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Consultant Ecologists

Consultants of the Year 2010
Winner

Holnicote Multi-Objective Flood Demonstration Project

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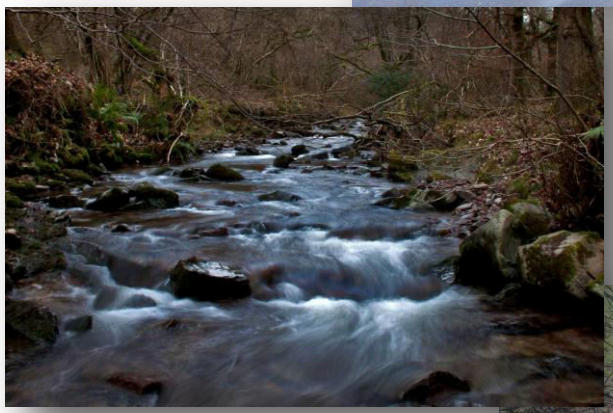
Introduction

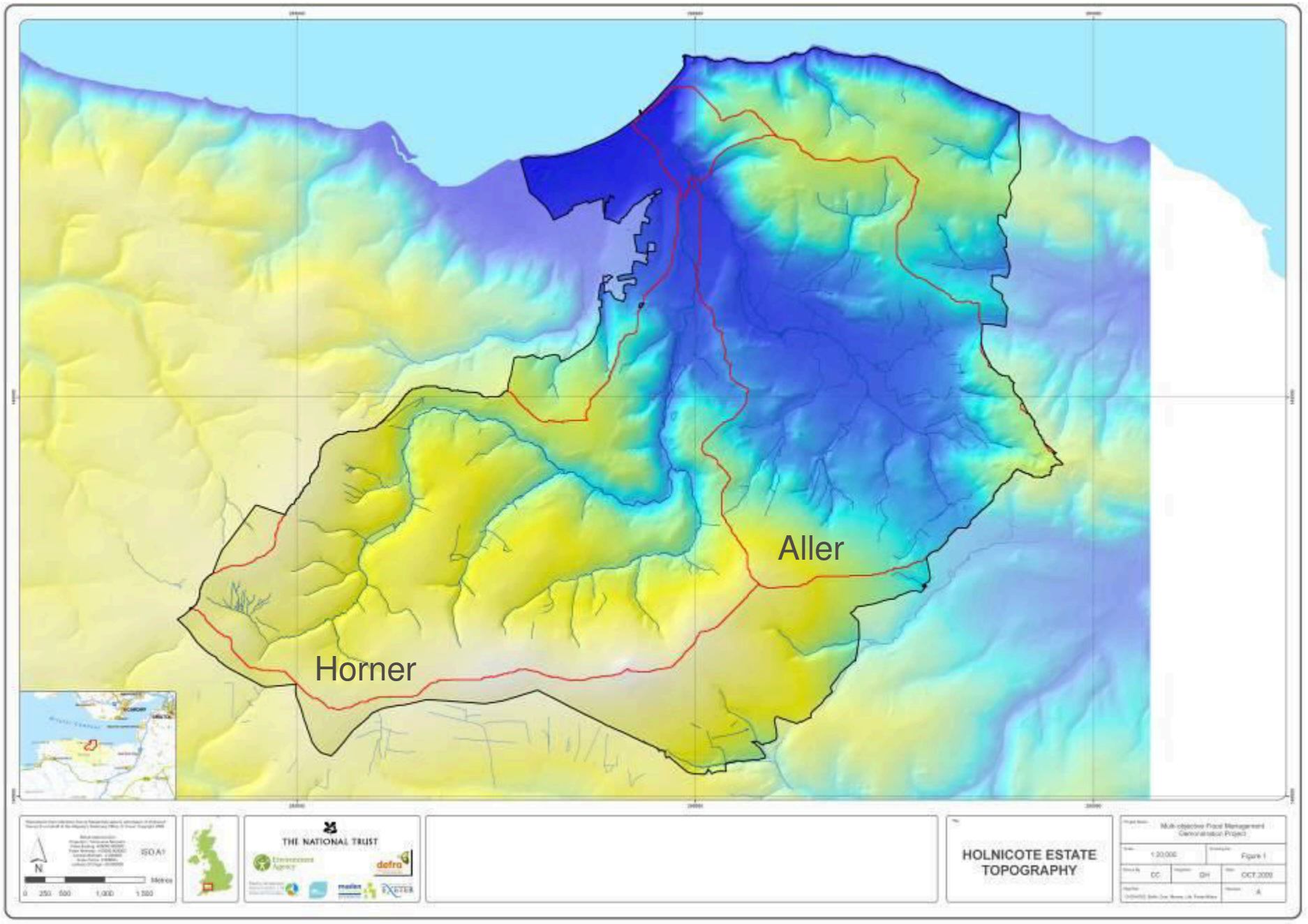
Objectives

- Identify landscape scale land management change required to mitigate downstream flood risk
- Maximise multiple benefits – habitat restoration landscape, soil conservation, carbon stewardship, diffuse pollution buffering, public access & learning opportunities

Investigations

- Catchment characterisation
- Hydrological monitoring
- Hydrologic & hydraulic modelling
- Water quality & ecology assessment
- Ecosystem services assessment

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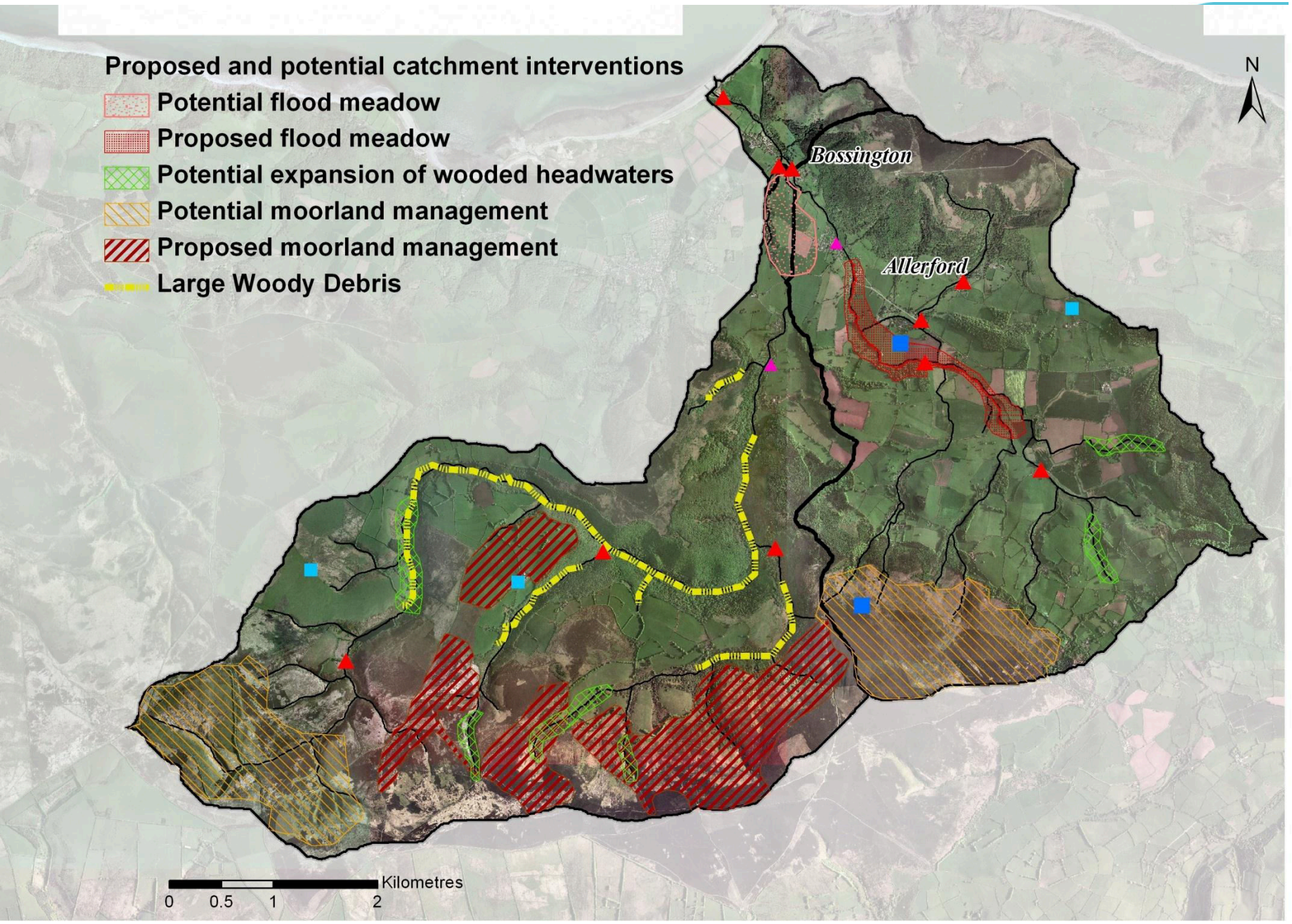
TOPOGRAPHY
Multi-objective Flood Management
Demonstration Project
Figure 1
OCT 2009

Land management changes

- Moorland restoration – heather restoration, surface drainage management (paths, tracks, roads) & grip blocking
- Interventions in direct/rapid flow pathways on hillslopes & connectivity to watercourses
- Implementation of best practice land & soil management
- Woodland extension
- Large woody debris dams
- Flood meadow creation


Proposed and potential catchment interventions
Potential flood meadow
Proposed flood meadow
Potential expansion of wooded headwaters
Potential moorland management
Proposed moorland management
Large Woody Debris
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Bossington
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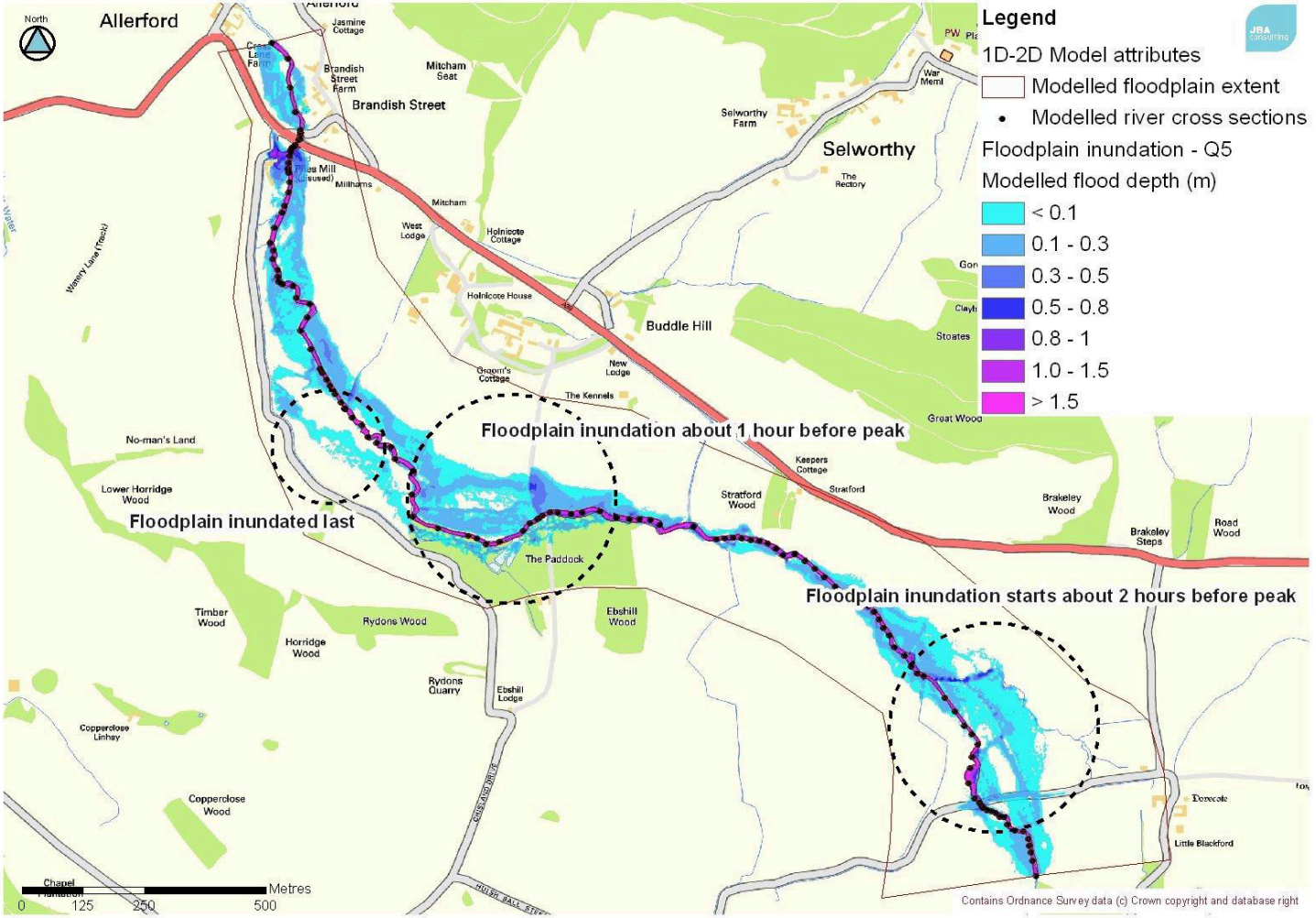
2

Key findings to date

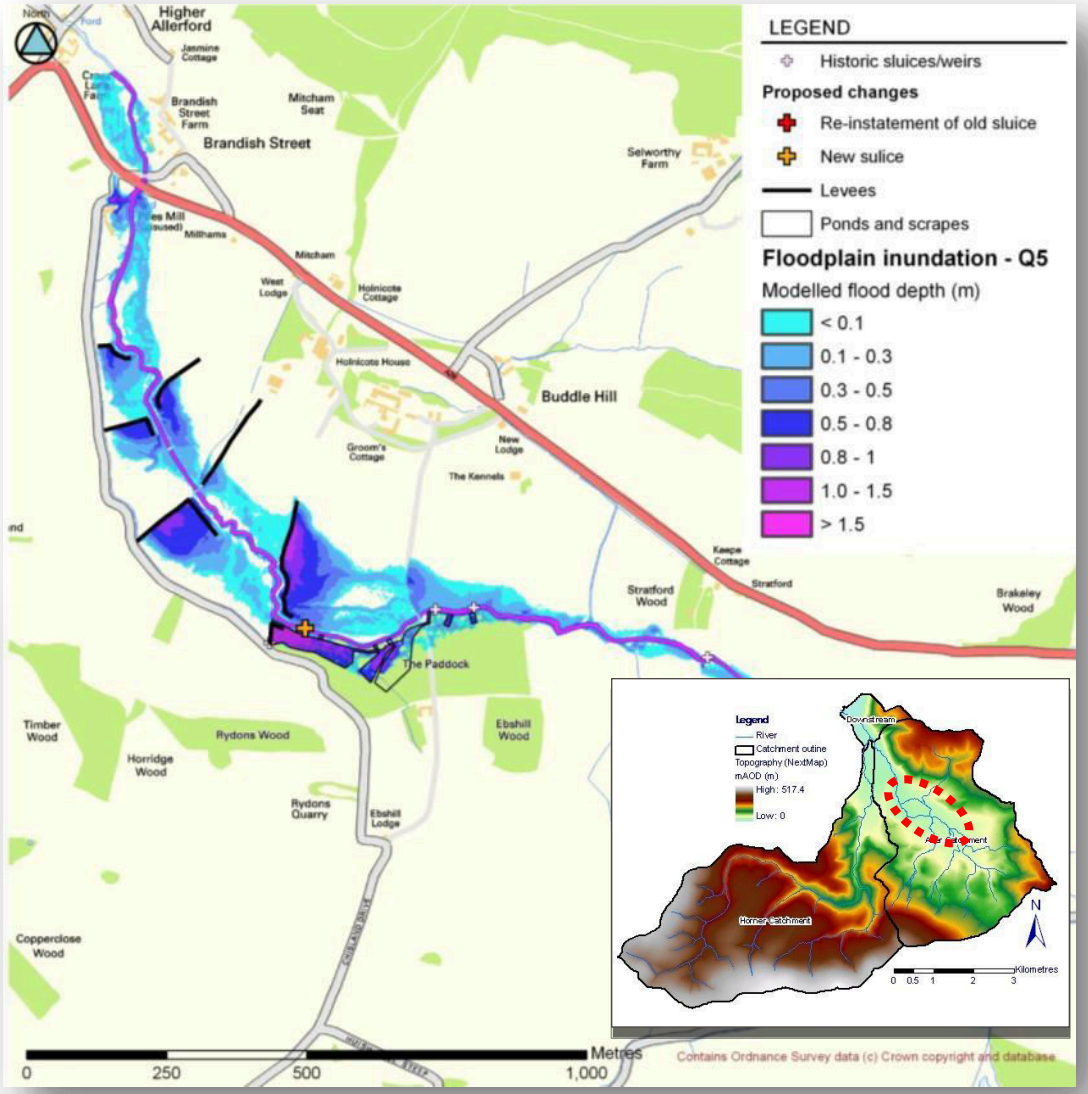
- Modelling can assist in opportunity mapping, impact assessment and development of intervention design
- Demo work
- Early interve
- Early author
- Worki for inte



River and floodplain model – results

Aller flood meadow

Return period (years)	Peak reduction (%)	Peak delay (h)
5	7	1
20	2.5	0.8



Key findings to date

- Modelling can assist in opportunity mapping, impact assessment and development of intervention design
- Demonstration events to show and discuss intervention approaches do work

Off-line pond restoration

Moorland drainage attenuation

Key findings to date

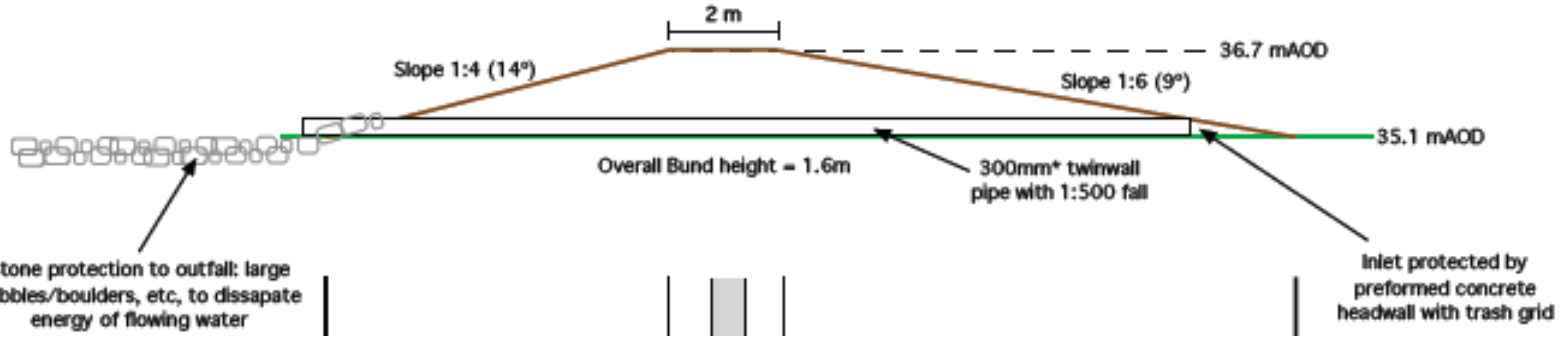
- ortunity mapping, impact assessment and
  design
- ow and discuss intervention approaches do

- Early dialogue with stakeholders on land management or catchment interventions to collect local knowledge, identify issues and constraints

- Ea gulatory, planning
  au ntions is essentia
- W ments of formal p
  for ning

Key findings to date

- Modelling can assist in opportun… and development of intervention des…
- Demonstration events to show a… es do work
- Early dialogue with stakeholders… nt interventions to collect local kno… aints
- Early dialogue with relevant regulatory, planning and consenting authorities on proposed interventions is essential
- Working through all the requirements of formal planning and consenting for interventions is time consuming



Project challenges

- Implementing change at a large enough scale to potentially make a difference
- Land manager uptake & enthusiasm
- Dry 2010-2011 – baseline monitoring
- Wet 2012 – flood meadow construction
- Extreme events – shingle bank breach

On-going debate

- Clear understanding of how land management and other natural flood management interventions contribute to flood risk management
- Balancing the benefits of multi-objective interventions through some form of equitable payments for ecosystem services scheme
- Pragmatic approach to the interpretation of the Reservoirs Act requirements for temporary floodplain storage interventions incorporating shallow earth bunds
- Clear guidance on the application of an NFM approach at a range of scales