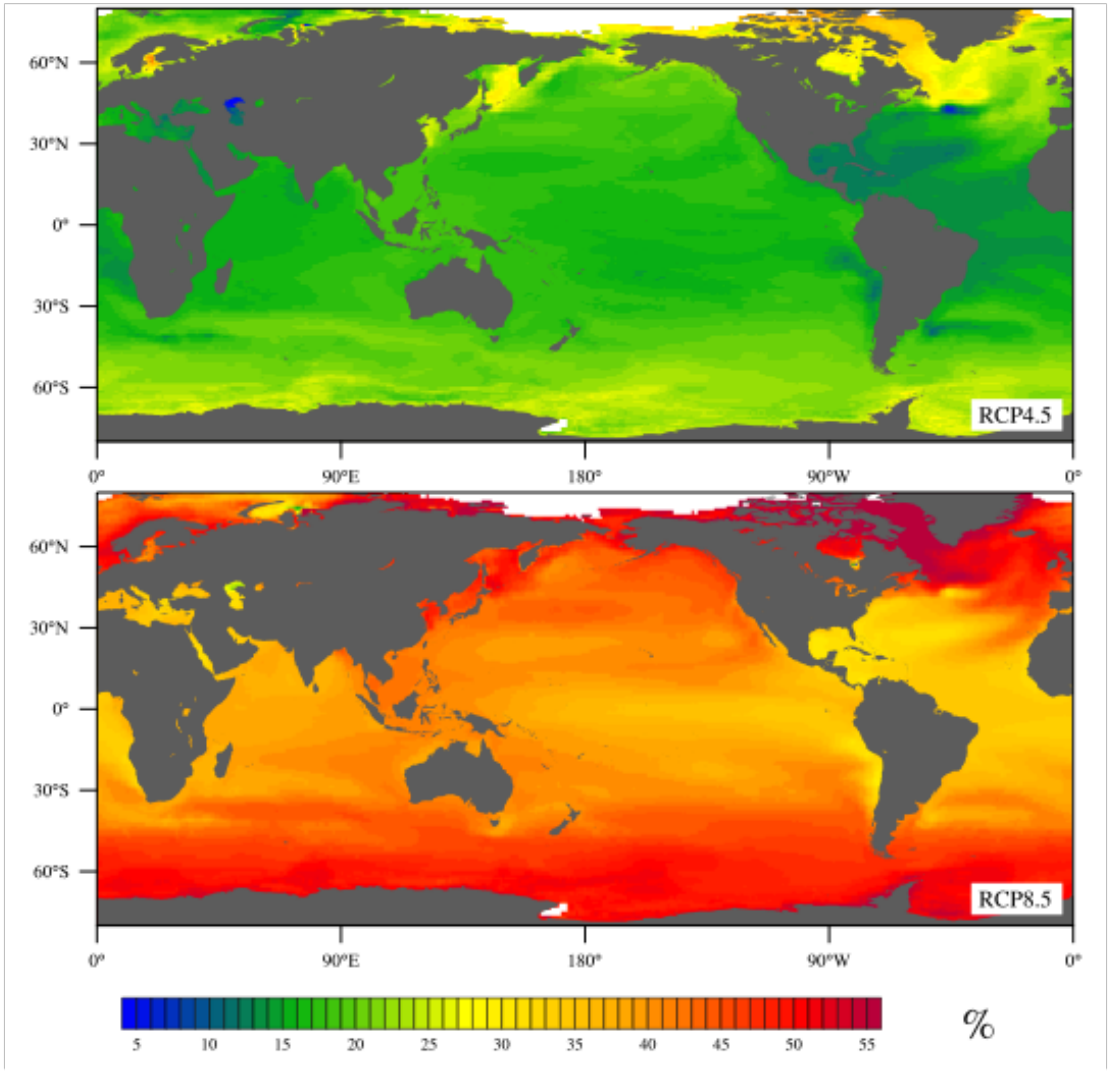
Open ocean climate
Acidifying



Acidification in 2100
under moderate mitigation

And business as usual

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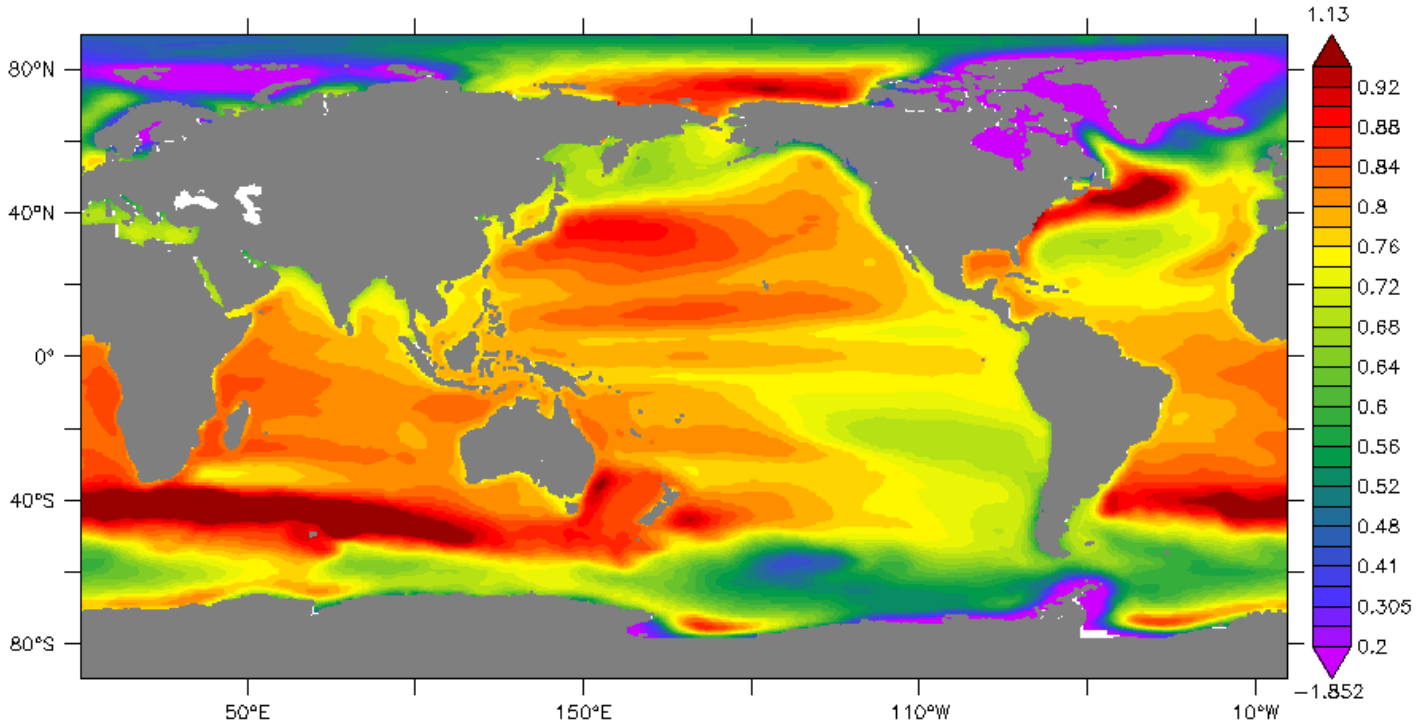
Open ocean climate

Sea level is rising



2100, business as usual scenario

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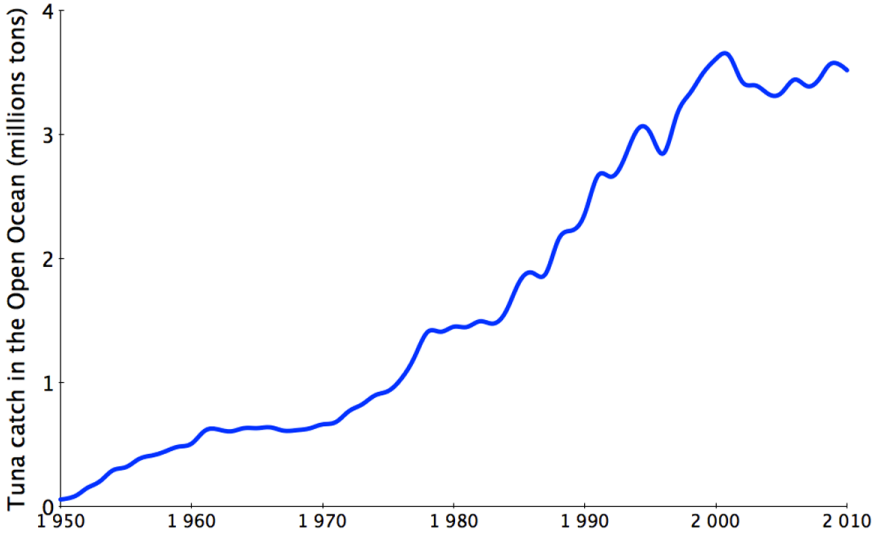
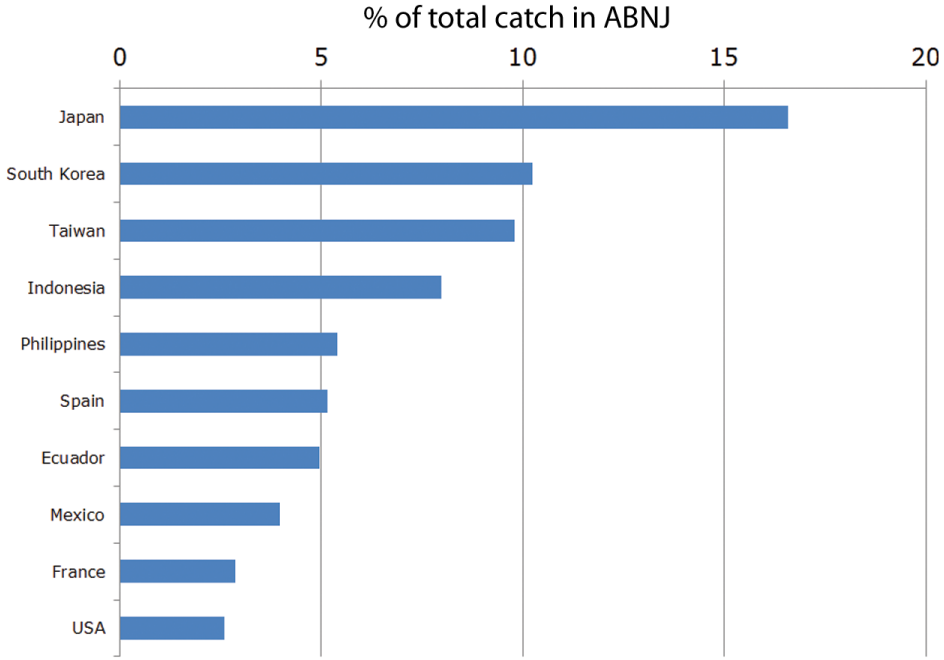
Fisheries

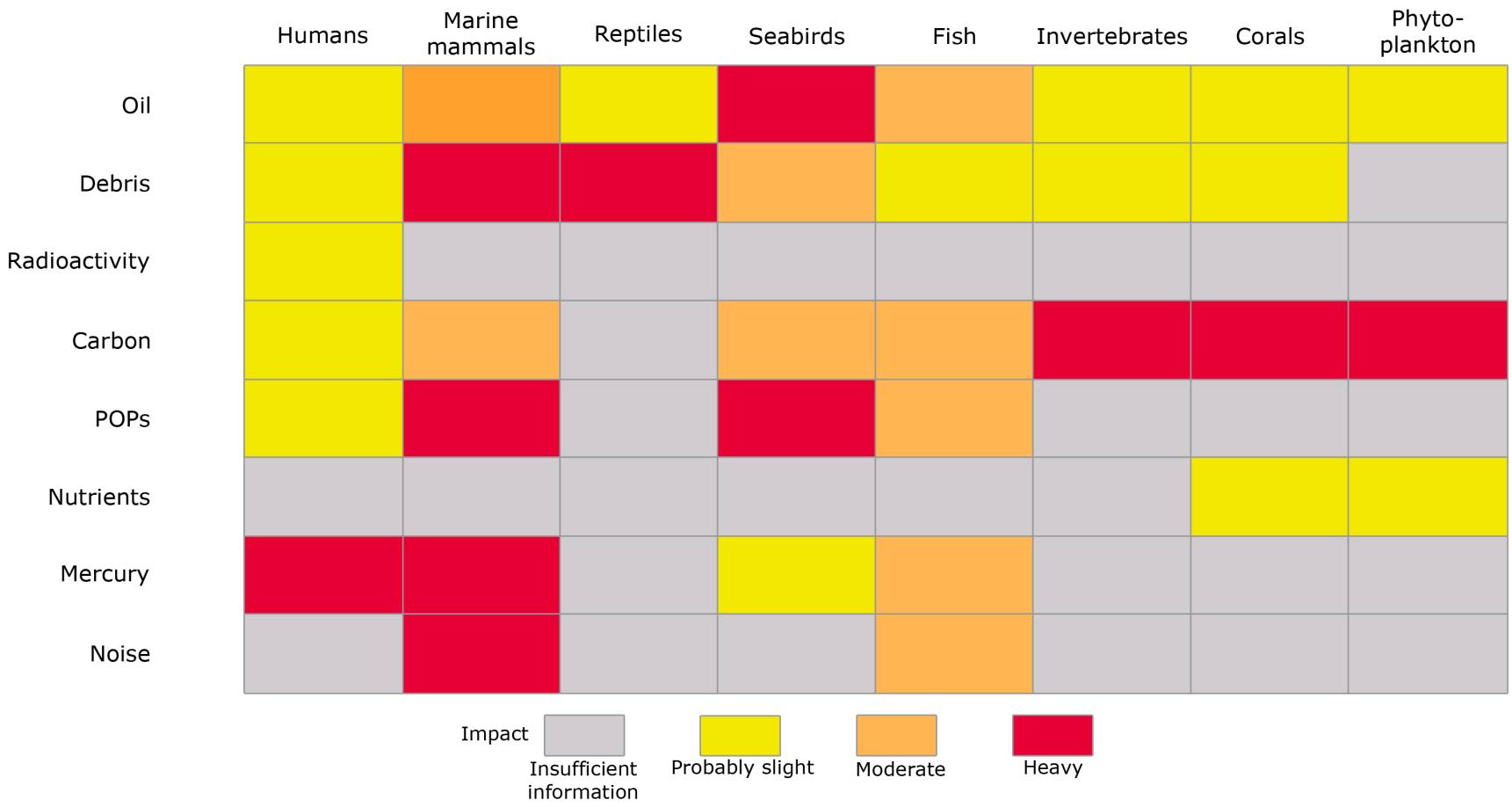
Direct human impact is growing





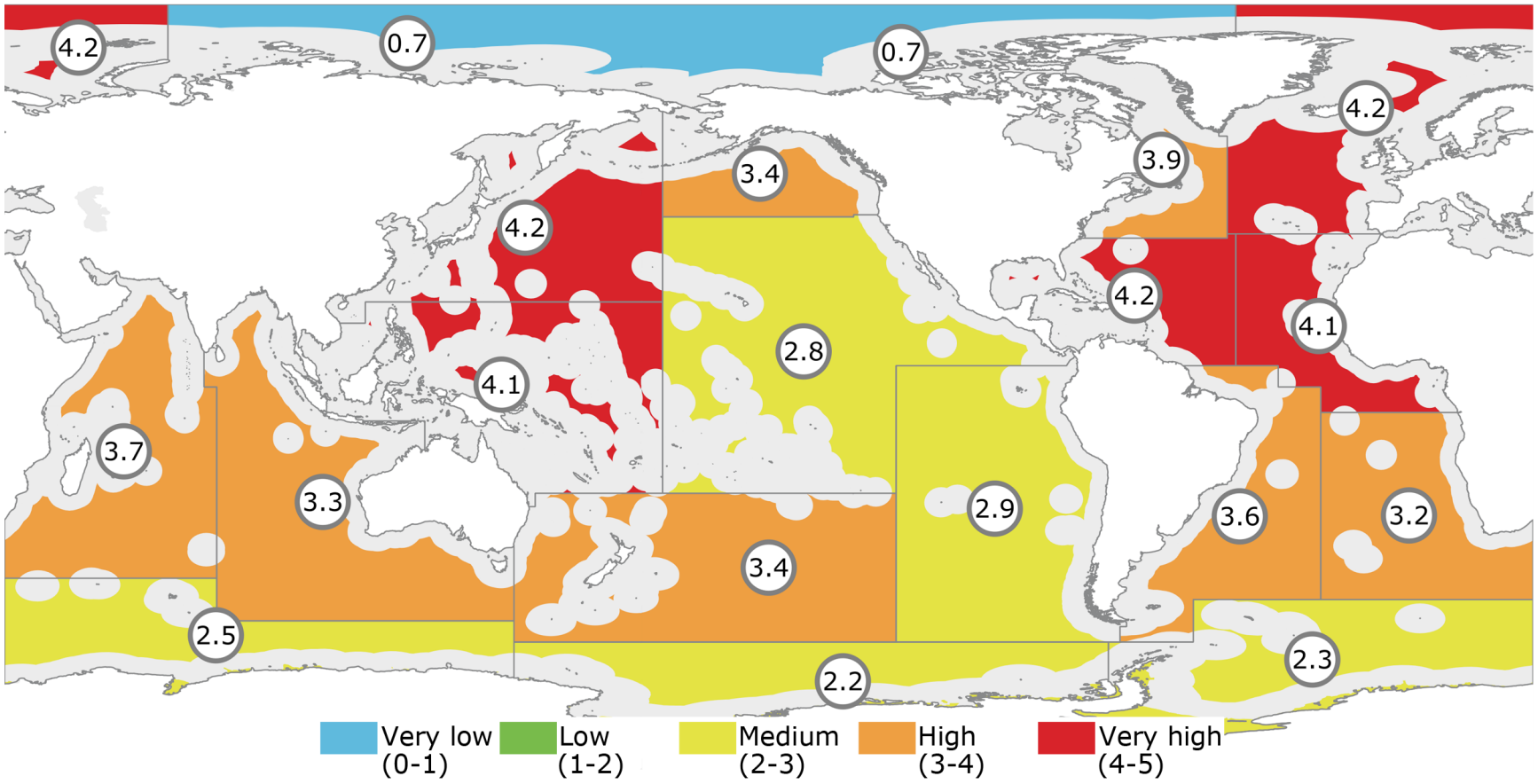
Pollution

Poses threats to open ocean ecosystems



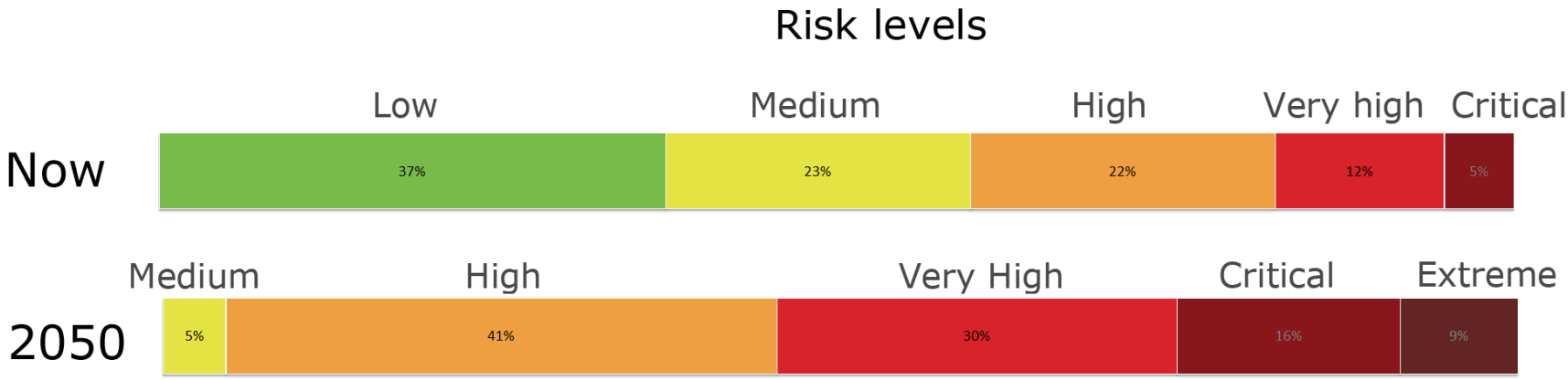
Cumulative human impact

Strong in many open ocean areas



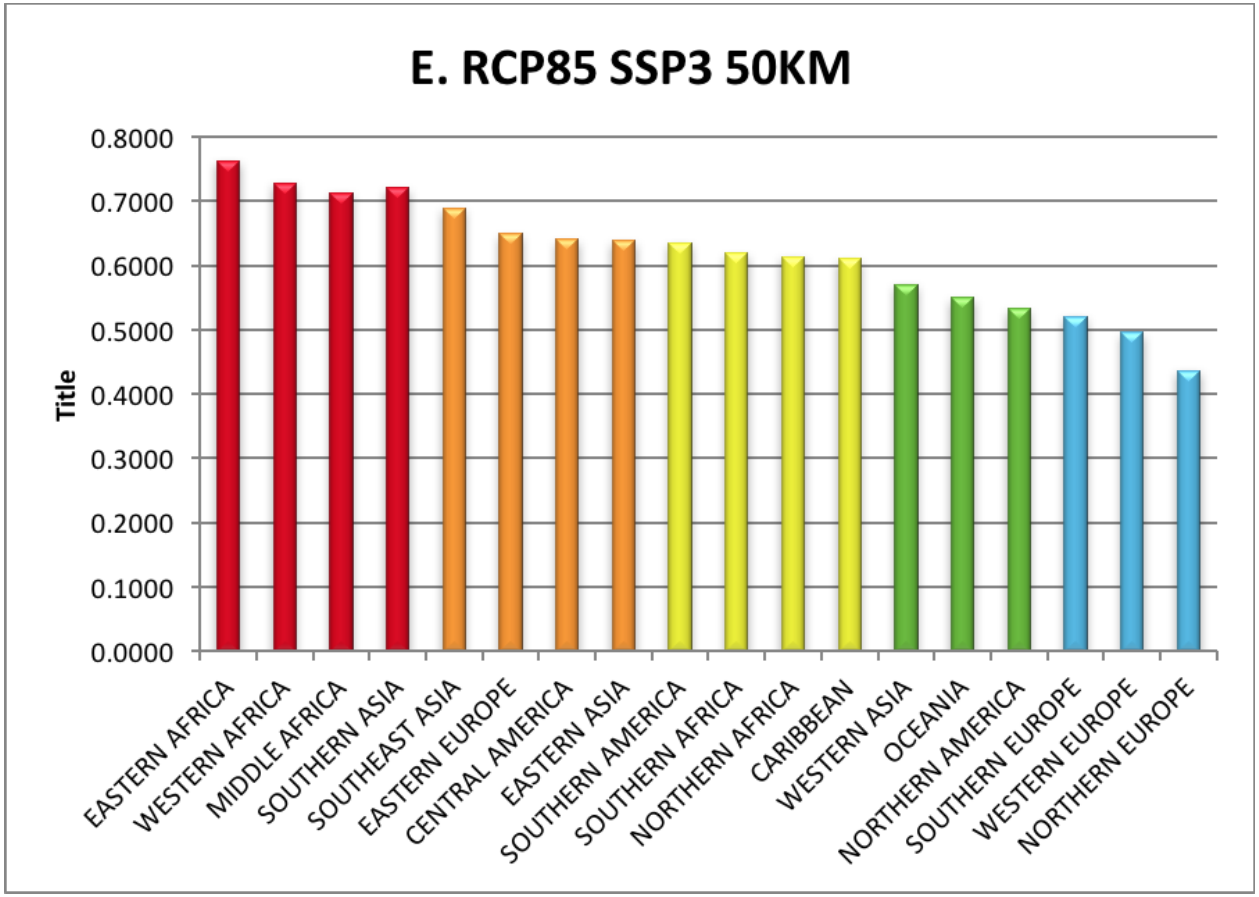
Corals

Reefs at risk



Global sea level rise

Risk: hazard, vulnerability, exposure

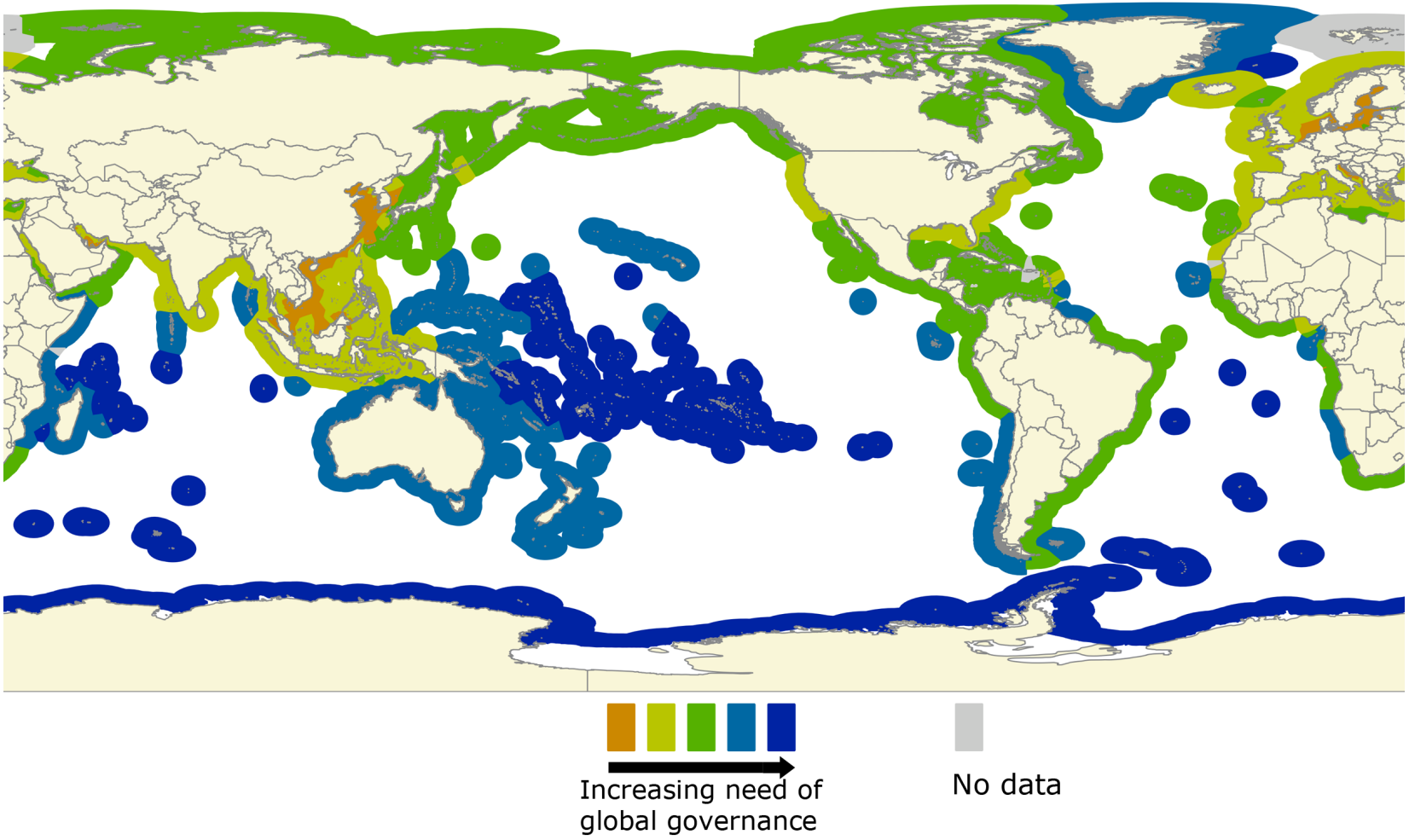


SLR Risk Index

- Very high risk
- High risk
- Moderate risk
- Low risk
- Very low risk

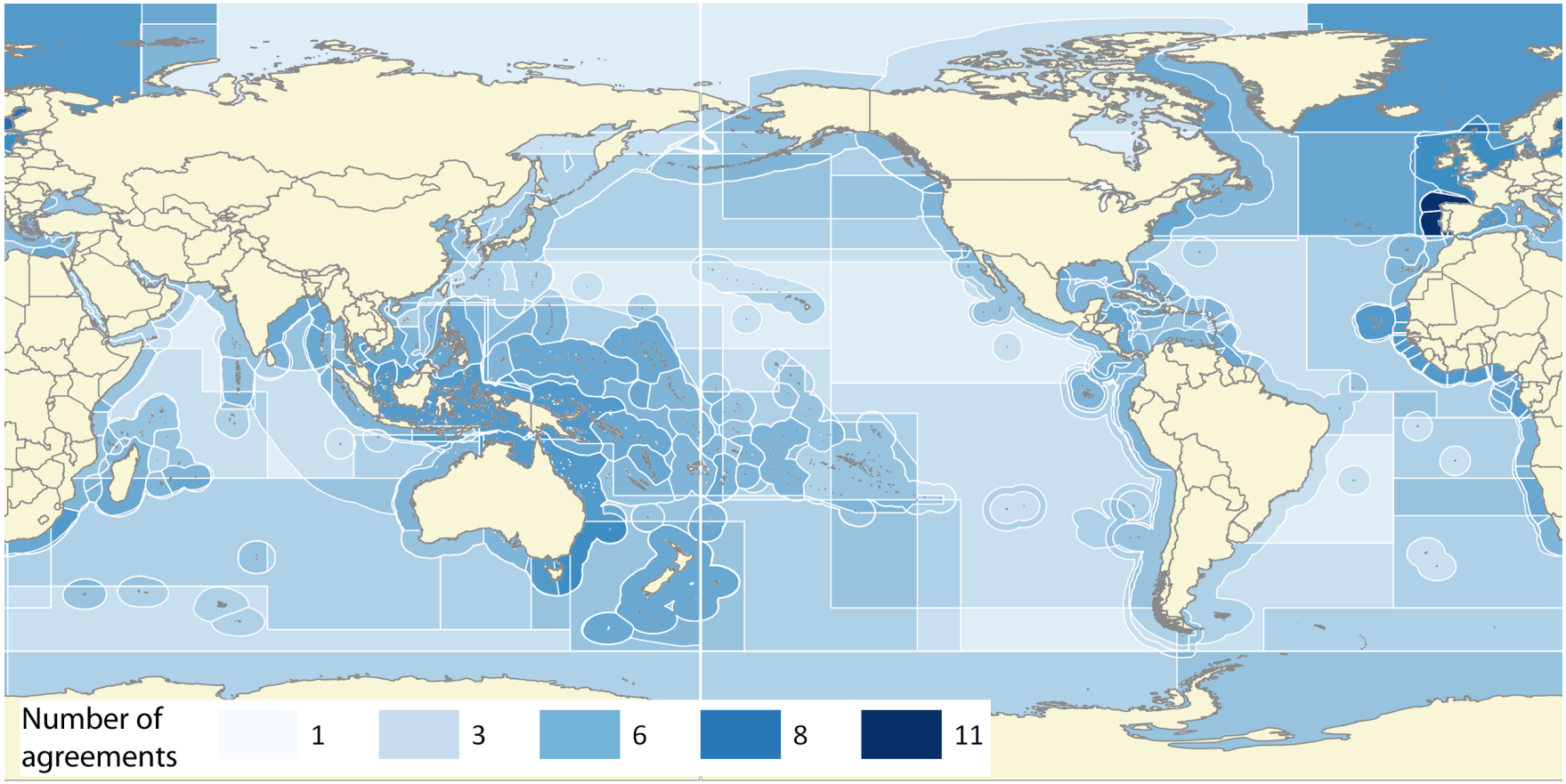
Local risk, global issues

Risk from transboundary environmental issues



Governance

Regional clusters a core for integration



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