Piddlehinton
Natural Flood Management and Resilience

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Environment Agency

What is Natural Flood Management?

- *Working with, restoring and emulating Natural Processes*
- *Nature Based Solutions*
- *Slowing the Flow*
- *Creating / restoring the 'sponge effect'*

- Catchment management
- Starts in the field
- Compliments traditional flood risk management
- Delivers Multiple Benefits
- Combination of multiple, small (often) low-cost measures
- Complex in Groundwater dominated catchments
- *No Silver Bullet* - Won't stop all flooding!!

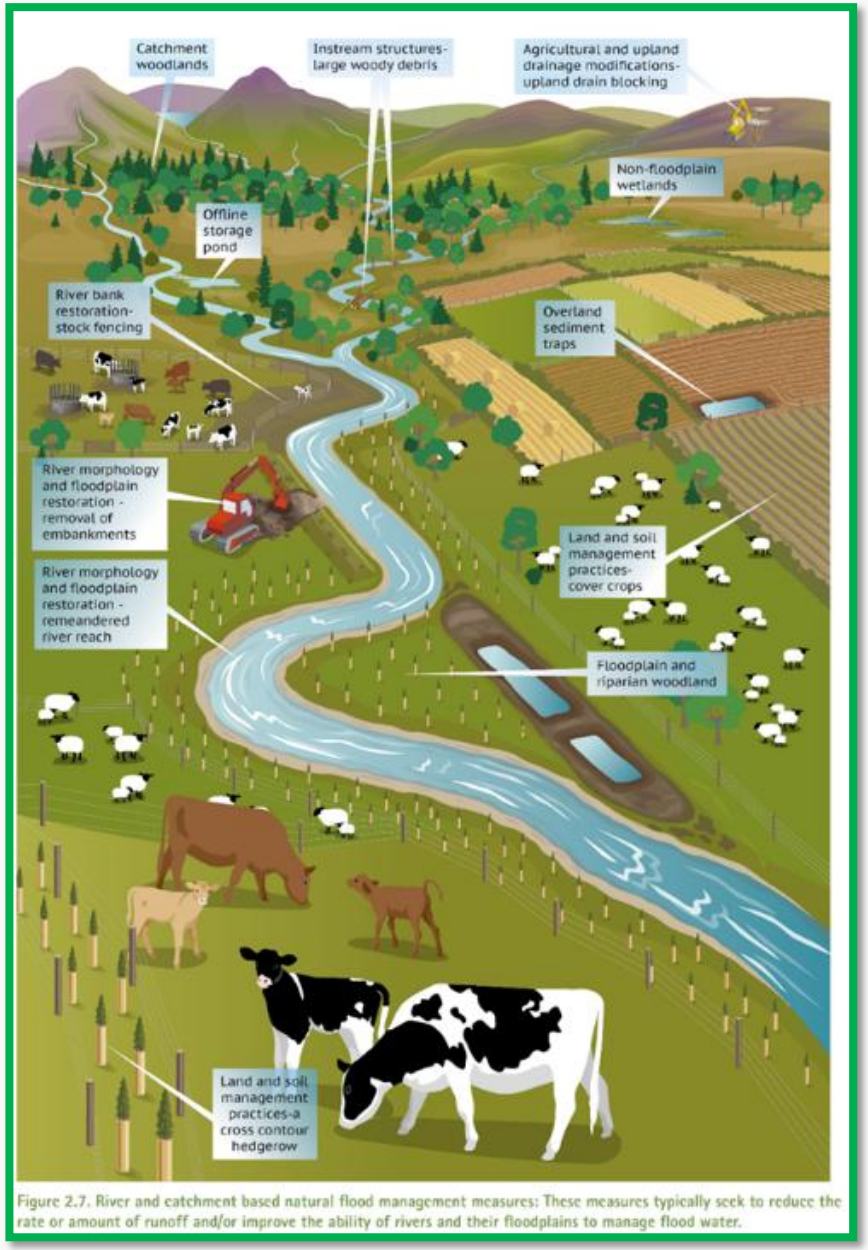
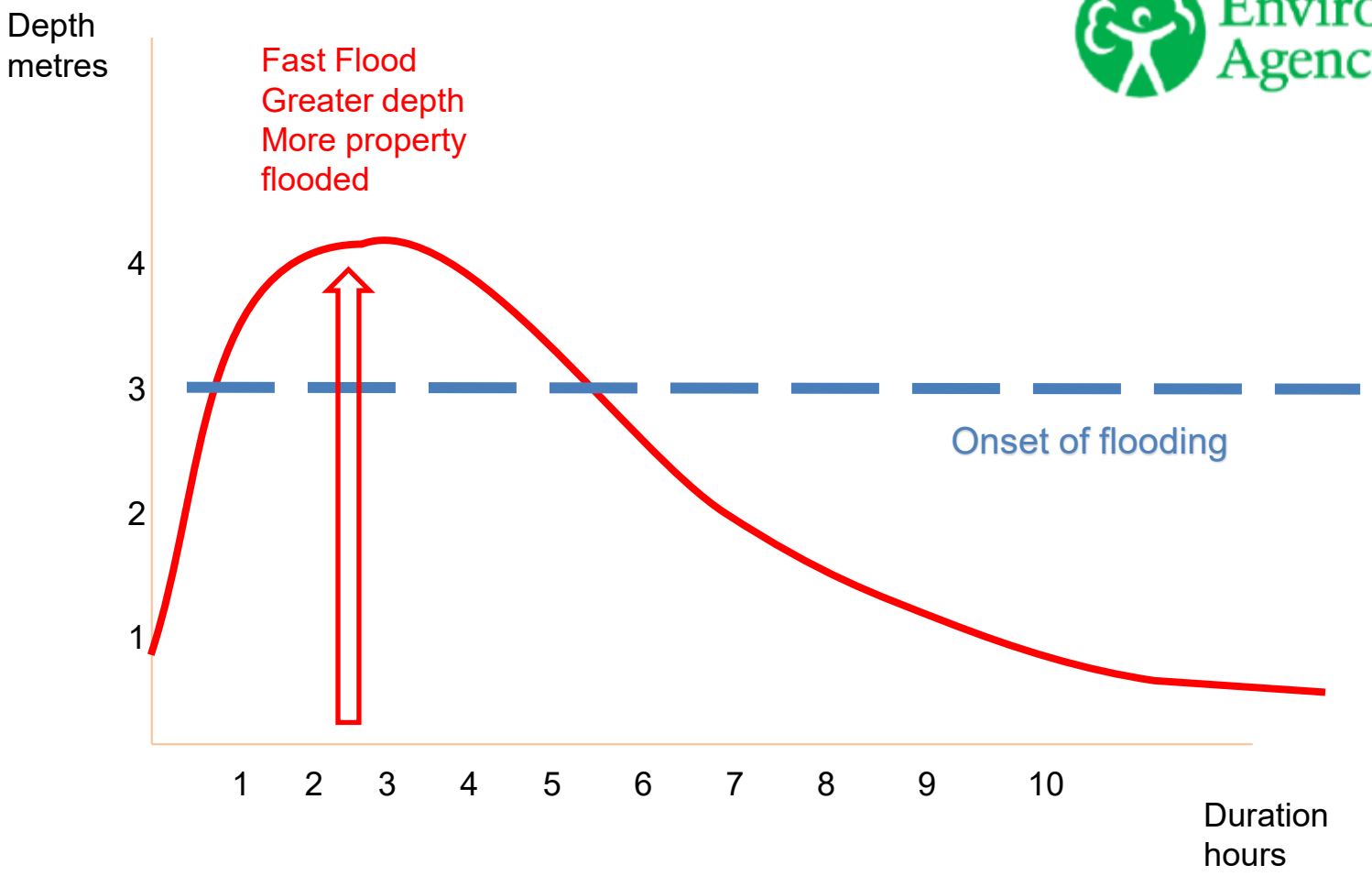


Figure 2.7. River and catchment based natural flood management measures: These measures typically seek to reduce the rate or amount of runoff and/or improve the ability of rivers and their floodplains to manage flood water.

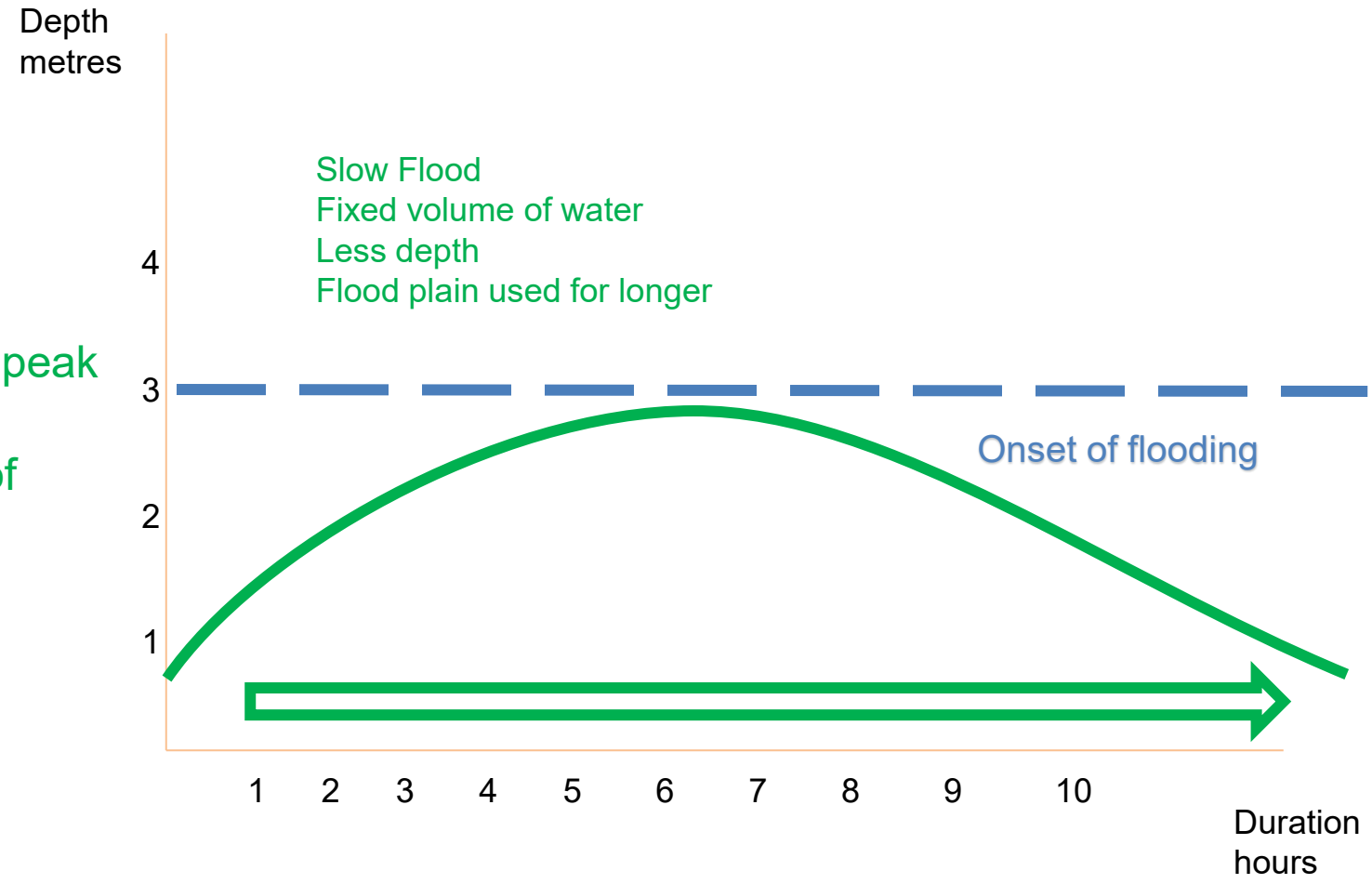
How NFM Works



How NFM Works

- Slow the flow
- Delay the peak
- Reduce time to peak

- Same amount of water



Examples of NFM Measures

- To Increase infiltration of rainfall
- To Intercept surface flow paths
- To hold back and attenuate flow
- To *'slow the flow'* instream
- To store and attenuate on floodplains


Breaking compaction



Improving soil structure


Buffer strips


Leaky dams


Hedge Planting


Ditch blocking


Leaky ponds


Sand dune management


Beavers


SUDS


Deculverting


River restoration


Reconnecting floodplains

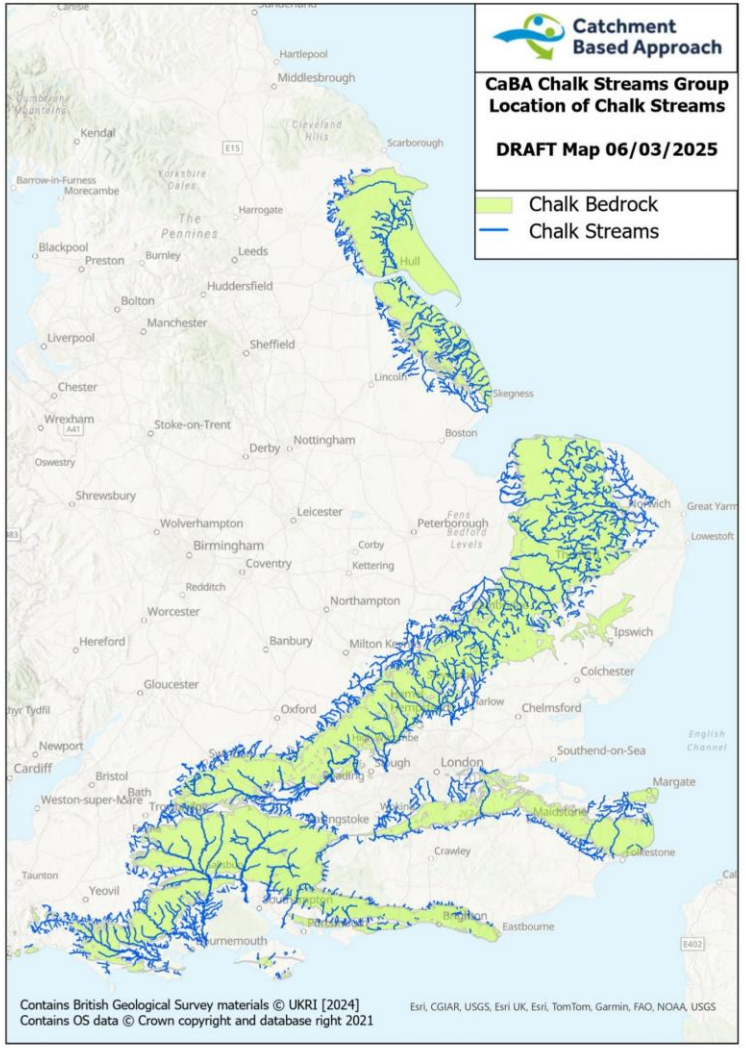
Upper Piddle Catchment

Chalkstream

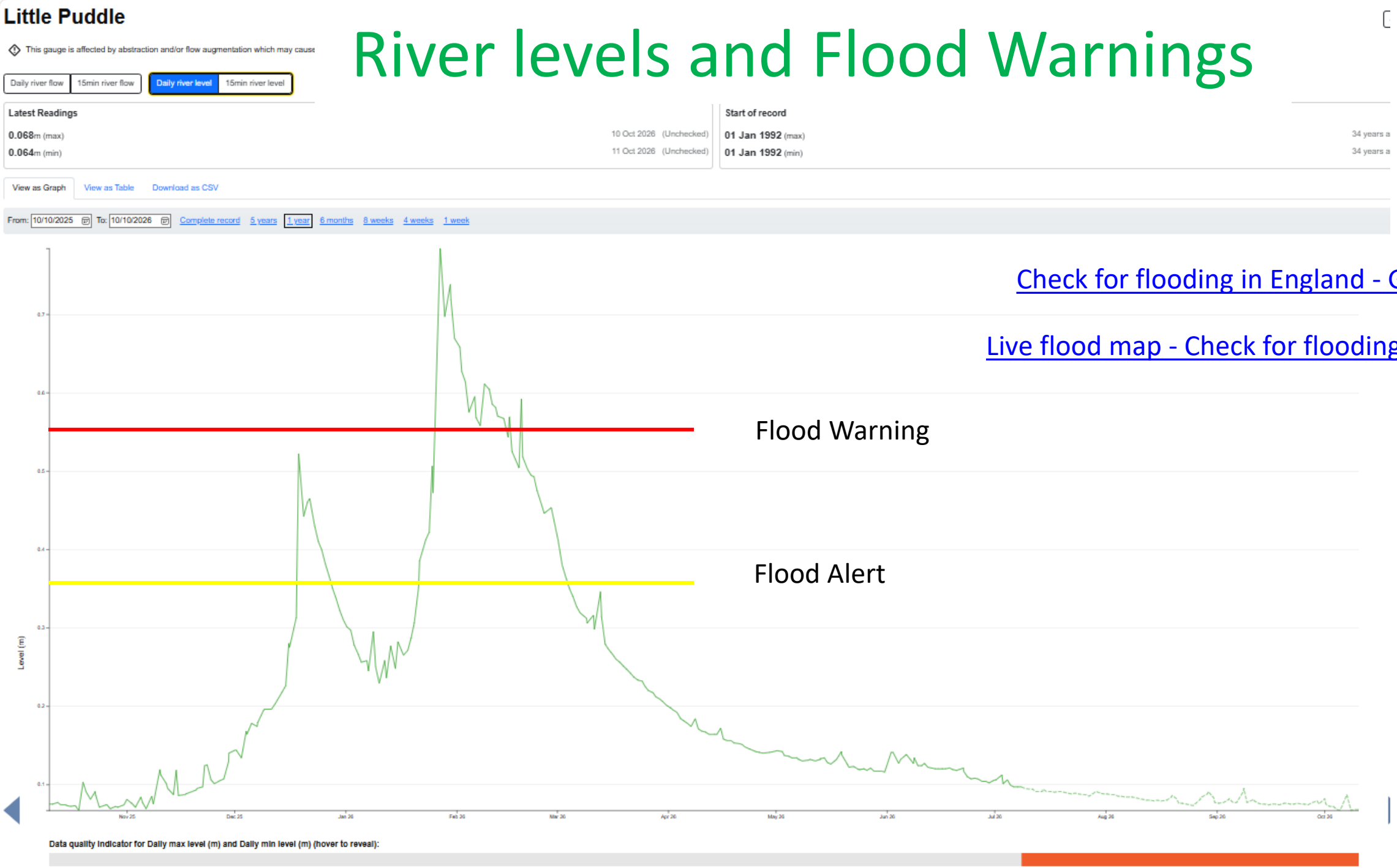
- Internationally rare habitat approx. 80% of worlds chalk streams in Uk
- High infiltration of rainfall to ground
- Slow to respond to rainfall
- Remains high for longer during high ground water
- Historically modified for watermeadows and milling

Complex flooding

- Fluvial – from the river
- Pluvial – from surface water / field run off
- Groundwater – from the aquifer / springs
- Biggest risk during combination



River levels and Flood Warnings

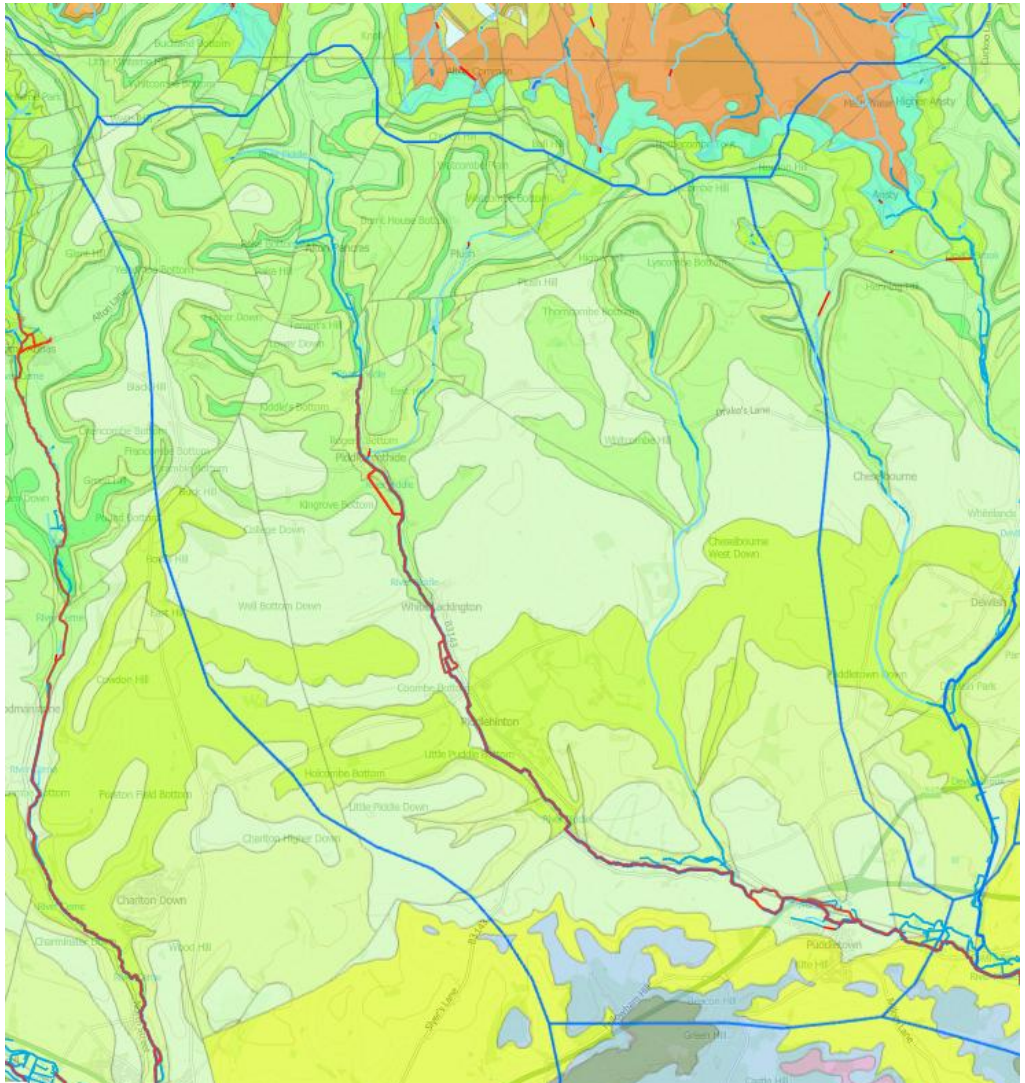


[Check for flooding in England - GOV.UK]

[Live flood map - Check for flooding - GOV.UK]

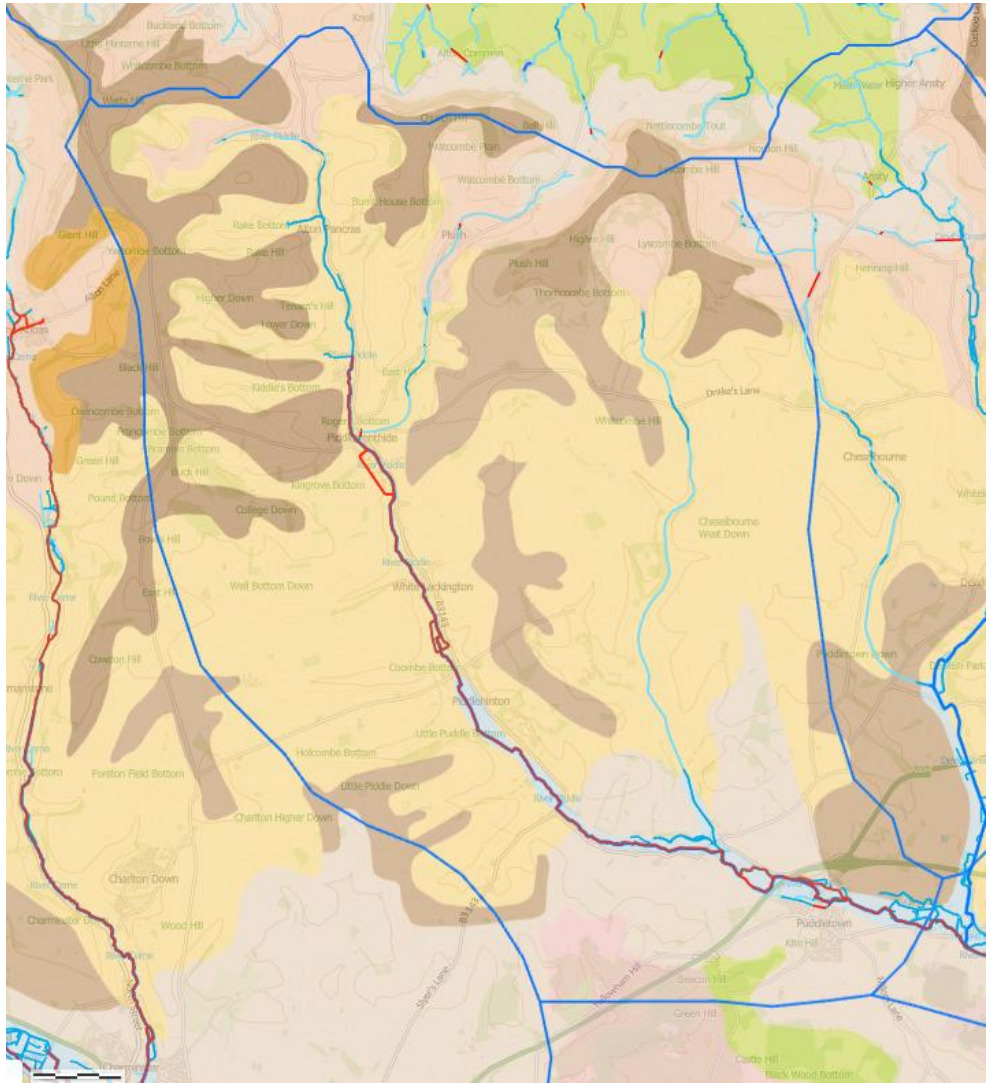
Upper Piddle Catchment

Geology - Chalk

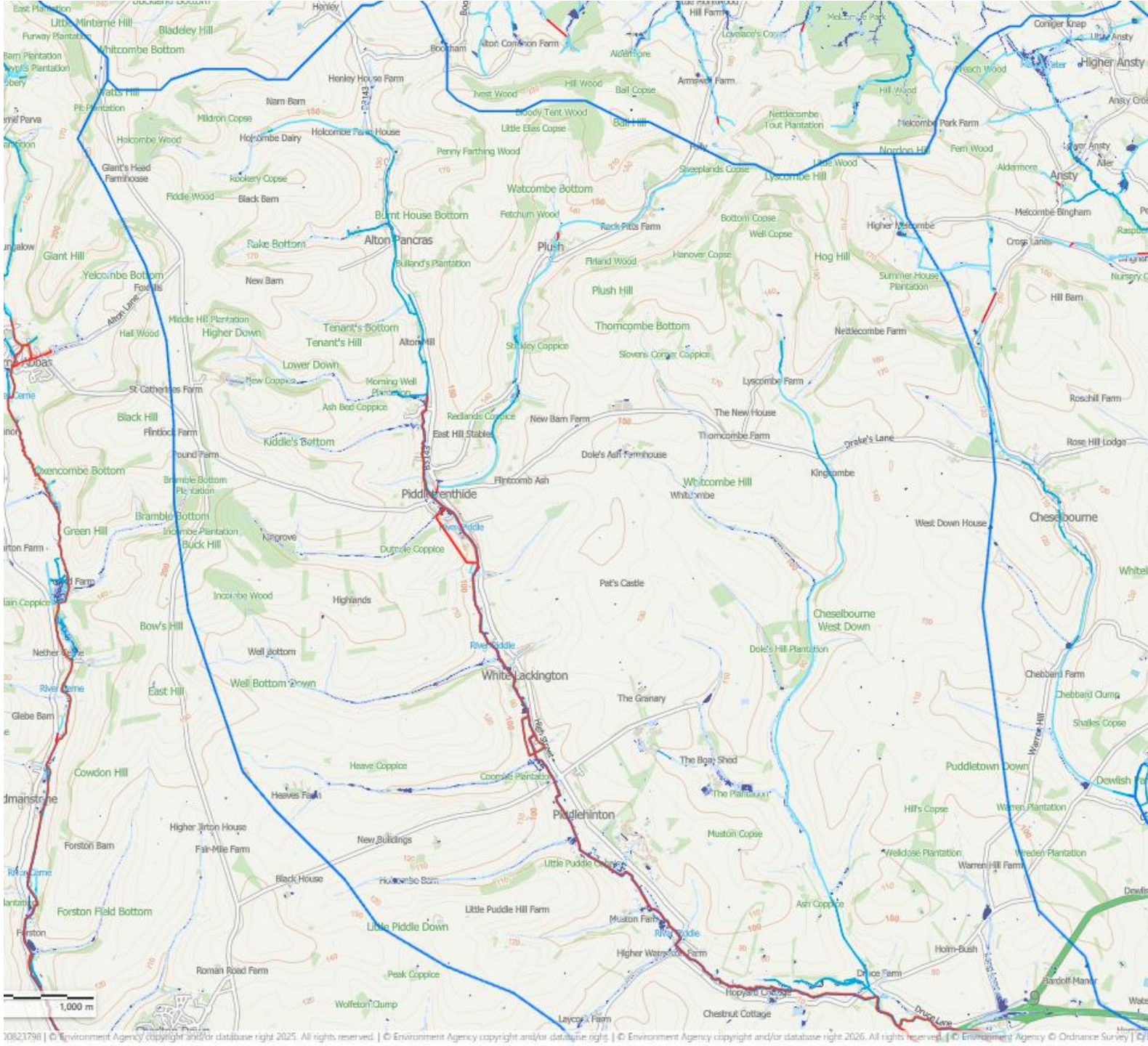


Hard Rock
Clay & Flint
Periglacial Valley Gravel
River Terrace
Alluvium
Portsdown
Culver Spetisbury
Culver Tarrant
Newhaven
Seaford
Lewes
New Pit
Holywell
Zigzag
West Melbury

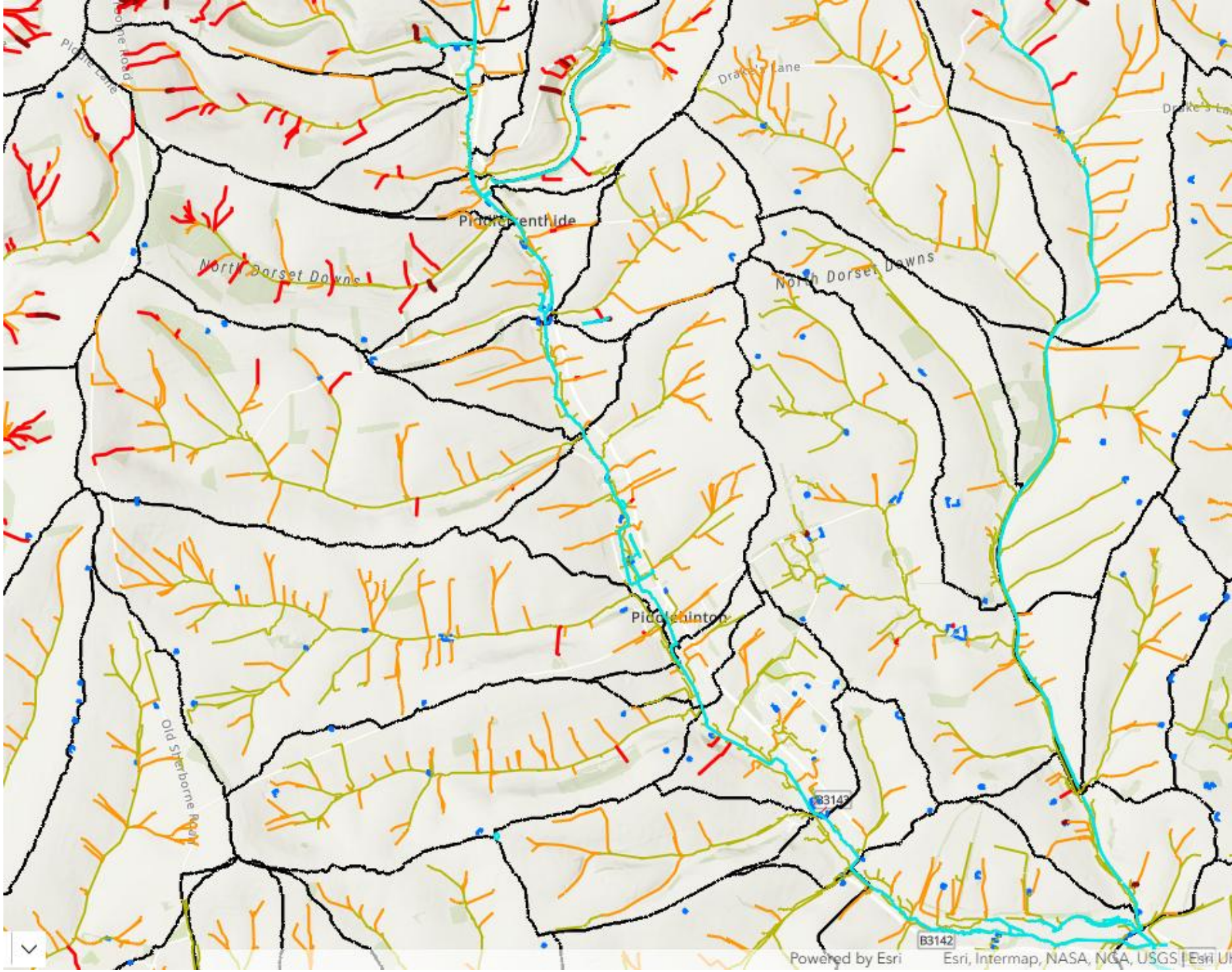
Soils – mostly free draining



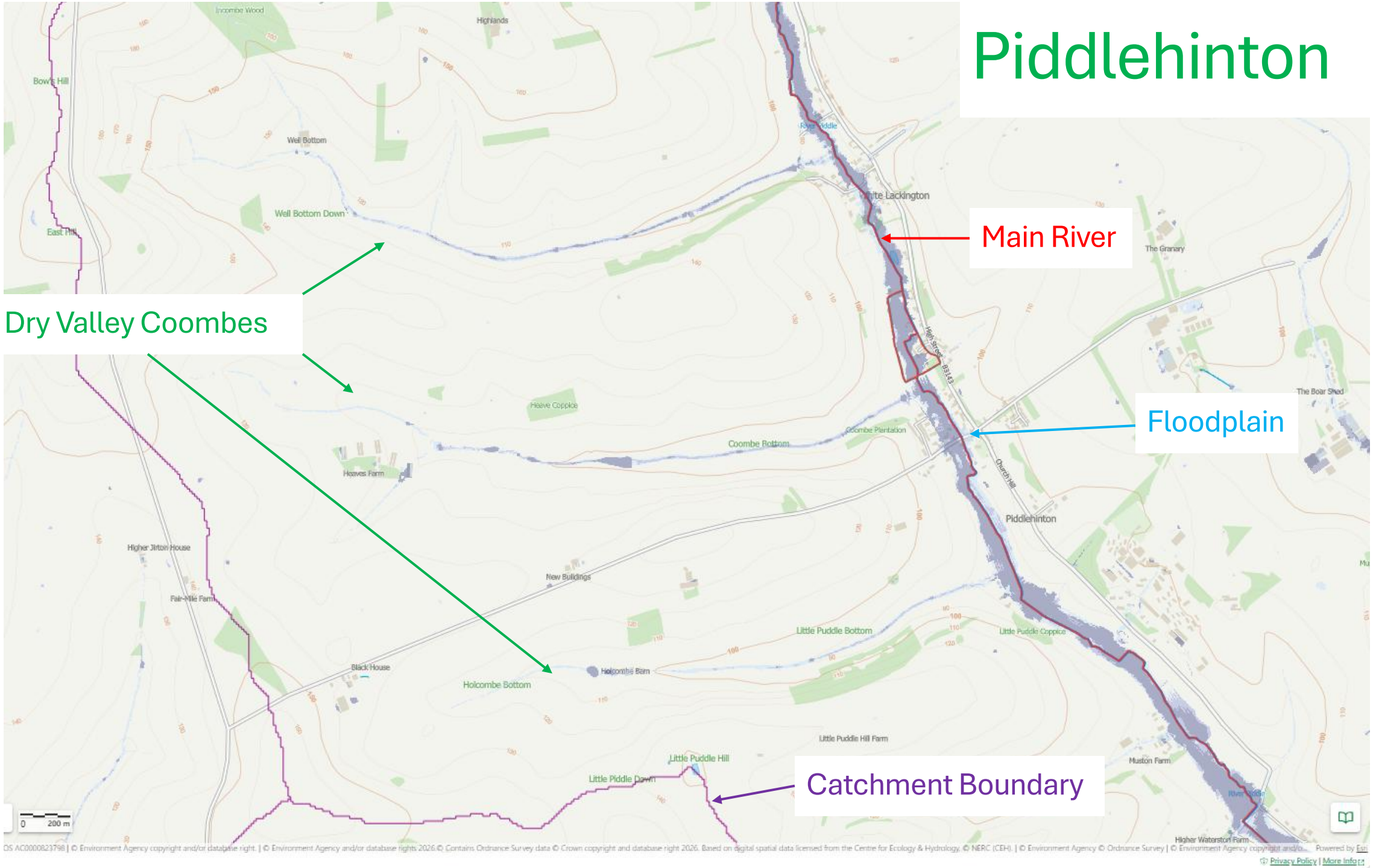
Upper Piddle Catchment



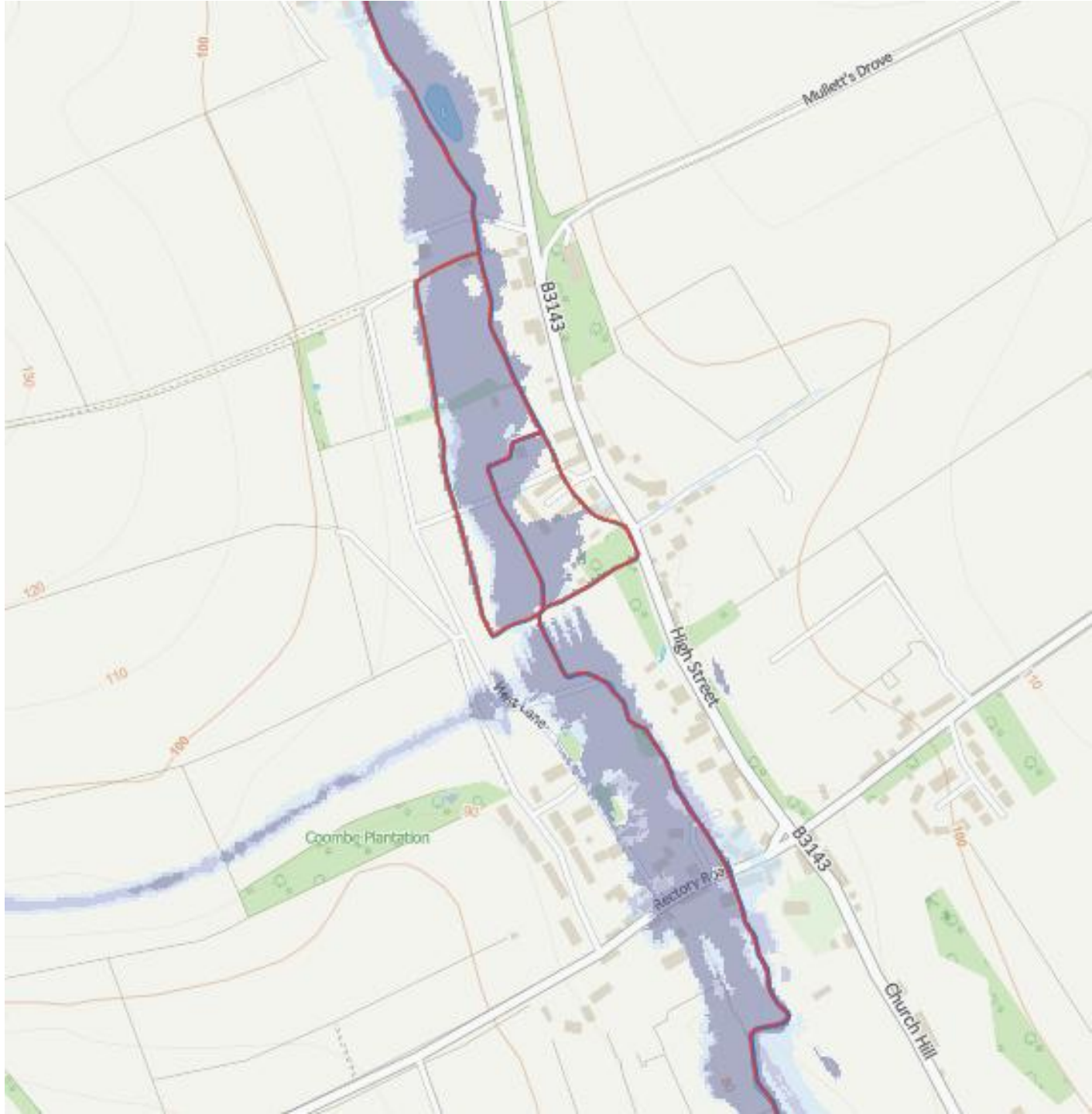
Sub catchments and flow paths



Piddlehinton

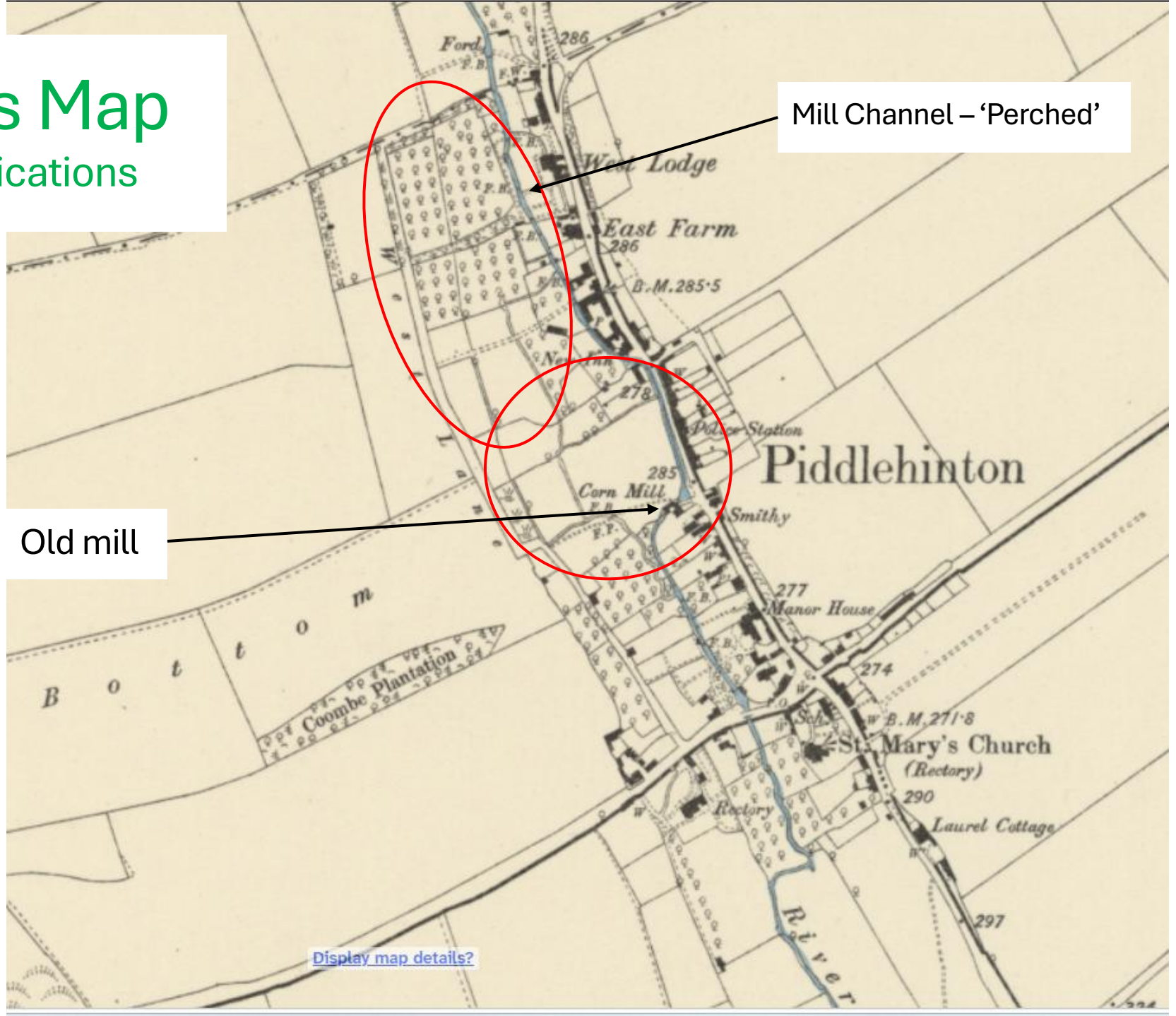


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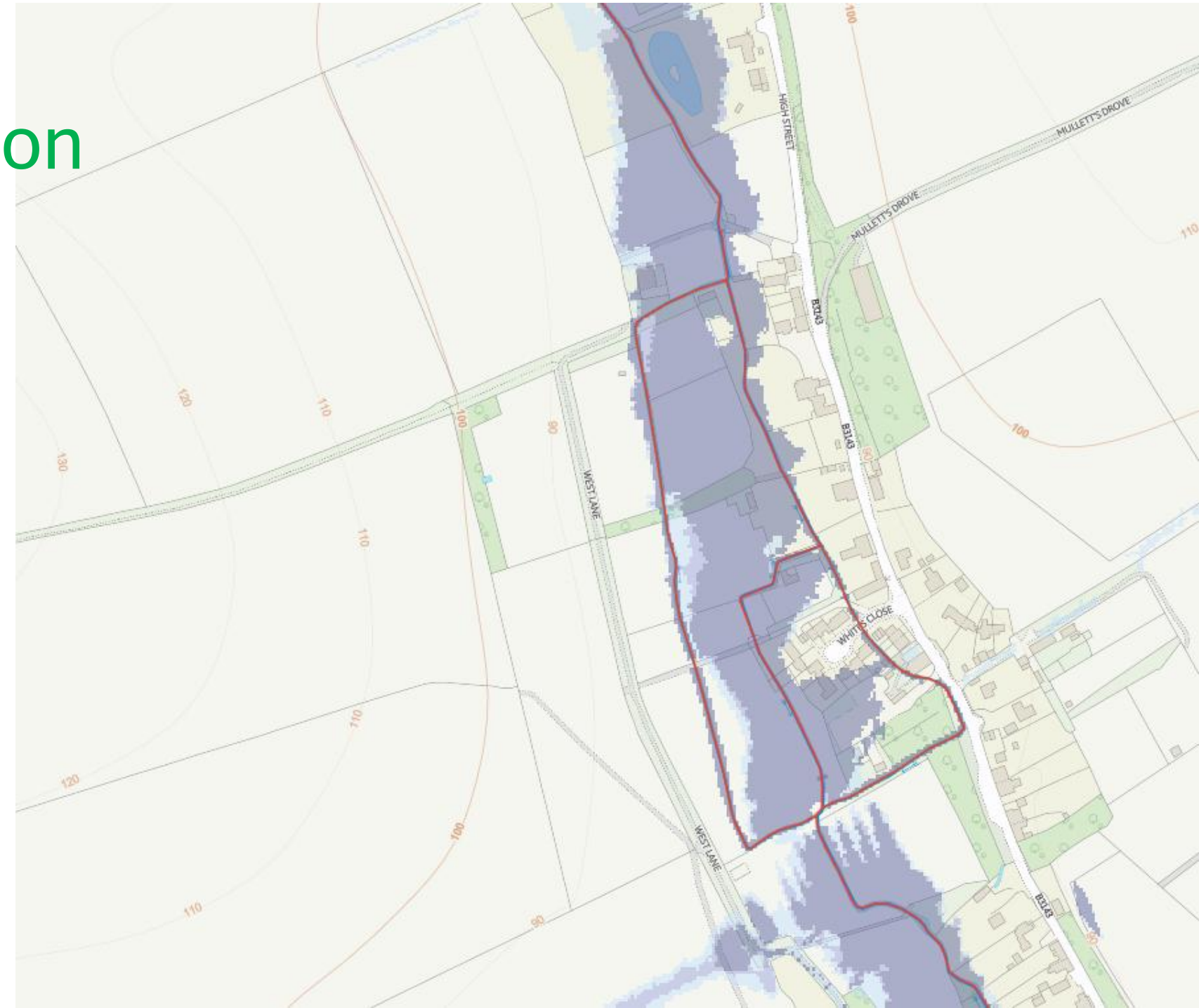


1830-1880's Map

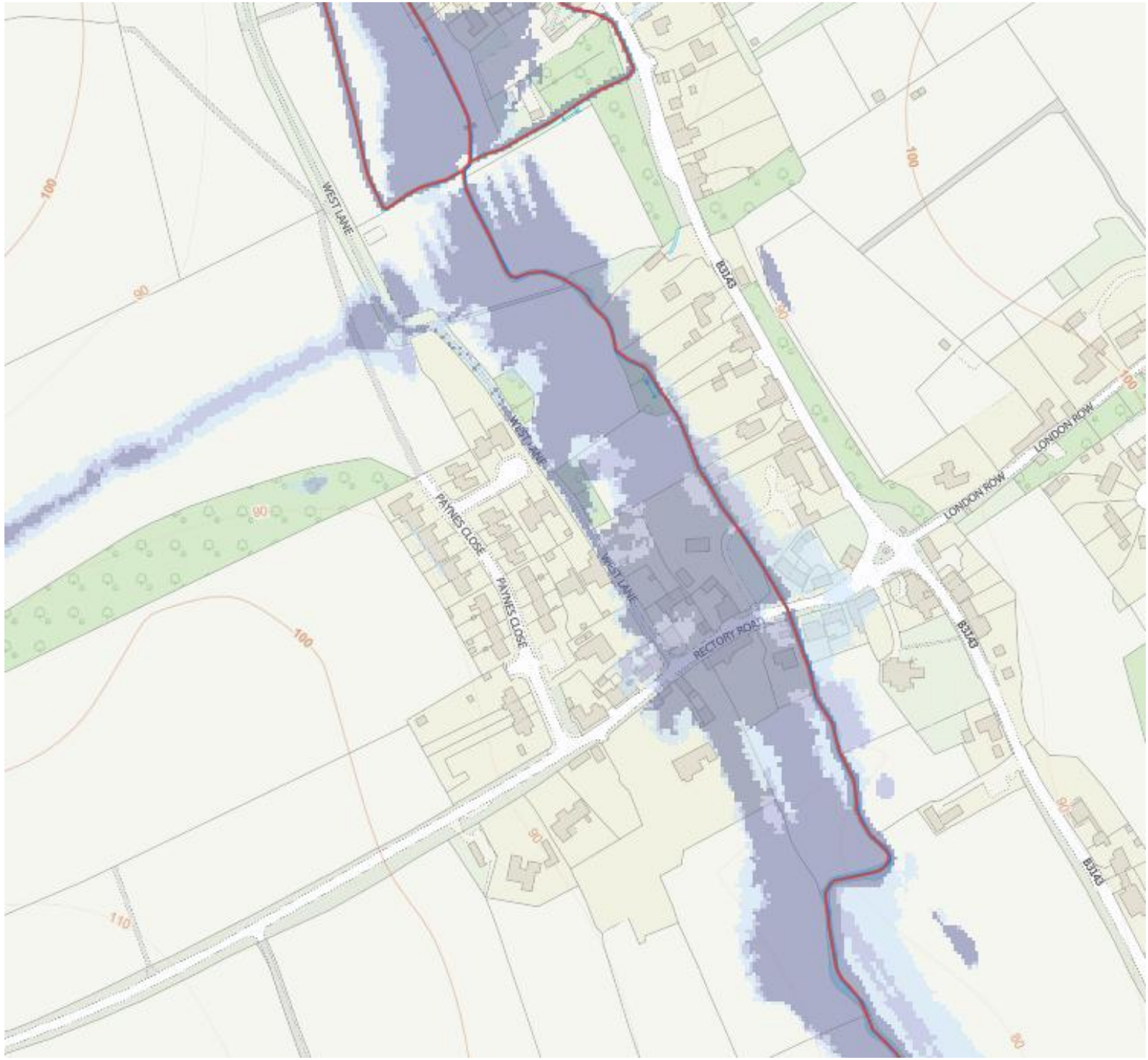
Historic River Modifications



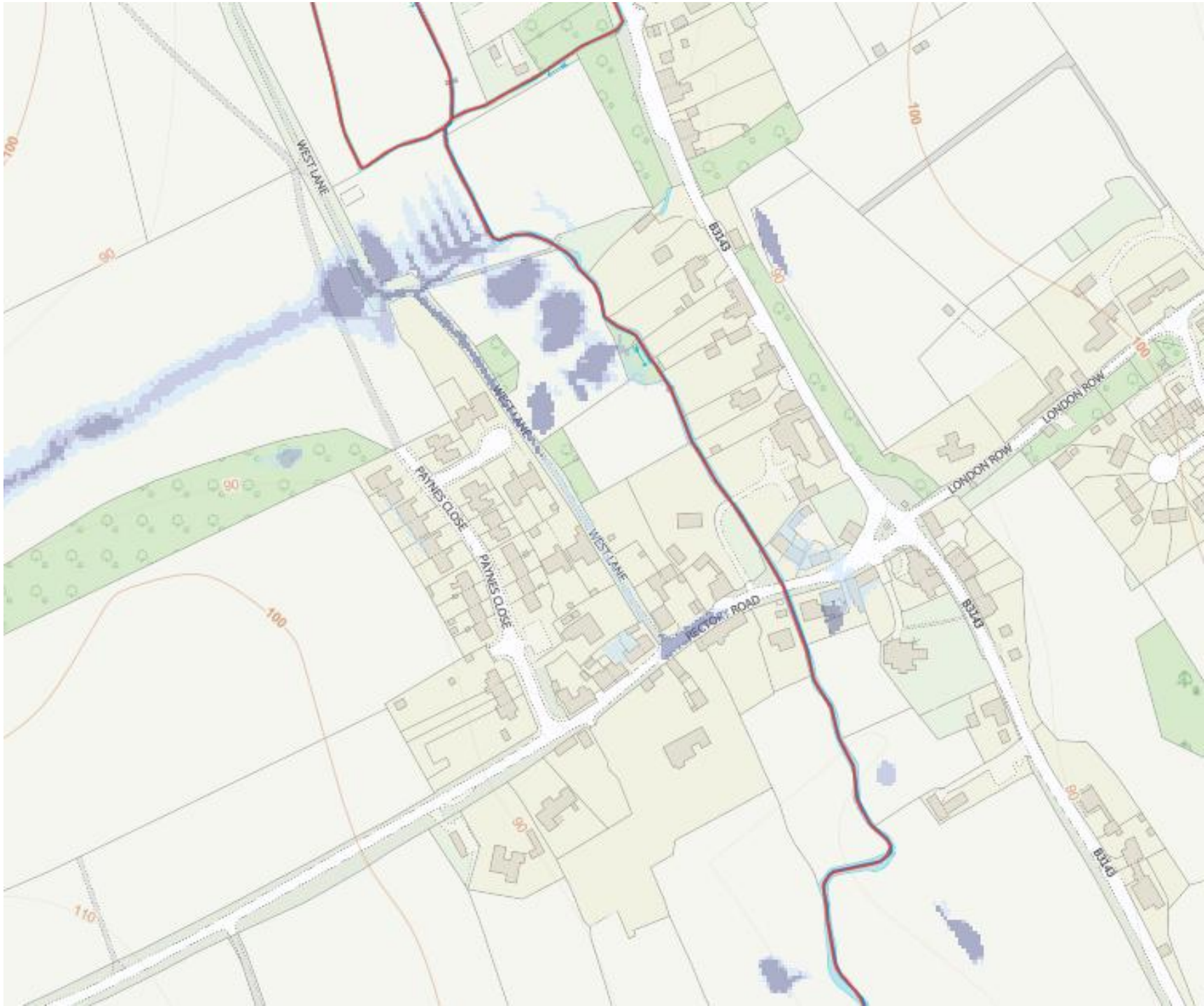
Upper Piddlehinton



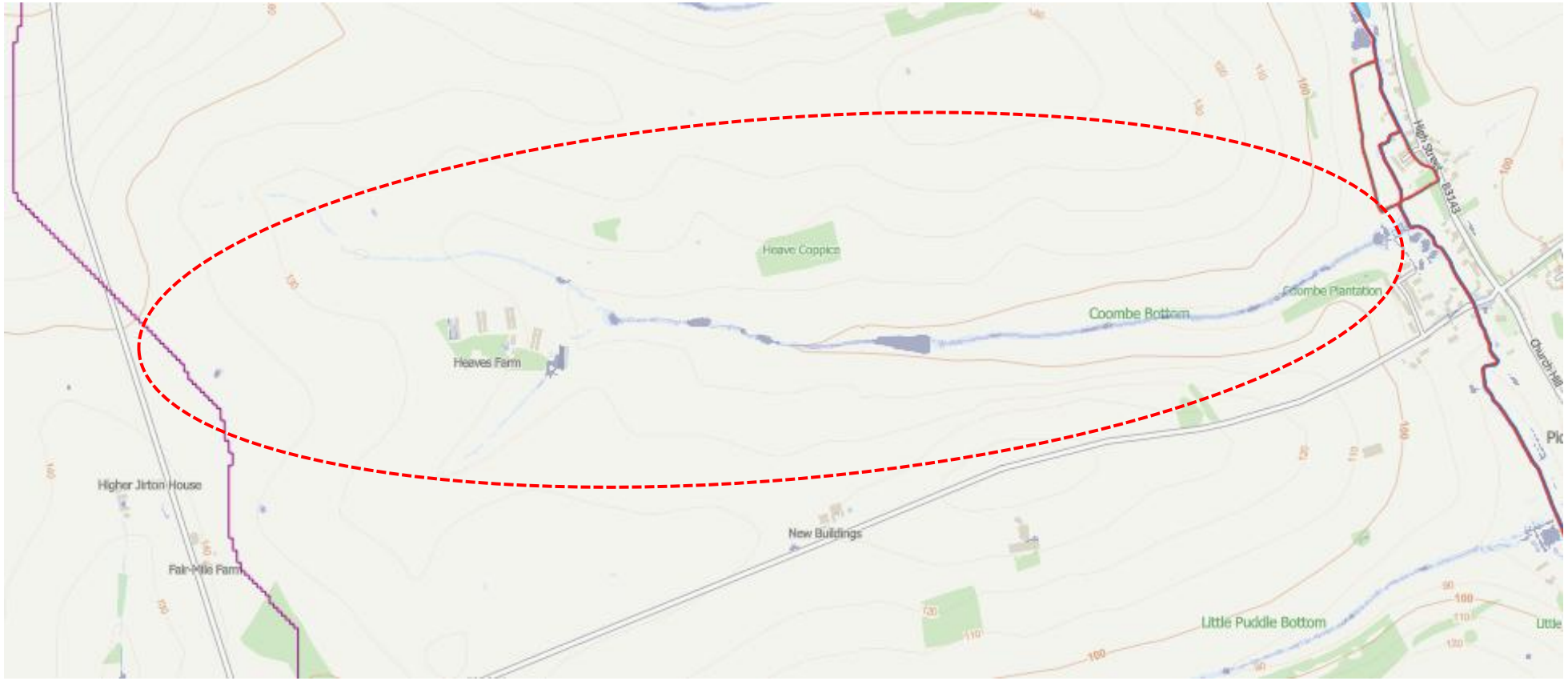
Lower Piddlehinton



Surface water flood map only



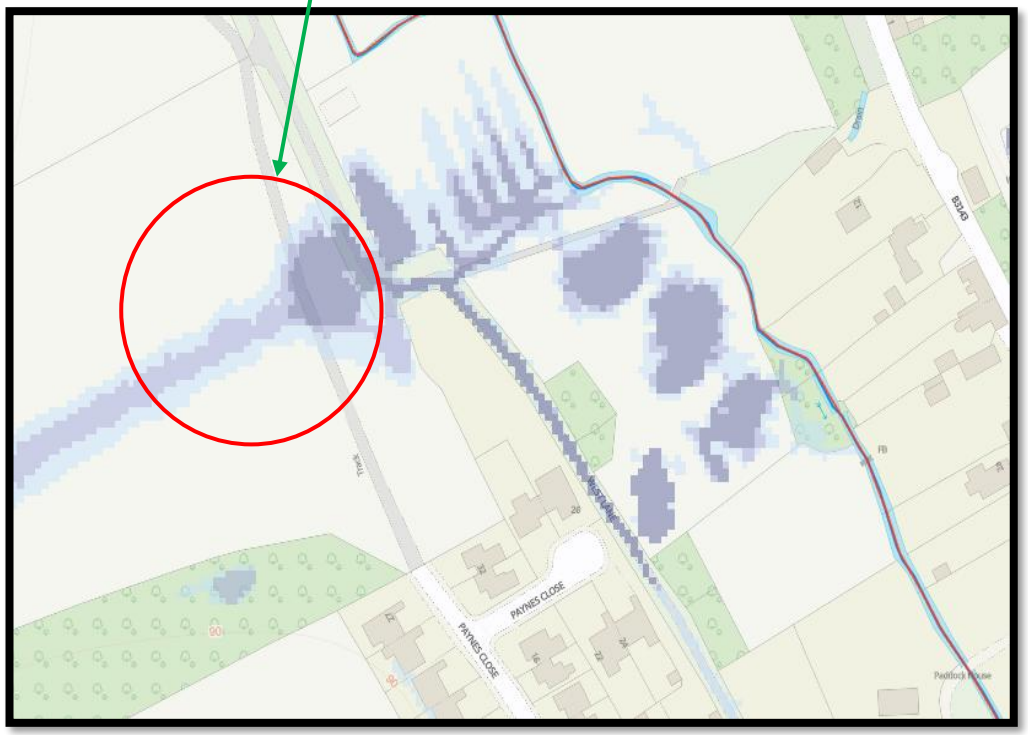
Dry Valley Coombe –
Surface water flow and ground water influenced



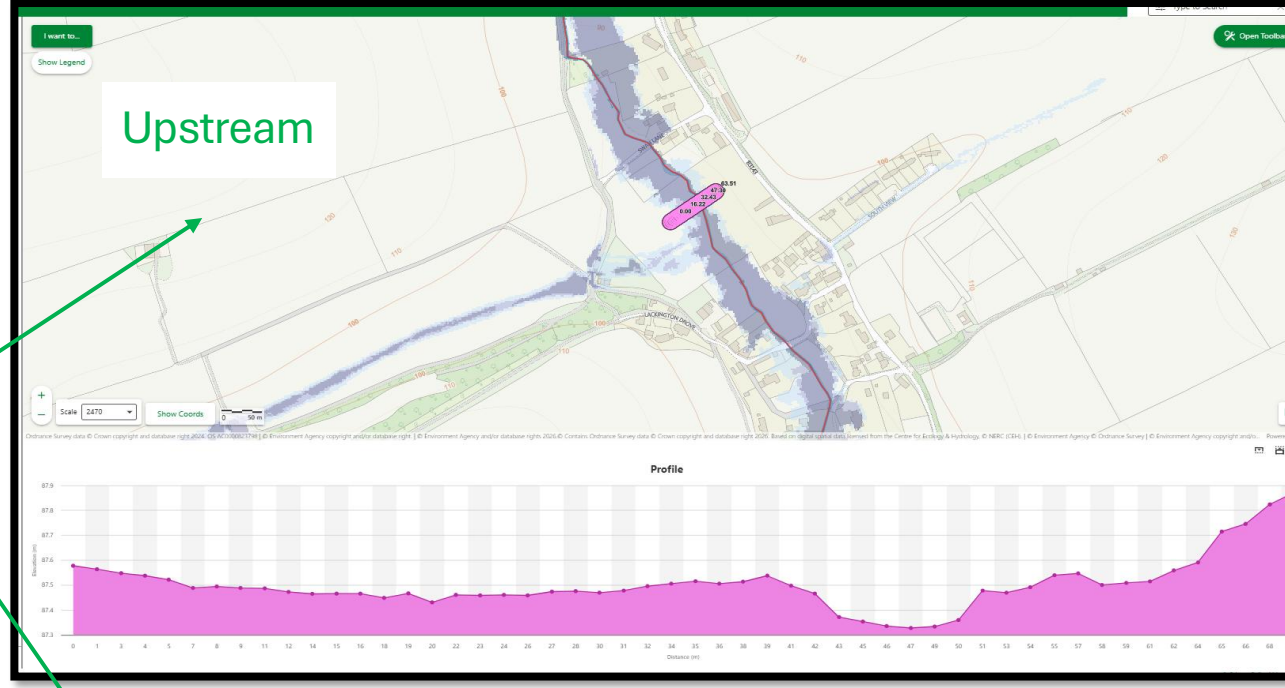

50.782290 -2.427084 Degrees
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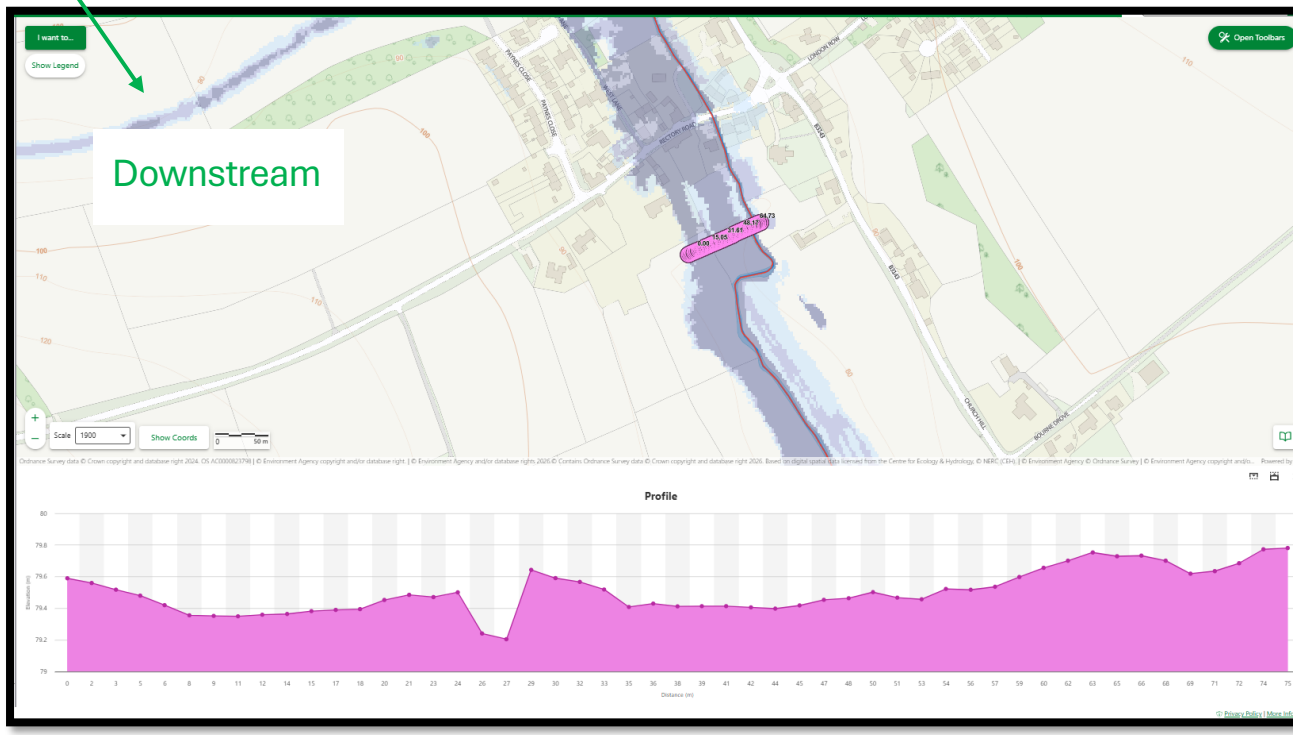
Potential Opportunities

Attenuation pond or wetland?



Reconnecting Rivers to their Floodplains





Land management improvements
Land use change

Thankyou

https://thefloodhub.co.uk/nfm/

https://slowtheflow.net/introduction-to-natural-flood-management/

https://www.wwt.org.uk/our-work/projects/two-valleys-slow-the-flow/natural-flood-management-methods

https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/working-with-natural-processes-to-reduce-flood-risk-2024

