

Scottish pelagic industry data collection initiatives



Steven Mackinson

Chief Scientific Officer, Scottish
Pelagic Fishermen's Association

Fraserburgh, NE Scotland



Herring




Mackerel



Blue whiting

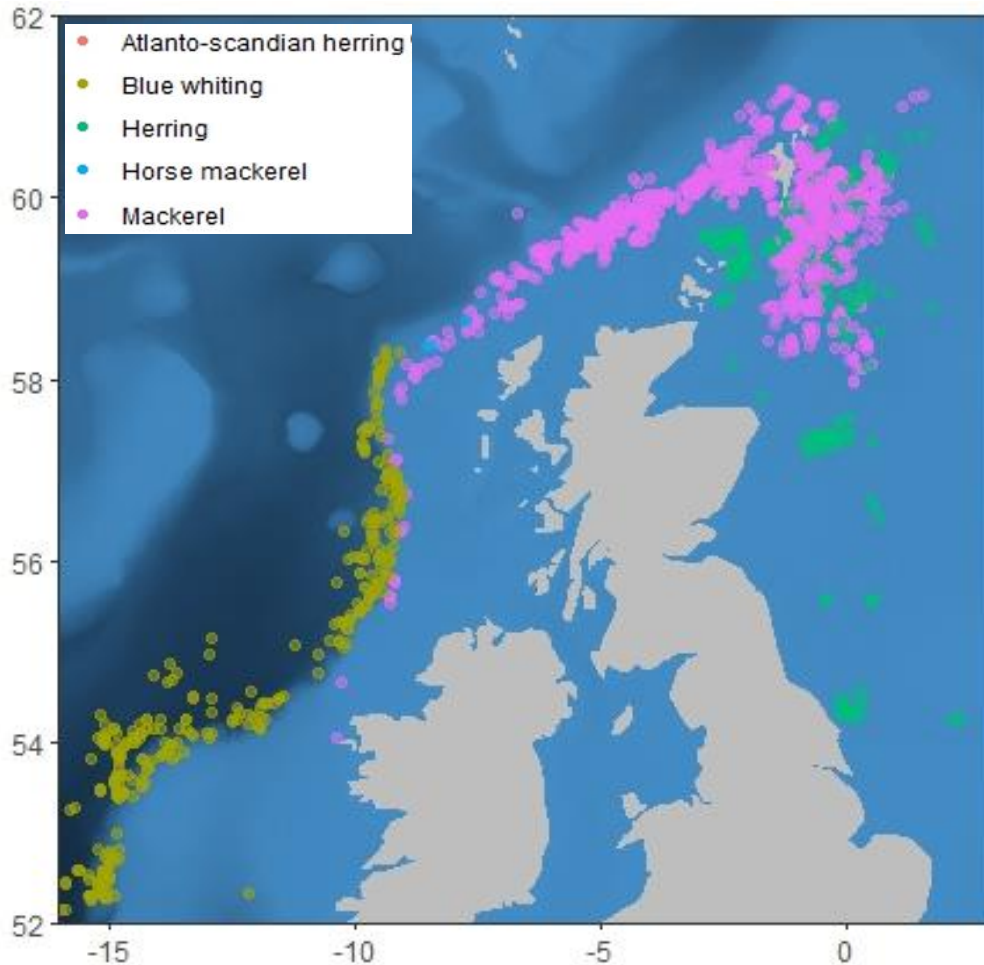
Our vision



Scottish pelagic fishermen, respected providers of scientifically credible data that's used to assess fish stocks, monitor changes in the pelagic ecosystem, and support management decisions.



Scottish Pelagic Industry-Science Data Collection Programme



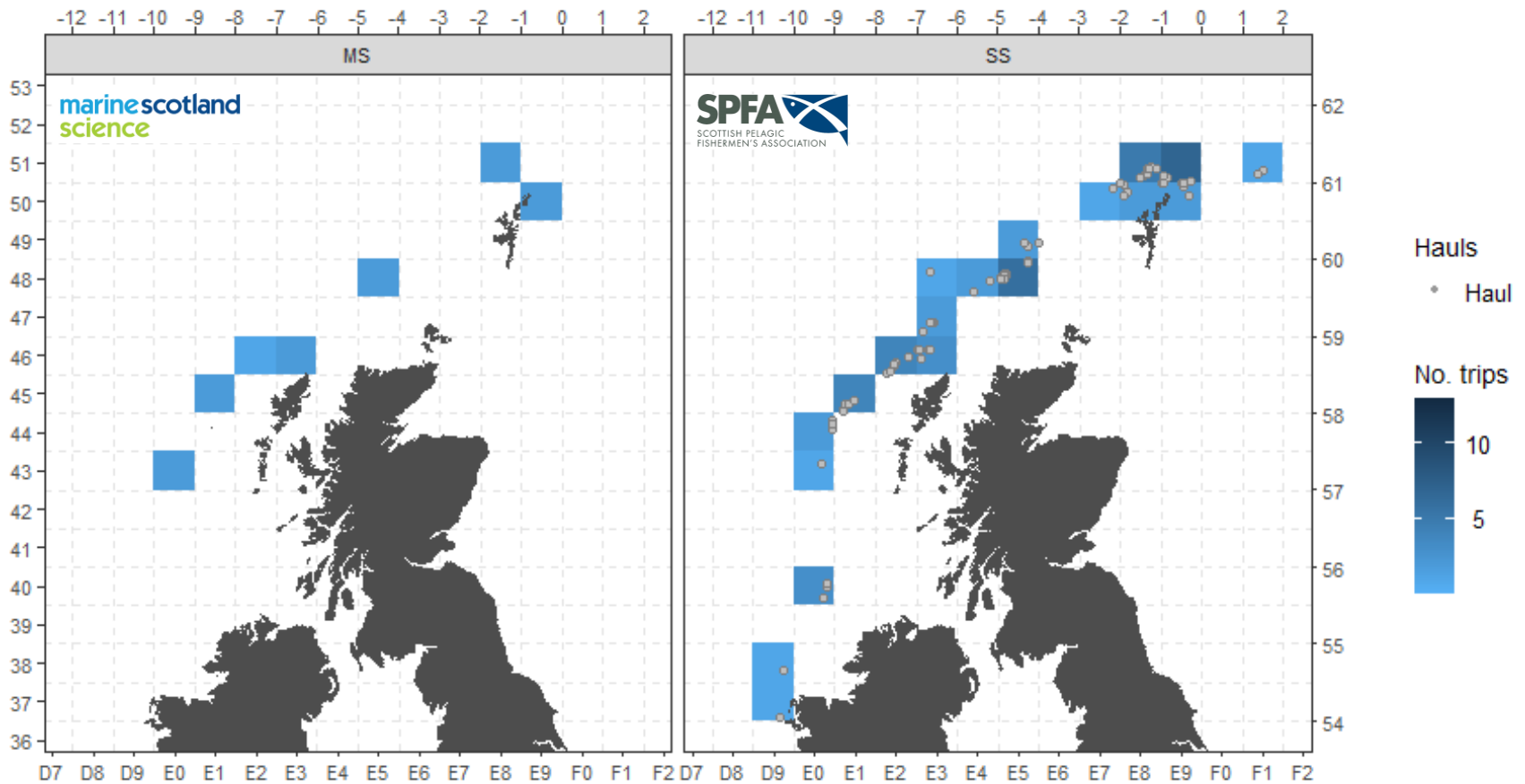
Two elements: Self-sampling and co-sampling both delivering information for pelagic stock assessment



Stats: Jun 18- Jan 2023

- 850+ trips
- 1,900+ hauls
- 223,000+ fish measured

Comparisons with Scottish 'DCF' data

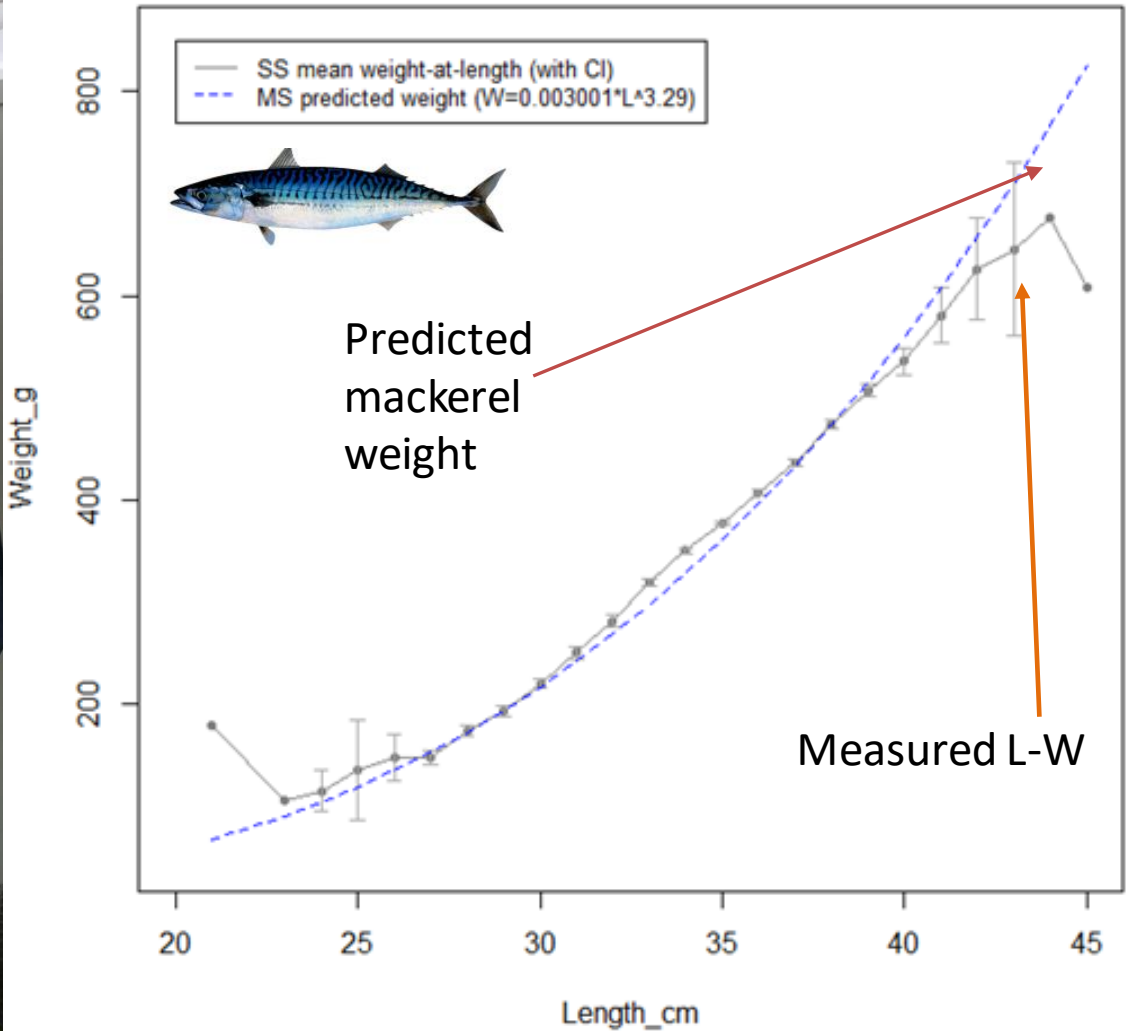


- Better coverage in time and space because every boat can be sampled.
- Richer data – every haul rather than every landing



Internal use

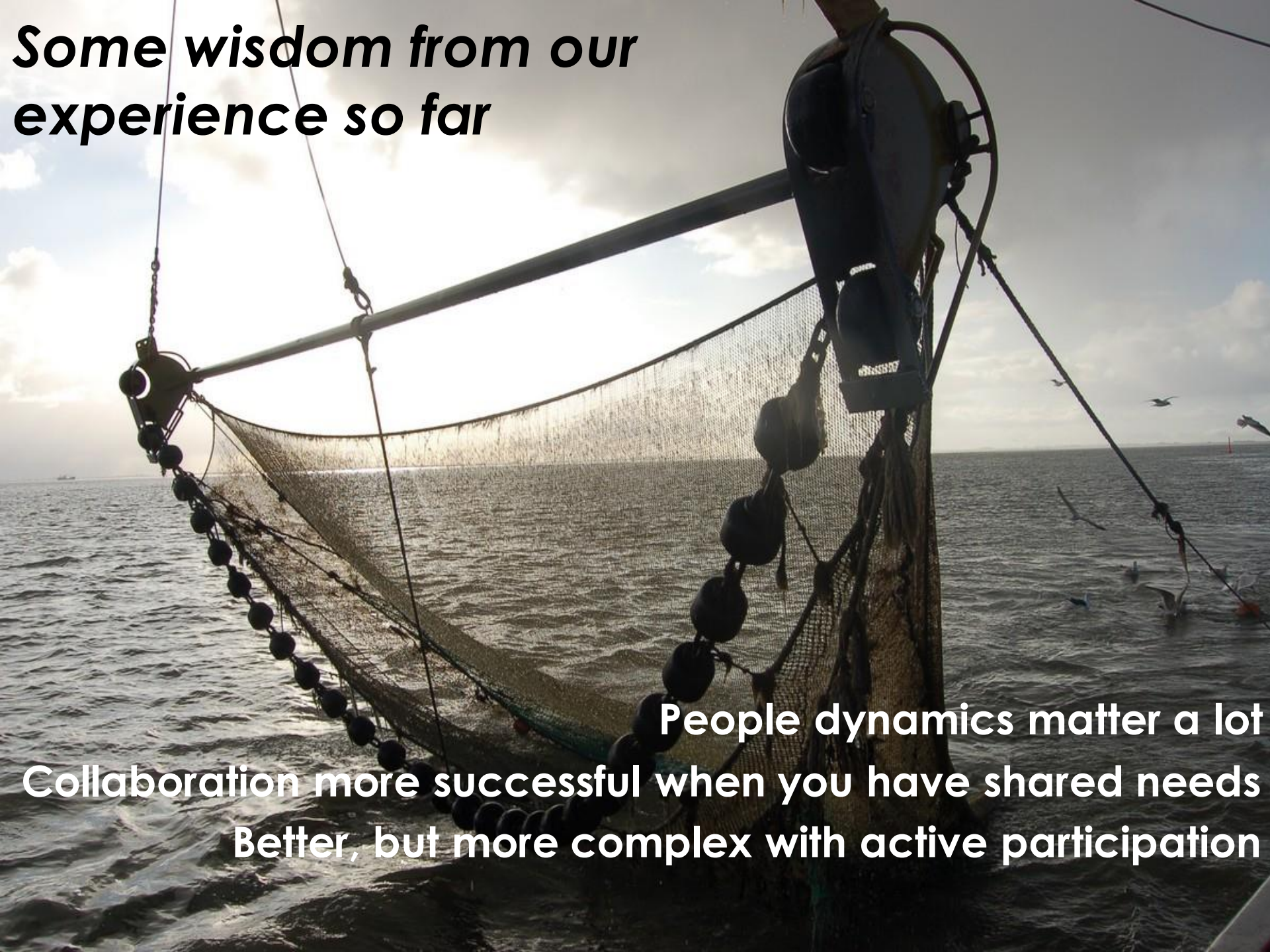
More work to do



Fish growing faster but not reaching as big (little ones heavier, big ones not so heavy)

***Some wisdom from our
experience so far***

**People dynamics matter a lot
Collaboration more successful when you have shared needs
Better, but more complex with active participation**



TRUST

RESPECT

FEELING VALUED

Practical guidance for good design



Need to satisfy

- (i) the value to individuals and the collective needs (ie. multiple ‘what’s in it for me’). Feedback – core design principle.
- (ii) deliver the intended product
- (iii) implemented well – harmonious with and adding value to existing operational practices, with sufficient training/ development and in parallel with/ cognisant of developments in national and international institutional processes that determine whether data from industry programmes have the chance to be applied in stock assessments.



TYPE Original Research
PUBLISHED 21 April 2023
DOI 10.3389/fmars.2023.1075345

Frontiers in **Marine Science**

The road to incorporating Scottish pelagic industry data in science for stock assessments

Steven Mackinson^{1*}, Katie Brigden², Jessica Craig³,
Elizabeth D. Clarke³, Chevonne Angus² and Campbell C. Pert³

¹Scottish Pelagic Fishermen's Association (SPFA), Fraserburgh, United Kingdom, ²Shetland UHI (SUHI),
Academic Partner of the University of the Highlands and Islands (UHI), Shetland, United Kingdom,
³Marine Scotland Science (MSS), Aberdeen, United Kingdom

21 April 2023

<https://doi.org/10.3389/fmars.2023.1075345>

A note on Digitalisation and Scientific Data Collection

FILLING THE DATA GAP

Electronic Monitoring is the Critical Link in Fisheries Management

ELECTRONIC MONITORING

While satellites, drones, vessels and planes can show who's on the water, electronic monitoring (EM) takes our awareness a whole step further—providing specific data on fishing effort, catch composition, and bycatch of non-target species (like sharks or turtles). In contrast to data collected via logbooks or on-board observers, EM data is more reliable, efficient, sharable and cost competitive.

PROVIDING VALUABLE NEW DATA FOR CONSERVATIONISTS AND BUSINESSES



1 EM spots problematic behavior (e.g., shark finning, under-reporting or non-reporting of target catch, like tuna) in legally-licensed fleets.

2 EM drives an evolution from managing fishing “inputs” (number of boats, number of permits) to “outputs” (amount of fish caught)—a shift that's critical for conservation. This change has created incentives for private-sector innovation that are already having an impact.

3 EM creates opportunities for efficiency and value in the seafood supply chain, giving conservationists and fisheries true “bait-to-plate” traceability, as well as the option to place premium prices on sustainably caught fish.



