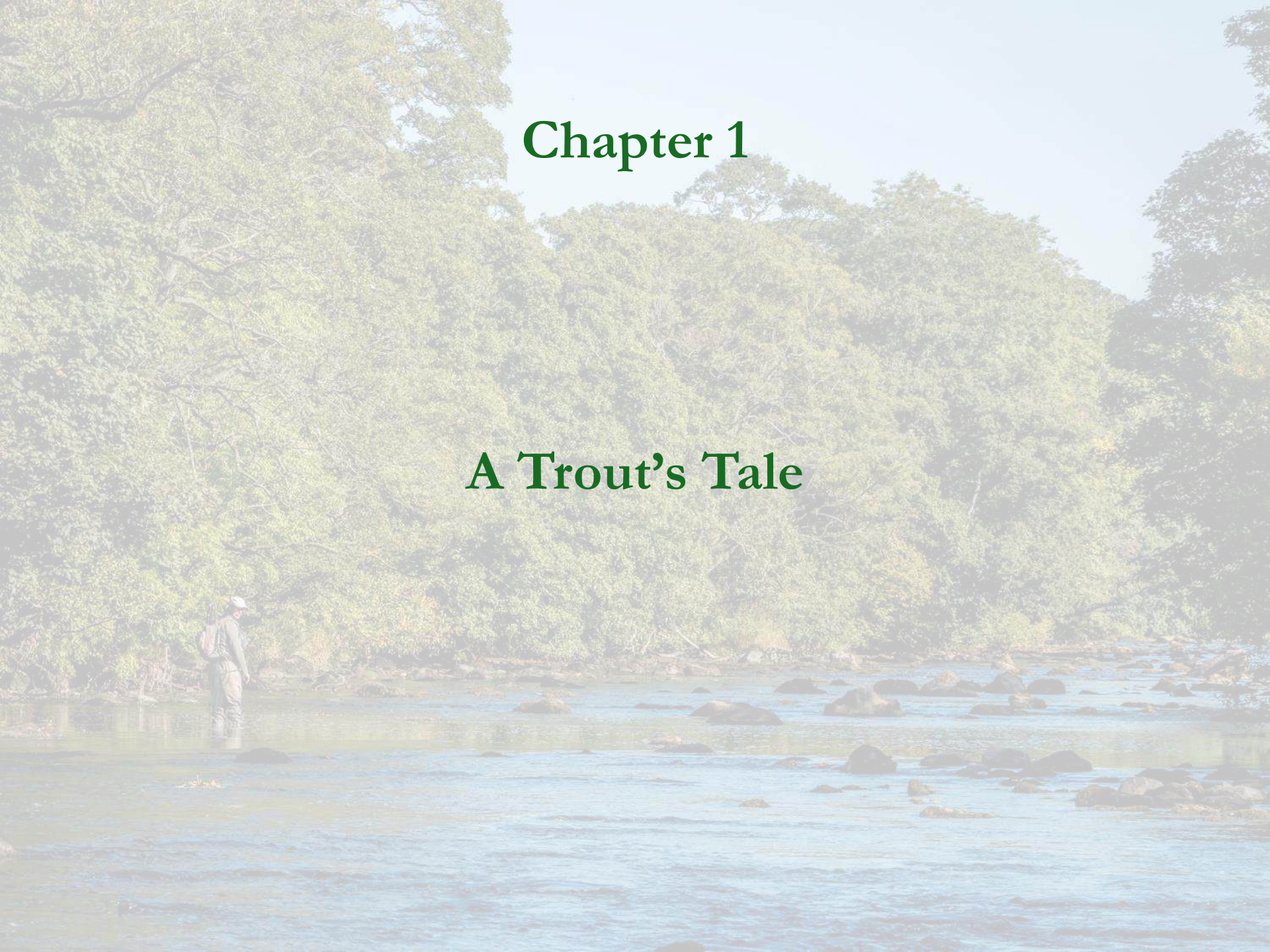
Beavers: back (in Britain's rivers) for good?

Shaun Leonard, Wild Trout Trust

Charles Rangeley-Wilson



Chapter 1

A Trout's Tale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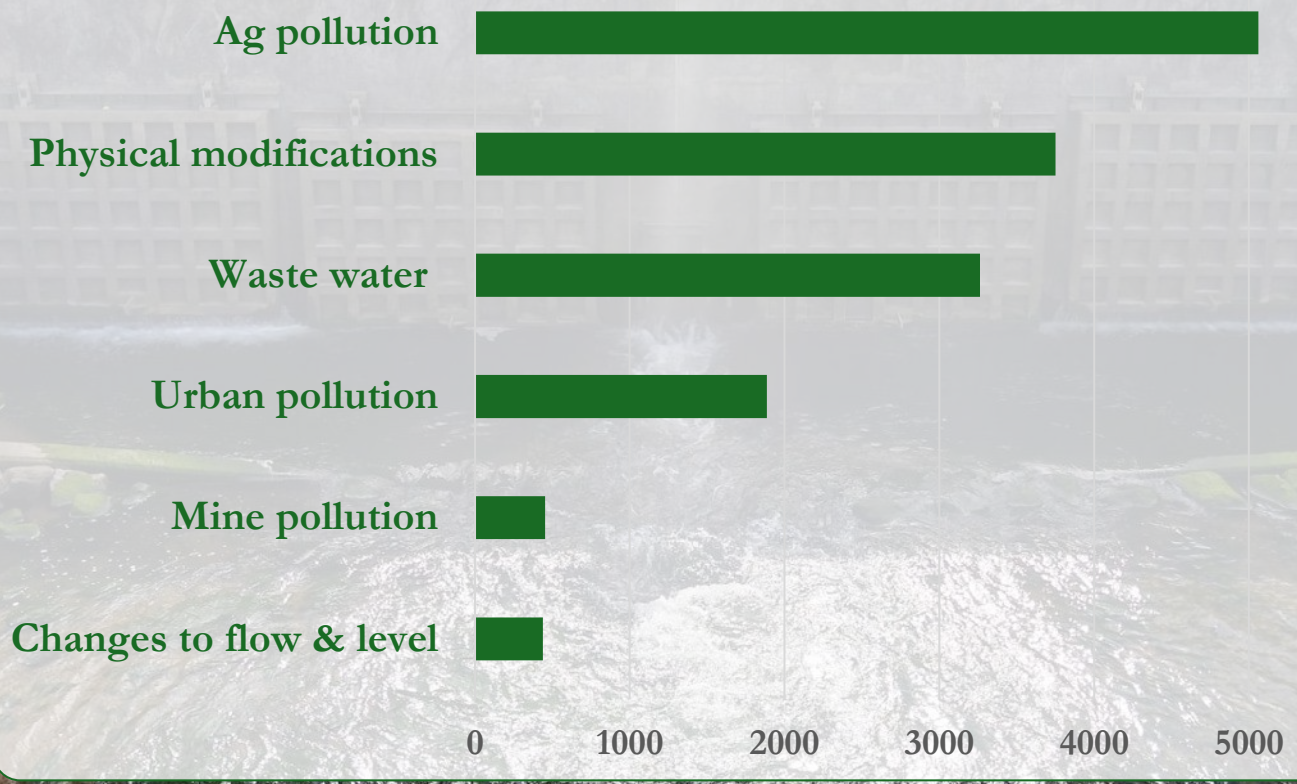
Chapter 2

Trials & Tribulations

RNAGs England



Fish

Britain's favourite fish at risk of wipeout within decades, predicts report

Brown trout unlikely to survive in most rivers at height of summer by 2080, says Environment Agency

Daniel Boffey *Chief reporter*

Fri 31 Jan 2025 14.58 GMT

Brown trout can grow and feed in temperatures up to 19.5C, the report said. Photograph: blickwinkel/Alamy

It has been native to Britain for thousands of years and was heralded as the national fish on the BBC's Springwatch, but a government report suggests the brown trout risks being wiped out in large parts of England within decades.

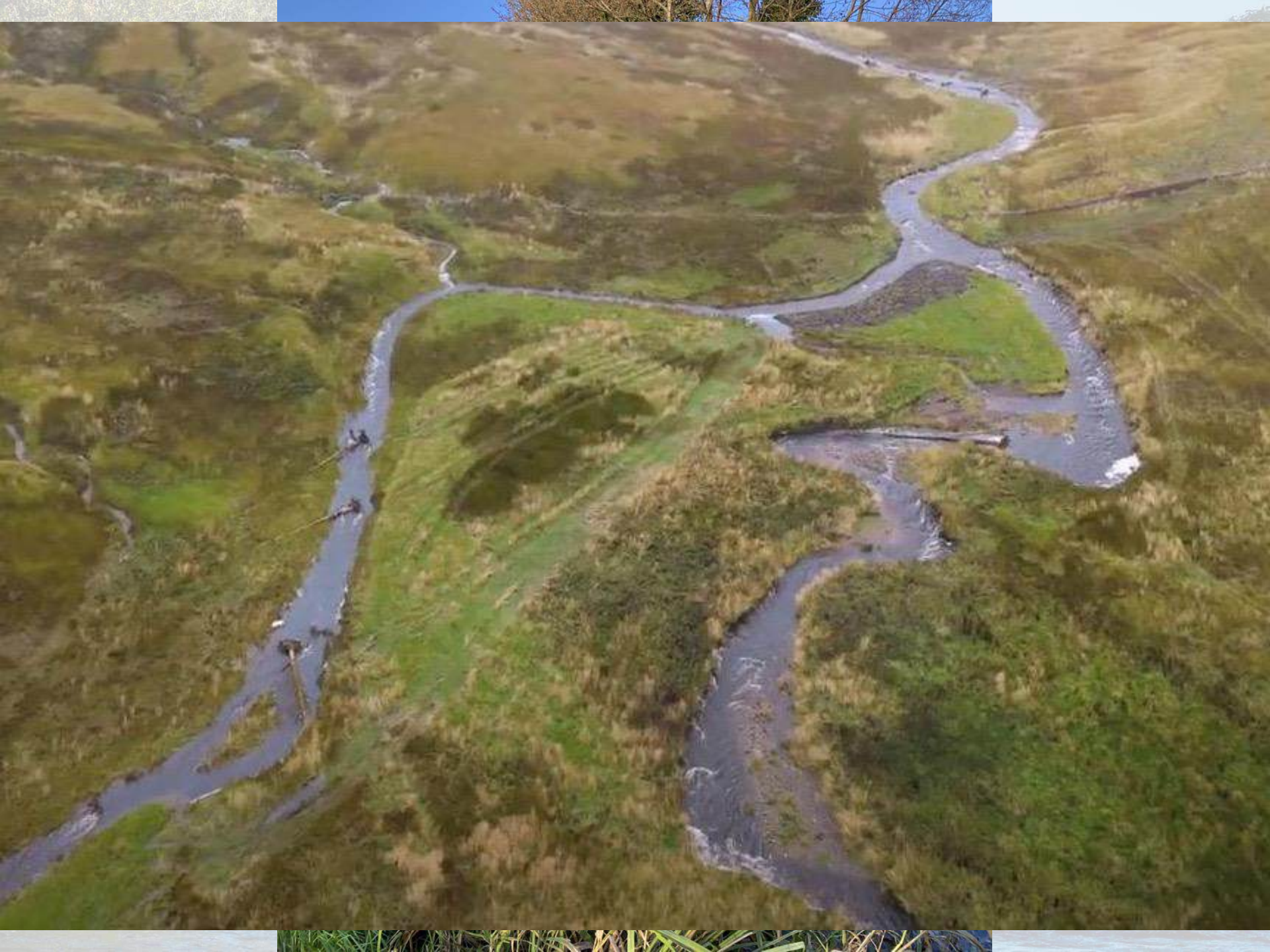
The first national temperature projections for English rivers by the Environment Agency forecasts that by 2080 the water will be too warm

Chapter 3

What to Do?

Get People Involved…

Try to Mend Broken Things…



Chapter 4

Beavers…back for good?

"Mill sites once established were jealously guarded, and legal battles were continually being waged over water supply."

Reynolds et al 1967

Beavers…for good…





Beaver…problems…

Beaver & fish problems…

Beaver & fish problems…

- Fish migration & damn dams
  - Lots of fish move lots
  - Co-evolution/co-existence?
  - Cf Alaska, Oregon, Norway?
- Dam passability: fish (species, size, behaviour), the dam (height, d/s pool, gaps etc) & conditions (T°C, velocity etc)

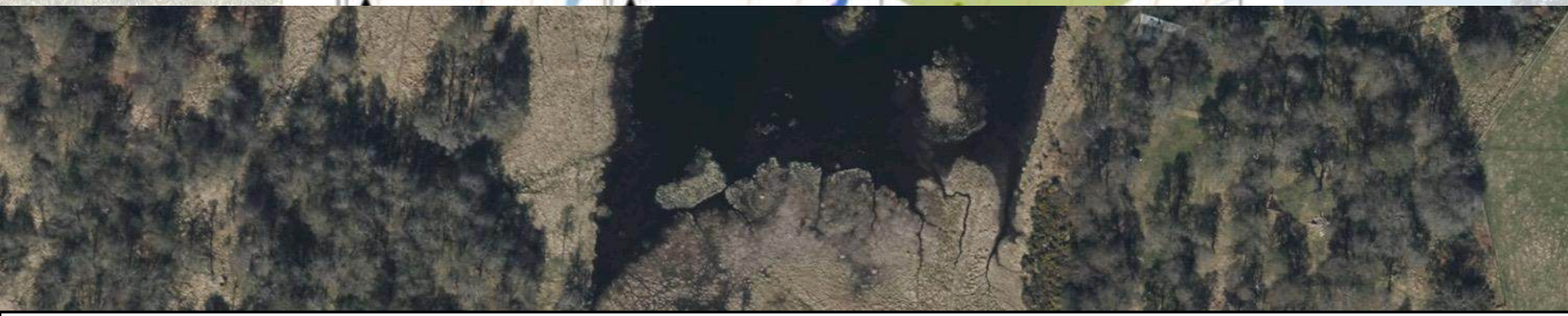
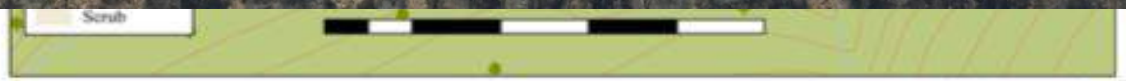


Table 6. Total number of trout detected at Dams 1–4 while moving in an upstream direction. Successful or failed passage attempts are recorded, enabling the calculation of passage efficiency. Routes taken are also depicted as are the % of resident individuals from within those reaches that did not pass.

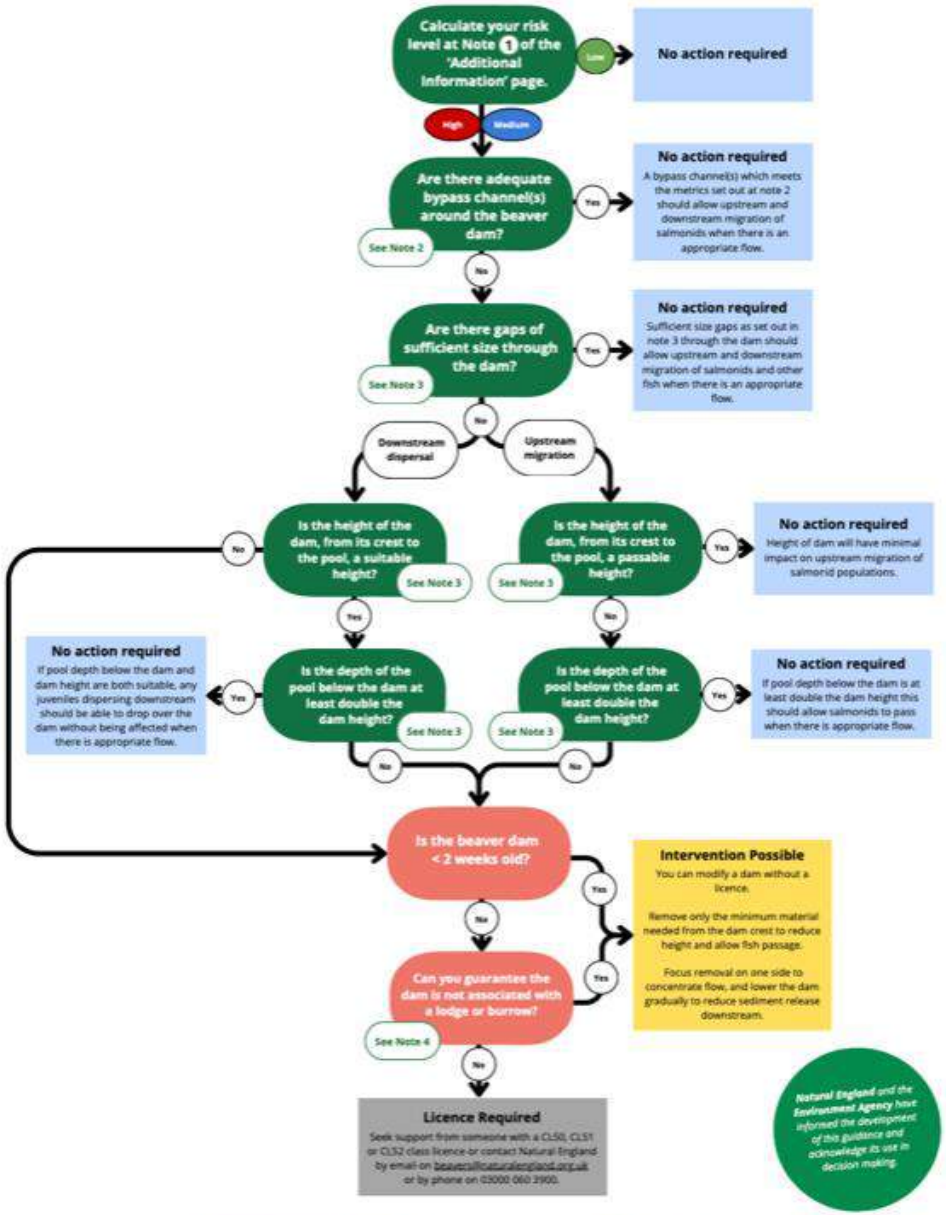
	Dam 1		Dam2		Dam 3		Dam 4	
	2015	2016	2015	2016	2015	2016	2015	2016
Total Dam Passes (including repeat passers)	19	8	61	5	47	0	14	0
Detected Below Dam	59	39	38	22	50	21	72	26
Failed to Pass	40	33	8	17	14	21	58	26
Detected Upstream of Dam	6	0	30	5	NA	NA	15	0
Passed Side Channel	13	6	NA	NA	36	0	NA	NA
% Resident No Passage	NA	NA	100	76.5	84.6	85.7	43.9	76.00

i.e. wet year 1/3 BT passed the most d/s dam; dry year <1/5 BT passed



Needham et al

Beaver Dam Assessment Methodology for Salmonids



Ecology

erse array of fish species and are home to cies (Wheeler, 1992). The salmon family, cludes species such as, but not limited to the (*Salmo trutta*), grayling (*Thymallus thymallus*),

This stage is crucial, as alevins are sensitive to changes in environmental factors such as temperature fluctuations and sedimentation, which can reduce oxygen flow and hinder development (Collen & Gibson, 2001).

Juvenile Development

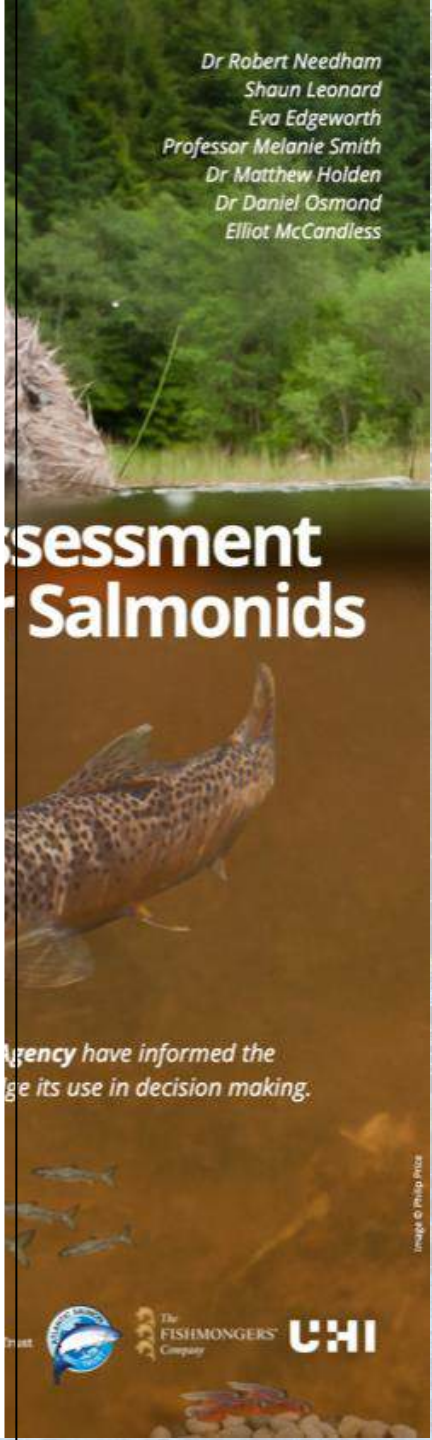
Once the alevins absorb their yolk sacs, they emerge as fry, perhaps 20mm long, with an immediate need to escape flow and predators and begin feeding independently on small invertebrates. This stage sees rapid growth as the fry develop into parr, characterised by vertical bars on their flanks. Parr remain in freshwater, adapting to their environment and developing survival skills such as predator avoidance and foraging techniques (Klemetsen *et al.*, 2003).

Migration

Many salmonids, particularly Atlantic salmon and sea trout, undergo significant migrations. They transition from freshwater nurseries to the ocean, where they spend most of their adult lives. A rapid journey to and from sea is vital; delays at barriers can cause huge losses from predation, stress and disease. Successful migration is essential for their growth and eventual return to freshwater to spawn (*Jonsson & Jonsson, 2009*).

Spawning

Spawning marks the end of the salmonid life cycle, occurring in Britain from October to February. Adults return to freshwater, often to their birthplace, and select clean, oxygenated gravel beds where females create nests (redds) for laying eggs, which males then fertilise. This energy-intensive process leads to high post-spawning mortality, especially among Atlantic salmon (Fleming, 1996). However, while many Atlantic salmon and sea trout do return to the ocean after spawning, a greater proportion of sea trout survive and can become repeat spawners compared to Atlantic salmon.



Take aways…

- A managed, beaver-y environment *could* be really beautiful in lots of places
- There will be issues; BDAMS could help manage collateral harm for trout & salmon