



*living and working
in harmony with nature*

Biosphere People Session



Special Partnership

- Partners from approx. 30 organisations
- Exciting new work:
- 25 Year Environment Plan
 - Landscape Pioneer
 - Marine Pioneer
- SWEEP
 - multi disciplinary programme led by Exeter University with Plymouth University and PML
 - Working on a range of projects that aim to deliver transformative regional impact using a natural capital approach



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Flood Reduction...naturally

Natural Flood Management

Andy Bell

Context for Flood Management

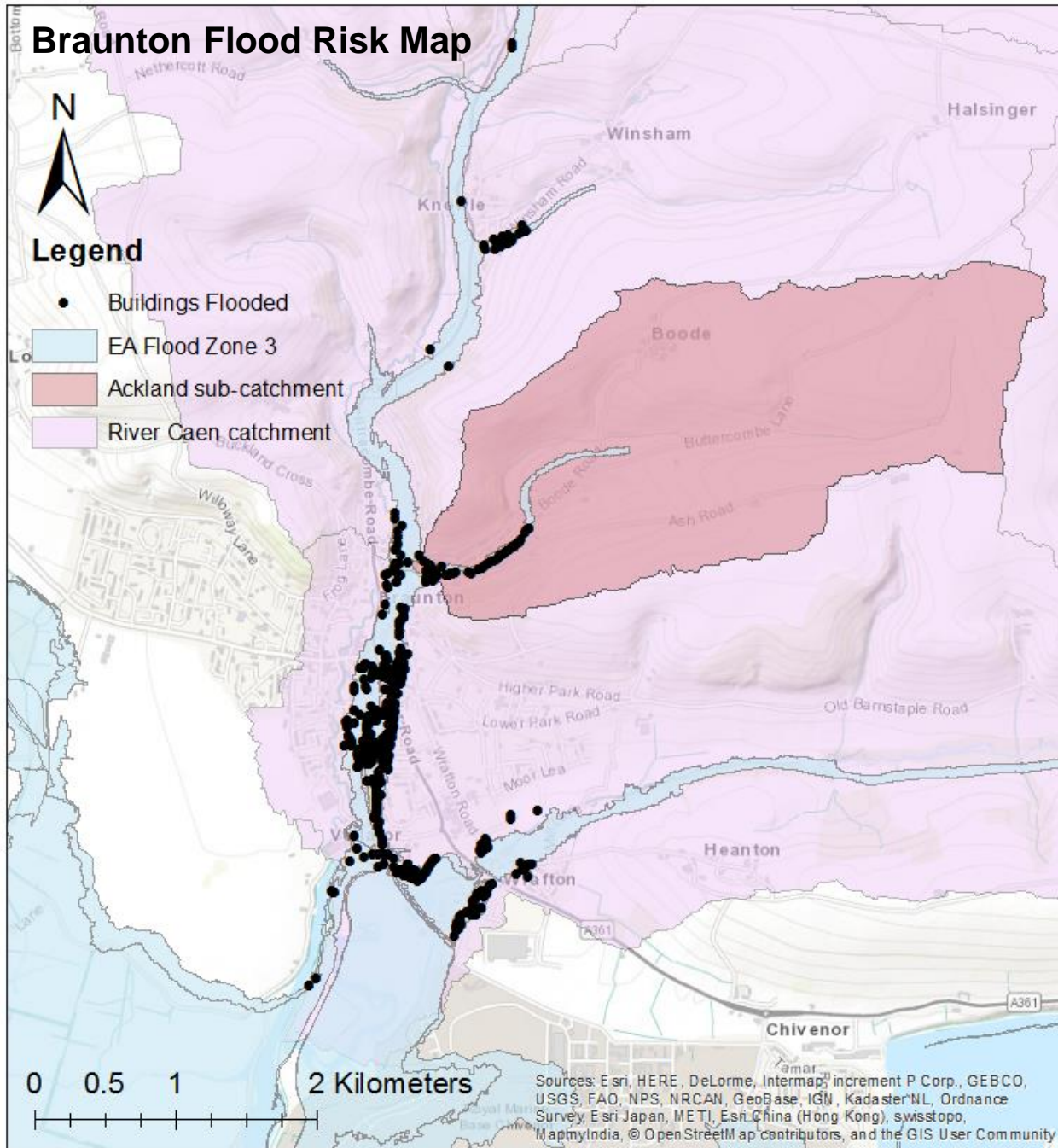
- Pitt review 2008
 - Catchment Flood Risk Management Plan
- National Ecosystem Assessment
 - Highlight the value of natural measure and cost effectiveness
- Defra 25 Year Environment Plan
 - Increase the natural capital providing a range of services for well being

Braunton Flood Risk Map



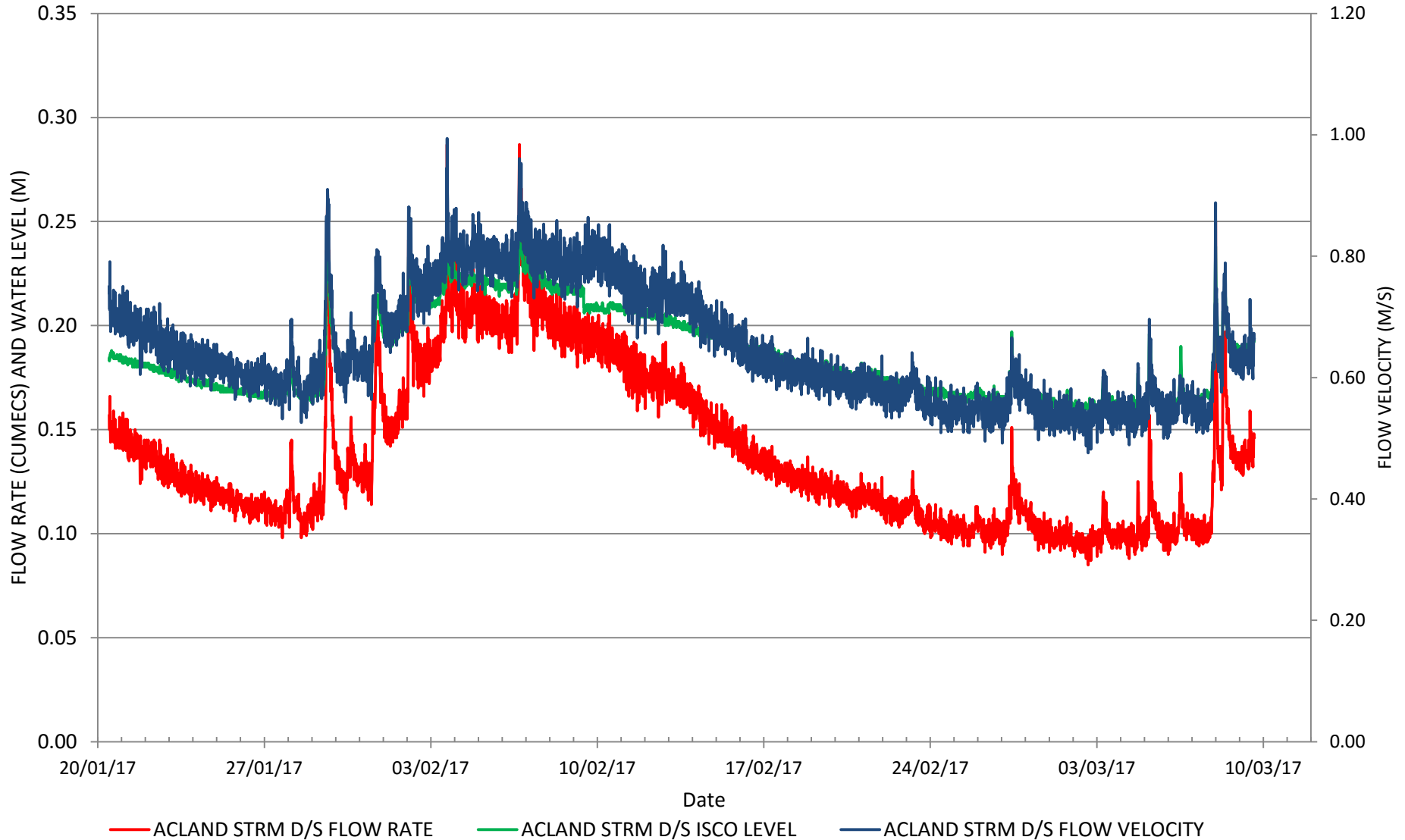
Legend

- Buildings Flooded
- EA Flood Zone 3
- Ackland sub-catchment
- River Caen catchment



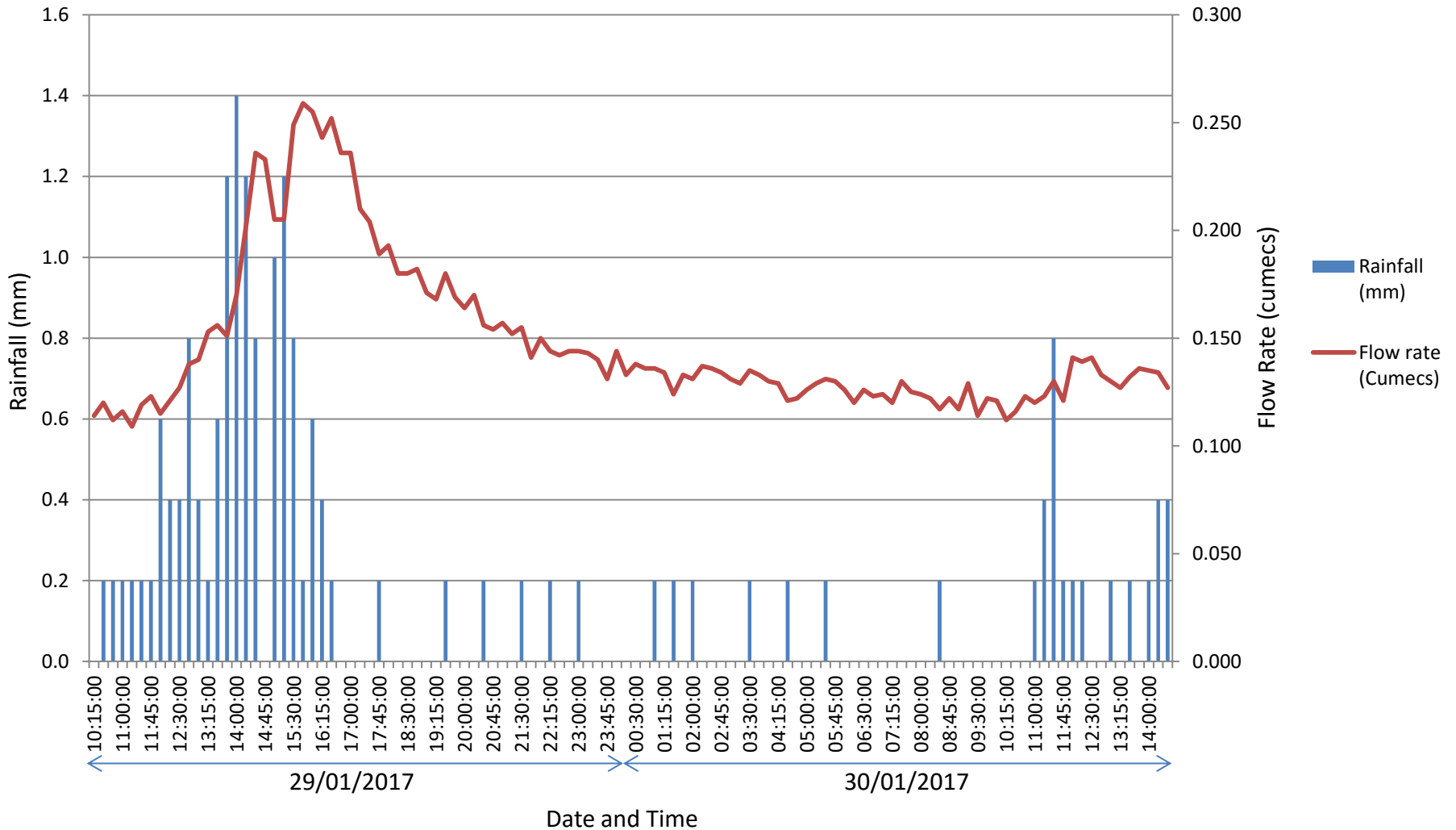
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Times of higher flow

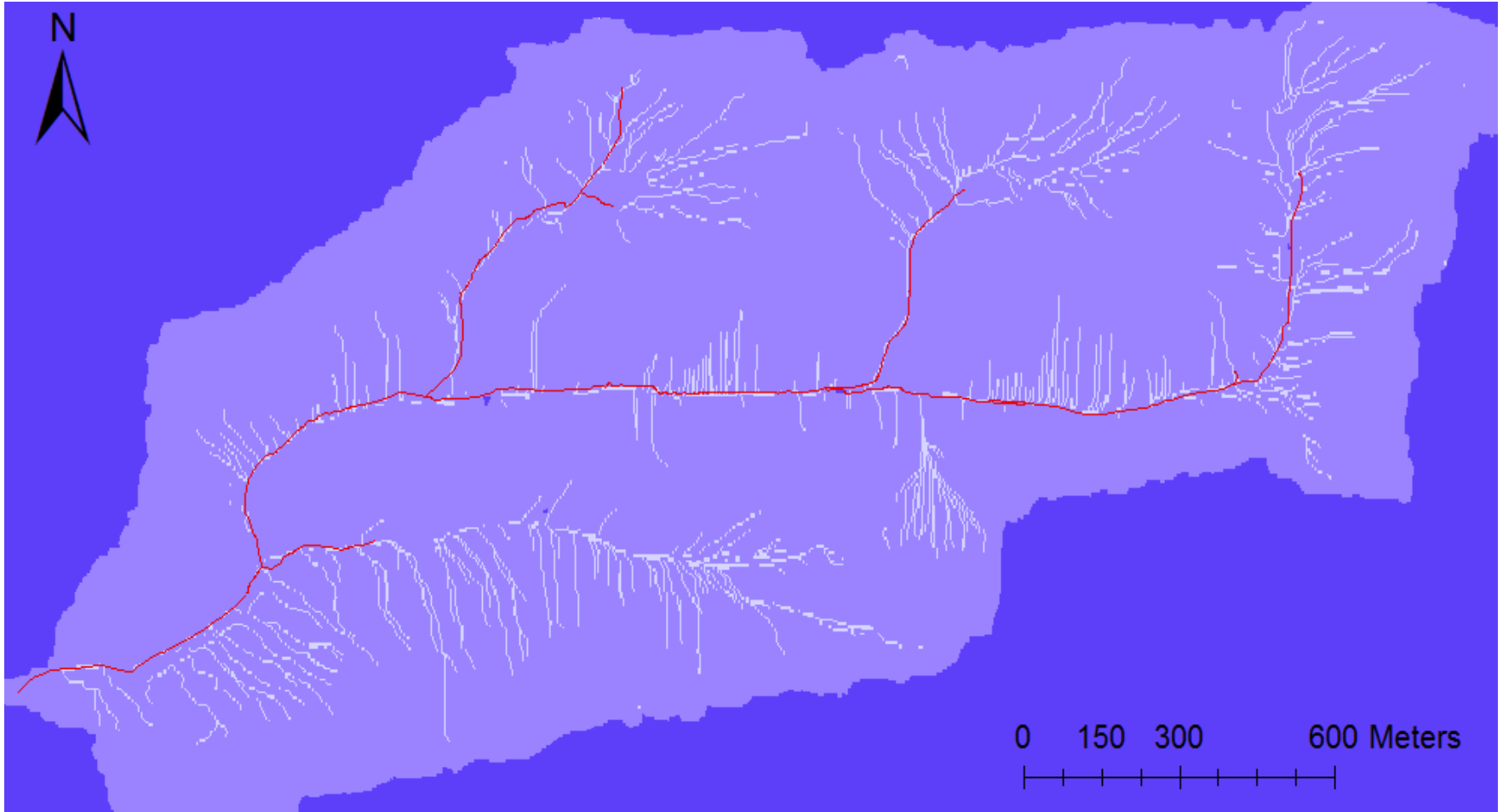


Rainfall and Instream Flow Rate

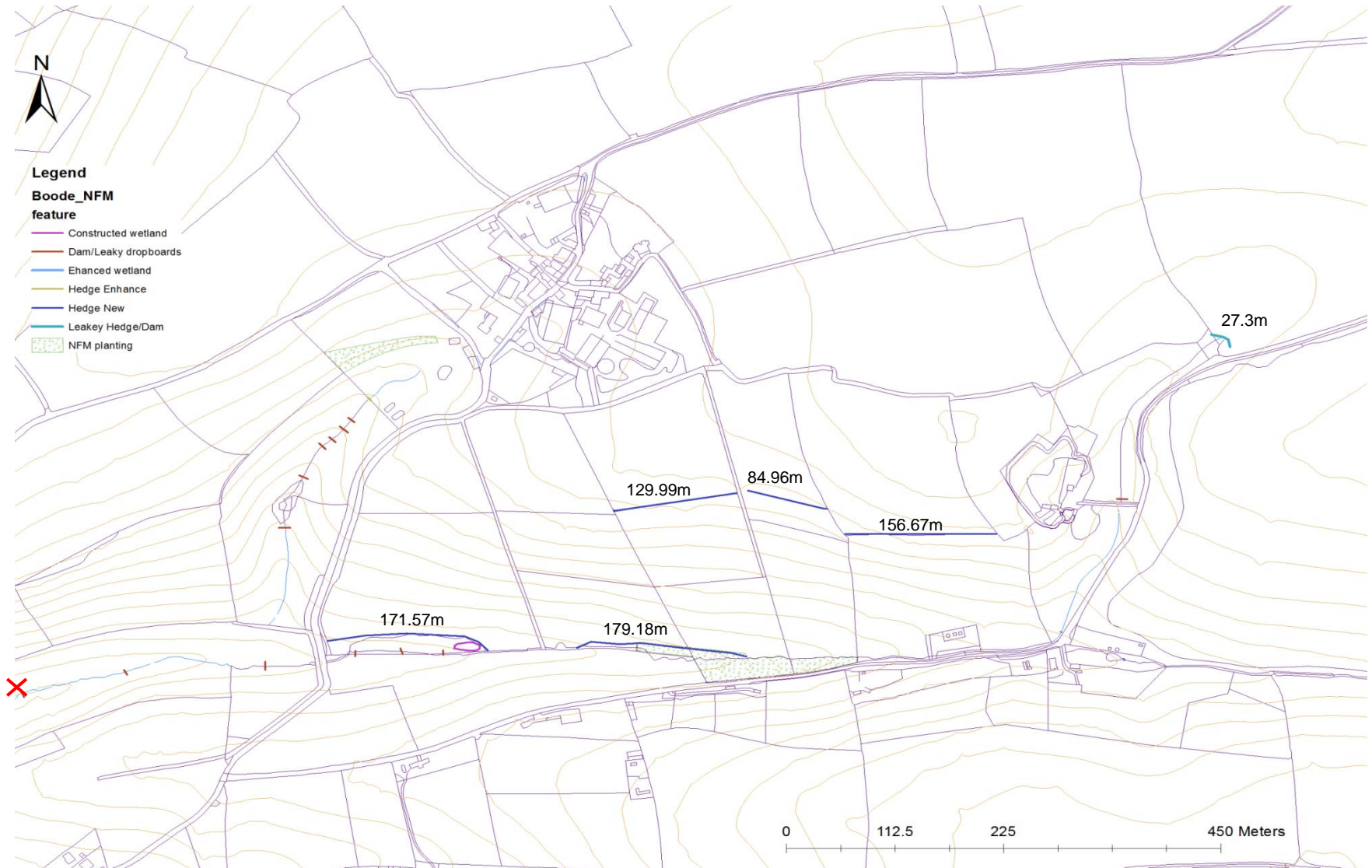
Acland Rainfall and Flow Rate



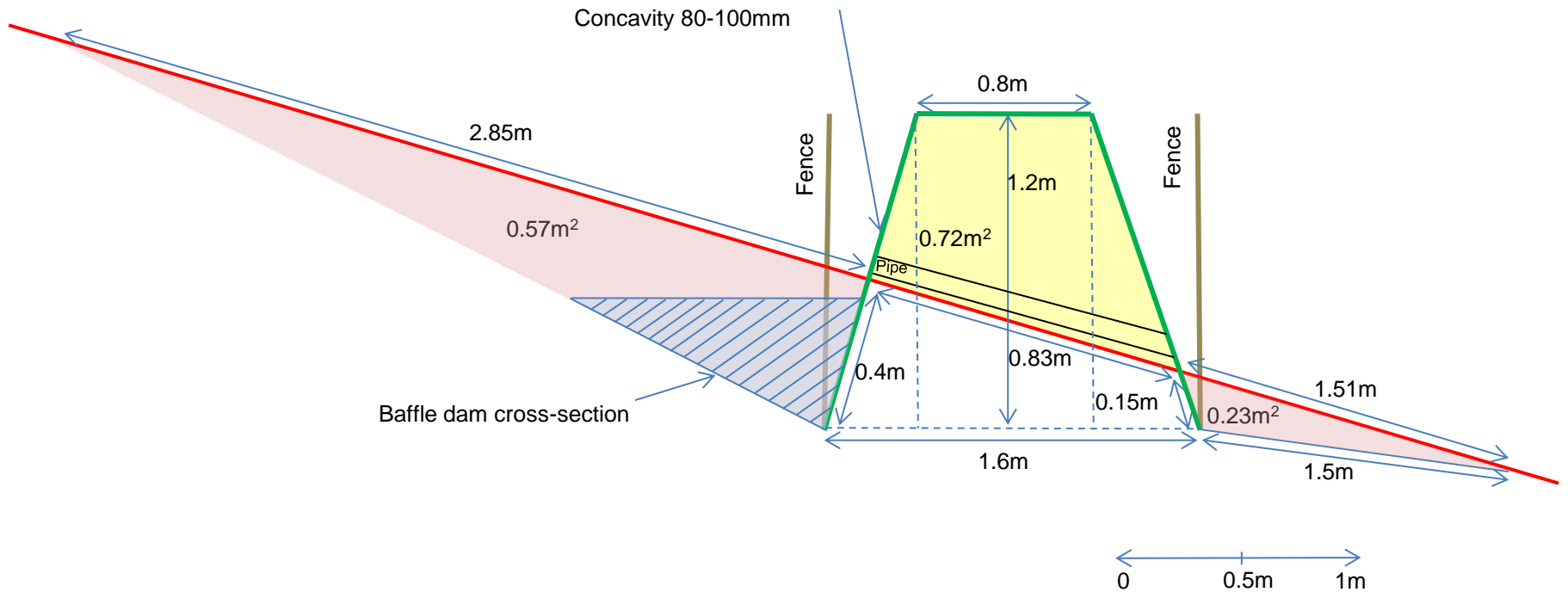
Runoff Map



Location of NFM Measures



Hedgerow Specification









Log dams



Wookey Hole Village (2017) Source: <http://www.wookehole.info/index.php/useful-information/190-build-a-leaky-dam-and-do-your-bit>

Log dams - Stroud



Photo by: Sophia Craddock



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Photo by: Sophia Craddock

Woodland Planting

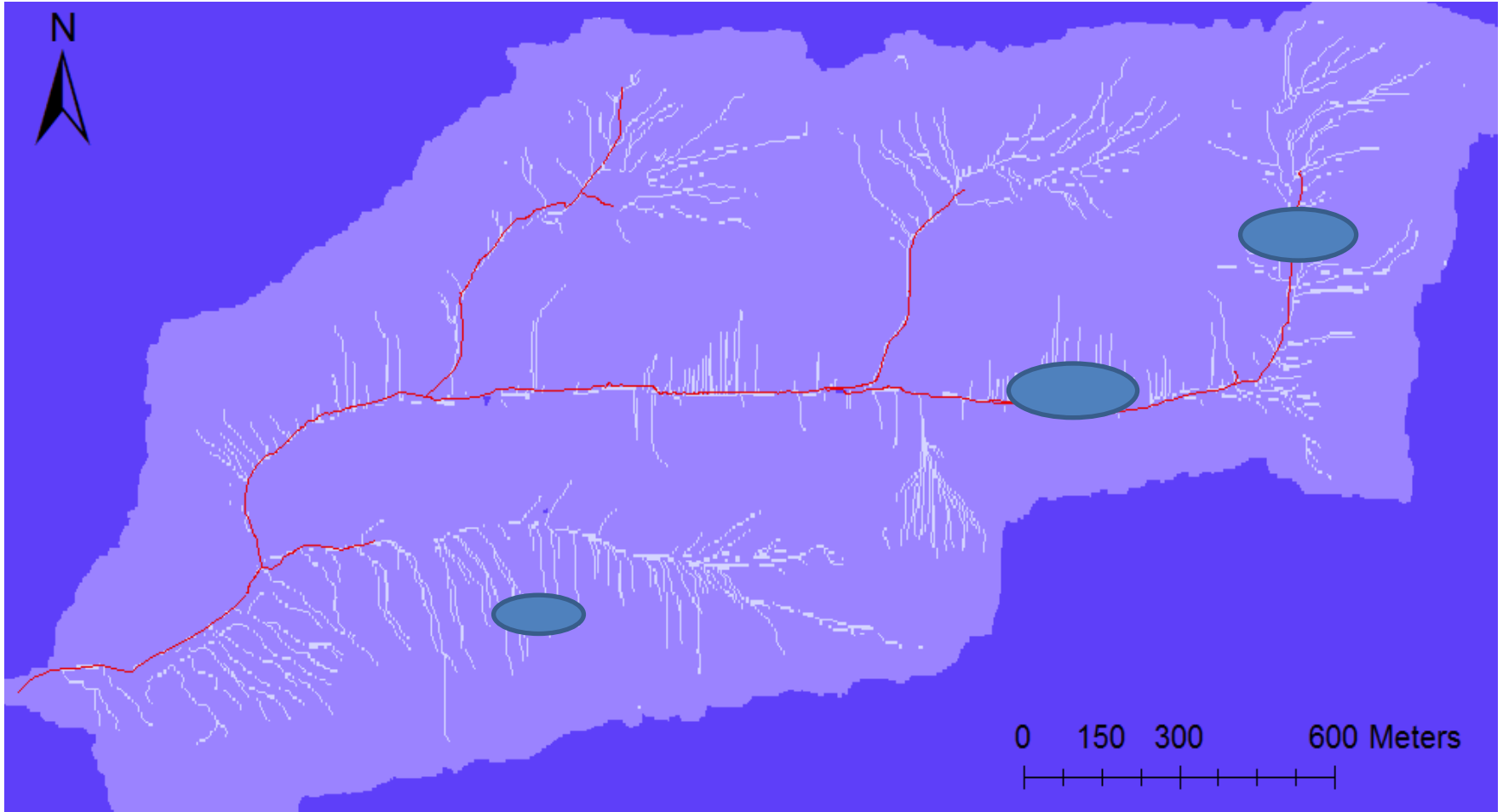




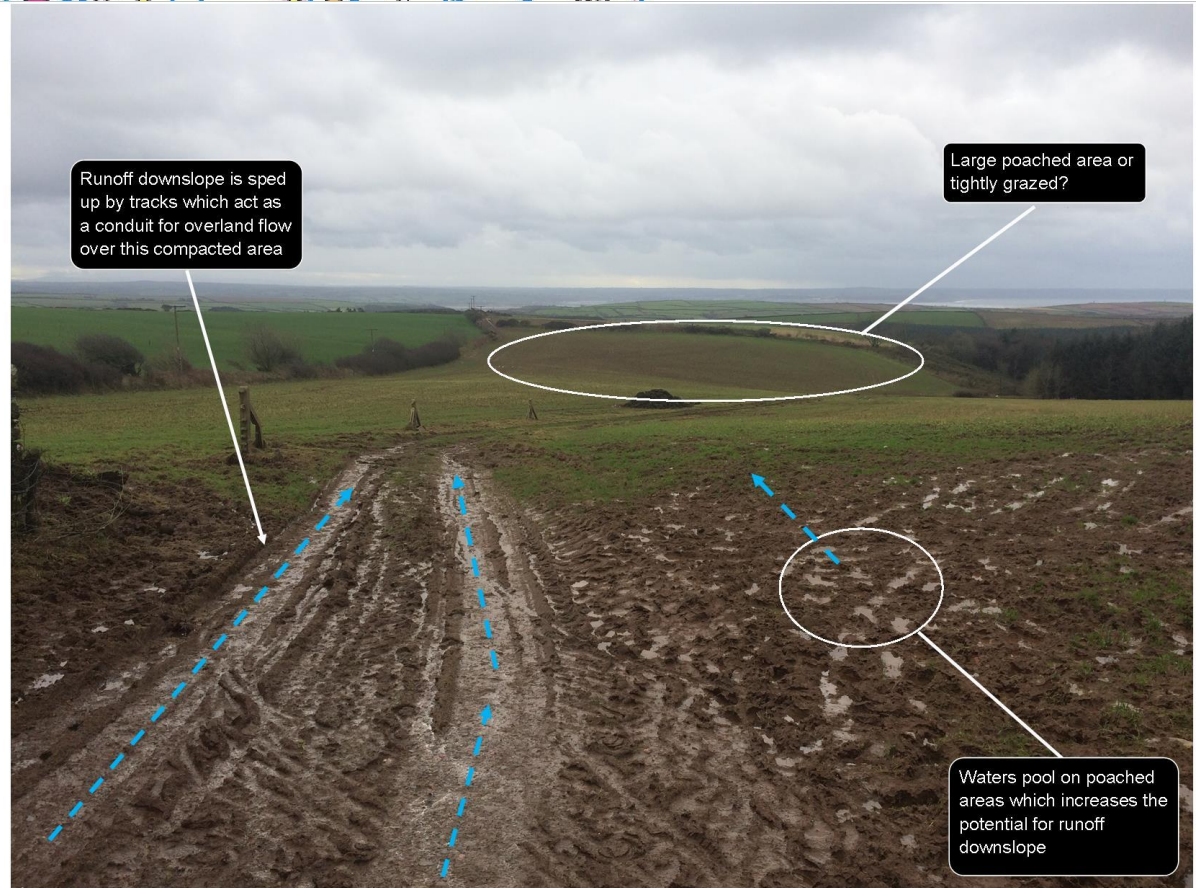
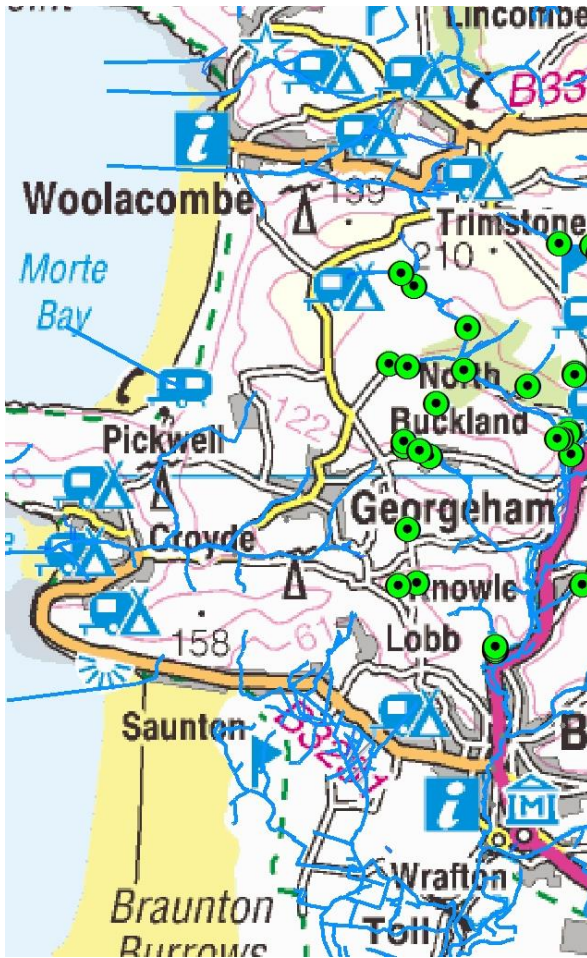
Scheme Costs

Item	Cost	Source
Project Management	£2,500	DCC/EA
Design	£3,000	DCC/EA
Ante project river monitoring	£7,000	DCC/EA
Groundworks & hedge banks	£23,400	DCC/EA
large woody debris dams materials and installation	£3,600	DCC/EA
fencing	£2,000	DCC/EA
Sub Total	£41,500	
Woodland Planting	£20,000	Biodiversity Offset
Post project monitoring and assessment (equipment and report)	£40,000	NE
TOTAL	£101,500	

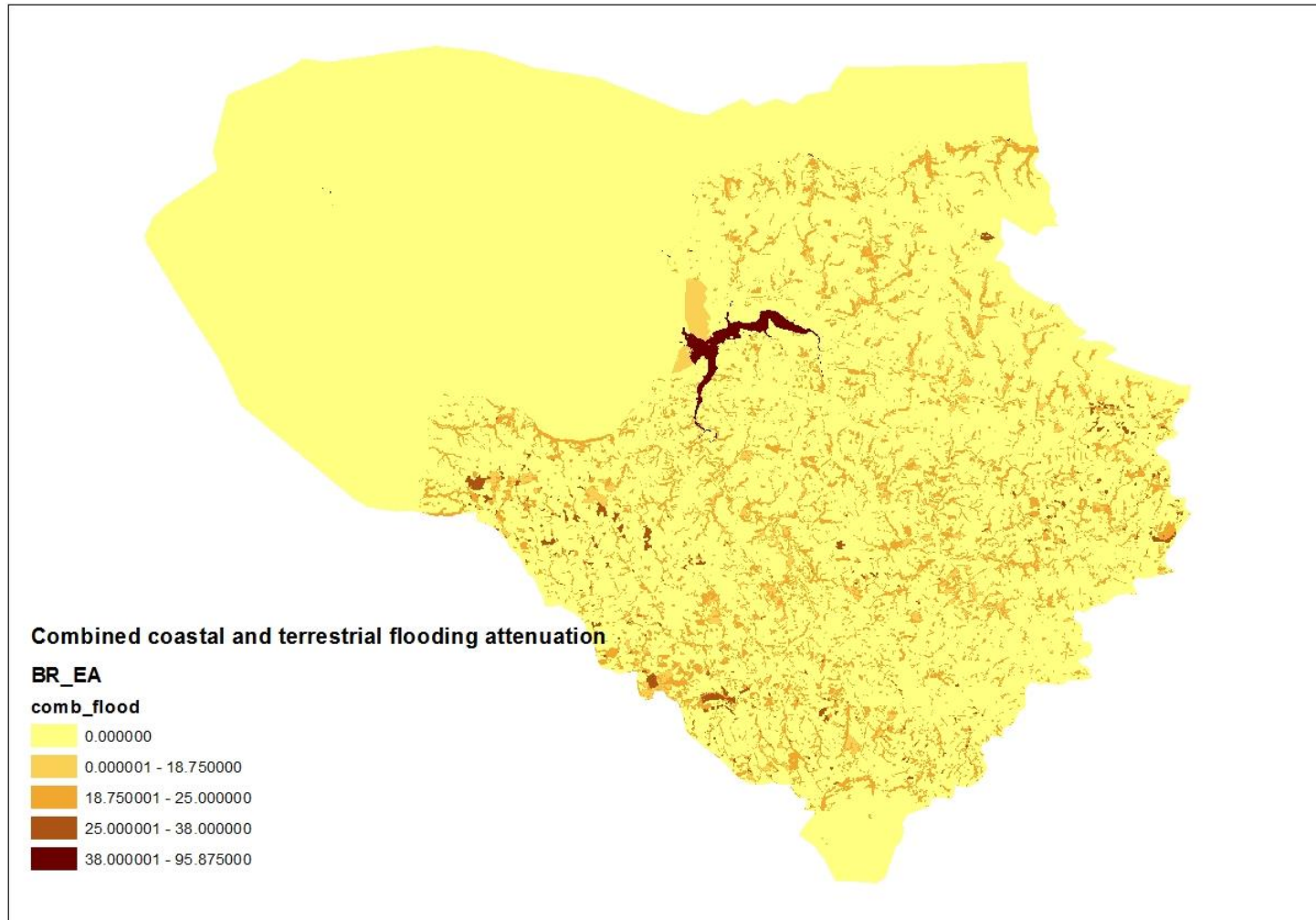
Next steps



Next steps

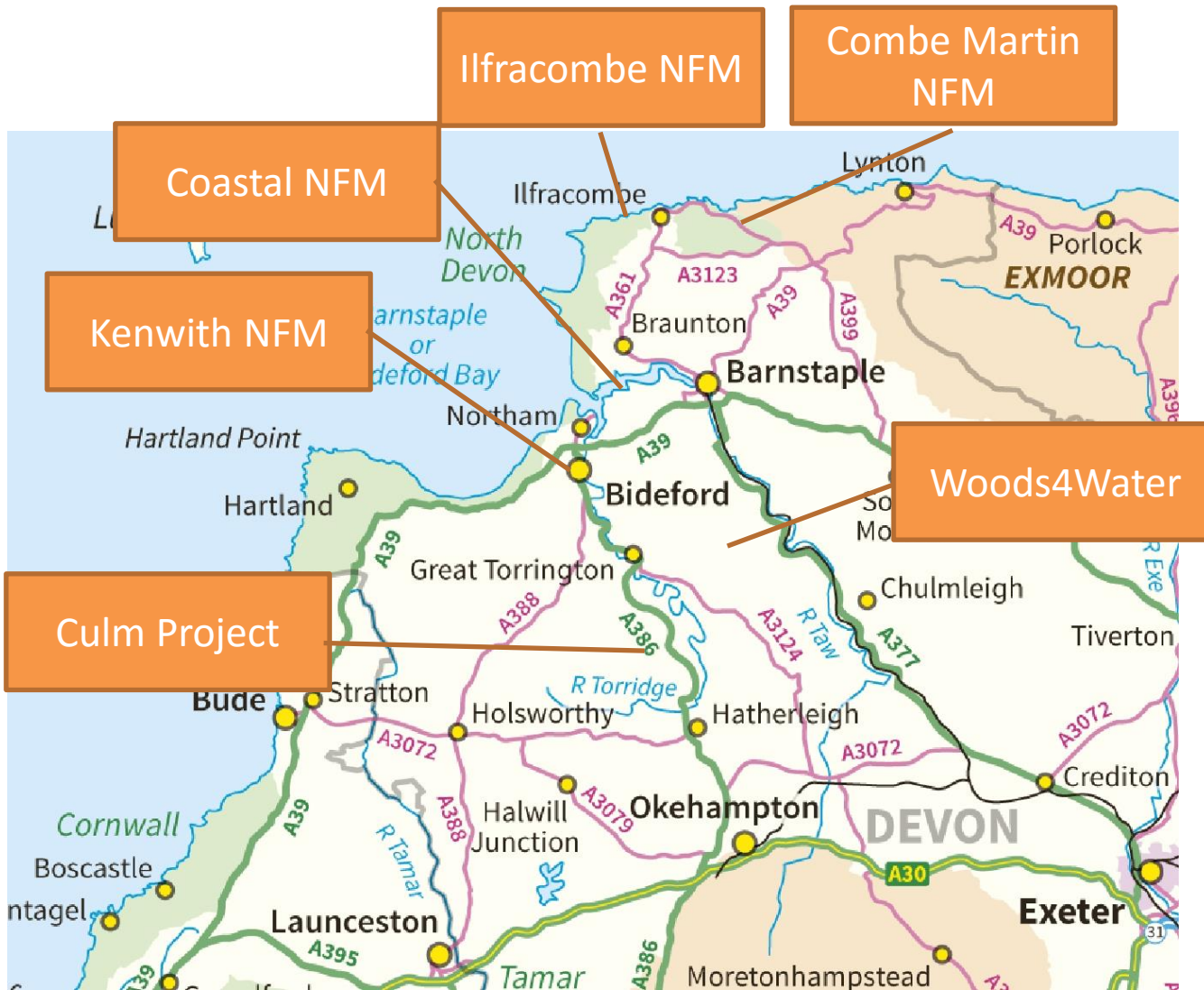


Flood Attenuation



Identify presence/absence and abundance of flood reducing habitats





Key Questions

- This needs to happen a lot more; how do we achieve that?
- How can we streamline the processes?
- How can we involve the community more?
- Is there a way be smarter with developer contributions and net gain?

Thank you for participating