

NIVAs voksende blå skog

Cecilie Mauritzen intervjuer Marianne Olsen, Hege Gundersen, Liz Selig og Kasper Hancke
Instituttmøte 6. april 2017

rtementet

ekst, stolt histor
ns havstrategi

21. februar



Vil skape flere blå jobber

- Dette er en strategi for fremtidens jobber, sa statsminister Erna Solberg da Regjeringen i dag la fram sin havstrategi.





Er medlem ▼

Del

Vars

Bilder

Filer

Søk i denne gruppen

"The Blue Garden network will address the challenges and opportunities of running small aquaculture farms growing macroalga in the circular economy philosophy, creating delicious niche specialties"

MEDLEMMER

32



FORESLÅTTE MEDLEMMER



Hildur Cecilie Knag

Legg t

ar delt en lenke.



Meld. St. 22

(2016–2017)

Melding til Stortinget

Hav i utenriks- og utviklingspolitikk

24. mars

Meld. St. 22 (2016–2017) Hav i utenriks- og utviklingspolitikken

Tilråding fra Utenriksdepartementet 24. mars 2017, godkjent i statsråd samme dag
(Regjeringen Solberg)

Melding til Stortinget

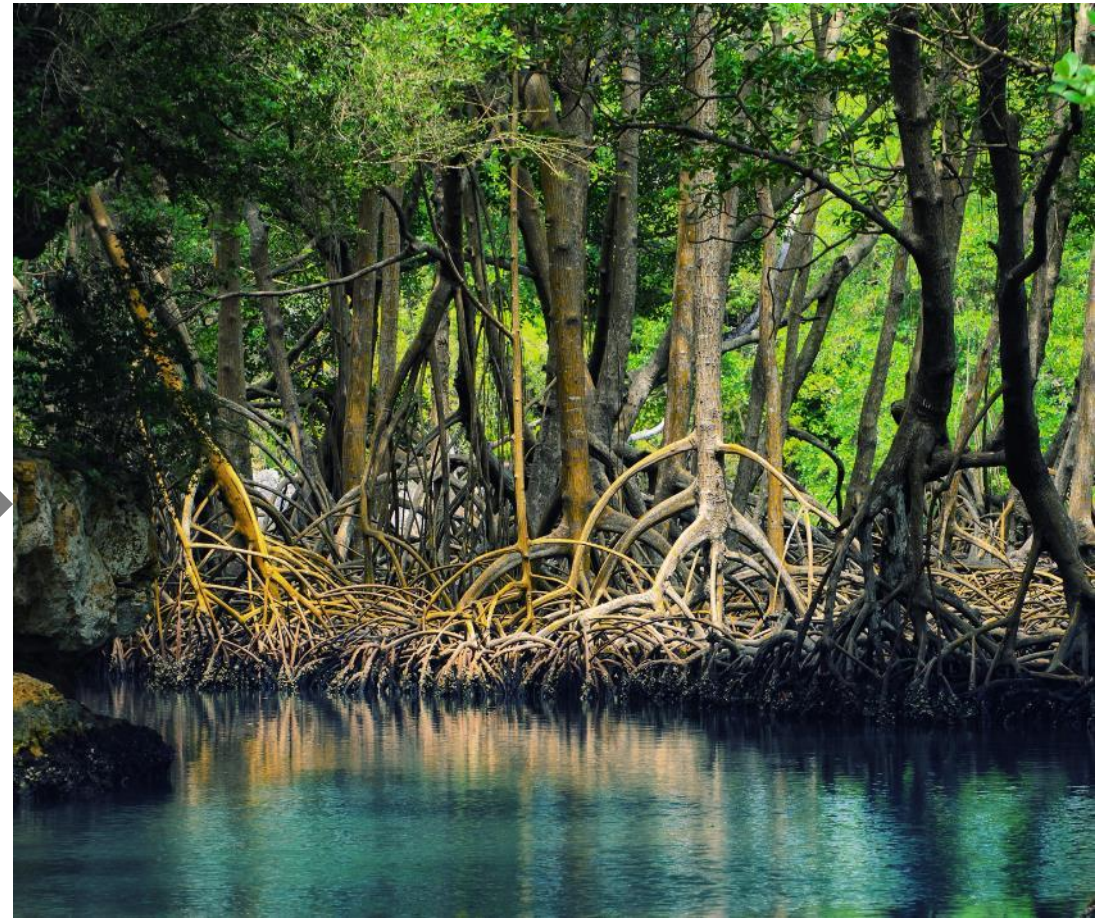
Stortingsmeldingen tydeliggjør hvordan utenriks- og utviklingspolitikken kan støtte opp under norske havinteresser og bidra til å nå FNs bærekraftsmål.

Meldingen vektlegger tre prioriterte innsatsområder for Norge: bærekraftig bruk og verdiskaping, rene og sunne hav, og blå økonomi i utviklingspolitikken. Den løfter også frem de store mulighetene som havet omfatter for Norge i årene fremover, og understreker samtidig viktigheten av å bekjempe alvorlige miljøutfordringer og ikke-bærekraftig bruk.

NIVAs innspill 14. november 2016: Hva kan regjeringen gjøre?	Regjeringens stortingsmelding 24. mars 2017: Regjeringen vil:
Forsterke norsk deltagelse i internasjonale kunnskapsprosesser rettet mot blå skog, blått karbon, spesielt i forhold til FNs Sustainability Development Goals (nr. 13 - klima og nr. 14 - hav), UNFCCC og IPCC	- forsterke norsk deltagelse i internasjonale kunnskapsprosesser rettet mot blå skog som ledd i å nå bærekraftsmål 13 om bekjempelse av klimaendringer, og bærekraftsmål 14 om bevaring og bærekraftig bruk av hav
Forsterke kunnskaps og kapasitetsstøtte til «tropisk blå skog»-politikk og strategiutvikling i de norske prioriterte bistandsland med blå skog, dvs. Haiti, Somalia, Myanmar og Tanzania.	- forsterke kunnskaps- og kapasitetsstøtte til tropisk blå skog-tiltak i partnerland med blå skog, det vil si Haiti, Somalia, Myanmar og Tanzania - styrke innsatsen for å inkludere mangroveskoger i arbeidet med reduserte klimagassutslipp fra avskoging og skogforringelse
Prioritere norsk-ledet forskning omkring tareskogens rolle i det globale karbonkretsløpet, primært ved å fastslå tall for sedimentering-/ sekvestreringsraten av tare.	- bidra til å prioritere forskning om tares rolle i det globale karbonkretsløpet, blant annet gjennom inkludering i Klimapanelets rapporter

Reducing Emissions from Deforestation and Forest Degradation (REDD+)

Financial incentives for avoiding carbon loss from deforestation and degradation

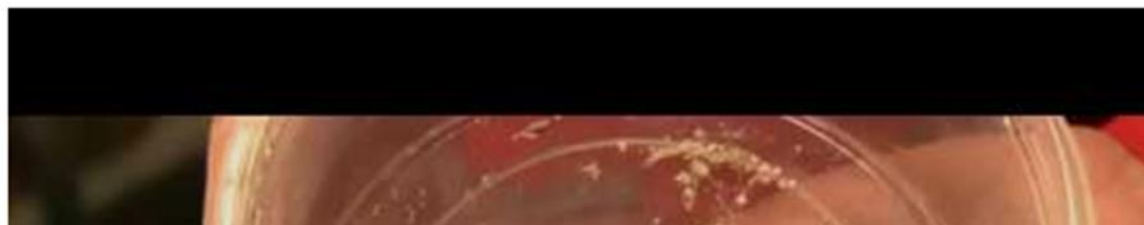


Alger og plankton – den nye oljen?

Publisert 11. november 2016

Du er her: [sintef.no](#) / [siste nytt](#) / [alger og plankton – den nye oljen?](#)

I land som Kina, Japan og Indonesia høstes hele 30 millioner tonn tang og tare i året. Et nytt planktonsenter skal friste industrien til å gjøre business på alger og plankton her hjemme.



Kontaktperson



Meld. St. 29

(2016–2017)

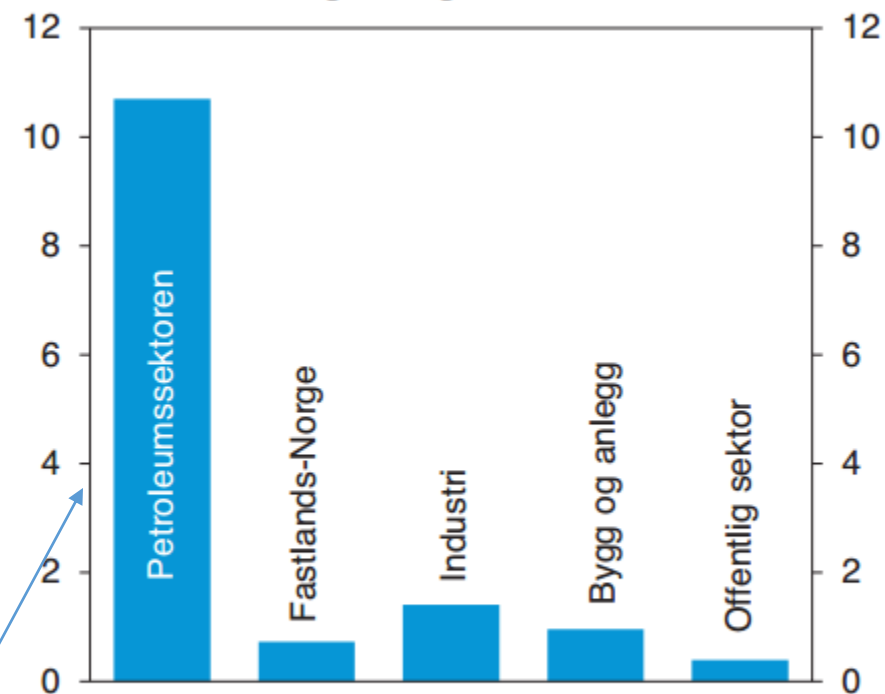
Melding til Stortinget

Perspektivmeldingen 2017

Fredag 31. mars

Maybe hard for any one thing to be «the new oil». Creativity and research is desperately needed.

A. Bruttoprodukt per sysselsatt. Gjennomsnitt 1970-2016. Løpende priser. Mill. kroner



C. Bytteforhold.¹ Indeks. 1990=100

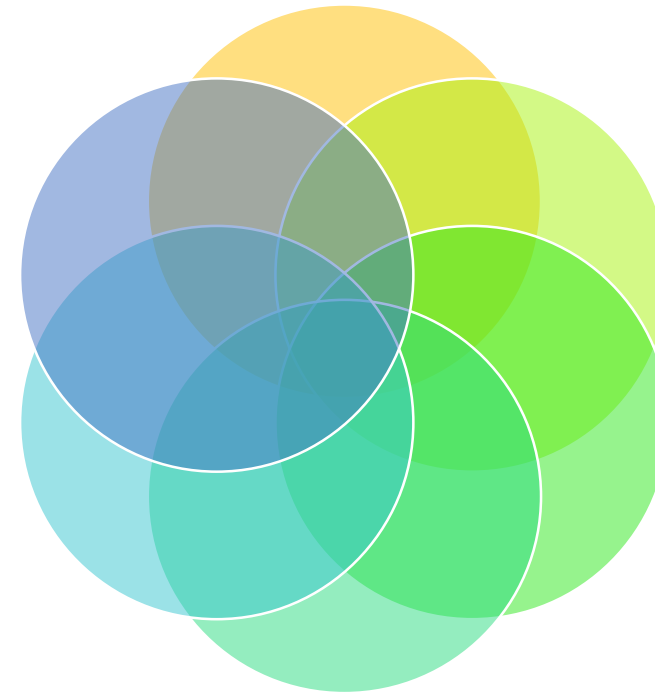
Bytteforhold= forholdet mellom prisen på eksport og import – et tegn på «lettjente penger» – at vi skal finne en «ny olje» er ikke noe finansdepartementet tror på...

NIVA's new oil: the Blue Forest

Part of NIVA's
"Blue Growth"
Focus

Role of Blue
Forest in Climate

Role of Blue
Forest in the
Economy



Role of Kelp and
Seagrass in the
Marine
Ecosystem

Contribution to
the Norwegian
Blue Forest
Network

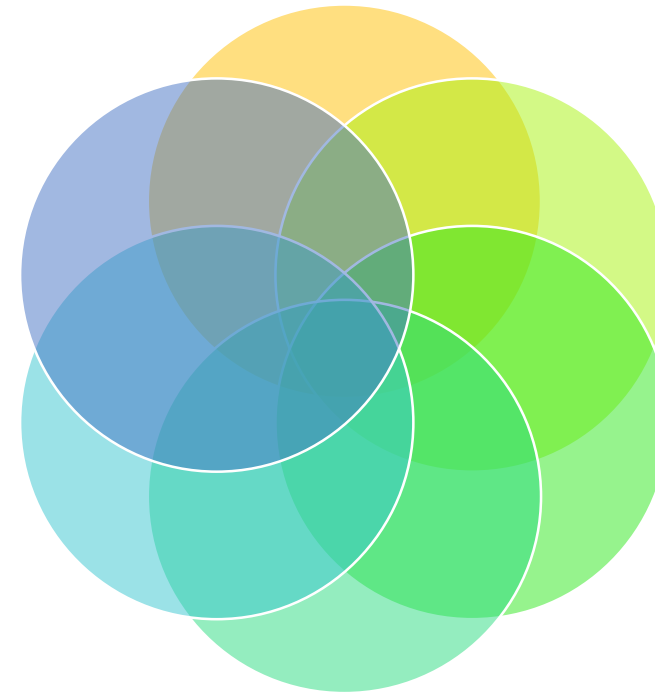
Role of Blue
Forest in
Bioremediation

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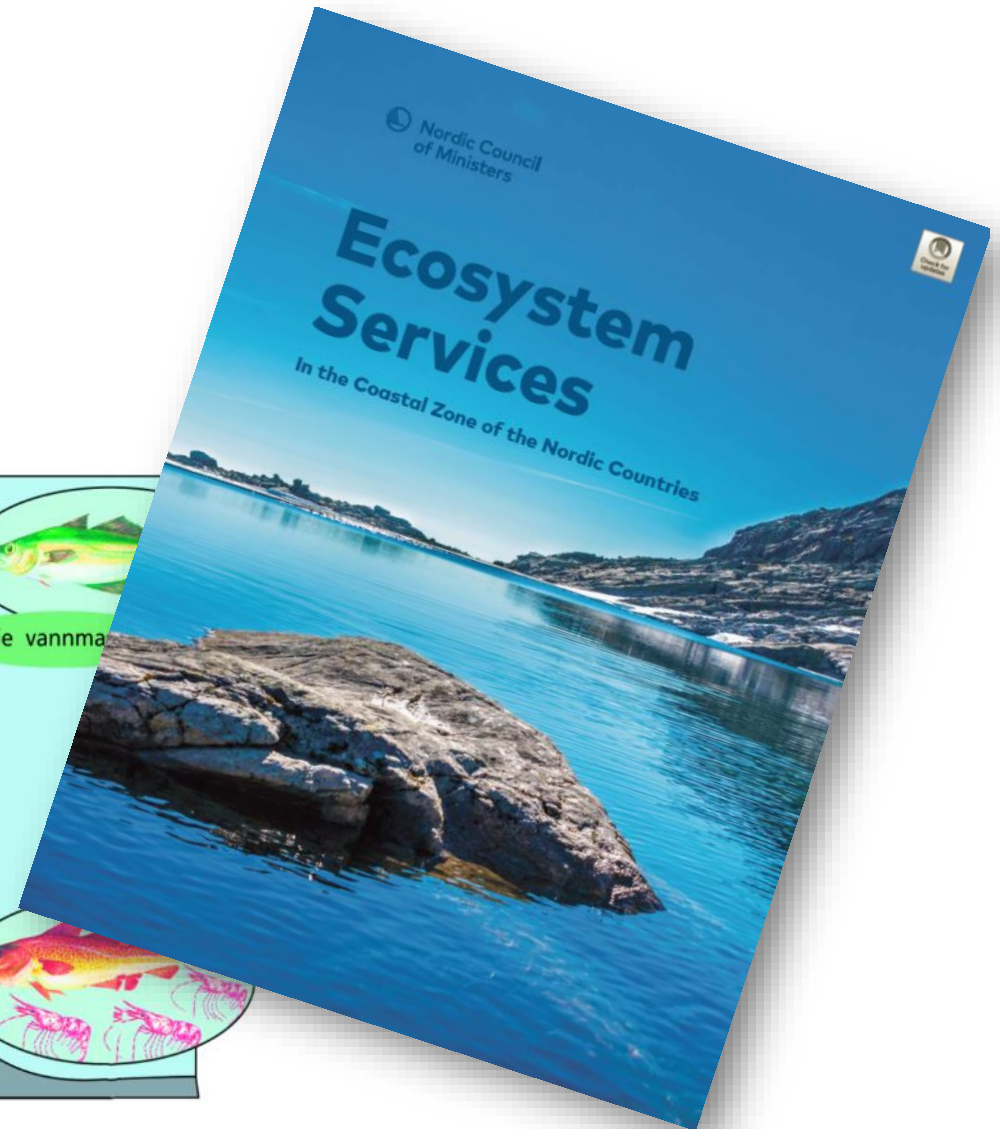
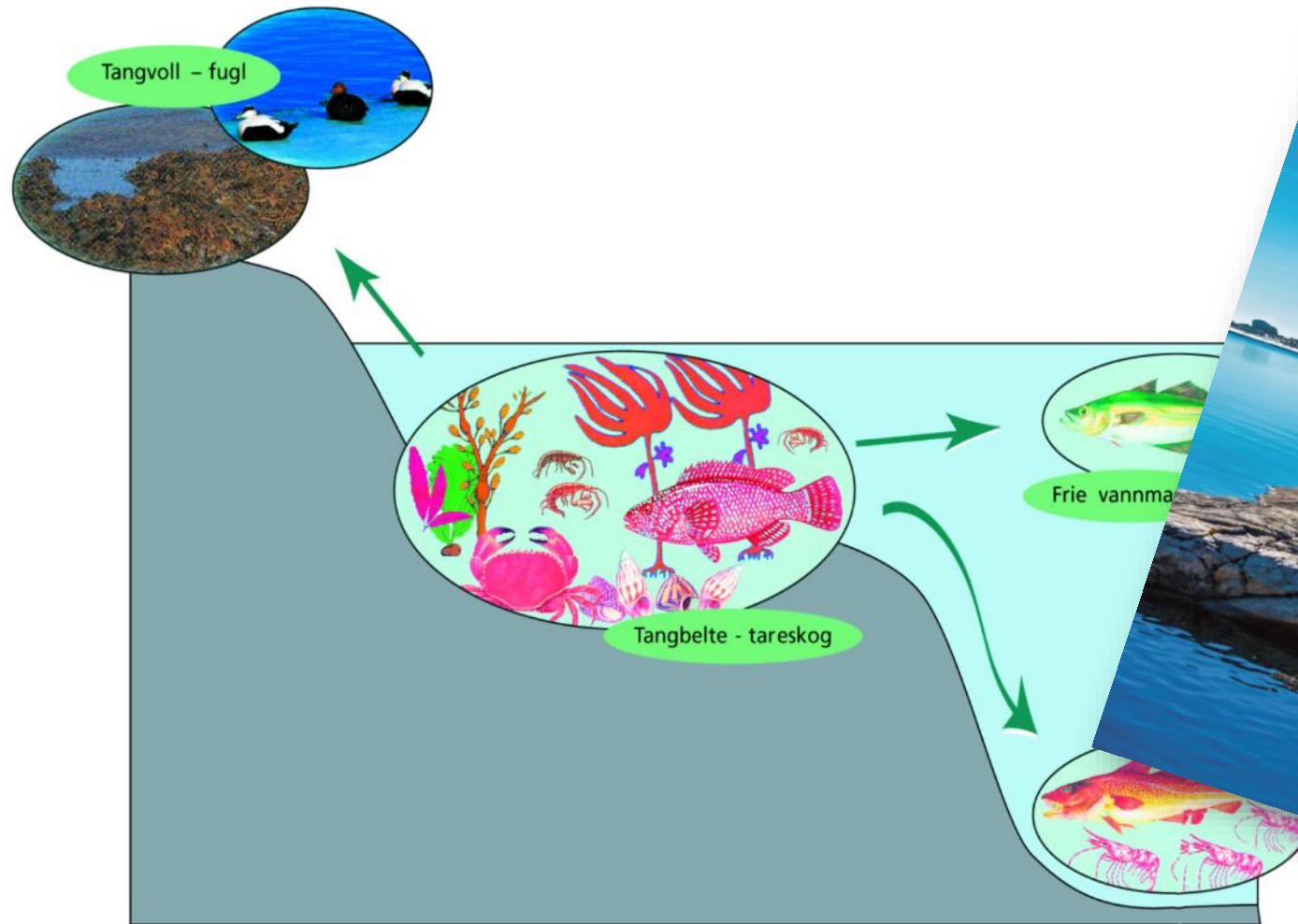


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Blue forests are supporting the whole coastal ecosystem

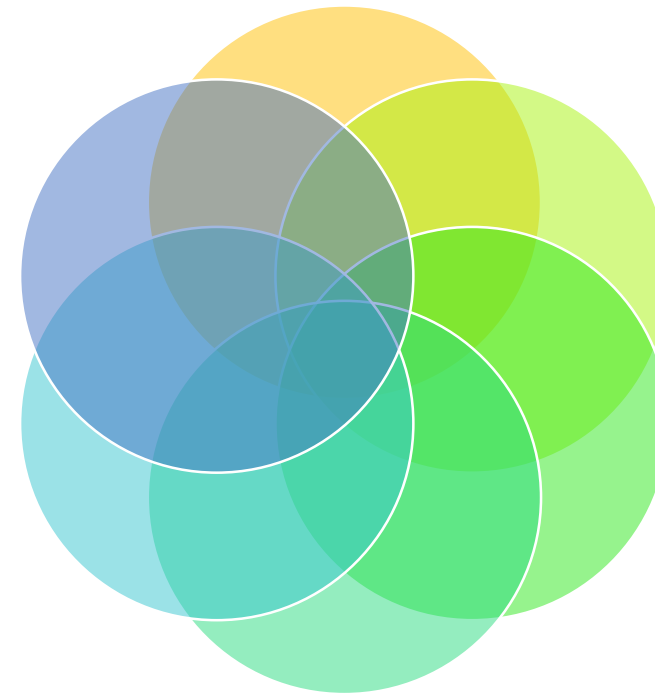


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Norwegian Blue Forest Network



Norwegian Blue Forests Network (NBFN) aims to jointly strengthen the Norwegian competence and know-how in blue forests so that its full potential in addressing the global climate challenge and provisioning of other ecosystem services can be met nationally and abroad. The four main objectives are to:

- Raise awareness in Norway on blue forests
- Improve understanding of blue forests
- Develop and execute action oriented projects
- Support the Norwegian blue forests policy and research agenda

Key NIVA activities for 2017:

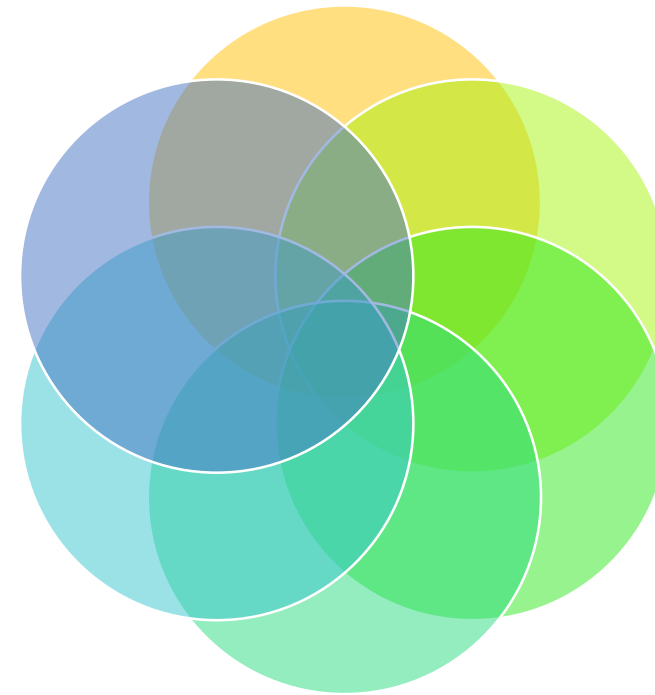
- Raise awareness
- Research and action
 - Kelp carbon sequestration
 - Support KELCO and Turf Algae workshops
- Knowledge and policy support
 - Support Norwegian Blue Carbon work and work with International Climate and Forest Initiative (NICFI)

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BIOREMEDIATION

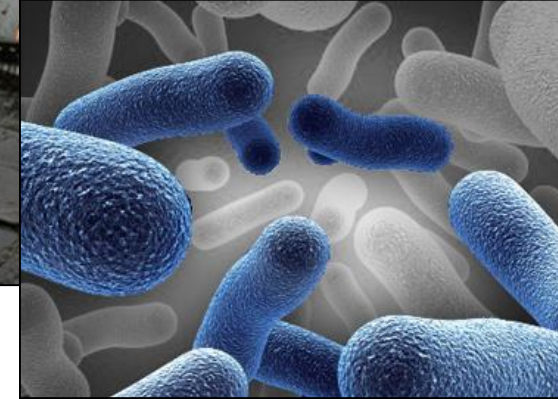
: a waste management technique

...the use of plants (or microbes and bacteria) to extract nutrients or pollutants from contaminated soils/sediment and water

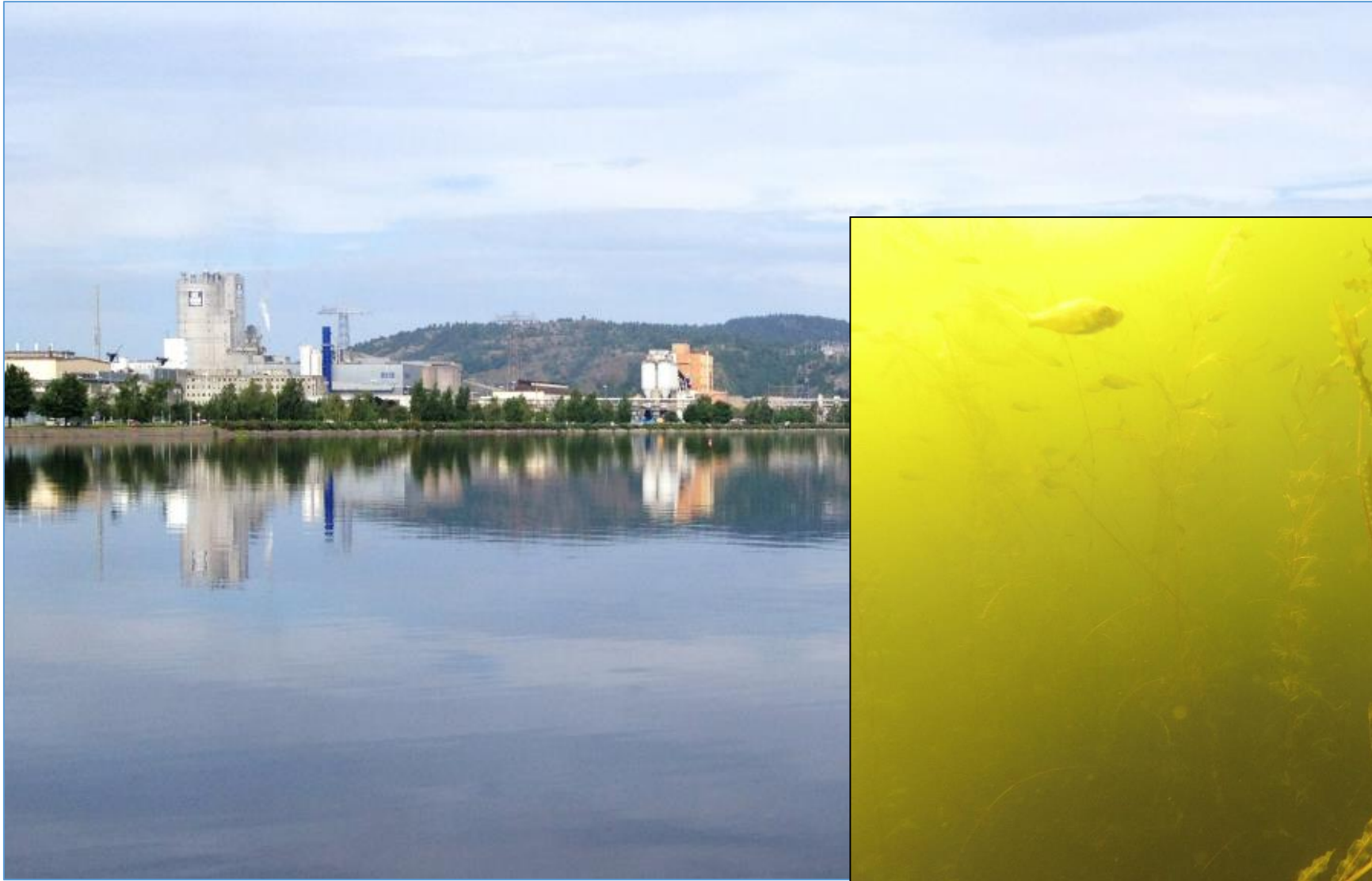
ex situ or in situ

Bioremediation in use

- Oil spills
- Multitrophic aquaculture
- Contaminated groundwater
- Contaminated water
- Contaminated sediments ?

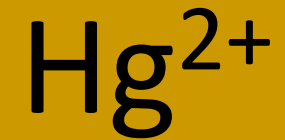


Gunneklevfjorden at Porsgrunn
Investigations of sediments



Macrophytes influencing microbial production of methyl-mercury in sediments

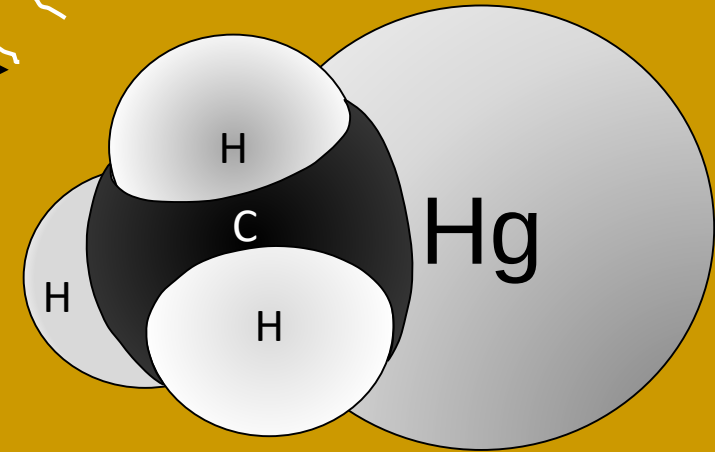
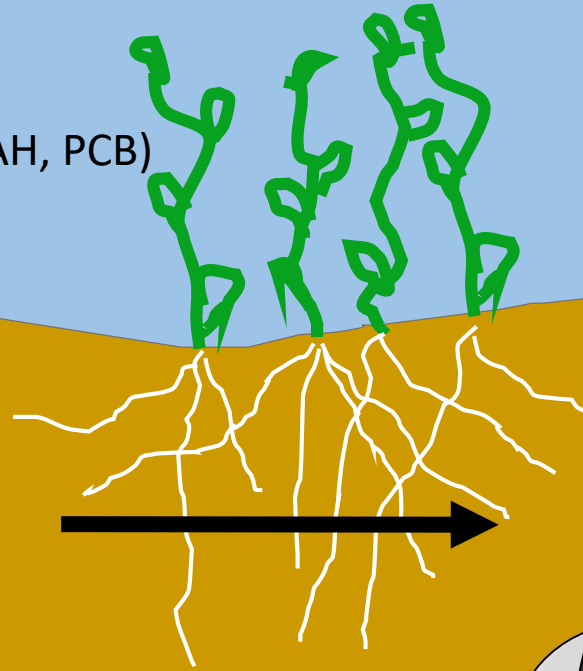
(...and degradation of other contaminants; PAH, PCB)



TOC

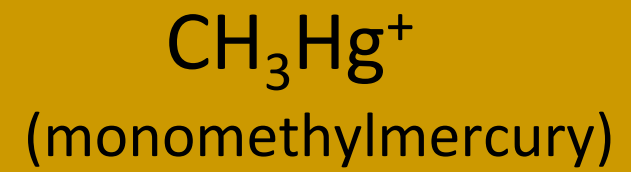
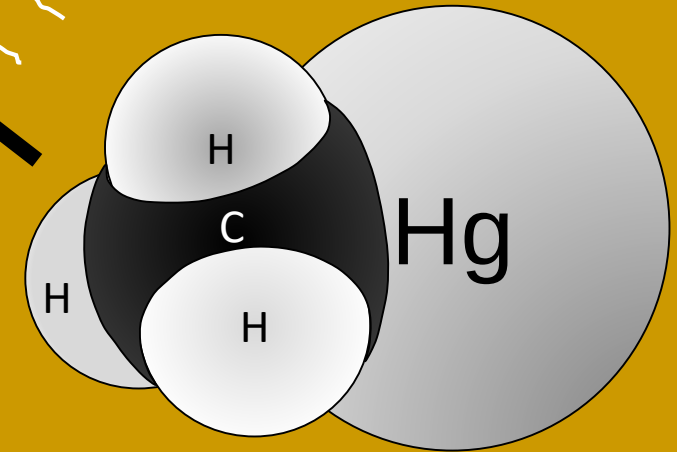
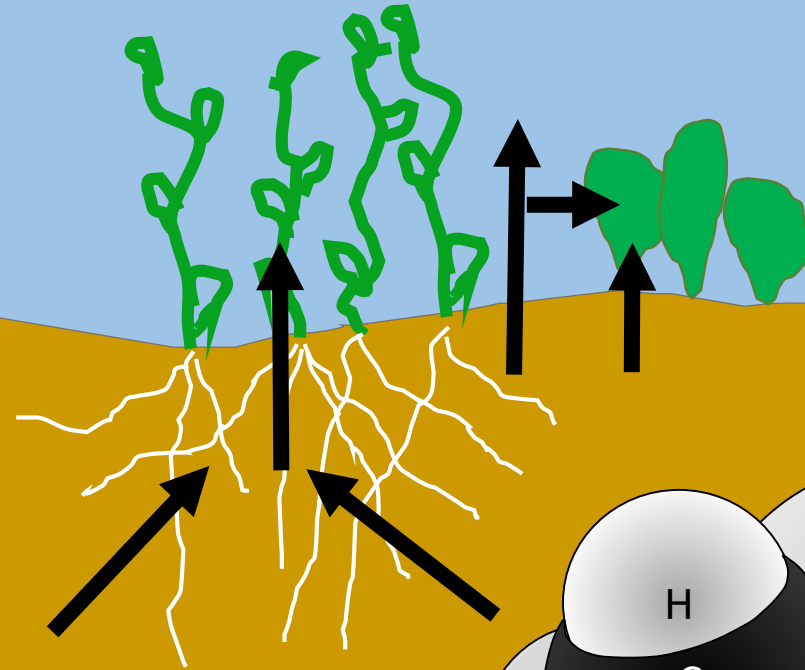


SRB



CH_3Hg^+
(monomethylmercury)

Uptake of Hg in plants and algae

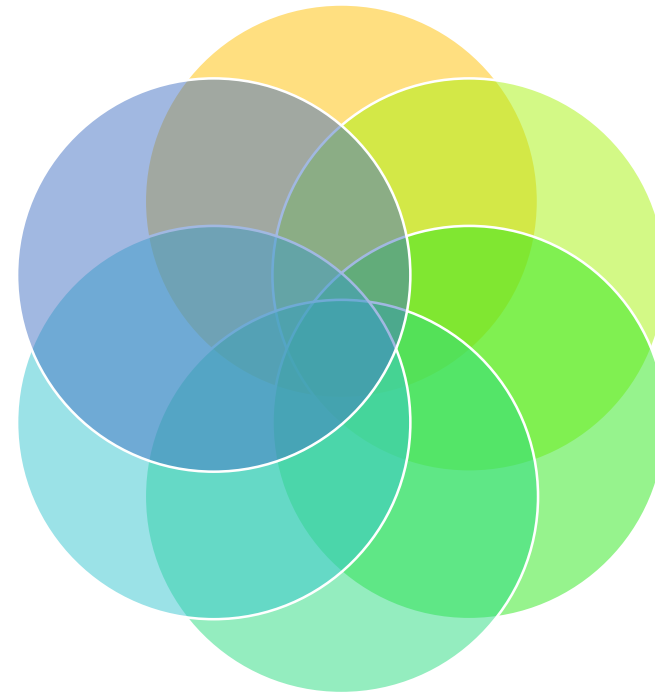


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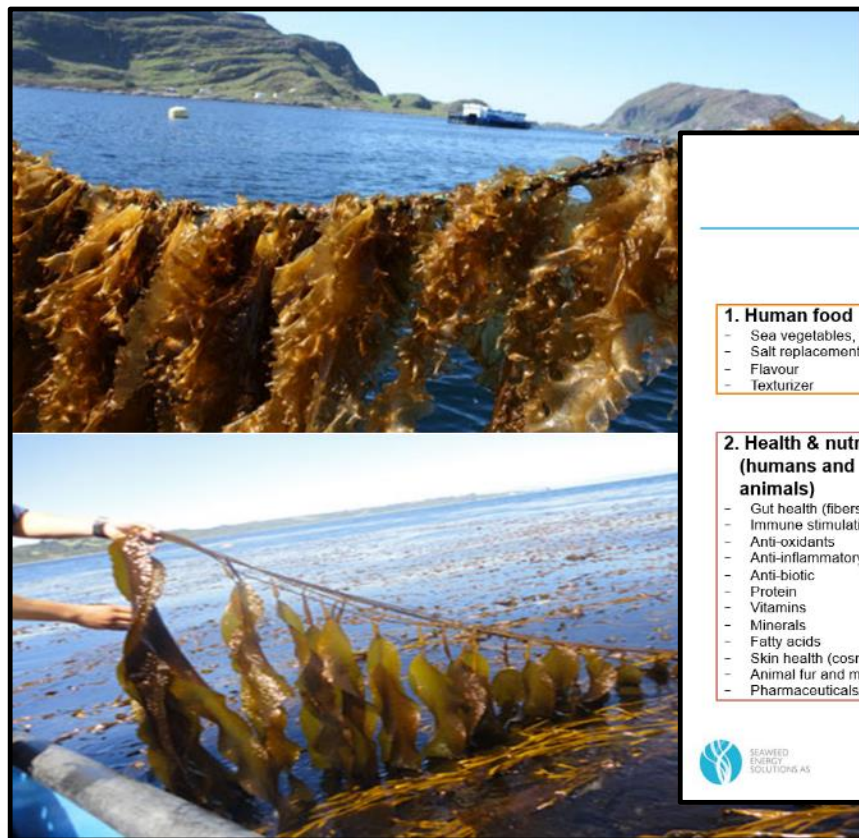


Role of Kelp and
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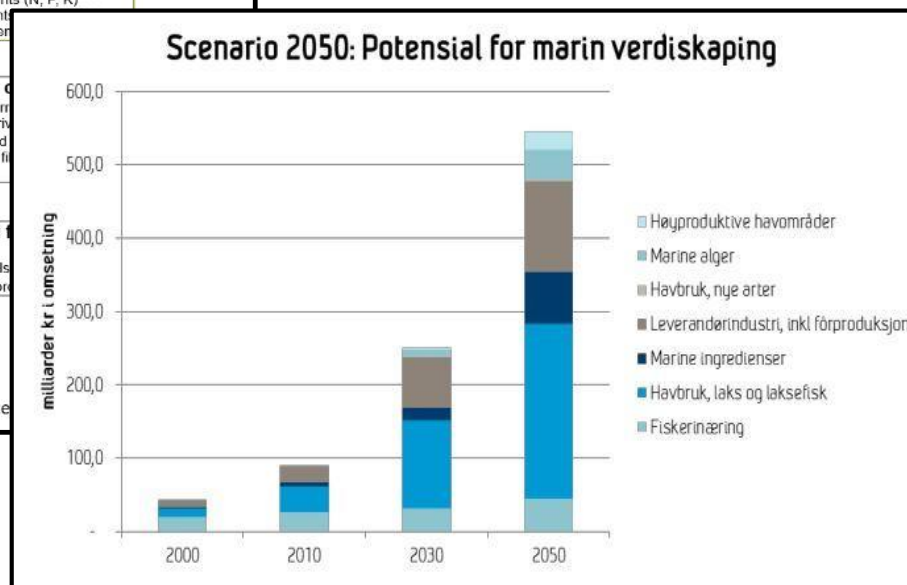
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Industrial kelp farming: An strategic initiative

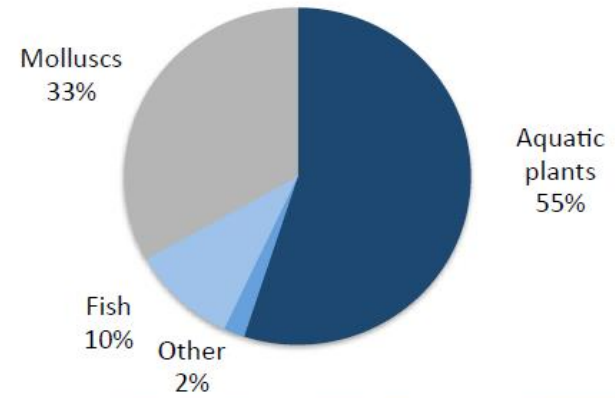


The macro algae industry is expected to increase from **NOK ~1 mrd (2010) to 40 mrd i 2050**



SINTEF, NTNU et al. - Verdiskapning basert på produktive hav i 2050

World marine aquaculture (47 Mton)

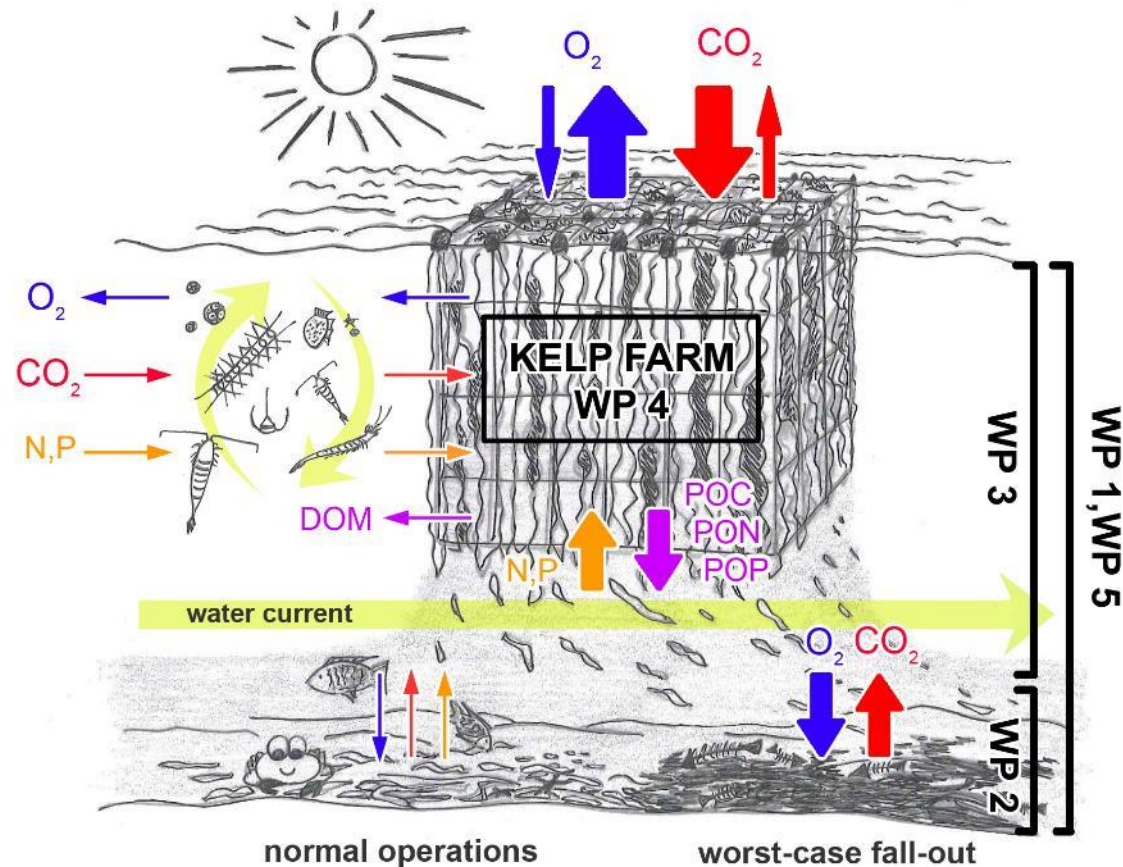


Sangou Bay, China



Impacts of kelp farming on the environment

- A new NIVA project KELPPRO (RCN)



Positive impacts are

- **Nutrient uptake**, reducing marine eutrophication
- **CO_2 uptake**, reducing ocean acidification
- **Increased primary production**
- Promote elevated **biodiversity**

Negative impacts are

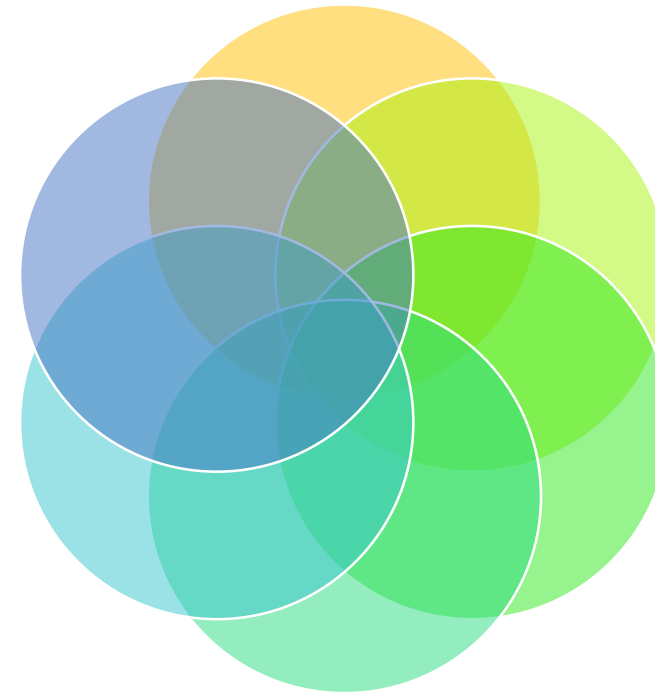
- **Depletion** of limited nutrients
- **Depositing** of large quantities of kelp biomass on the seafloor, leading to
- **poor environmental conditions**,
- **oxygen deficiency**,
- and change in natural **biodiversity**

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Detached kelp drifting and settling on the sea floor





Blue carbon sinks are built by plants and trees (otherwise known as angiosperms such as mangroves, salt-marsh plants and seagrasses) but the coastal ocean also contains vast areas covered by algal beds. Most macroalgal beds (including kelp forests) do not bury carbon, as they grow on rocky substrates where burial is impossible.

A RAPID RESPONSE ASSESSMENT

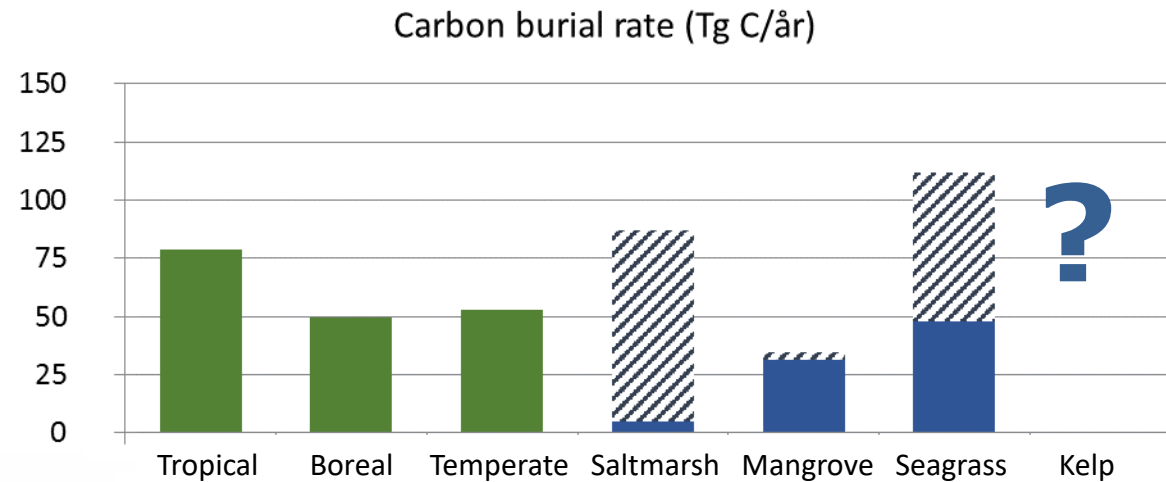
BLUE CARBON

THE ROLE OF HEALTHY OCEANS IN BINDING CARBON



Blue is the new green

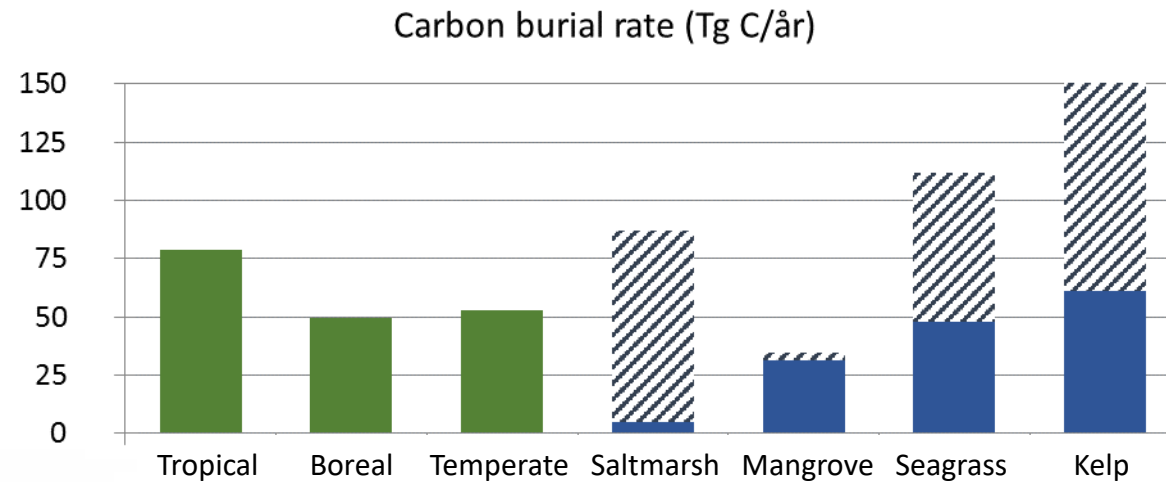
Globally, the marine carbon sequestration is in scale with the terrestrial



McLeod et al. 2011 Front Ecol Evol

Blue is the new green

Globally, the marine carbon sequestration is in scale with the terrestrial



The importance of KELP communities as carbon sinks have been largely overlooked, and the dynamics of carbon sequestration in kelp forest environments are poorly understood

McLeod et al. 2011 Front Ecol Evol
Krause-Jensen & Duarte 2016 Nature

NIVA's new oil: the Blue Forest

