



PFA

PELAGIC FREEZER-
TRAWLER ASSOCIATION

What is (in) an ecosystem approach for the fishing industry?

Martin Pastoors







Anna Danielsdottir @DanielsdottirK Sep 19 Petter Olsen @Pleonasten presenting Decision support for sust. seafood prod. @ICES ASC



Wim



A Guide to Making
Your Science Matter

ESCAPE from the IVORY TOWER

Foreword by Donald Kennedy

Nancy Baron



SUGGESTIONS FOR YOUR TALK

- Please, identify potential benefits and barriers
- Please, if feasible, address the relationship between the fishing industry and other marine and maritime activities with an impact on the ecosystem.
- If applicable, address stakeholders fatigue and how to make the most of the science-industry collaboration.

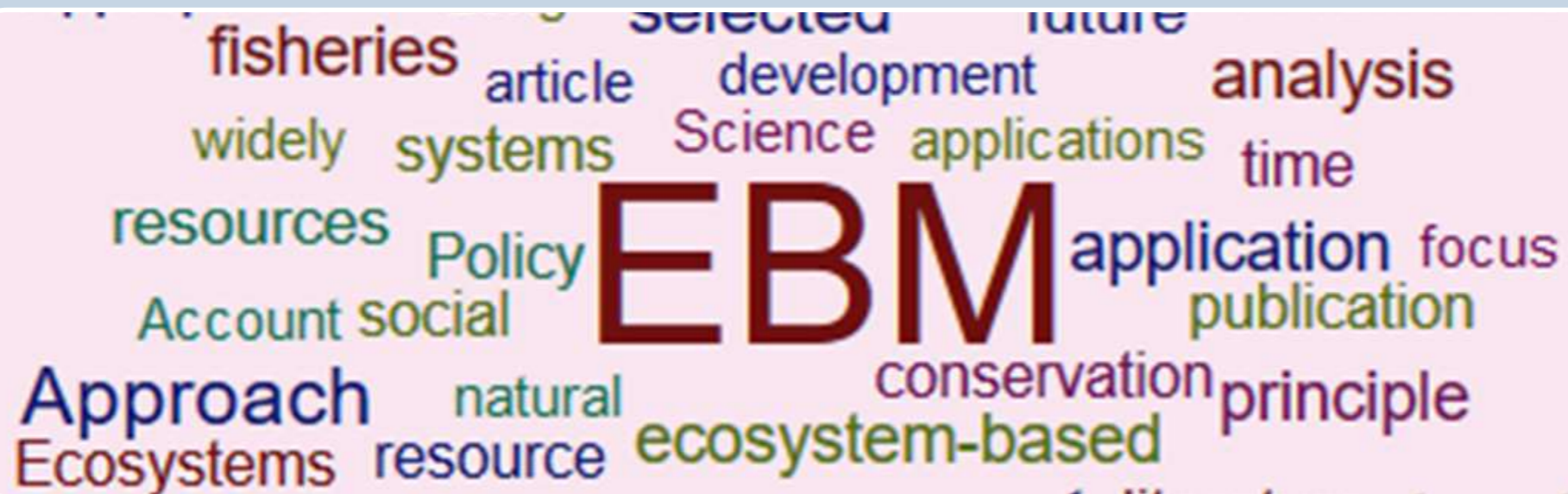
What is (in) an ecosystem approach for the fishing industry?



Old question:
what is an/the
ecosystem
approach?

New challenge:
Ecology-Energy-
Proteins

New mode:
fishers as
knowledge
actors



1. Old question: what is the ecosystem approach?

“Ecosystem approach? Which of the 56 definitions?”

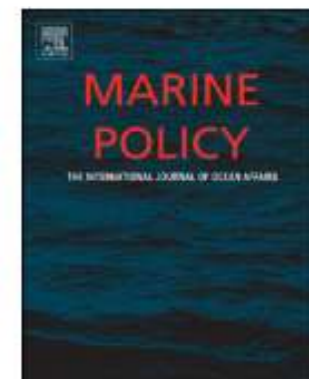


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Key principles of marine ecosystem-based management

Rachel D. Long^{a,*}, Anthony Charles^a, Robert L. Stephenson^{b,c}

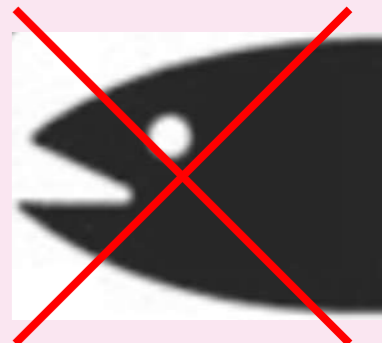
^a School of the Environment, Saint Mary's University, Halifax, Nova Scotia, Canada B3H 3C3

^b Department of Fisheries and Oceans St. Andrews Biological Station, St. Andrews, New Brunswick, Canada E5B 2L7

^c Department of Biology, University of New Brunswick, Fredericton, New Brunswick, Canada E3B 5A3



CrossMark



15 highest ranking principles of EBM in literature

1. Consider Ecosystem Connections
2. Appropriate Spatial & Temporal Scales
3. Adaptive Management
4. Use of Scientific Knowledge
5. Integrated Management
6. Stakeholder Involvement
7. Account for Dynamic Nature of Ecosystems
8. Ecological Integrity & Biodiversity
9. Sustainability
10. Recognise Coupled Social-Ecological Systems
11. Decisions reflect Societal Choice
12. Distinct Boundaries
13. Interdisciplinarity
14. Appropriate Monitoring
15. Acknowledge Uncertainty

FISH and FISHERIES



FISH and FISHERIES, 2017, 18, 244–253

Key principles of ecosystem-based management: the fishermen's perspective

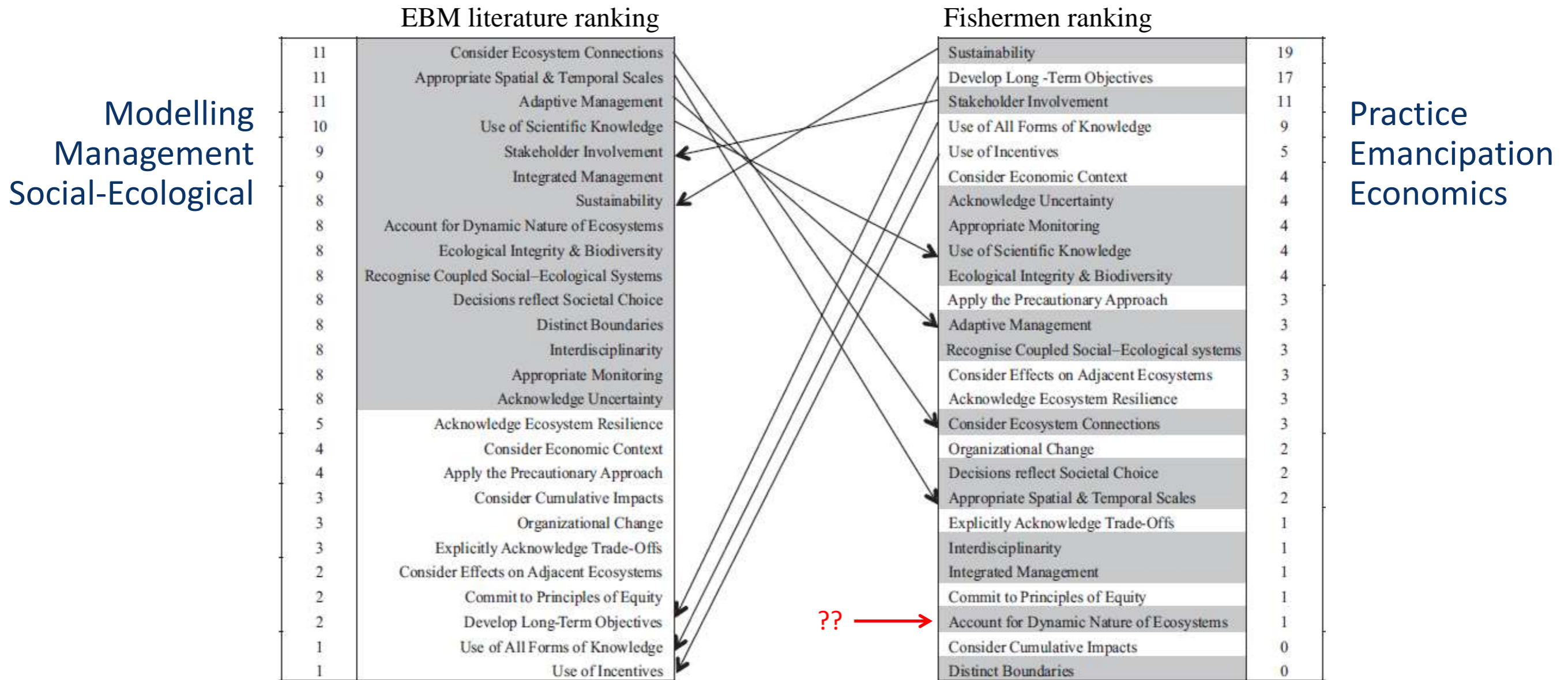
Rachel D Long¹, Anthony Charles¹ & Robert L Stephenson^{2,3}

¹School of the Environment and School of Business, Saint Mary's University, 923 Robie Street, Halifax, Nova Scotia, Canada B3H 3C3; ²Department of Fisheries and Oceans, St. Andrews Biological Station, 531 Brandy Cove Road, St. Andrews, New Brunswick, Canada E5B 2L9; ³Canadian Fisheries Research Network, Department of Biology, University of New Brunswick, P.O. Box 4400, Fredericton, New Brunswick, Canada E3B 5A3

5 highest ranking principles according to (Canadian) fishermen

1. Sustainability ----- *Linked with resource abundance*
2. Develop long-term objectives ----- *And think about long term effects*
3. Stakeholder involvement ----- *Able to shape the future*
4. Use of all forms of knowledge ----- *Include fishermen knowledge*
5. Use of incentives ----- *To facilitate required change in practices*

The gap between EBM literature and Fisheries perspectives



Does the Canadian fisheries experience compare with Europe?



Ecosystem approach & Fisheries ?

Bridging the gap between different perspectives



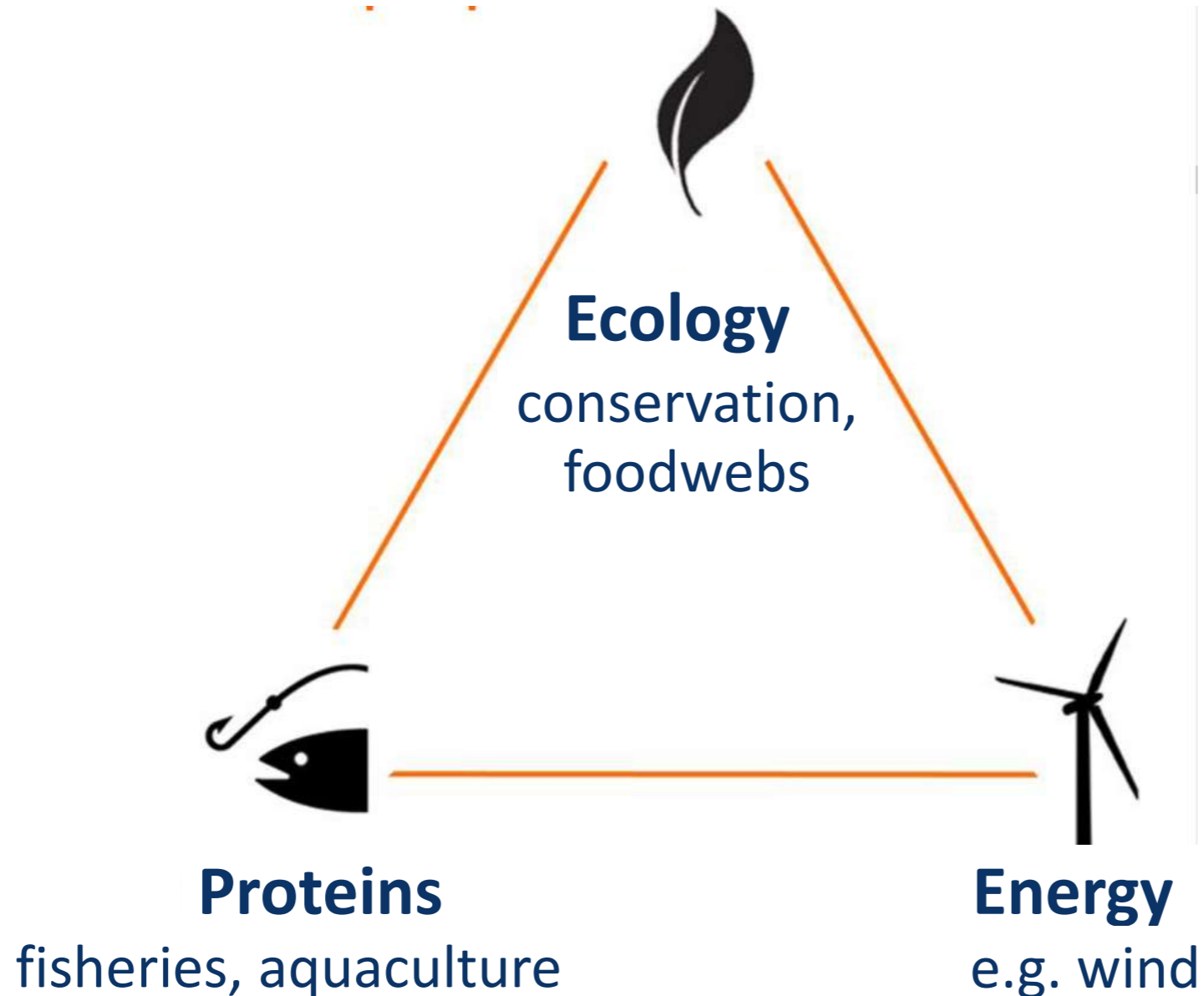


2. New challenge: Ecology-Energy-Proteins

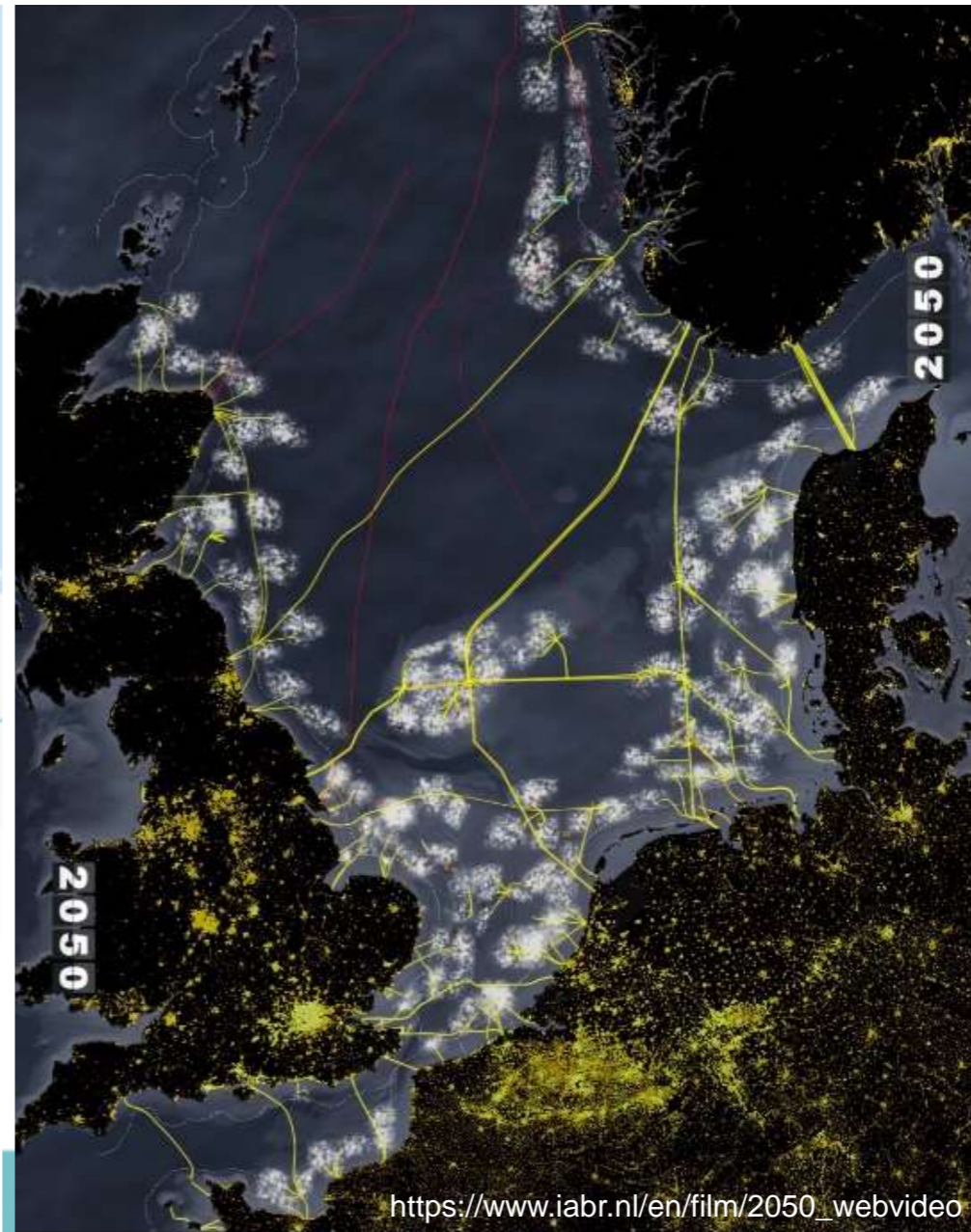
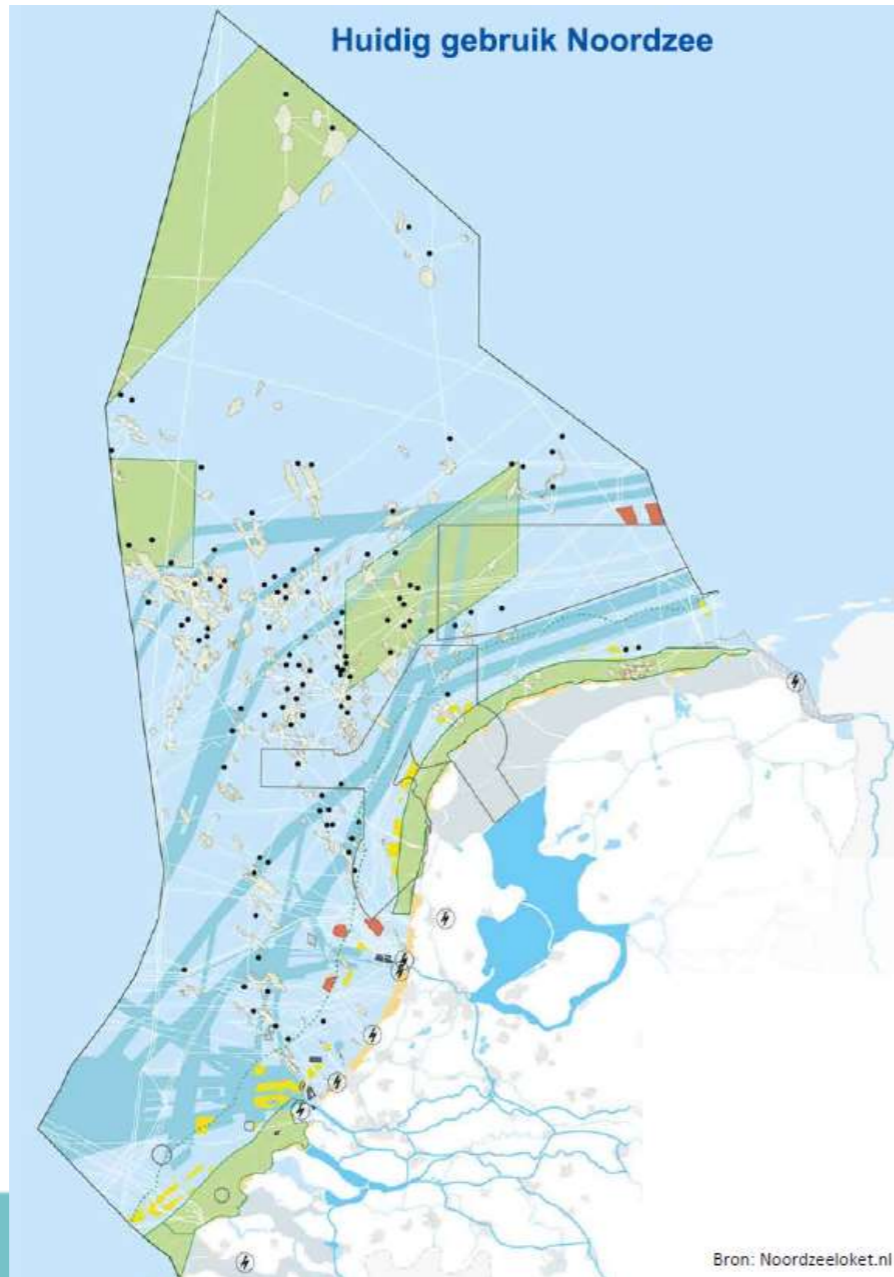
Going beyond the **ecology – fisheries** dichotomy ...

... and beyond pelagics

How to balance 3 main societal challenges?



Example North Sea: present = busy, future = busier



Responsible Innovation: North Sea Energy Lab 2017



MVI
North Sea
Energy
Lab

*Op weg naar een integrale
ontwikkellogica op de Noordzee –
Wat staat ons nú te doen?*

Voorlopige resultaten MVI North Sea Energy Lab



TOPSECTOR ENERGIE
Empowering the new economy



TKI WIND OP ZEE
Topsector Energie

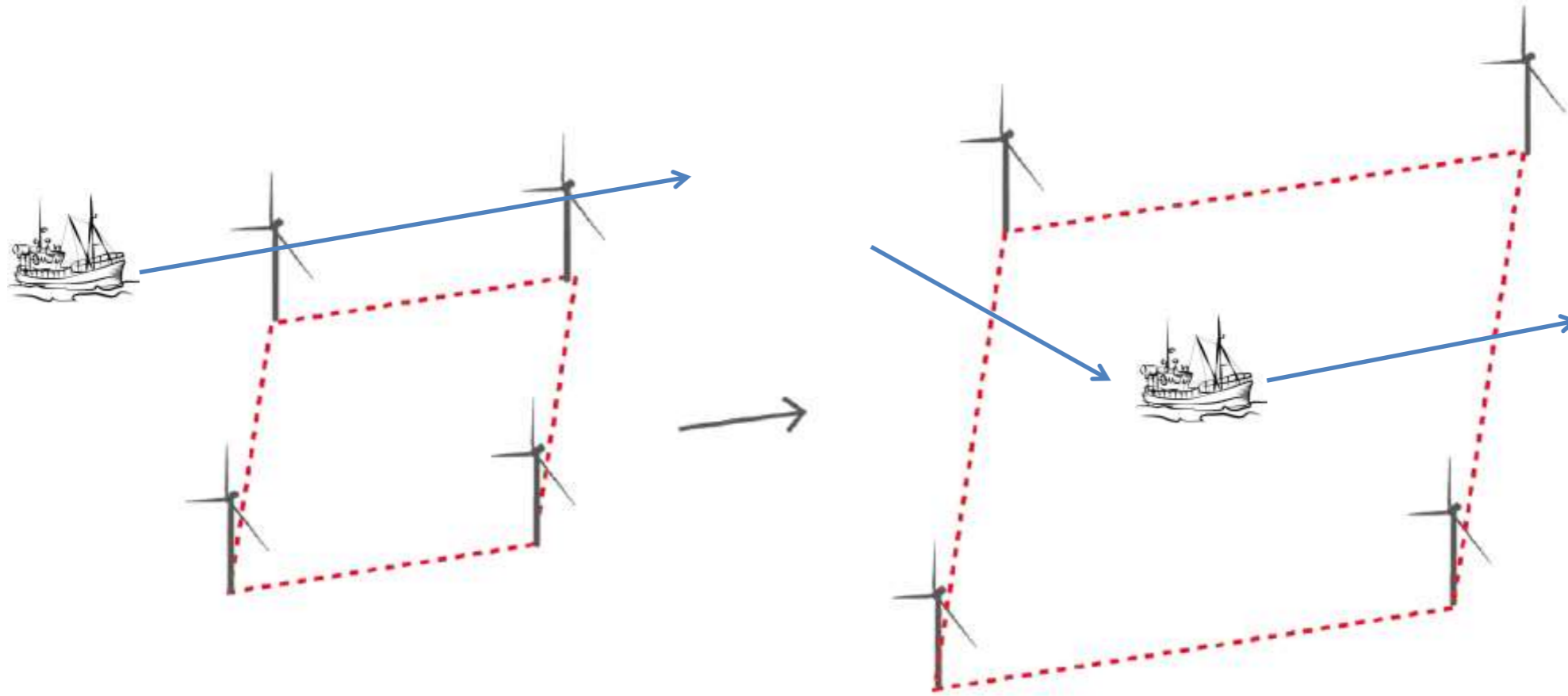


Rijksdienst voor Ondernemend
Nederland



ReosPartners

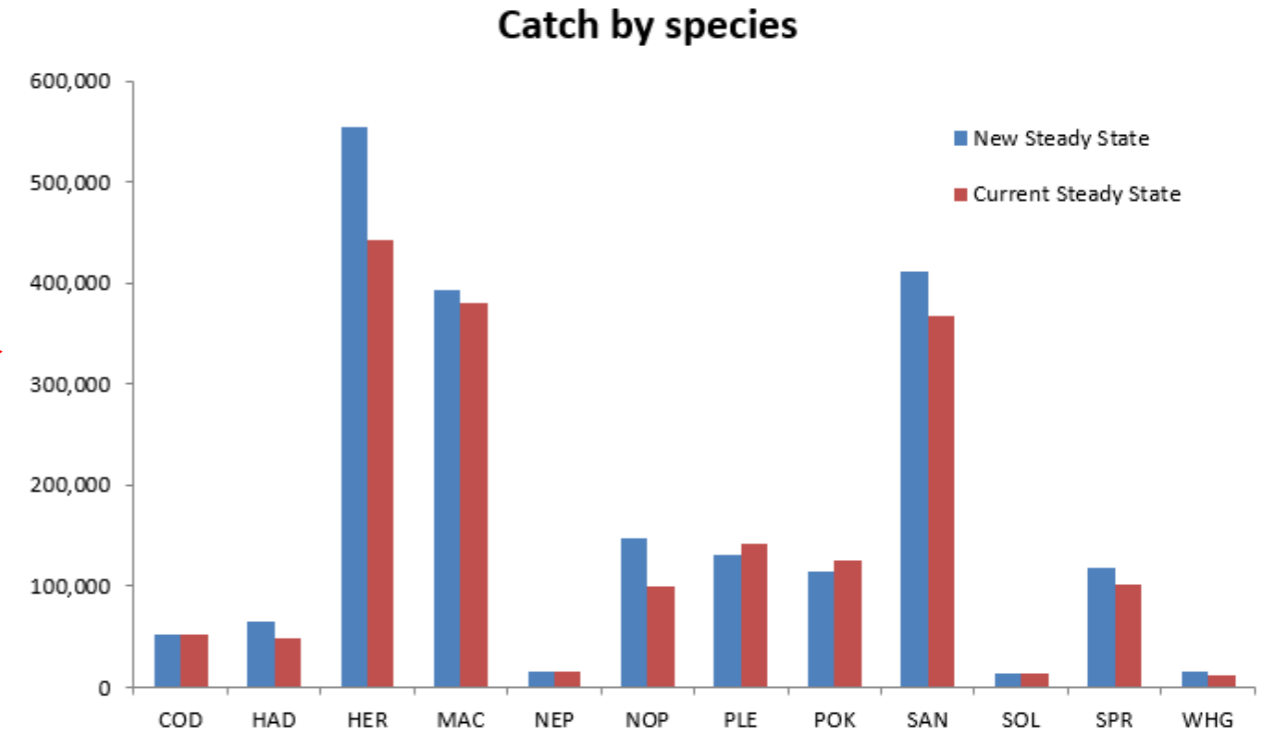
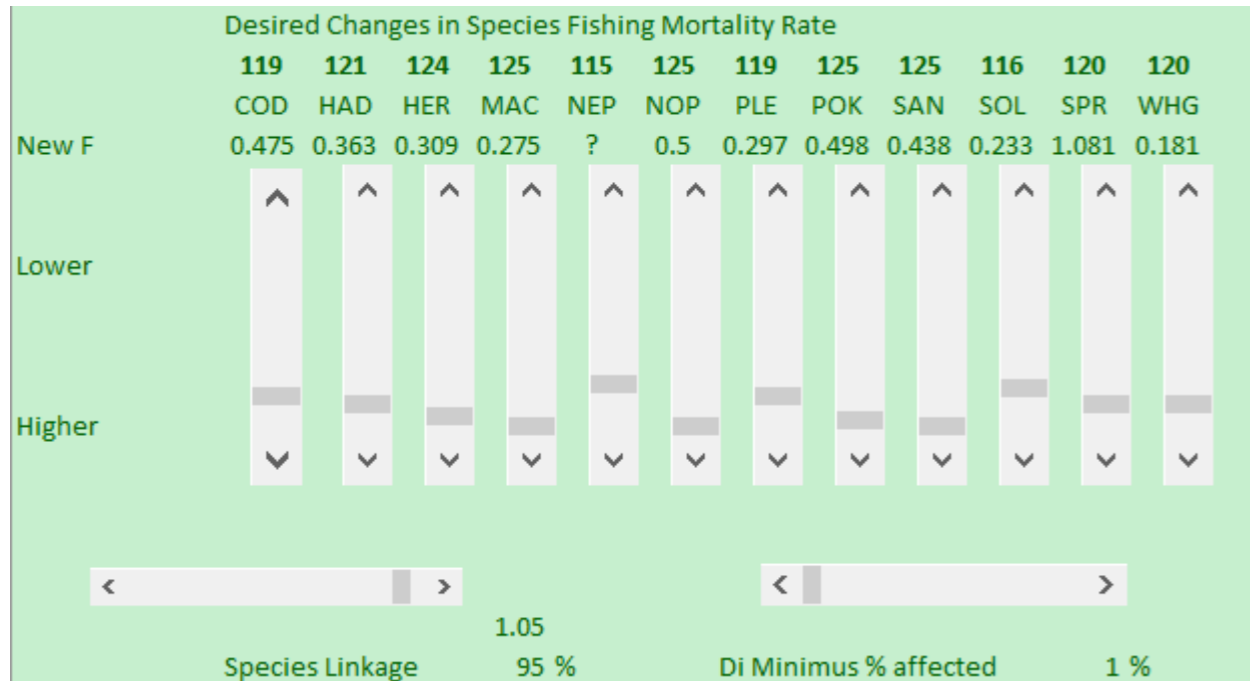
Looking for joint solutions



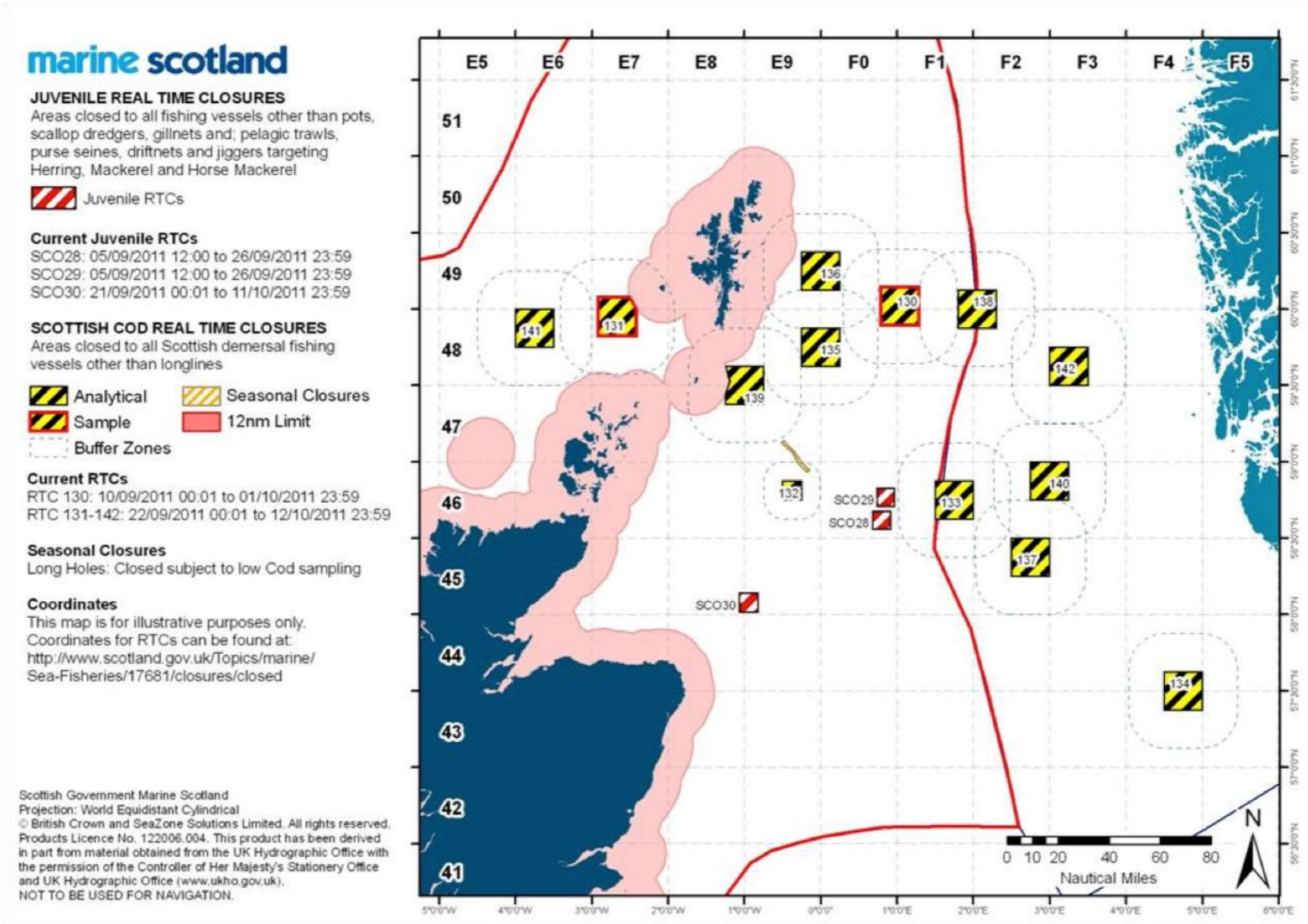
Energy, no proteins

Energy plus proteins

Looking for efficient protein 'production' ...



... while respecting productivity and conservation



... and involving all stakeholders (including fisheries & NGOs)



The new ecosystem approach?

Balancing the 3 requisites for sustainable marine futures



Ecology



Energy



Proteins



3. New mode: fishers as knowledge actors

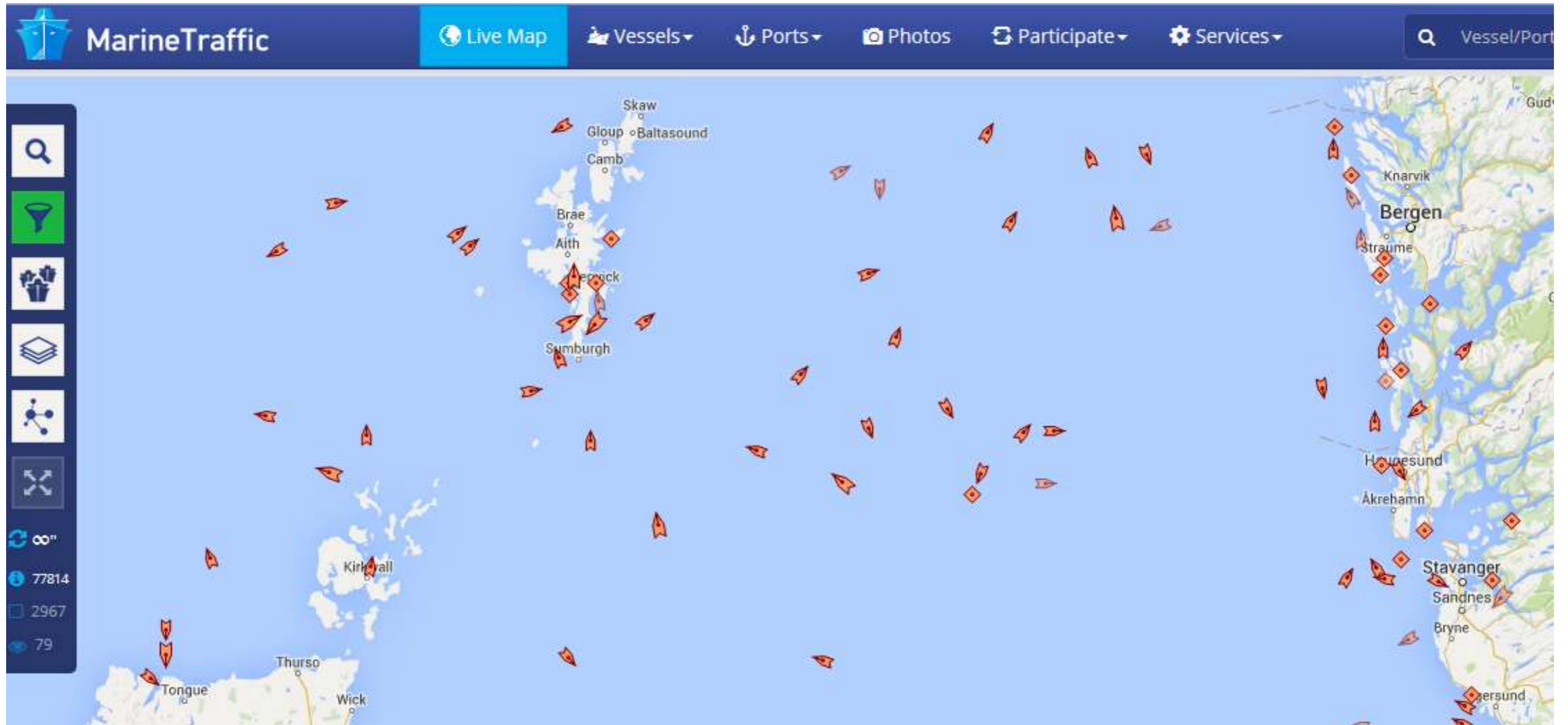
“address stakeholders fatigue and how to make the most of the science-industry collaboration.”



~~“address stakeholders fatigue and~~ how to make the most of the science-industry collaboration.”



Fishermen are the eyes and the ears at sea

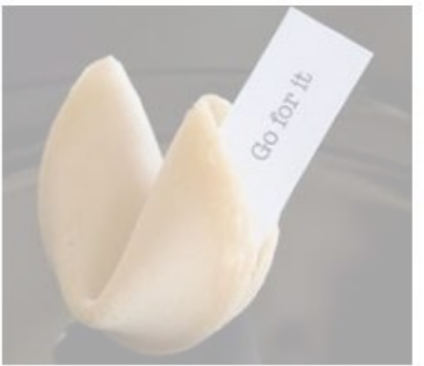


How can we better utilize fishermen knowledge to improve science and management?



Merk	Aantal cartons	Voorraad in (m³)	Tijd in tank	Stukstallen per p	Stuks per kg	Sorteerklasse	Kwaliteit	Sorteringskwaliteit	Voedsel	Textuur	Model	Buikvulling Hom/Kuit	Beschadigd andere vis
ARU010	5667	20	0 - 12uur	60/80	3 a 5	A	2	A	0	B	A	A	A/B
ARU011	2030	20	0 - 12uur	40/60	2 a 3	A	2	A	0 - 1	B	A/B	A/B	A/B
WHB012	1360	20	0 - 12uur	120/160	4 a 7	A/B	2/3	A/B	0	B	C	A	B/C
WHB013	1664	20	0 - 12uur	180/220	5 a 9	A/B	2/3	A/B	0	B	C	A	B/C
ARU014	2435	20	0 - 12uur	60/80	3 a 5	A	2	A	0	B	A	A	A/B
WHB015		30	0 - 12uur	300 +	13 a 16	A/B	2	A	0	B	C	A	B/C
WHB018		30	0 - 12uur	220/260	8 a 11	A/B	2	A/B	0	B	C	A	B/C
WHB019	5023	30	0 - 12uur	120/160	4 a 7	A/B	2	A/B	0	B	C	A	B/C
WHB021		30	0 - 12uur	180/220	6 a 10	A/B	2	A/B	0	B	C	A	B/C
WHB022	4992	30	0 - 12uur	260/300	10 a 13	A/B	2	A/B	0	B	C	A	B/C
ARU023	1543	20	0 - 12uur	40/60	2 a 3	A	2	A	0 - 1	B	A/B	A/B	A/B





Go for it !



Really engage ! In 2 ways !



Industry

Science



IF YOU WANT IT, GO FOR IT. TAKE A RISK. DON'T ALWAYS PLAY IT SAFE OR YOU'LL DIE WONDERING.



Research & Knowledge strategy 2015 - 2018



Ambition

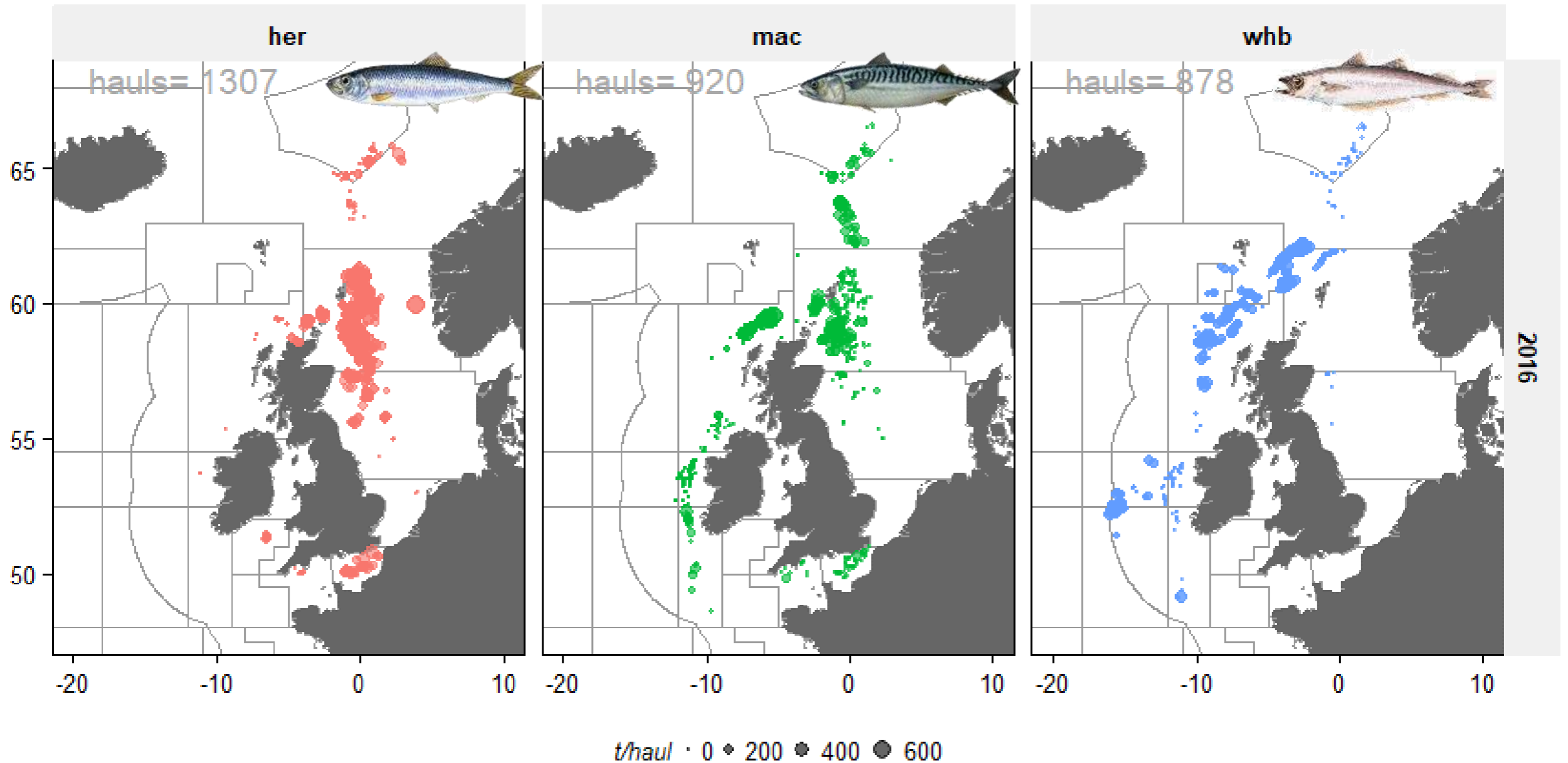
PFA (*Pelagic Freezer-trawler Association*) is committed to initiate, develop, contribute and sustain knowledge development that is needed for sustainable management and exploitation of fish stocks in all areas where PFA members are active.

**Catching with care
for a better world.**

Small change in actions

Big change in outcomes

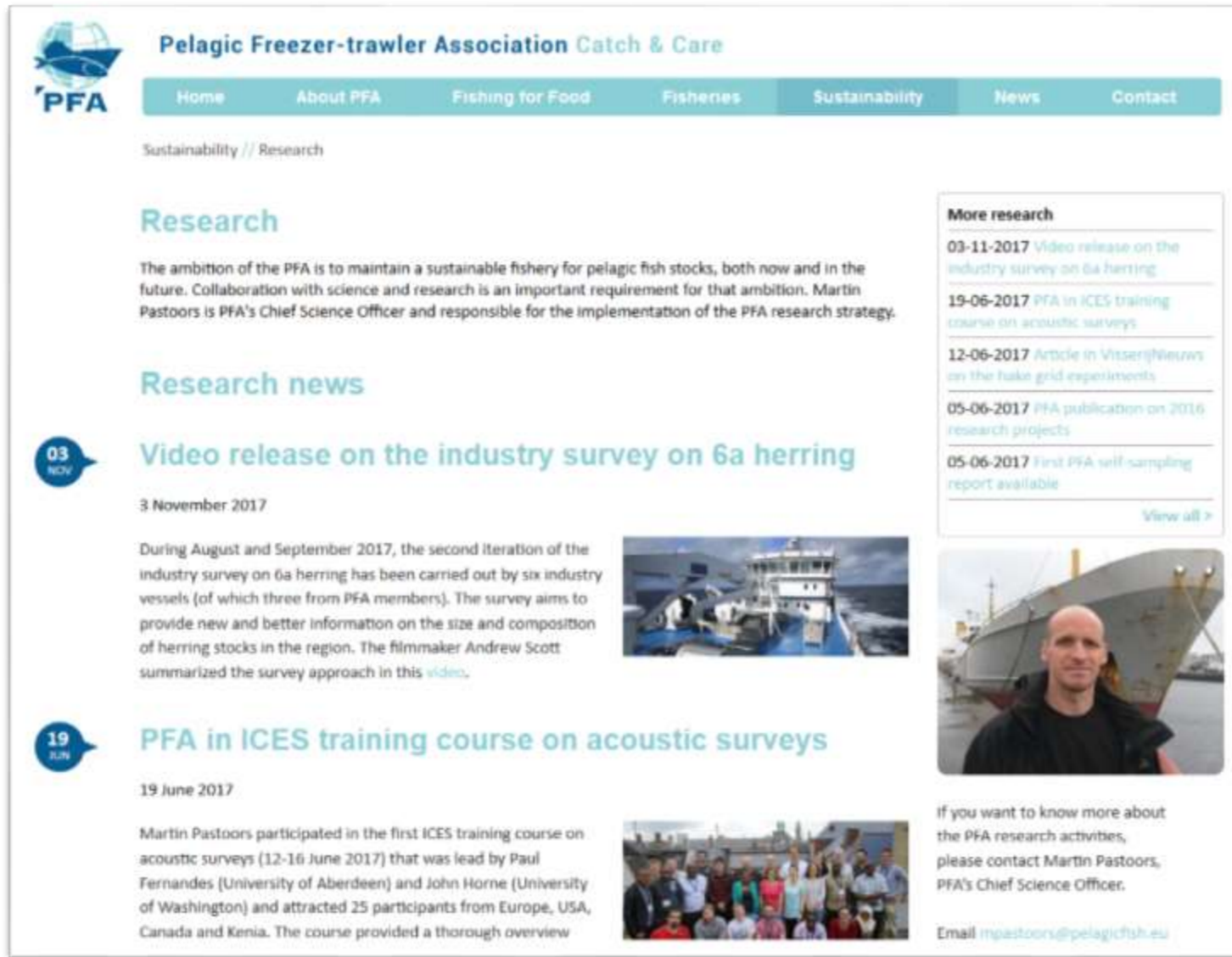
Catch composition per haul



Mackerel fat content by area, month and year



Utilize the results



Pelagic Freezer-trawler Association Catch & Care

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Sustainability // Research

Research


The ambition of the PFA is to maintain a sustainable fishery for pelagic fish stocks, both now and in the future. Collaboration with science and research is an important requirement for that ambition. Martin Pastoors is PFA's Chief Science Officer and responsible for the implementation of the PFA research strategy.

Research news

03 NOV Video release on the industry survey on 6a herring

3 November 2017


During August and September 2017, the second iteration of the industry survey on 6a herring has been carried out by six industry vessels (of which three from PFA members). The survey aims to provide new and better information on the size and composition of herring stocks in the region. The filmmaker Andrew Scott summarized the survey approach in this [video](#).



19 JUN PFA in ICES training course on acoustic surveys

19 June 2017

Martin Pastoors participated in the first ICES training course on acoustic surveys (12-16 June 2017) that was lead by Paul Fernandes (University of Aberdeen) and John Horne (University of Washington) and attracted 25 participants from Europe, USA, Canada and Kenya. The course provided a thorough overview

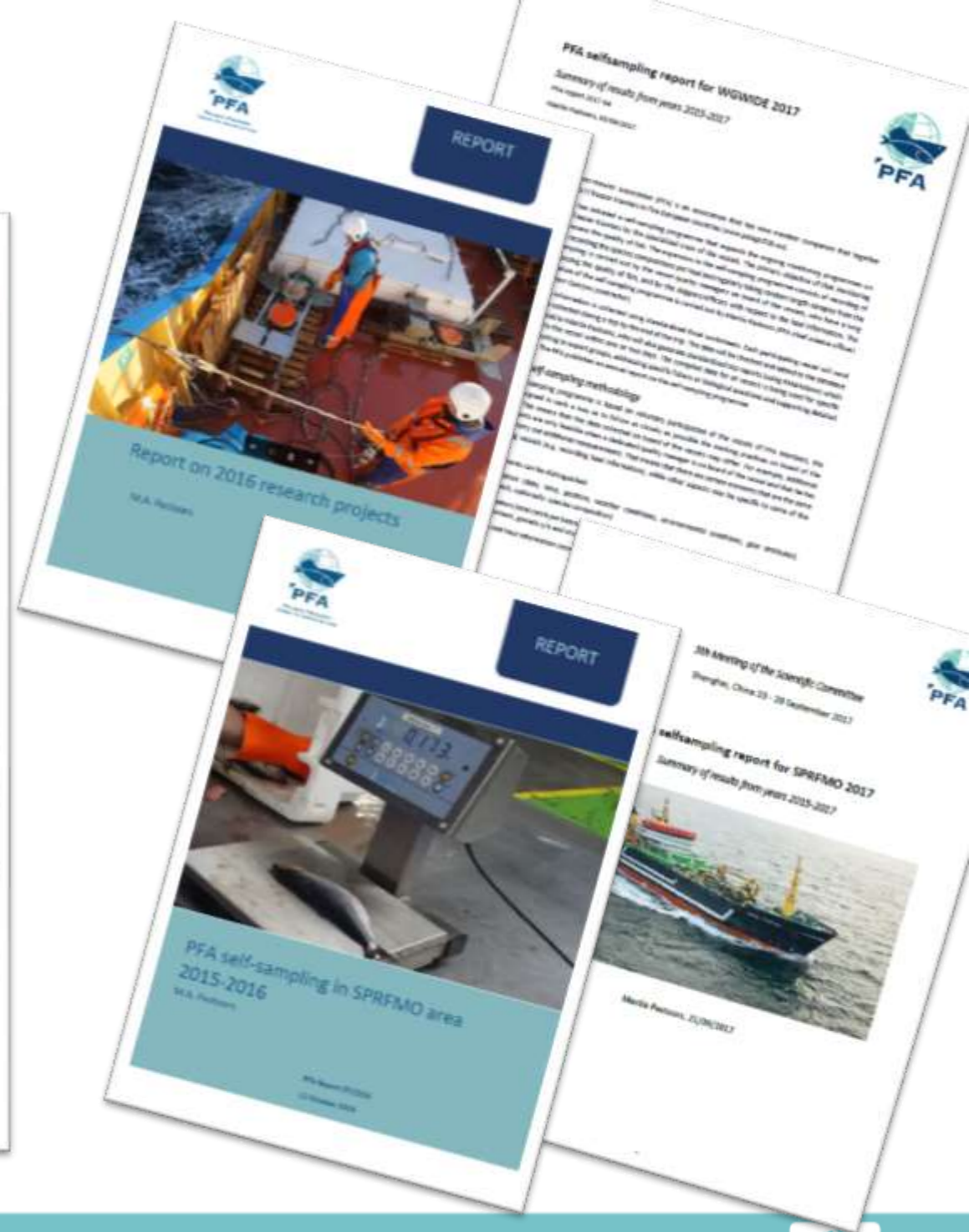


More research

- 03-11-2017 Video release on the industry survey on 6a herring
- 19-06-2017 PFA in ICES training course on acoustic surveys
- 12-06-2017 Article in *VisserijNieuws* on the trawl grid experiments
- 05-06-2017 PFA publication on 2016 research projects
- 05-06-2017 First PFA self-sampling report available

[View all >](#)

If you want to know more about the PFA research activities, please contact Martin Pastoors, PFA's Chief Science Officer.
Email mpastoors@pelagicfish.eu



...and bridge the gap between science and industry



There is a lot to be gained by everyone



Merk	Aantal cartons	Voorraad in (m/f)	Tijd in tank	Stukstallen per p	Stuks per kg	Sorteerklasse	Kwaliteit	Sorteringskwaliteit	Voedsel	Textuur	Model	Buikvulling Hom/Kuit	Beschadigd andere vis
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ARU023	1543	20	0 - 12uur	40/60	2 a 3	A	2	A	0 - 1	B	A/B	A/B	A/B



and so much to tell....

What I would like you to remember (if possible):

- Ecosystem-based management means different things to different people
 - Fishers could have a different perspective from you
- The new challenge is in combining ecology, energy and food (proteins)
 - In the ecosystem approach: going beyond the ecology – fisheries dichotomy
- Stakeholder engagement happens through engagement from both sides
 - Science to industry and industry to science
 - There is a lot to gain !
 - It is great fun !

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Ecosystem-based management means different things to different people

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The new challenge is in combining ecology, energy and food (proteins)

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Stakeholder engagement happens through engagement from both sides

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- There is a lot to gain !
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Working with industry to improve science and management

