

Jun 23rd, 12:05 PM - 12:30 PM

Session A4: Monitoring Fish Pass Performance: Towards a European Standard

Emma Washburn
Environment Agency, England

Jon Hateley
Environment Agency, England

Jim Gregory
Environment Agency, England

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Washburn, Emma; Hateley, Jon; and Gregory, Jim, "Session A4: Monitoring Fish Pass Performance: Towards a European Standard" (2015). *International Conference on Engineering and Ecohydrology for Fish Passage*. 3.
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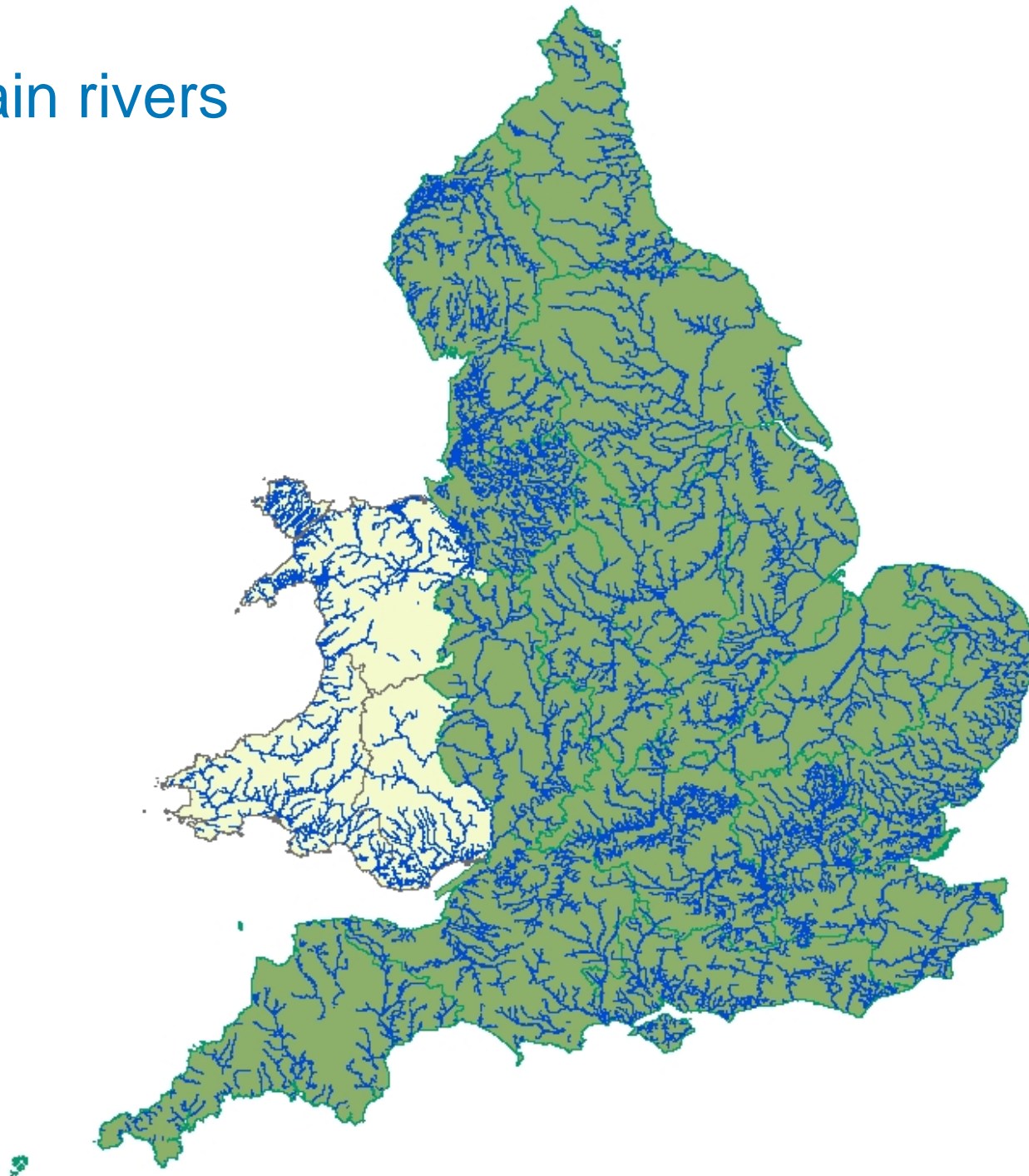
Monitoring fish pass performance: Towards a European standard

Emma Washburn, Jon Hateley & Jim Gregory
Environment Agency, England

Summary

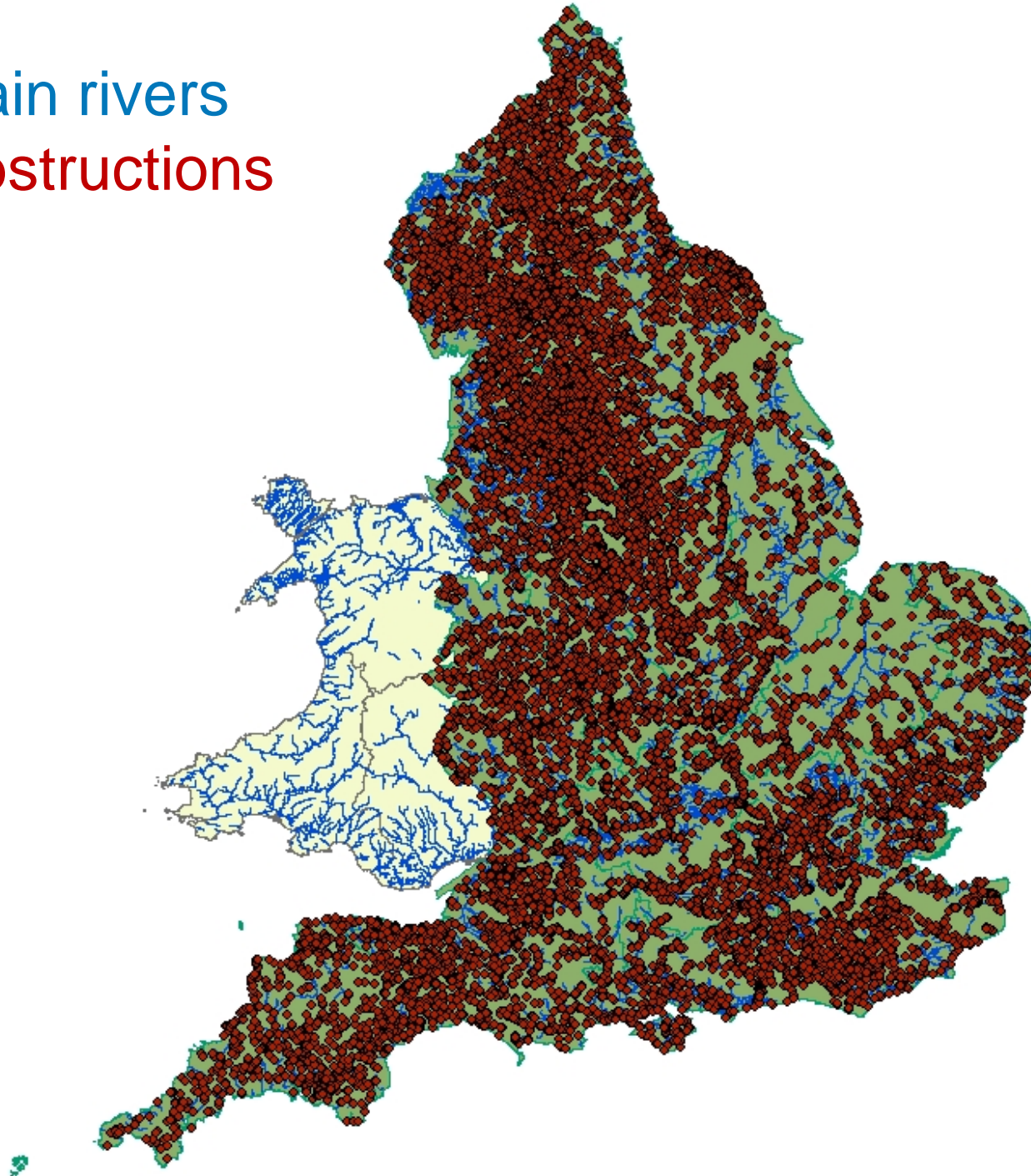
- ➔ The need for standardised fish pass monitoring: My story
- ➔ European Committee for Standardisation (CEN)
- ➔ How a European standard is produced
- ➔ Where we are and what next

Main rivers



Main rivers

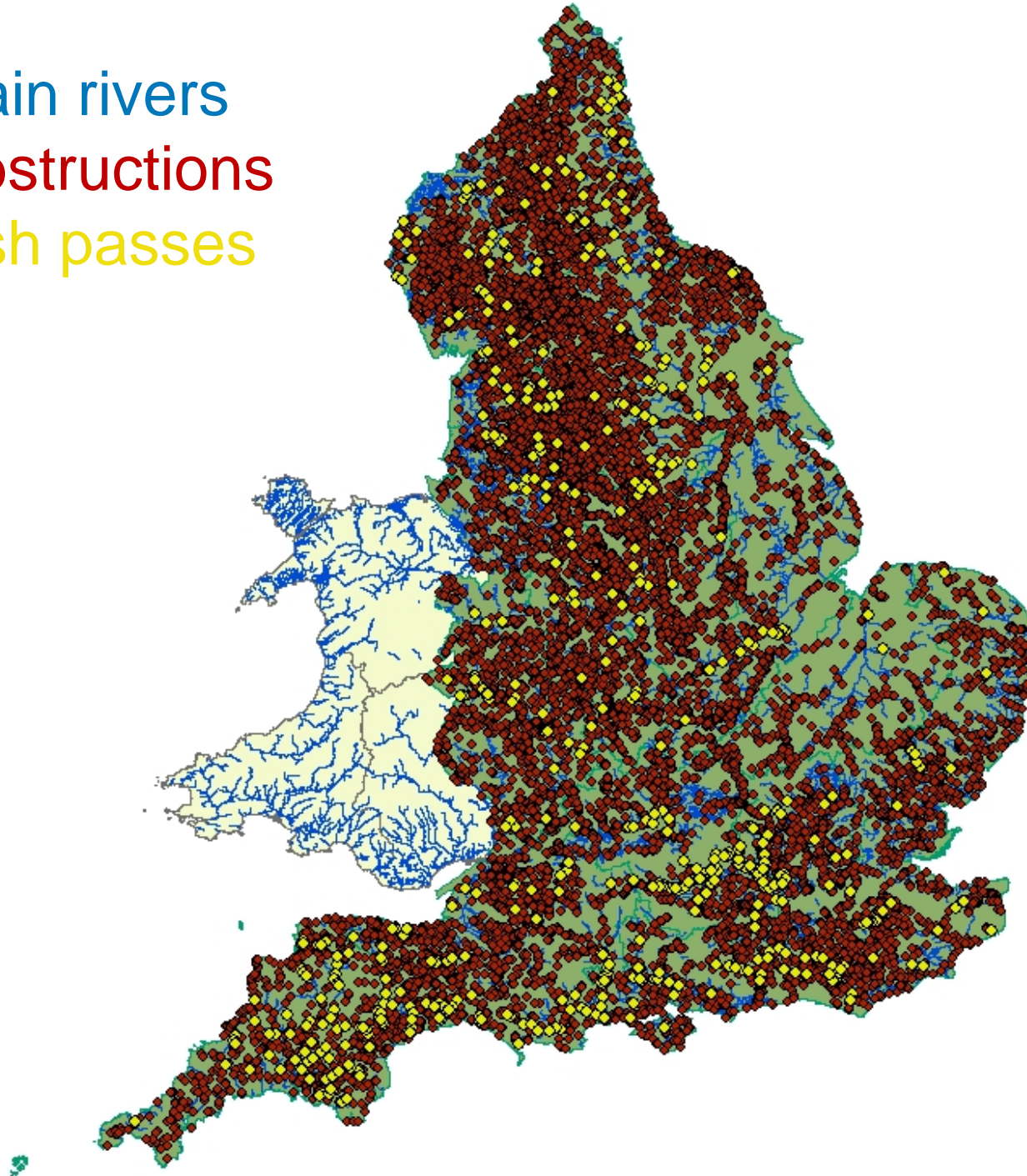
Obstructions



Main rivers

Obstructions

Fish passes

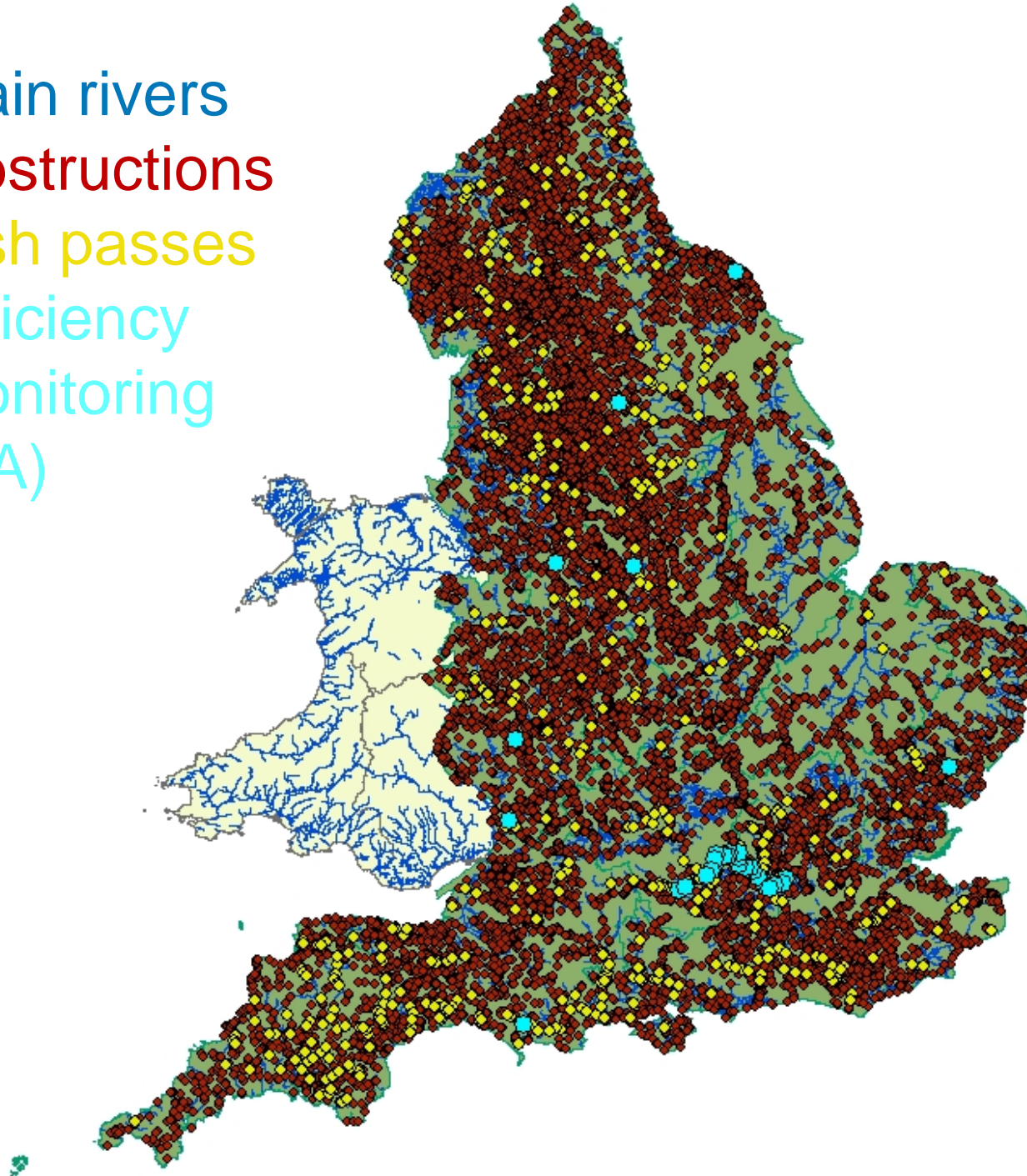


Main rivers

Obstructions

Fish passes

Efficiency
monitoring
(EA)



Problems with comparing: Efficiency metrics

All measuring different things!

Overall fish pass efficiency – The proportion of fish that find and use the fish pass.

Attraction efficiency – The proportion of fish that find the fish pass.

Passage efficiency (of fish pass). – The proportion of fish that use the fish pass.

Obstruction passability – The proportion of fish that get past the obstruction – somehow!

Different ways of dealing with variables....



Tagging
method



Capture
method



Downtime



Delay



Predation



Motivation

Fallback

Release
site

Capture
location

Detection
efficiency

Physiological
effects

Site
characteristics

Location of
monitoring stations

Who cares? Why bother about comparable data?

- ➡ How does the performance of fish pass designs compare?
- ➡ Where are the strengths and weakness in the different designs?
- ➡ Can we improve on current fish pass designs?



Who cares? Why bother about comparable data?

- ➡ Efficiency monitoring studies are expensive:
£15,000 - £140,000 (21,000 – 190,000 euros) to set up and run for a year
- ➡ Pool data and share information



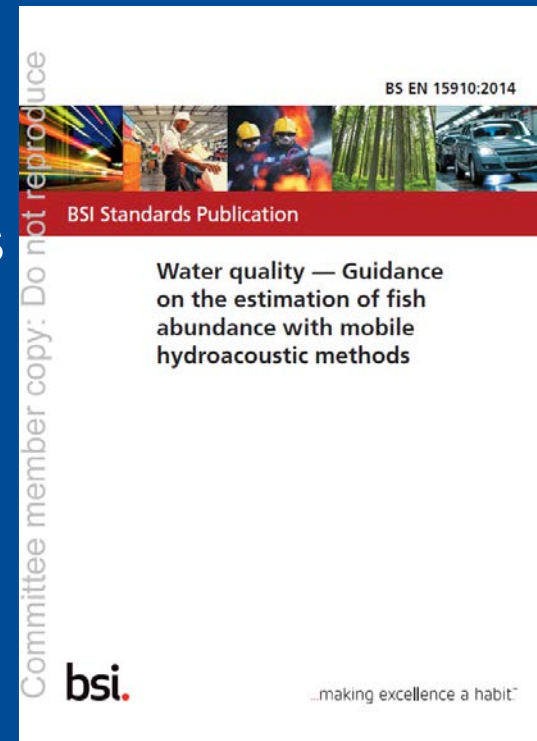
Standardisation



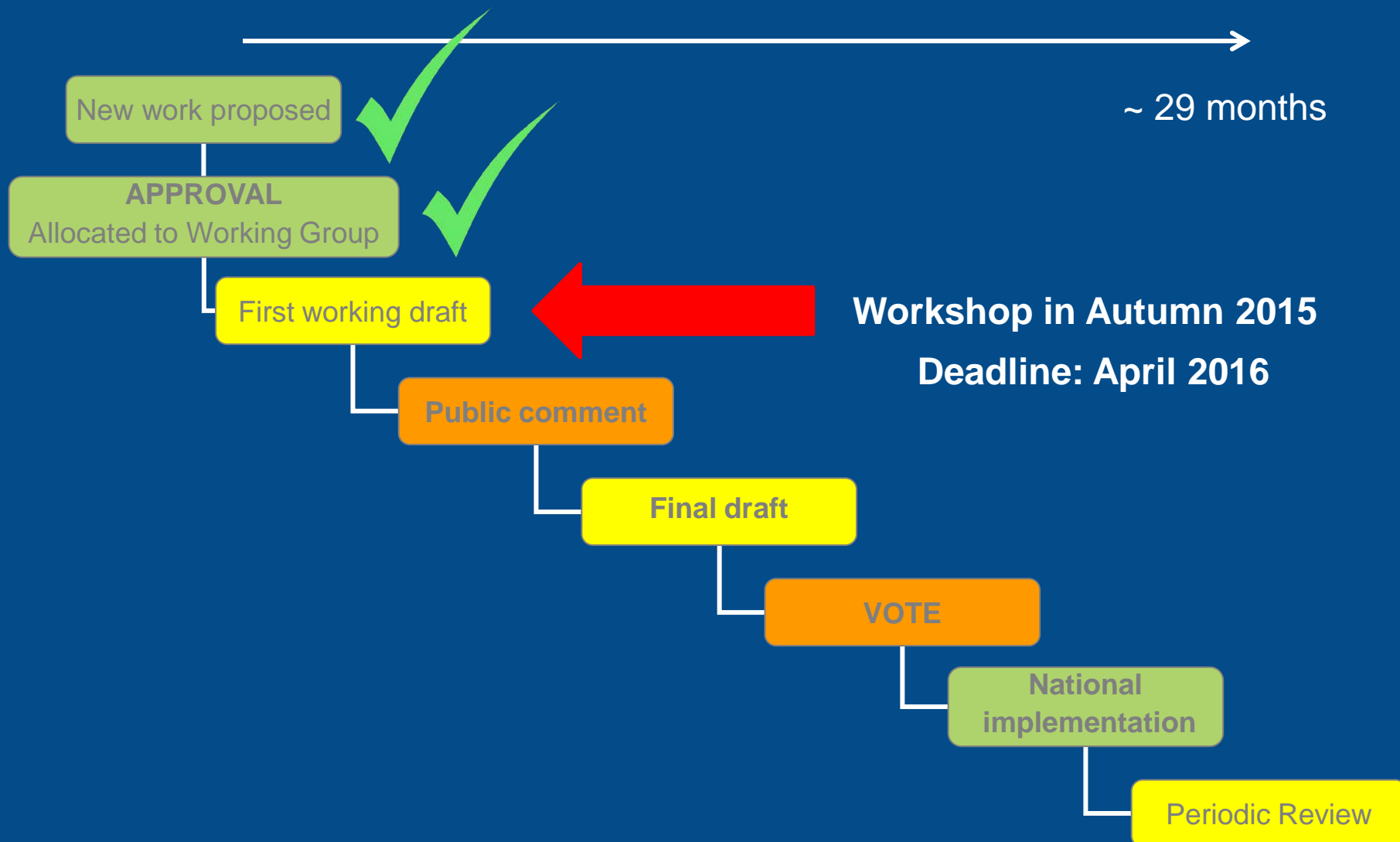
European Committee for Standardization.
'one standard, one test, accepted everywhere'

Published fish monitoring CEN standards:

- Sampling of fish with multi-mesh gillnets
- Sampling of fish with electricity
- Fish sampling methods
- Hydroacoustic methods



How to develop a standard



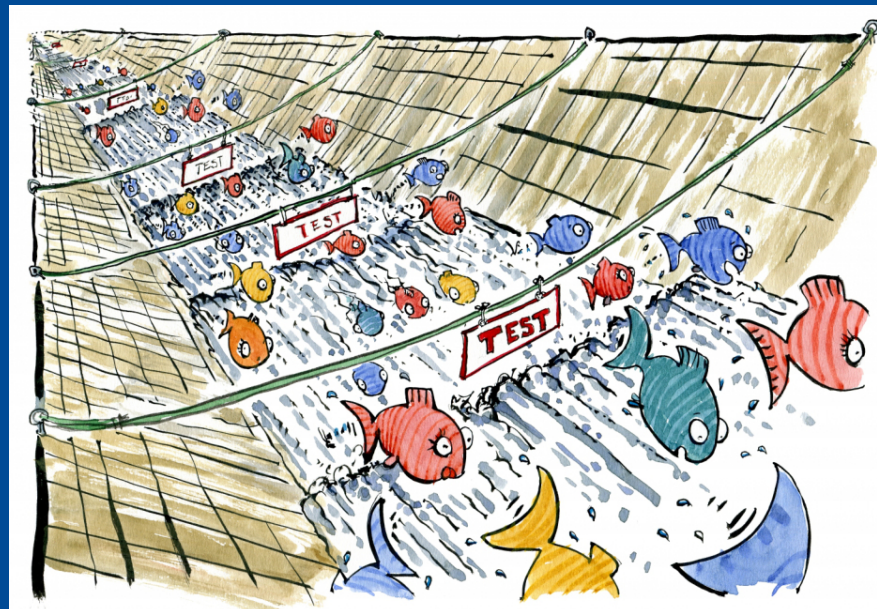
What to include

- Definitions & terminology
- Valid methods & equipment
- Experimental design:
 - Array/ antennae positions
 - Capture & release, handling & tagging
 - Timing & duration of investigation
 - Control/baseline studies
 - Sample sizes
- Analysis:
 - Statistics & data interpretation
- Supplementary data
 - Flow / Velocities
 - Hydrograph
 - Bathymetry



A CEN standard.....

- ➔ Will have a clearly defined scope
- ➔ Is not a 'recipe' for fish pass monitoring
- ➔ Is a set of guidelines - minimum and optimum requirements
- ➔ Is based on best practice
- ➔ Aims to minimise variability and produce internationally comparable data
- ➔ Can refer to other standards
- ➔ Is a group effort!



For further information.....

Come along to the Barramundi Room tonight at 17:50

OR

Contact: emma.washburn@environment-agency.gov.uk

Thank you to everyone who has been involved so far.