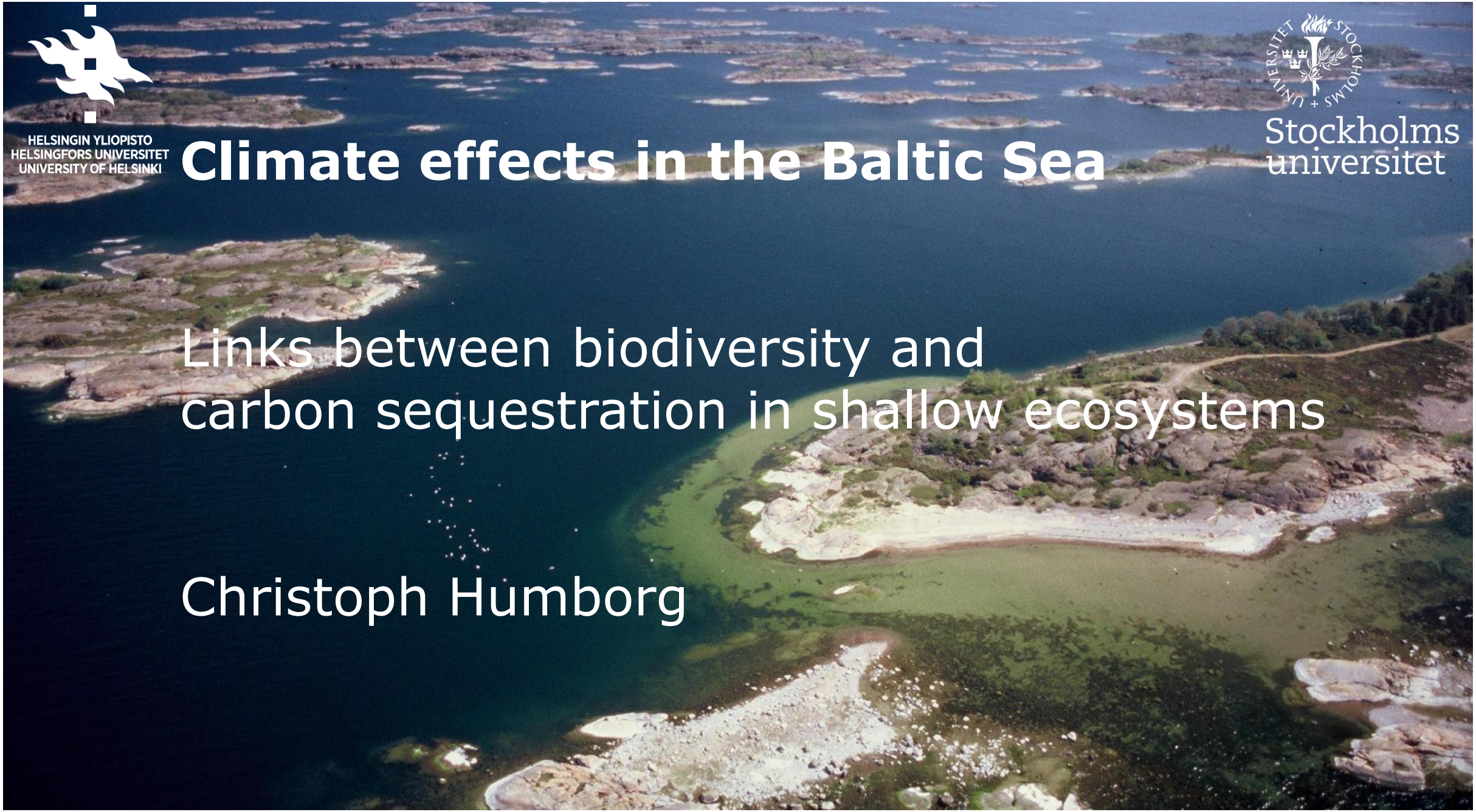
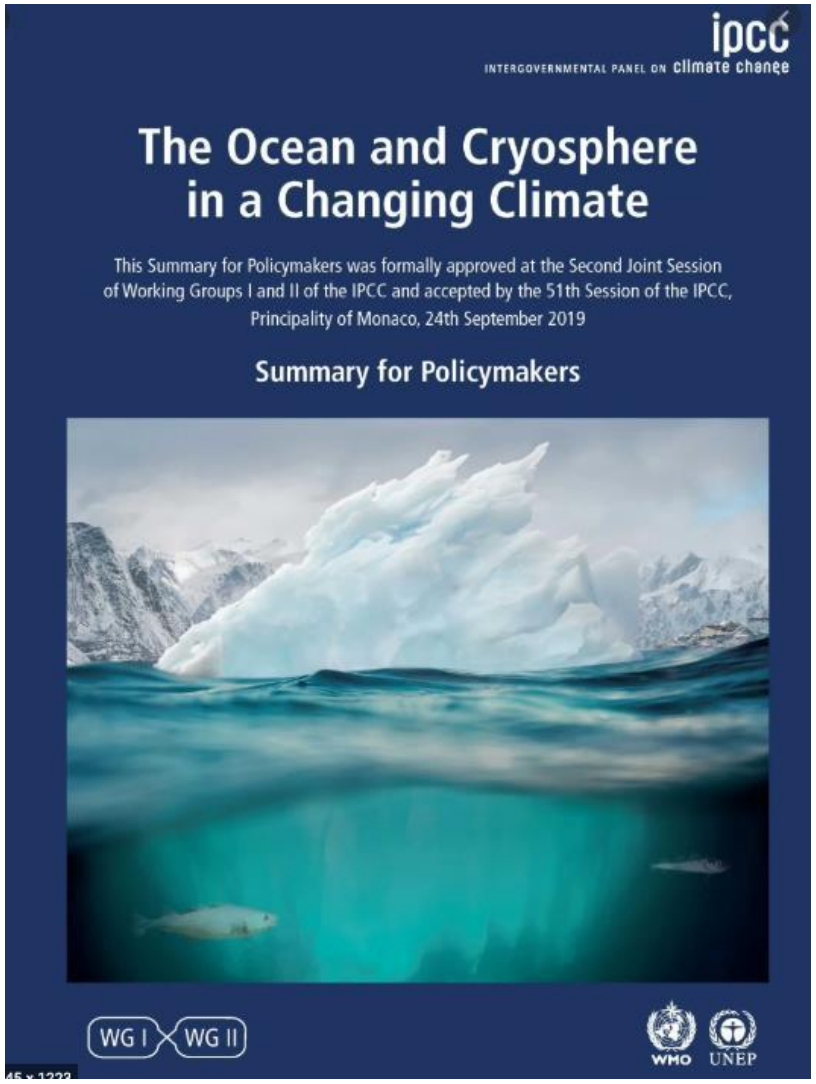

HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI
Stockholms universitet
Climate effects in the Baltic Sea
Links between biodiversity and carbon sequestration in shallow ecosystems
Christoph Humborg

IPCC SROCC. A clarion wake up call



Climate change makes the ocean:

- higher
- warmer
- more acidic
- see heat waves
- hold less oxygen
- less productive
- less predictable

Jane Lubchenco, AUG 2020

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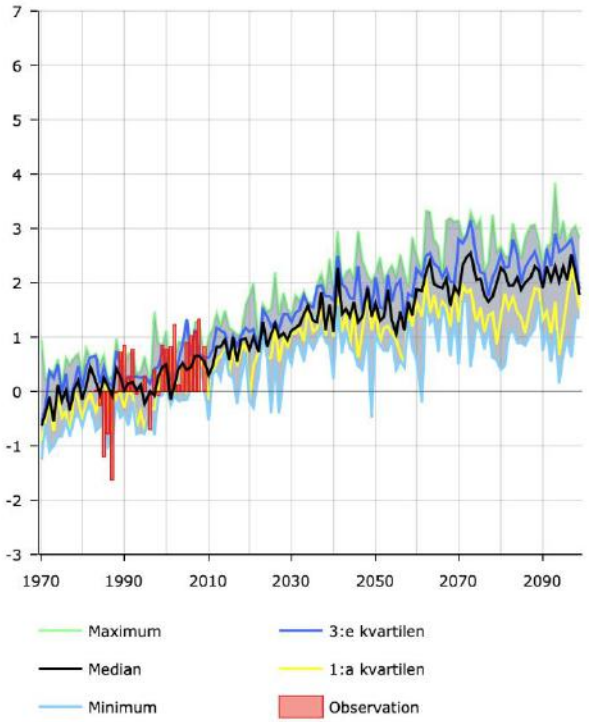
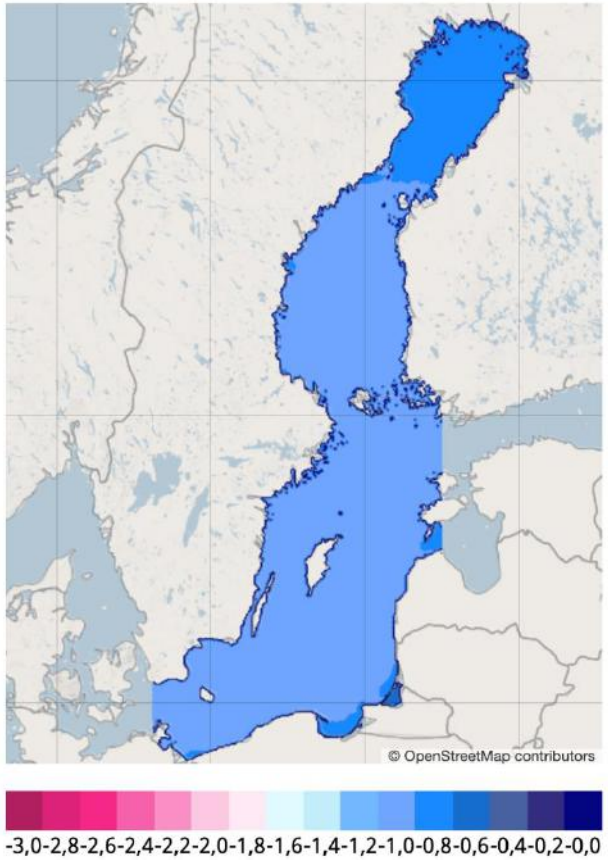
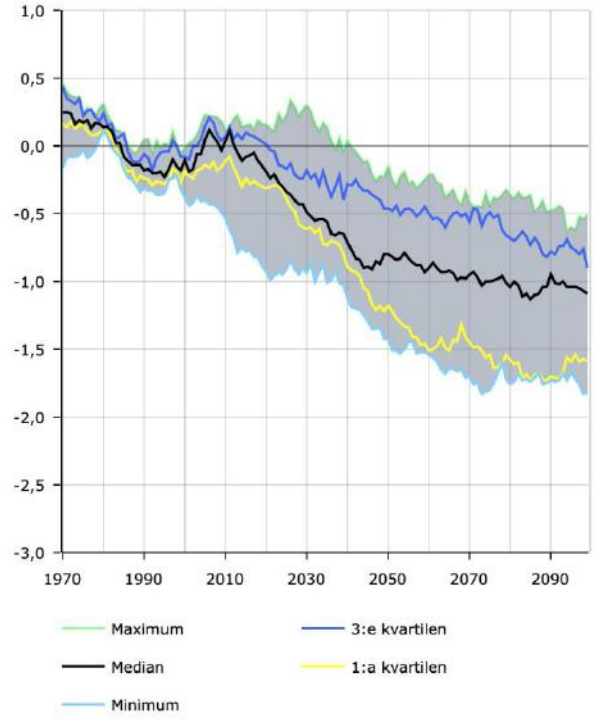
Scenarios for the Baltic Sea

Temperature



Salinity





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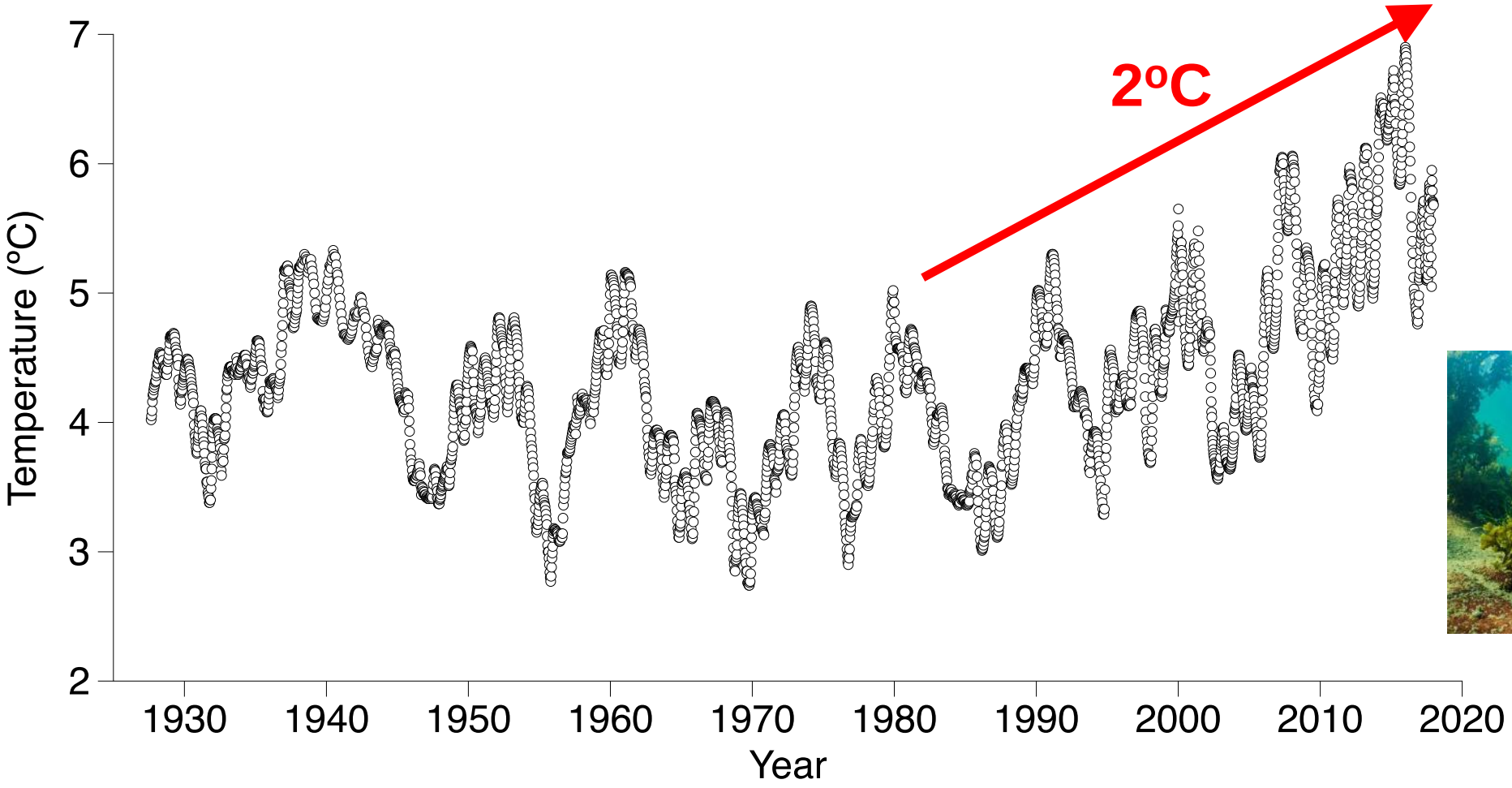
Water temperature at 31 m



Tvärminne Zoological Station, at the entrance to the Gulf of Finland

Source: Humborg et al. 2019

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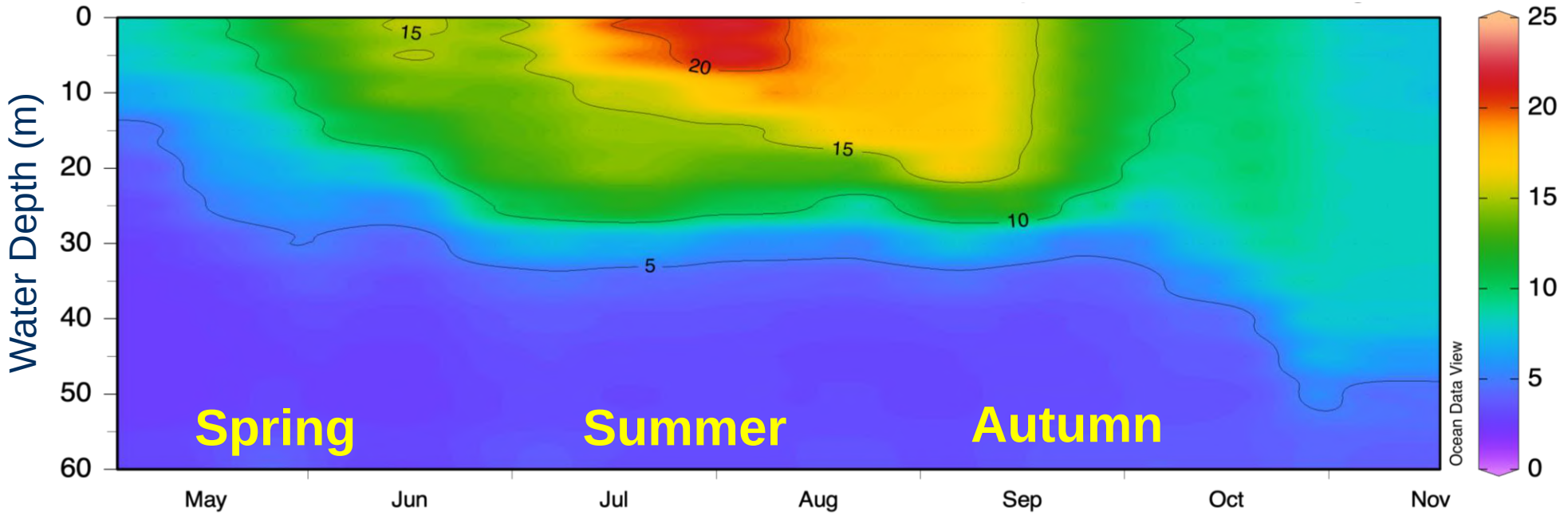
Tropical temperatures in the marine environment during the heatwave of 2018



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Study on greenhouse gas emissions during the heatwave of 2018

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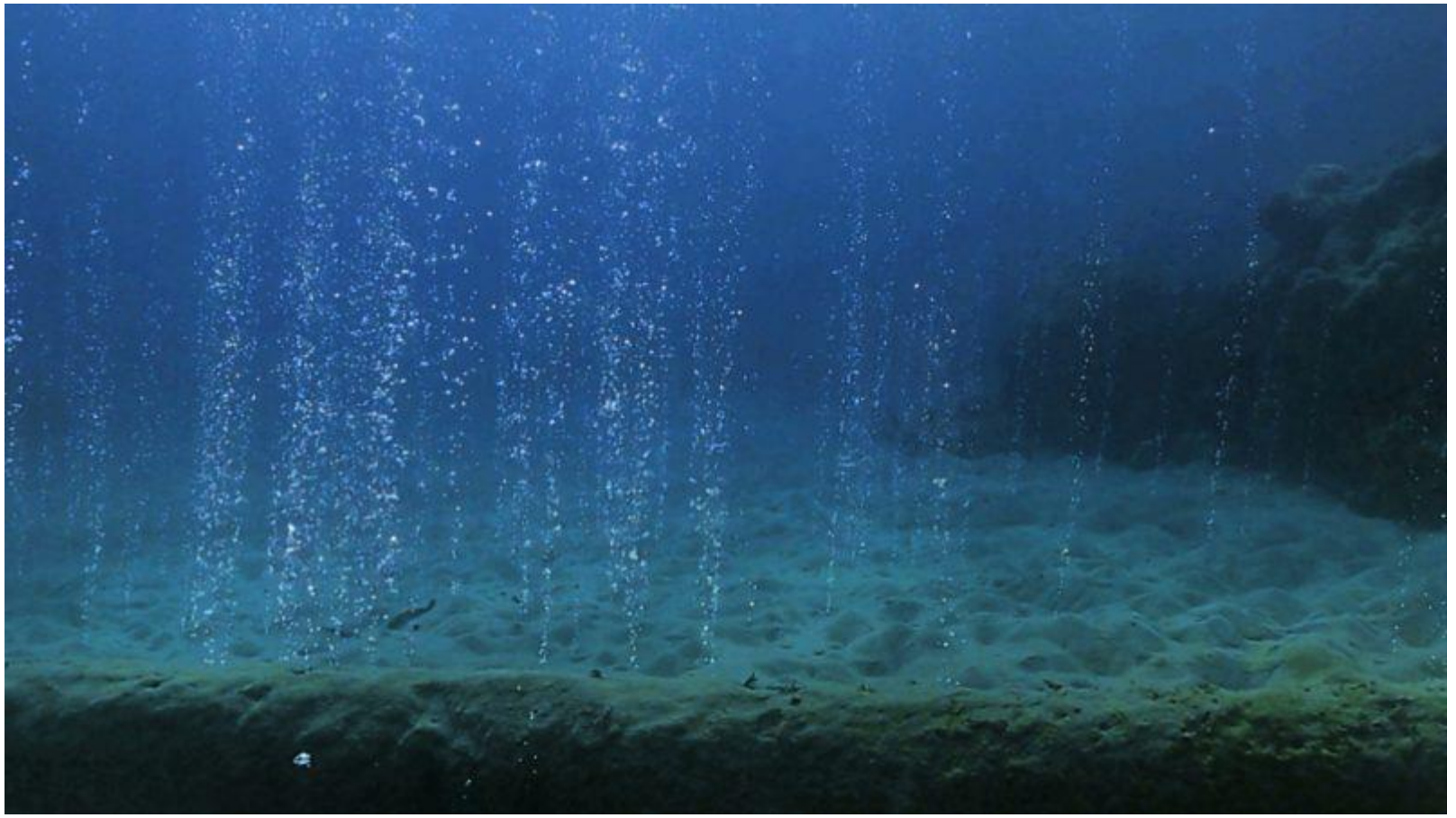
Massive methane emissions detected



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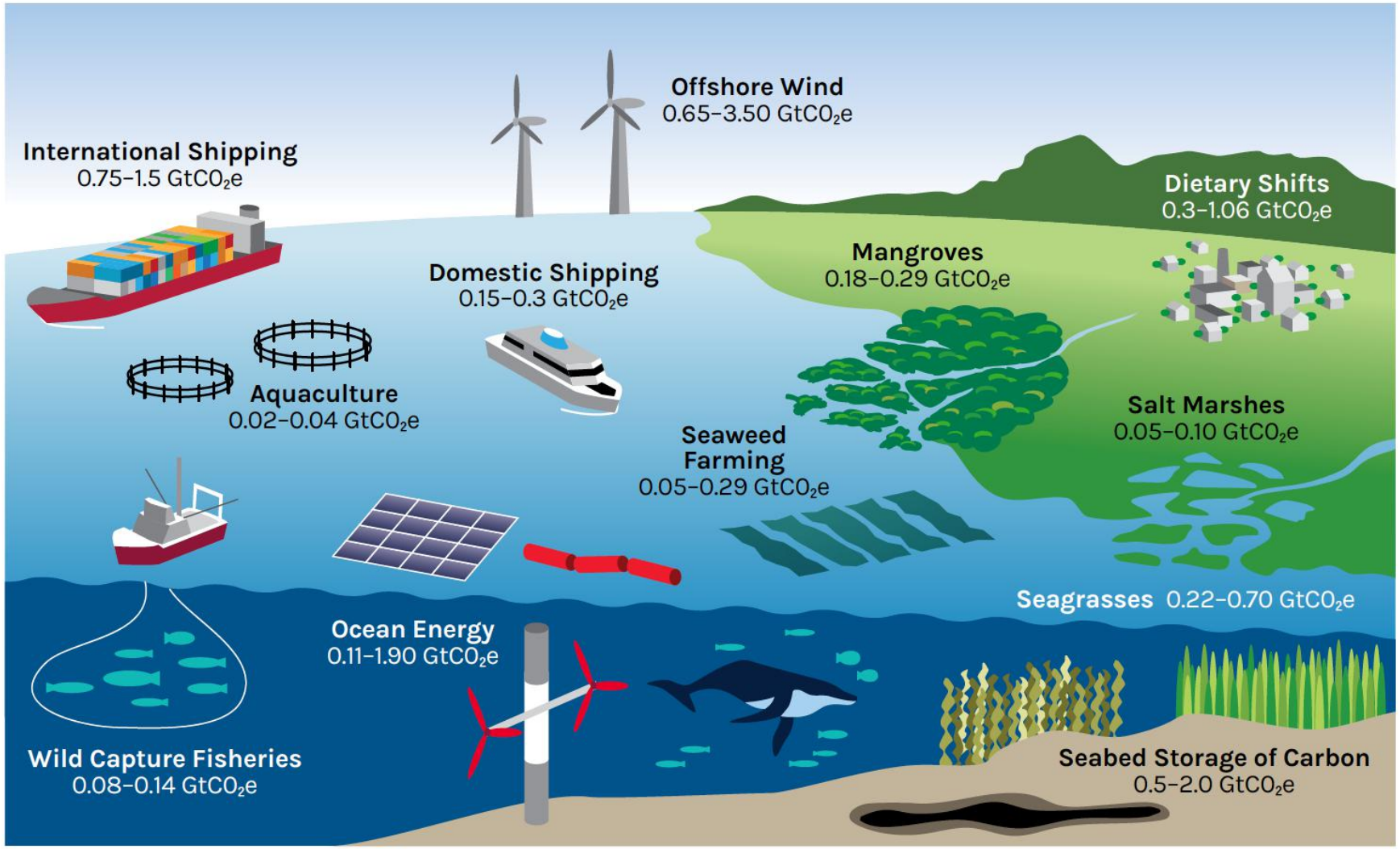
Ocean based mitigation options: From victim to solution

Figure ES-1. Ocean-based Mitigation Options Explored in This Report and Associated Annual Mitigation Potential in 2050



www.oceanpanel.org/climate

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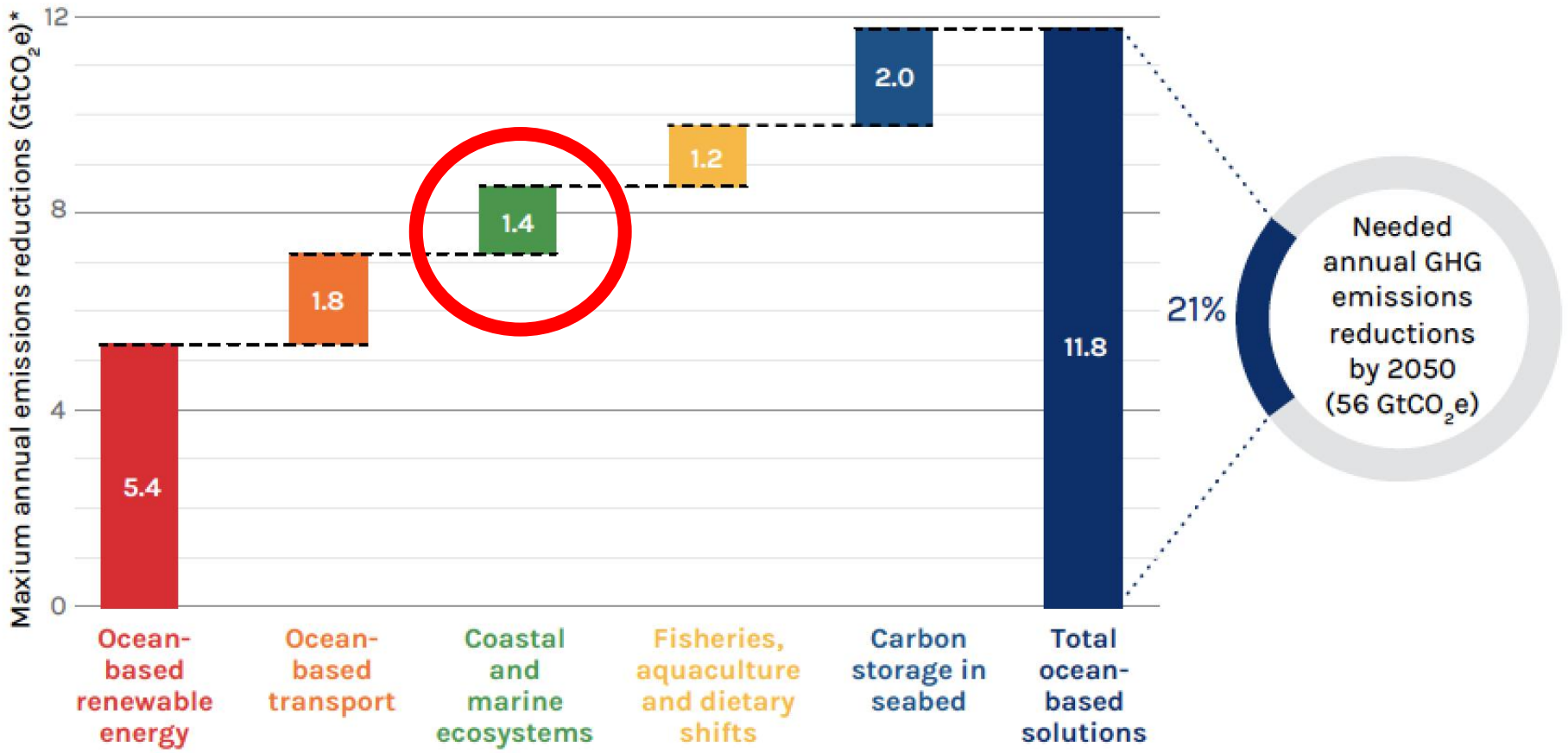
Potential for sea-based measures

Figure ES-4. Contribution of Five Ocean-based Climate Action Areas to Mitigating Climate Change in 2050 (Maximum $GtCO_2e$)



*Notes: * To stay under a 1.5°C change relative to pre-industrial levels*

Source: Authors

www.oceanpanel.org/climate

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