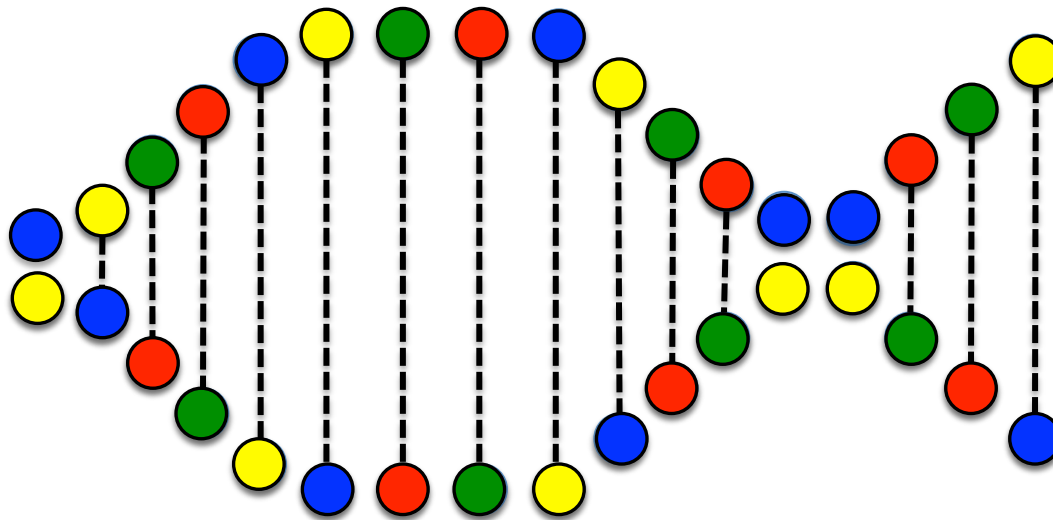


A complimentary approach to Atlantic cod stock assessment on the Faroe Bank using environmental DNA samples



Ian Salter, Ph.D

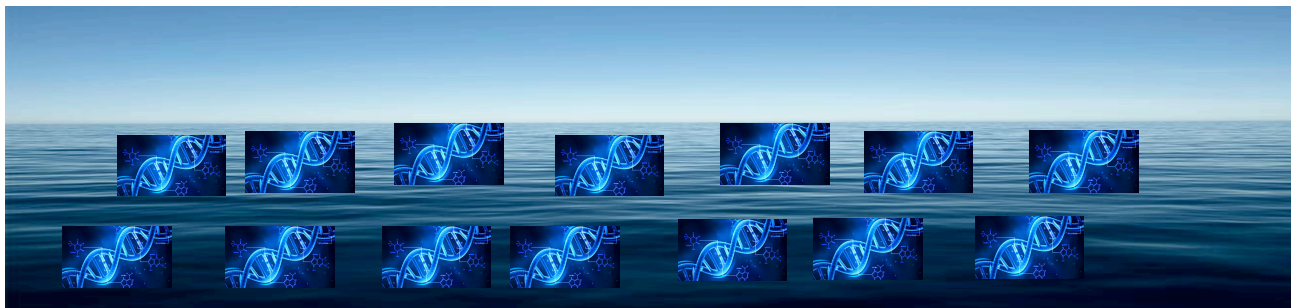
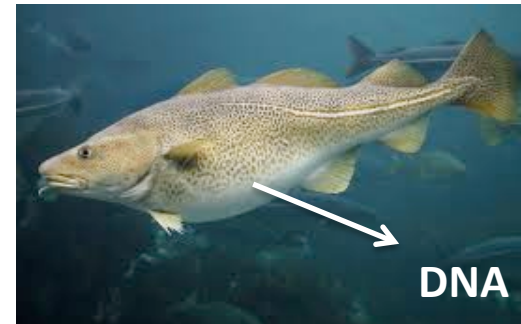
What is environmental DNA?

All of the DNA that can be recovered from an environmental sample

Microscopic organisms



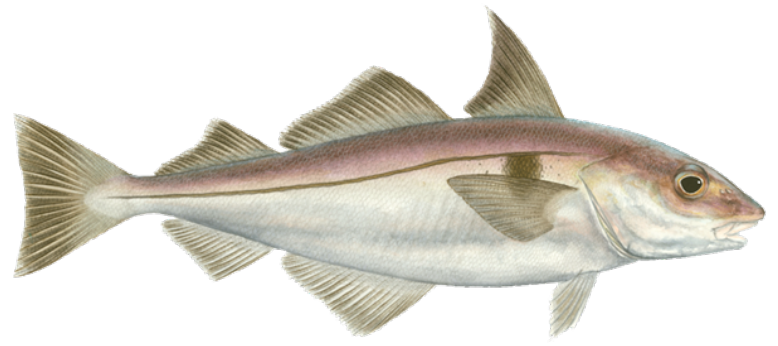
Larger organisms



Environmental DNA



AACCTTGACGTAGTAGCAGTGGTACGA



GACGTTAGCCAGGTAGGCAGGTAGGACG



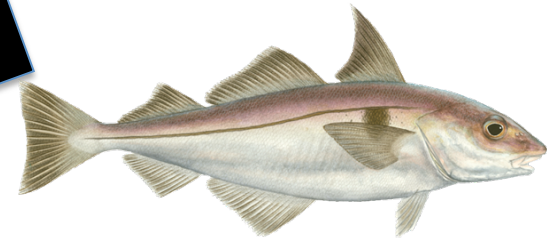
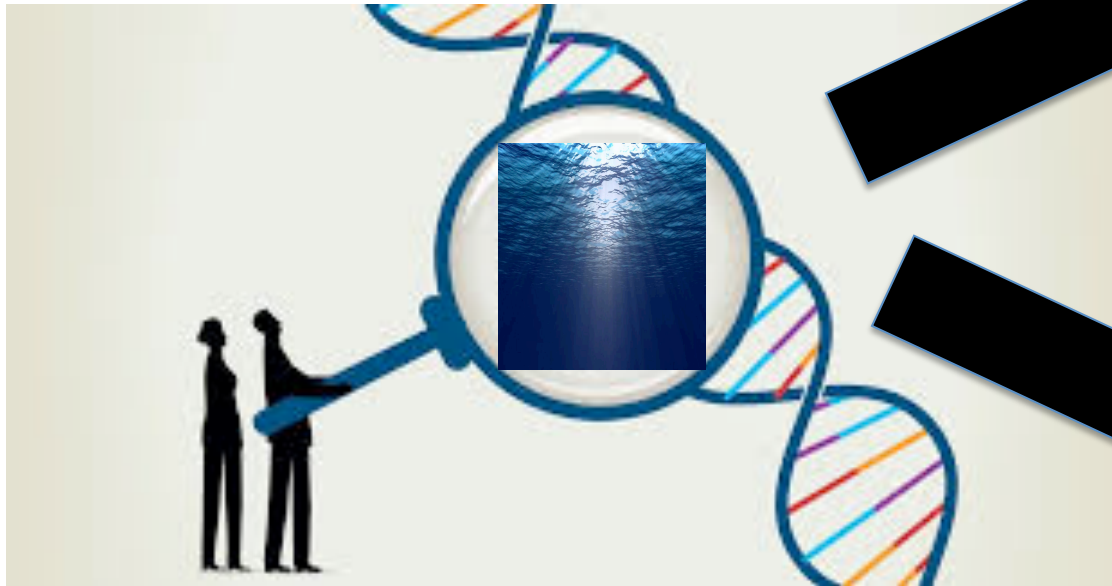
CGTATATGTTTATTGCAACGTATTACGTATA



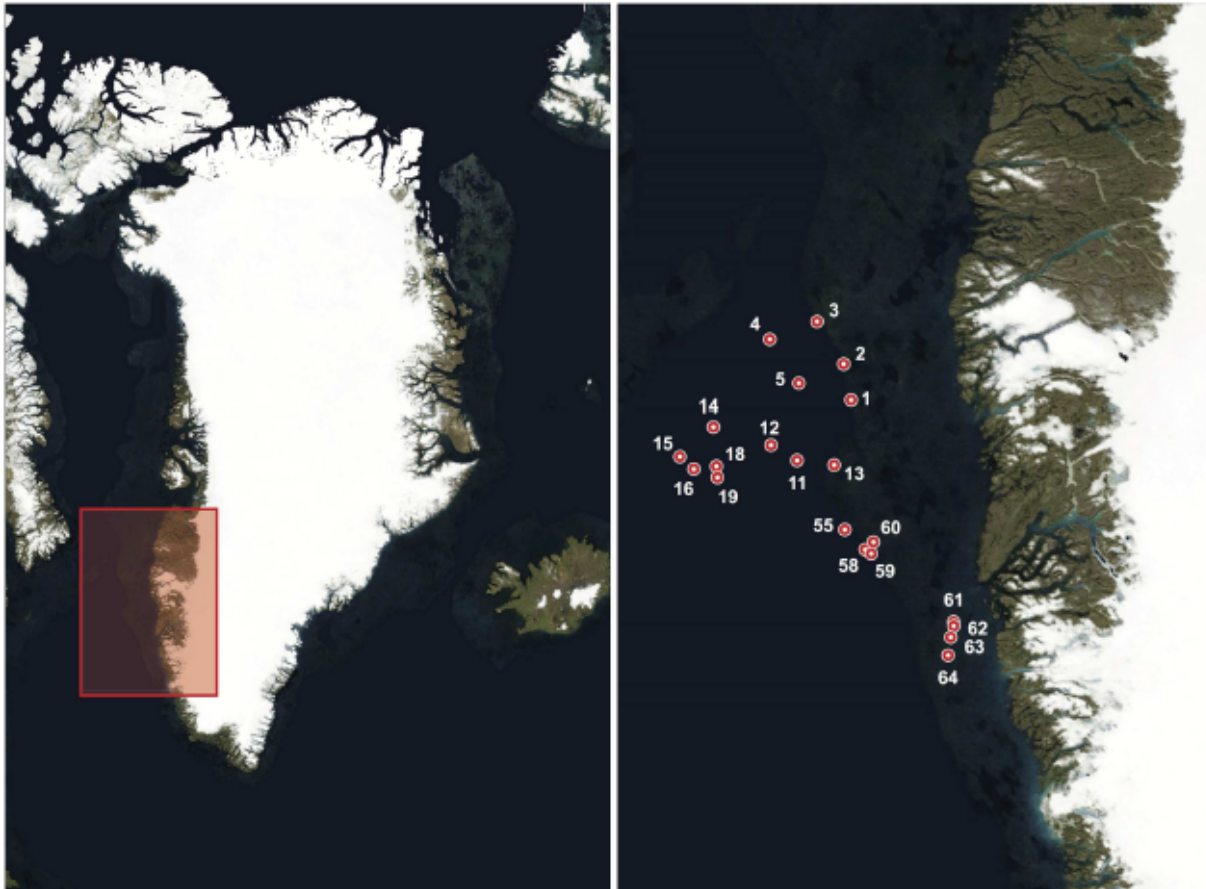
Environmental Forensics



Environmental Forensics

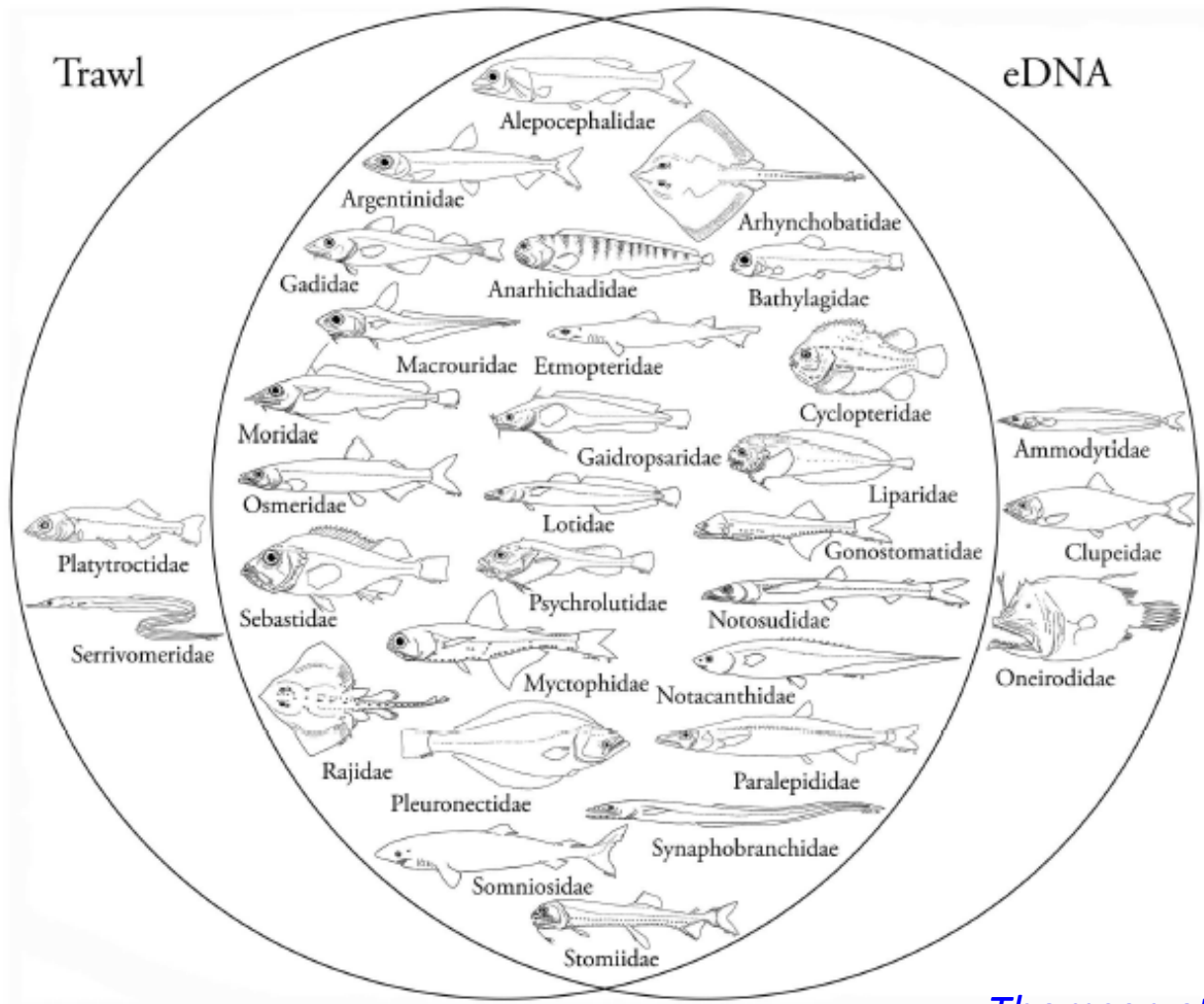


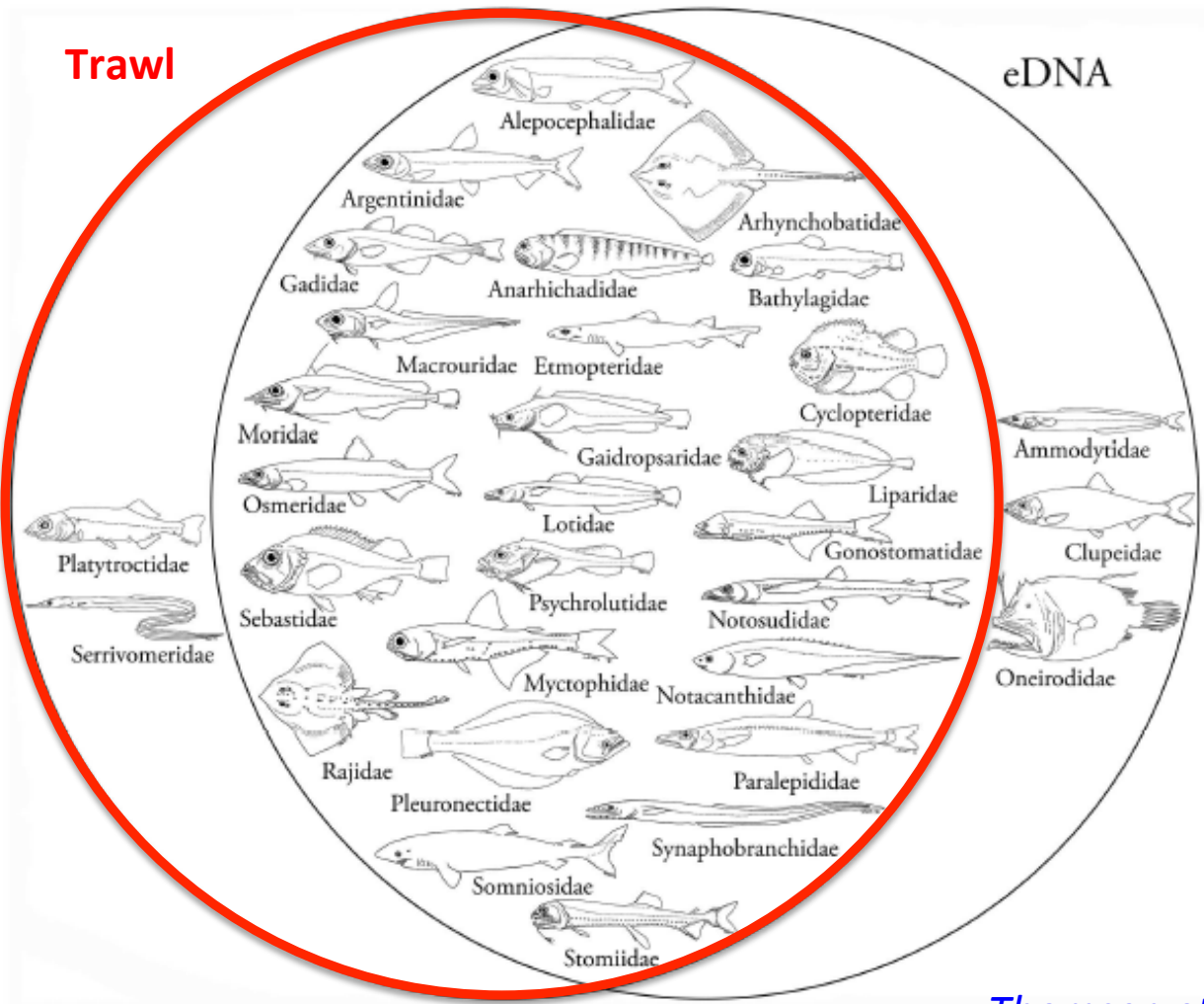
How does eDNA analysis perform in the field ?



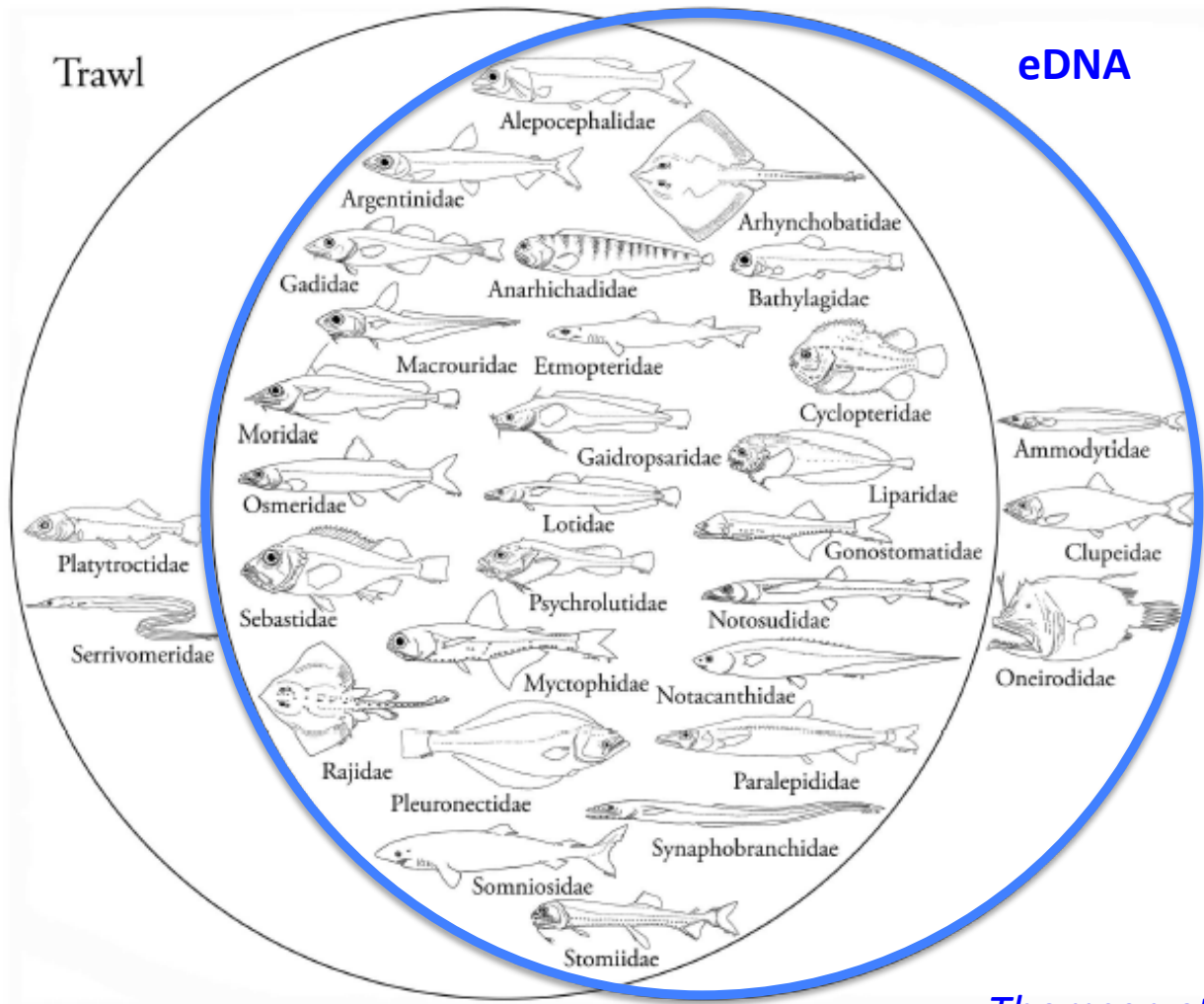
1.5 litre water samples

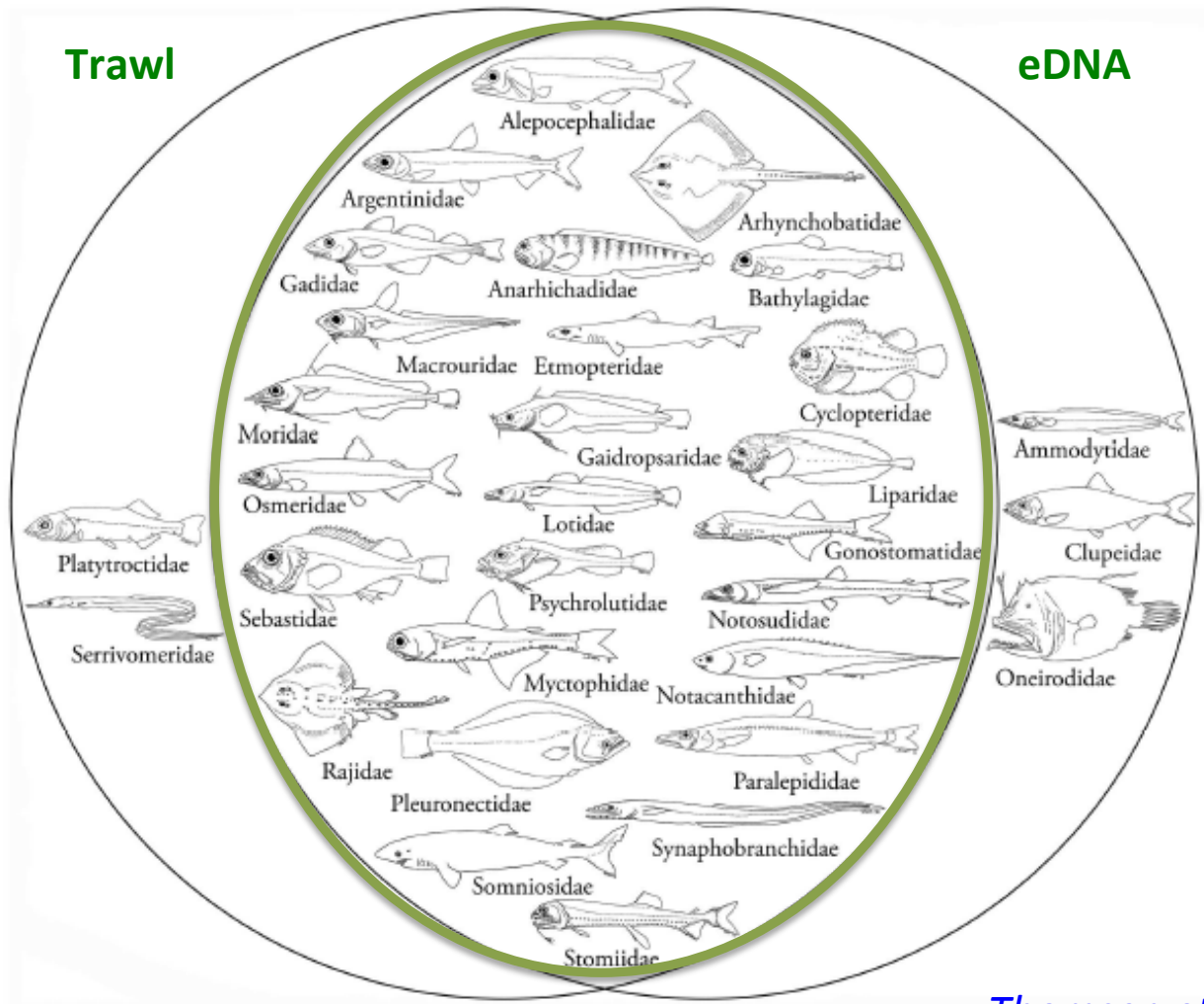
Collected prior to
bottom-trawl





How does eDNA analysis perform in the field ?





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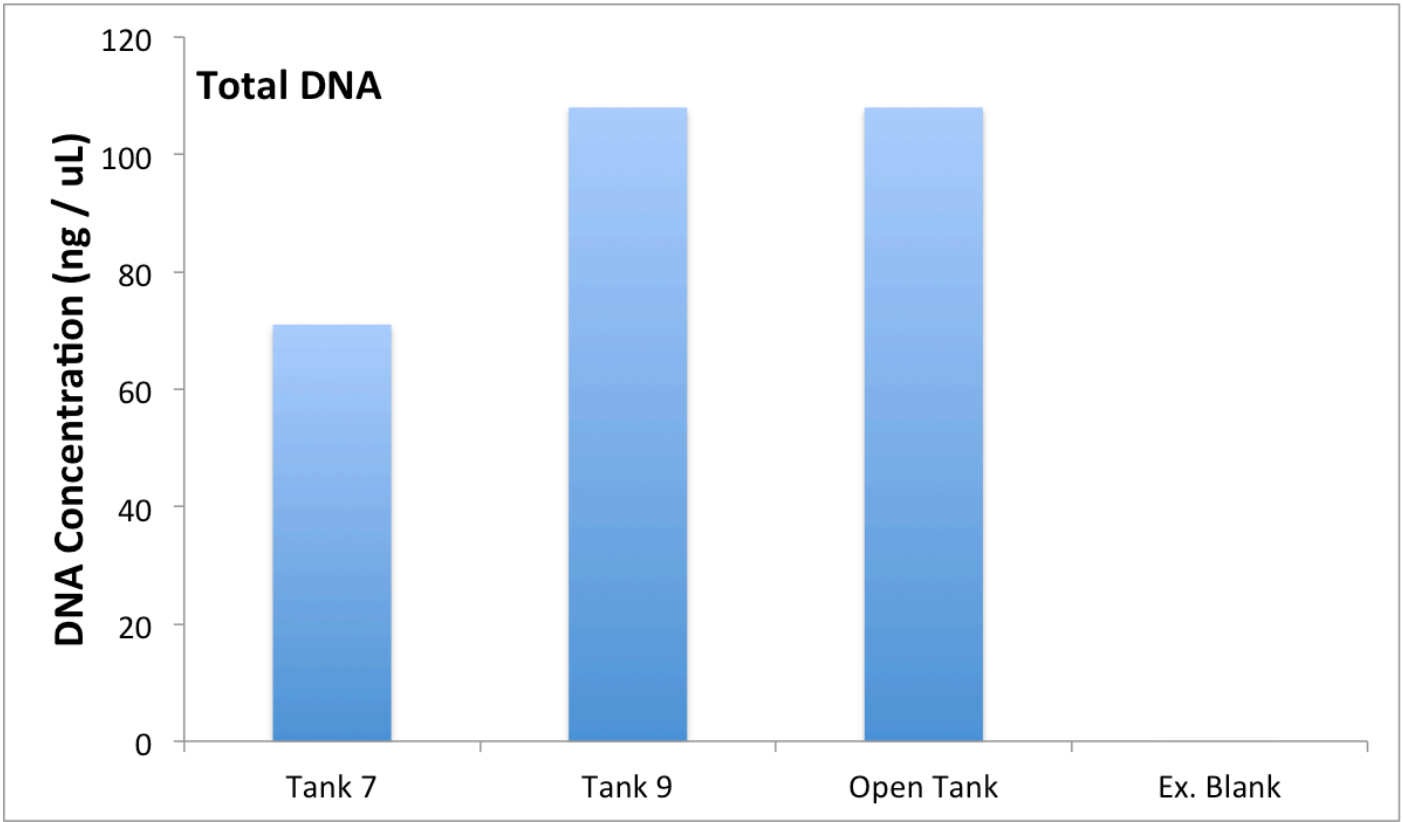
>90%
detection
rate

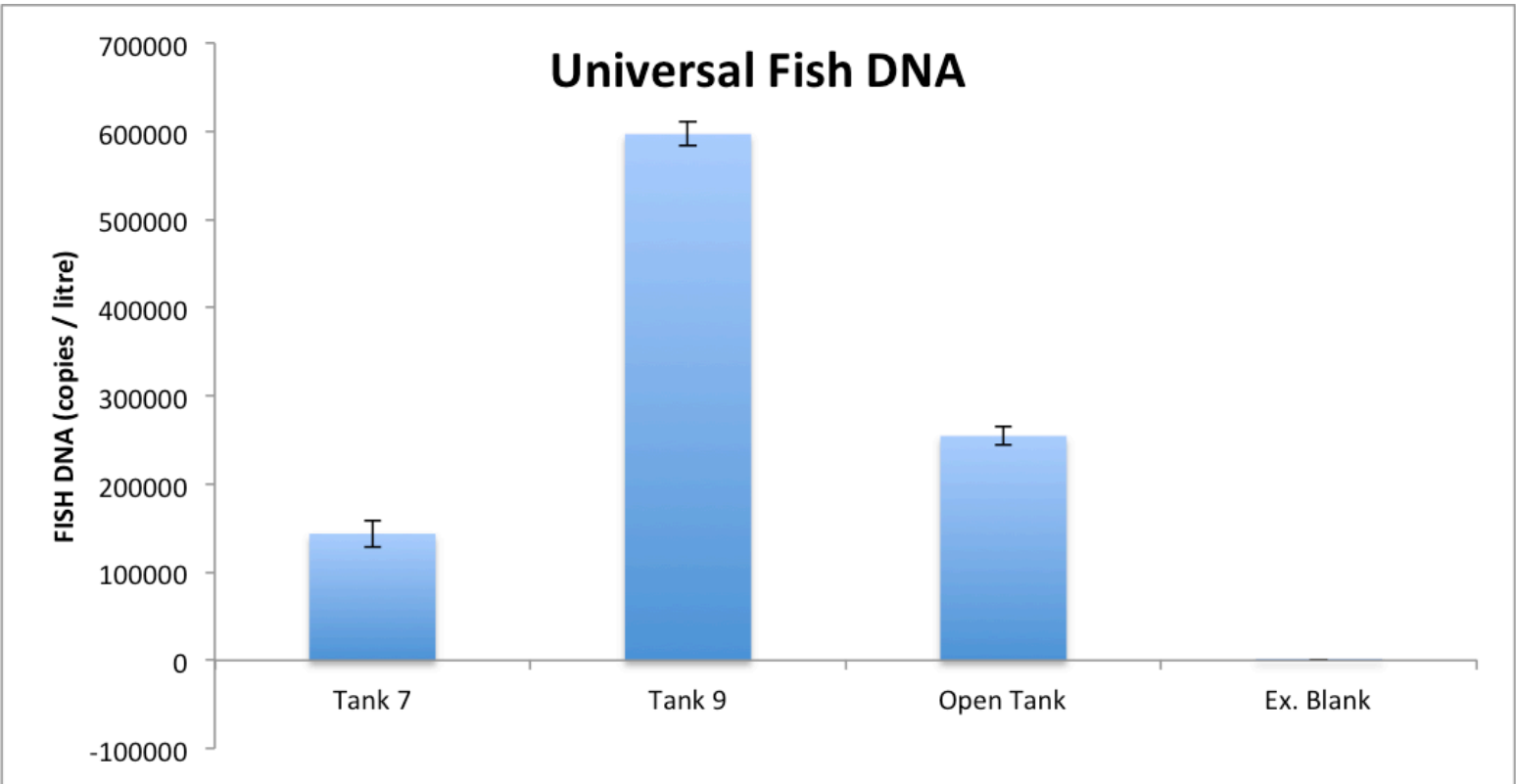


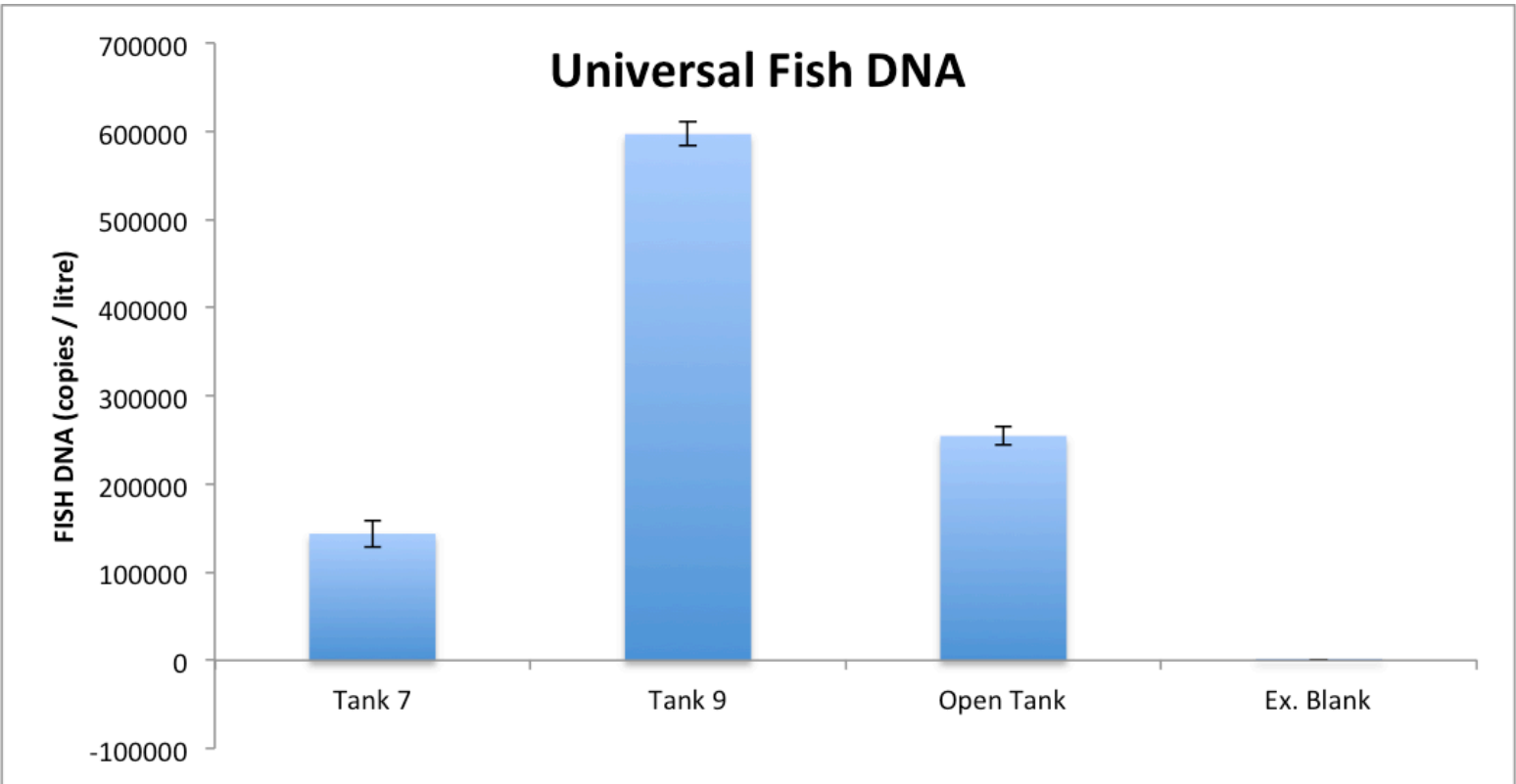
Environmental DNA analysis has proven useful for detecting the presence of a broad group of fish species

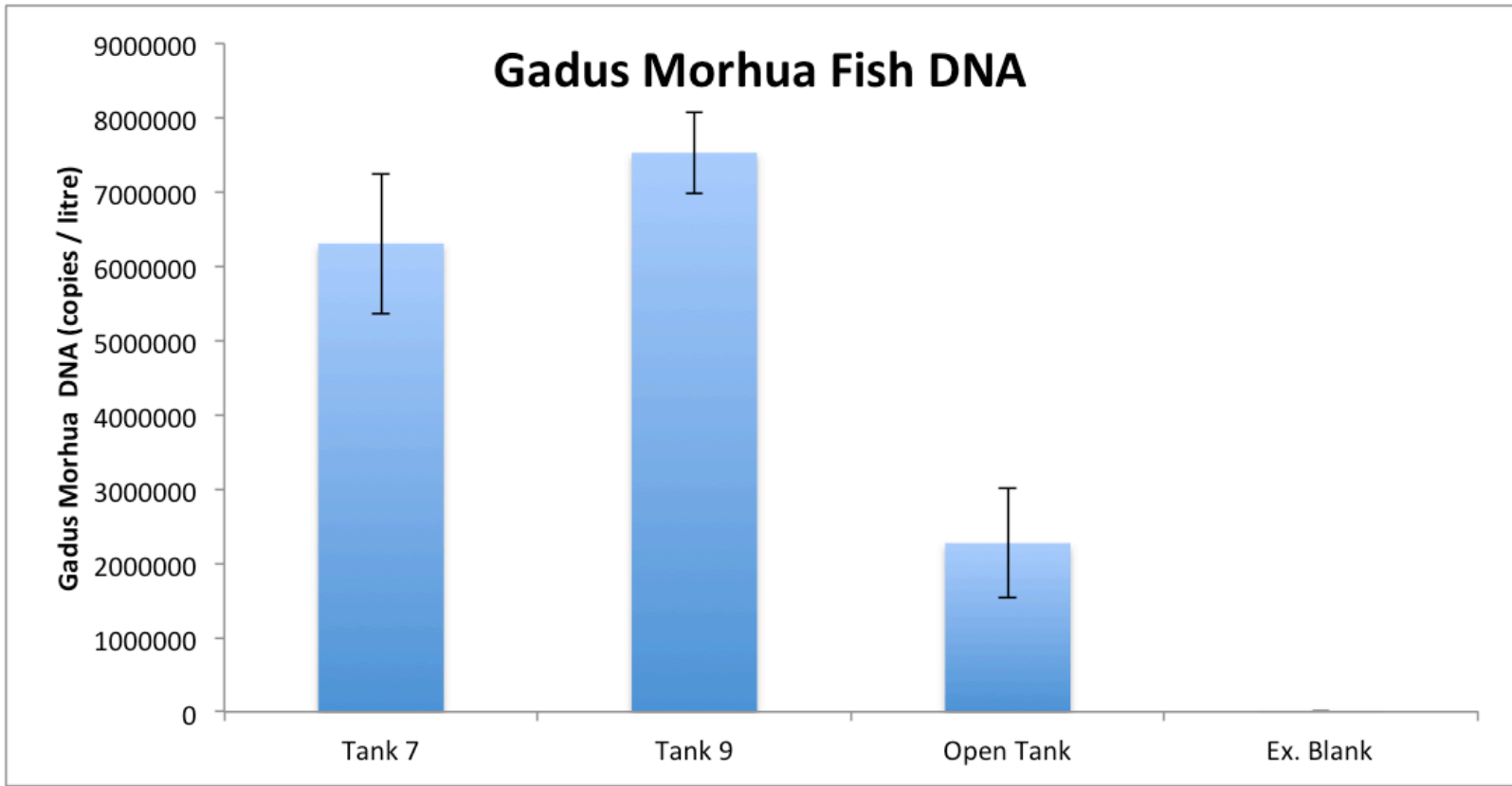
Is the quantity of DNA from a species in an environmental sample linked to it's abundance and / or biomass?

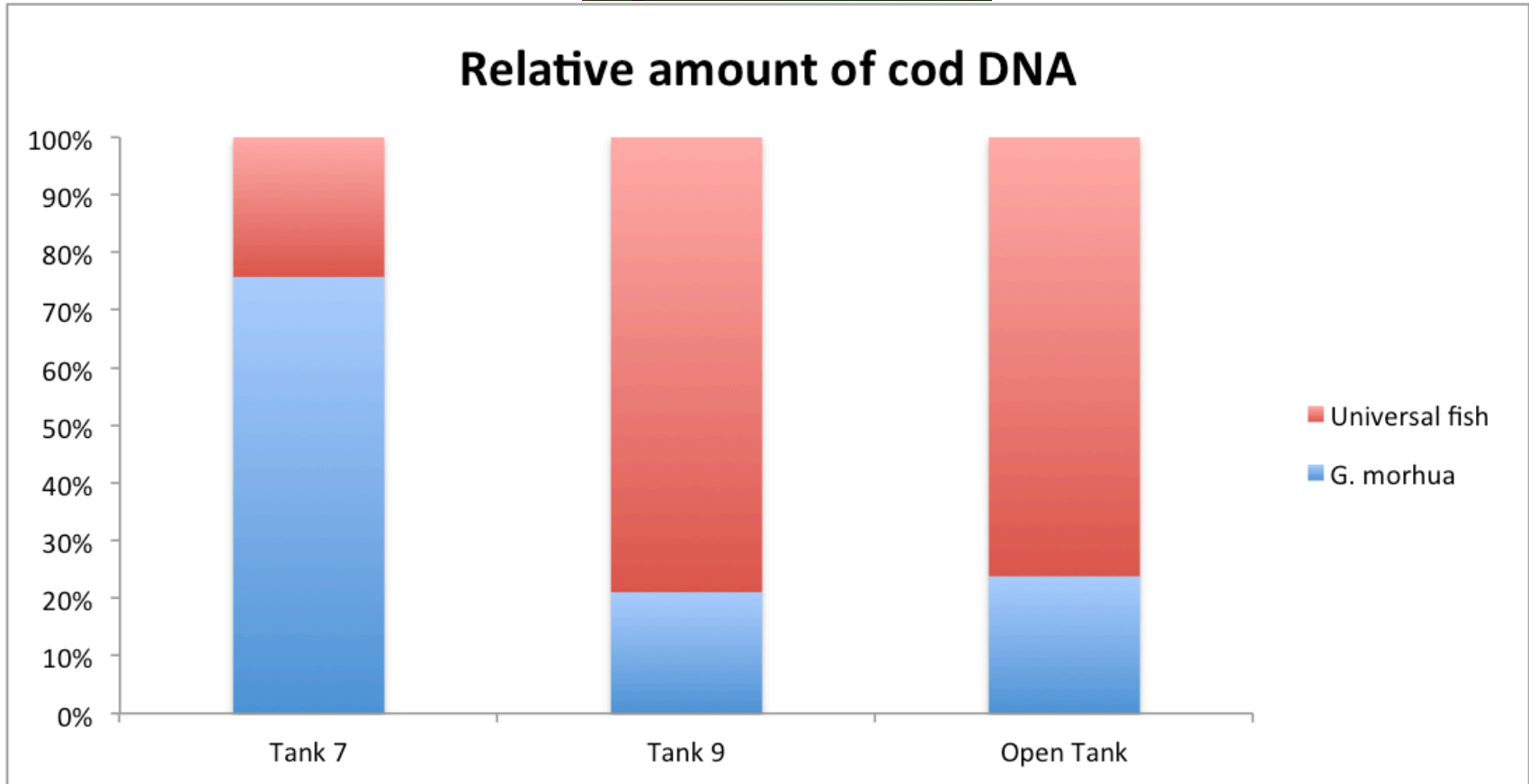




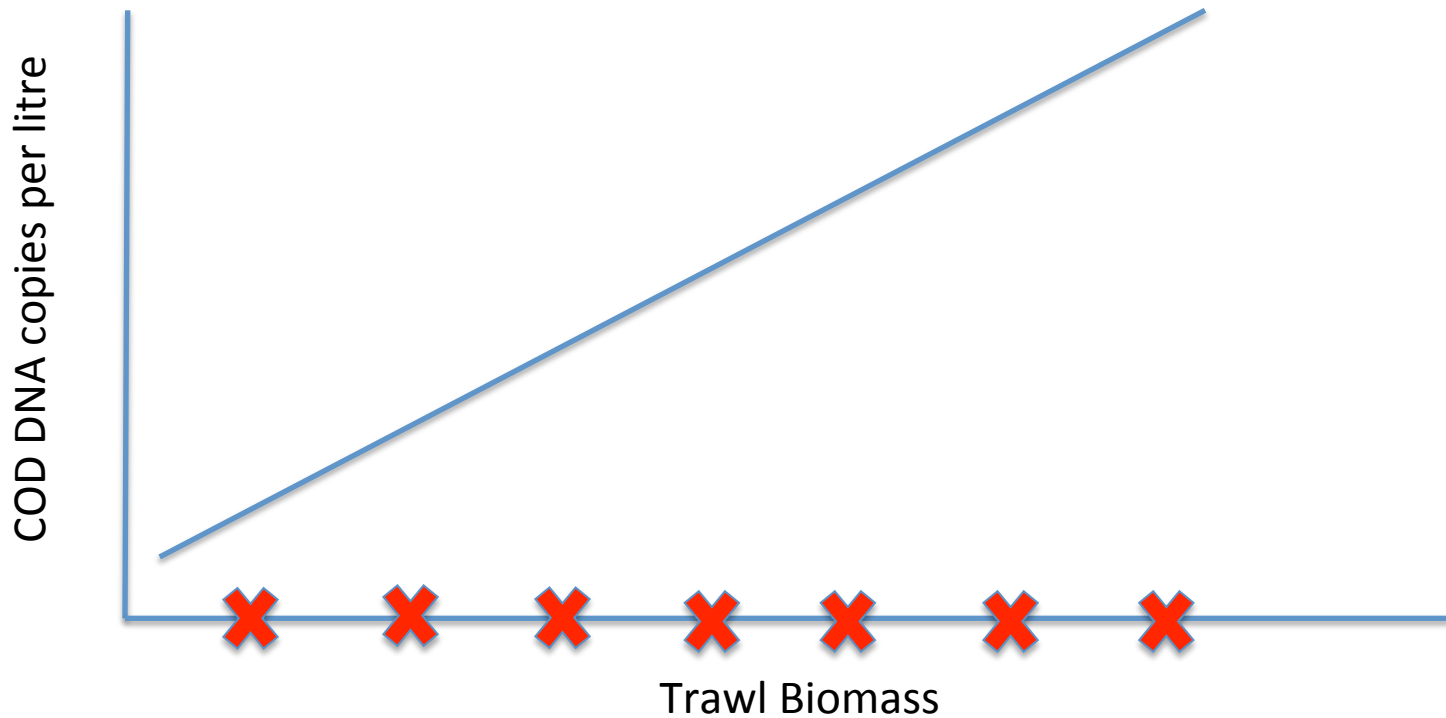






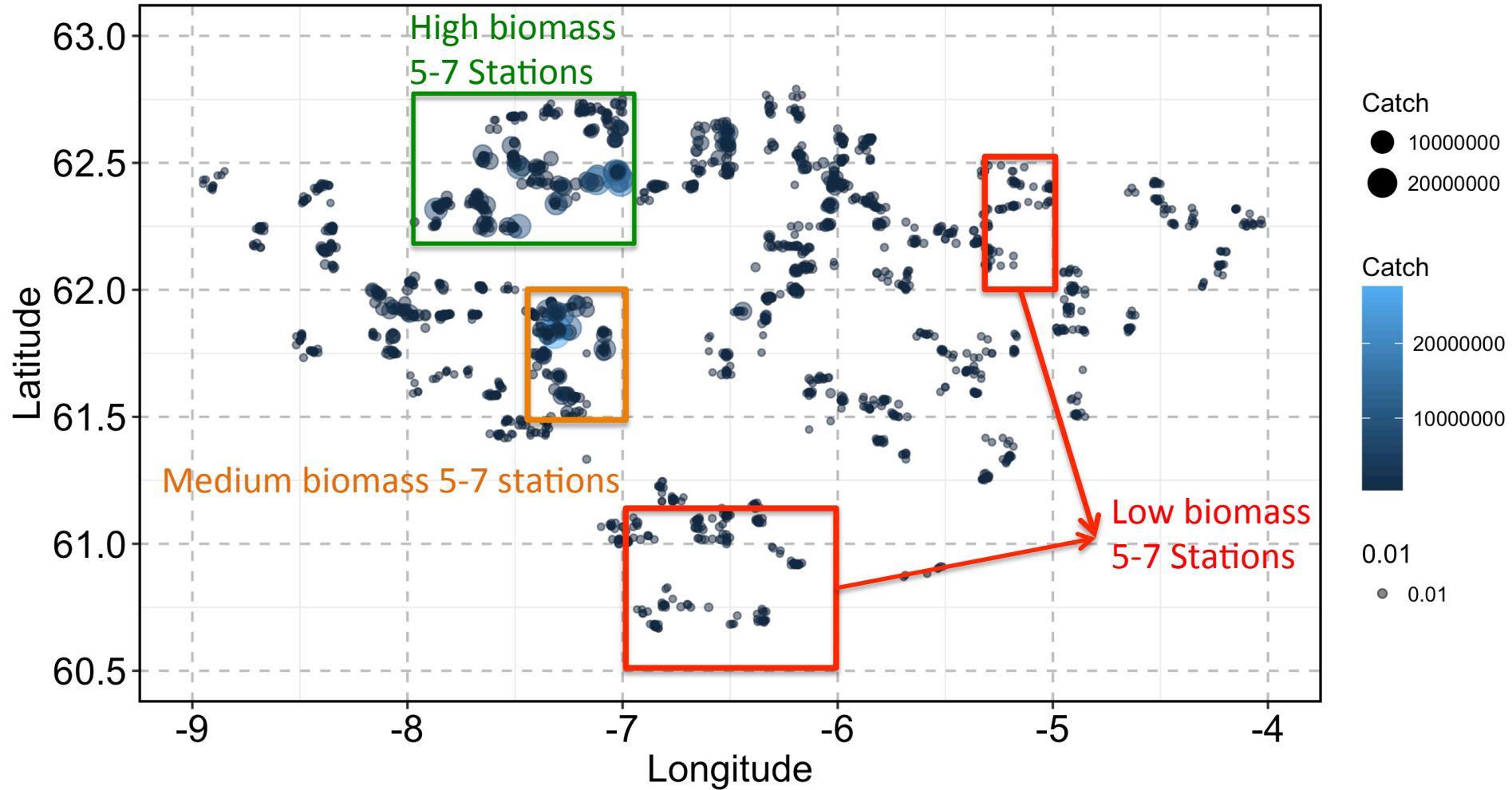


Quantify Cod DNA in seawater and compare it to biomass in trawls



Cod catch data - Landgrunnur

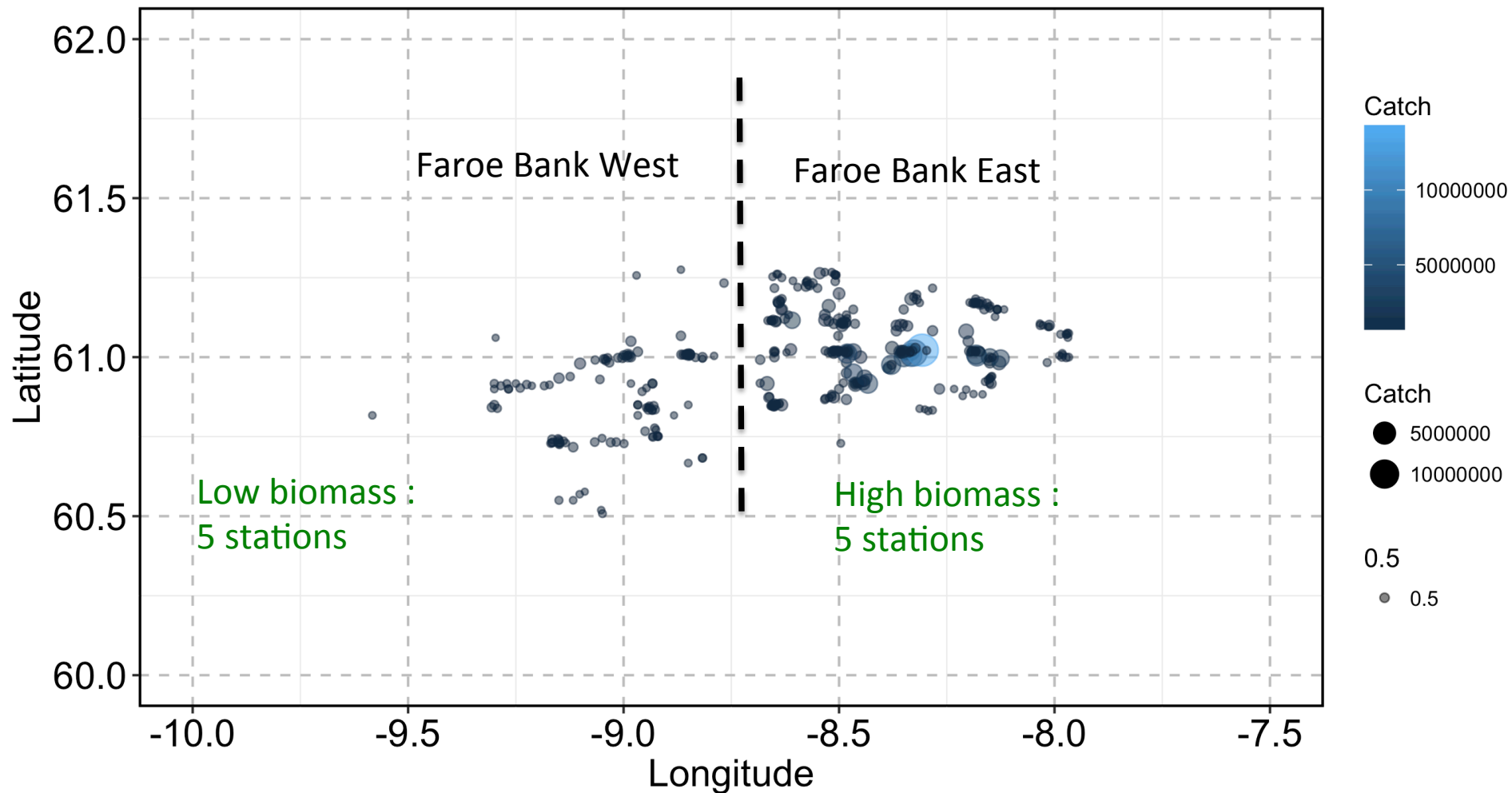
1994-2017



15-21 stations Landgrunnur (4 weeks)

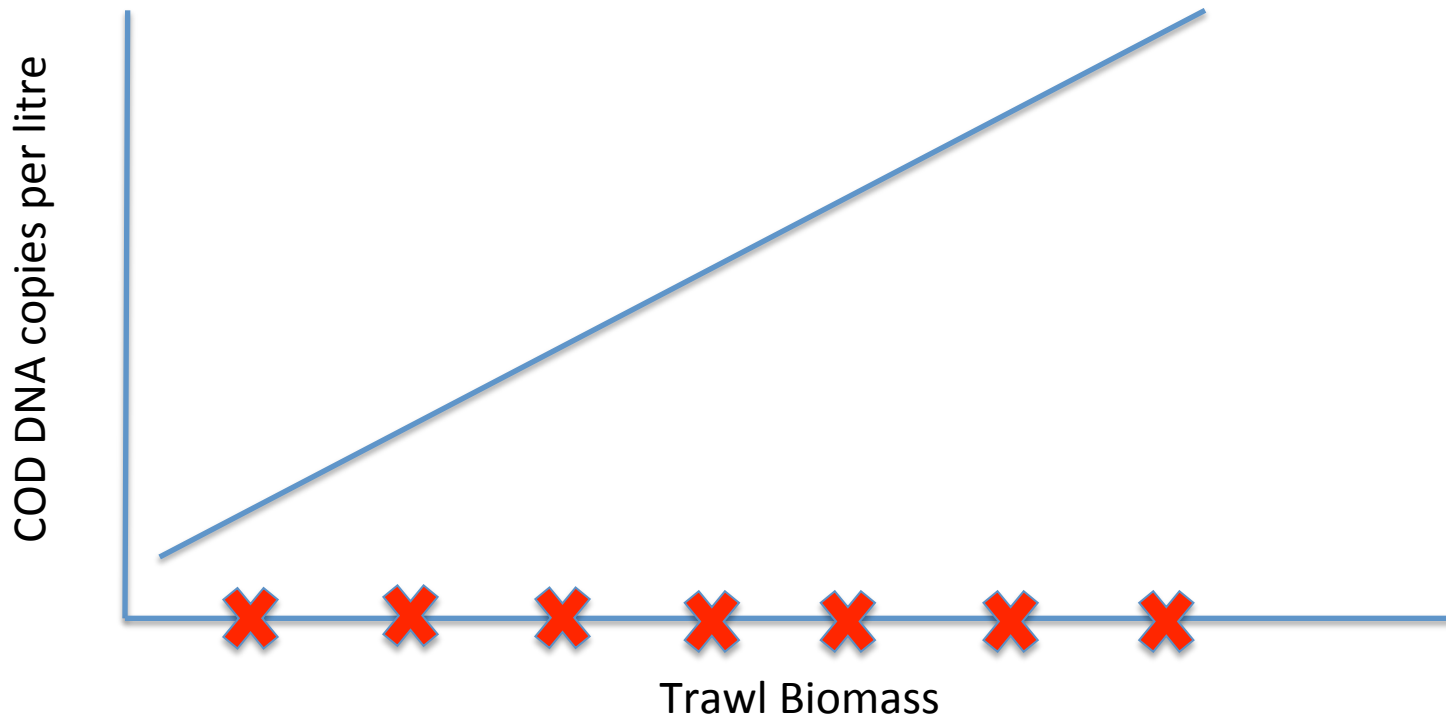
Cod catch data – Faroe Bank Spring

1994-2017



10 stations Faroe Bank (1 week)

Quantify Cod DNA in seawater and compare it to biomass in trawls





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- › **Theme sessions**
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- › Key dates and deadlines
- › Past ASCs

Theme sessions



This year the ASC offers 18 different theme sessions.

The call for abstracts will open in January 2018.

Theme session A

Mesopelagic ecosystems: fish and invertebrate population biomass and biodiversity, and role in carbon flux

Conveners:
Webjørn Melle (Norway)
Antonina dos Santos (Portugal)
Peter. H. Wiebe (USA)

Theme session B

Modernizing fisheries stock assessment and monitoring with genetic methods

Conveners:
Nathan G. Taylor (Canada)
Rich Hillary (Australia)
Pascal Lorange (France)

Theme session C

Assessing and analysing marine spatial planning - knowledge - indicators - visions

Conveners:
Andrea Morf (Sweden)
Kira Gee (Germany)
Riku Varjopuro (Finland)

Theme session D

The Nordic seas and the Arctic – climatic variability and its impact on marine ecosystems, fisheries and policymaking

Conveners:
Harald Gjøsæter (Norway)
Agnes Gundersen (Norway)
Heino Fock (Germany)



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Theme sessions

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<p>Theme session C Assessing and analysing marine spatial planning - knowledge - indicators - visions</p> <p>Conveners: Andrea Morf (Sweden) Kira Gee (Germany) Riku Varjopuro (Finland)</p>	<p>Theme session D The Nordic seas and the Arctic – climatic variability and its impact on marine ecosystems, fisheries and policymaking</p> <p>Conveners: Harald Gjøsæter (Norway) Agnes Gundersen (Norway) Heino Fock (Germany)</p>

Modernizing fisheries stock assessment and monitoring with genetic methods



Independent of trawl and vessel specificities

Capable of screening for all fish species simultaneously

DNA can be archived indefinitely for retrospective analysis

Data can be obtained from non-trawling oceanographic cruises

Data can be obtained remotely using in-situ water sampling devices