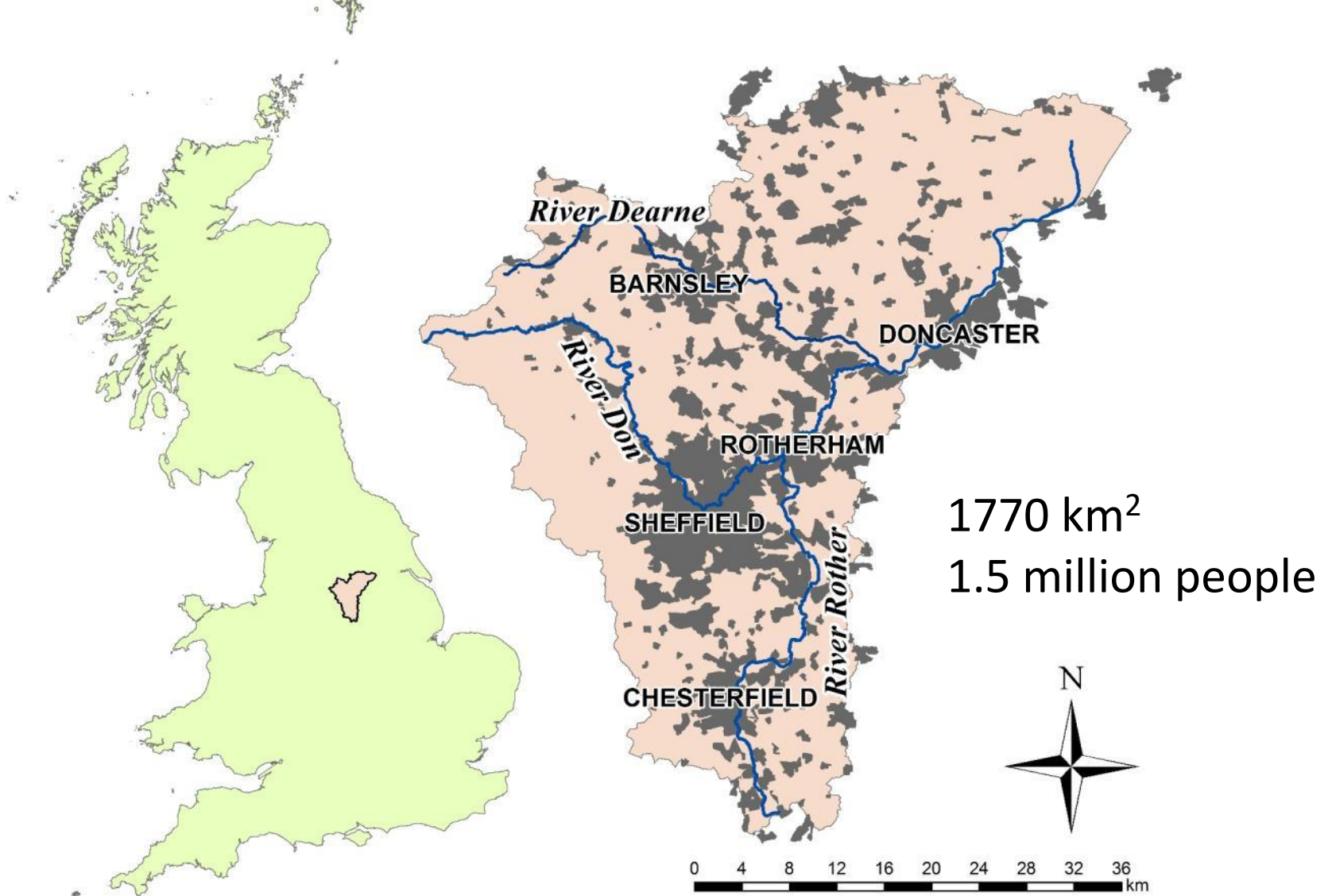


# Tackling the weirs of the Don Catchment



Ed Shaw







TOTTER. 29

Early Morning  
on the Don, SHEFFIELD.



Arthur Lee and Sons Crown Steel Works,  
Sheffield, 1921







*“Sheffield, I suppose,  
could justly claim to be  
called the ugliest town in  
the Old World..... the  
shallow river that runs  
through the town is  
usually bright yellow with  
some chemical or other”*

George Orwell

‘The Road to Wigan Pier’

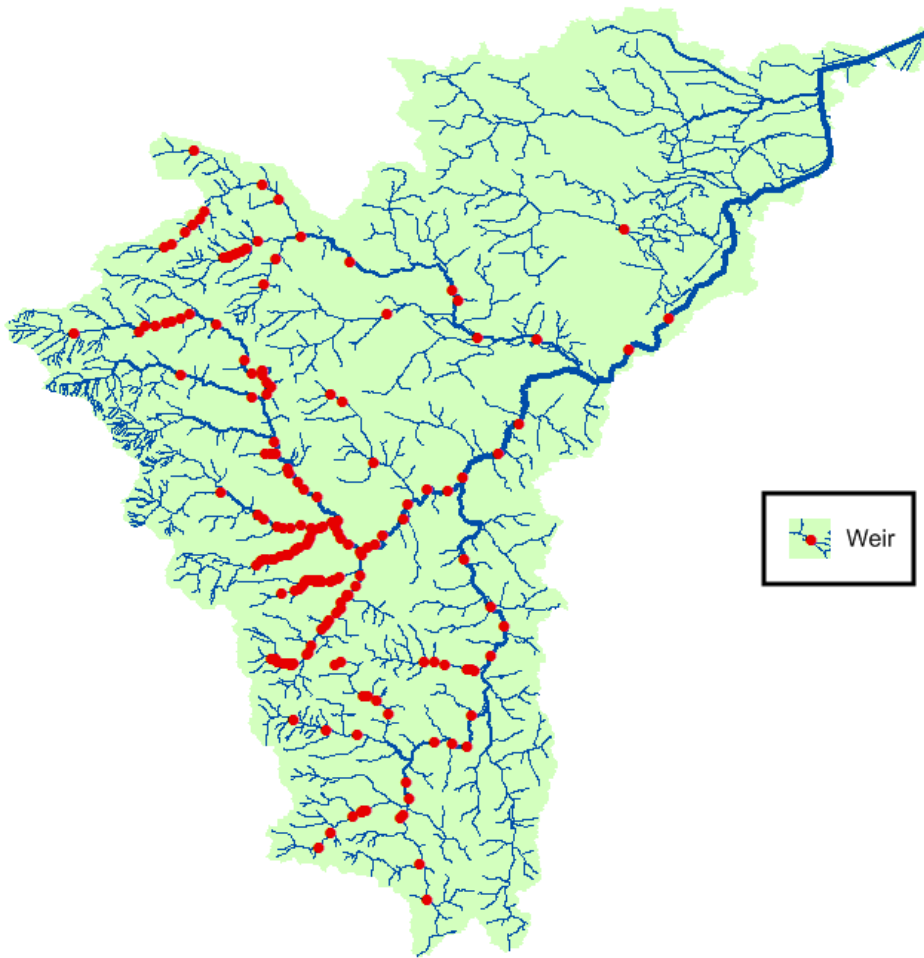
1937







# Weirs



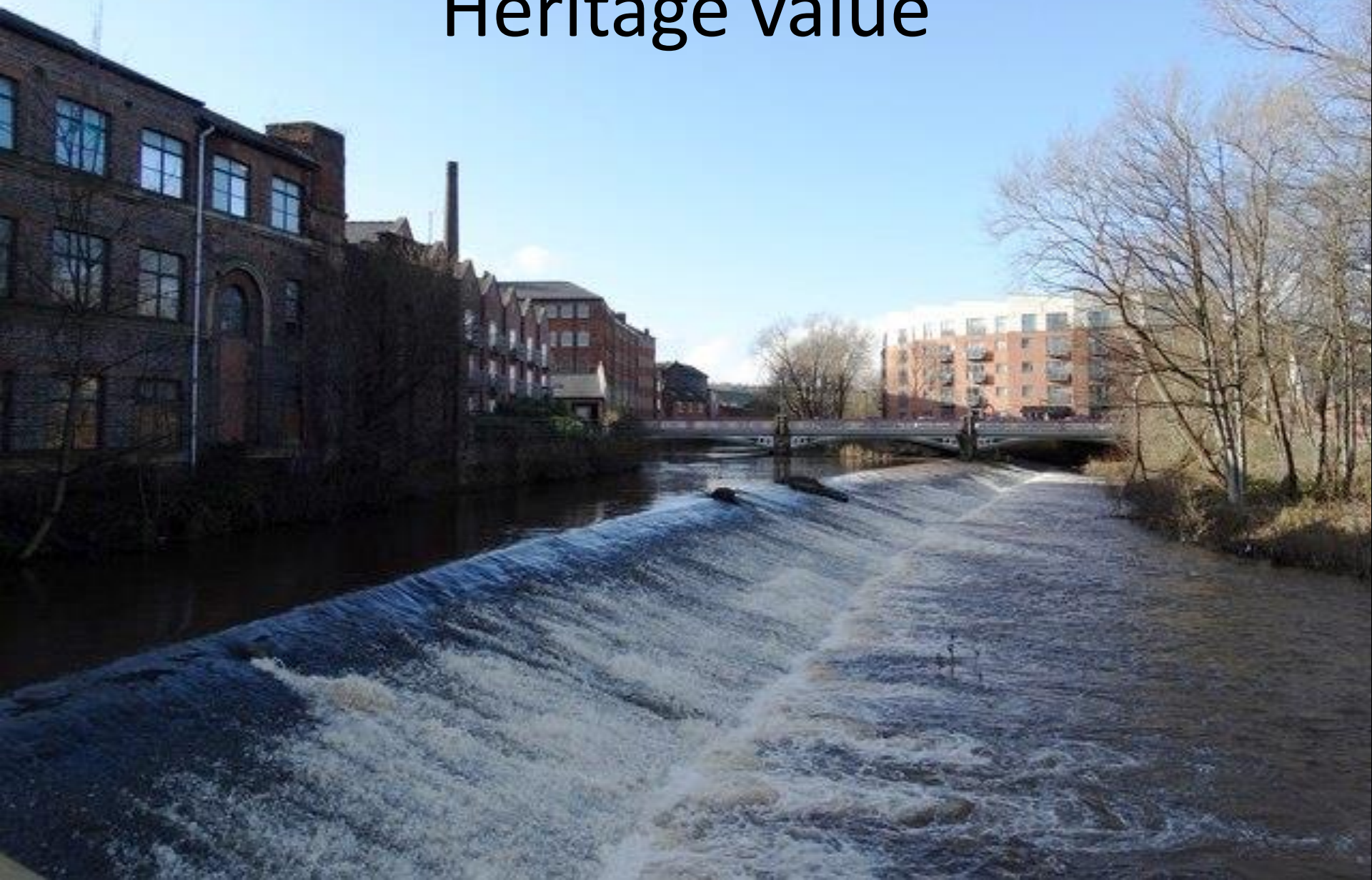


Weir removal best,



but...

# Heritage value







*‘the Wheels of the Loxley Valley must be seen to be of far more than local or regional significance: their importance is European, if not more widely international’*



# Heritage value





# Heritage value





# Navigation



© 2017 Google  
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Google Earth



# Navigation





# Gauging Weirs





# Infrastructure



# Infrastructure





# Risk of damage





# Risk of contamination







# Ecological





# Ecological



# Atlantic Salmon

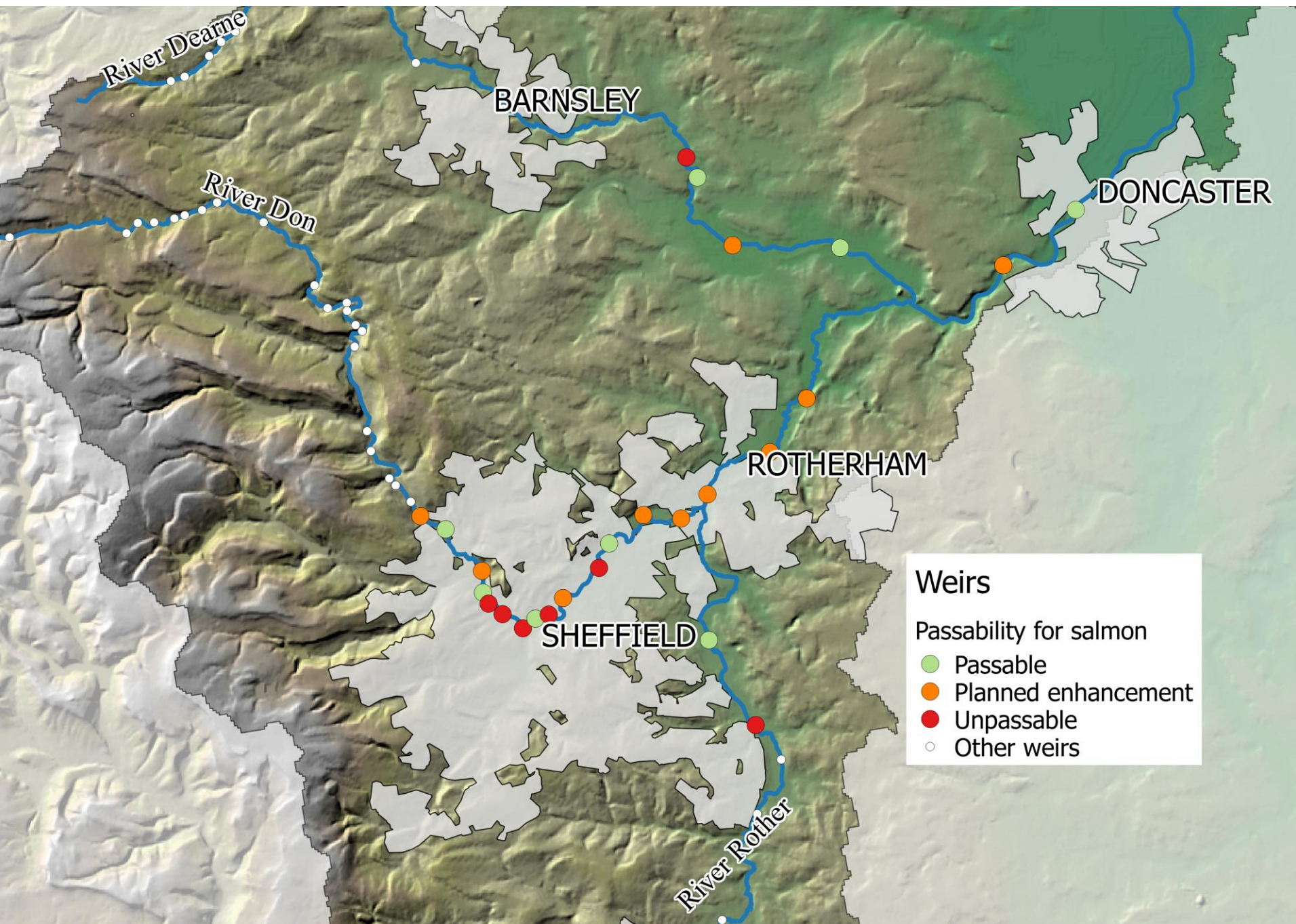
- Aim to enable salmon to recolonise catchment
- Well known once common
- Symbolic of the fate of the river
- Recolonisation powerful message of recovery













# Living Heritage of the River Don

- Heritage Lottery Fund & matched funding
- reconnecting people back to the natural, cultural and industrial heritage of the Don
- improving attitudes to the Don so its heritage is better valued as a major asset



Supported by

**The National Lottery**<sup>®</sup>

through the Heritage Lottery Fund



# Larinier fish passes





# Easements

















# The 'orphan' weir challenge

- Owners of the five weirs couldn't be traced
- How to build fish passes without permission?
- Indemnity insurance
- EA statutory powers
- Can be transferred



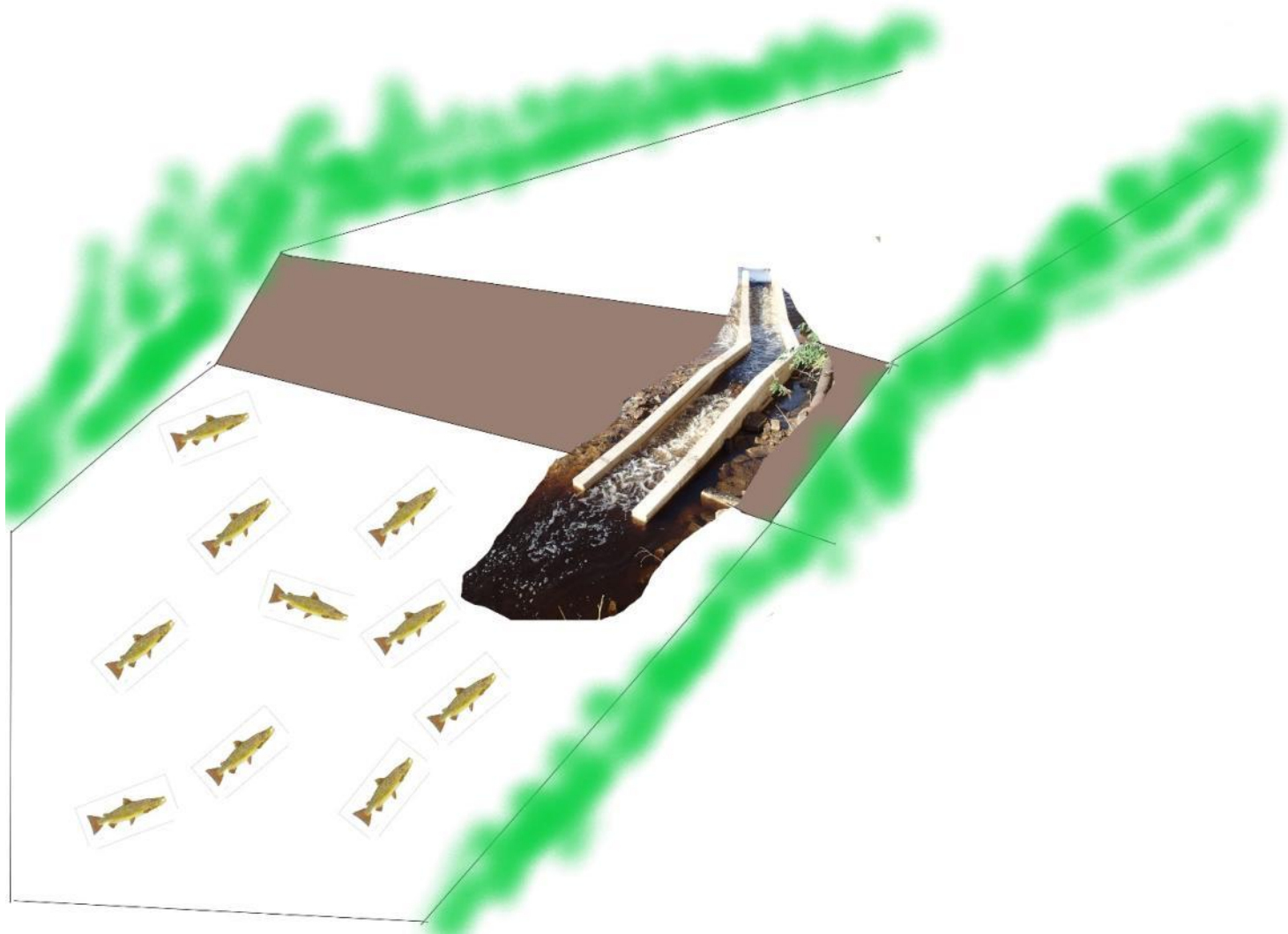
# Prospects for salmon

- To what extent will salmon flourish?
- Fish passes aren't perfect
- Question of the combined impact of fish passes

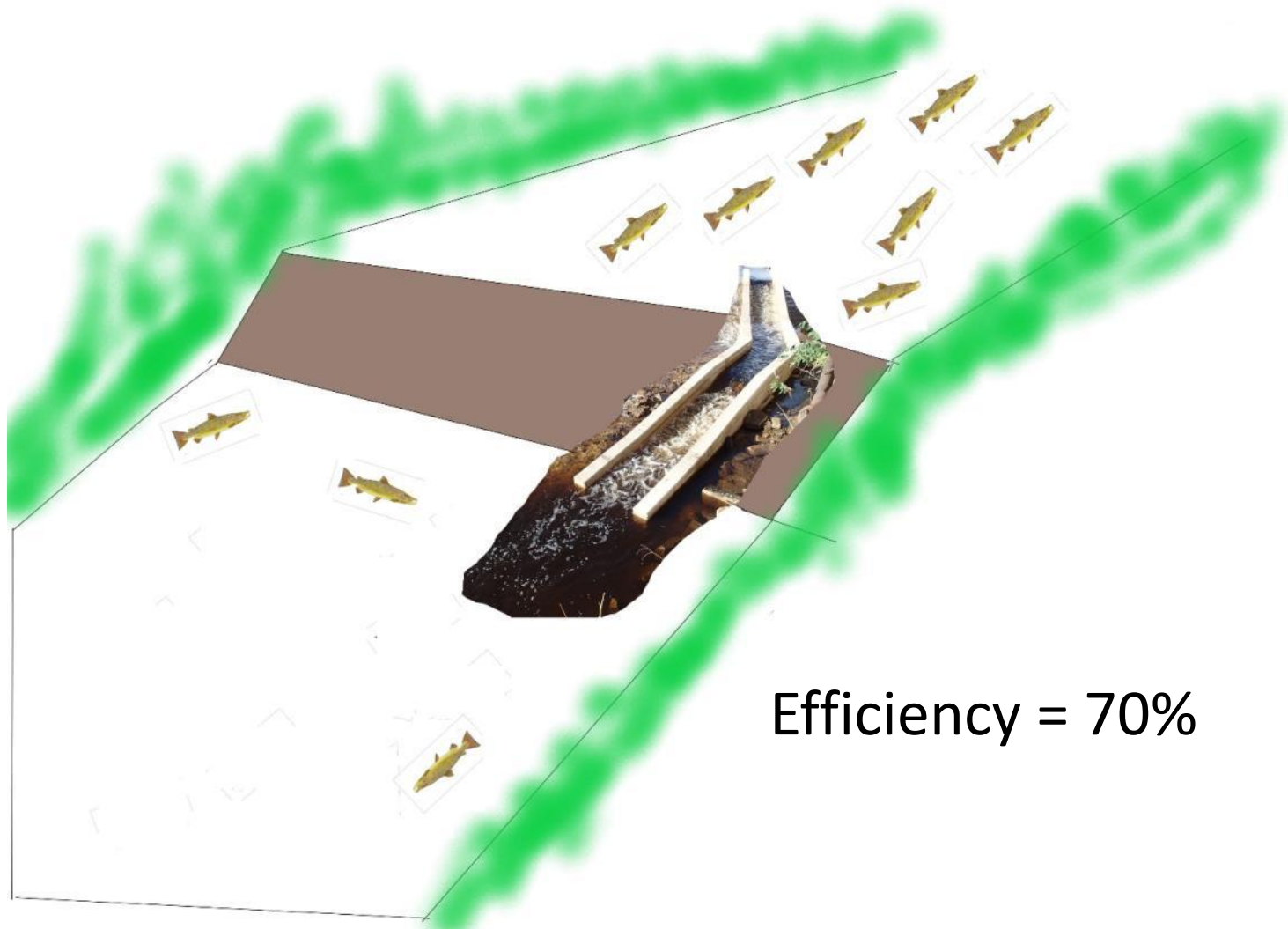




# Fish pass efficiency



# Fish pass efficiency

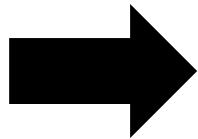




# Cumulative impact



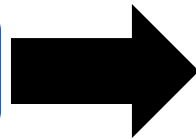
100%



FISHPASS  
70%



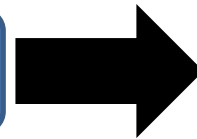
70%



FISHPASS  
70%



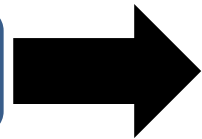
49%



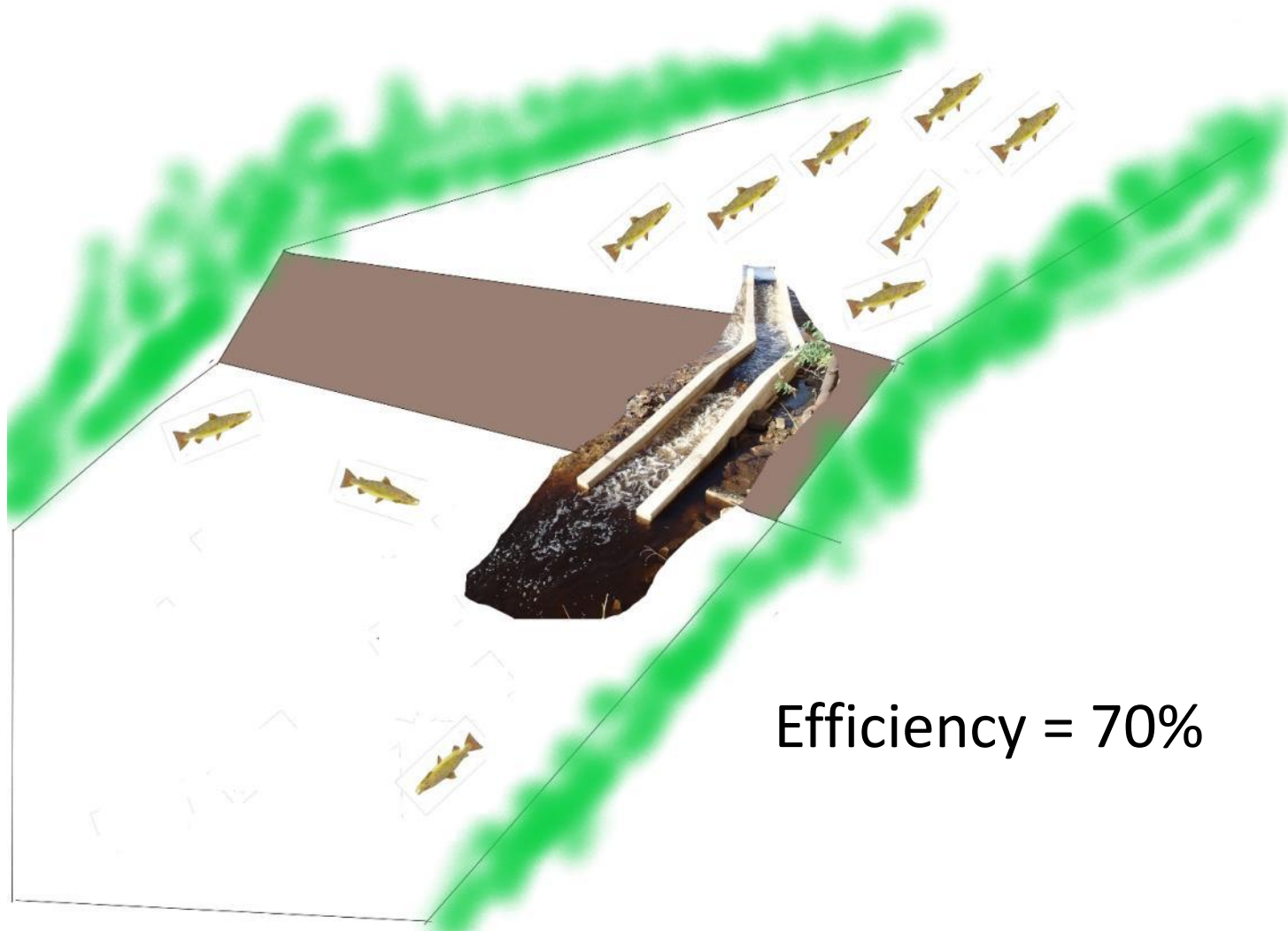
FISHPASS  
70%



34%



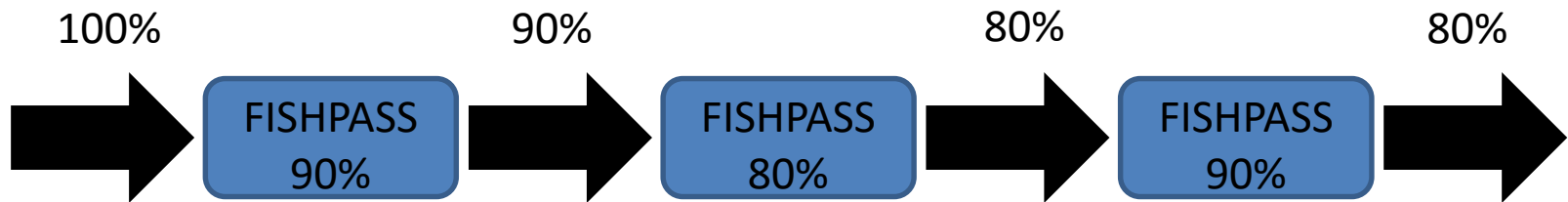
# Fish pass efficiency



Efficiency = 70%

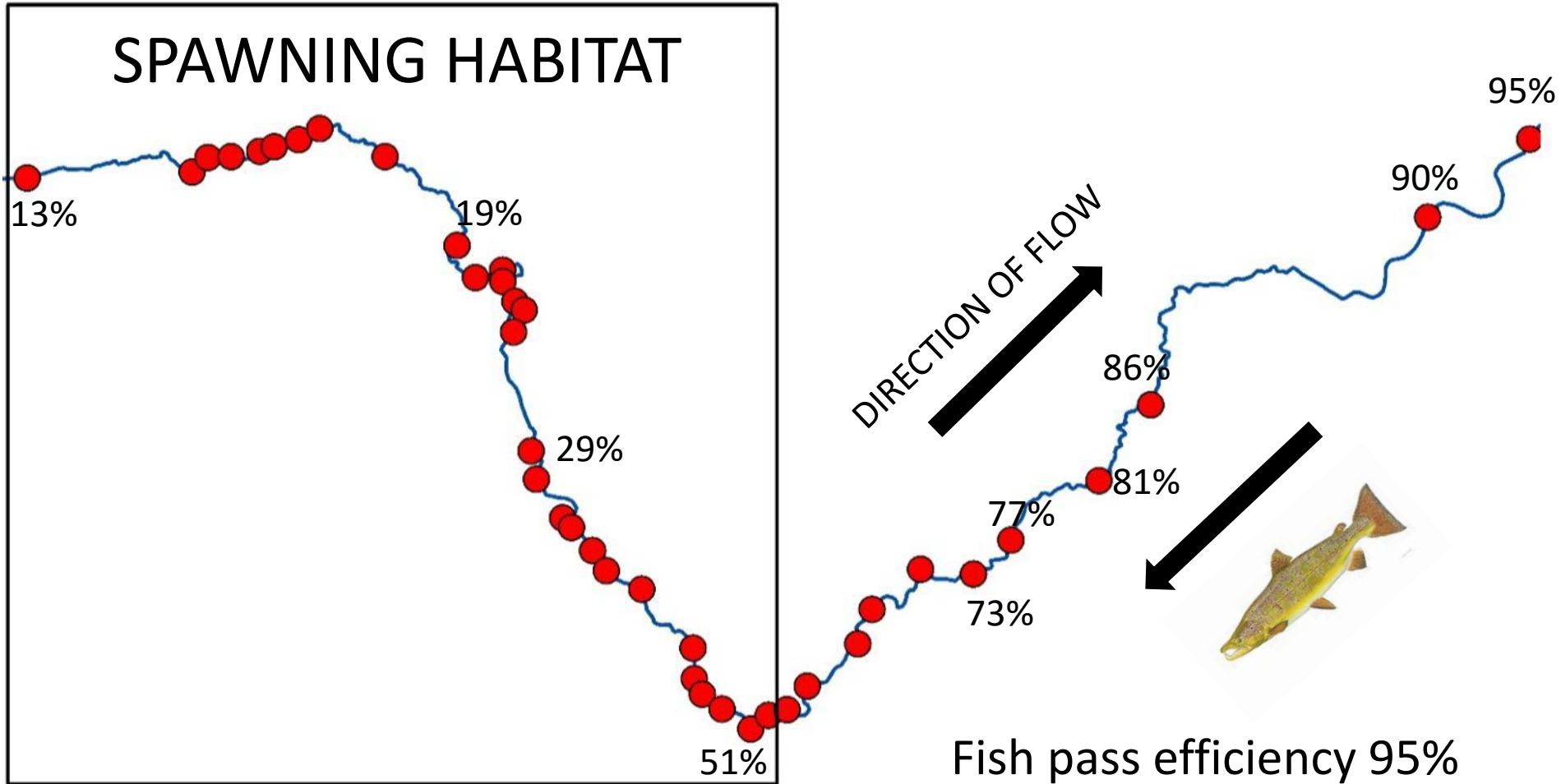


# Bottleneck effect



# Cumulative impact

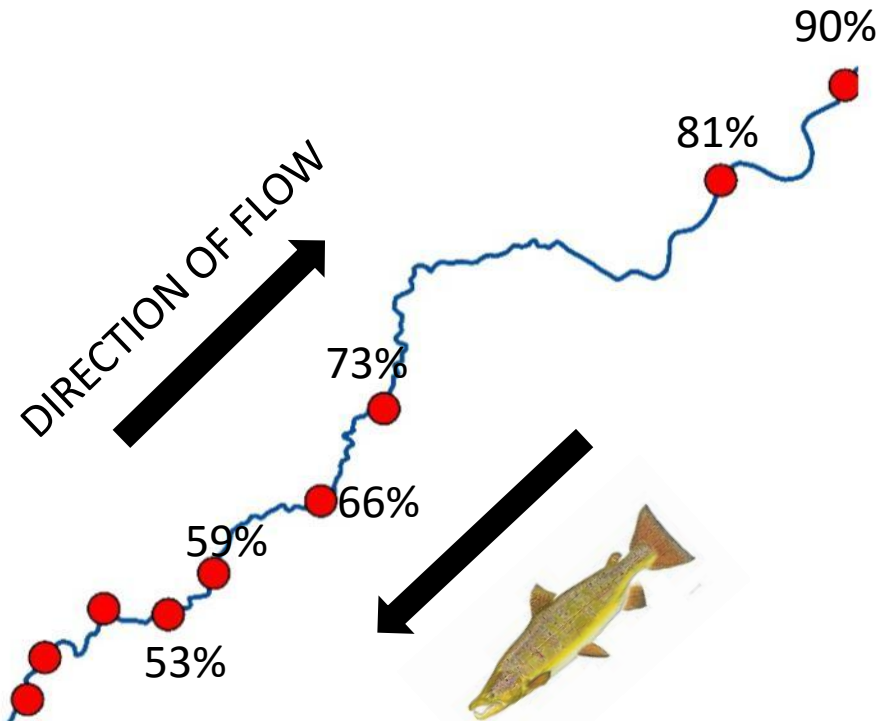
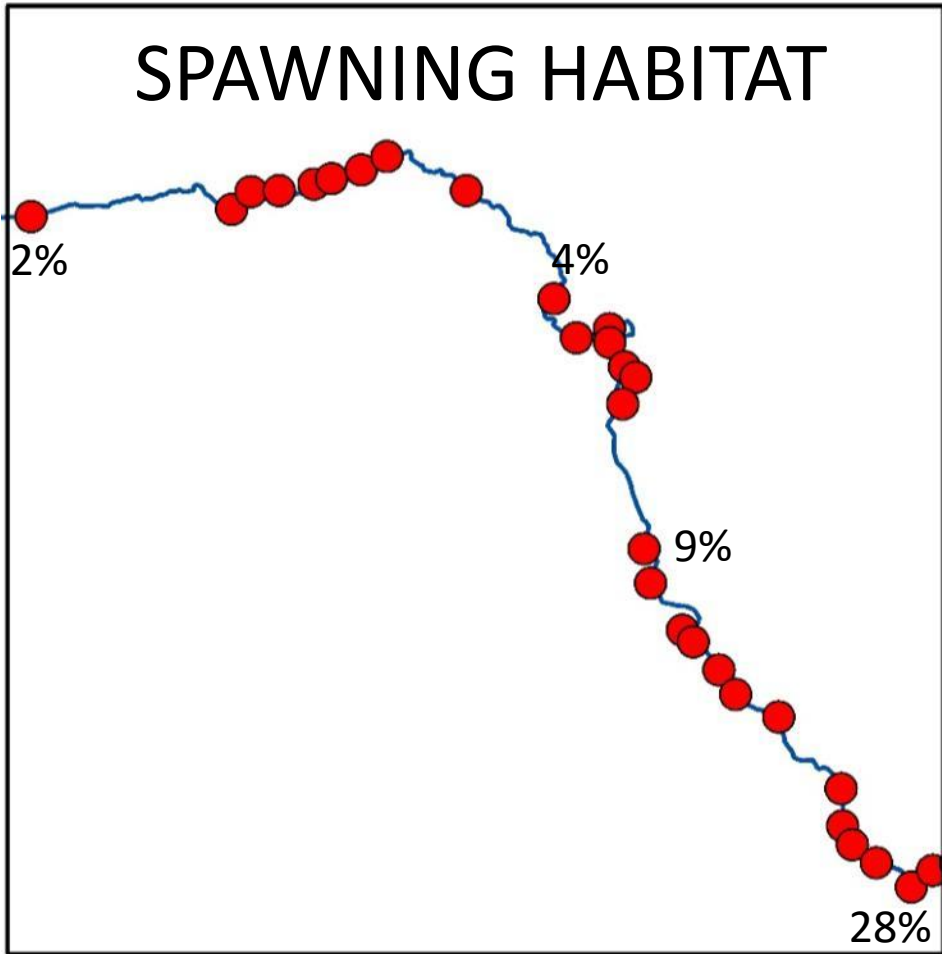
## SPAWNING HABITAT





# Cumulative impact

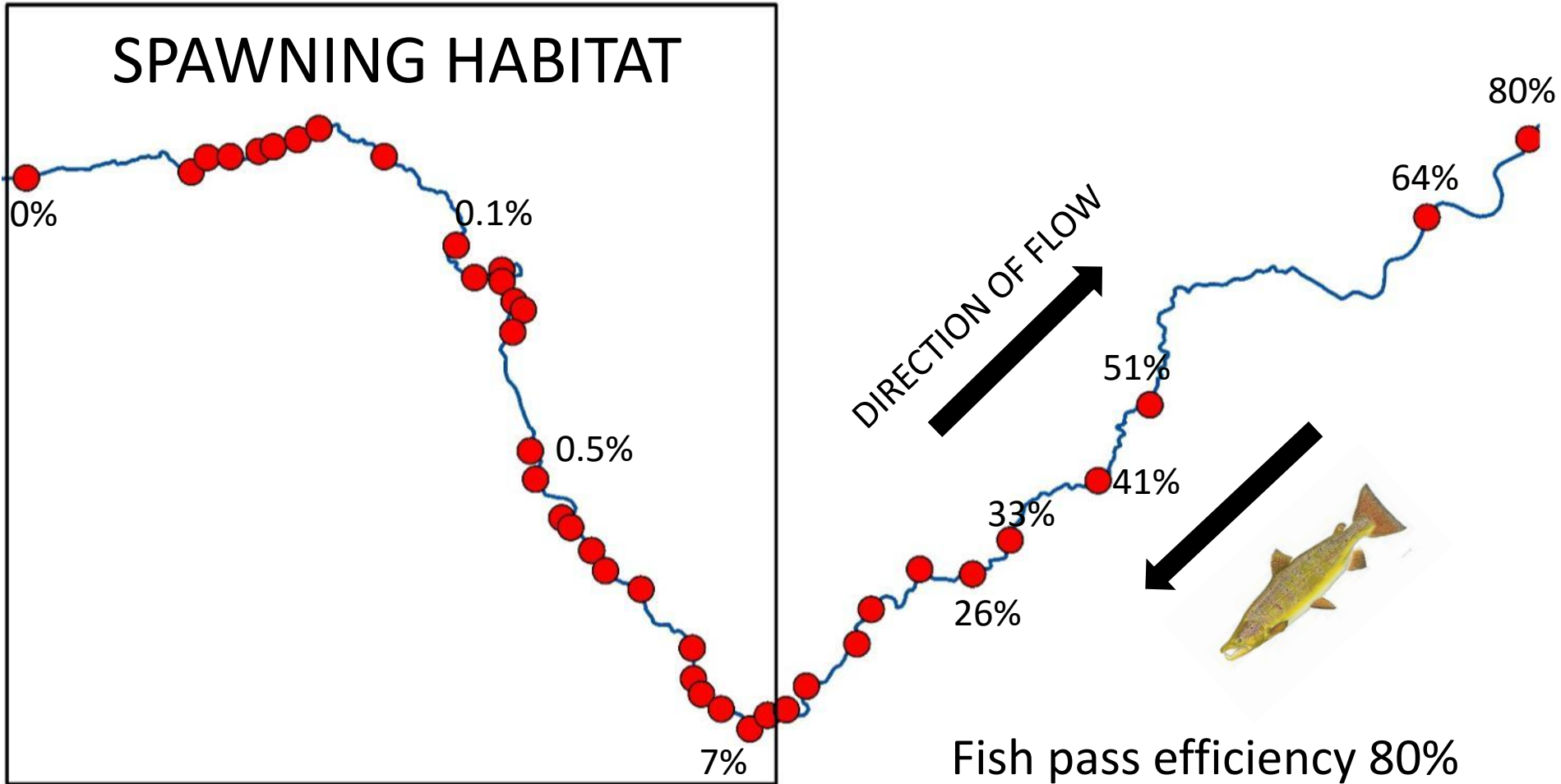
## SPAWNING HABITAT



Fish pass efficiency 90%

# Cumulative impact

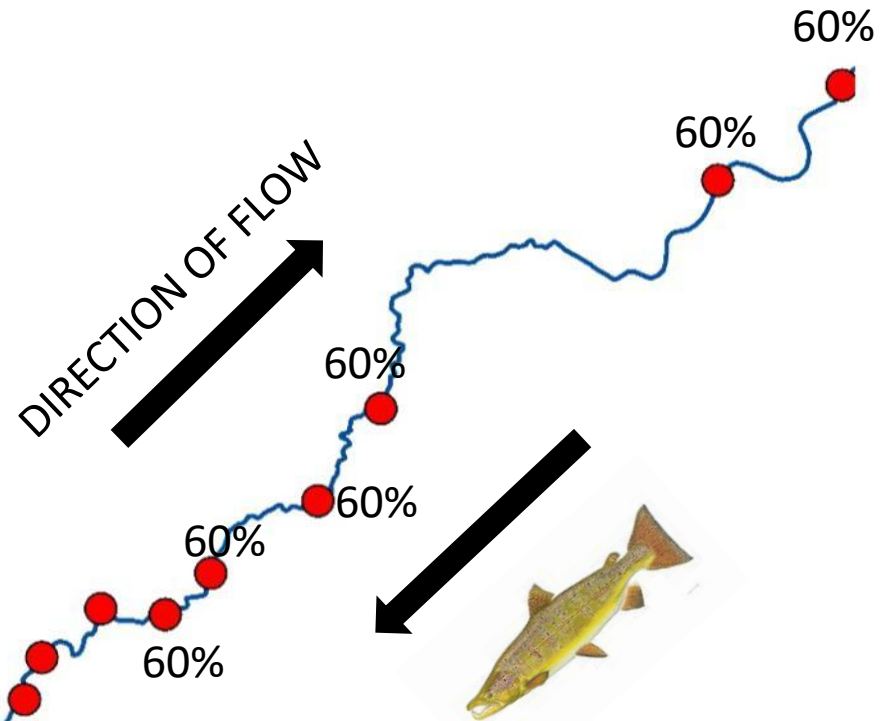
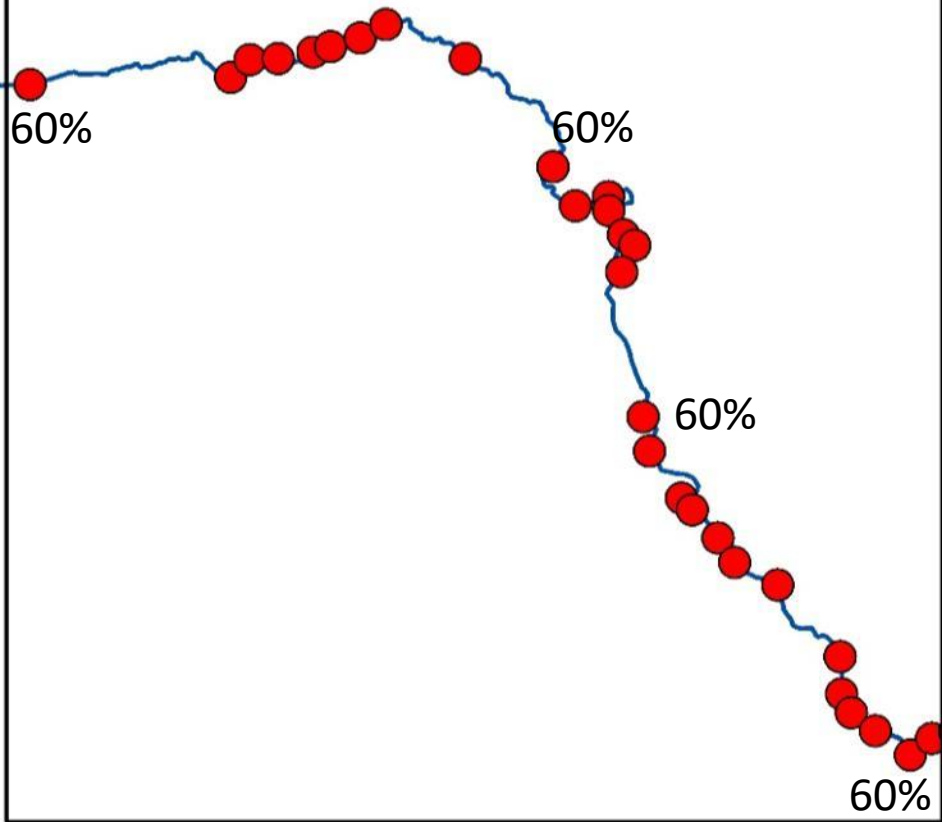
## SPAWNING HABITAT





# Bottleneck effect

## SPAWNING HABITAT



Fish pass efficiency 60%

# What about multiple fish passes?

- Reality somewhere in between?
- 'Random' failure more serious
- Complicated by temporal variation in passability
- Important implications for strategic planning





# Conclusions

- Lots of reasons why weirs can't be removed
- 'Orphan' weirs dealt with using EA statutory powers
- Combined impact of weirs very important





YorkshireWater



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