



BLENHEIM PALACE

Saving  
*'The Finest View'*

THE QUEEN POOL DREDGE





# OVERVIEW





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*The lakes are of regional importance for breeding wildfowl and are of county importance for wintering wildfowl.*

*Forty-two species of wildfowl are recorded of which fourteen are regular visitors or breeding residents.*

*The lakes have supported over 1% of the total British wintering population of gadwall since 1977*

*Largest breeding population of great crested grebe in Oxfordshire.*

**Currently listed as: Unfavorable - Recovering**

**Blenheim Park SSSI**  
**Reference 1000732**





# THE PROBLEM...





2021





2023



A scenic landscape featuring a calm lake in the center, surrounded by lush green grass in the foreground and a dense line of trees in the background. The sky is a clear, vibrant blue. On the left side, the branches of a tree with yellowing autumn leaves are visible. The word "DREDGING" is written in a large, white, serif font, positioned in the upper right quadrant of the image.

# DREDGING





# DREDGEING PROCESS





# DREDGEING PROCESS





# DREDGEING PROCESS





# DREDGEING PROCESS





# DREDGEING PROCESS





# LANDFORM





# LANDFORM





# LANDFORM





# PROBLEMS FACED





# ARCHAEOLOGY





# ARCHAEOLOGY





# CONSTRAINTS

Ecology & Nesting Birds





# CONSTRAINTS

Ecology & Nesting Birds





# DREDGE PHASE Complete



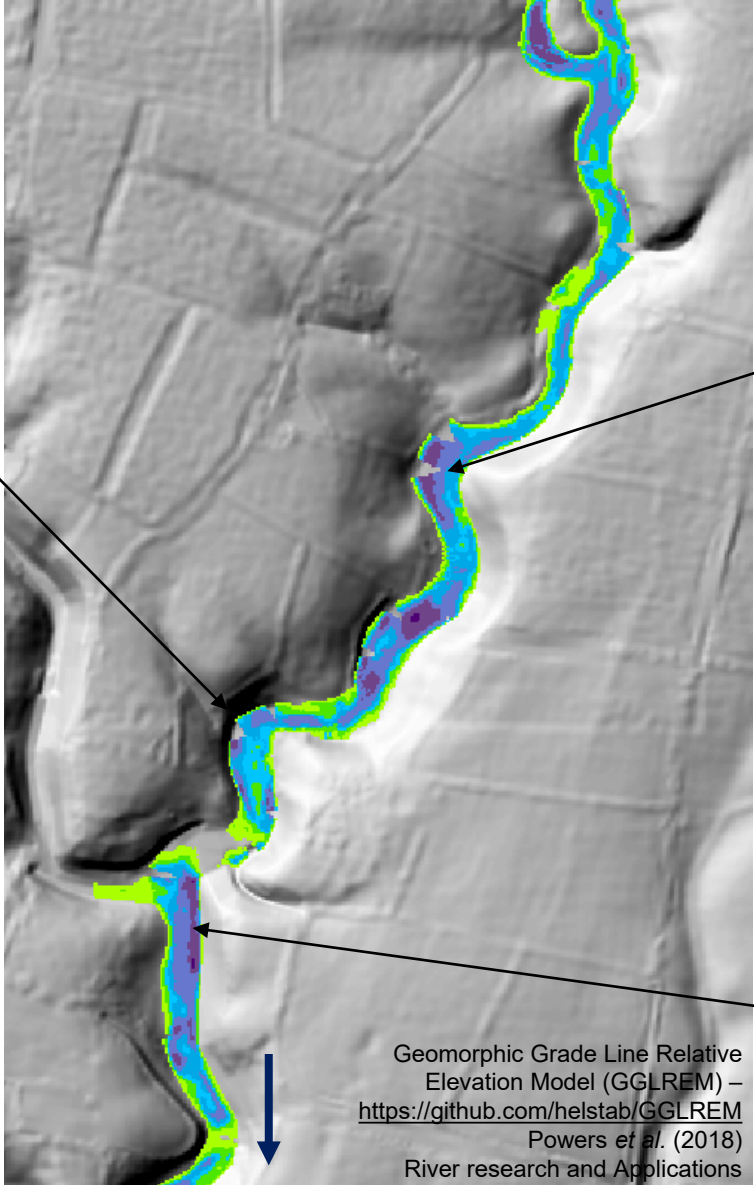
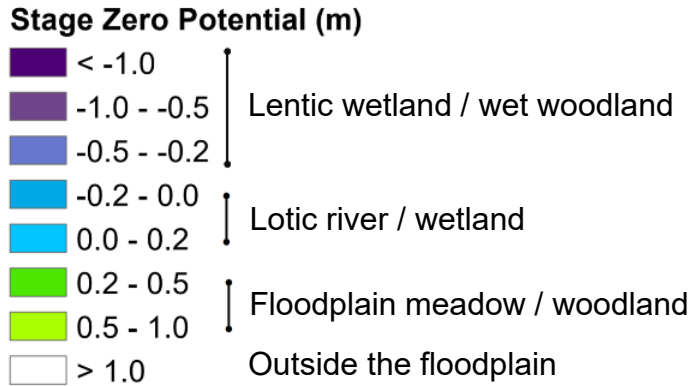


# WHAT'S NEXT?

Stage Zero



# Stage 0 modelling



Geomorphic Grade Line Relative  
Elevation Model (GGLREM) –  
<https://github.com/helstab/GGLREM>  
Powers *et al.* (2018)  
River research and Applications

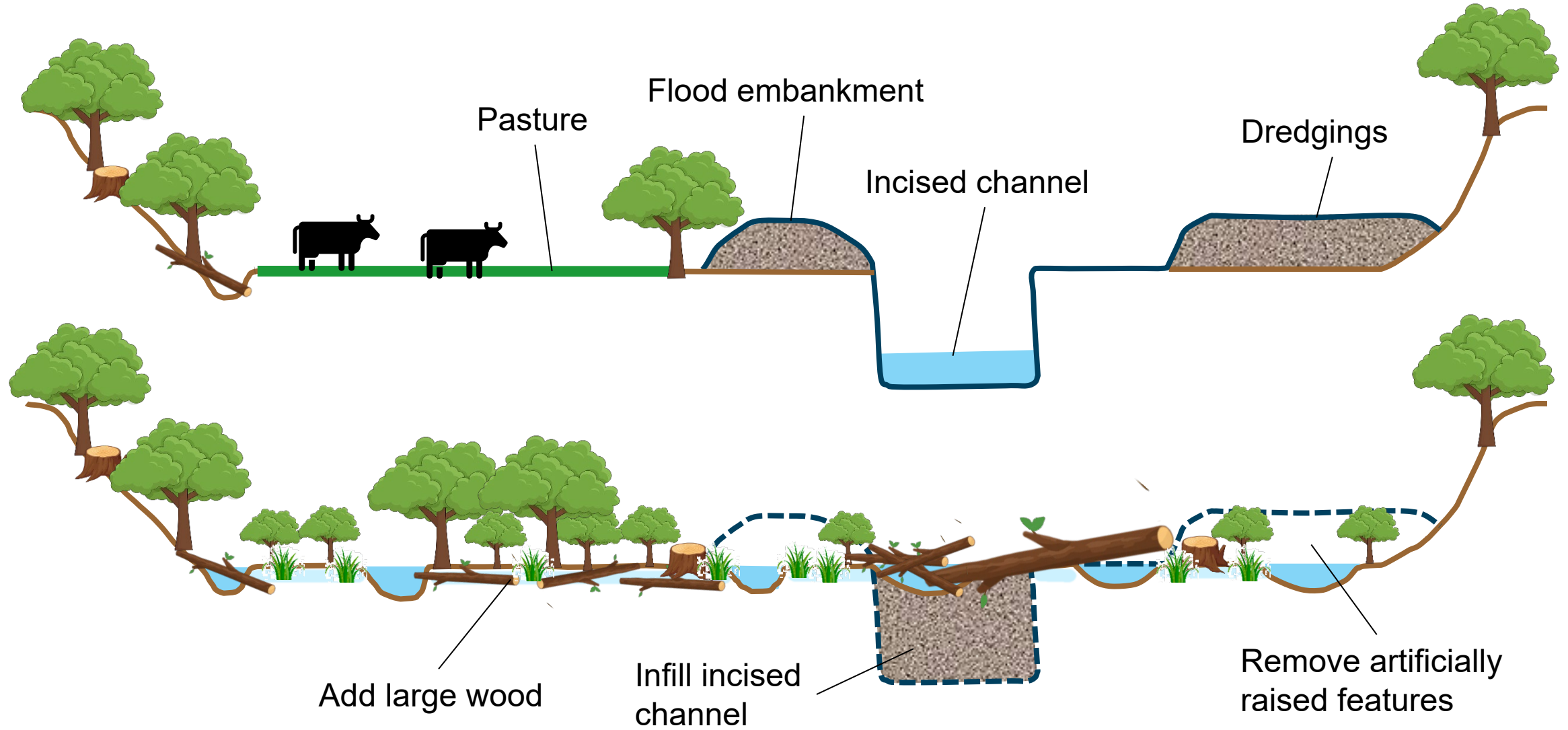


Drone imagery of  
Evenlode  
catchment in  
flood



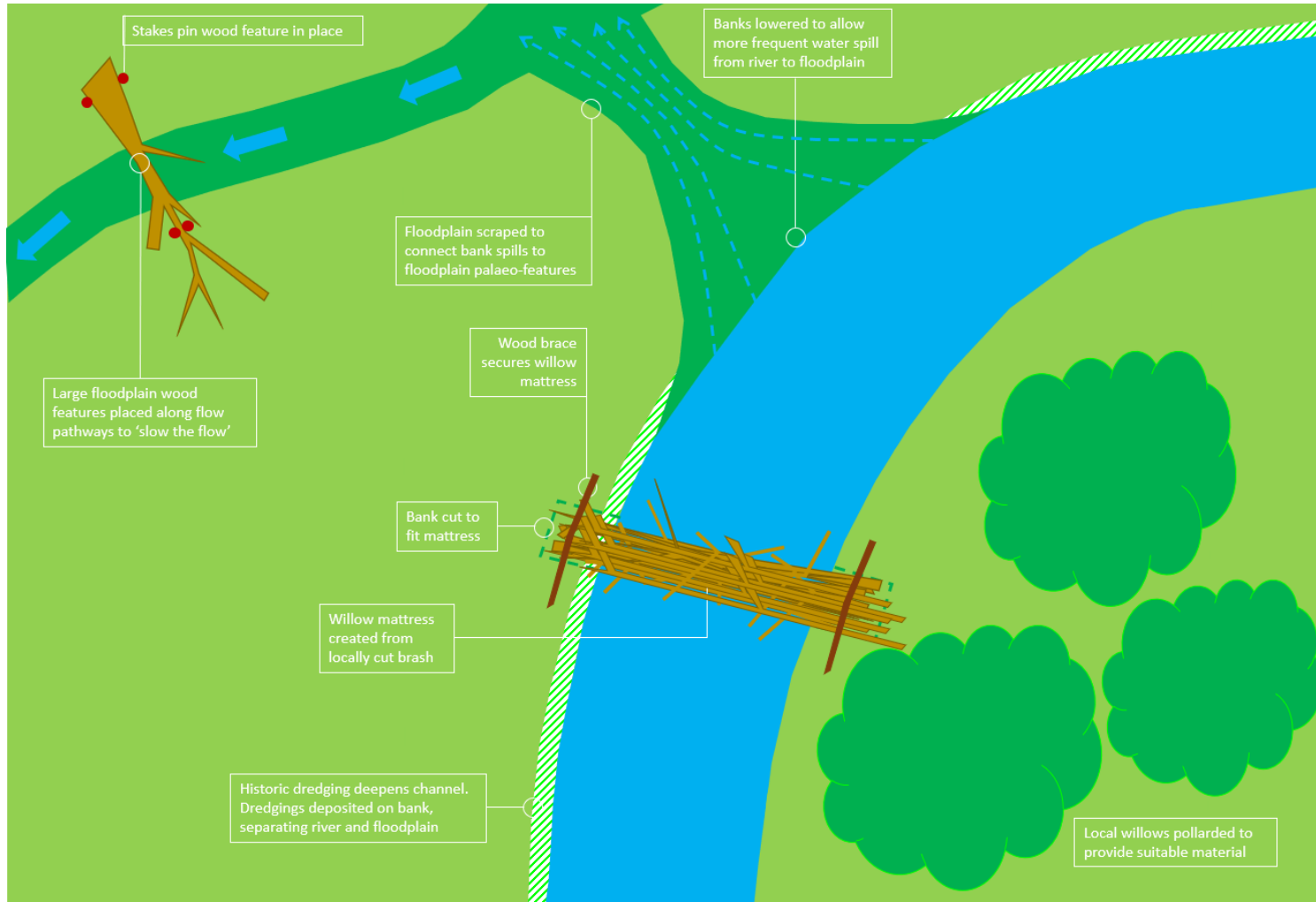


# Traditional Stage 0 design





# 'Slow' Stage 0 with Beaver Dam Analogues



## WHY do a 'slow' Stage 0?

- › Working with natural processes - letting the river do the work
- › Less material movement
- › Locally sourced materials
- › Low disturbance
- › Low cost
- › Low carbon
- › Potentially reversible

## HOW to do a 'slow' Stage 0:

- › Topographic survey
- › Drone mapping during flood events
- › Early Contractor Involvement
- › Landowner and stakeholder engagement
- › Learn and adapt design over time



# Outcomes



Sept 2021



Oct 2021



Dec 2021



Mar 2022




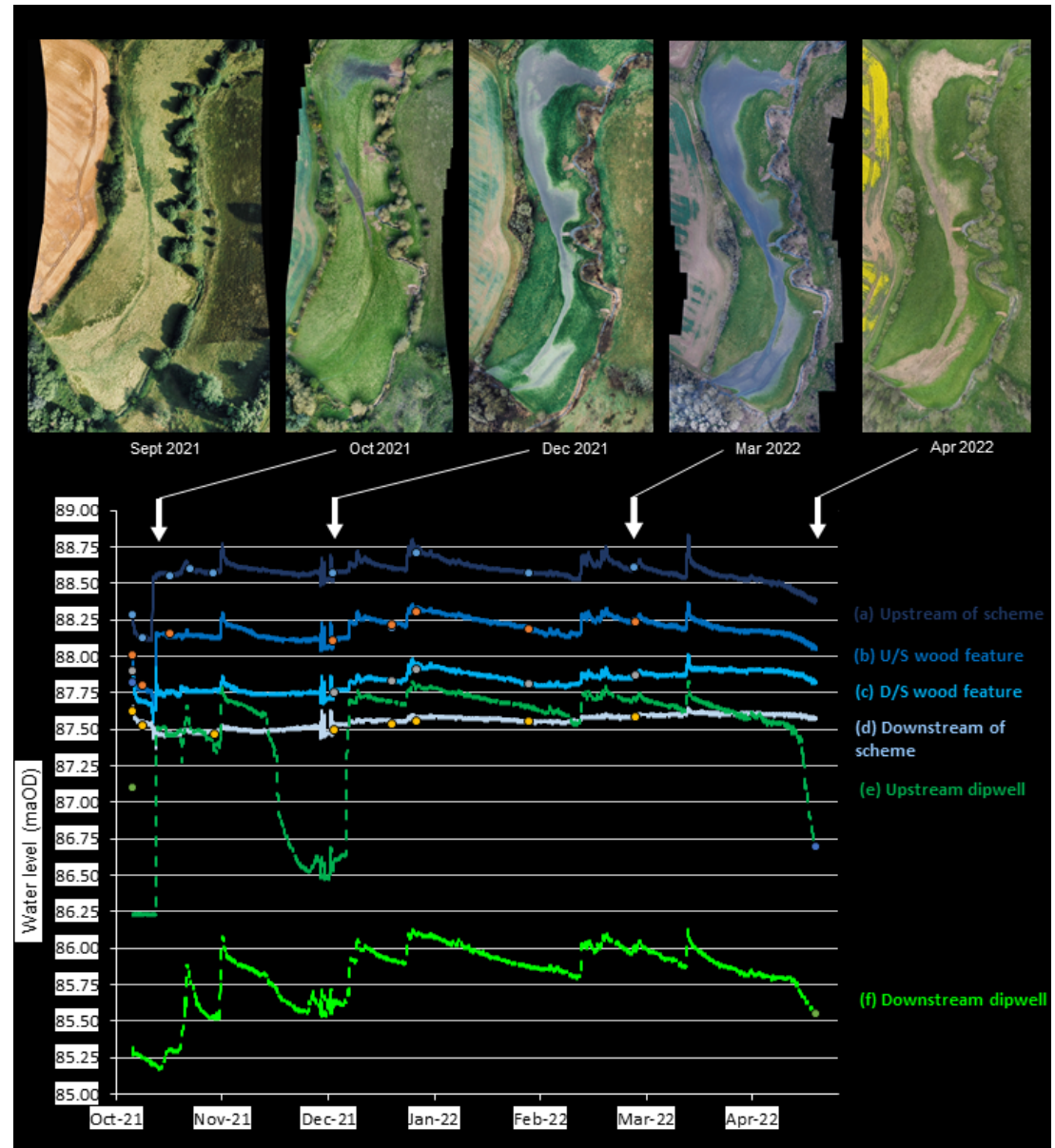
Apr 2022



# Monitoring multiple benefits

- › Hydrometric monitoring (levels in the river and in Dipwells in the floodplain)
- › Geomorphology (topographic survey and MoRPh)
- › Water quality
- › Fisheries survey
- › Carbon (Bangor University)
- › Floodplain flora (Wychwood Flora Group)
- › Drone imagery
- › Time lapse camera
- › Fixed point photography
- › Masters students – University of Nottingham & Bangor University

Location ID <b>FPP2</b>	Location grid reference <b>SP 45124 21160</b>
<b>Location description</b> <ul style="list-style-type: none"> <li>• Photo taken looking north east to WDD2</li> <li>• Marker location on the western side of the River Dorn.</li> <li>• Marker location on high ground on the fence line with a row of hawthorns and is &lt;1 m from the fence.</li> </ul>	<b>Camera description</b> <ul style="list-style-type: none"> <li>• River meanders frame photo</li> <li>• Gap in tree line in centre of photo</li> <li>• Tree line in centre of photo vertically.</li> </ul>
<b>Location photograph</b> 	





# Delivery in partnership and encouraged partners



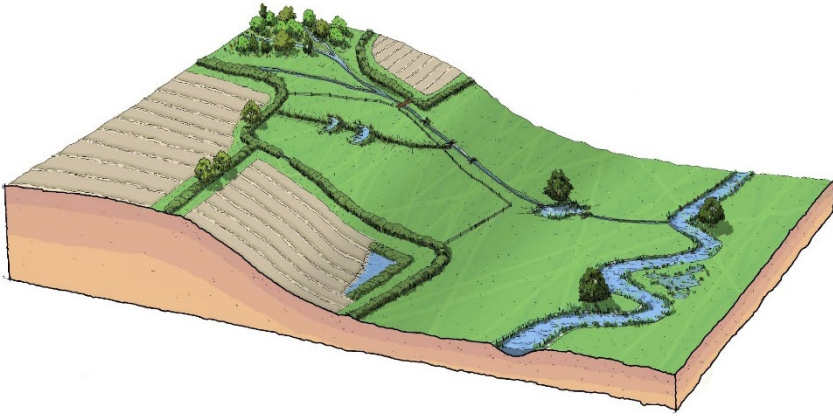
› Farmer cluster walkover



› British Society of Geomorphology site visit



# Links to wider catchment strategies



- › Thames Water Smarter Water Catchment funding farmer creation schemes



- › Environment Agency Evenlode River Landscape Restoration programme

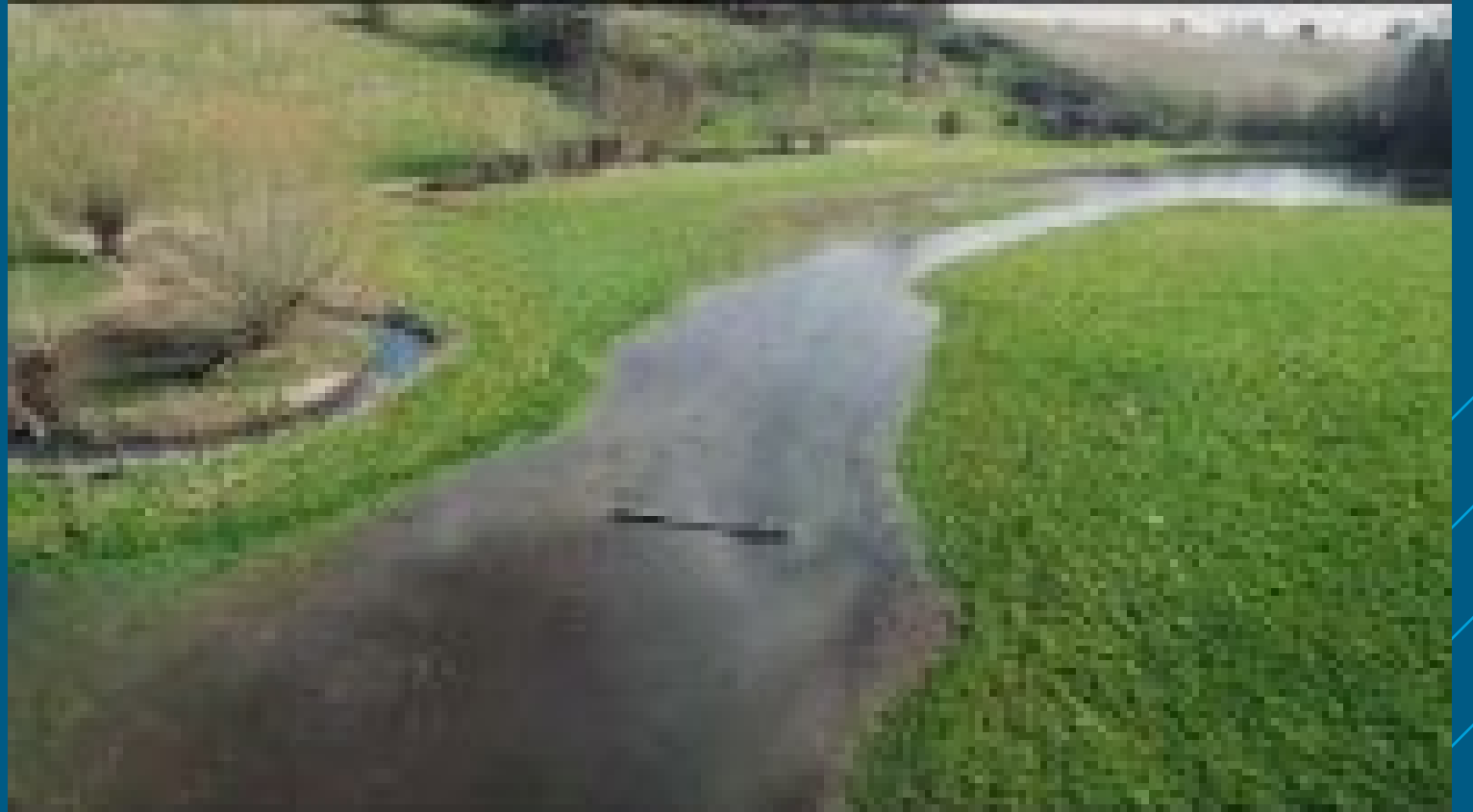


- › Bringing partners together to benefit communities at risk of flooding



# Take home points

1. Stage 0 is a dramatic landscape change, but the design and delivery doesn't have to be
2. Show and tell
3. Long-term involvement of partnership team
4. Give it a go! Be ready and willing to accept uncertainty



Source: Atkins Catchment Science YouTube channel