



FAMEOS – Faroese Marine Ecosystem Observing Study

Eygleiðingarskipan við tíðarrøðum fyri lívfrøðiliga margfeldið og vistskipanina á Landgrunninum

Ian Salter, Havstovan

23. september 2022

Hvat er umhvørvis DNA?

mikroskopiskar lívverur



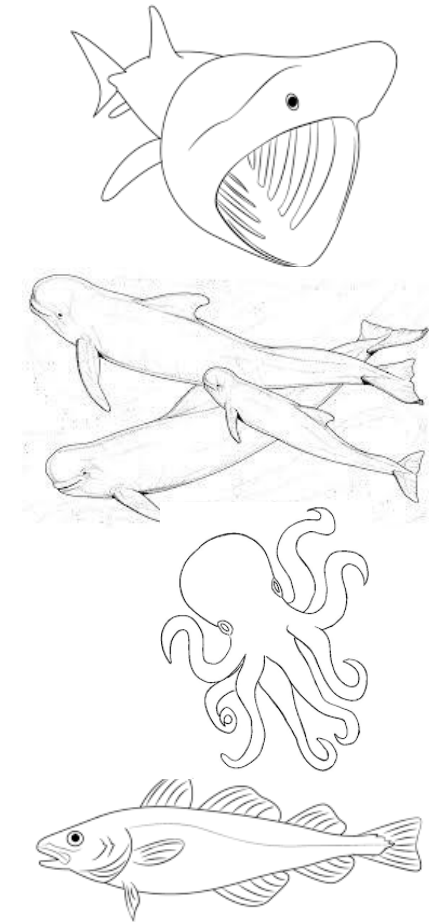
Hvat er umhvørvis DNA?



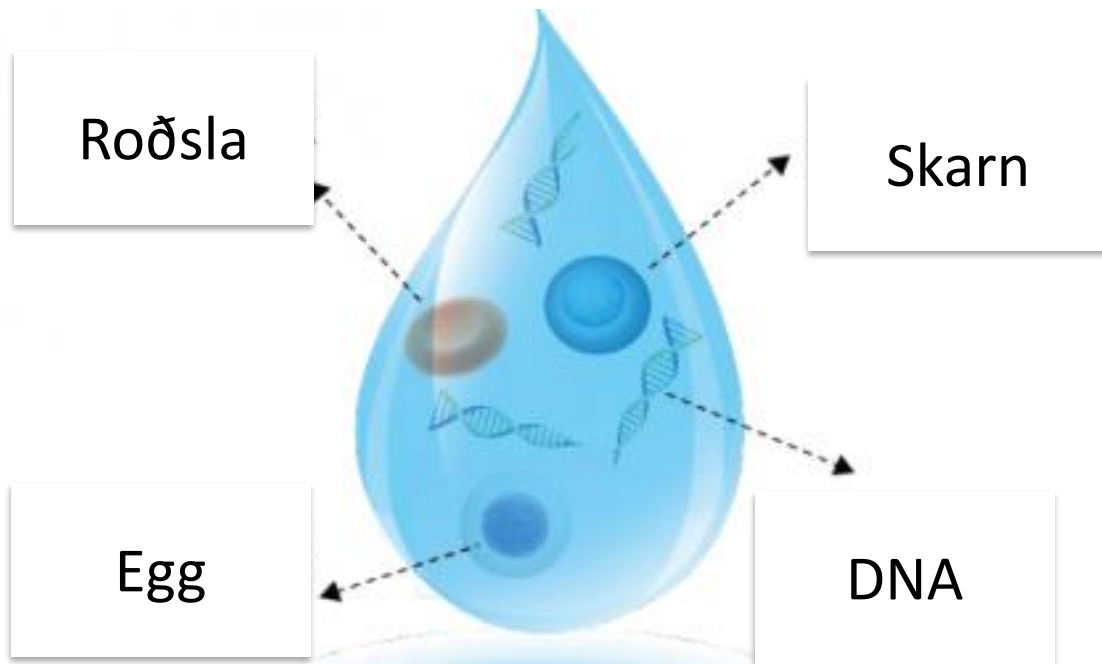
mikroskopiskur lívverur



DNA petti

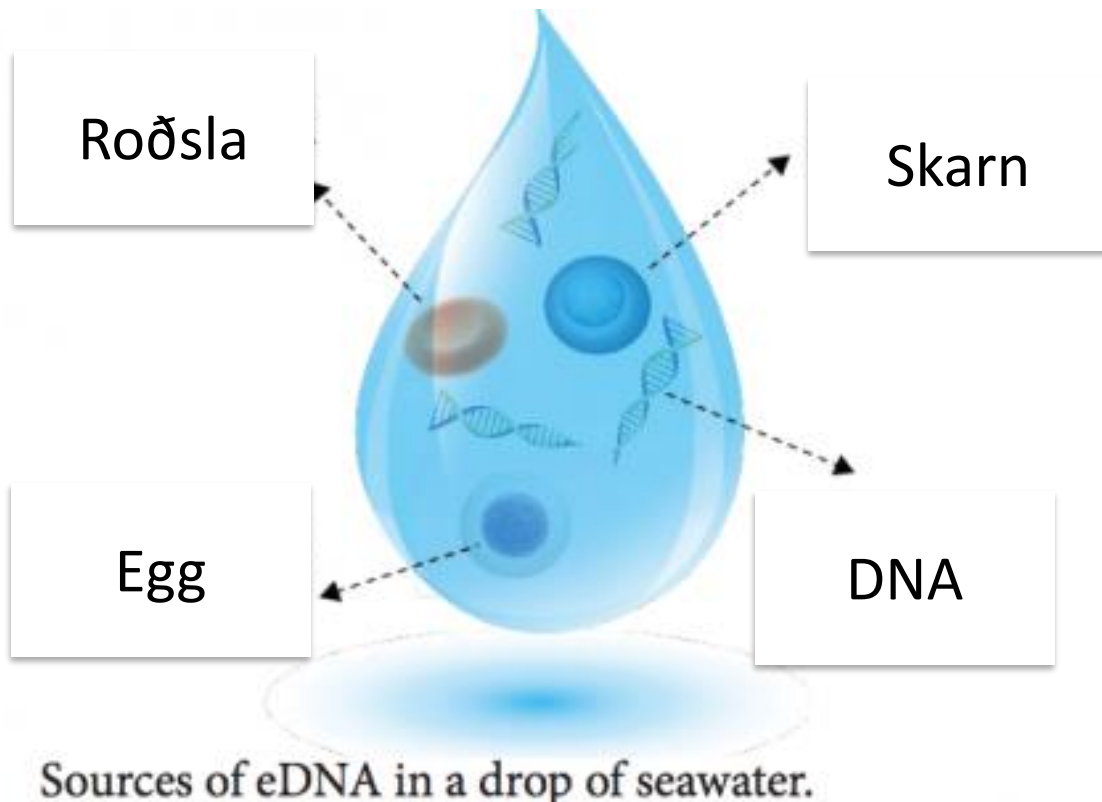


Hvat er umhvørvis DNA?

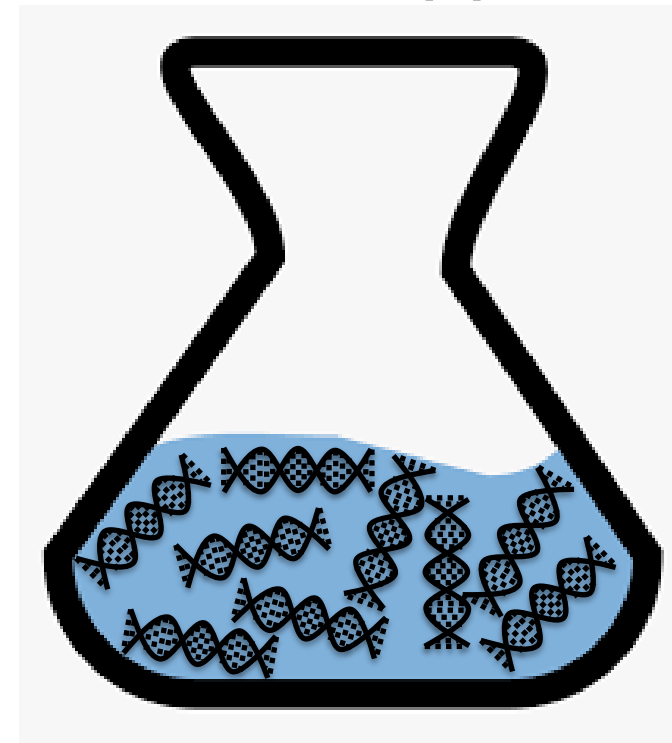


Sources of eDNA in a drop of seawater.

Hvat er umhvørvis DNA?

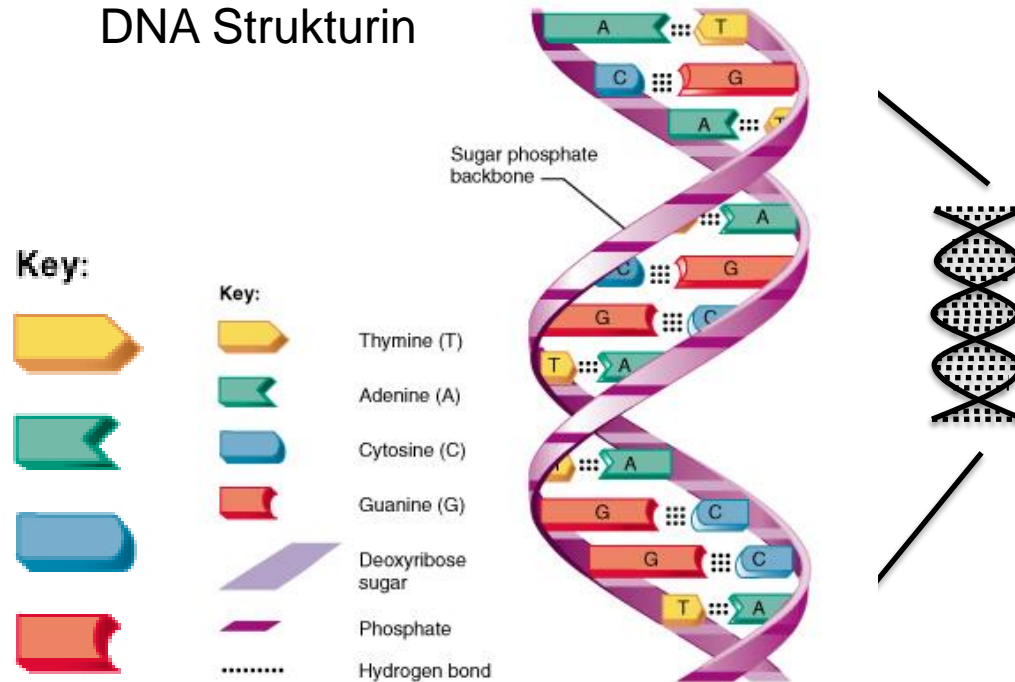


DNA suppa



Hvat er umhvørvis DNA?

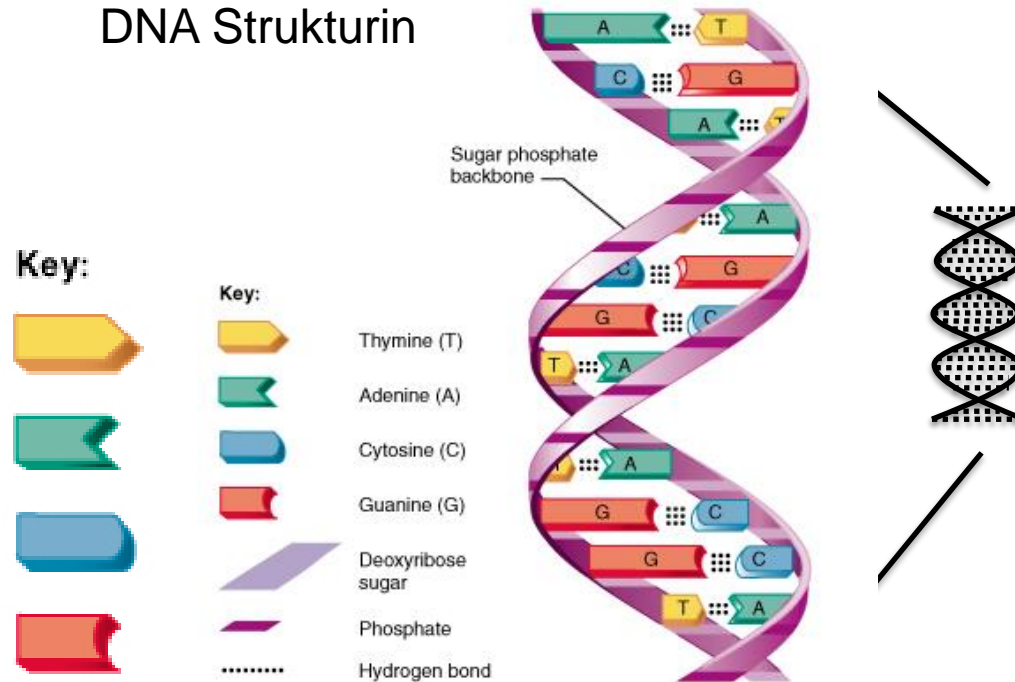
DNA Strukturin



(b)
 Copyright © 2001 Benjamin Cummings, an imprint of Addison Wesley Longman, Inc.
 Date: 25th September 2020

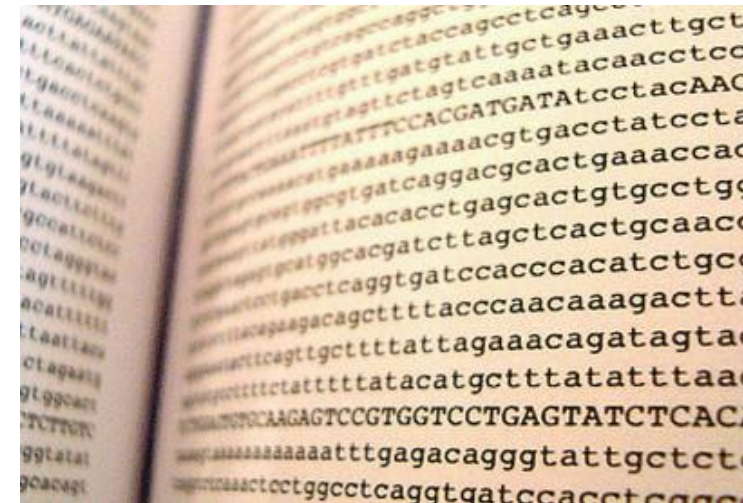
Hvat er umhvørvis DNA?

DNA Strukturin

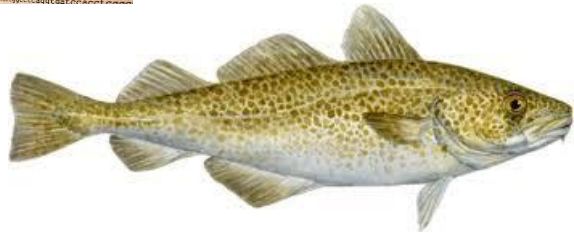


(b)
 Copyright © 2001 Benjamin Cummings, an imprint of Addison Wesley Longman, Inc.
 Date: 23rd September 2020

DNA: Eitt mál við fyra bókstavum og longum orðum



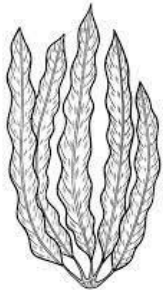
Hvat er umhvørvis DNA?



Fiskur



GAC**GT**AGCCGTA



Tari



GAC**ATT**GCCGTA

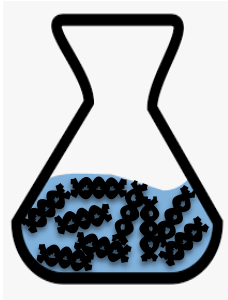


Hvalur



GAC**AAG**C

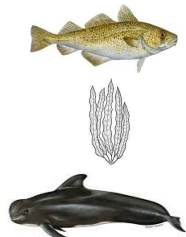
Hvat er umhvørvis DNA?



Havið er fult av
DNA leivdum



DNA er eitt mál sum hevur
fýra bókstavar og long orð



Nøkur “orð” í DNA málinum eru
serstøk fyri djóraslagið

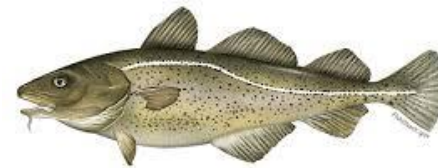


**Vit kunnu brúka
sjósýnir at kanna
líffrøðiliga margfeldið**

Hvat er umhvørvis DNA metabarcoding



AGCCCGAATGCCAG
TCGGGCTTACGGTC



Hvat er umhvørvis DNA metabarcoding

11,801,293

Specimen Records

8,883,213

Specimens with Barcodes

316,934

Species with Barcodes

Animals:

- Acanthocephala [2285]
- Acoelomorpha [20]
- Annelida [100738]
- Arthropoda [9710473]
- Brachiopoda [302]
- Bryozoa [4043]
- Chaetognatha [1738]
- Chordata [821428]
- Cnidaria [29005]
- Ctenophora [480]
- Cycliophora [326]
- Echinodermata [53991]
- Entoprocta [63]
- Gastrotricha [1350]
- Gnathostomulida [24]
- Hemichordata [231]
- Kinorhyncha [719]
- Mollusca [236107]
- Nematoda [33850]
- Nematomorpha [394]
- Nemertea [5576]
- Onychophora [1279]
- Phoronida [157]
- Placozoa [20]
- Platyhelminthes [37536]
- Porifera [7362]
- Priapulida [148]
- Rhombozoa [48]
- Rotifera [12550]
- Sipuncula [1299]
- Tardigrada [2812]
- Xenacoelomorpha [18]

Plants:

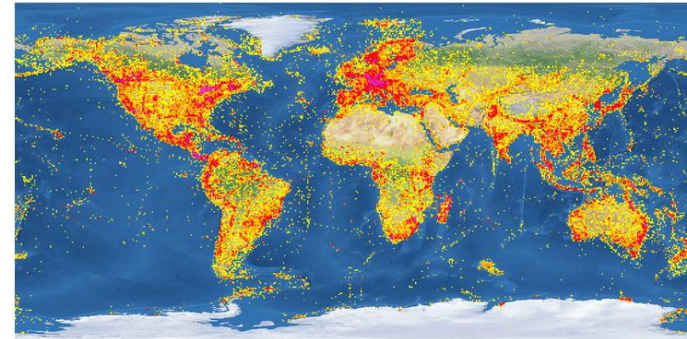
- Bryophyta [21869]
- Chlorophyta [14335]
- Lycopodiophyta [1215]
- Magnoliophyta [365242]
- Pinophyta [7064]
- Pteridophyta [11377]
- Rhodophyta [54279]

Fungi:

- Ascomycota [97809]
- Basidiomycota [65697]
- Chytridiomycota [293]
- Glomeromycota [3529]
- Myxomycota [235]
- Zygomycota [3273]

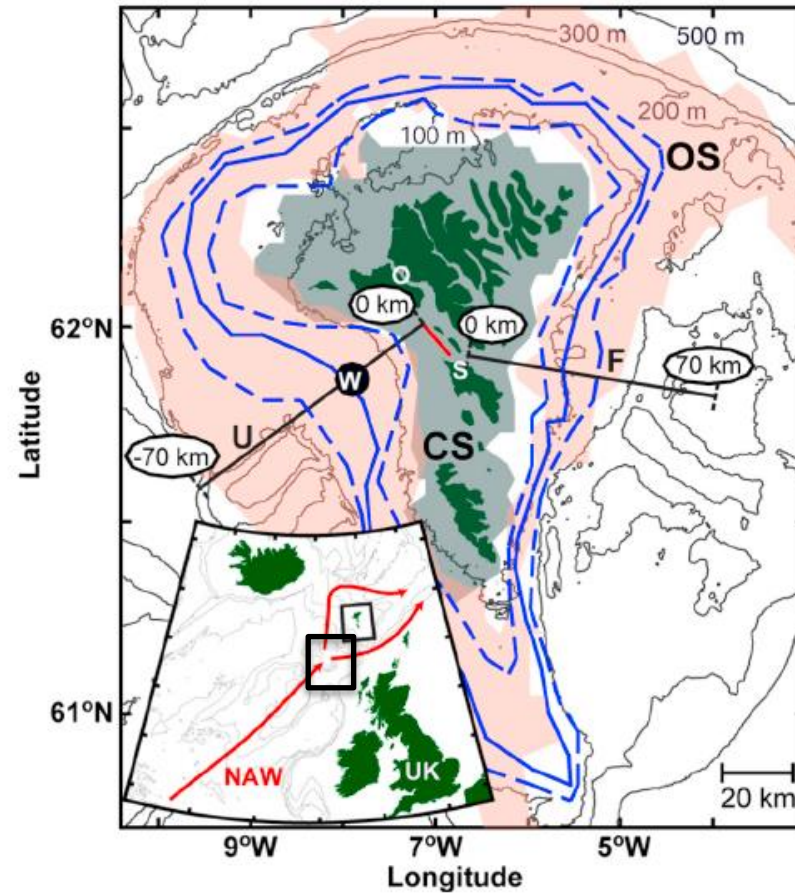
Protists:

- Chlorarachniophyta [67]
- Ciliophora [786]
- Heterokontophyta [7209]
- Pyrrophycomphyta [2299]

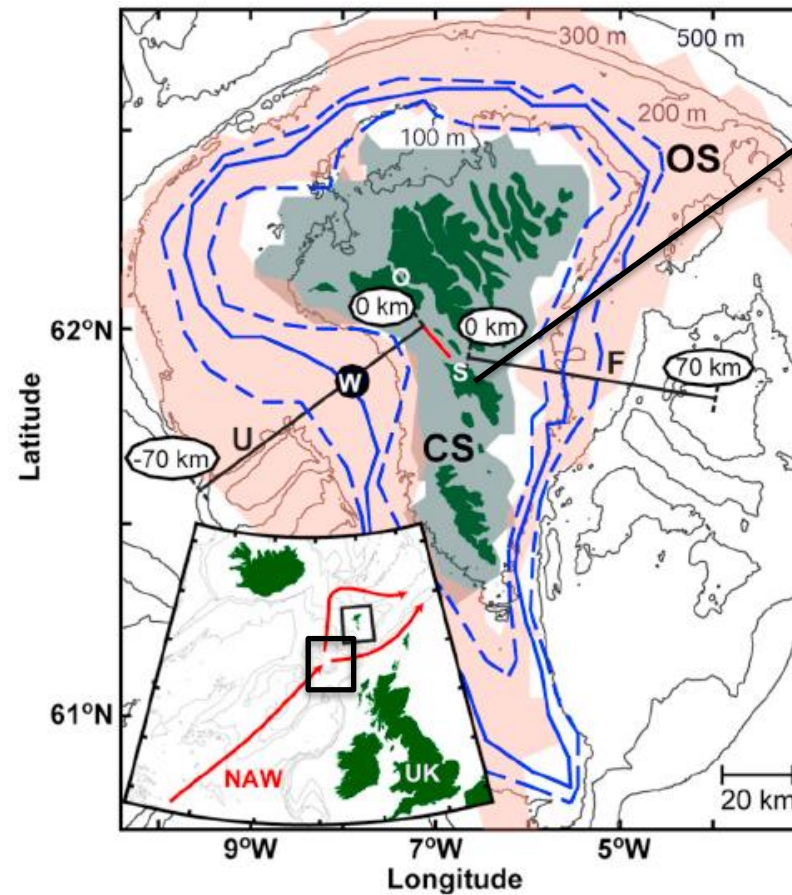


BOLD – Barcode of Life Database

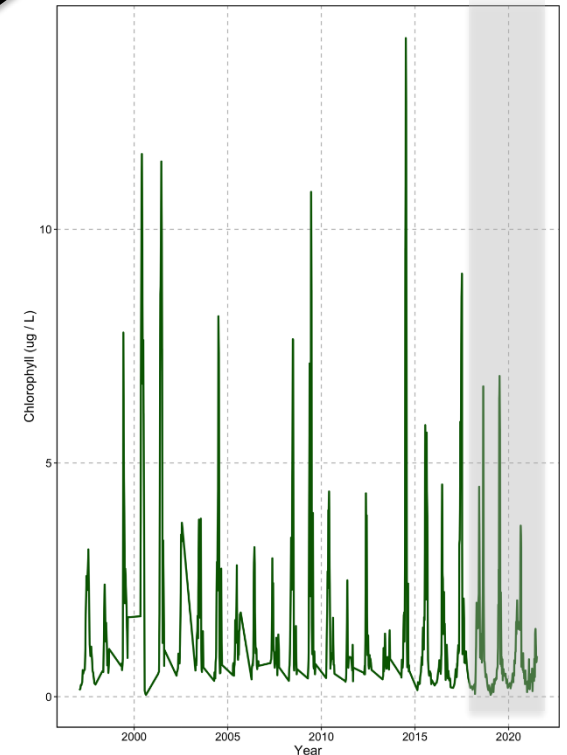
FAMEOS



FAMEOS



CS Time-Series

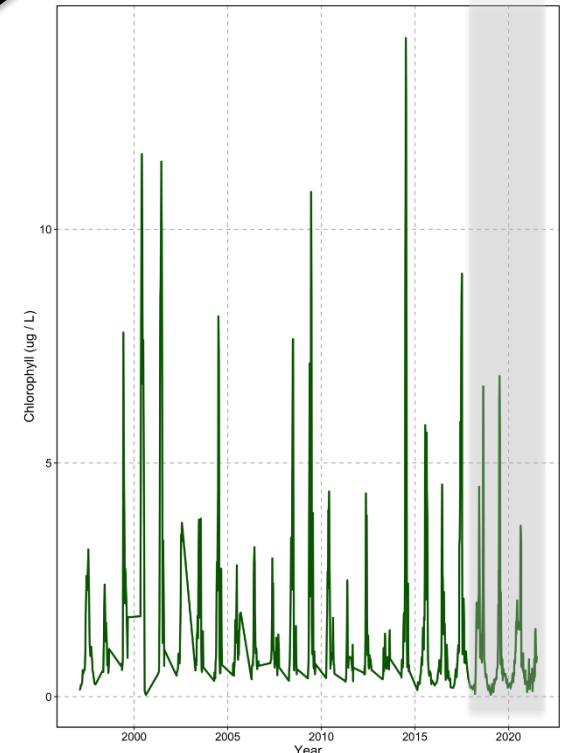
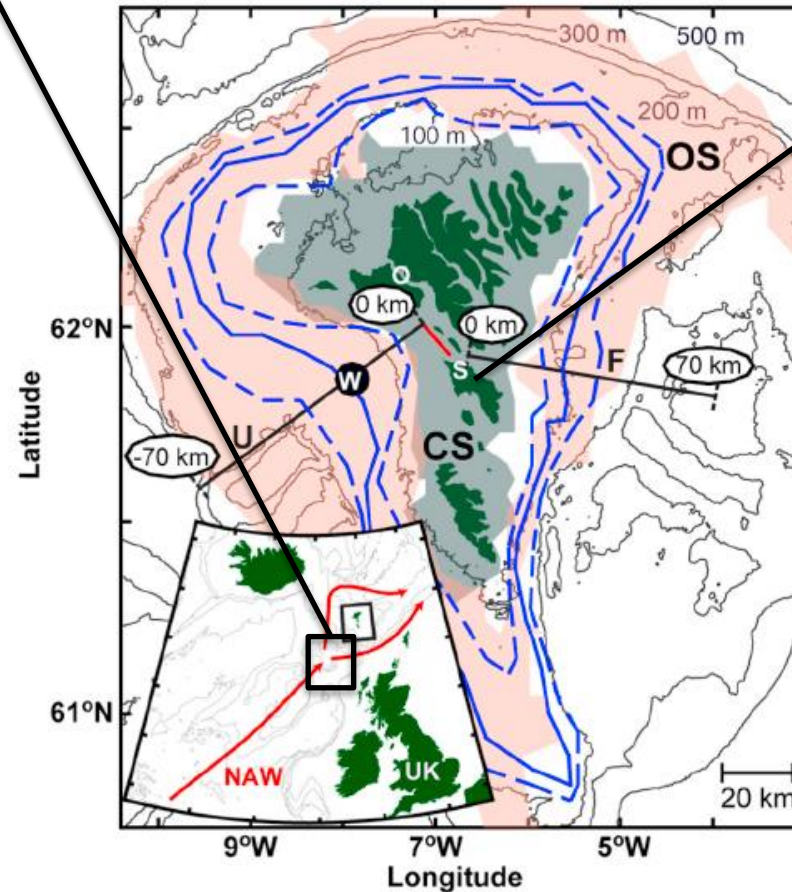
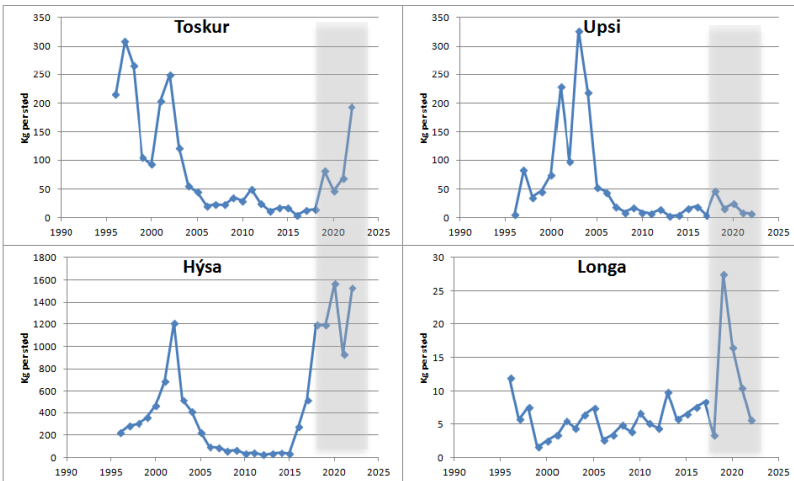


FAMEOS 2018.....
 Weekly / Biweekly
 200 sampling dates

Føroya Banki Time-Series

FAMEOS

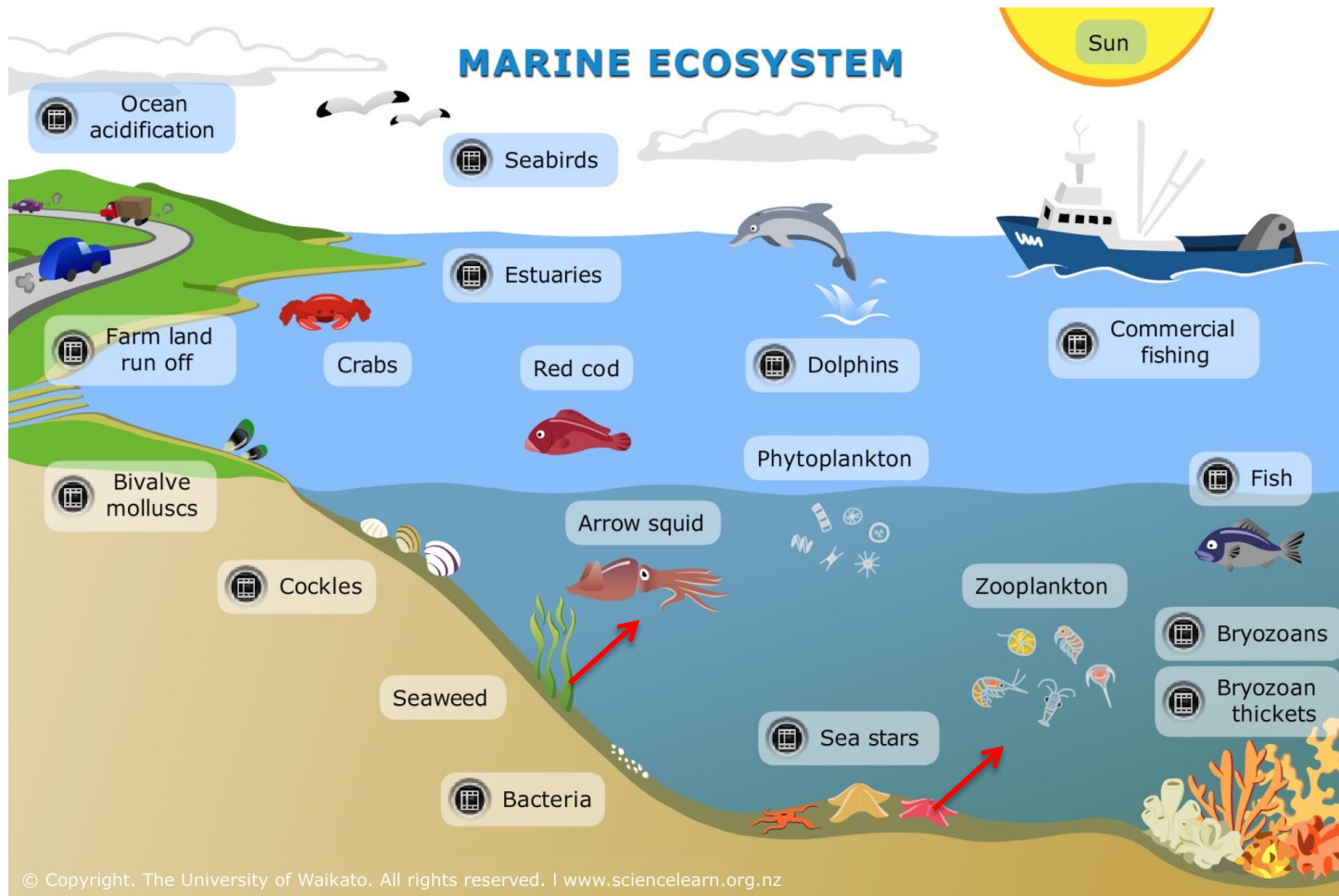
CS Time-Series



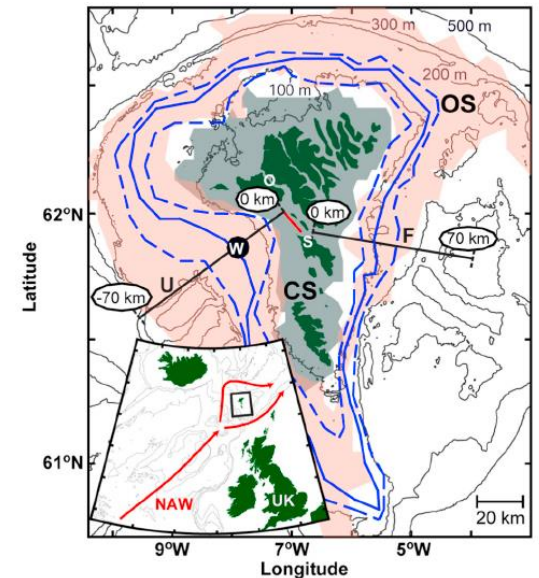
FAMEOS 2019.....
Biannually
20 survey sites

FAMEOS 2018.....
Weekly / Biweekly
200 sampling dates

Vistskipan í eini flösku



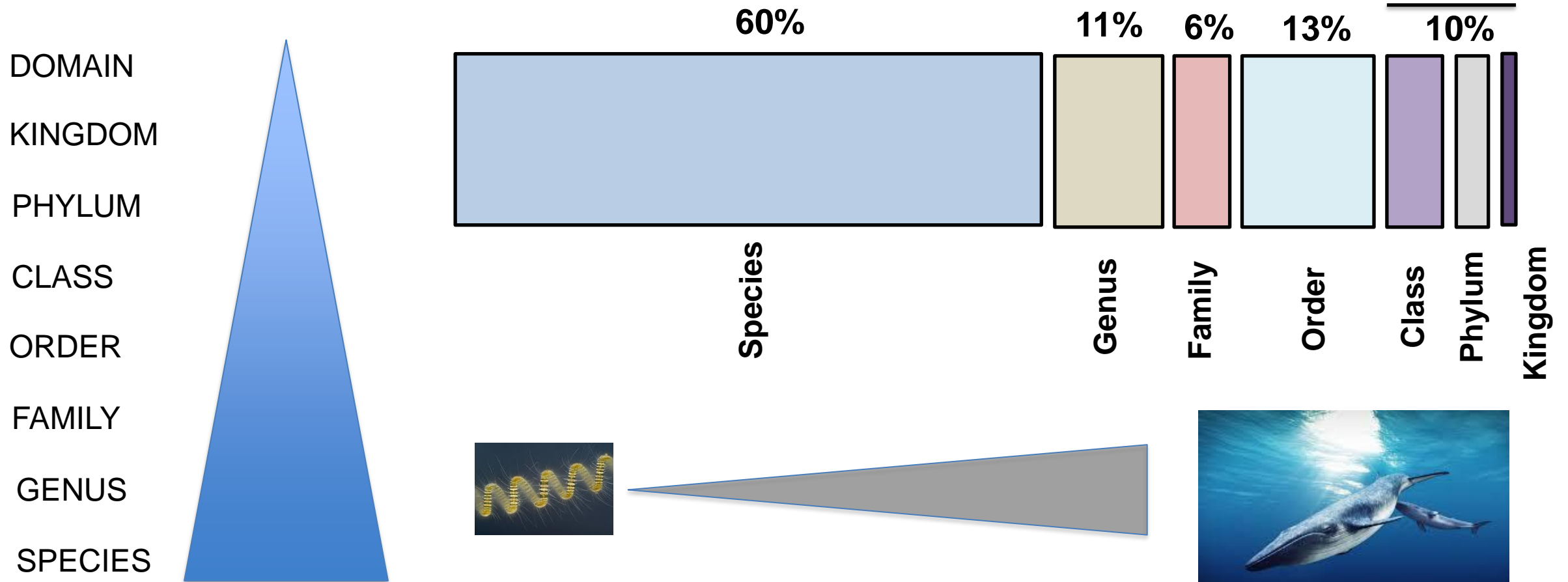
FAMEOS



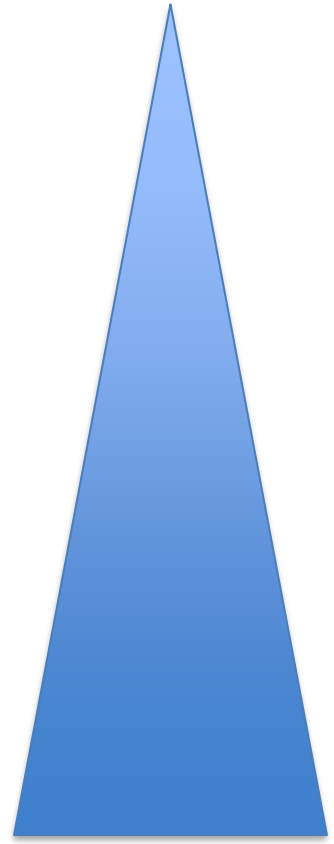
Vistskipan í eini fløsku

Sequence similarity

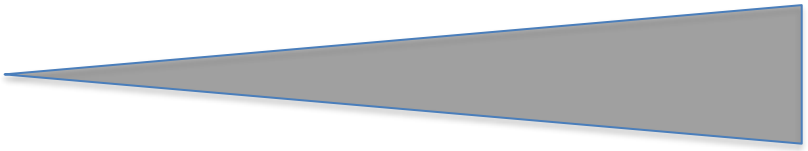
465 taxonomic (phylogenetic) classifications



DOMAIN
KINGDOM
PHYLUM
CLASS
ORDER
FAMILY
GENUS
SPECIES



Mikroskopiskar algur



Hvalur

Botnur ryggleys dýr



264 sløg

88 óskrásett sløg

1/3 nýggj fyri Føroyar

- Bivalves
- Hydrozoa
- Polychaete worms
- Anemones
- Tunicates
- Sea pens
- Sea cucumbers
- Sea slugs

.....

Tari



40 slög av tara

34 fyrr skrásett

6 óskrásett slög

Alaria crassifolia

Hecatonema maculans

Microspongium tenuissimum

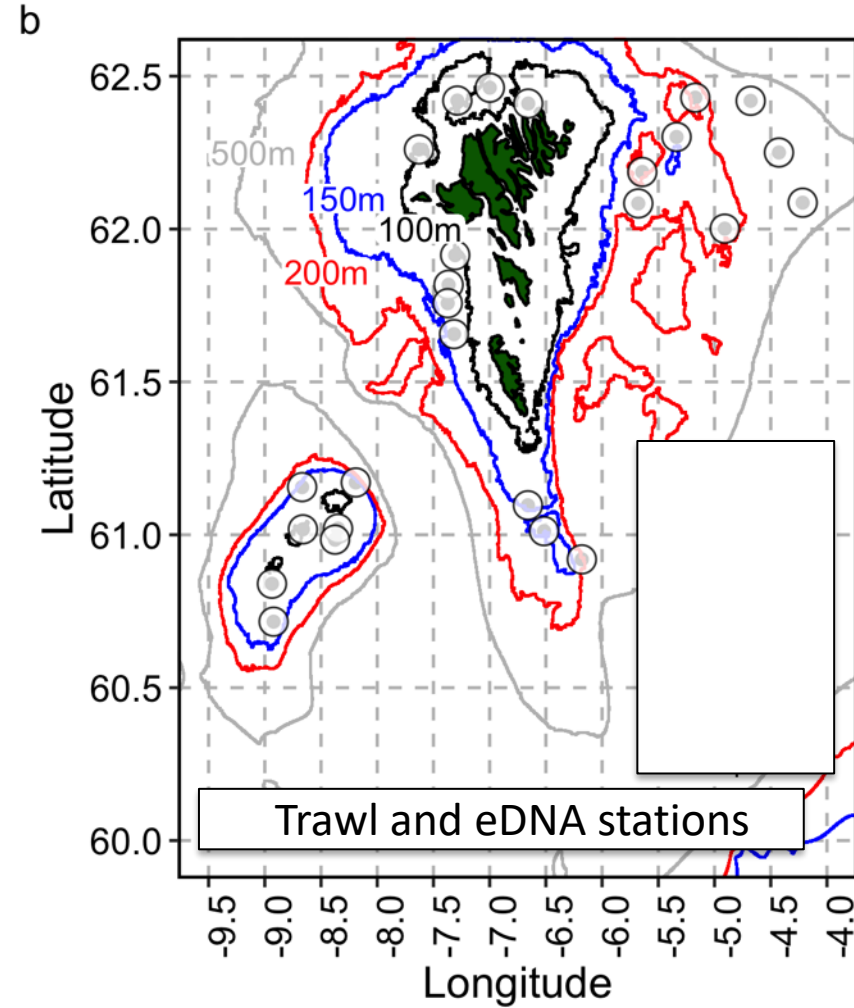
Rhodothamniella floridula

Colaconema proskaueri

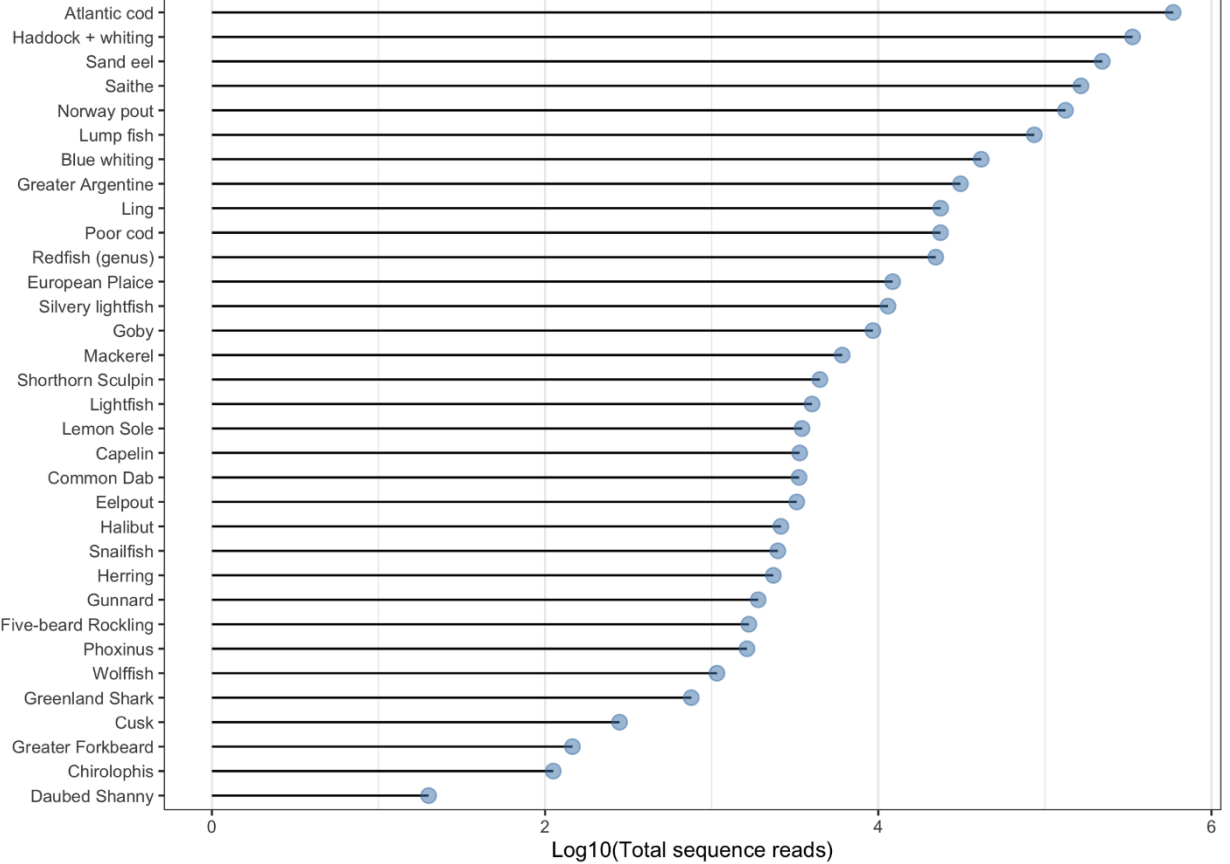
Pyropia haitanensis

**Nýggj slög
kunnu verða
skrásett**

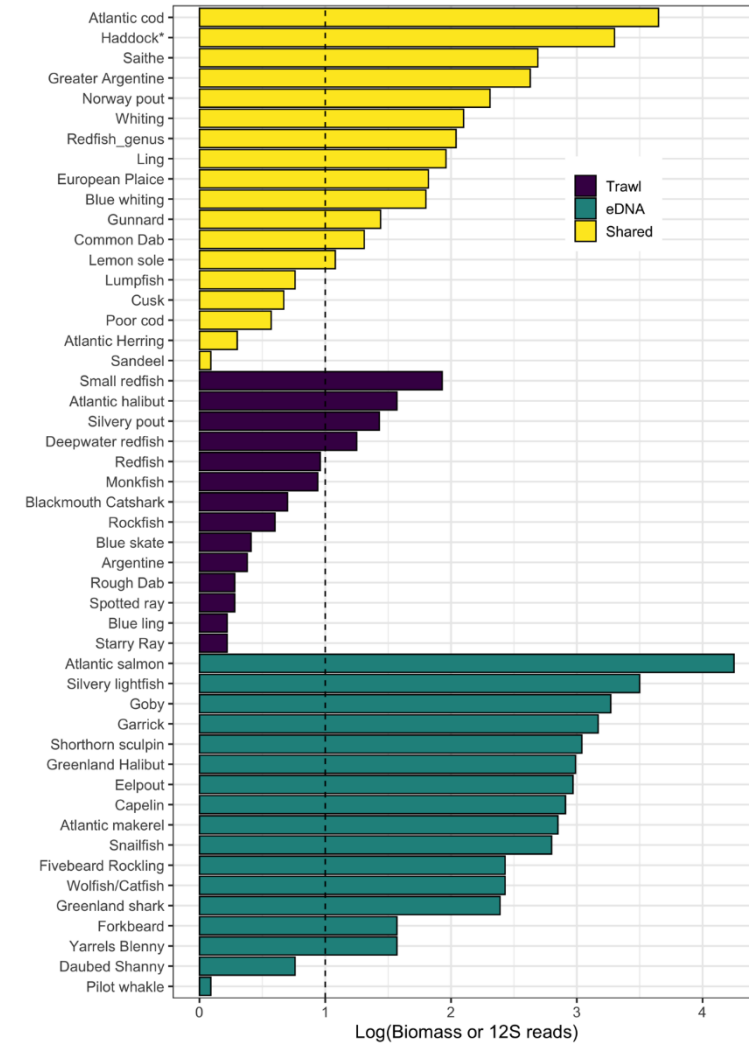
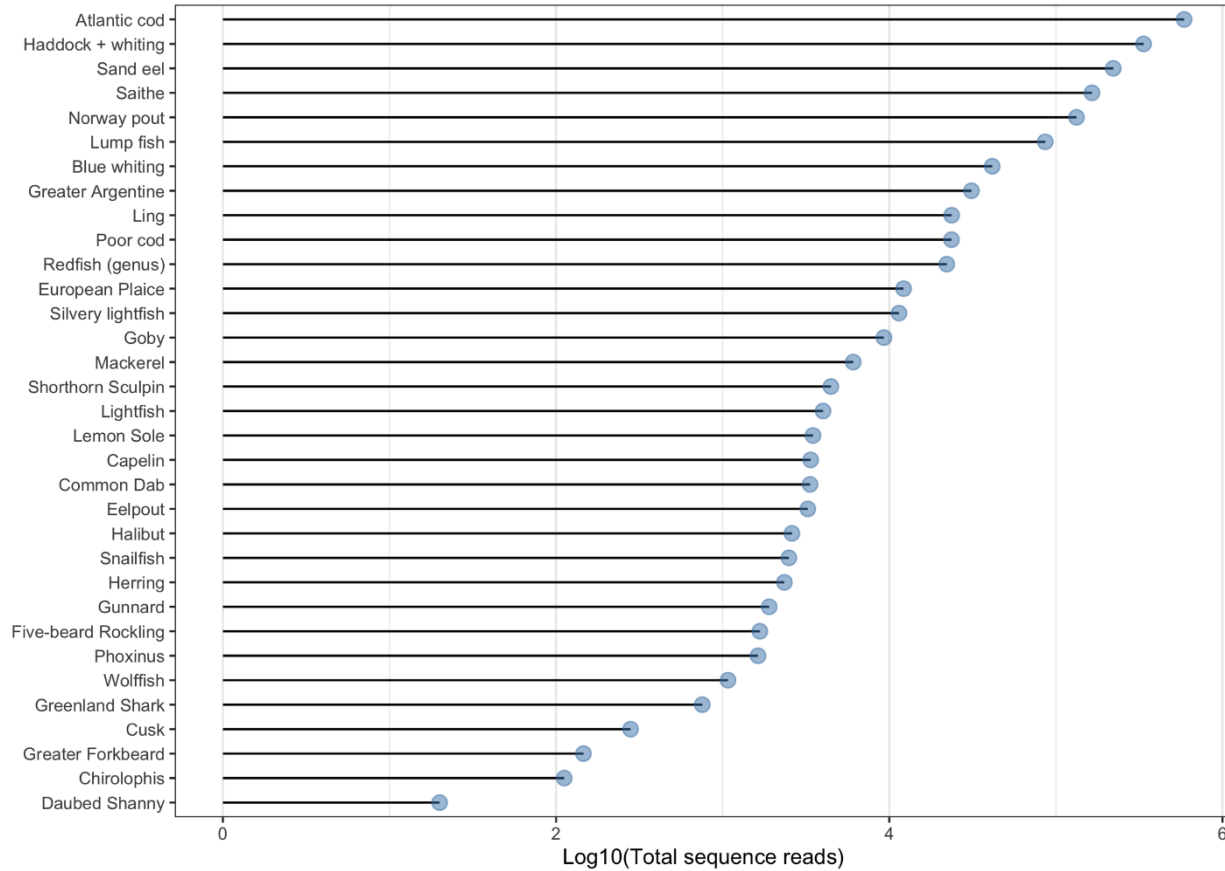
Fiskur – Samanbering við yvirlitstroling



Fiskur – Samanbering við yvirlitstroling

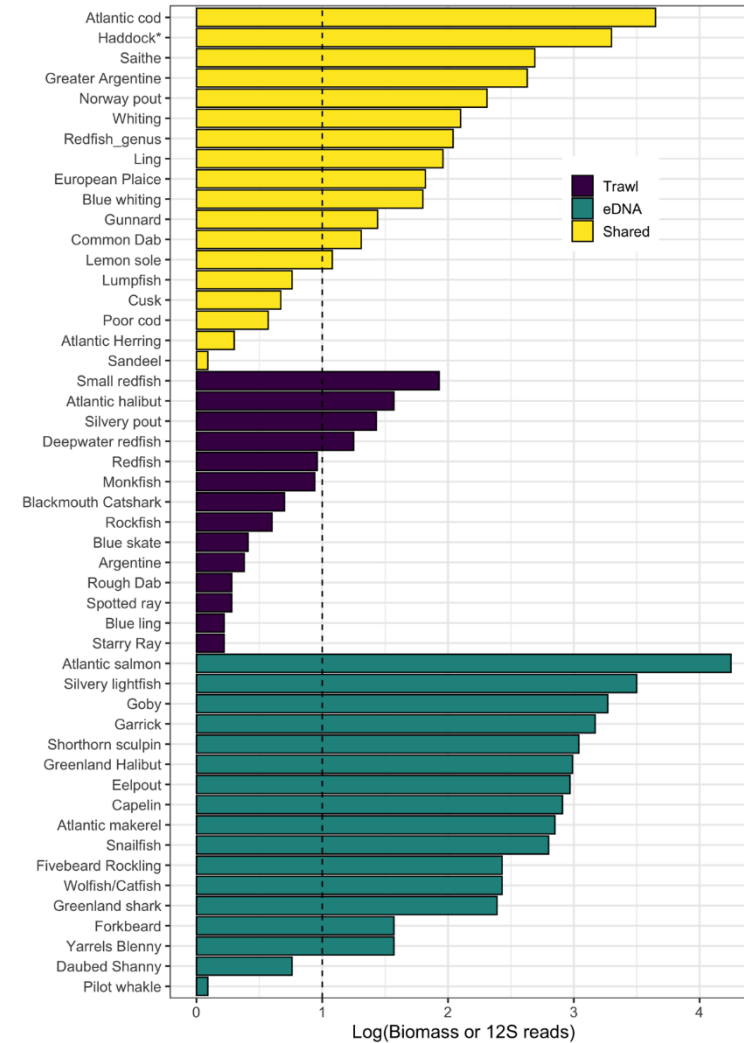
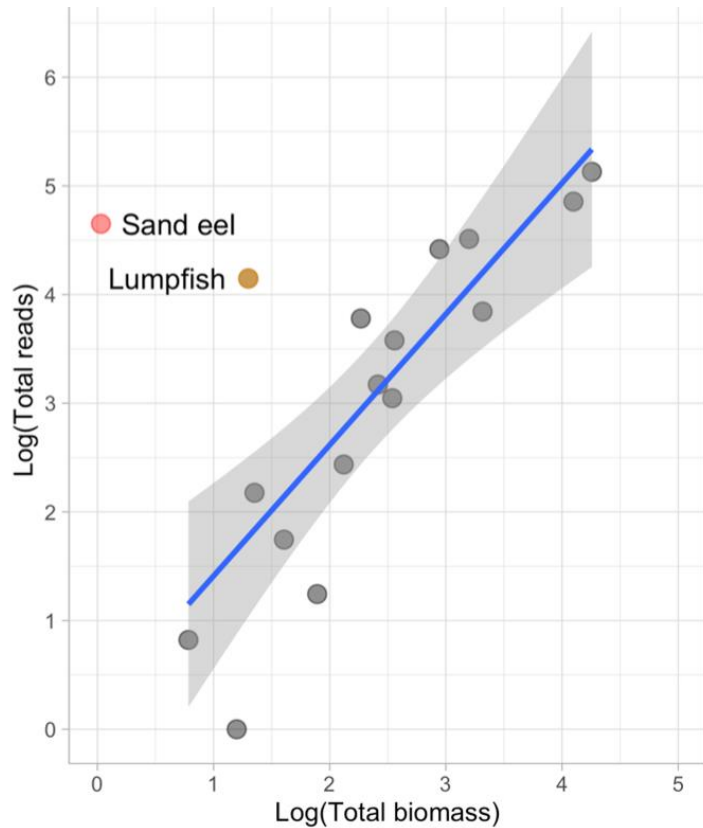


Fiskur – Samanbering við yvirlitstroling



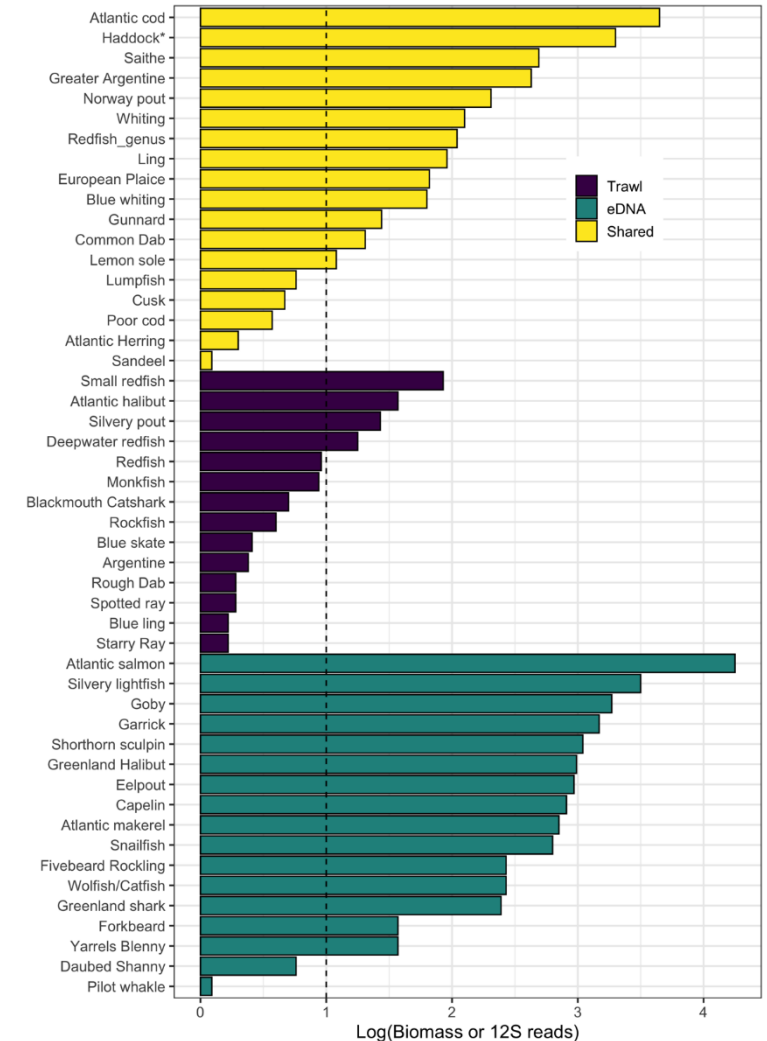
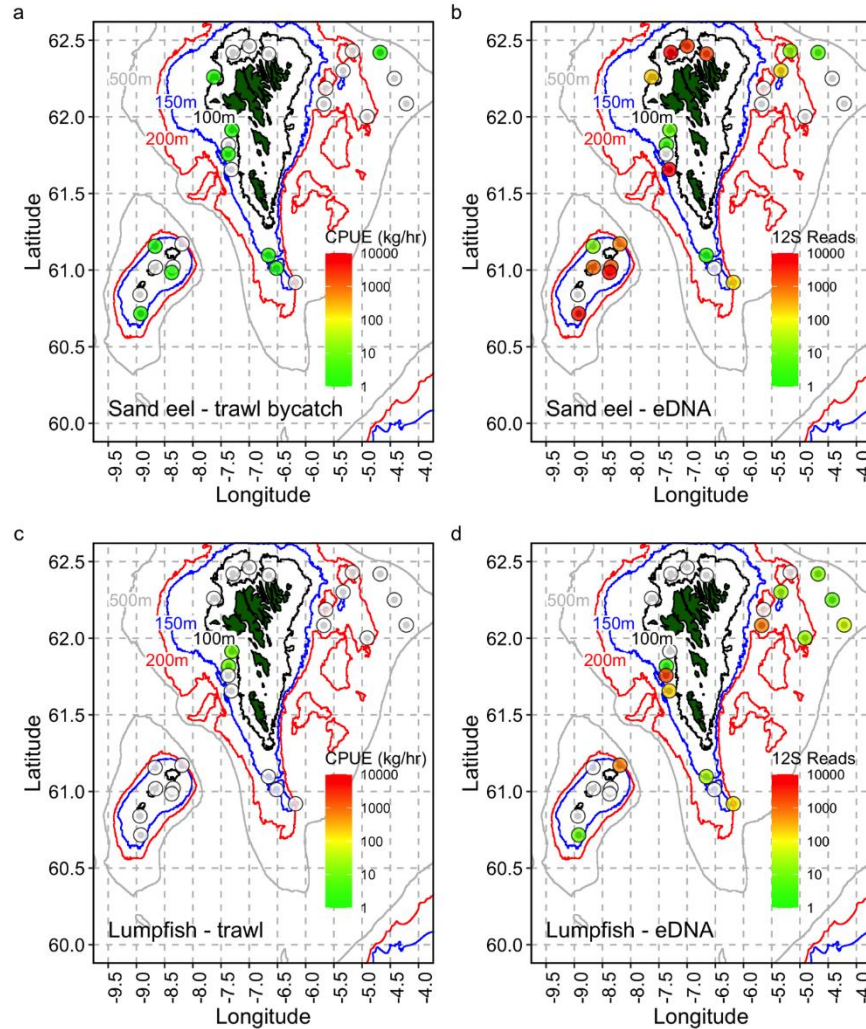
Fiskur – Samanbering við yvirlitstroling

Samsvar millum fiska eDNA og nøgd frá yvirlitstroling



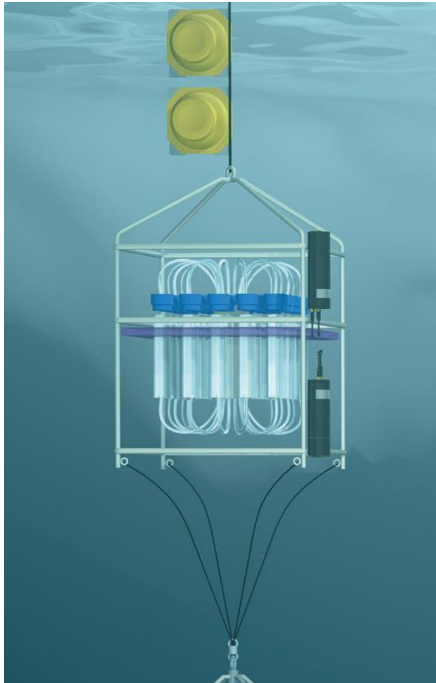
Fiskur – Samanbering við yvirlitstroling

Good Agreement between fish DNA reads and fish biomass



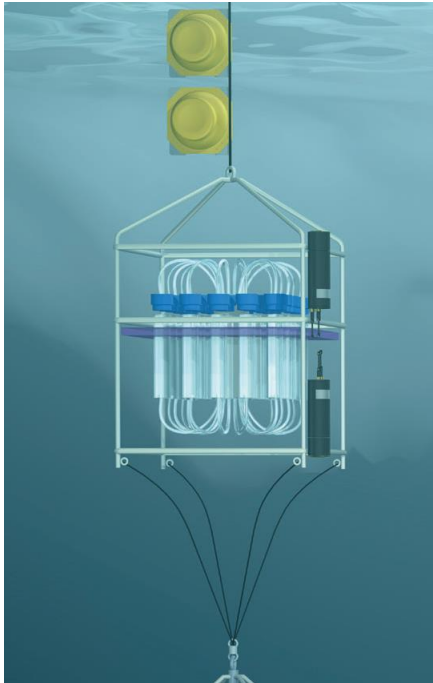
Umhvørvis DNA í framtíðini : sjálvvirkin sýnistøka

Sjálvvirkin sjósýnir



Umhvørvis DNA í framtíðini : sjálvvirkin sýnistøka

Sjálvvirkin sjósýnir

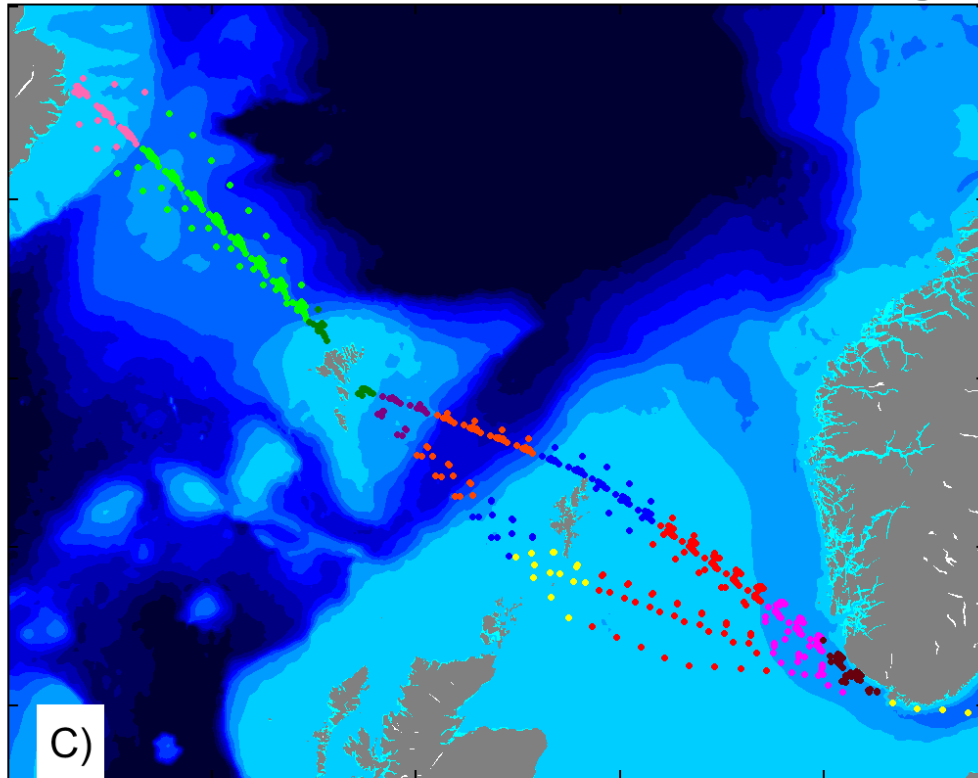


Skip



Sjálvvirkin sýnir – Møgulig skip

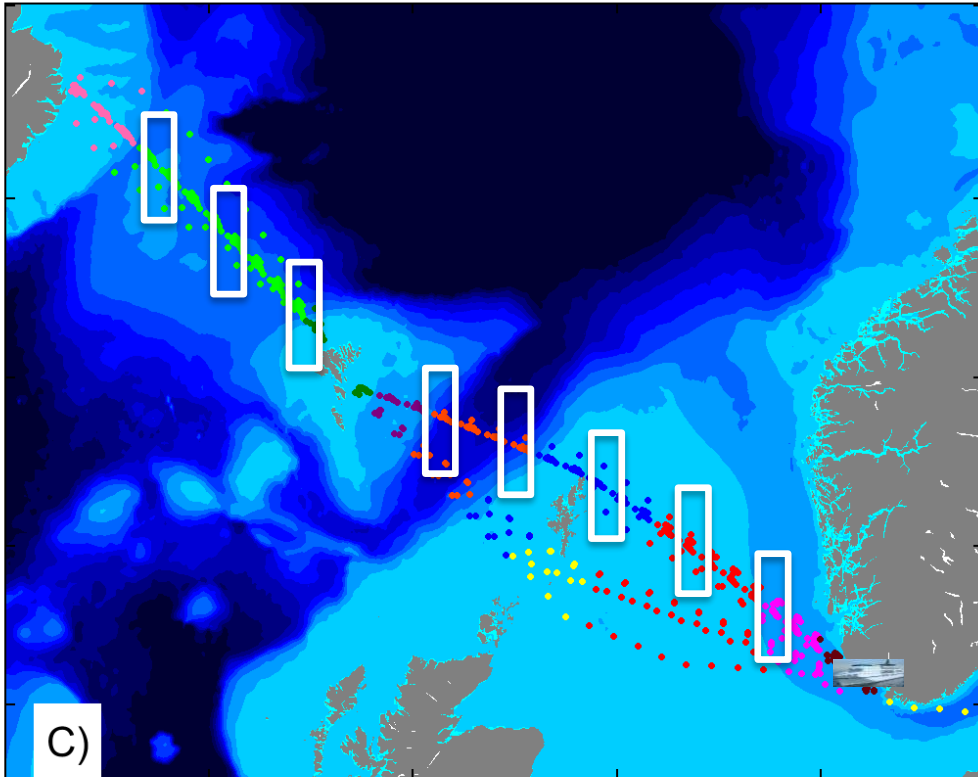
Bathymetri of the region
dots are CPR positions, colours indicate region



MS Norröna

Sjálvvirkin sýnir – Møgulig skip

Bathymetri of the region
 dots are CPR positions, colours indicate region



GPS



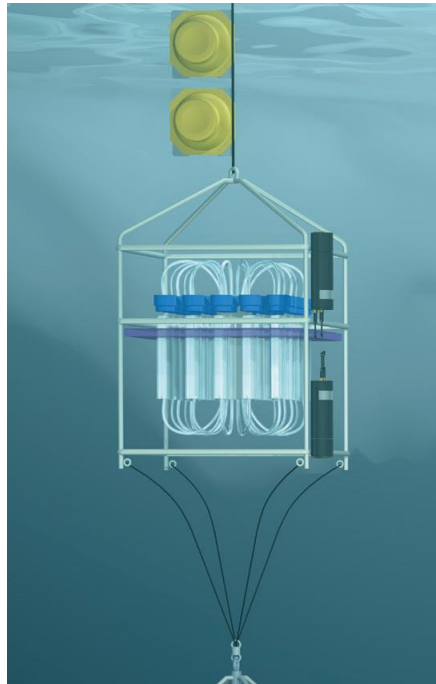
MS Norröna



Havstovan

Umhvørvis DNA í framtíðini : sjálvvirkin sýnistøka

Sjálvvirkin sjósýnir



Skip



Sjálvvirknir kavbátar



Niðurstøða

- DNA í sjósýnum kann nýtast til at kanna lívfrøðiliga margfeldið og vistskipanina
- FAMEOS stovnar í 2018 – DNA
- Fyrikoma nýggj sløg
- Samsvar við aðrar teknikkir
- Spennandi framtíðar møguleikar



Takk fyri at tit lurtaðu eftir mær í dag

granskingar ráðið
RESEARCH COUNCIL FAROE ISLANDS

RESEARCH PARK
INOVA

HAVSTOVAN
FAROE MARINE RESEARCH INSTITUTE