

# IBBI symposium - Netherlands Feb 2025



## Risk Management – a British Perspective

Krzysztof Dabrowski and Elly Andison (Environment Agency)

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2. National risk management approach
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## Environment Agency

Work to create better places for people and wildlife, and support sustainable development

Ian Hodge: Director Asset Management & Engineering. Flood Risk Management

James Addicott: Manager Engineering and Technical Assurance

Krzysztof Dabrowski: Advisor, Species Recovery Team (Beaver), Nature Recovery

Elly Andison: Senior Advisor, Species Recovery Team (Beaver), Nature Recovery

10,800

## Natural England

Government adviser for the natural environment in England. We help to protect and restore our natural world.

Jake Chant: National Beaver Officer, Species Recovery and Reintroduction, Strategy and Government advice.

Giles Wagstaff and Amy Radford: Complex Case Unit

Claire Howe: Senior Specialist, Mammals, Chief Scientist Directorate

2,000

## Expert advisor

Roisin Campbell-Palmer

Independent expert to EA and NE

Author – welfare, mitigation,



+ many others





# Who manages the water infrastructure in GB?

## England

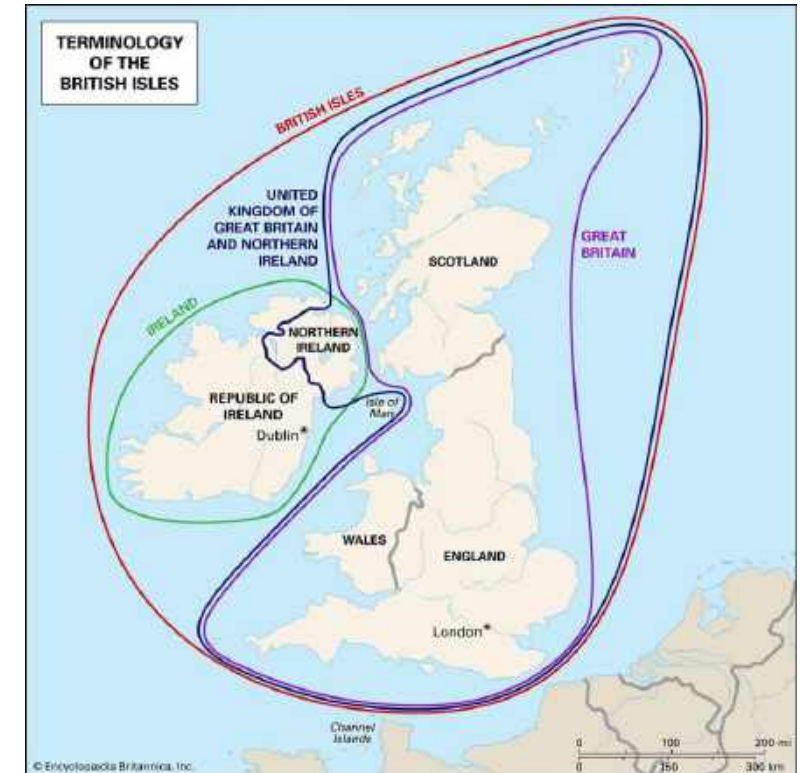
- Main rivers - Environment Agency
- Ordinary watercourses - local authorities,
- Others - IDBs, water companies, Highways England, Network Rail

## Scotland

- Rural context – landowners responsible for river and flood banks
- Communities with flood risk – Local authorities
- Scottish Environmental Protection Agency - Regulators and strategic flood risk management
- Others - Scottish Water, SSE (hydro), Network Rail, Transport Scotland or local authorities (roads)

## Wales

- Natural Resources Wales
- Local Authority



# National risk management approach

## Biodiversity

Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations') - protection

Wildlife and Countryside Act 1981 – licensing

Natural Environment and Rural Communities Act 2006, section 40 'biodiversity duty' - public authorities have to conserve and enhance biodiversity

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 – physical interventions

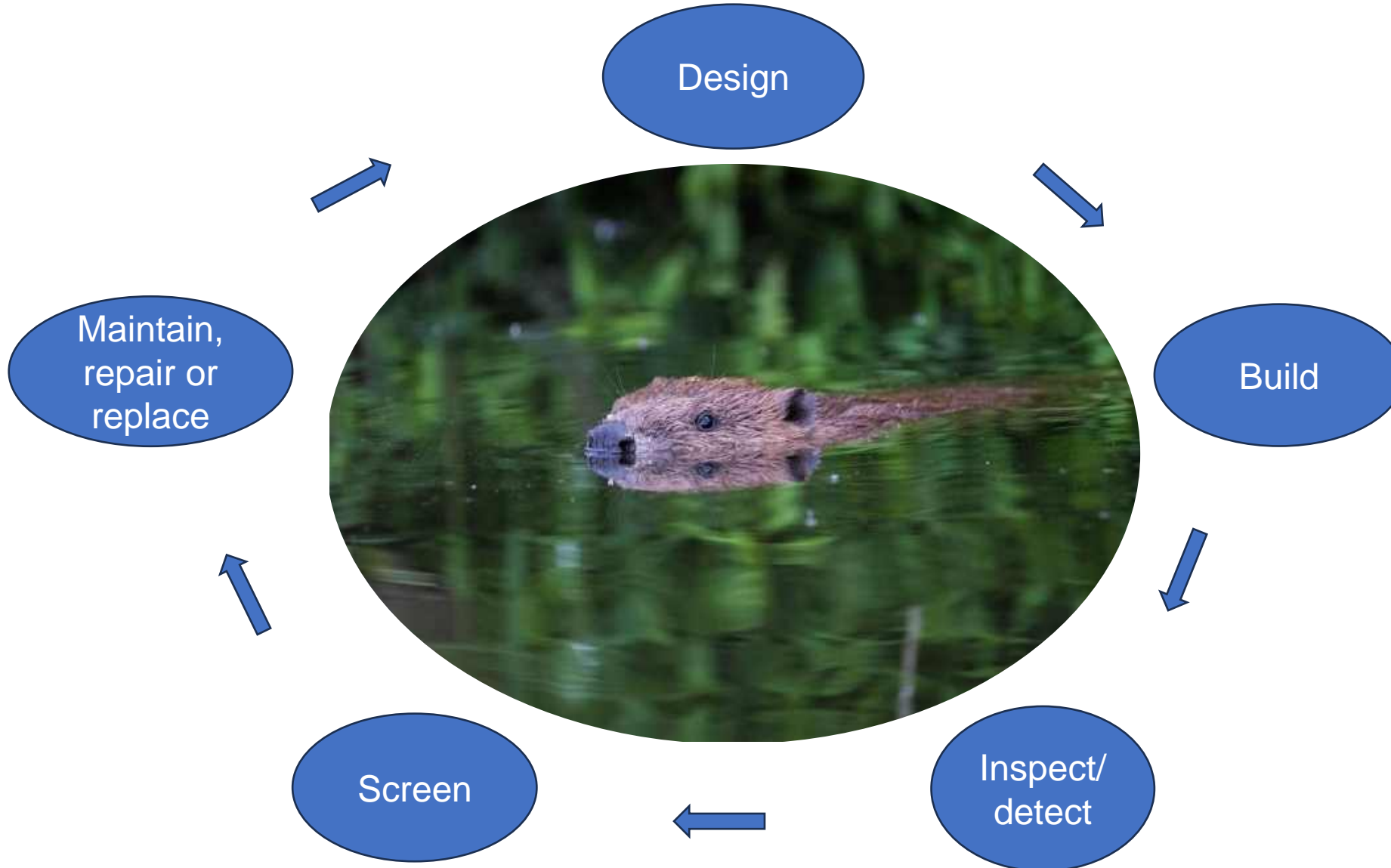
## Flood and Coastal Risk Management (FCRM)

Flood and Water Management Act 2010

Reservoirs Act 1975

Environmental Permitting Regulations (England and Wales) 2016

# Life cycle of assets



Understanding the different risks at the different stages

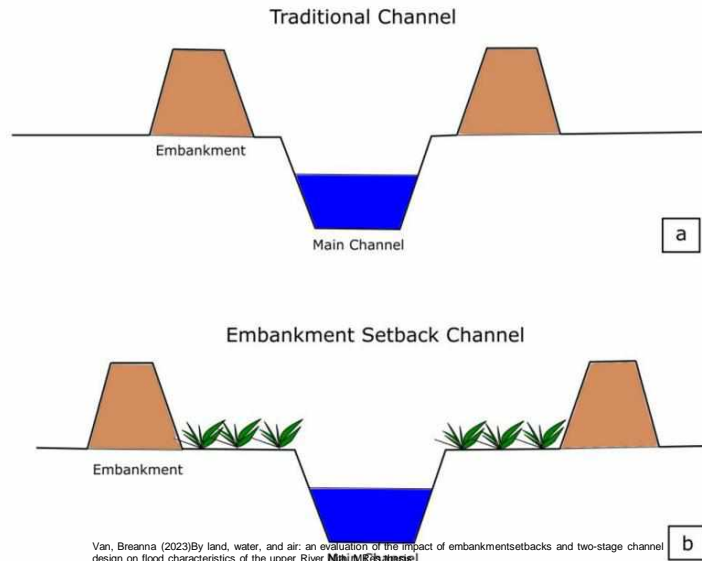
Risk = probability x consequence

Proportionate & appropriate response

# Asset management

EA Assessment methodology created for:

- Maintenance programme
- Capital programme



Van, Breanna (2023) By land, water, and air: an evaluation of the impact of embankment setbacks and two-stage channel design on flood characteristics of the upper River Mersey



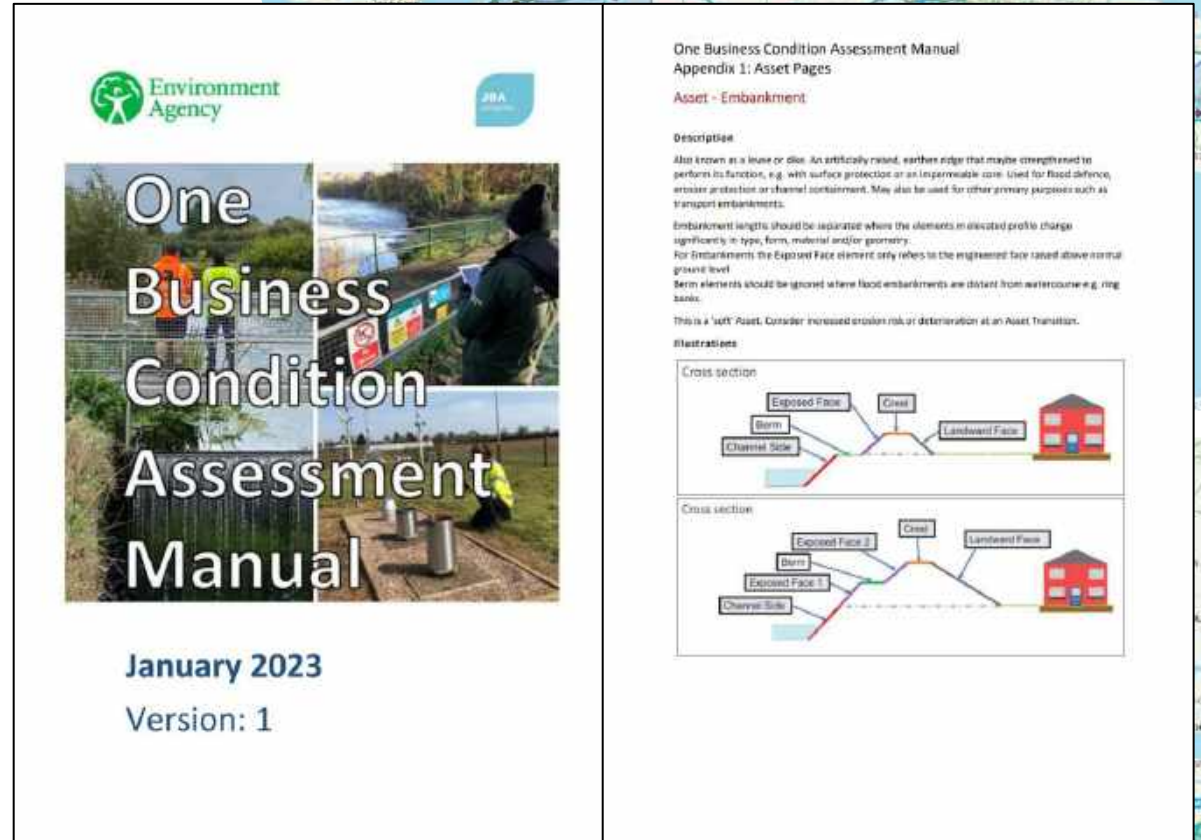


# Asset management

EA Assessment methodology created for:

- Maintenance programme
- Capital programme

Methodology in development for asset by asset 'vulnerability' assessment





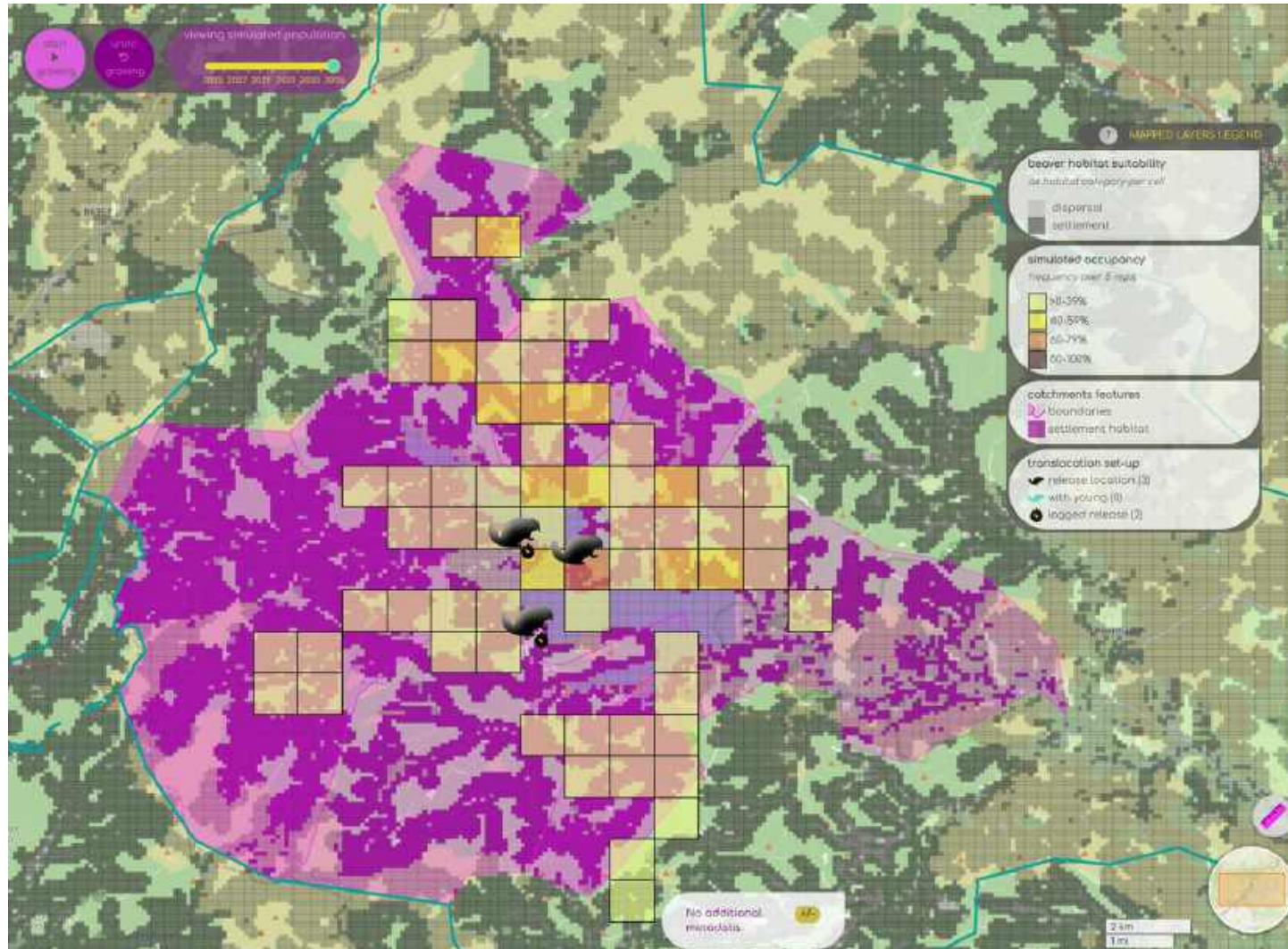
# Use of tools, models, assessment/mapping

To bring biodiversity and FCRM together

- Beaver population simulation app
- Dam capacity model
- Beaver foraging index
- Hydrology (DCM + modelling flow)
- Beaver Impact Assessment Toolkit (BIAT)



# Beaver Population Simulation App



# Tools for assessing risk - damming



## Dam Capacity Model

Low (0) to high likelihood (30 dams/km)

## Beaver Foraging Index





# Tools for assessing risk - damming

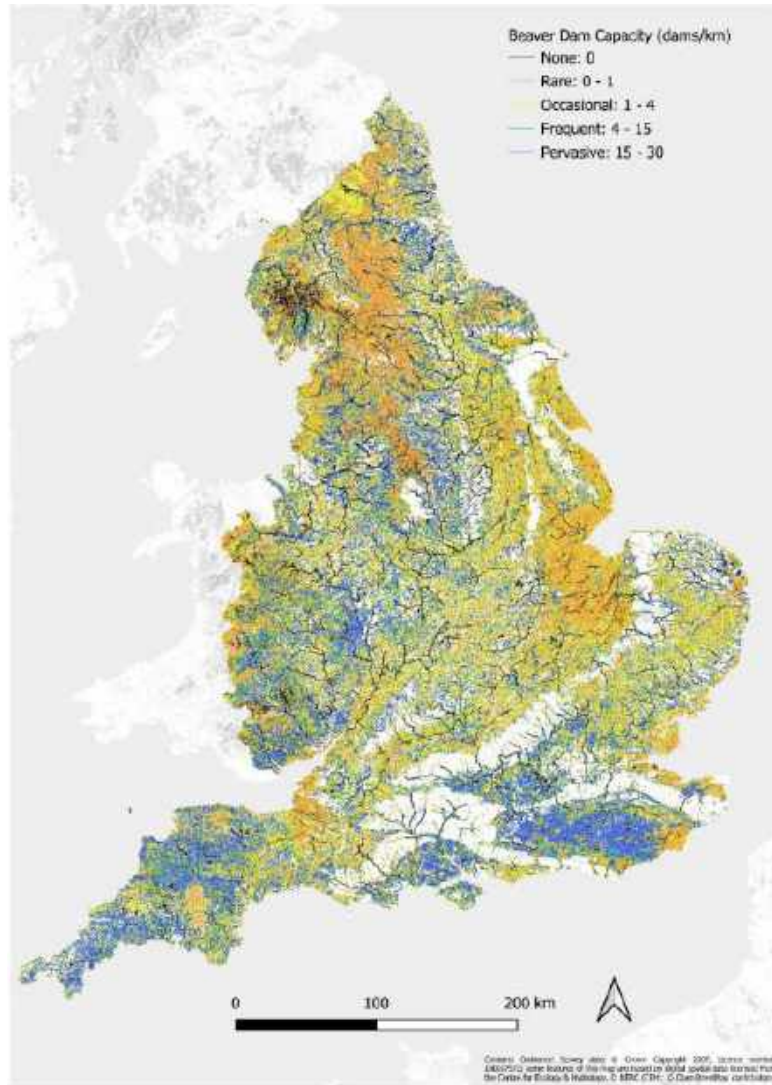


Figure 1: Beaver Dam Capacity (EDC) of English river network

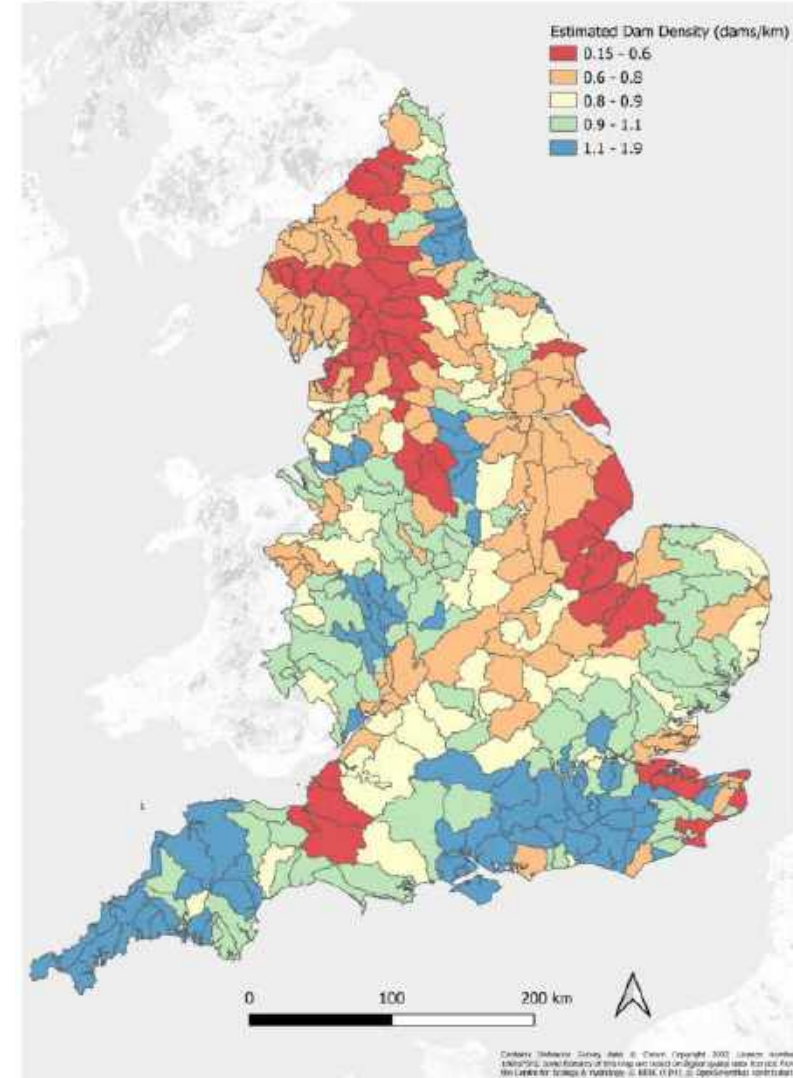
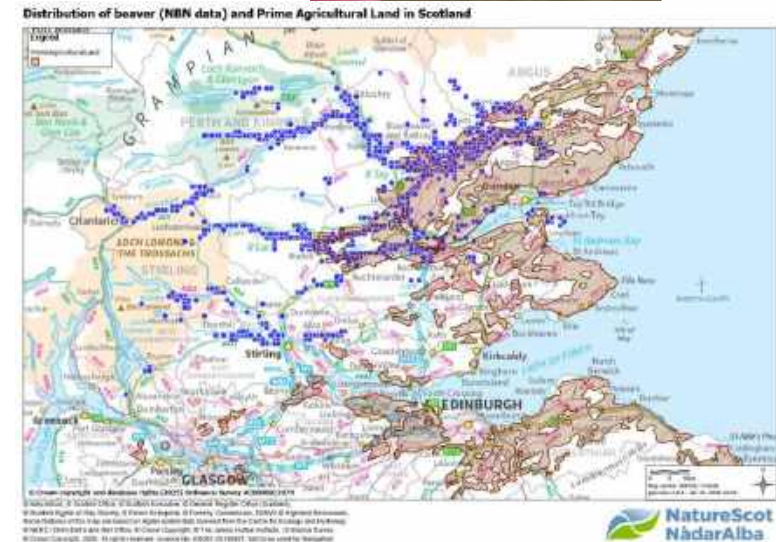


Figure 4: Estimated dam density for English Operational Catchments

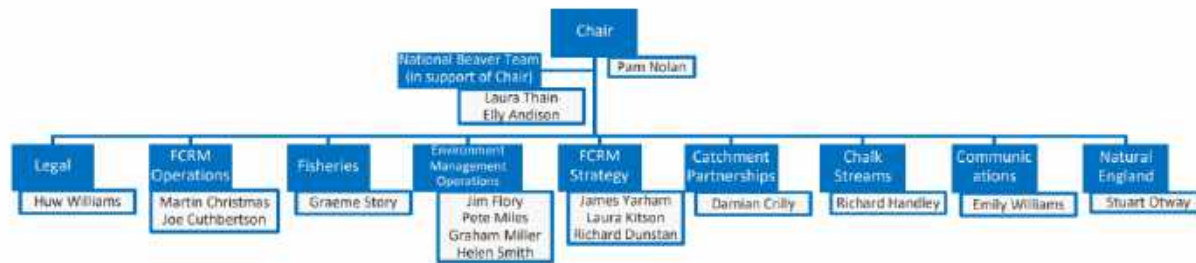
# Assessment in Scotland

- Looking at detection methods ground survey, boat & drone based sonar and drone based radar. Blog <https://scotlandsnature.wordpress.com/2024/11/14/new-tech-helps-shed-light-on-beaver-burrows/>
- App for recording site visits incorporating risk matrix
- Would like to model/develop proactive assessment incorporating hydromorphological risks.



# Governance and specialists

## Beaver Steering Group



## National Beaver Team



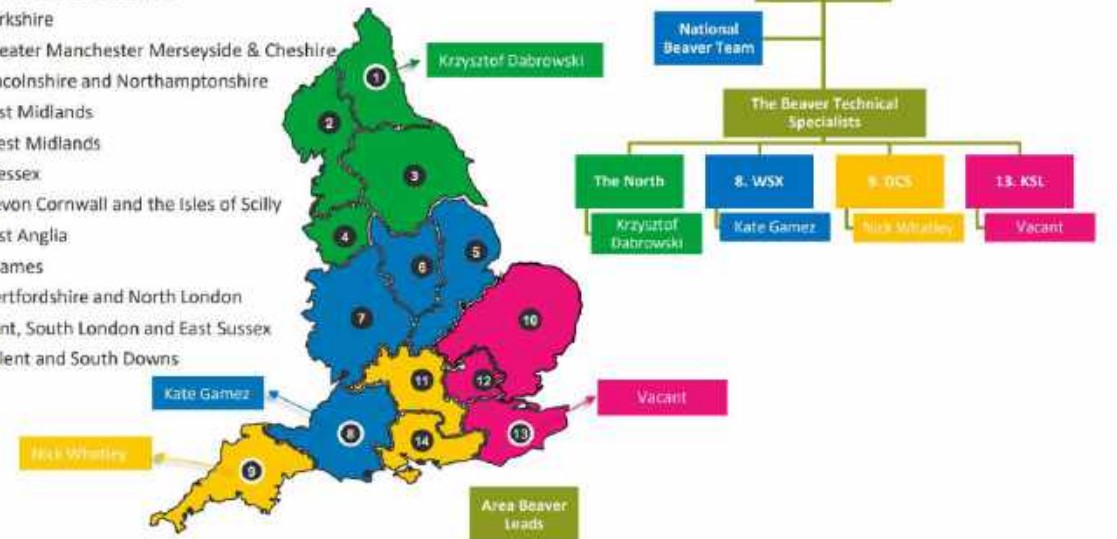
## The Virtual Beaver Team



## Beaver Contacts in each Area

### Beaver Technical Specialists (BTS) working in hubs

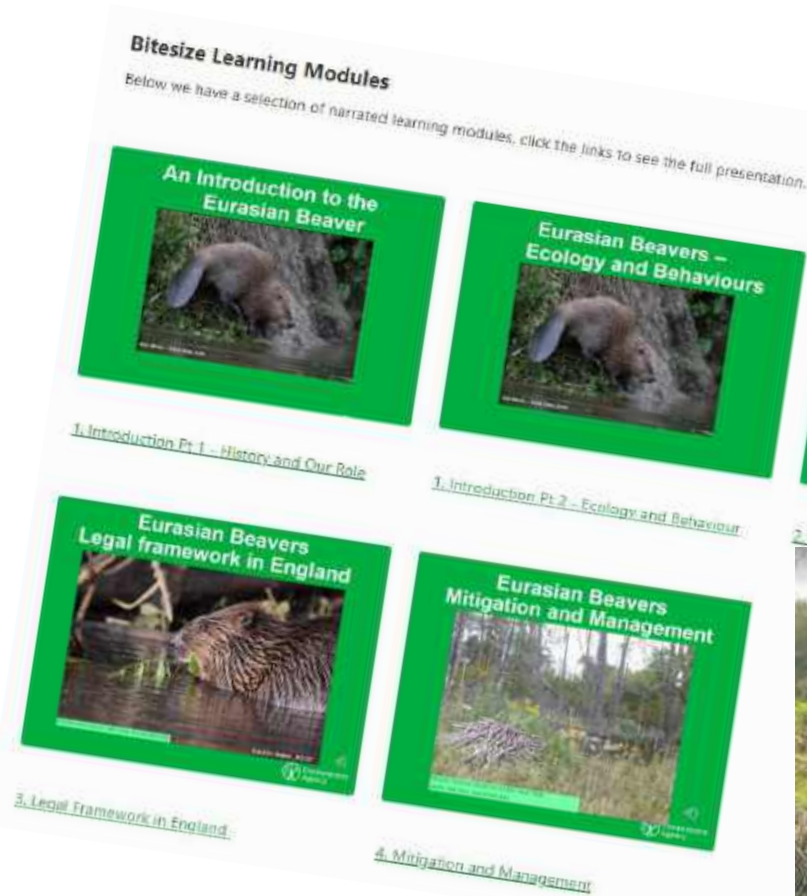
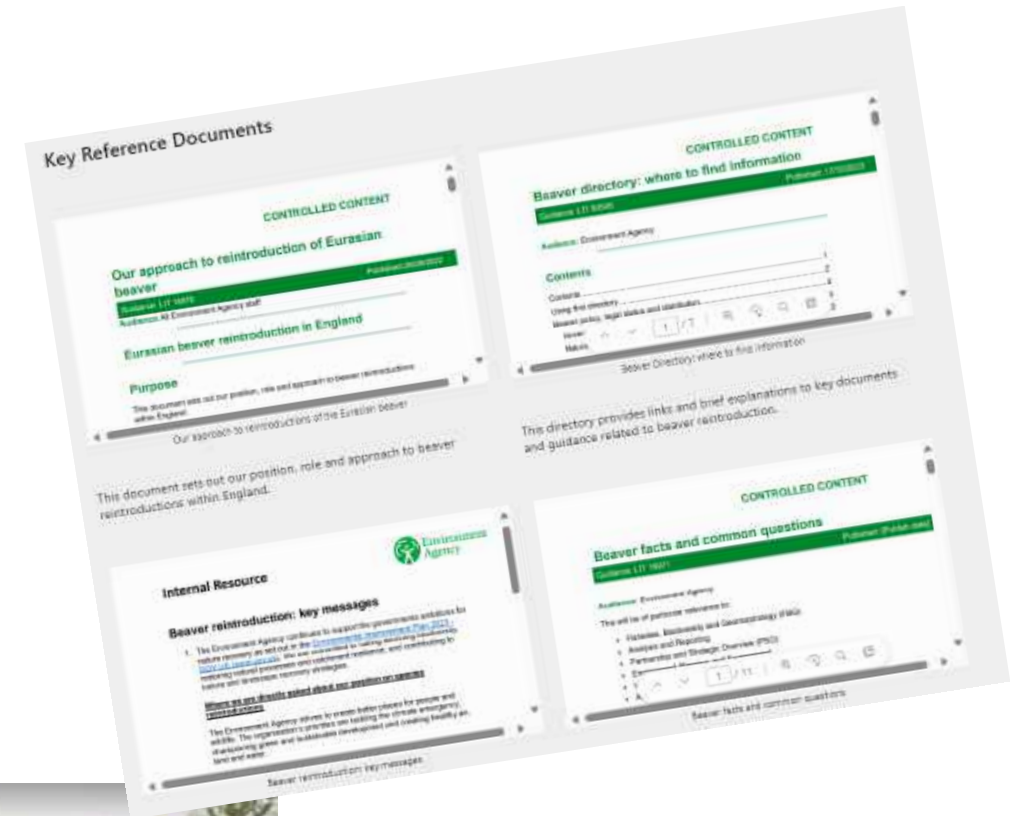
- 1 North East
- 2 Cumbria and Lancashire
- 3 Yorkshire
- 4 Greater Manchester Merseyside & Cheshire
- 5 Lincolnshire and Northamptonshire
- 6 East Midlands
- 7 West Midlands
- 8 Wessex
- 9 Devon Cornwall and the Isles of Scilly
- 10 East Anglia
- 11 Thames
- 12 Hertfordshire and North London
- 13 Kent, South London and East Sussex
- 14 Solent and South Downs





# Training and guidance

Consistency is the aim!!



H&S considerations – limitations of EA staff  
Use of contractors – experienced and have higher level of in-water qualifications

# How we learn, share and embed

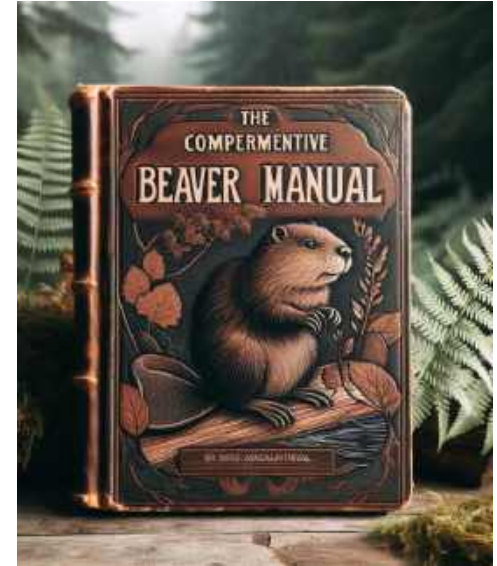


- English National Beaver Management Forum - infrastructure subgroup
- Scottish Beaver Advisory Group - Beaver mitigation subgroup.
- International website (inc [England](#) & [Netherlands](#)) + UK Beaver Management website
- Beaver Management Groups / Beaver Practitioner Group
- Beaver Manual...

# Developing guidance for all British RMAs

## Beaver manual of engineering techniques

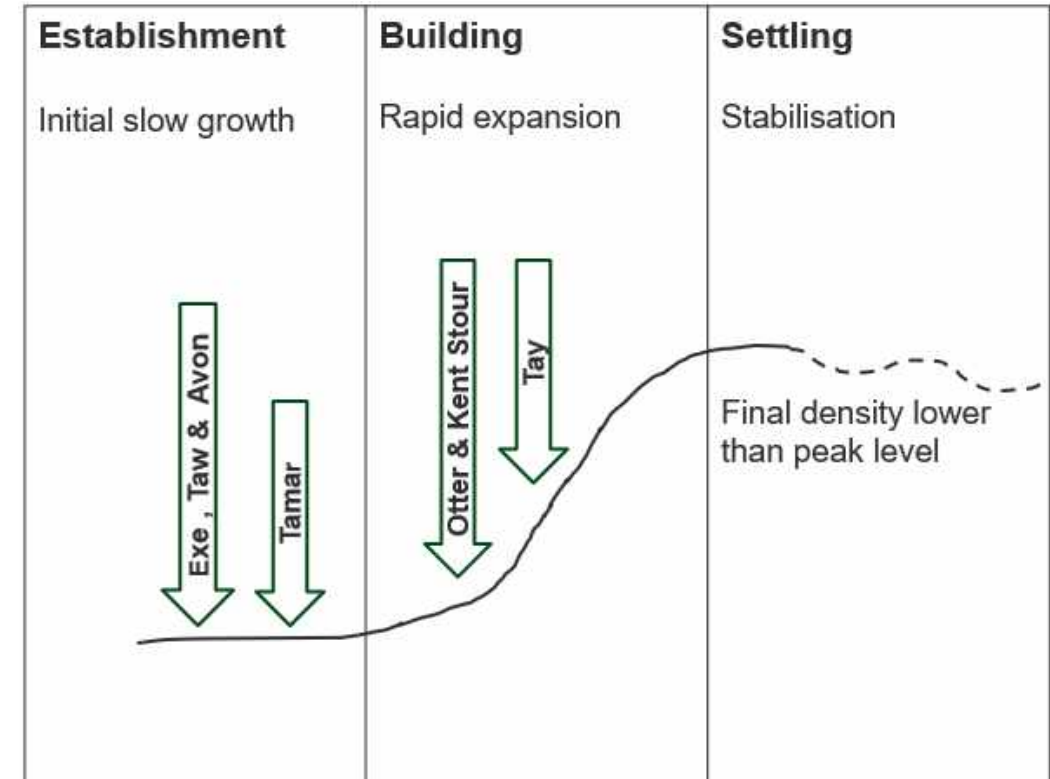
- To avoid ad-hoc and disjointed guidance and develop inconsistent engineering techniques
- Support risk management authorities and the wider engineering community
- Reduce the risk of 'heavy-handed' hard engineering being implemented as standard
- Encourage soft engineering or setting back assets to give space for the river and beavers
- **Working with international colleagues... you!**





# Where we are now in GB and what next?

- Low populations with some in rapid expansion phase
- Developing how we will work alongside beavers and infrastructure
- Build up evidence and research
- Avoid duplication and collaborate
- Maximise coexistence and benefits for us and beavers



**Questions?**