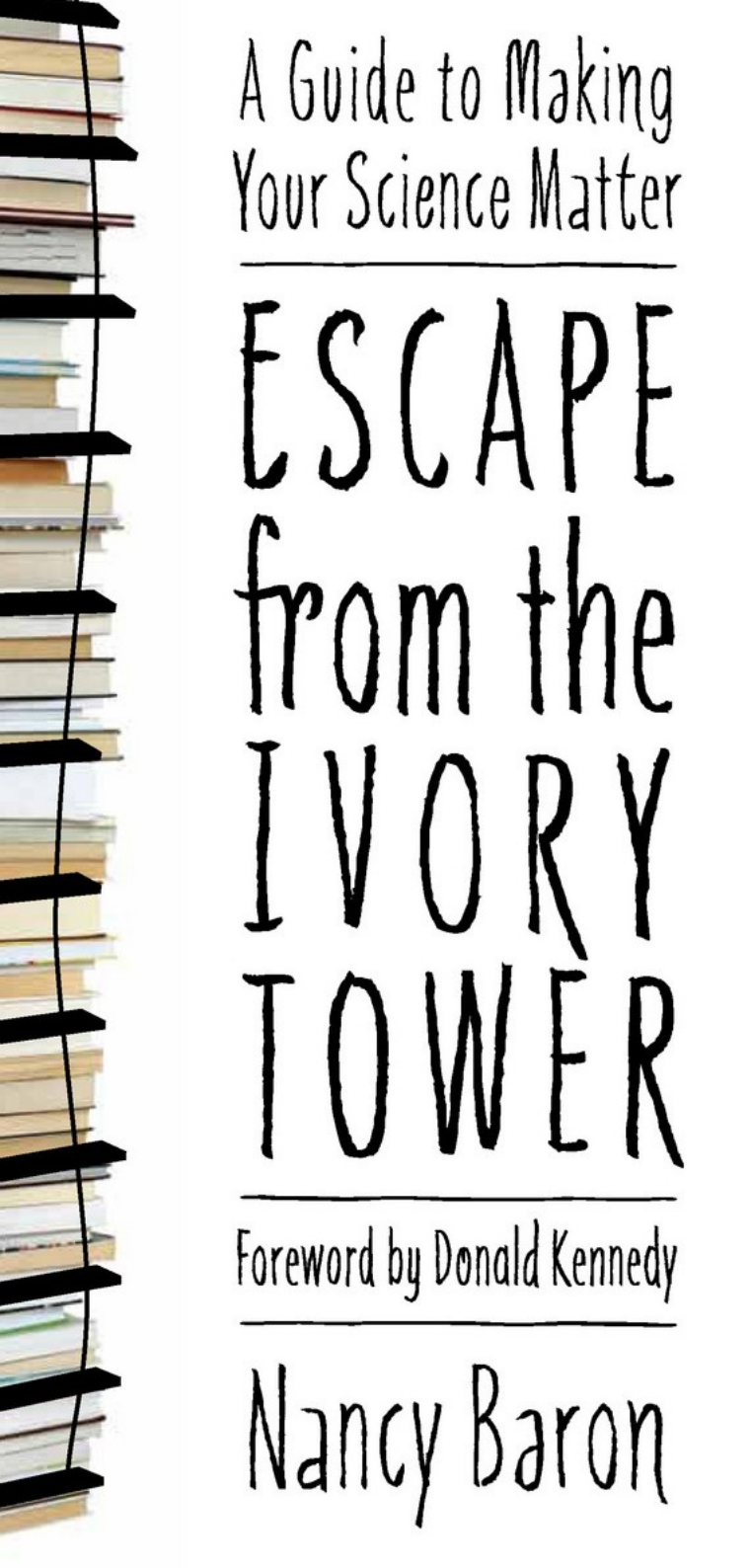
Self-sampling approach for long-distance fish

Martin Pastoors (PFA Chief Science Officer)

LDAC, Brussels

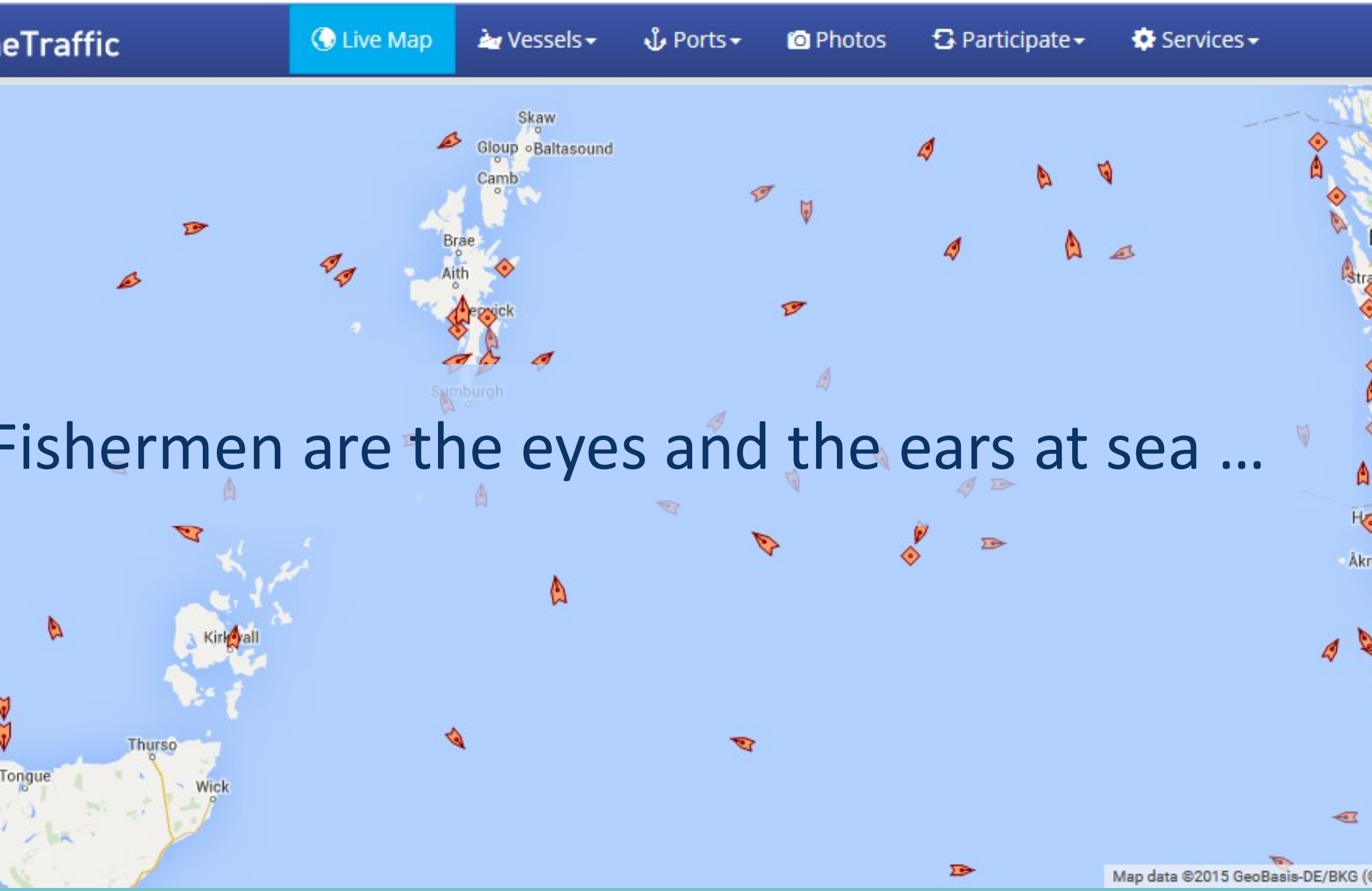


A Guide to Making Your Science Matter

ESCAPE from the IVORY TOWER

Foreword by Donald Kennedy

Nancy Baron

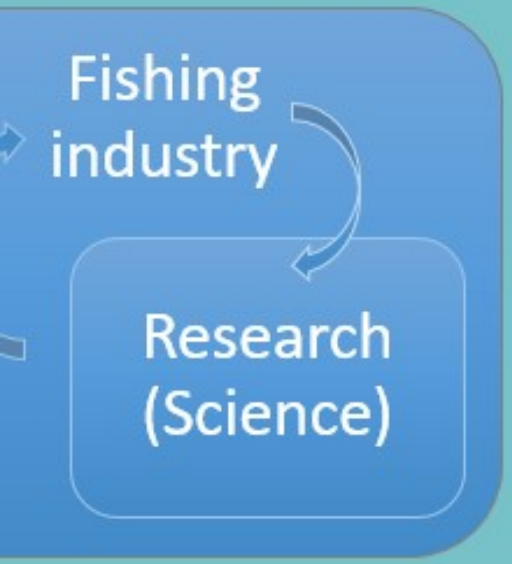


Fishermen are the eyes and the ears at sea …

but how can we make fisheries data & knowledge **count**?

How could this work in the case of distant-water fisheries ?

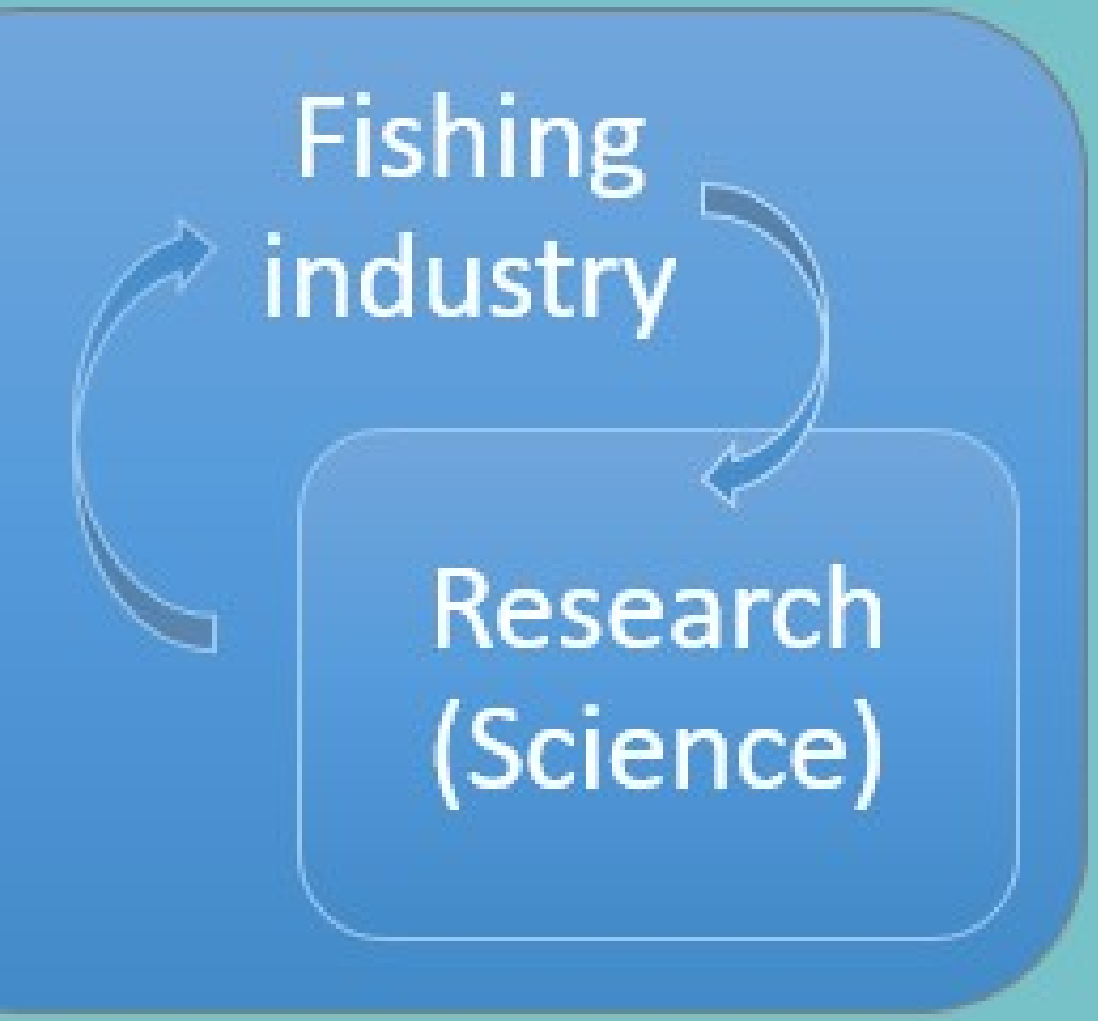
Three steps to get to get to the redfish



ng-industry
ce

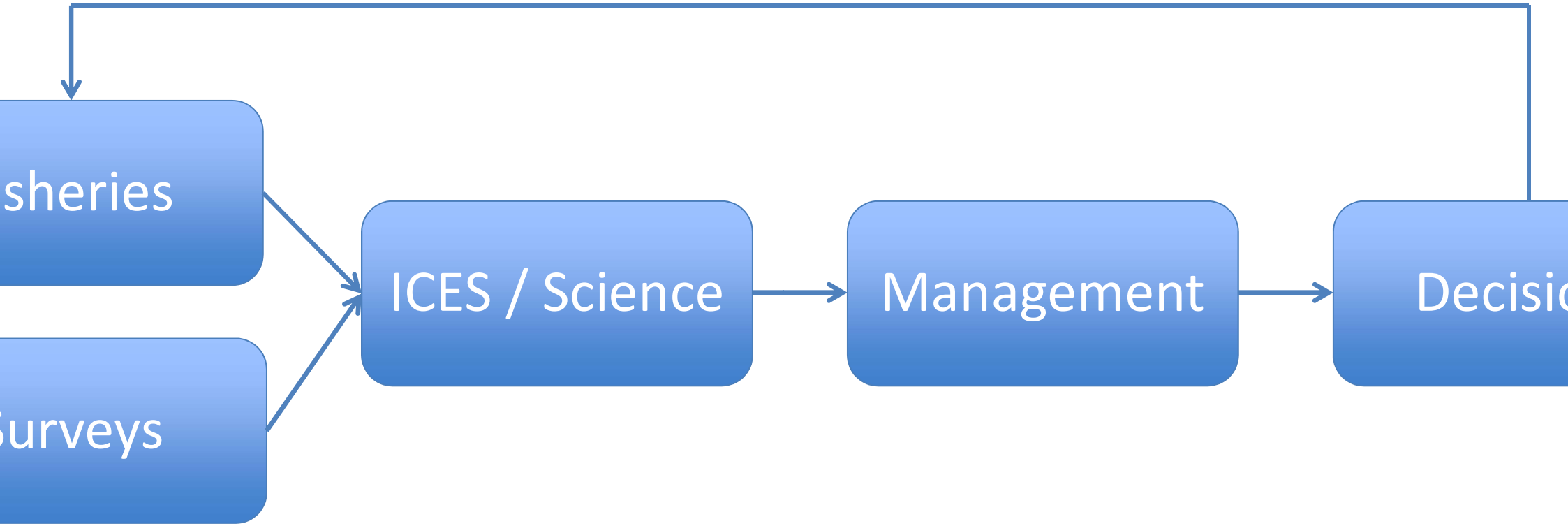
Pelagic self-sampling approach

Application to redfish etc.



1. Why fishing-industry science?

he traditional linear model of fisheries science



Limited feedback !!

esearch projects have demonstrated value of engagement

JAKFISH
Judgement and Knowledge in Fisheries Involving Stakeholders

SUSTAINABILITY, INCLUSIVITY, ACCURACY
Fishery Dependent Information

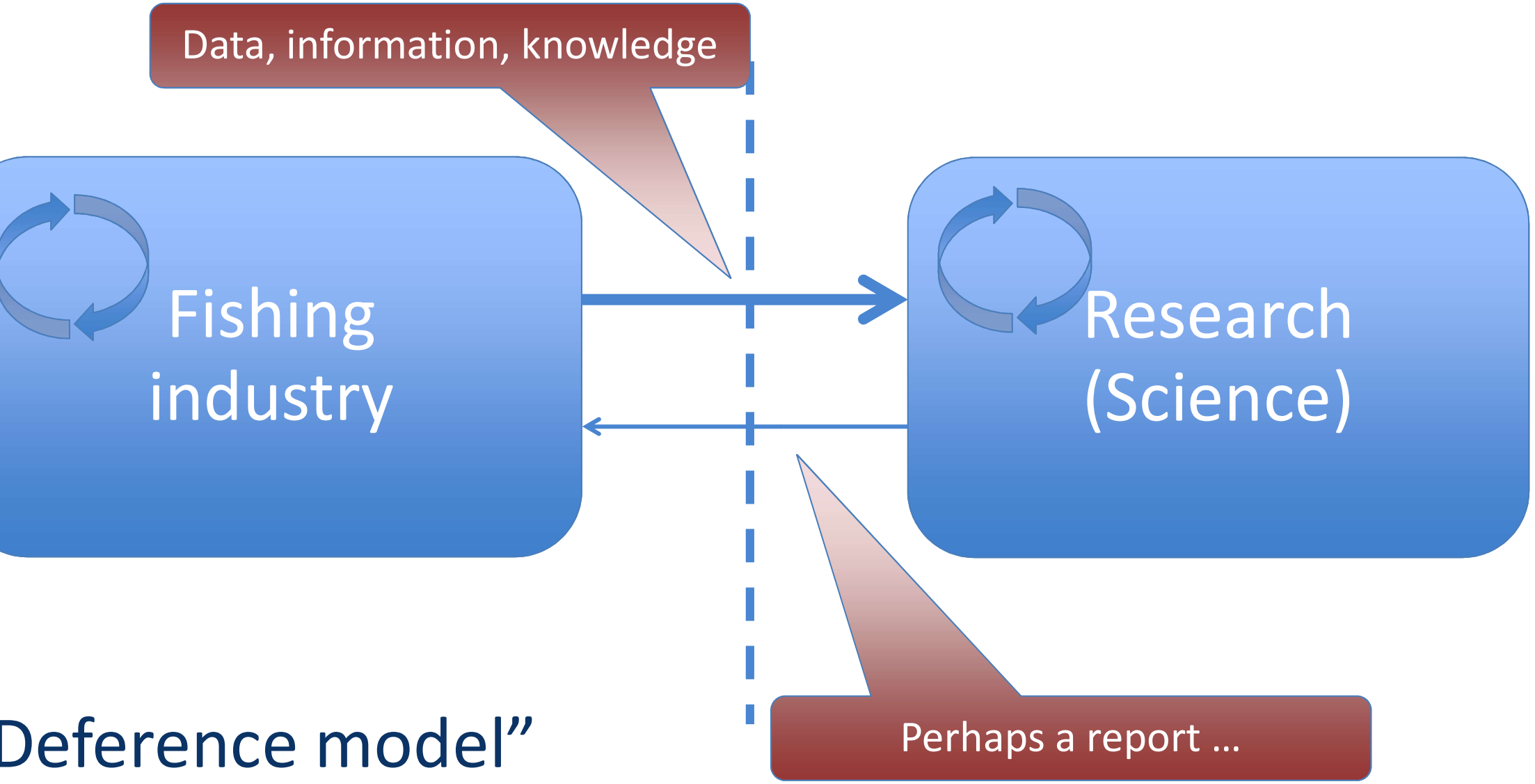
myfish
Maximising yield of fisher
while balancing ecosyst
economic and social conce

GAP
Connecting Science
Stakeholders and Policy

Canadian Fisheries
Research Network

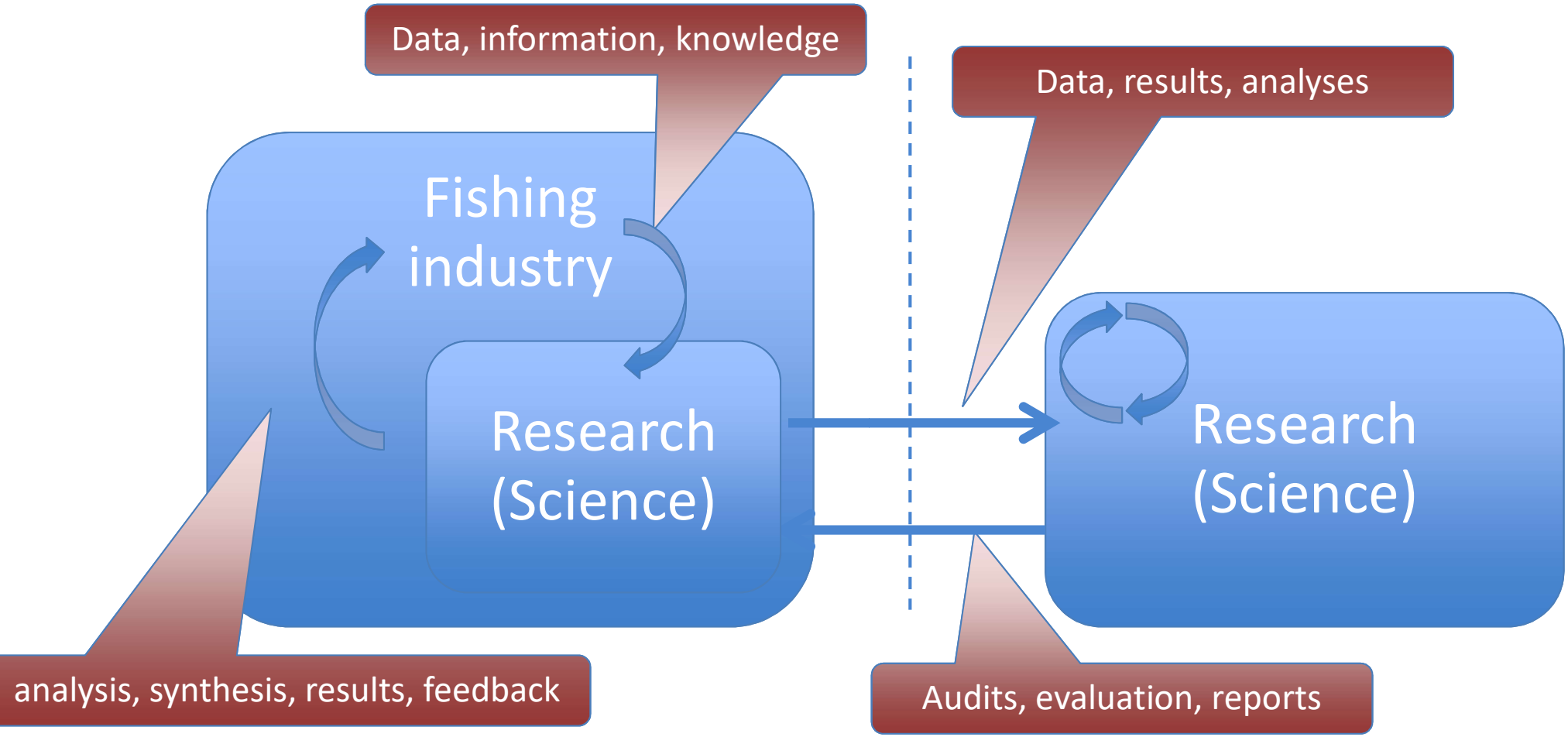
Réseau canadien de
recherche sur la pêche

but so far, the exchange was mostly ‘over the borde



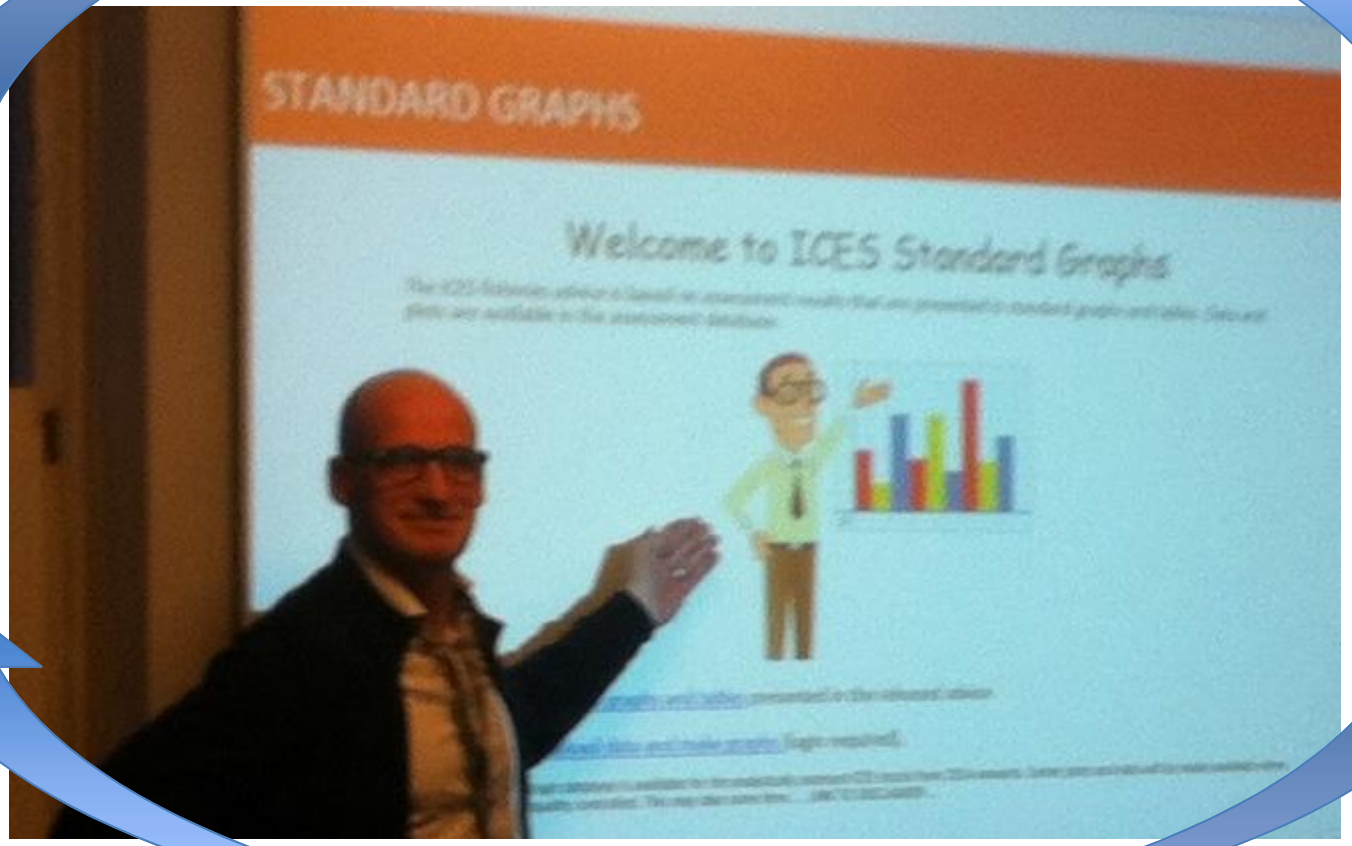
Deference model”

shing-Industry Science: integrates science in industry



portant (essential) to personally deliver data to scien

Data and knowledge



isheries

Science
(e.g. ICES

Results + what are key issues?

shing-industry science

A new of fishing-industry to engage with science

Making data and knowledge count

Using brokers to bring information to the right place

Address the needs of science

Make science and management better !!

2. Pelagic self-samplin approach

Research & Knowledge strategy 2015 - 2018

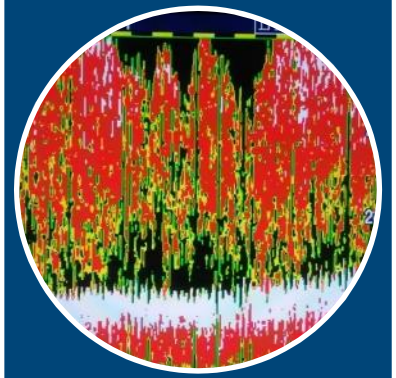
Ambition

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.

FA research programme 2014-2018

g

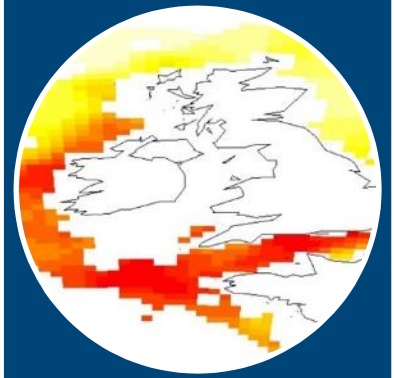


Vessel acoustics

Improve selectivity

Assess impacts

Collaborate with industry and NGOs



Contribute to science

Co

tandardized data-entry protocols

C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
haul	date	shoot time	haul time	shoot lat	shoot NS	shoot long	shoot EW	haul lat	haul NS	haul long	haul EW	surface temp	headline temp	Wind direction	Windforce (Bft)	headline depth	water depth	mesh size
1	10/08/2017	13:00	19:45	71°32'	N	003°18'	E	72°00'	N	003°02'	E	8.9	2.9	NE	3.0	410	1500	
2	11/08/2017	03:10	21:20	71°52'	N	002°48'	E	71°40'	N	003°10'	E	9.2	2.8	NE	4.0	410	1500	
3	12/08/2017	02:20	23:20	71°45'	N	004°30'	E	72°38'	N	006°29'	E	9.5	3.0					
4	13/08/2017	03:00	23:25	72°39'	N	005°31'	E	72°36'	N	005°29'	E	9.5	3.0					
5	14/08/2017	02:15	21:15	72°37'	N	005°29'	E	72°43'	N	005°35'	E	9.5	2.8					
6	15/08/2017	00:10	19:55	72°44'	N	005°42'	E	72°24'	N	003°07'	E	9.6	2.8					
7	15/08/2017	22:00	19:50	72°27'	N	005°33'	E	72°29'	N	005°20'	E	9.5	3.0					
8	16/08/2017	23:40	21:10	72°10'	N	004°30'	E	72°06'	N	003°20'	E	9.6	3.8					
9	17/08/2017	23:45	20:30	72°14'	N	003°24'	E	72°10'	N	005°10'	E	9.5	3.7					
10	18/08/2017	22:40	21:00	72°11'	N	005°45'	E	72°10'	N	005°50'	E	9.6	2.8					
11	19/08/2017	23:55	21:55	72°08'	N	005°51'	E	72°14'	N	006°30'	E	9.5	2.6					
12	21/08/2017	00:20	20:40	72°13'	N	006°16'	E	72°13'	N	006°56'	E	9.5	2.7					
13	21/08/2017	22:45	21:15	72°14'	N	006°47'	E	72°18'	N	005°56'	E	9.5	3.3					
14	23/08/2017	00:00	22:15	72°19'	N	006°24'	E	72°14'	N	005°46'	E	9.2	3.0					
15	24/08/2017	00:30	20:45	72°14'	N	005°40'	E	71°50'	N	003°22'	E	9.2	3.8					
16	24/08/2017	23:30	21:15	71°42'	N	003°52'	E	70°48'	N	006°05'	E	9.2	3.7					
17	26/08/2017	02:00	23:10	71°11'	N	006°47'	E	72°13'	N	007°10'	E	9.2	3.9					
18	27/08/2017	01:30	19:10	72°20'	N	007°08'	E	72°22'	N	006°24'	E	9.5	3.0					
19	28/08/2017	01:25	23:25	72°23'	N	006°33'	E	72°24'	N	007°04'	E	9.5	3.0					
20	29/08/2017	04:15	21:15	72°50'	N	008°10'	E	73°08'	N	007°45'	E	9.5	2.9					
21	30/08/2017	04:20	17:00	73°11'	N	007°38'	E	73°11'	N	007°36'	E	9.3	2.7	N	4.0	420	1500	
22	30/08/2017	20:00	13:15	73°16'	N	007°26'	E	72°53'	N	008°18'	E	9.3	3.0	NW	4.0	420	1500	
23	31/08/2017	15:40	07:45	72°55'	N	008°14'	E	73°03'	N	007°52'	E	9.1	3.0	VAR	2.0	420	1500	
24	01/09/2017	10:30	07:00	73°03'	N	007°57'	E	73°02'	N	007°38'	E	8.9	3.0	S	4.0	420	1500	
25	02/09/2017	11:00	03:30	73°30'	N	008°06'	E	72°52'	N	008°23'	E	8.9	2.9	SW	5.0	415	1500	
26	03/09/2017	06:30	04:15	72°48'	N	008°12'	E	72°52'	N	008°09'	E	8.9	2.8	SW	4.0	430	1500	
27	04/09/2017	07:15	04:45	72°48'	N	008°19'	E	73°10'	N	007°31'	E	9.2	3.0	SW	4.0	430	1500	
28	05/09/2017	06:45	04:30	73°11'	N	007°33'	E	72°19'	N	008°59'	E	9.2	2.9	S	3.0	430	1500	
29	06/09/2017	06:30	05:00	72°25'	N	009°01'	E	72°33'	N	008°40'	E	9.3	3.0	SE	3.0	410	1500	

merkenlijst | tellijst | Vet | overzicht per soort | Macros | Haul | Merk | lists | Rect | Print

Started small in the beginning of 2015


Afrika


Zeeland


Sandettie


Wiron 5+6


Carolien


Frank Bon


Cornelis Vrolijk


Prins Bernhard


Label Normandy


Annie Hillina


Willem van der Zwan


Annelies Ilena

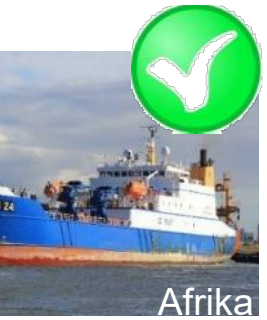

Margiris

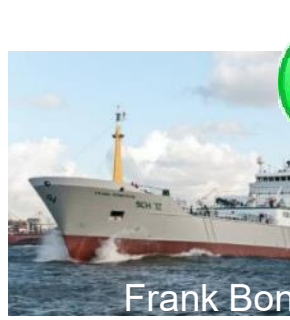

Jan Maria

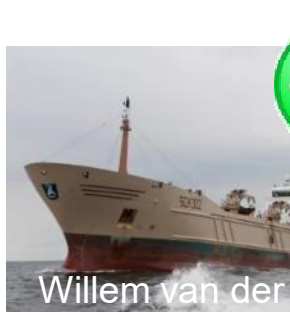

Maartje Theadora

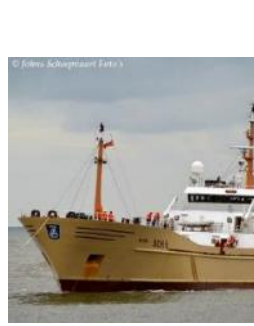

Helen Mary

Now covering most of the fleet !





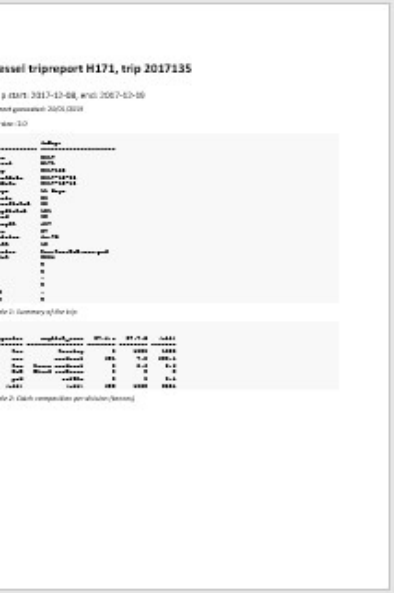


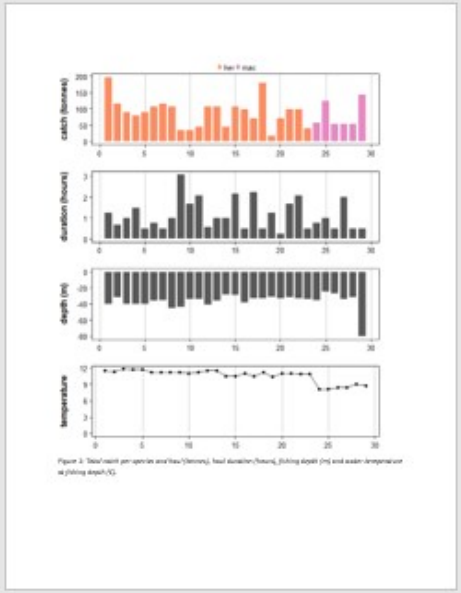


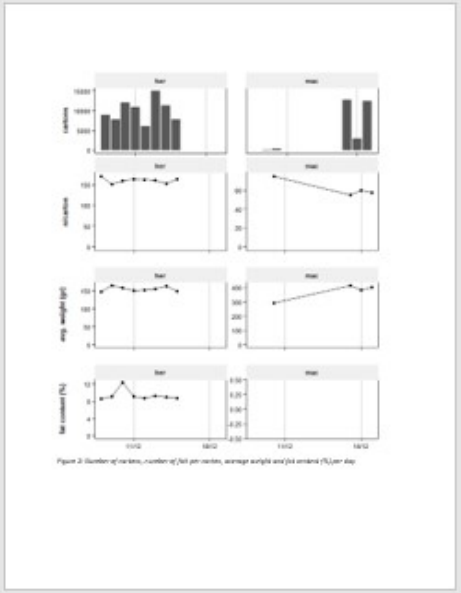
pansion in number of vessels, trips and measuremer

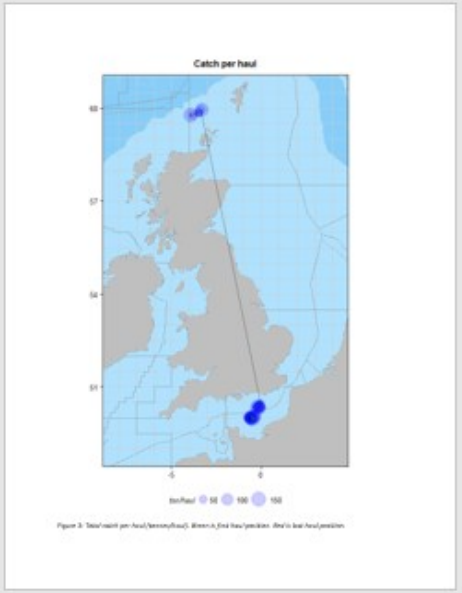
year	nvessels	ntrips	ndays	catch	nlength
2015	8	43	758	134,804	122,315
2016	11	98	1,539	302,089	157,365
2017	15	122	2,037	388,782	293,674

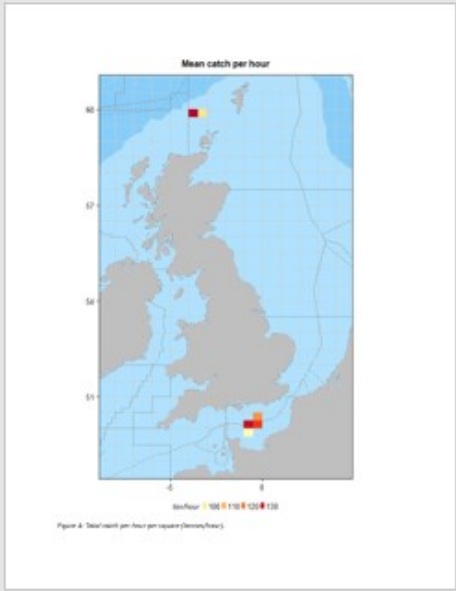
eed-back via standardized trip reports for the vessels

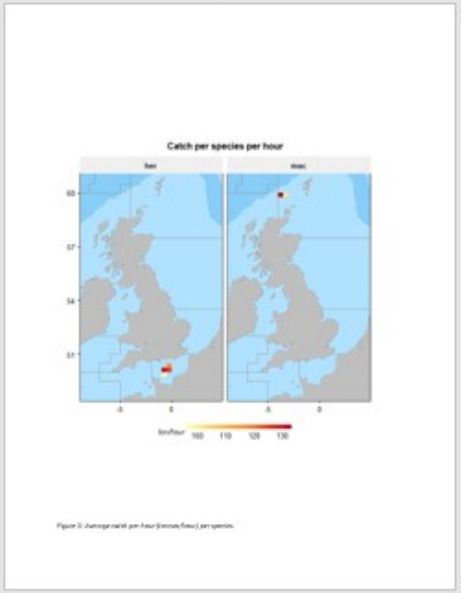


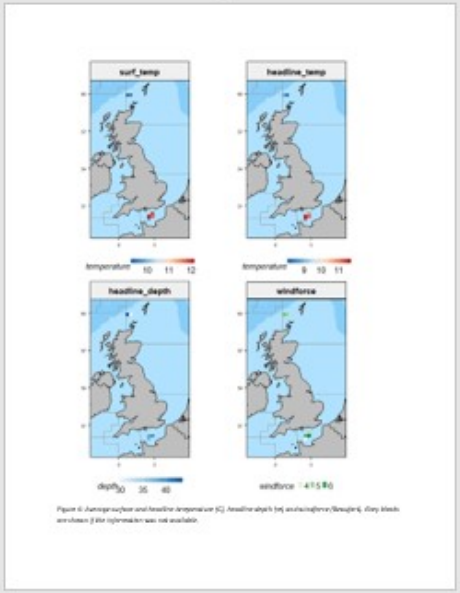


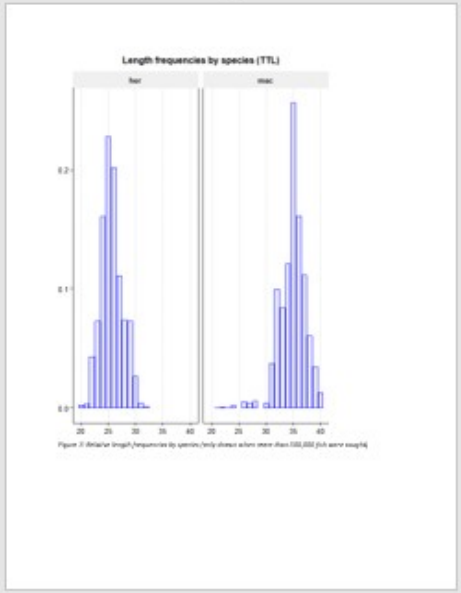


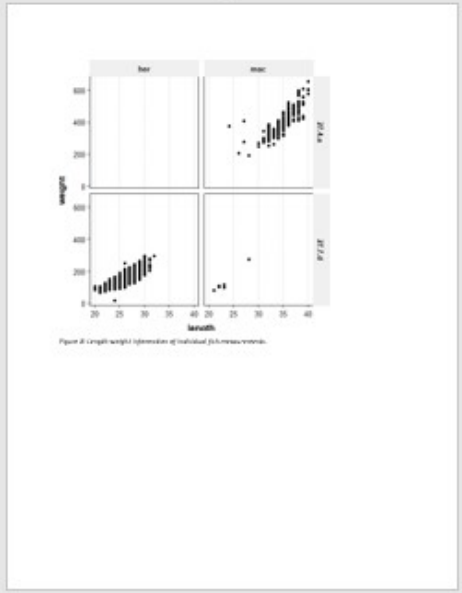






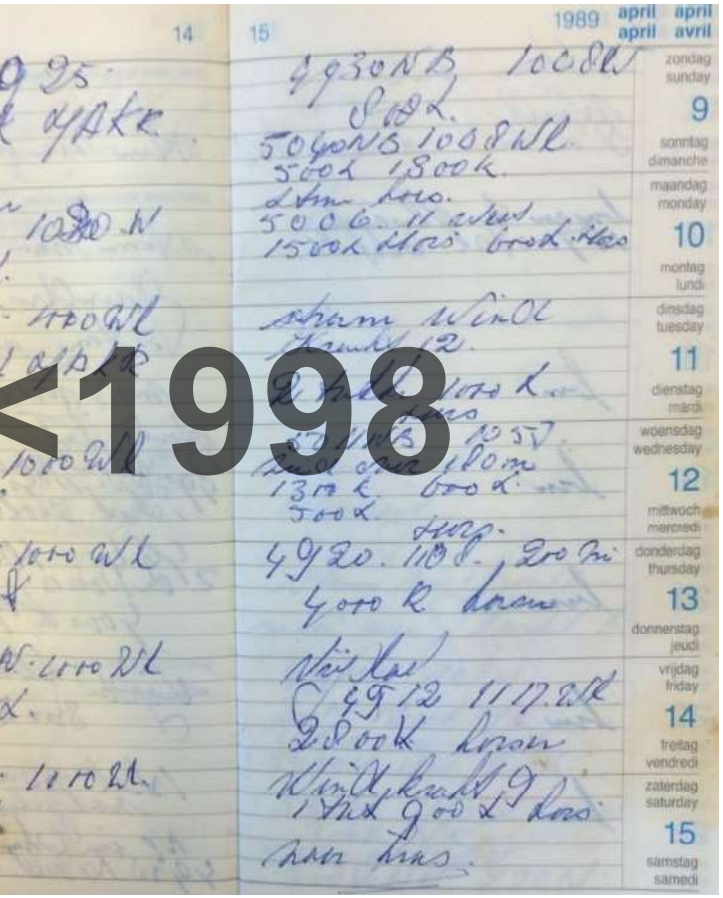






pend time on vessels. Show results. Build trust.

histories: skipper's 'diaries' (haul by haul) + self-sam



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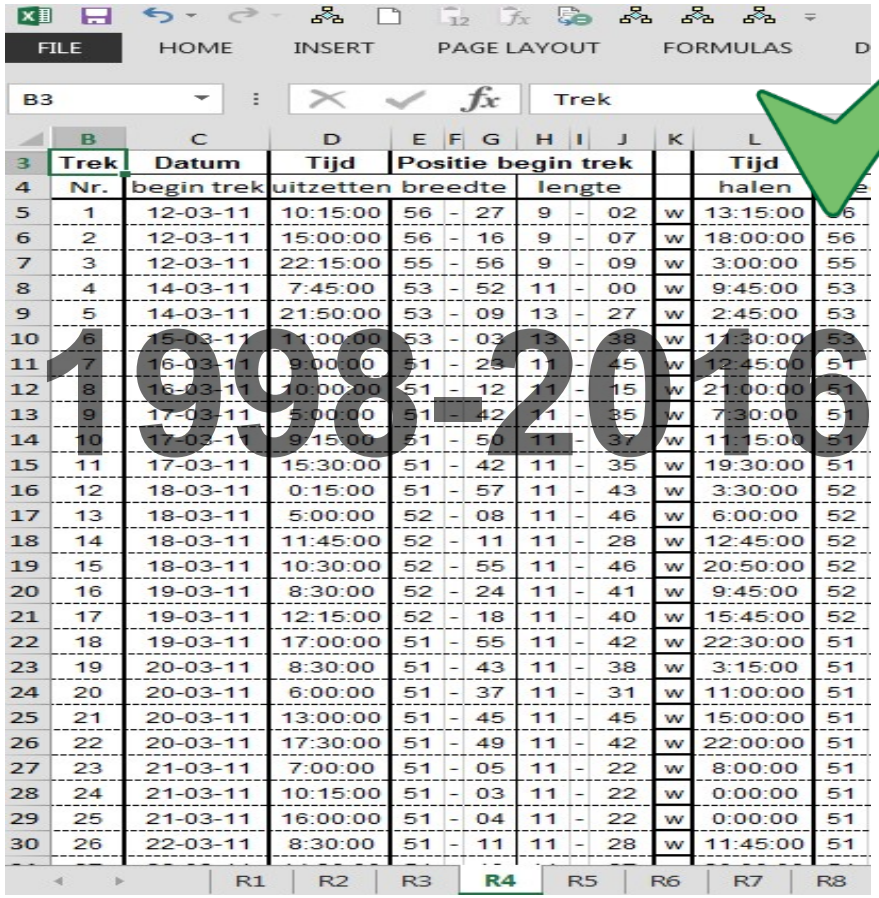
Paper diaries



Trek	Datum	Tijd	Positie begin trek							Tijd	
Nr.	begin trek	uitzetten	breedte			lengte				halen	
1	12-03-11	10:15:00	56	-	27	9	-	02	w	13:15:00	56
2	12-03-11	15:00:00	56	-	16	9	-	07	w	18:00:00	56
3	12-03-11	22:15:00	55	-	56	9	-	09	w	3:00:00	55
4	14-03-11	7:45:00	53	-	52	11	-	00	w	9:45:00	53
5	14-03-11	21:50:00	53	-	09	13	-	27	w	2:45:00	53
6	15-03-11	11:00:00	53	-	03	13	-	38	w	11:30:00	53
7	16-03-11	9:00:00	51	-	28	11	-	45	w	12:45:00	51
8	16-03-11	19:00:00	51	-	12	11	-	15	w	21:00:00	51
9	17-03-11	5:00:00	51	-	42	11	-	35	w	7:30:00	51
10	17-03-11	9:15:00	51	-	50	11	-	37	w	11:15:00	51
11	17-03-11	15:30:00	51	-	42	11	-	35	w	19:30:00	51
12	18-03-11	0:15:00	51	-	57	11	-	43	w	3:30:00	52
13	18-03-11	5:00:00	52	-	08	11	-	46	w	6:00:00	52
14	18-03-11	11:45:00	52	-	11	11	-	28	w	12:45:00	52
15	18-03-11	10:30:00	52	-	55	11	-	46	w	20:50:00	52
16	19-03-11	8:30:00	52	-	24	11	-	41	w	9:45:00	52
17	19-03-11	12:15:00	52	-	18	11	-	40	w	15:45:00	52
18	19-03-11	17:00:00	51	-	55	11	-	42	w	22:30:00	51
19	20-03-11	8:30:00	51	-	43	11	-	38	w	3:15:00	51
20	20-03-11	6:00:00	51	-	37	11	-	31	w	11:00:00	51
21	20-03-11	13:00:00	51	-	45	11	-	45	w	15:00:00	51
22	20-03-11	17:30:00	51	-	49	11	-	42	w	22:00:00	51
23	21-03-11	7:00:00	51	-	05	11	-	22	w	8:00:00	51
24	21-03-11	10:15:00	51	-	03	11	-	22	w	0:00:00	51
25	21-03-11	16:00:00	51	-	04	11	-	22	w	0:00:00	51
26	22-03-11	8:30:00	51	-	11	11	-	28	w	11:45:00	51

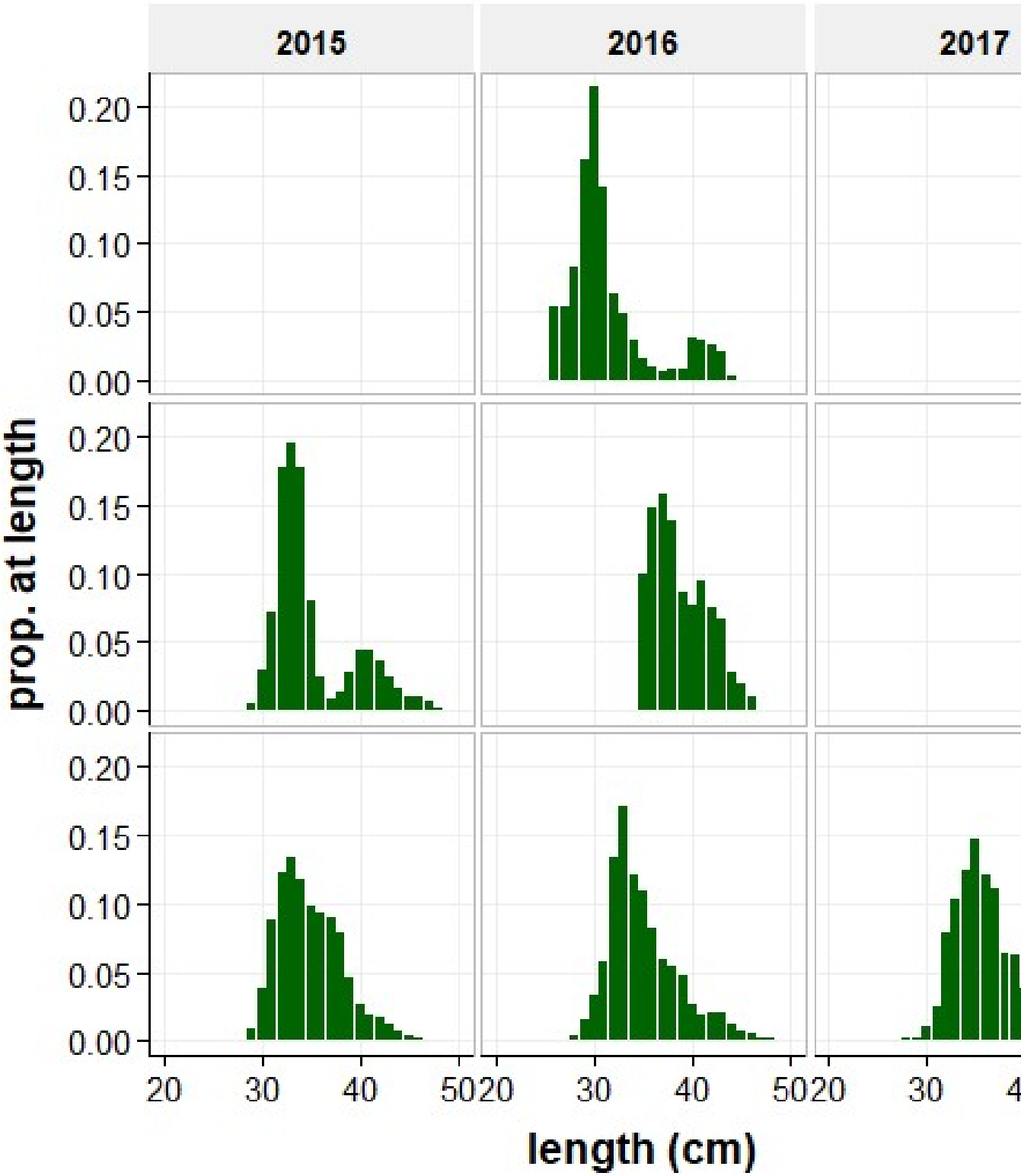
1998-2016

Excel diaries

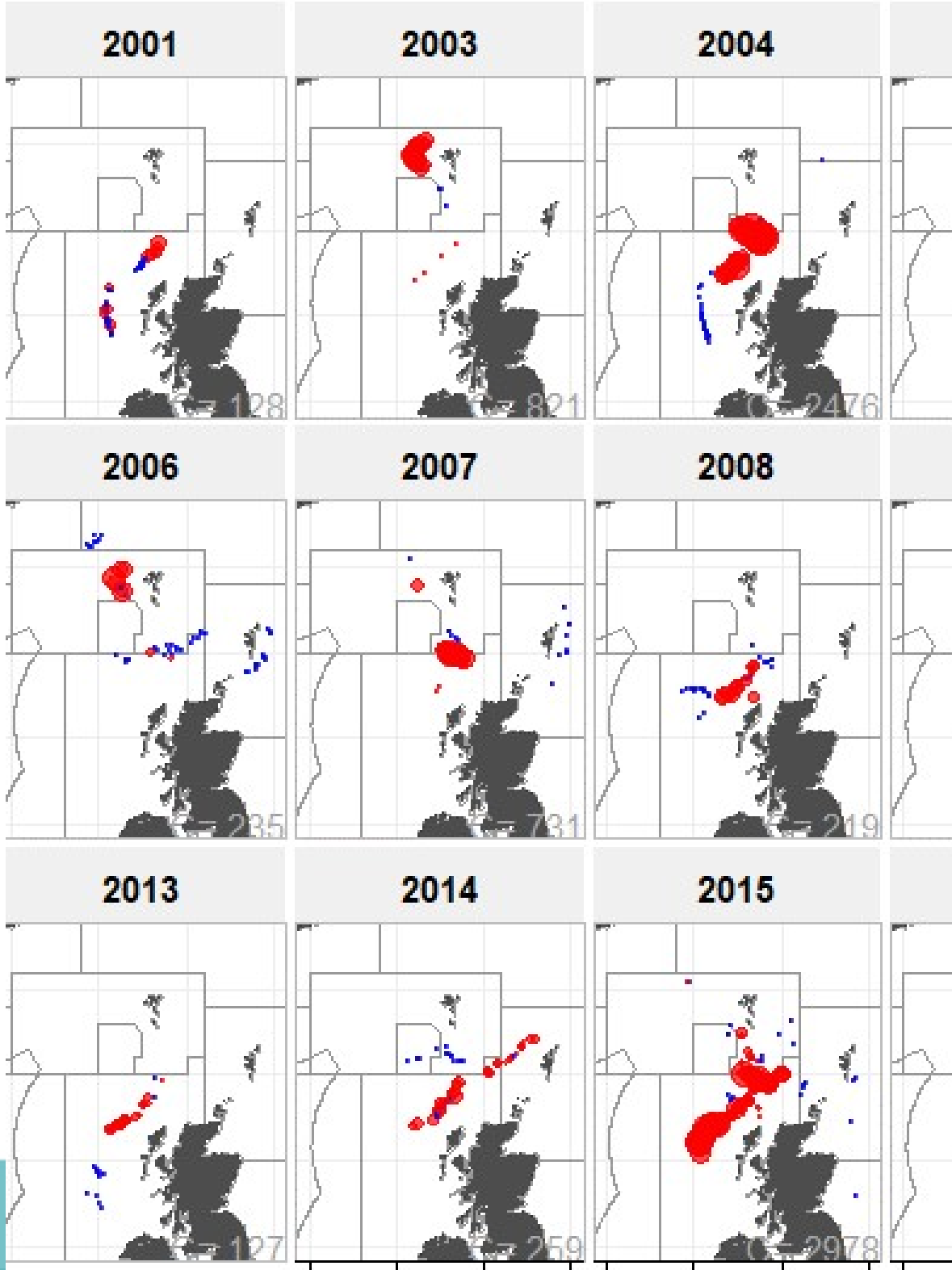
2015-2

Self-sampli

ing a difference:
ength information
rgentines



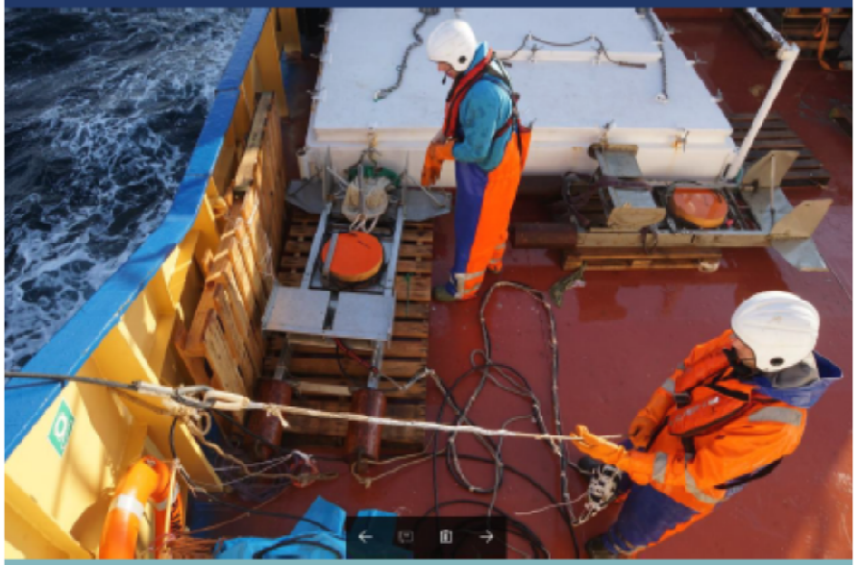
ing a difference:
historical catch rates
skipper's logbooks



PFA

Pelagic Freezer-trawler Association

REPORT



Report on 2016 research projects

M.A. Pastoors

PFA report 2017/01

3-7-2017

Report on the 2016 industry–science survey Western British Isles (ICES div 6a, 7bc)

Steven Mackinson[1], Martin Pastoors[2], Susan Lusseau[3], Eric Armstr
Dick de Haan[4], Raoul Kleppe[2], Mike O'Malley[5],Andrew Campbell[5],
Wiseman[1].

[1] Scottish Pelagic Fishermen's Association, Scotland.
[2] Pelafic Freezer Trawler Association, Netherlands
[3] Marine Scotland, Scotland
[4] Wageningen Marine Research, Netherlands
[5] Marine Institute, Ireland

/lister Irvine), Wiron 5&6 (Jan Melis), Quantus (Mark Buchan), Unity (Stephen
tlantic Challenge (Stevie McSharry), Annie Hillina (Henk Krijgsman).

7/03/2017)

report: Mackinson, S., Pastoors,M., Lusseau, S., Armstrong, E., Fässler,S.,
., O'Malley,M., Campbell, A., Clarke, M., Wiseman, A. 2017. Report on the 2016
ey of herring in the Western British Isles (ICES div 6a, 7bc). 82pp

elagic self-sampling approach

- Great commitment of skippers and crew
- Gradual building up of number of participating vessels
- Feedback is a crucial element !!
- PFA as recognized knowledge partner
  - Providing key biological knowledge on target species
  - Providing unique information on data-deficient species
- Fishing-industry scientists as linking pin with science

3. Could this work f
redfish and other
distant-water fisher

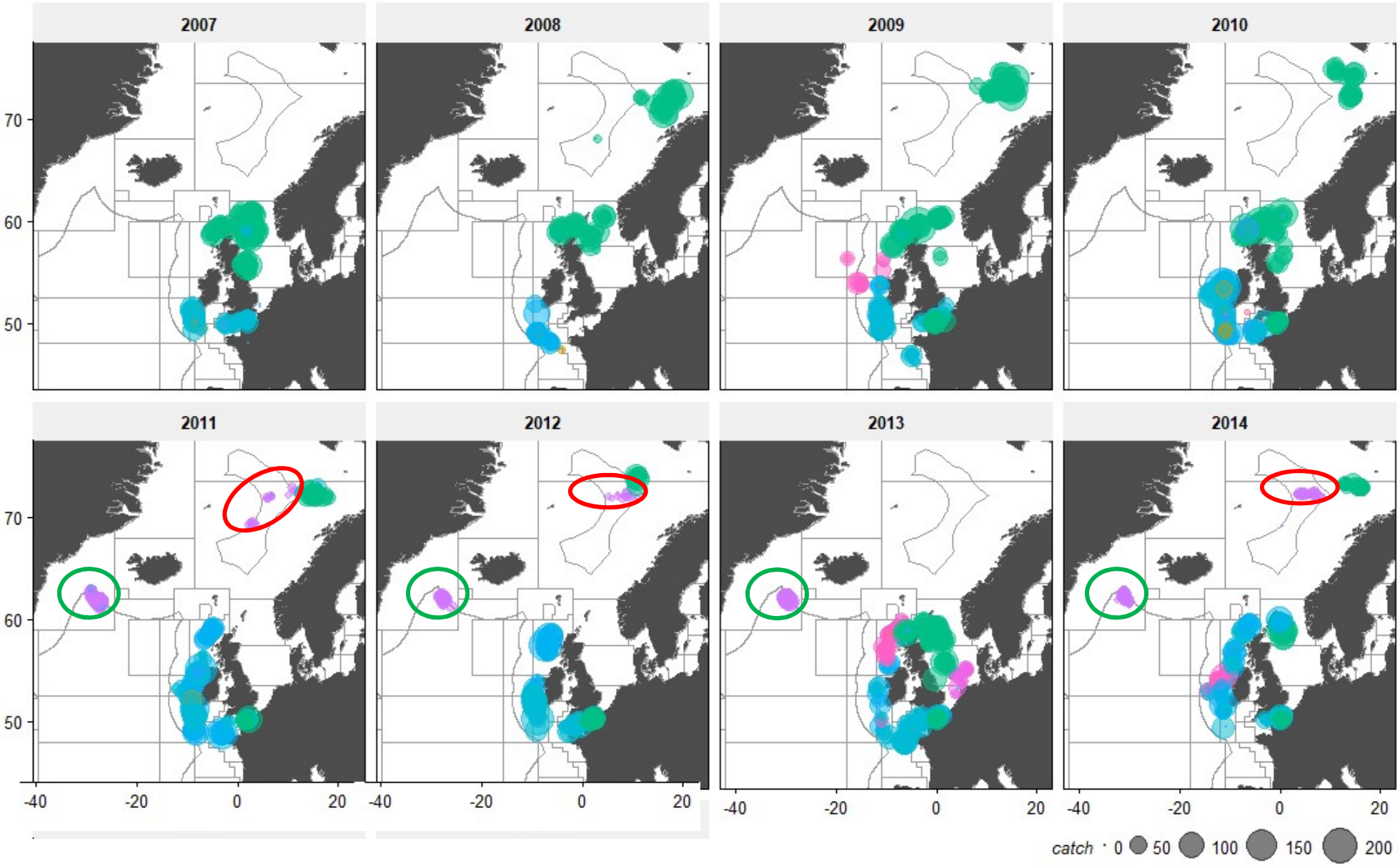
Yes

tep-by-step approach

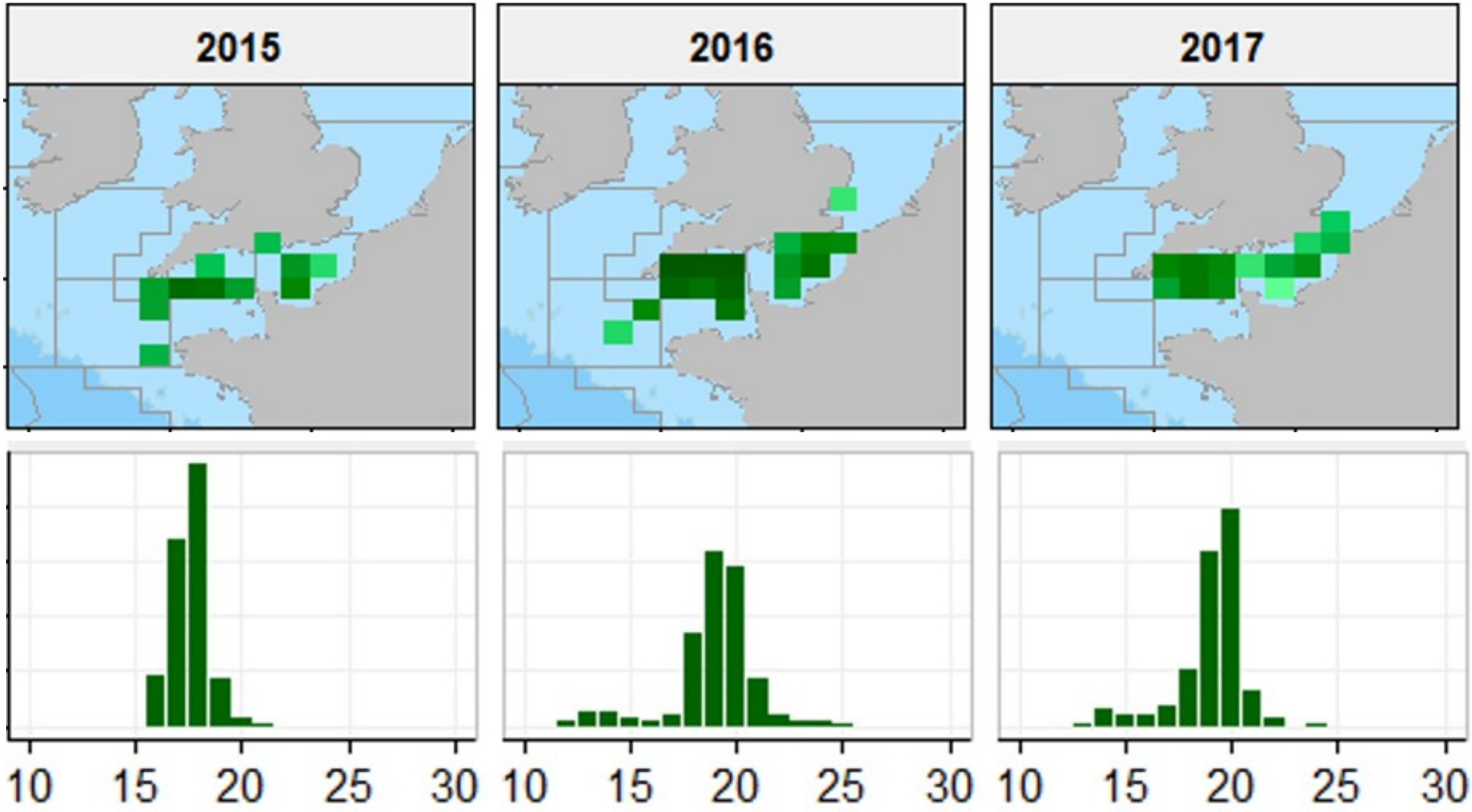
- Hire a scientist !
- Assessment of needs: what data makes the difference?
  - Benchmark workshops are a useful mechanism
- Protocol for data collection
  - Descriptions + software (ensure harmonized data)
- Mechanism for receiving and transforming data
- Generating trip report
- Generating reports for scientific groups
- Presenting results to scientific groups (in person)

ombine backward with forward looking approach

Backwards: mapping of fishing grounds & catch rates



orwards: length and species compositions per haul



This is sardine by the way

shing-industry science approach to redfish (and othe

Potential for detailed insights into redfish populations

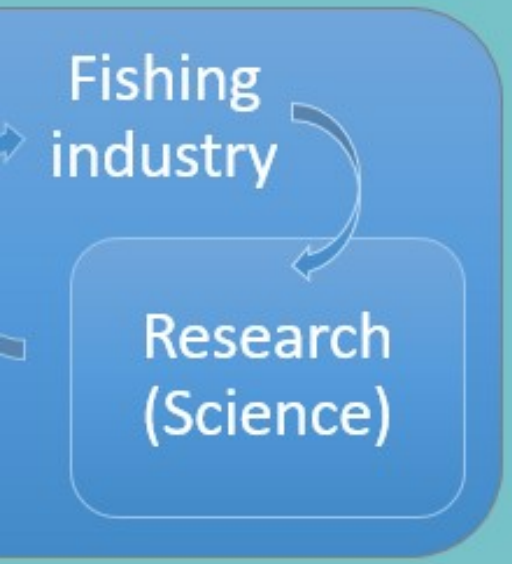
Backwards and forwards looking

Make sure there is **capacity to synthesize results**

Take the results to where they will be used.

Combine (where possible) with regular observer programme

Summing up: the three steps to the redfish



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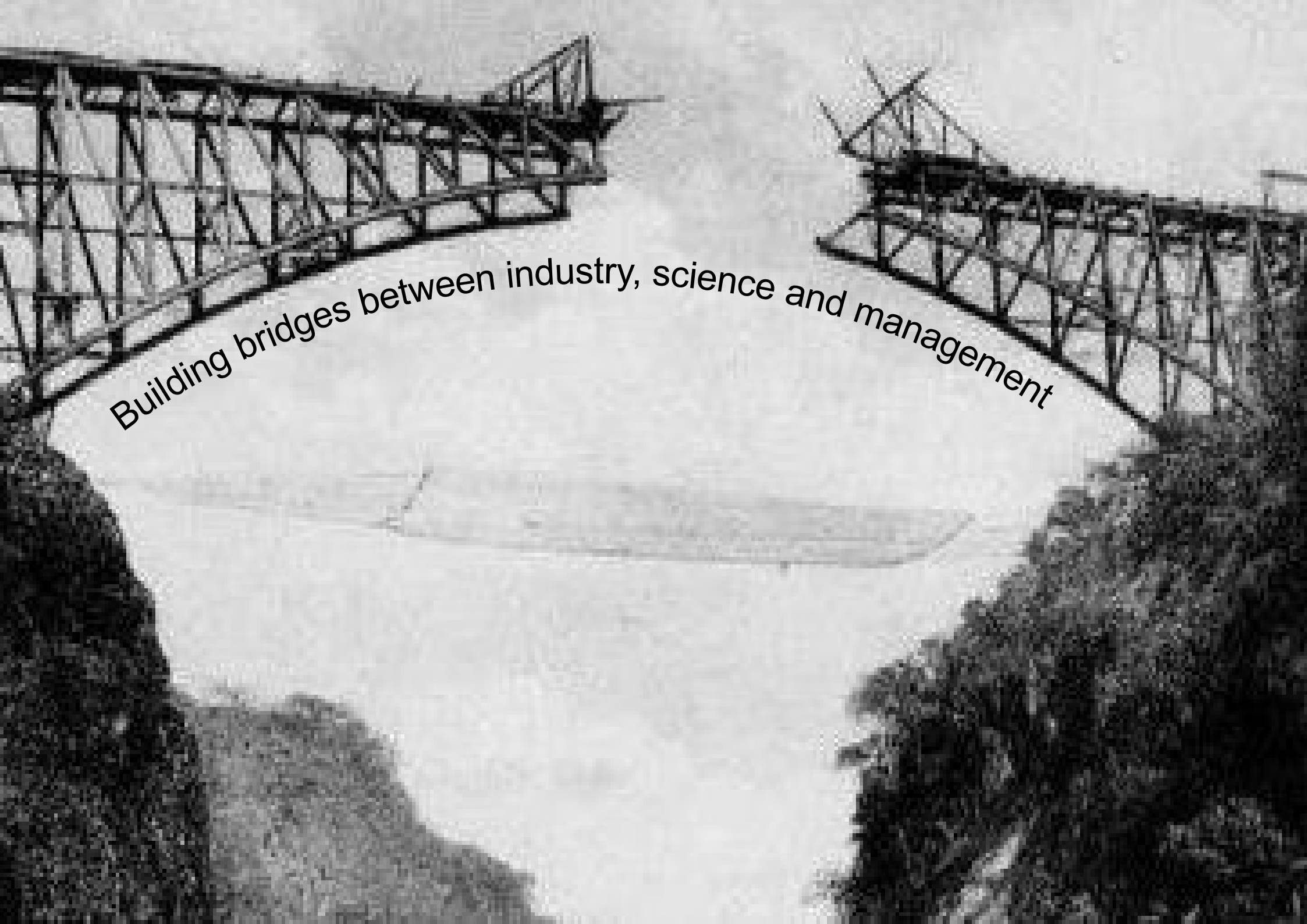
Pelagic self-sampling approach

Application to redfish etc.


Building bridges between industry, science and management

Fishing Industry Science: to improve science and management

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