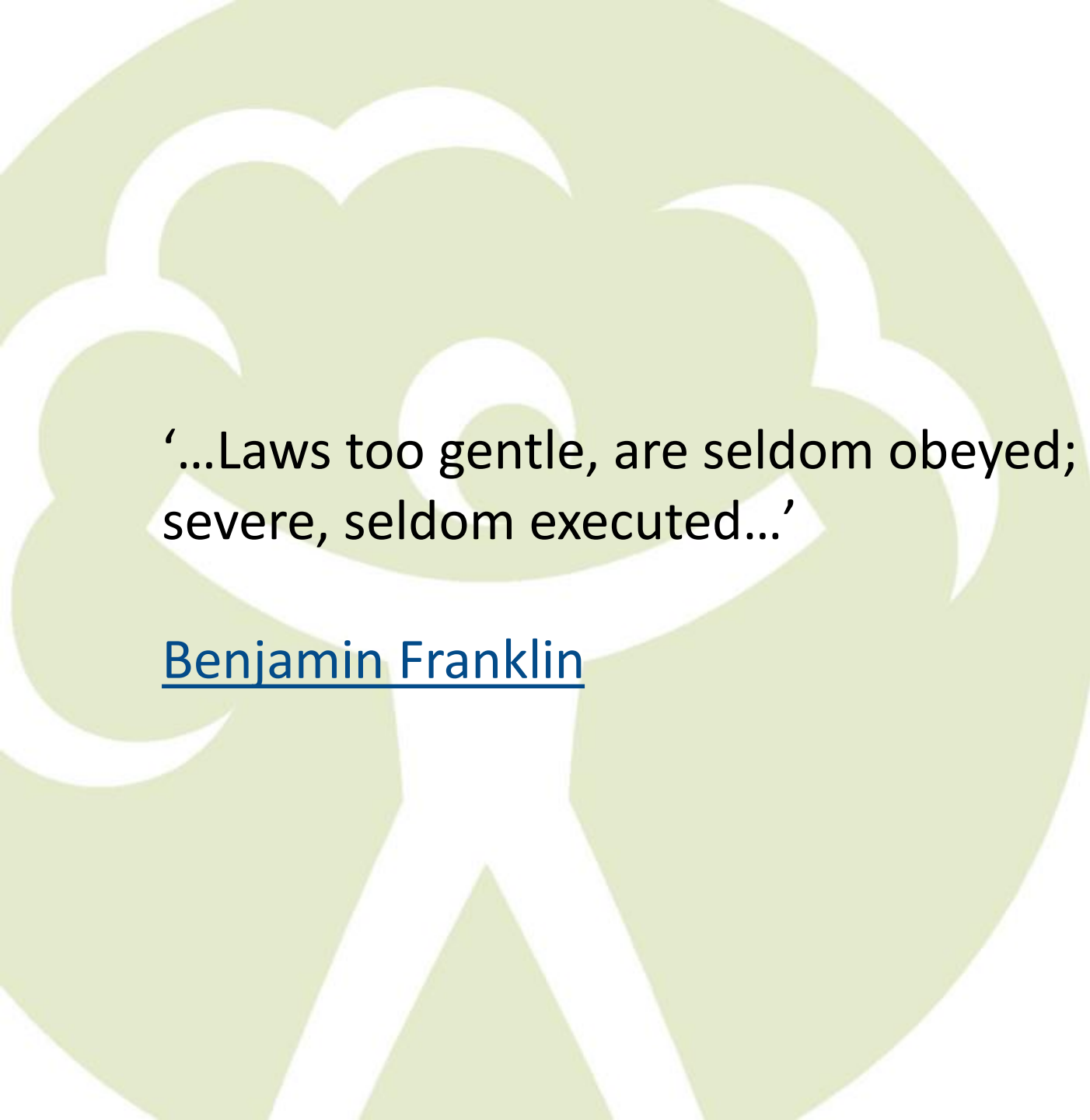


Translating Regulation into Outcome

The eel's migration from statutory to physical protection

Andy Don
National Fisheries Services

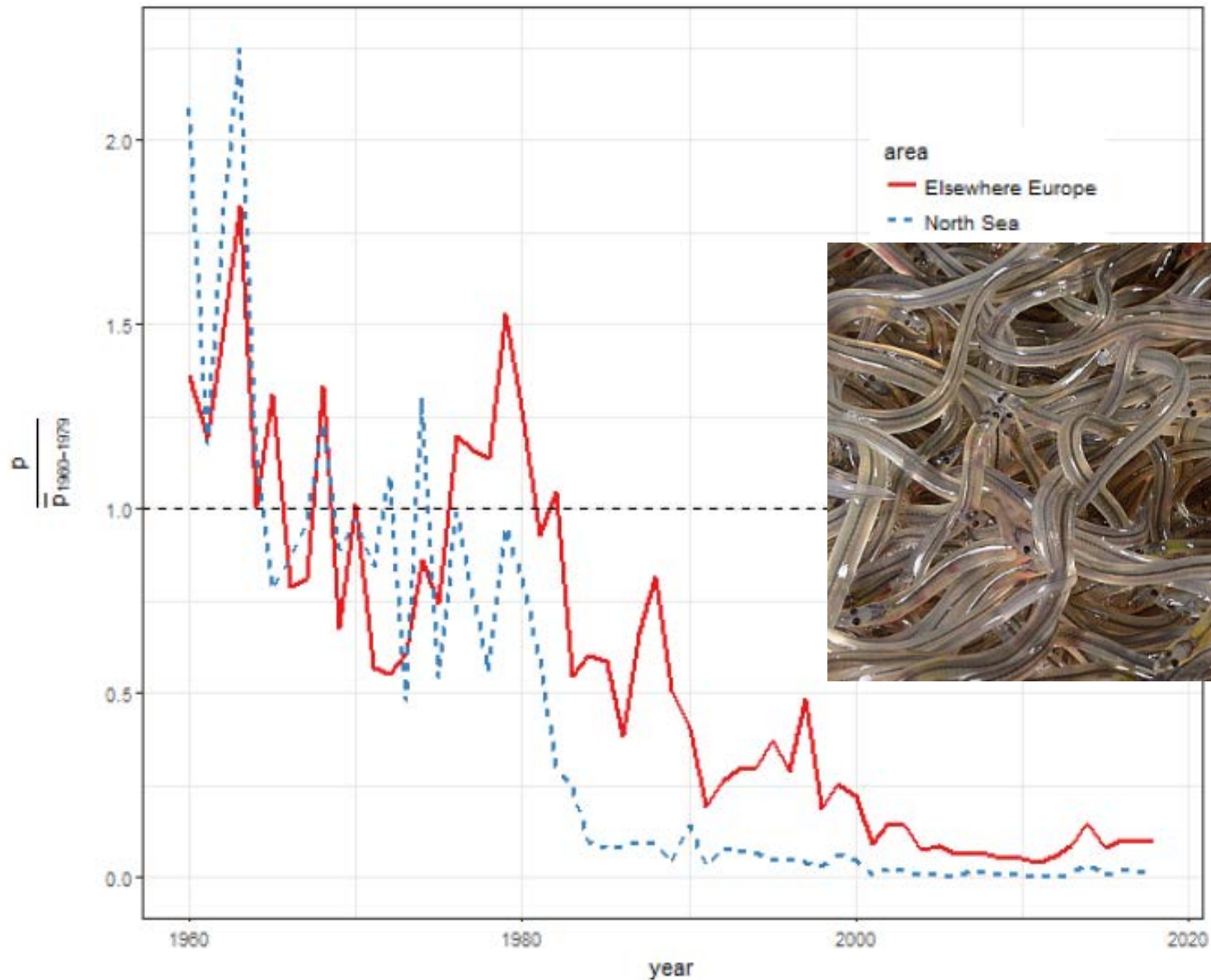
10 yrs of the Sustainable Eel Group, 27.06.19, Natural History Museum, London



‘...Laws too gentle, are seldom obeyed; too severe, seldom executed...’

[Benjamin Franklin](#)

What is it all about...?



The European Eel Regulation (EC 1100/2007)



COUNCIL OF
THE EUROPEAN UNION

Brussels, 14 August 2007
(OR. en)

12031/07

Interinstitutional File:
2005/0201 (CNS)

PECHE 241

22.9.2007 EN Official Journal of the European Union L 248/17

COUNCIL REGULATION (EC) No 1100/2007 of 18 September 2007

establishing measures for the recovery of the stock of European eel

THE COUNCIL OF THE EUROPEAN UNION,

locations where eel are exploited. Priority should be given to action by Member States through the drawing up of Eel Management Plans adjusted to regional and local conditions.

Having regard to the Treaty establishing the European Community, and in particular Article 37 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament (1),

Whereas:

(5) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (2) and Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (3) are intended, inter alia, to protect, conserve and enhance the aquatic environment where eels spend part of their life cycle and it is necessary to ensure that there is coordination and consistency between measures taken under this Regulation and those taken under the aforementioned Directives. In particular, Eel Management Plans should cover river basins defined in accordance with Directive 2000/60/EC.

(1) On 19 July 2004 the Council adopted conclusions concerning the Commission's Communication to the Council and the European Parliament of 1 October 2003 on the development of a Community Action Plan for the Management of European Eel, which included a request to the Commission to come forward with proposals for long-term management of eels in Europe.

(2) On 15 November 2005 the European Parliament adopted a resolution calling on the Commission to immediately submit a proposal for a regulation for the recovery of European eel stocks.

(3) The latest scientific advice from the International Council for the Exploration of the Sea (ICES) concerning European eel is that the stock is outside safe biological

(6) The success of measures for the recovery of the European eel stock depends on close cooperation and coherent action at Community, Member State and local and regional level as well as on information, consultation and involvement of the public sectors involved. To this end support from the European Fisheries Fund may contribute to the effective implementation of Eel Management Plans.

(7) If river basins lying within the national territory of a Member State cannot be identified and defined as constituting natural habitats for the European eel, it should be possible for that Member State to be exempted from the obligation to prepare an Eel Management Plan.

(8) In order to ensure that eel recovery measures are effective and sustainable, it is necessary that Member States identify

LEGISLATIVE ACTS AND OTHER INSTRUMENTS

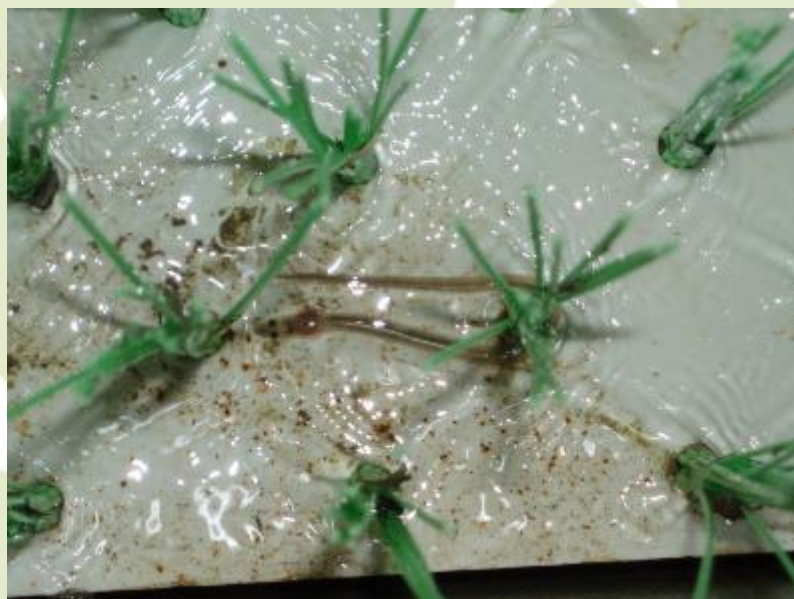
Subject: COUNCIL REGULATION establishing measures for the recovery of the stock of European eel



Environment
Agency

The Eels (England & Wales) Regulations 2009 Statutory Instrument

‘The Eel(s) Regs.’



STATUTORY INSTRUMENTS

2009 No. 3344

FISHERIES, ENGLAND AND WALES

RIVER, ENGLAND AND WALES

The Eels (England and Wales) Regulations 2009

Made - - - - 14th December 2009
Laid before Parliament 21st December 2009
Laid before the National Assembly for Wales 21st December 2009
Coming into force - - 15th January 2010

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Passage of eels

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The main impacting factors on eel populations

Exploitation,
Access/migration barriers,
Entrainment, Loss of habitat,
Predation, Water quality/pollution,
Pathogens & parasites,
Climate change/oceanic factors



The Eel Regs

Part 1 Context and definitions

Parts 2 & 3 Regulation of commercial and recreational eel fishing. Plus 60% for restocking

Part 4 The passage of eels.

Part 5 Notices and Appeals

Part 6 Enforcement and Penalties

We had to:

- Design a process
- Train and support staff
- Get 'responsible persons' to understand The Regulations, the process and their obligations.....and act on them(!)

Scale of the challenge:

Qualifying sites range from this:



to this:



Needed to adopt a 'risk-based approach' to implementation

Prioritisation: A Two Stage Approach

Stage 1. Filter **26,000** potential obstructions / **21,000** abstractions down to a “useable” number.

- Standardized Process
- identify those with highest geographical significance.
- Use Nationally managed and maintained Datasets and GIS tools

Based on criteria such as:

Distance from Head of Tide

Relative Size

Predicted presence of Eel from Fisheries Classification Scheme (FCS2)

Water body abstraction “Sensitivity” (from CAMS)

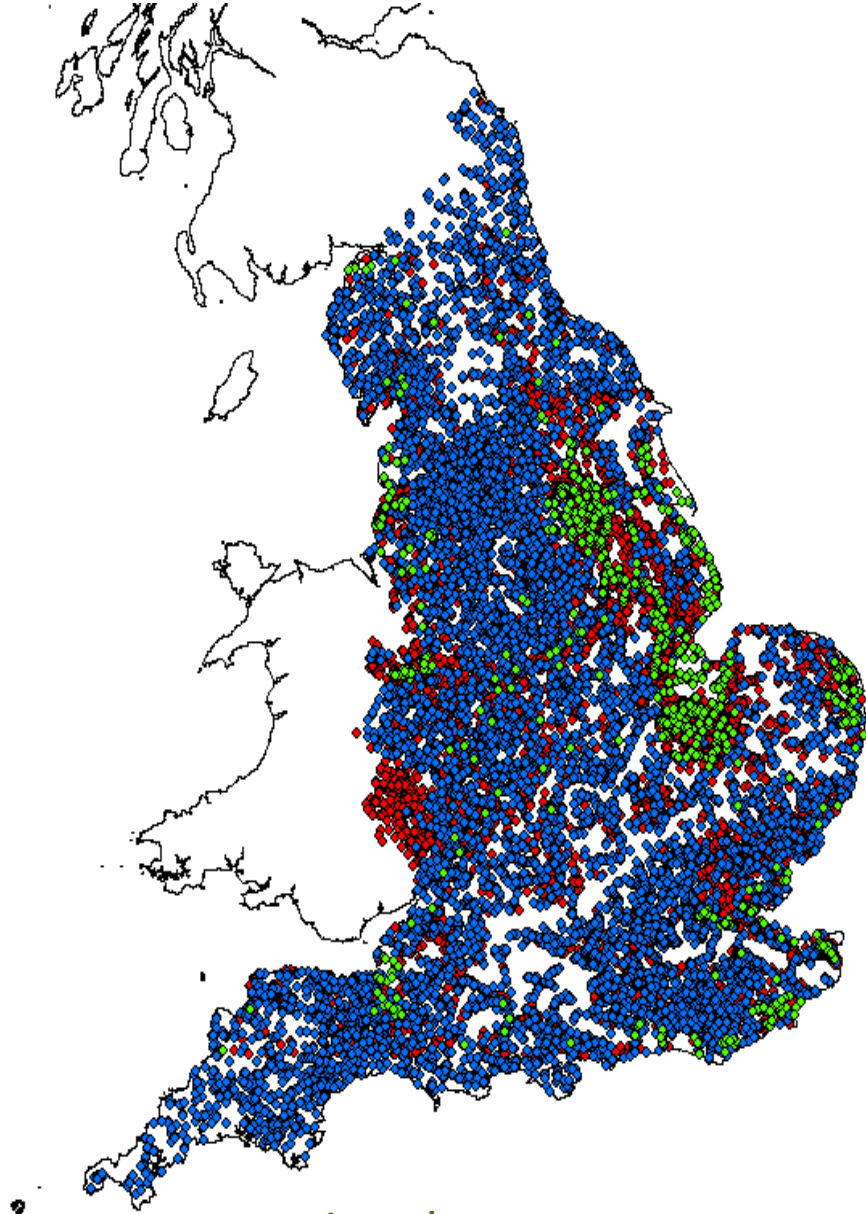
Length of stream opened

Proportion of catchment opened

Number of barriers downstream

Stage 2. Local Consultation

“Wise up” the filtered list.

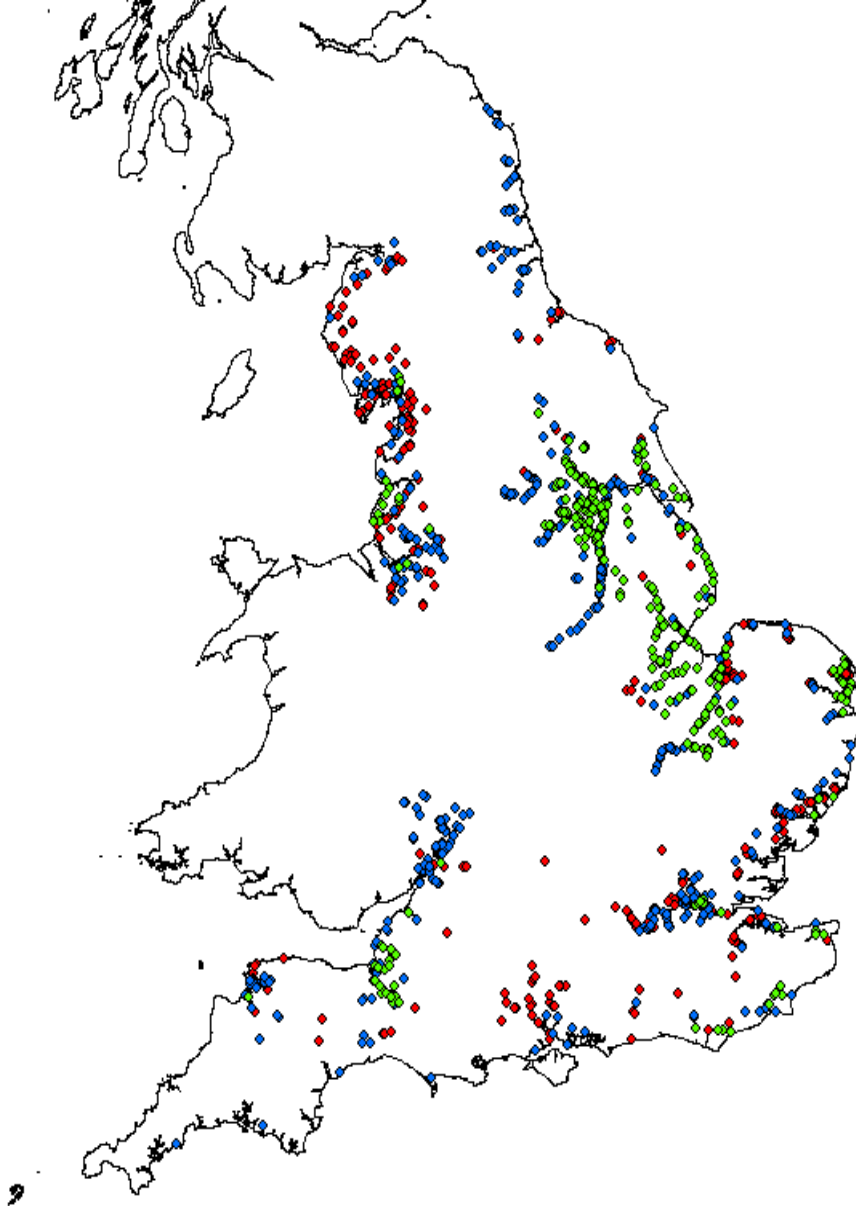


Legend:

Abstractions – Red

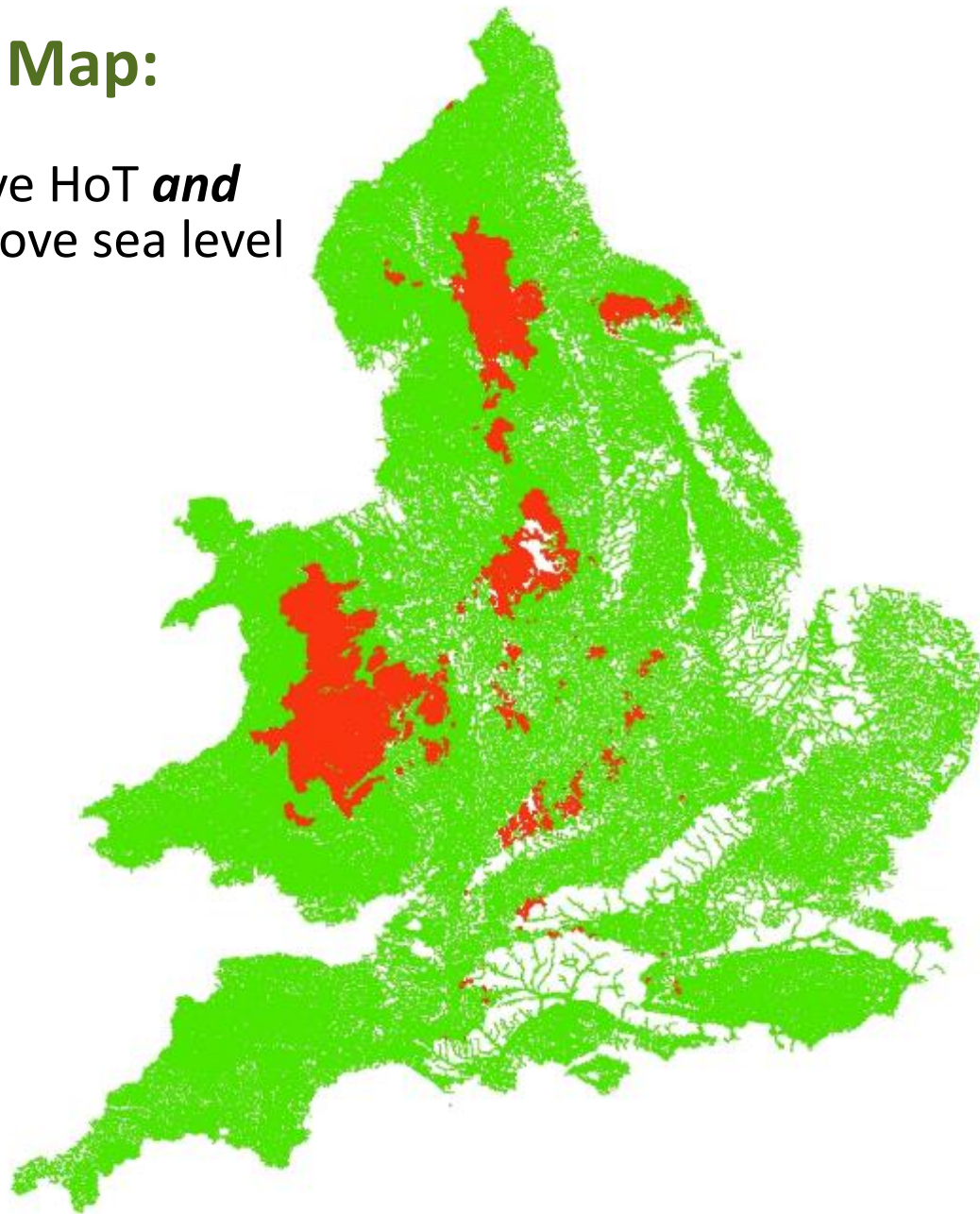
Obstructions – Blue

Pumping Stations – Green



Eel Risk Map:

Sites >100km above HoT ***and***
>150m altitude above sea level



The Eel Manual: an overview

GEHO0211BTMU-E-E

The plight of the European Eel (*Anguilla anguilla*)

Scientists e
to less than
throughout
for eel.



Monitoring elver and eel populations

The Eel Manual – GEHO0211BTMY-E-E



Stocking European Eel (*Anguilla anguilla*)

The Eel Manual - GEHO0211BTMX-E-E



Screening at intakes and outfalls: measures to protect eel

The Eel Manual – [GEHO0411BTQD-E-E](#)

Elver and eel passes

A guide to the design and implementation of passage
solutions at weirs, tidal gates and sluices

The Eel Manual— GEHO0211BTMV-E-E

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Please input data into this sheet, as described in the 'Guidance' tab. *Column for info only; can be hidden if preferred										WFD catchment impro			
2														
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8	Example	1002	Catchment Bundle	Two bundles together	West Cornwall and the Fal	South West		Nitrates	Physical Modification		improvement	5		
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Vs



Safe Passage for Eel:

Alternative Measures (where best practice screening is not cost beneficial for existing sites)

What's this document about?

This guidance supports the [Safe Passage for Eel Guidance of Exemptions](#) and it should be read in conjunction with this management system document. This document specifically deals with sites that require works under Part 4 of the Eels (England & Wales) Regulations, 2009 but via the [economic appraisal process](#), are deemed not cost beneficial for best practice screening. We have introduced Alternative Measures to ensure that asset owners do all that is reasonable to protect eel.

When should I use this guidance?


This document has been written for existing sites only. If, having carried out a [cost benefit analysis](#) for the **existing site**, the results show that it is **not** cost beneficial to achieve best practice screening, you will need to refer to the following guidance to decide what Alternative Measures are appropriate at the site and should be included as a condition on the exemption notice. It may also be necessary to use this document if you believe that best practice screening is not feasible for another accepted reason (for example health and safety at nuclear plants).

For **new build sites** we expect best practice screening to be intrinsic to the design of the scheme. Please refer to the Safe Passage for Eel Operational Instruction section - [Applying the regulations, New abstractions, impoundments and in-river works](#).

Key

Denotes suggested Alternative Measures by sector
(NB: the split by sector is for guidance only. There may be sites that fall outside of this sector split).

Table A: Alternative Measures by Engineered solutions

Most to least Preferred Option	Alternative Measures Options by Engineered Solution	Is Table C required?	Sector							
			Nuclear	Combustion	Water	Environment Agency	Hydropower (must also consider existing hydropower guidance)	Agriculture, Canal & Rivers Trust, NGOs, National Trust, Private Landowner	IDBs	Refineries, Chemical Works, Steel Works, Incinerators Paper & Pulp
	Improve existing screening but to a lesser standard than Best Practice, for example increasing the slot width or the intake velocity and including a Fish Recovery Return (FRR) system and monitoring*	No								
	FRR installed onto existing drum/band screen	No								
	Fish friendly pump or turbine installed (where through-passage is beneficial)	No								
	Improve existing screening but to lower than BP gap size/approach velocity specifications inc. monitoring*	Decided via Local Area Assessment **								
	Improvements made to existing FRR system	Decided via Local Area Assessment **								
	Eel-specific bypass added e.g. bed bypass, Venturi attracting flows	Decided via Local Area Assessment **								
	KLAWA (or other approved) silver eel bypass system added	Consult Screening Helpdesk								
	Intake flows altered by the addition of flow deflectors/baffles	Yes								
	Intake location altered	Yes								
	Behavioural deterrent added with monitoring*	Yes								

Sector compliance and implementation



Accessible Solutions:

Efficiency of "bel Tiles" for upstream migrating glass eel (*Anguilla anguilla*) ascending an experimental Crump weir

Andrew Vowles, Andy Don, Peri Karageorgopoulos, and Paul Kemp

Background

In the UK, riverine barriers, normally defined as up to 1.5m high and 1.5m wide, are being replaced by low-level barriers to facilitate upstream migration of glass eels. The design of the barrier is critical to its effectiveness and the following information is provided to assist in the design of such barriers.

Aim

To assess the effectiveness of "bel Tiles" for facilitating upstream passage of glass eels through an experimental Crump weir.

Objectives

- Quantify the effectiveness of "bel Tiles" in facilitating upstream passage of glass eels through an experimental Crump weir.
- Compare the passage of glass eels through "bel Tiles" with the passage of glass eels through a standard Crump weir.
- Determine whether "bel Tiles" can be used as a cost-effective solution for facilitating upstream passage of glass eels.

Methods

An experimental Crump weir was constructed in a laboratory setting. The weir was 1.5m high and 1.5m wide. The "bel Tiles" were 1.5m high and 1.5m wide. The "bel Tiles" were placed on the weir. The passage of glass eels was recorded. The results were compared to the passage of glass eels through a standard Crump weir.

Results

- The "bel Tiles" were found to be effective in facilitating upstream passage of glass eels.
- The passage of glass eels through "bel Tiles" was significantly higher than the passage of glass eels through a standard Crump weir.
- The "bel Tiles" were found to be a cost-effective solution for facilitating upstream passage of glass eels.

Conclusions

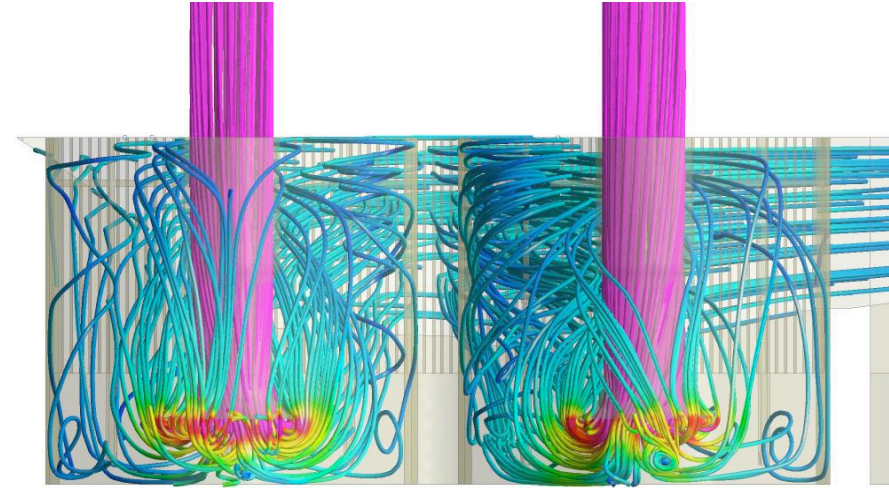
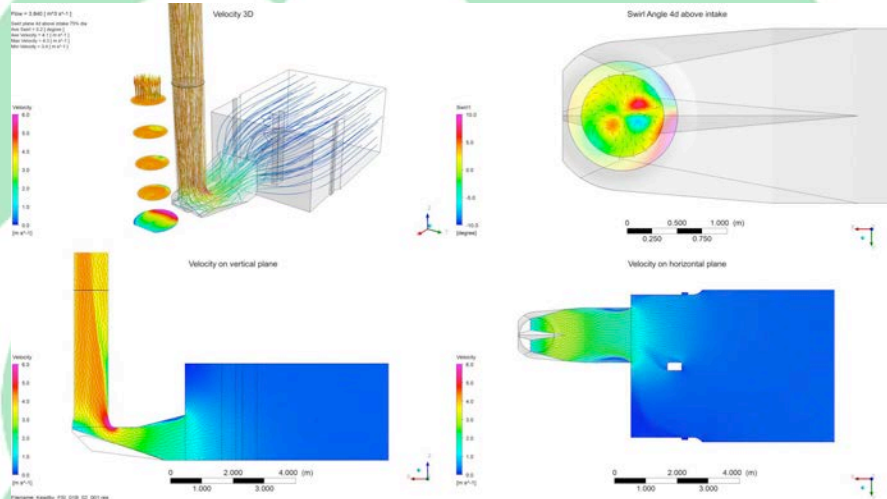
The "bel Tiles" were found to be an effective solution for facilitating upstream passage of glass eels. The passage of glass eels through "bel Tiles" was significantly higher than the passage of glass eels through a standard Crump weir. The "bel Tiles" were found to be a cost-effective solution for facilitating upstream passage of glass eels.

ICER

Dr. Andrew Vowles
Email: av104@psn.ac.uk



Evidence and Guidance, and therefore solutions are all dynamic:



Fish friendliness of the pump according to REEN 8775 is presented in mortality charts below. With the red dots the maximum duty points are highlighted.

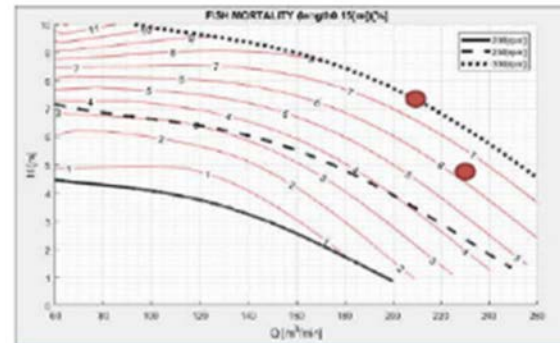
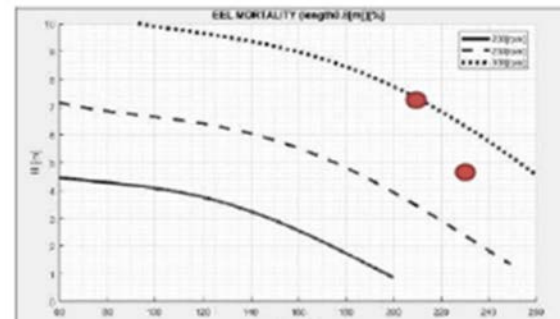


Figure 13: Mortality chart scaly fish



HIFI Research & REDEEM Project Overview



Jon Bolland

Hull International Fisheries Institute



EELS

BIOLOGY, MONITORING, MANAGEMENT,
CULTURE AND EXPLOITATION



PROCEEDINGS OF THE FIRST
INTERNATIONAL EEL SCIENCE
SYMPOSIUM

EDITED BY
ANDY DON
PAUL COULSON





Thank you for listening!

