



Changing the fate of the ocean by unleashing the power of data, technology and collaboration.

Jo Øvstaas

Foredrag for Rotary Holmestrand

5 September 2023

HI IR Ocean

Centre for the Fourth Industrial Revolution

Litt om meg – En havglad kar fra Holmestrand



- BSMA 1989-1991
- NTH Marin 1991-1995
- DNV Maritime 1996-2001
- DNV Software 2001-2008
- DNV Shanghai 2009-2013
- DNV Digital Solutions 2013-2017
- DNV Veracity 2017-2018
- HUB Ocean 2019-

Hav og Maritim har vært en rød tråd ☺





Agenda

1. Hva slags problemer har vi i havet?
2. Hva kan vi gjøre som enkeltpersoner eller mindre organisasjoner?
3. Kan vi jobbe “top down” og “bottom up” på en gang?
Litt om HUB Ocean og hva vi gjør. Og en dæsj REV Ocean som er en annen organisasjon.
4. Hvis vi ikke kan måle havet, er det vanskelig å forvalte havet på en bærekraftig måte. Litt om havdata og eksponentiell vekst.
5. Holmestrand og Fornebu – Noen konkrete ideer

Hva er problemet?

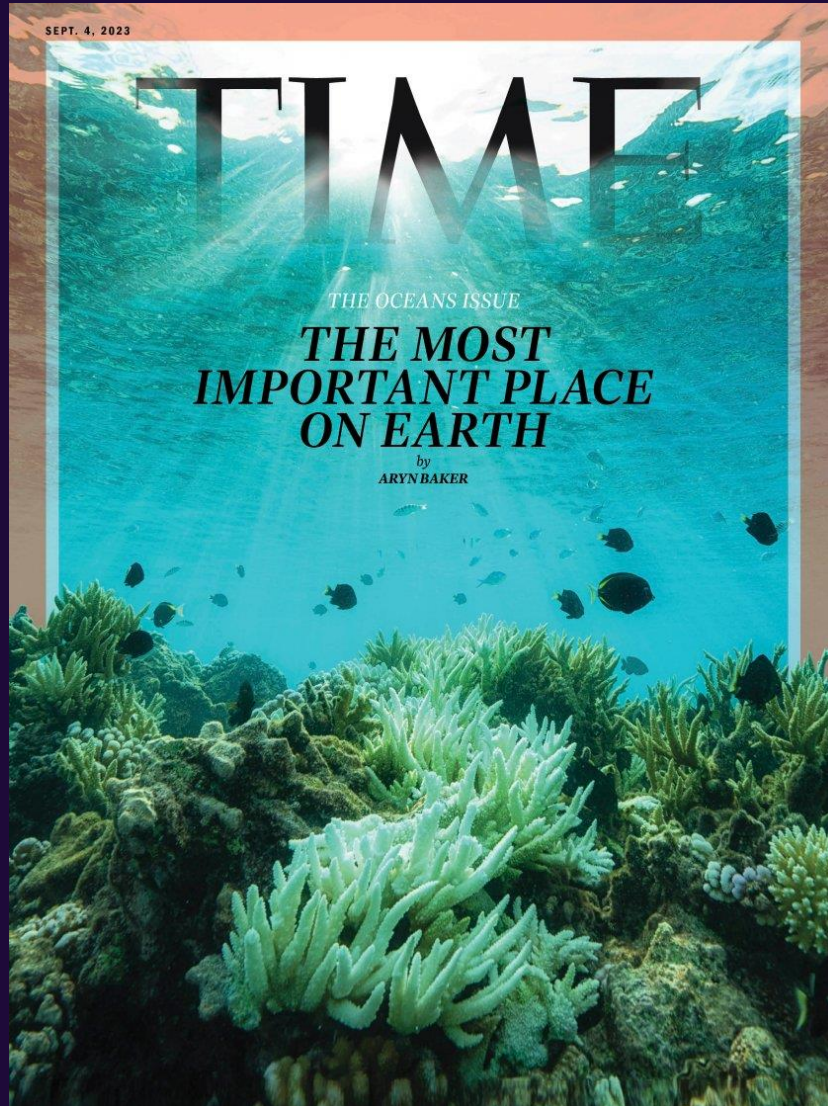
A CONSERVATION INTERNATIONAL FILM

HARRISON FORD IS

THE OCEAN

natgeo.org/speaking.org

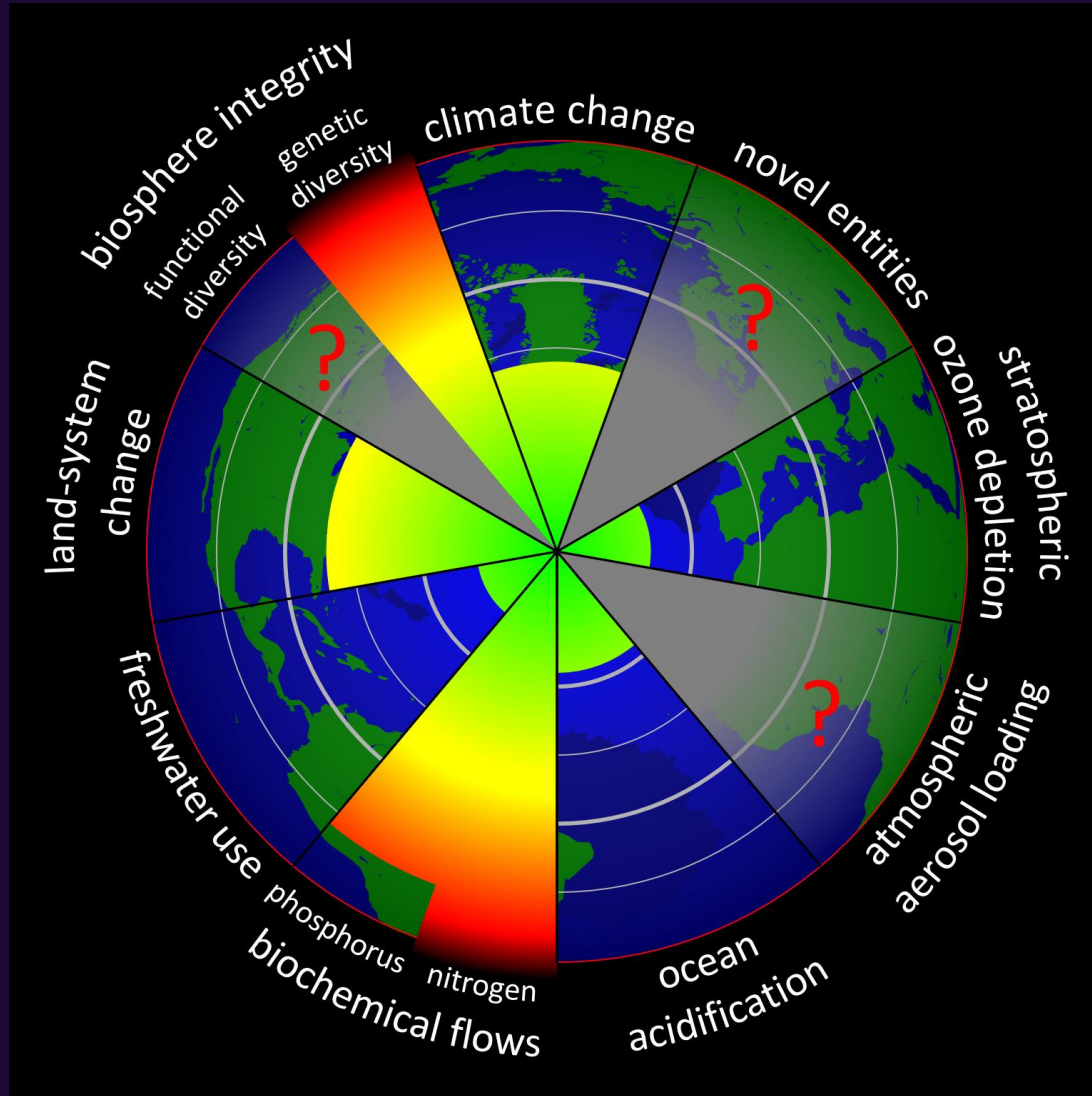
The most important place on earth...?



“Suddenly, we’re seeing that the impacts of climate change are not something that is going to be suffered by somebody else”

“The more nature we have, the more nature will be able to absorb our impacts.”

Planetary Boundaries



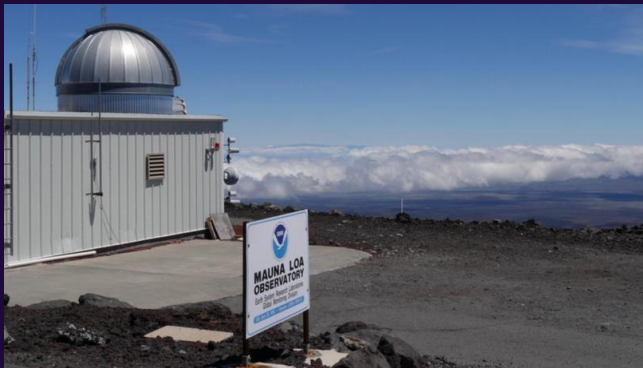
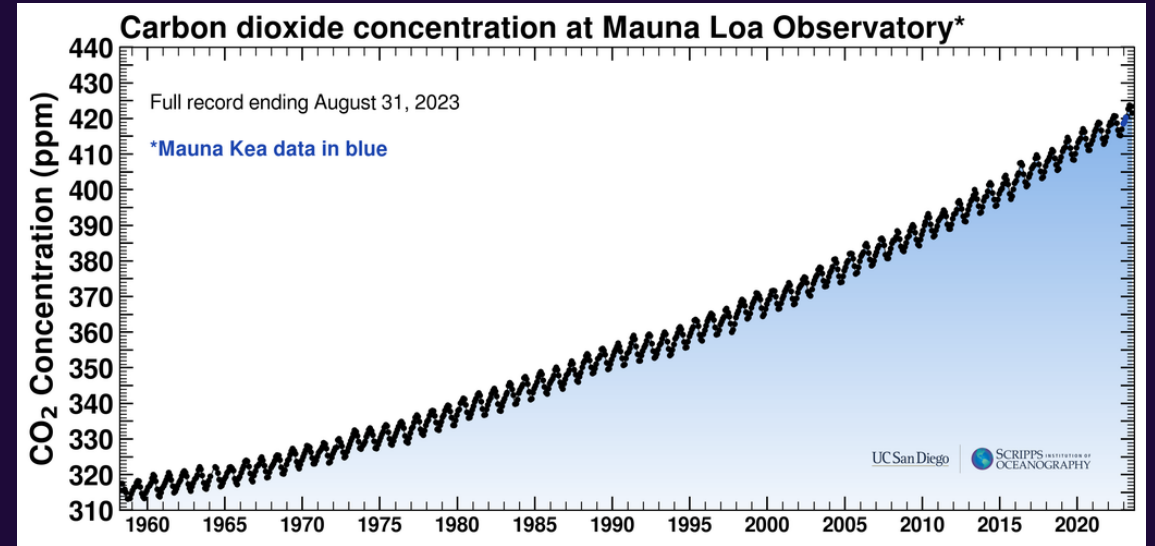
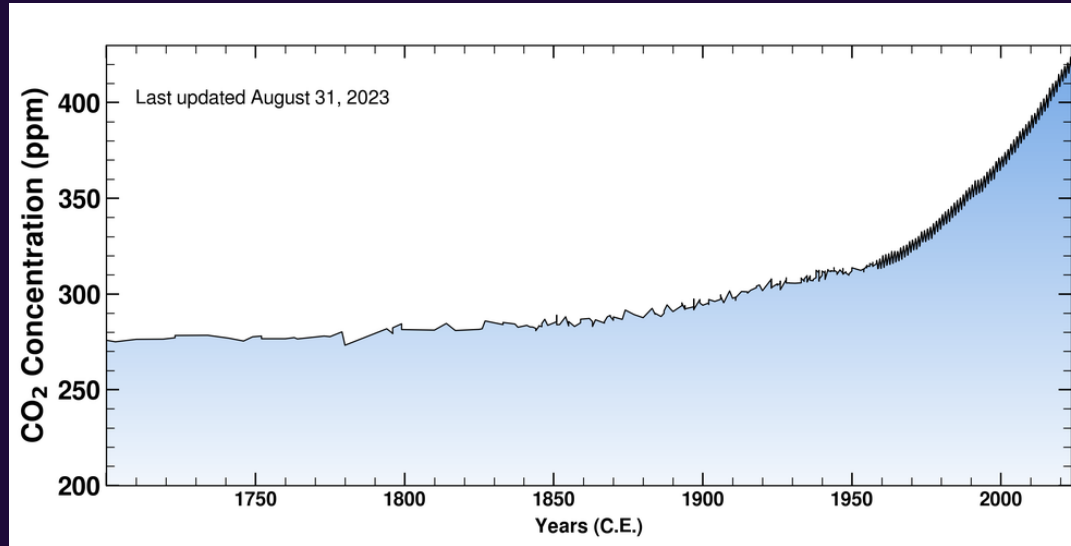
The planetary boundaries concept presents a set of nine planetary boundaries within which humanity can continue to develop and thrive for generations to come



Johan Rockström

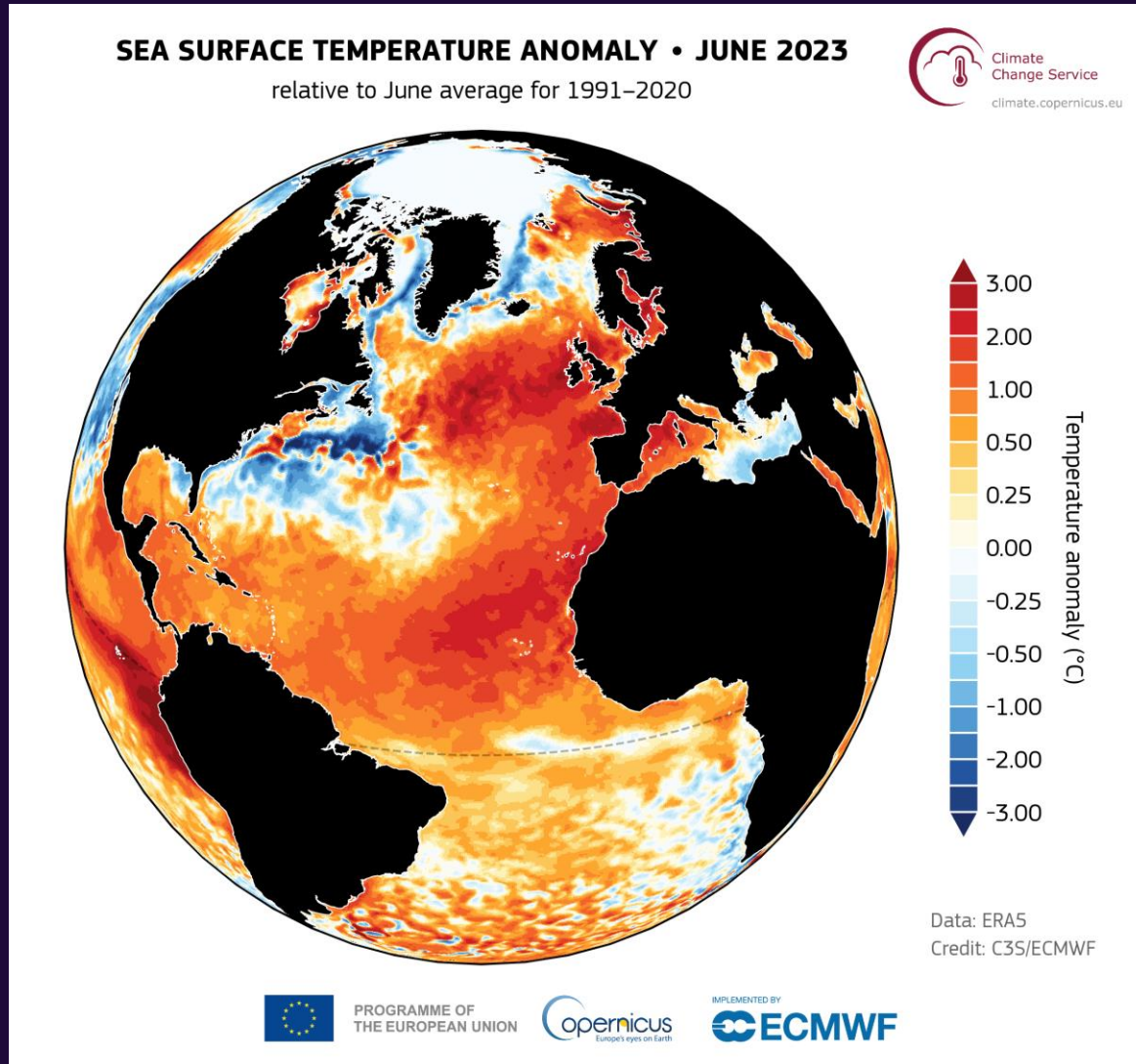
Potsdam Institute for Climate Impact Research

The Keeling curve



The ocean acts as a “carbon sink” and absorbs ~30% of the CO₂ emissions released into the atmosphere

Marine heatwaves this summer



Forskere frykter massedød i havet

Havet er unormalt varmt, og verst er det i Nord-Atlanteren. Amerikanske myndigheter tror hetebølgen vil vare helt til november.

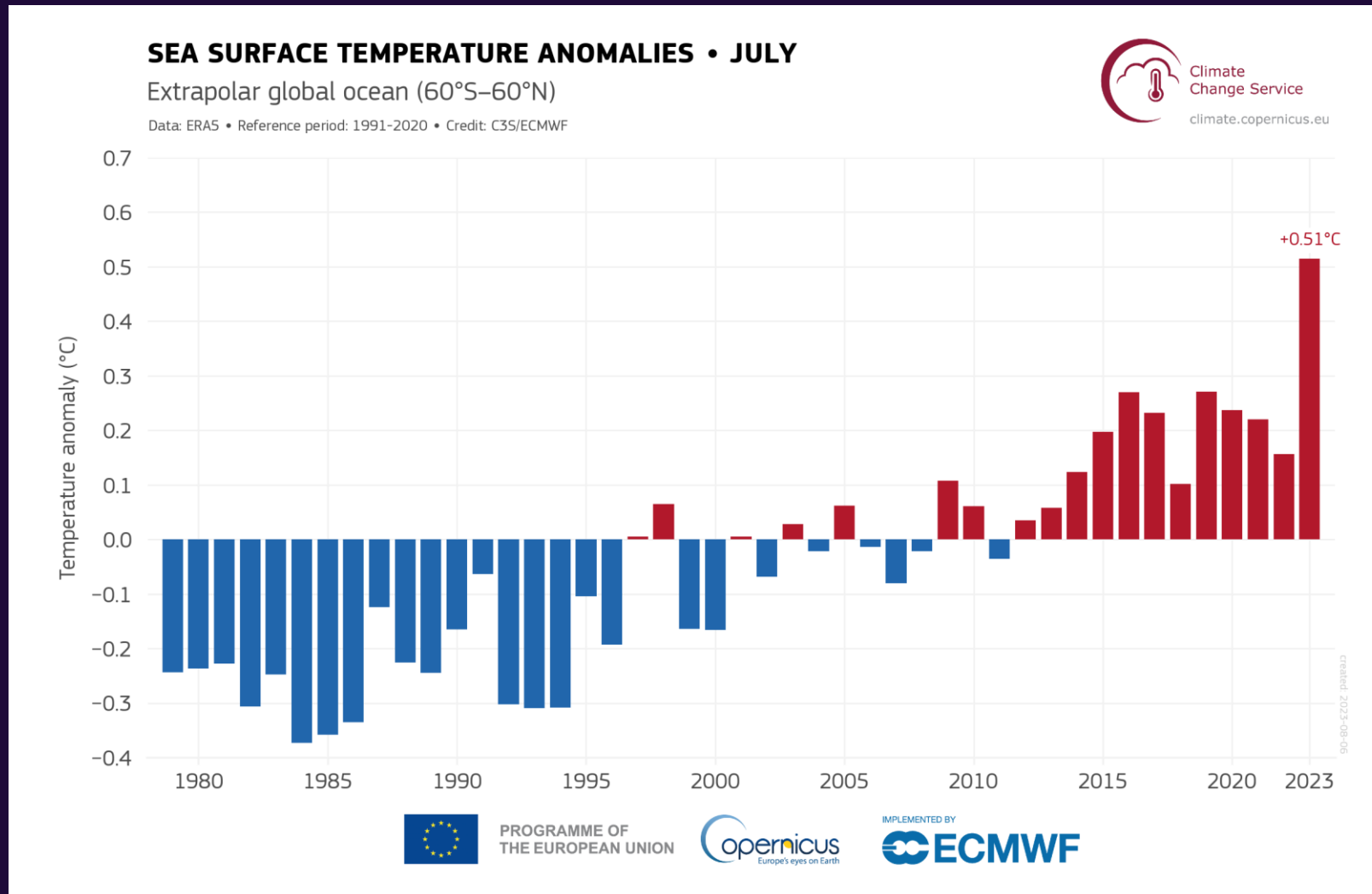



Philippe Bédos Ulvin
Journalist

Publisert 23. juni kl. 21:49

PLANKTONAVHENGIG: En hval ligger strandet i New Jersey i USA i mars i år. Det er uklart hva som drepte denne hvalen, men mindre plankton på grunn av varmere hav truer også mange hvalarter.
FOTO: WAYNE PARRY / AP

Sea Surface Temperature anomalies

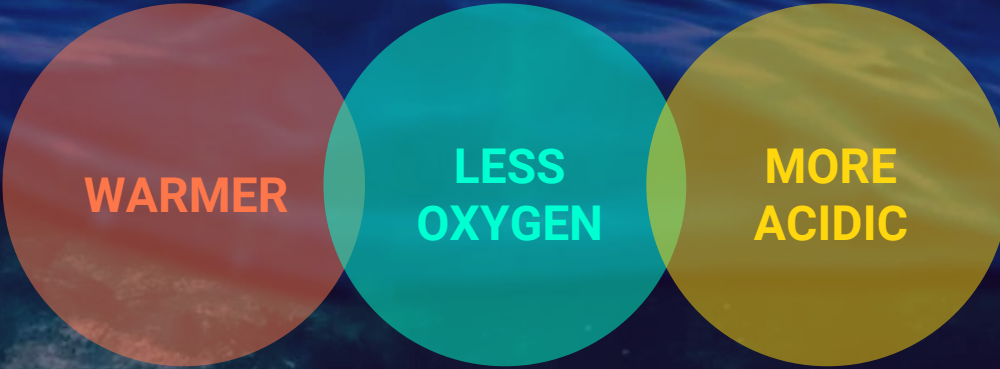


Climate change is affecting our ocean.



making the ocean

Burning fossil fuels, deforestation and industrial agriculture release carbon dioxide (CO₂) and other heat-trapping gases into our atmosphere, causing our planet to warm.



The ocean has buffered us from the worst impacts of climate change by absorbing more than 90% of this excess heat and about 25% of the CO₂, but at the cost of causing significant harm to marine ecosystems.

causing



SEA LEVEL RISE

Flooding coastal communities and drowning wetland habitats



BLEACHING

Warm water coral reefs will be lost if the planet warms by 2°



TOXIC ALGAE

Larger and more frequent blooms are making animals and people sick



HABITAT LOSS

Lower oxygen levels suffocate animals and shrink habitats



ACIDIFICATION

More acidic water prevents animals from building their shells



FOOD INSECURITY

Disruptions in fisheries affect the marine food web and human food security

Hva kan vi gjøre som enkeltpersoner eller mindre organisasjoner?

What can we do as individuals?



2016: My first electric car
I have cut 22 tons of CO2 in 7 years
Oslo – Mallorca = 1.4 tons



2018: Solar panels installed
10000 kWh per year
110x fully charged car

Where are the solar panels on all the new buildings?

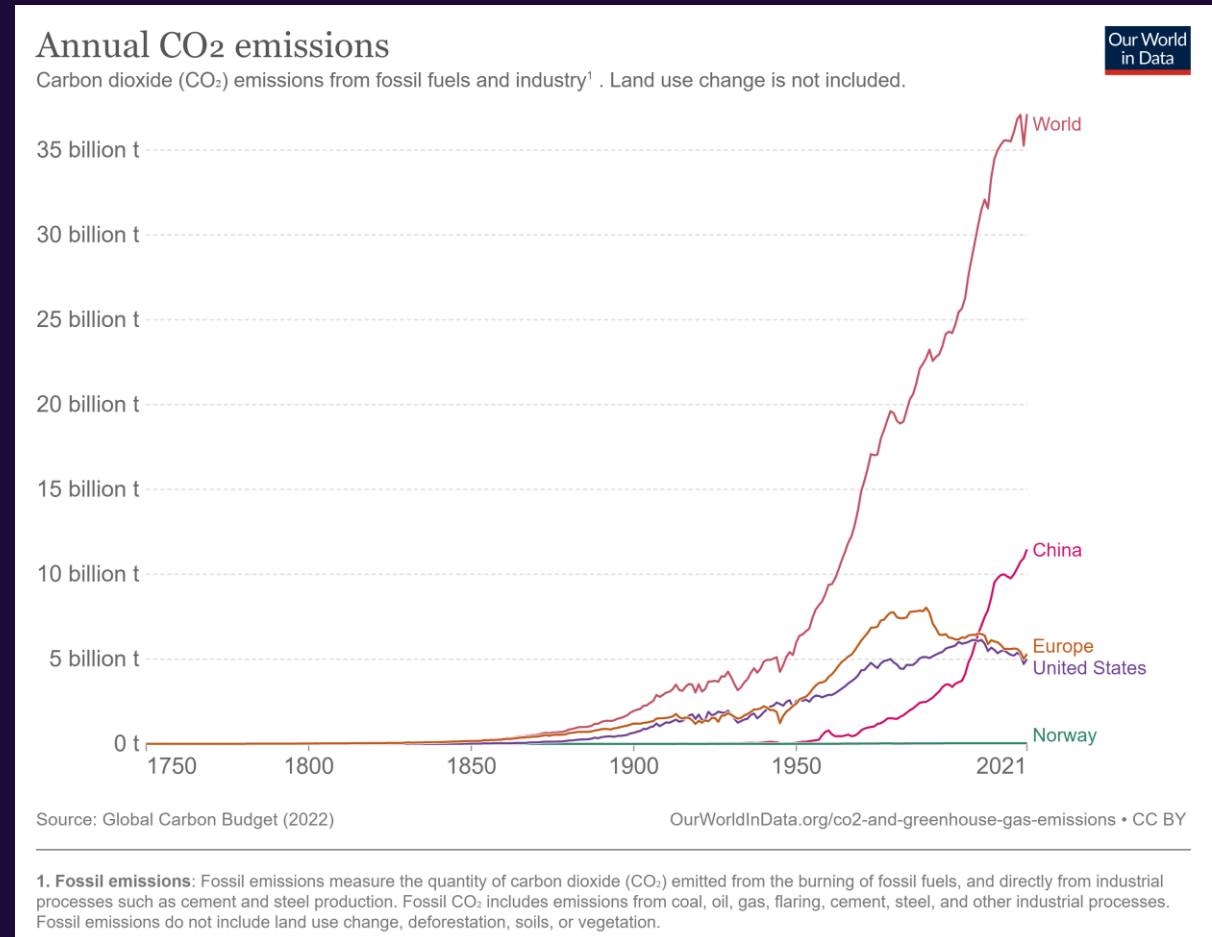
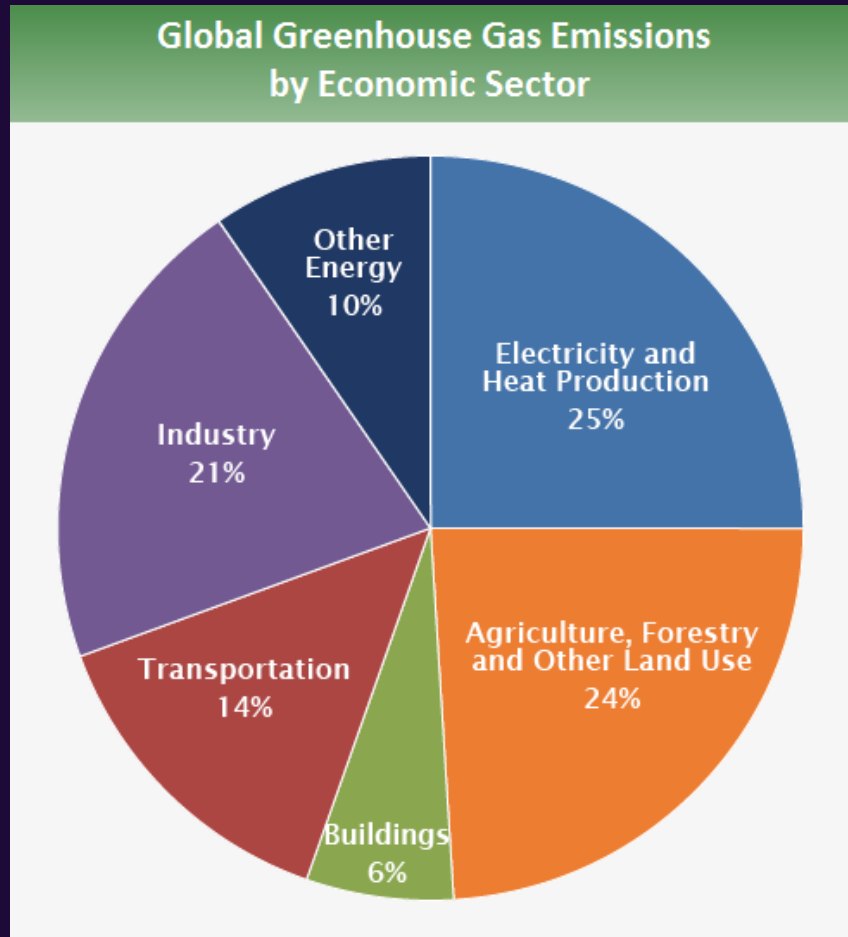


Strandholmen / Holmestrand



Jarlsø / Tønsberg

Does it help? Who are the major polluters?



There are two numbers you need to know: **51** and **0**

Vi må tenke «top down» og «bottom up»

Grasrot og globale institusjoner på en gang

REV Ocean

The initiative was started as a result of Kjell Inge Røkke signing the Giving Pledge in 2017, vowing to donate more than 50% of his fortune to philanthropic causes



HUIR Ocean

A non-profit ocean foundation

Founded by



Centre for the Fourth Industrial Revolution

Supporting



United Nations Decade
of Ocean Science

Leading

Ocean Data Action Coalition



In partnership with



Operating

Ocean Data
Platform

Meet the HUB Ocean Team

A dedicated group of leaders dedicated to achieving data-driven impact at scale



Kimberly Mathisen

CEO

Mathisen joined as CEO in 2022. She has 25+ years of experience in digitalization and technology, Branded Consumer Goods, Pharmaceuticals and Media leading across geographies in North America, Europe and Asia.



Nicholas Robertson

Growth & Impact Director



Vigdis Hvaal

Director of People & Communications



Martin Moen

CFO



Pinghua Huang

Software Engineer Director



Jo Øvstaas

Ocean Innovation Director

Gustav Kågesten

Ocean Data Director

Our advisory Board

Our committed advisory team with a wide range of expertise and connections



Øyvind Eriksen

CEO, Aker ASA

Jeremy Jurgens

Head of C4IR, World Economic Forum

Alexandra Bech Gjørsv

CEO, SINTEF

Oliver Tonby

Chairman, McKinsey Asia Pacific

Elisabeth Brinton

VP Sustainability, Microsoft

Vladimir Ryabinin

Former Executive Secretary, UNESCO-IOC

Sissel Rogne

Former CEO, Institute for Marine Research

Thomas Thune Andersen

Chairman, Ørsted

Erik Solheim

World Resource Institute



United Nations Decade of Ocean Science

About

The Ocean Decade (2021-2030) seeks to stimulate **ocean science and knowledge** generation to reverse its decline and spur sustainable ocean development.

The Ocean Decade gathers **scientists and stakeholders across sectors** to deliver on the 2030 Agenda. UNESCO's **Intergovernmental Oceanographic Commission (IOC)** manages its execution

Vision

The science we need for the ocean we want

HUB Ocean's efforts:

Special Emissary for Industrial Ocean Data

We support Kjell Inge Røkke in the role of Patron of the Ocean Decade Alliance and Special Emissary. The purpose:

- **Unlock priority ocean data from industry sources so that it is accessible for science, decision making, policy and management**
- **To develop a system to offer free research vessel time for early career researchers around the world**
- **To support co-design and implementation of Decade Actions related to plastics and the mesopelagic ecosystem**



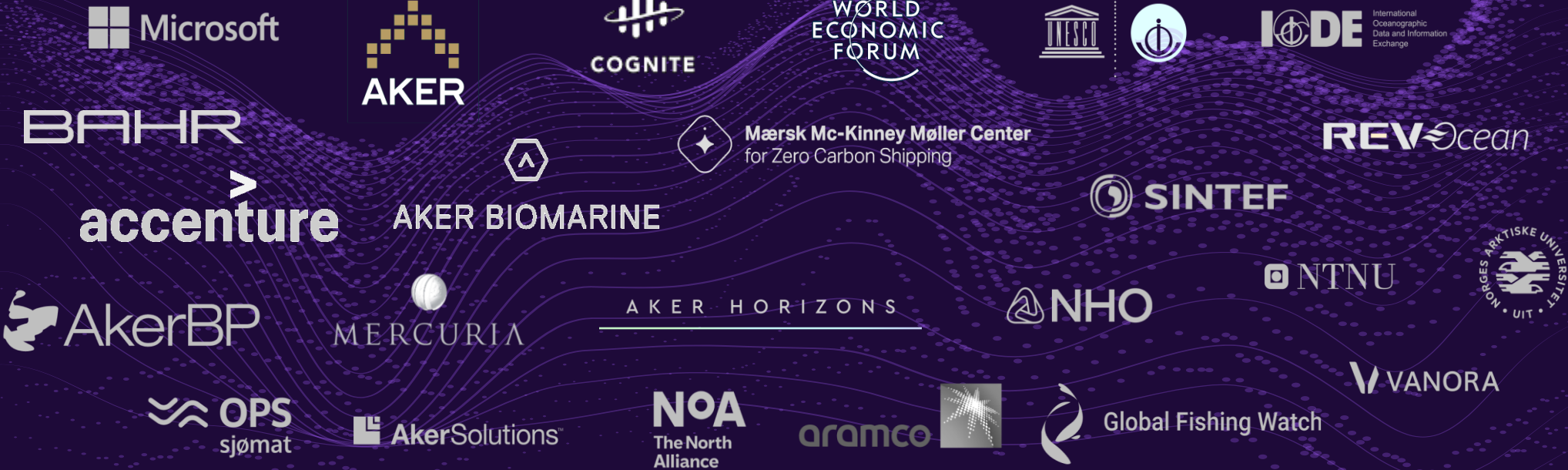
MAN-
DATE

A trusted partner to major global organizations across:

Industry

Government

Science



Hvis vi ikke kan «måle» havet,
er det vanskelig å forvalte det på en
bærekraftig måte



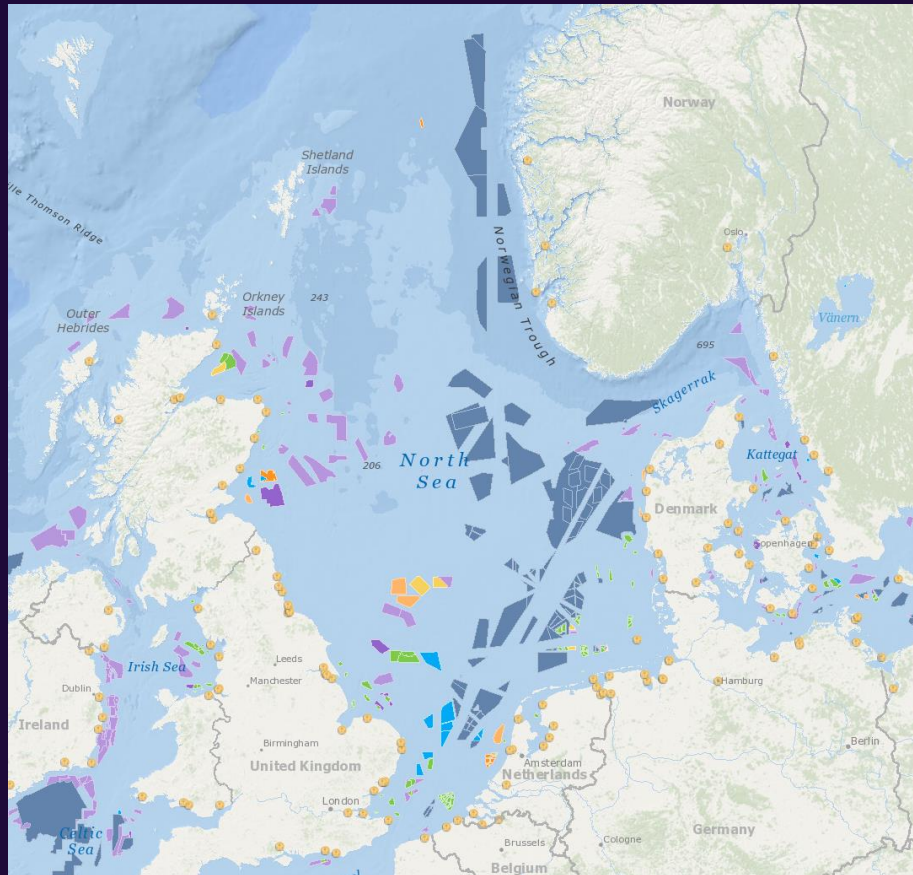
Heal the ocean vs Rewire industries

- SDG 14: Protect Life Below Water
- Map & manage 100% of a country's ocean territory
- Protect 30% of ocean territory by 2030

- 40x more renewable energy by 2050
- 6x more sustainable seafood by 2050
- Zero emission shipping by 2050

The spatial problem – “Offshore wind vs Nature”

Example: The North Sea basin – A myriad of Marine Protected Areas – Potential sector conflicts



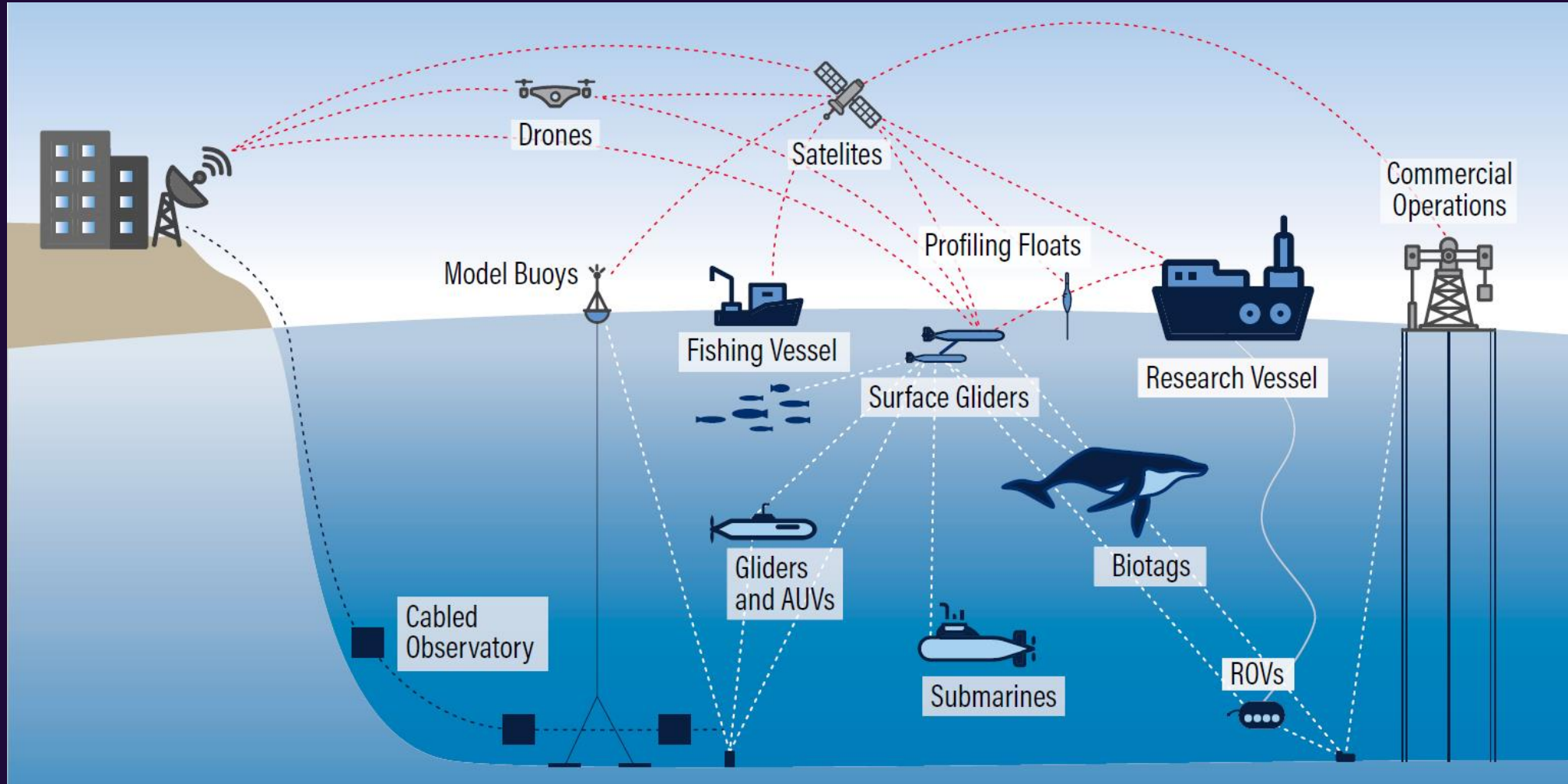
Commissioned or planned wind farms



Current Marine Protected Areas
(from current ~3% to 30% by 2030)

Source: 4coffshore.com + MPA Atlas

How is ocean data collected?



Ocean “Internet of Things” – A small selection



HYPSO-1



SAILDRONE



Starlink rack



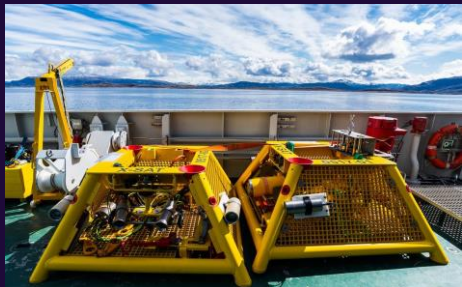
Mariner USV



SAIL BUOY



HUGIN AUV



LoVe observatory



ARGO FLOAT



ROV “Aurelia”



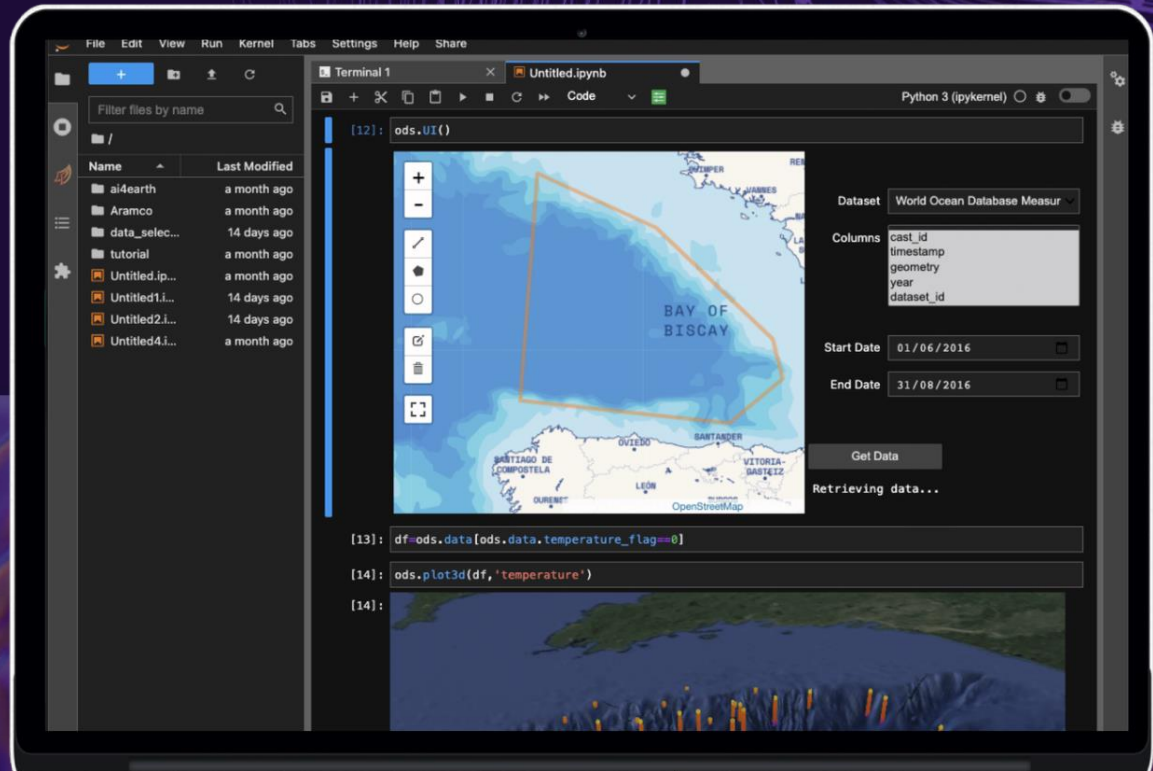
Sub “Aurelia”

The Ocean Data Platform

INGEST | SEARCH | ACCESS | ANALYSE

The geospatial platform at the heart of our mission

An advanced cloud technology to gather, fuse and provide access to a **vast array of ocean data** from multiple sources **in one place**

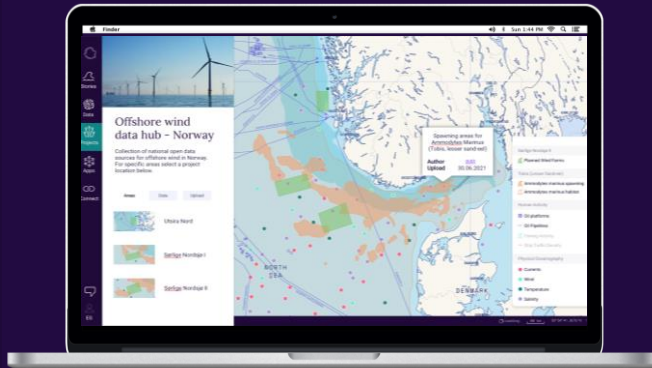


Powered by



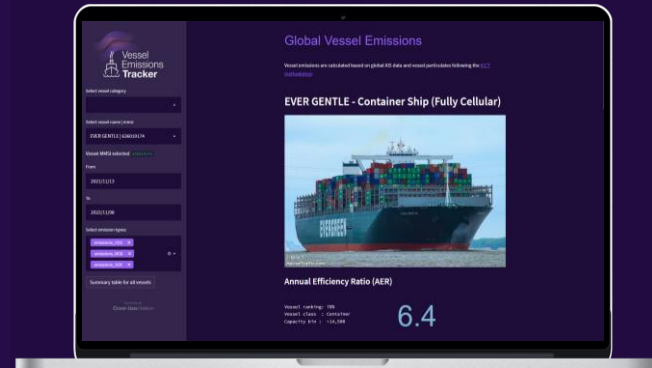
Sample Use Cases Relevant for **Industry**

OFFSHORE WIND



This project aims to create a streamlined portal for ocean data to expedite offshore wind development. We provide an intelligent approach to **gather and organizing data** and **managing asset**.

SHIPPING

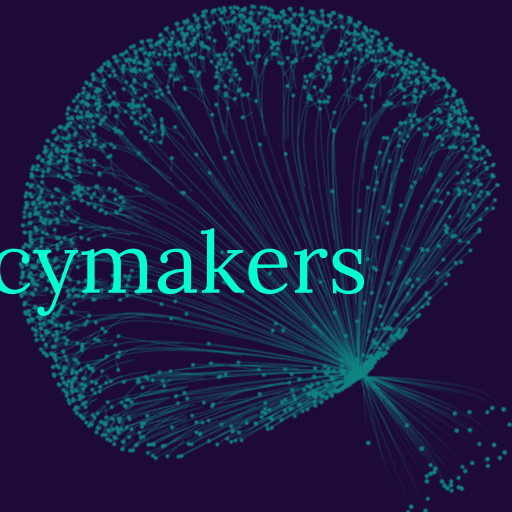


This application provides a top-down method for estimating the emissions of the global shipping fleet. We provide greater **transparency** in, for example, chartering processes.

FINANCE

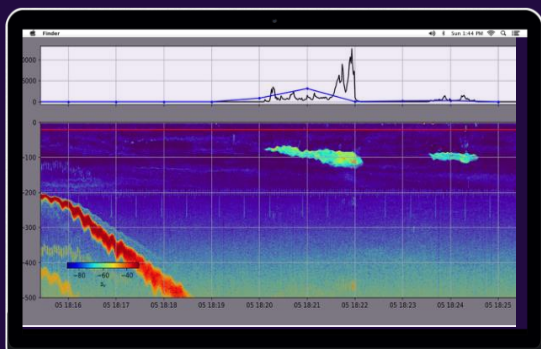


This project assess the effects and risks of shipping on the environment. The system provides a comprehensive analysis, including **exposure-based CO2 emissions**, **vessel movement**, and **time spent within MPAs**.



Sample Use Cases Relevant for Science & Policymakers

KRILL



This dataset is a compilation of 10 years of Aker Biomarine fishing missions in the Southern Ocean. It can be used to improve management of the fishery and ensure sustainable catches.

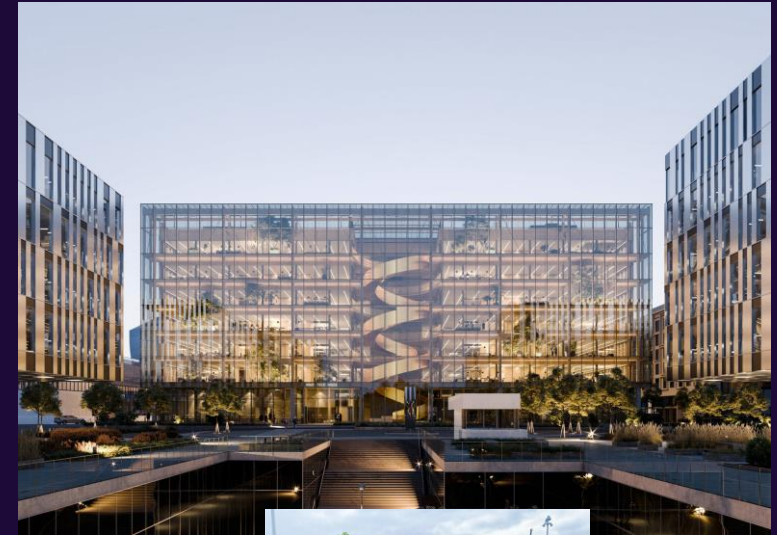
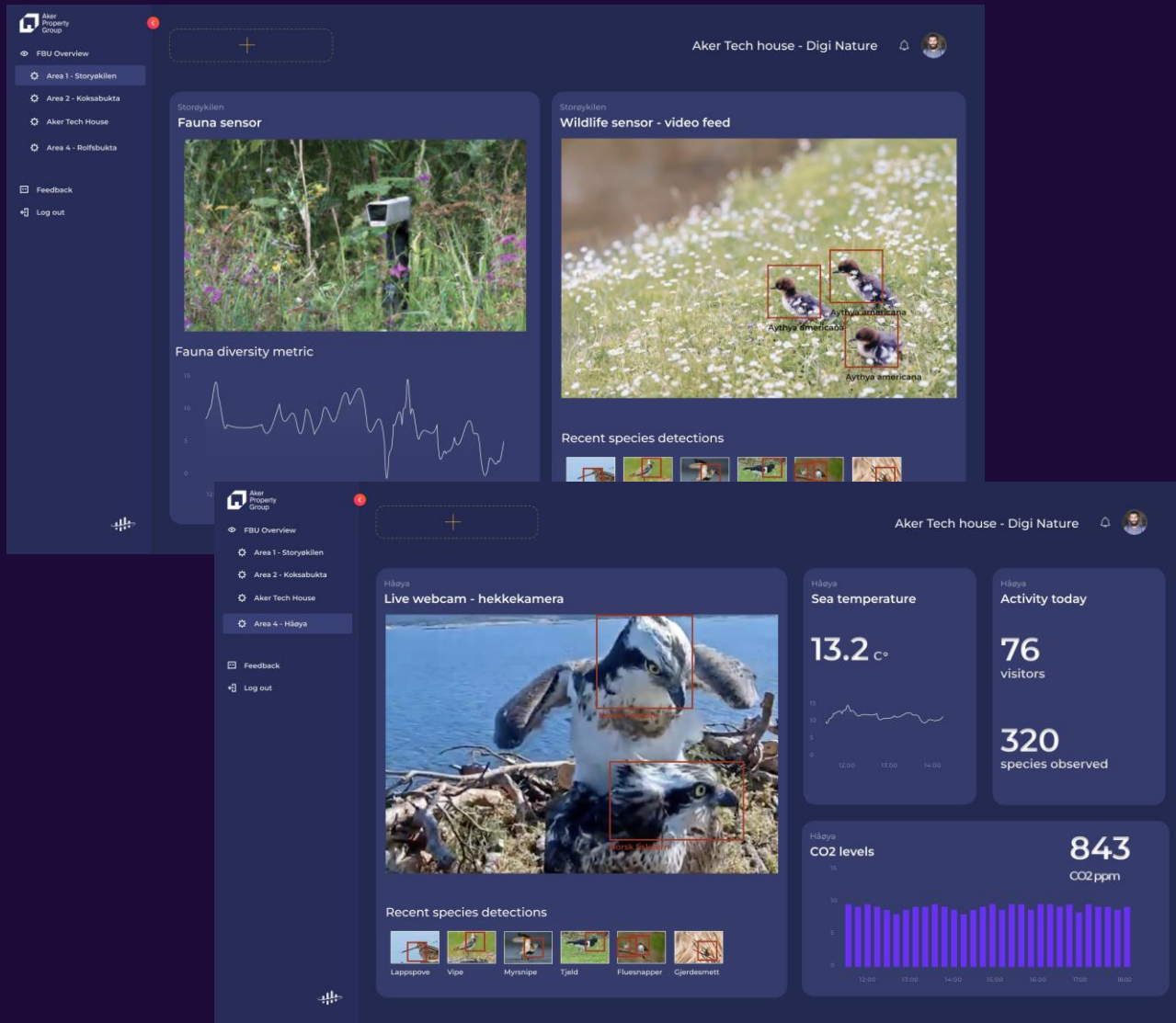
POLLUTION



A pilot in the Ocean Lab infrastructure in Norway and Germany will leverage the system of system concept of ILIAD to combine data from sensors and models to enhance data resolution from real-time data.

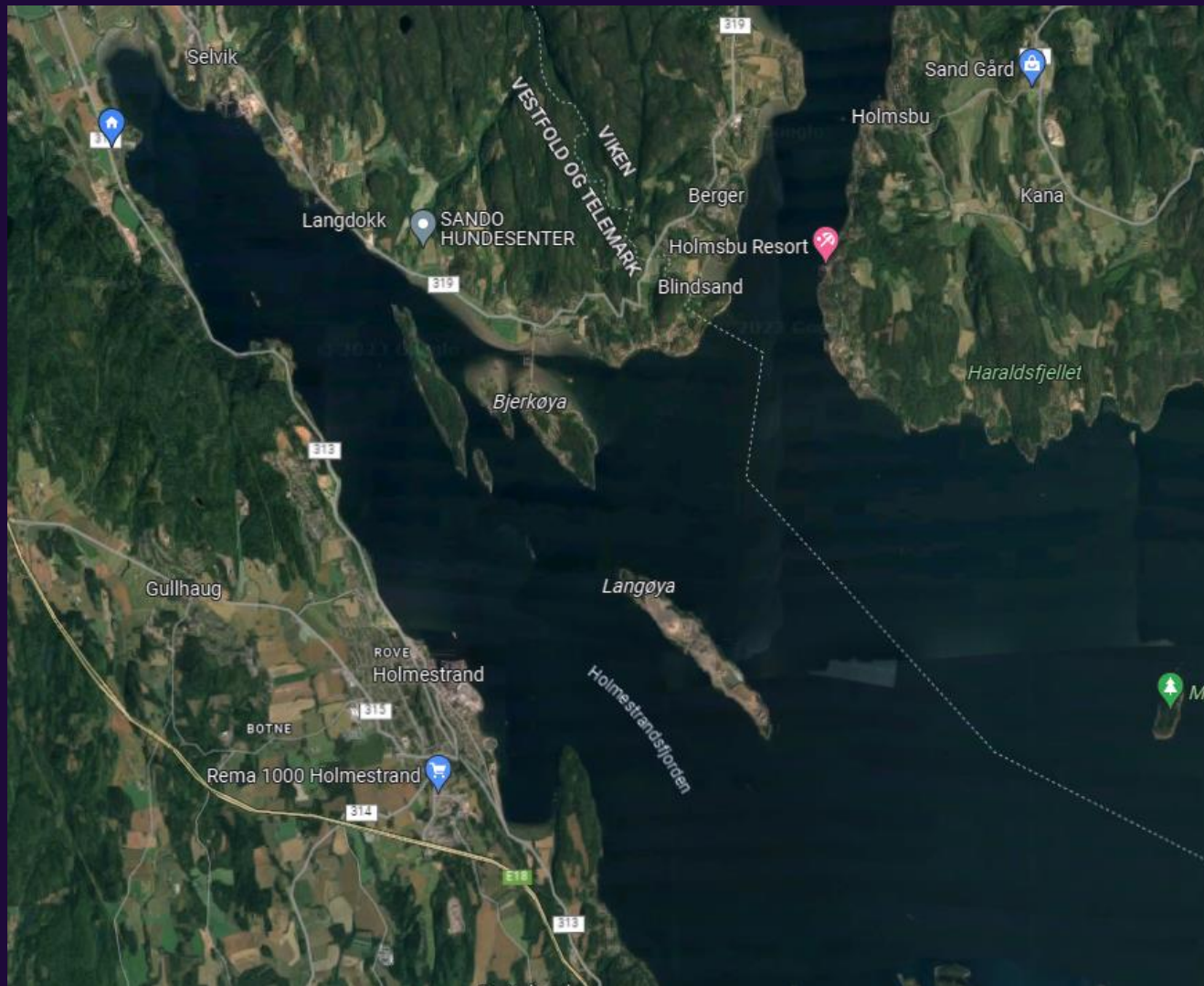
Men...hva med Holmestrand?

Aker Tech-House og Digi Nature på Fornebu

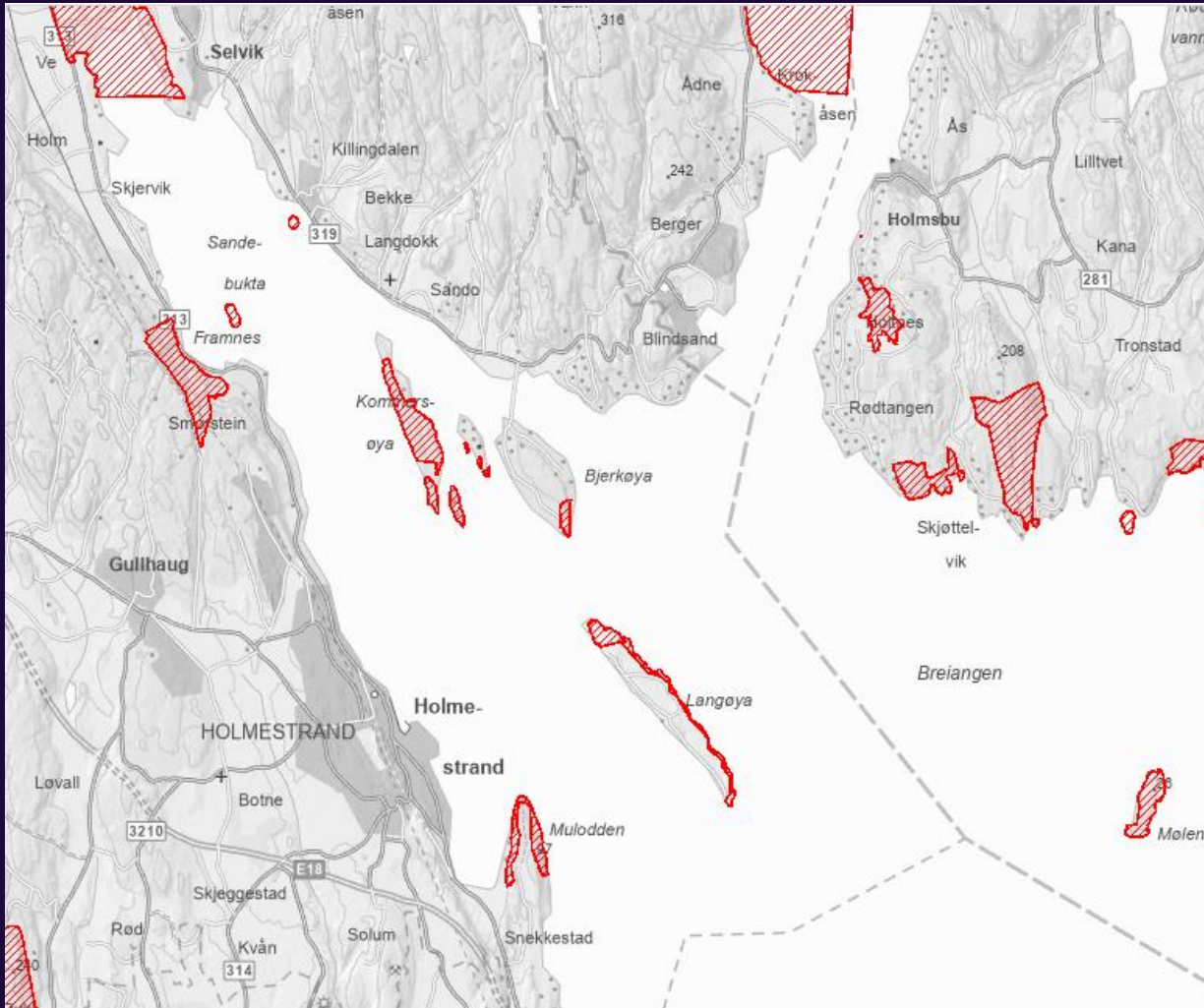


Men...er det egentlig noen forskjell på Fornebu og Holmestrand? (bortsett fra at Holmestrand er MYE finere da 😊)

Hva kan vi gjøre i Holmestrand?



Hva kan vi gjøre i Holmestrand?



- Naturvern-områder
- Fauna
- Fisk
- Fugl + fuglereservat
- Hummer
- Asko sjødroner
- NOAH
- Speira
- Fritidsbåter
- Skoler
- Renseanlegg
- Frisk Oslofjord
-masse å ta tak i!!!

Thanks for listening!

Unlock the full potential of our oceans. Share your ocean data today and be part of a global movement working to build a better, more sustainable world. Break down the silos, collaborate with other organizations, and shape the future of our planet with the power of data.

HI IR Ocean

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