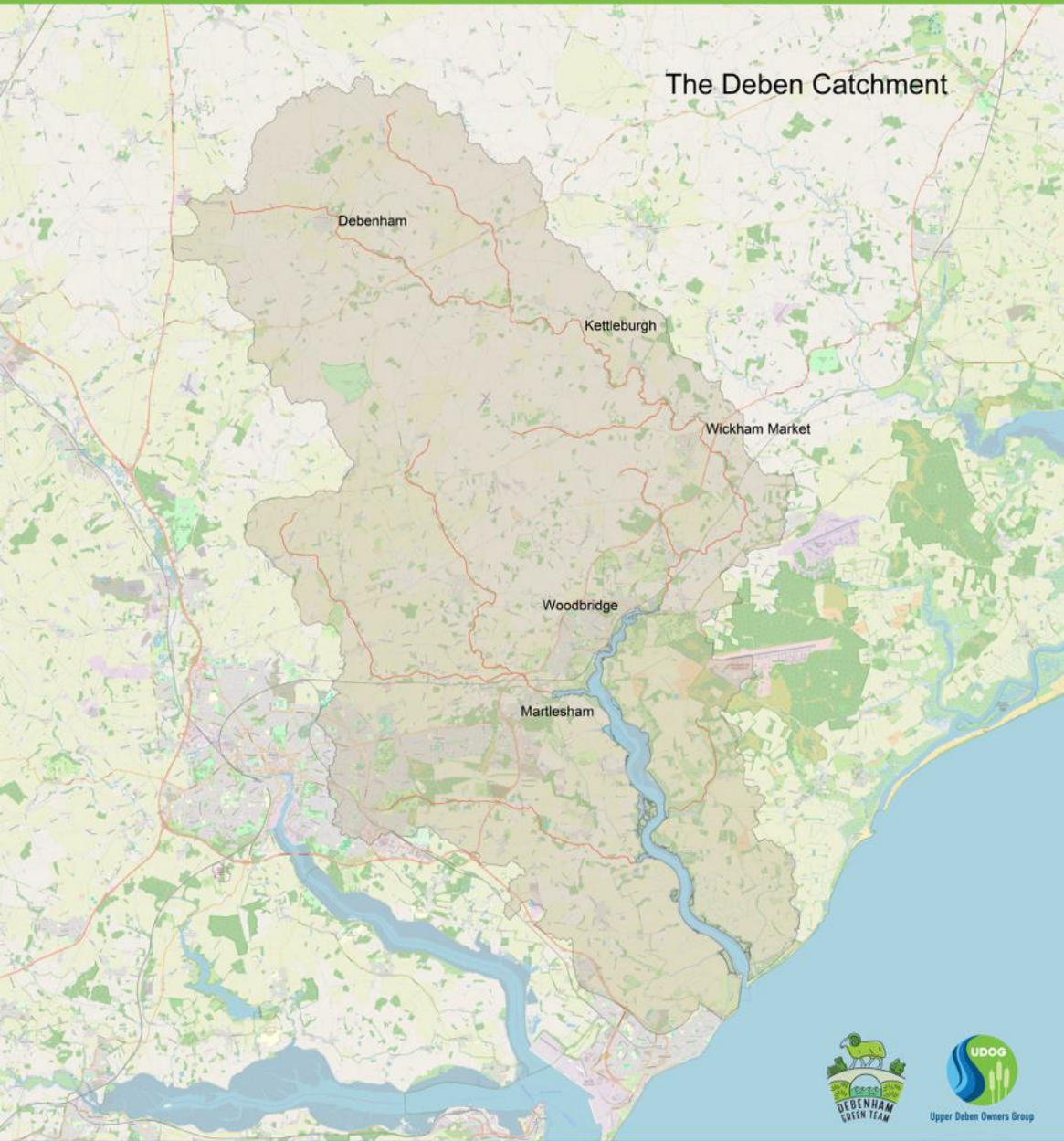




Upper Deben Owners Group

LAUNCH
Debenham Community Centre
5th June 2026



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Debenham Community Centre
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Professor Peter Hobson
The context:
River landscapes through changing times

Matt Hullis
The problem:
Storm Babet, the story behind the flood

Glenn Buckingham
The Solution:
**Natural Flood Management
Pros – cons and practice**

Andrew Donnelly
Accelerating the solution:
The role of community - UDOG

YOU
Panel Discussion



Professor Peter Hobson

Emeritus Professor,
Biodiversity Conservation, ARU
UDOG Advisor

The context:
River landscapes through changing times

Upper Deben Owners Group



River landscapes through changing times

Peter Hobson

Emeritus Professor, Biodiversity Conservation, ARU

Econics Institute <https://econics.institute/en/#>



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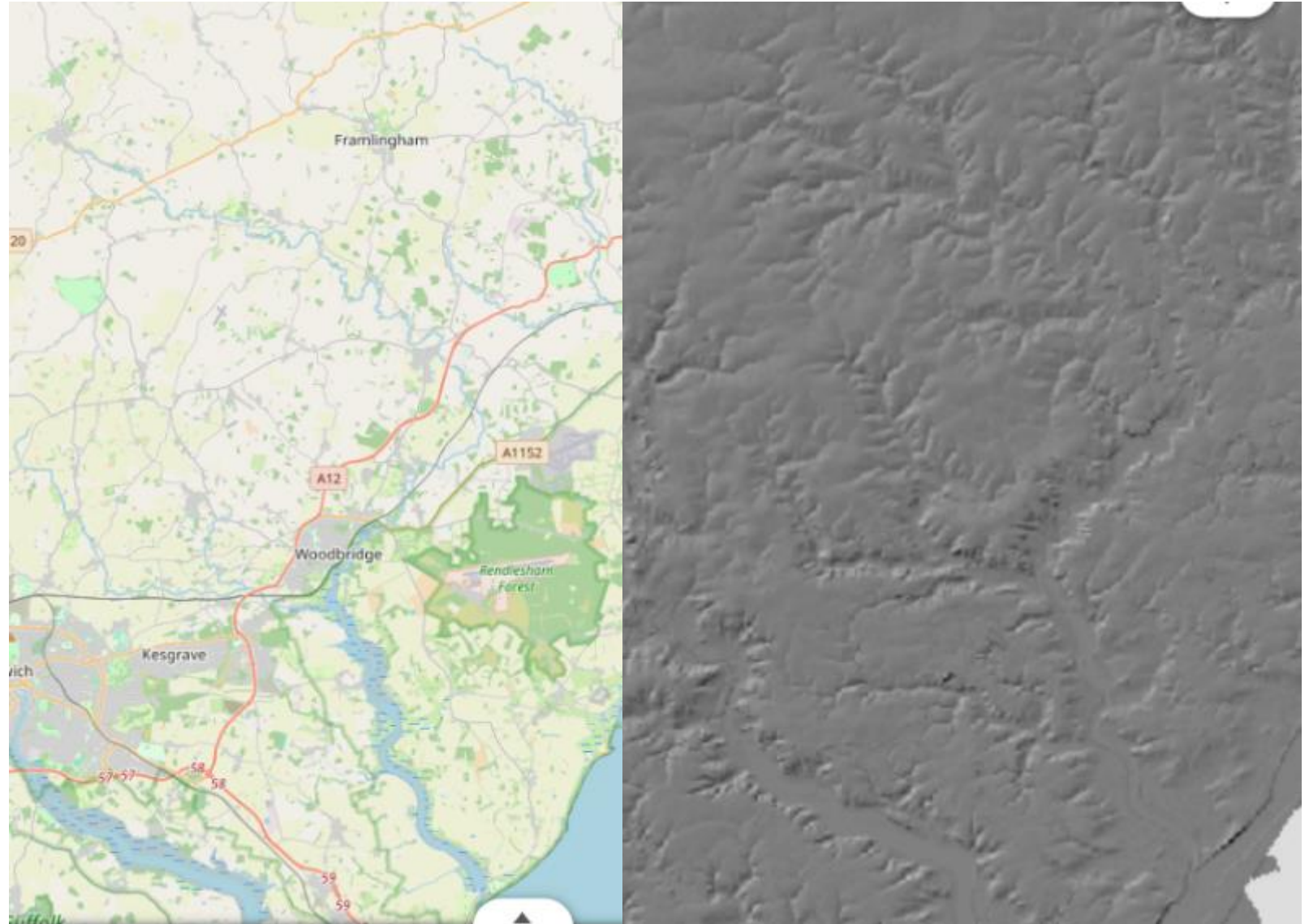
Most of England's rivers have lost their original character

1,500 discrete rivers in the UK, **97% are modified**, blocked or engineered

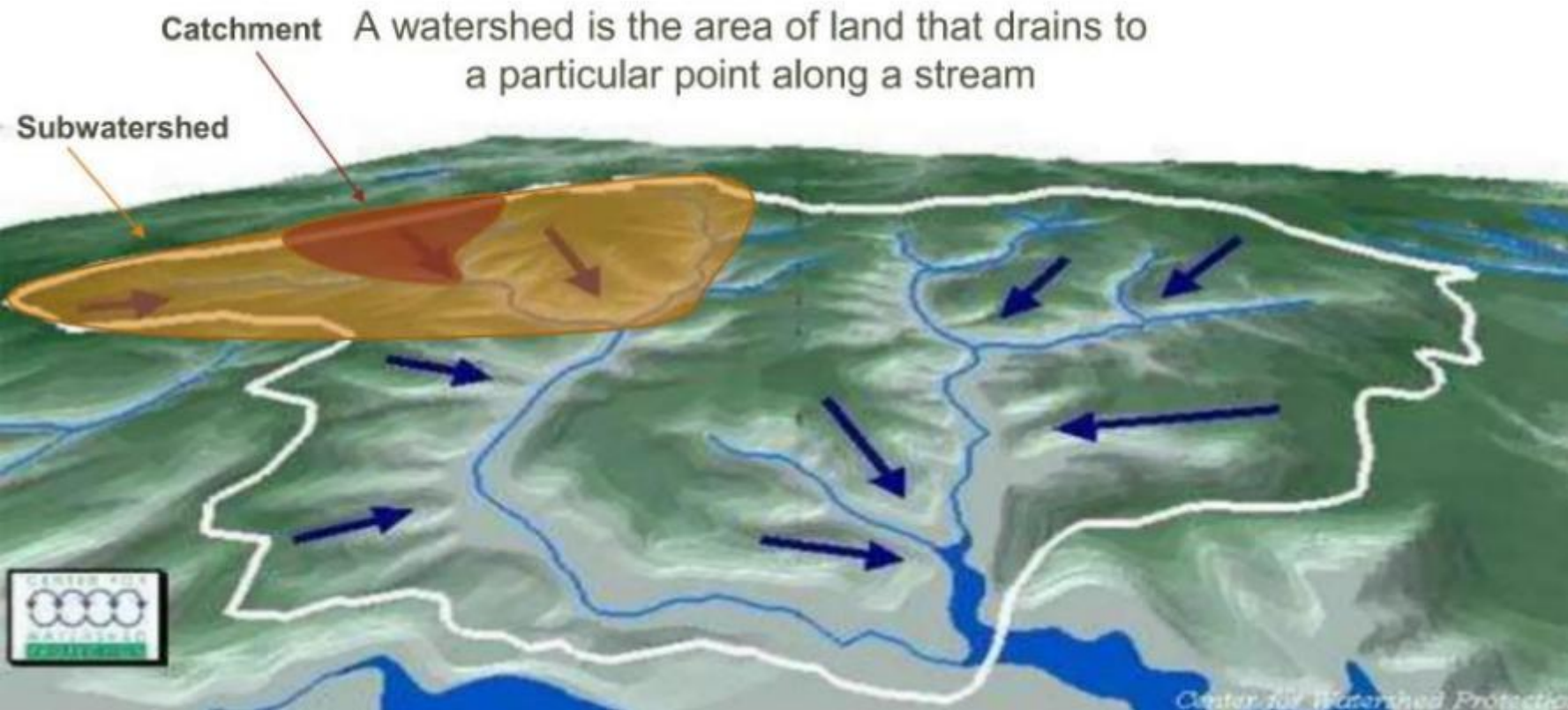
The Deben as seen through open street map and Lidar.

Lidar image reveals the 'skeleton' of the river and '**Ghost spring-lines**'

<https://lidarfinder.com/>



To understand the nature and character of a river a catchment perspective is needed

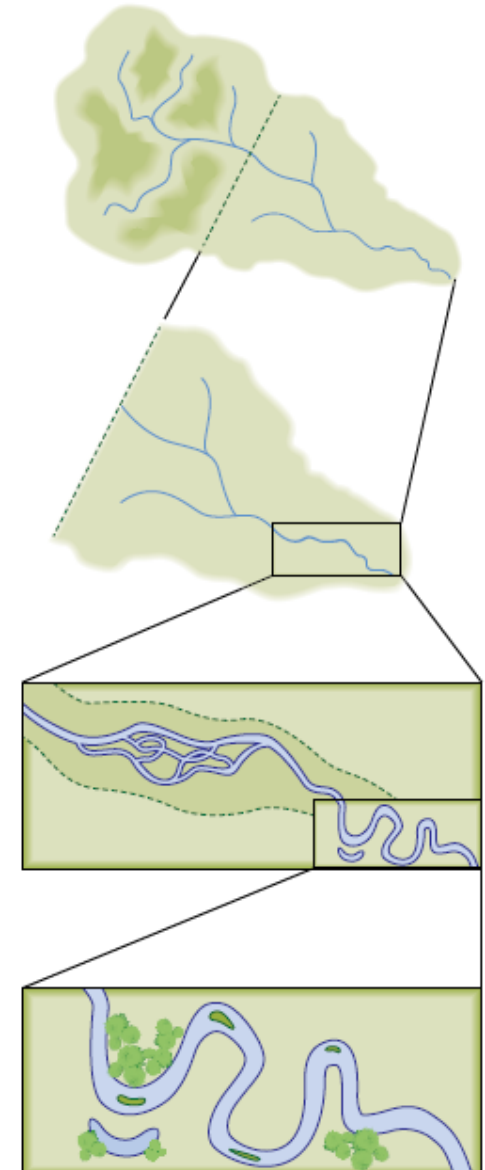


Catchment
 $10^2 - 10^5 \text{ Km}^2$

Landscape unit
 $10^2 - 10^3 \text{ Km}^2$

Segment
 $10^1 - 10^2 \text{ Km}$

Reach
 $10^0 - 10^1 \text{ Km}$



Natural rivers are characteristically branched. Networks are optimum structures for dissipating energy

- Minimal energy expenditure at any link in the network
- Equal energy expenditure per unit area
- Minimum energy expenditure in the Network as a whole

But 97% of England's rivers have lost 'their branches'



Part of upper River Alde catchment, Rendham, Suffolk 2025

Ghost springs incorporated into networks of field ditches



The impacts of field drains and ditches on the watershed

About 6.4 million hectares of agricultural land in England and Wales with pipe drain systems.

Estimated 500,000 km of field ditch systems (AHDB)

Accelerated Flow Paths:

Ditches are artificial extensions to river network

They **intercept surface water** and sub-surface agricultural drains, ditches

Speed up water delivery

Cause runoff to reach rivers much faster

and **increase severity of downstream flooding**



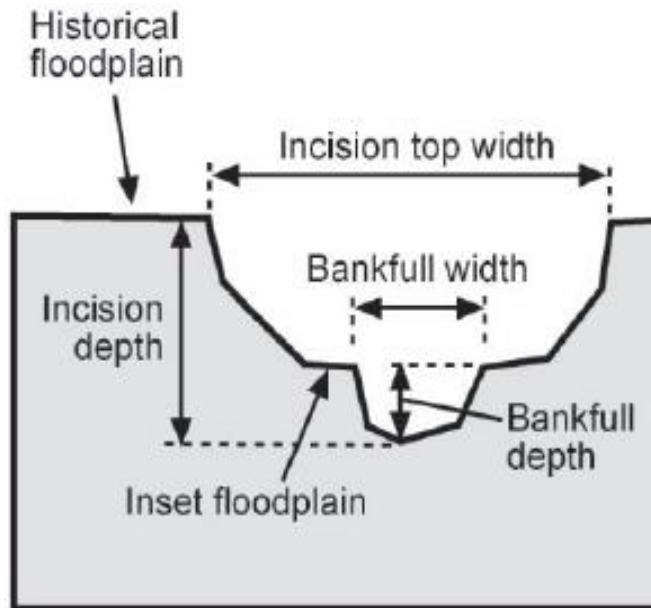
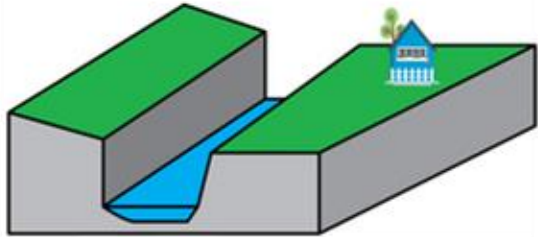
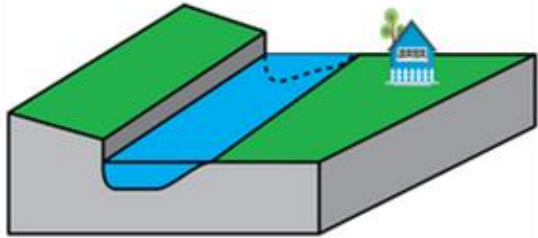
It is not just the structure of rivers that has changed

64% of UK flood plains are under agricultural use (Entwhistle et al. 2019);
and agriculture affects more than 60% of failing water bodies.

**Upstream of the rivers. In the catchment
headwaters -
ditch clearing and erosion**



Long term changes to river dynamics: Stream Incision; formation of “Gulls”



Mainstem channel incision lowers base level

- Tributary incision
- Gully formation

When a stream cuts its channel into the bed of a valley.

Result of geology;
Change in Land cover and use;
Canalizing of channel;

Causes –

Drop in water table;
Increased velocity of flow;
Increased erosion of river bed
and banks

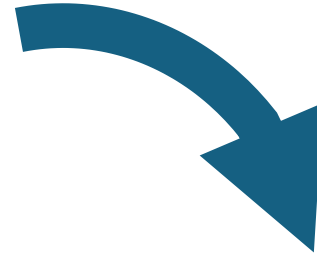
Nutrient loading and contamination of streams and rivers

Muck heaps on compacted soils close to field ditches;
Land drain/waste pipe discharges directly into ditches or spring lines



Regenerating and future proofing our river landscapes

Dialing forward



Sustainable River Management (SRM)
Through Nature-based solutions



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Thank you!





Matt Hullis

Head of Environmental Strategy
Suffolk County Council
UDOG Advisor

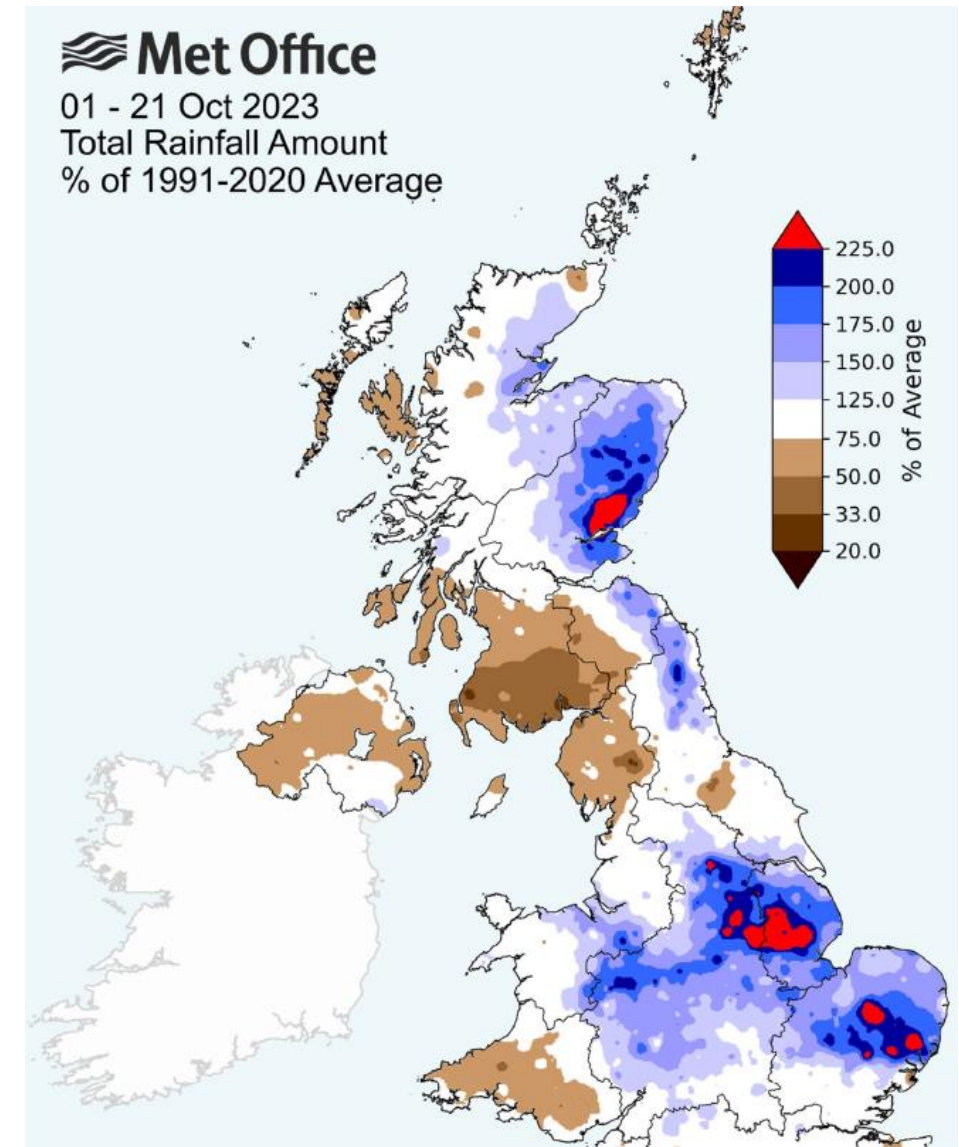
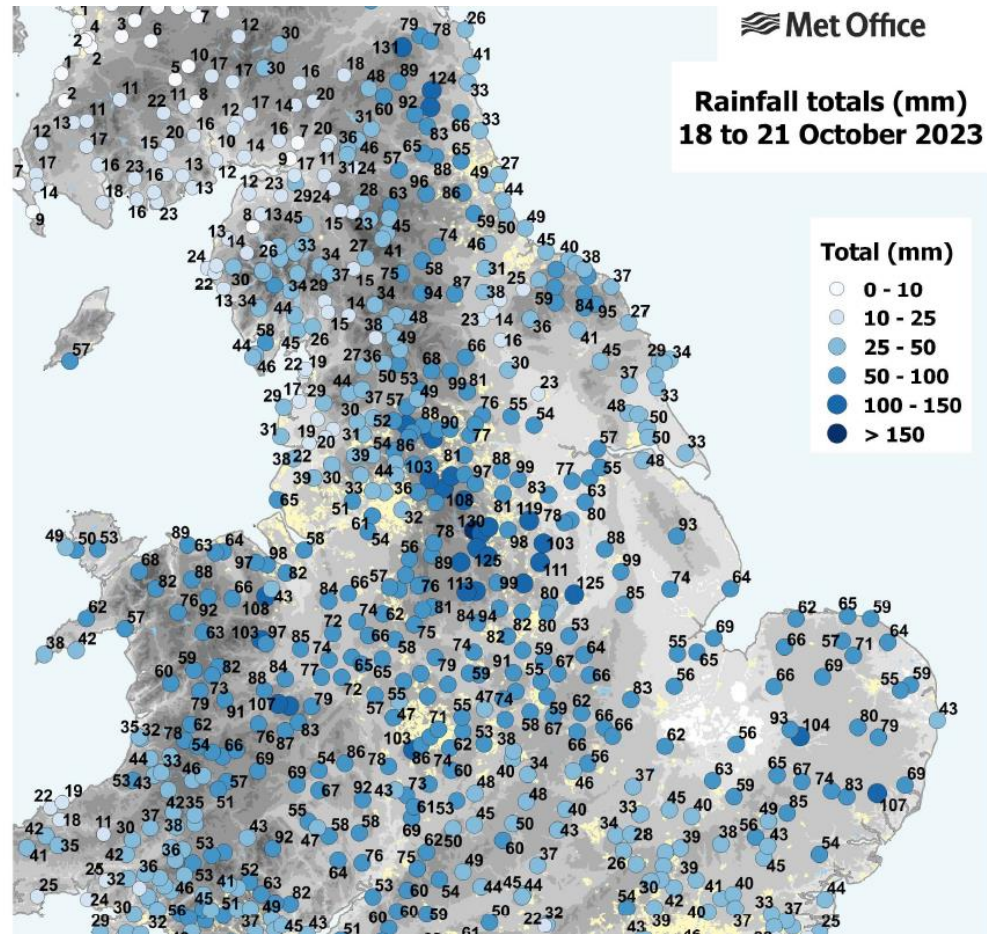
The problem:
Storm Babet, the story behind the flood

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The problem: Storm Babet, the story behind the flood

19 October 2023 was, by a wide margin, the wettest day on record in a series from 1891.

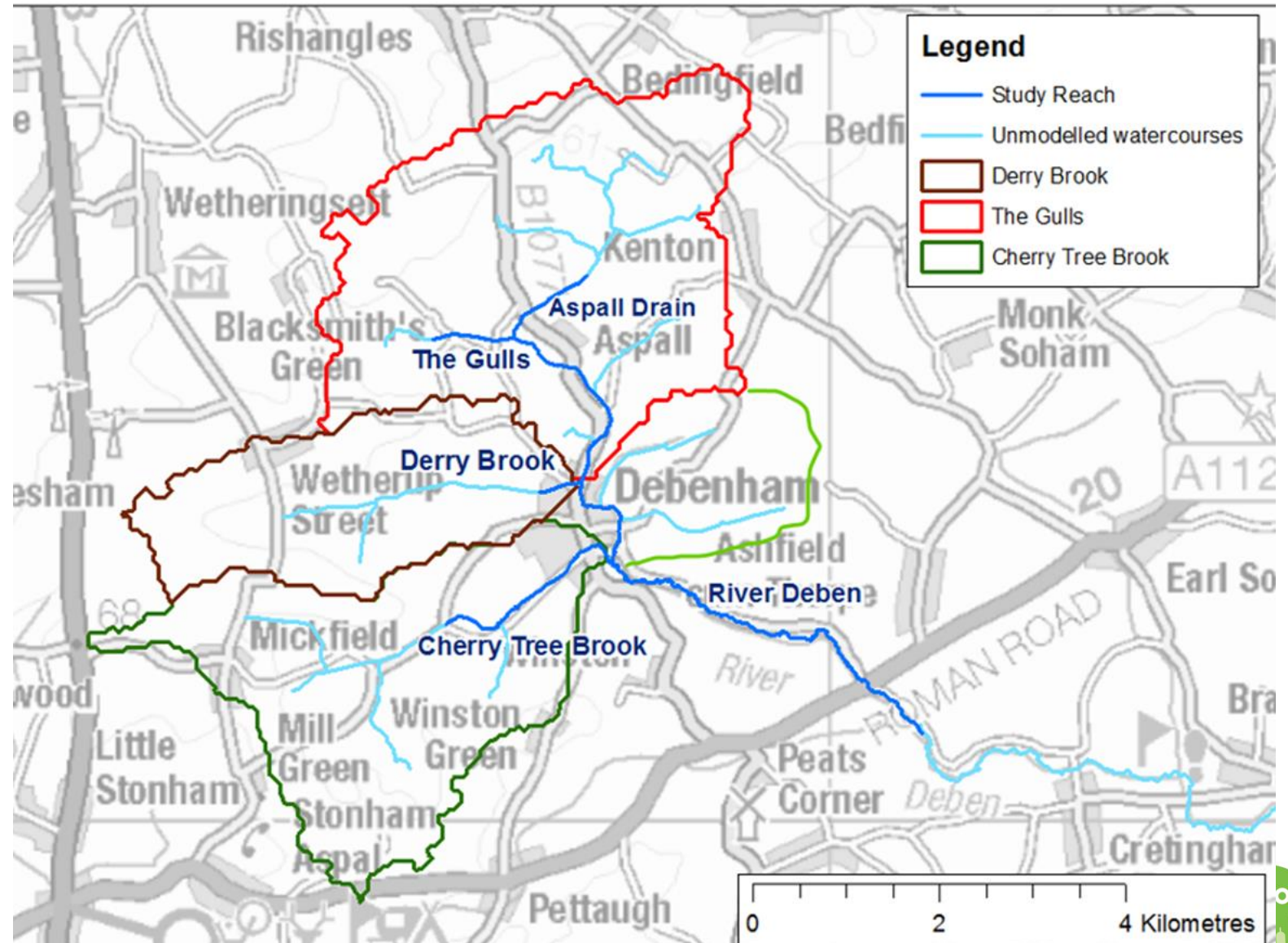
18-20 October was the third-wettest independent 3-day period for England and Wales in a series from 1891.

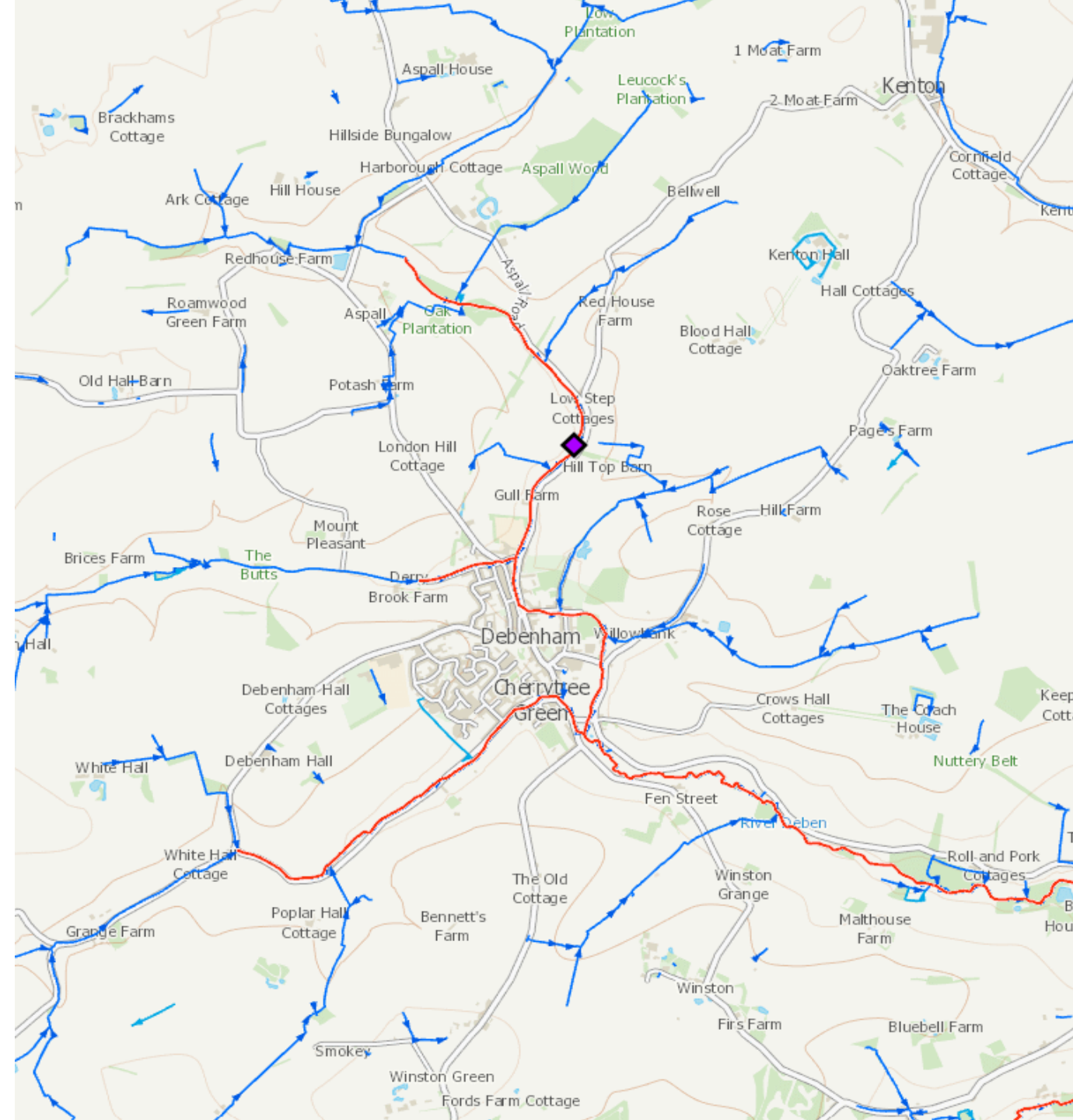


4 catchments draining into Debenham

- The Gulls/Aspall Drain: 13km²
- Cherry Tree watercourse: 10km²
- Derry Brook: 6.5km²
- Un-named catchment: 3km²
- Total: 32.5km²

3 days of rain linked to Storm Babet = **~3 million tonnes of water**

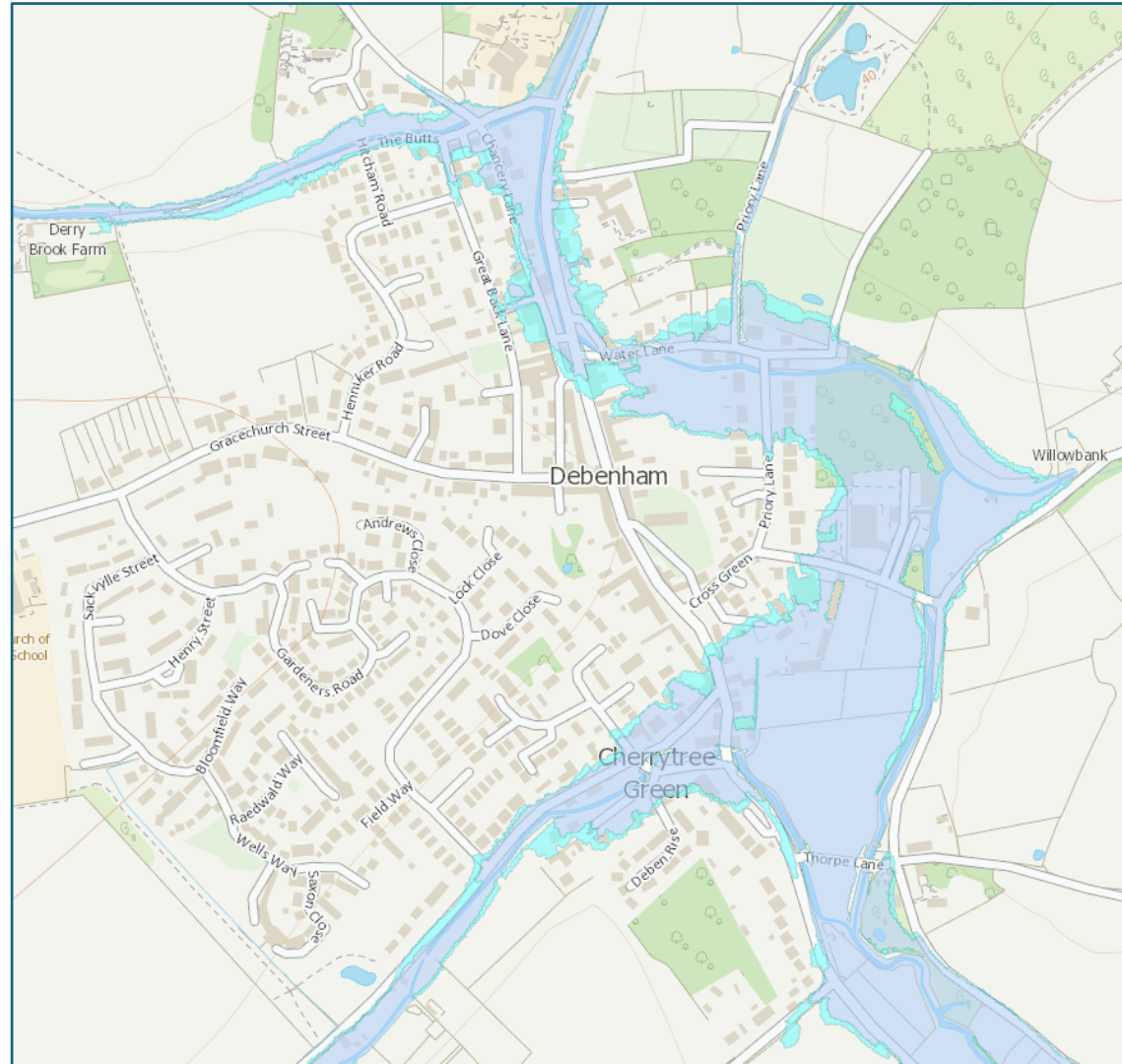




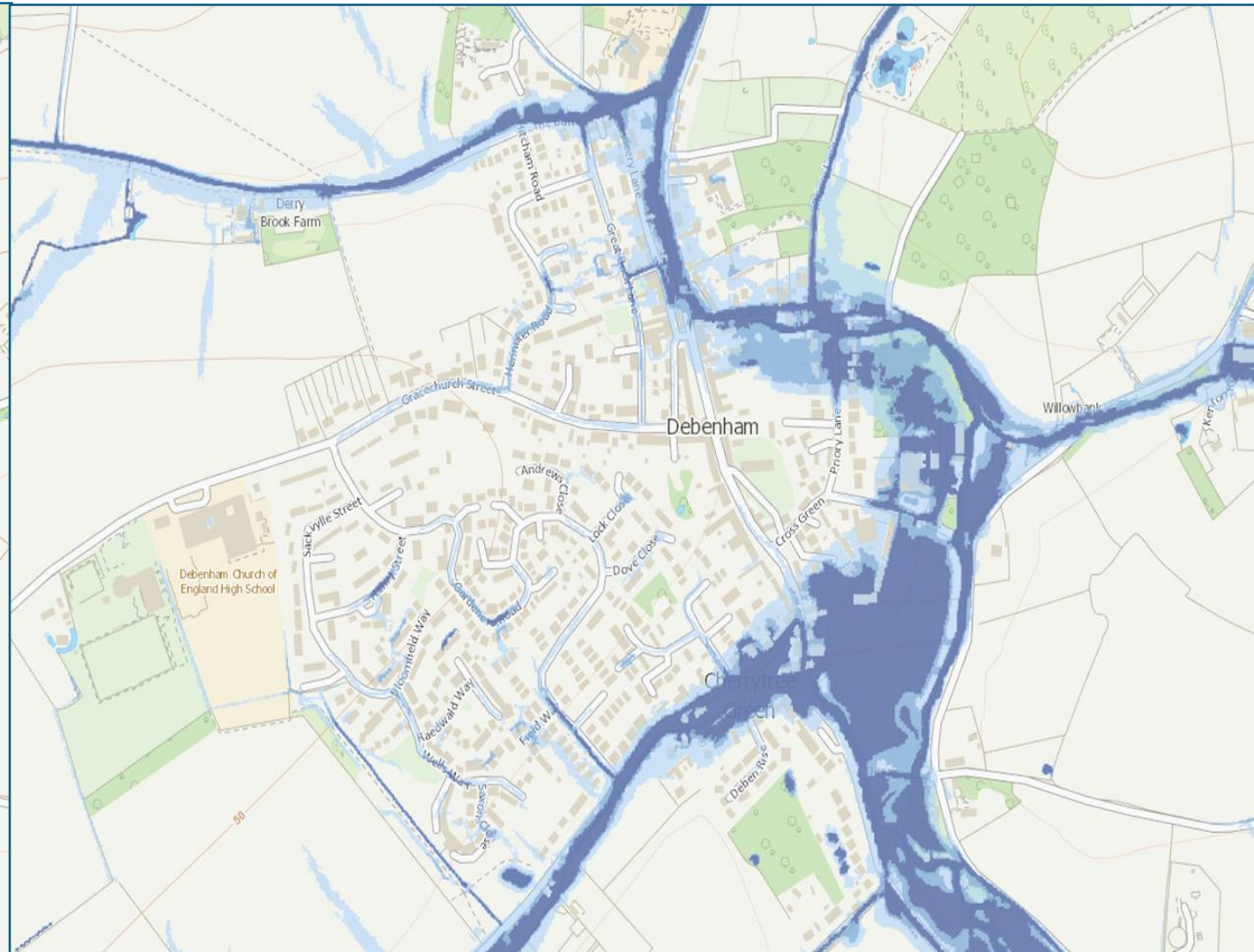
Complex network of ditches and larger watercourses draining mainly arable land into the River Deben

Modelled flood risk

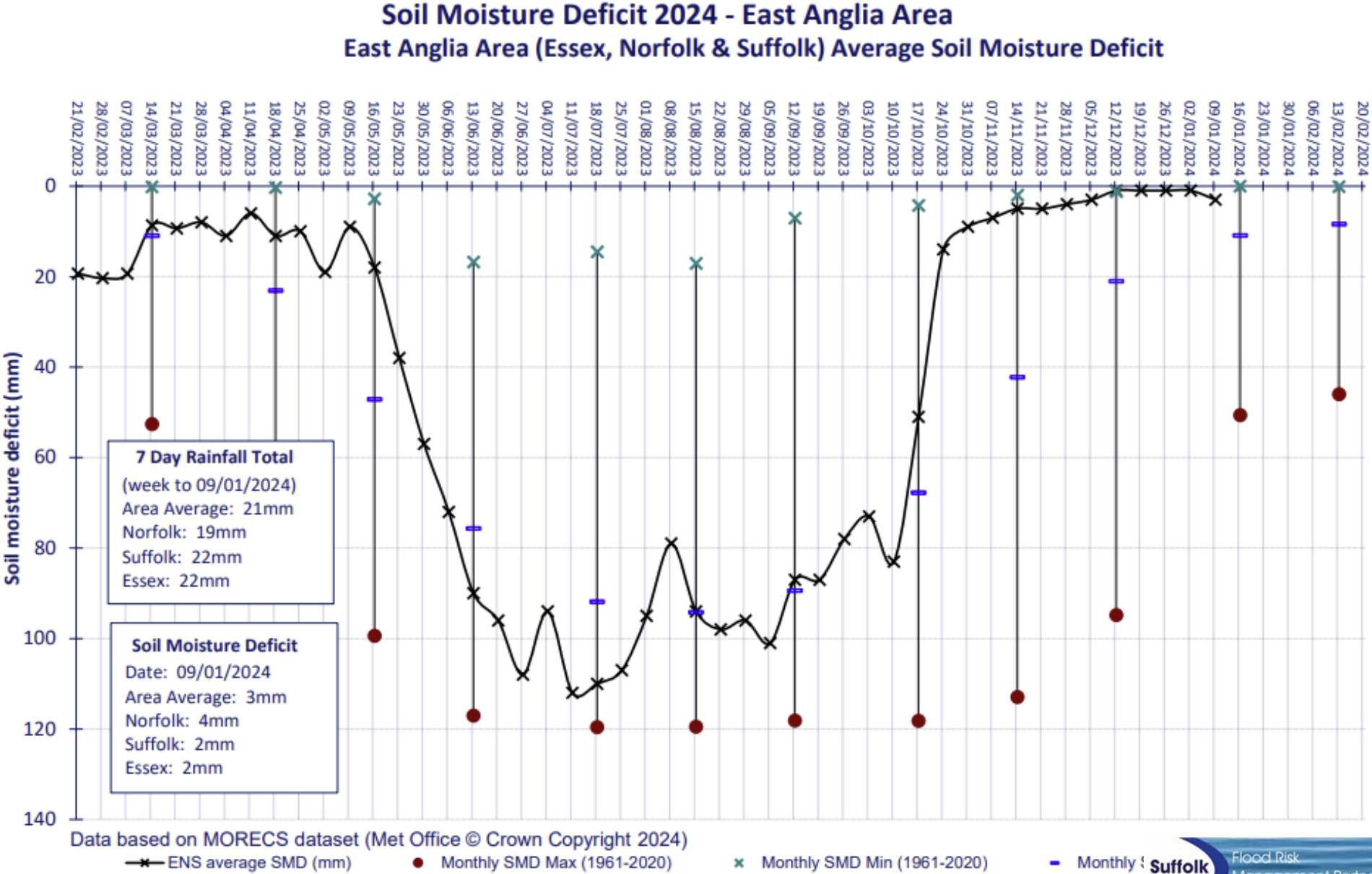
Flooding from the River – bursting the banks



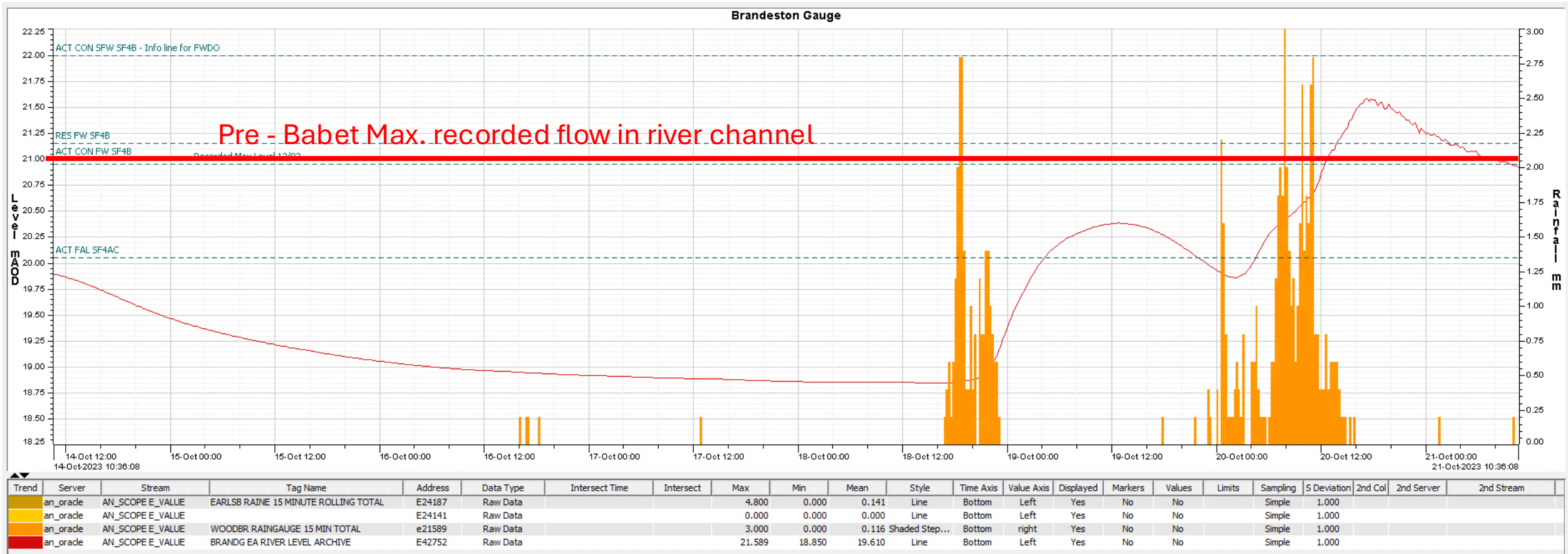
Flooding from Surface Water – overland flow towards the river



Soil Moisture Deficit -



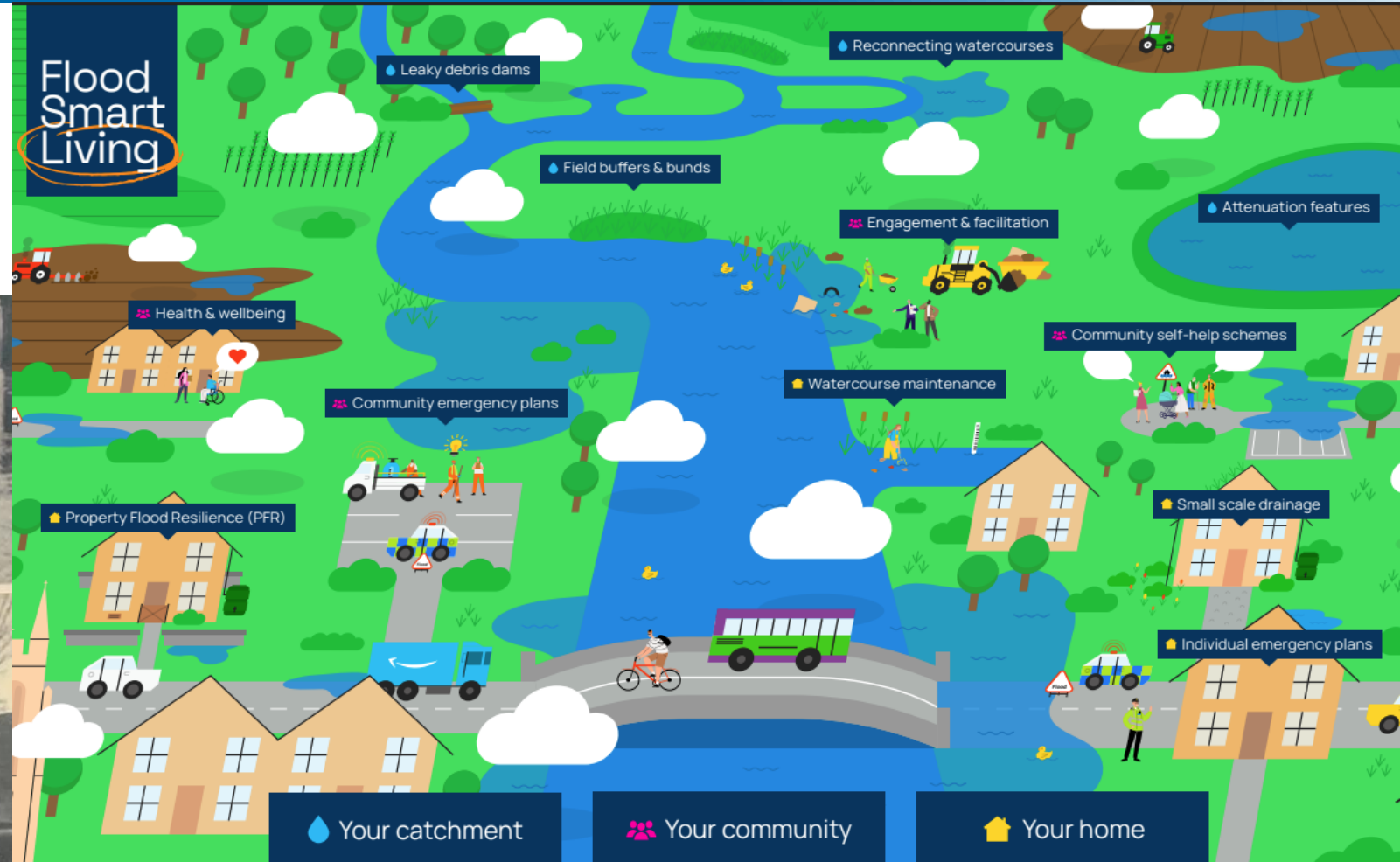
Brandeston River Gauge – previous rainfall and river reaction



The river was still high after previous rainfall on the 18 October, and was almost above Flood Alert level already, when the rainfall on the 20 October arrived and caused it to react quickly.

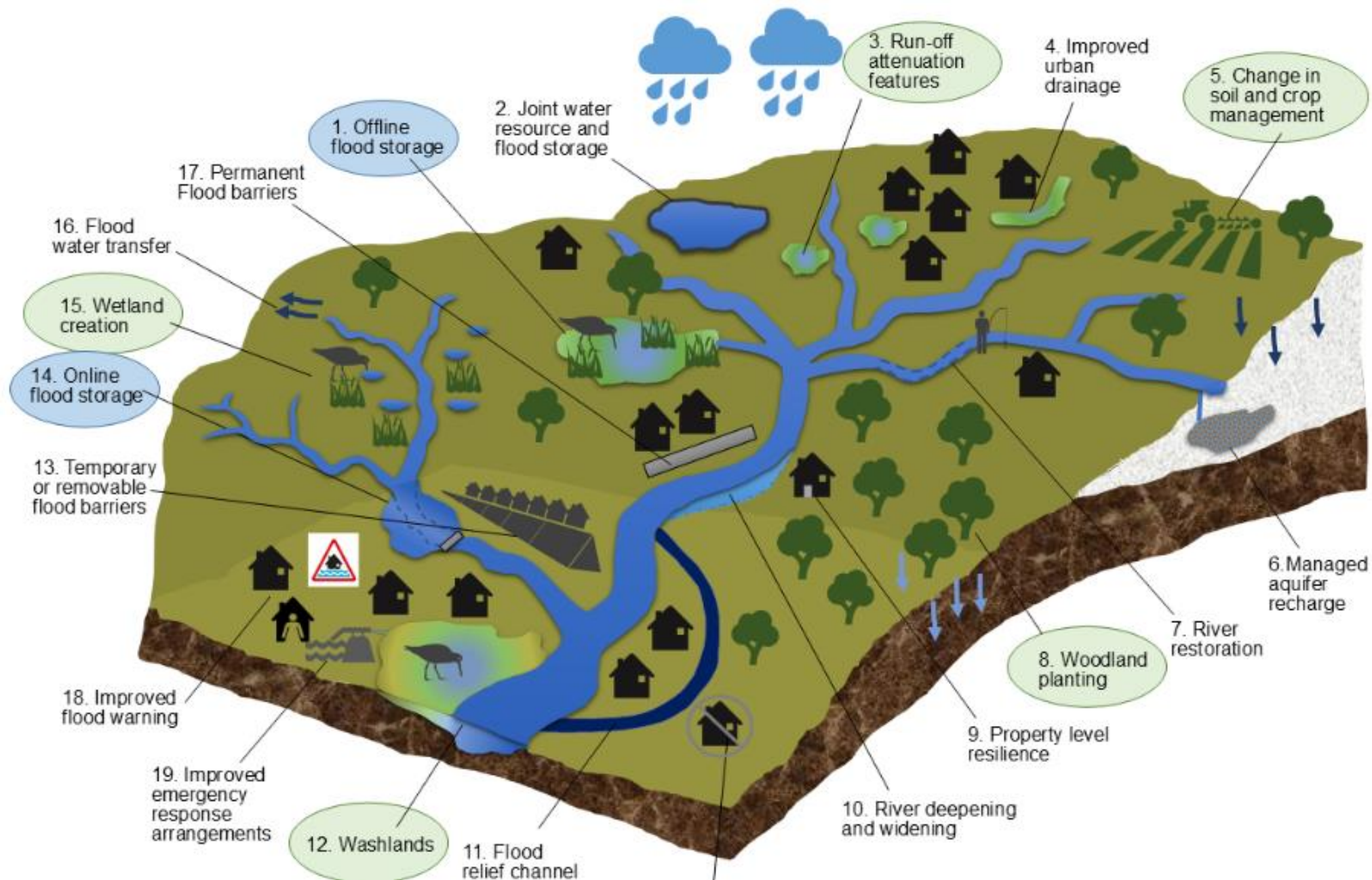
Debenham has a long history of living with floods

1912, 1927, 1936, 1944, 1947,
1956, 1968, 1986, 1993, 1994,
1995.....2023



We need to find new places to store water in the catchment. We also need to make our homes and communities more resilient to the risk of flooding.

Finding space for water in the upper catchments





Glenn Buckingham

Estate Manager, Helmingham
UDOG Advisor

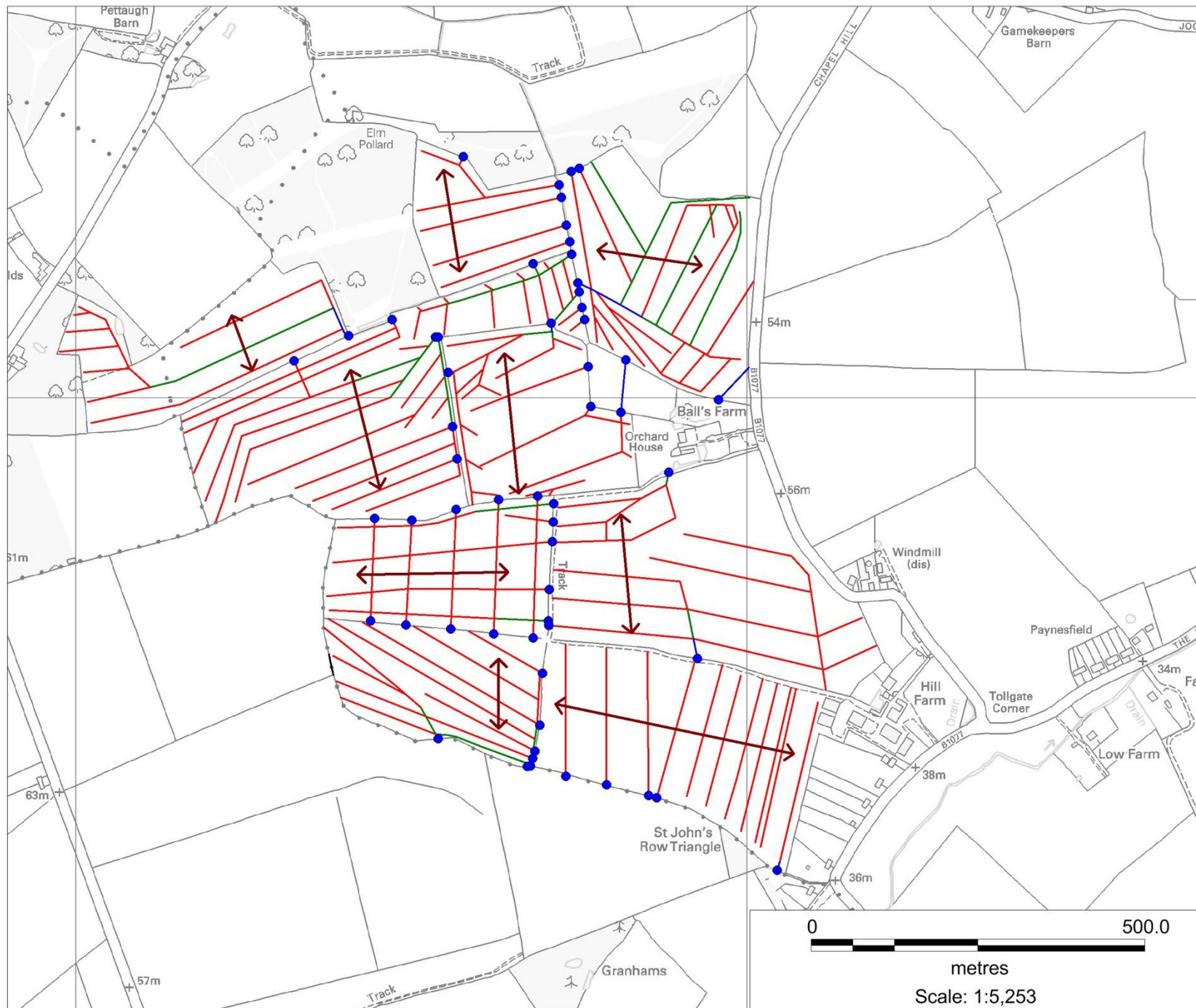
The Solution:
Natural Flood Management
Pros – cons and practice

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Key

-  Mole drains
-  3 inch pipe
-  4 inch pipe
-  6 inch pipe
-  52mm pipe
-  60mm pipe
-  80mm pipe
-  110mm pipe
-  160mm pipe
-  180mm pipe
-  300mm pipe
-  Shingle spurs
-  Location of outfall

Block 1



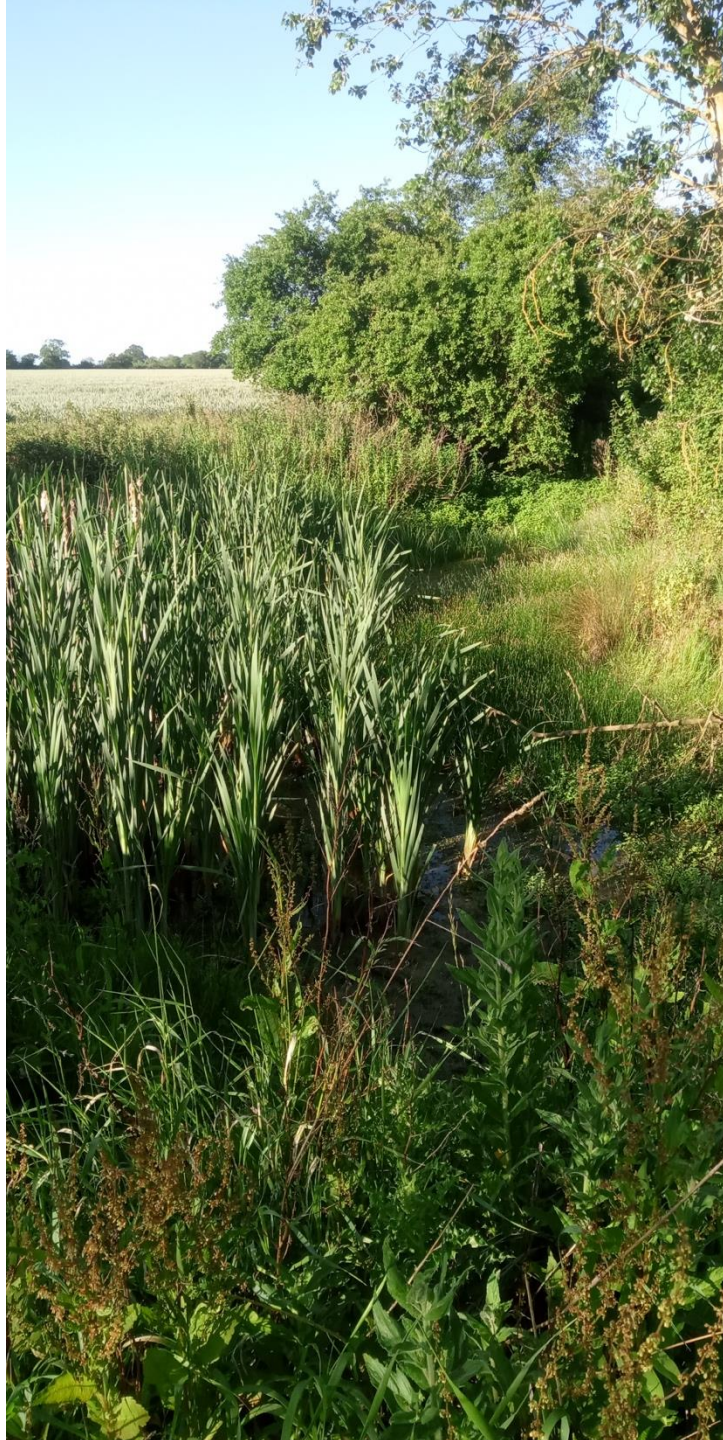














Andrew Donnelly

Director
Enviropartner UK Ltd
UDOG Chair

**Accelerating the solution:
The role of community -
UDOG**

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**Our river is in trouble.
If we don't fix it, so are we.**

What is UDOG?

Why is UDOG needed?

What will we do?

How will we do it?

What do you think? Will you join us?

Over to you.



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What has ballroom dancing got to do with catchment management?

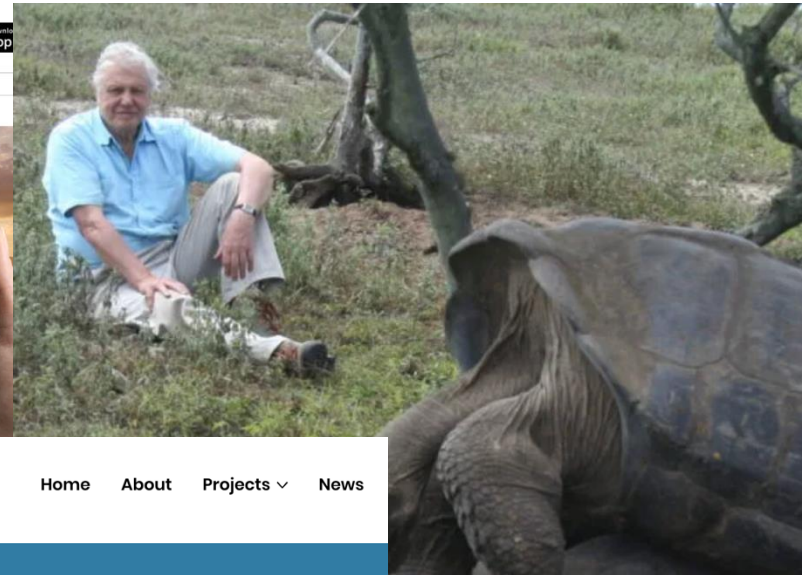




Andy Donnelly,
Chair, UDOG
Director, Enviropartner UK Ltd

- Research
- Policy
- Broker: Cross Sector Partnerships
 - Public
 - Private
 - Community

**Science Education
& Conservation Partnerships**



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What do you see?

- Climate change in action
- Failed catchment management
- Flawed agricultural system
- Social upheaval

NEWS

Home | InDepth | Israel-Gaza war | War in Ukraine | Climate | UK | World | Business | Politics | Culture

England | Local News | Suffolk

Flood-hit firms say plea for protection is ignored



ELE WILLIAMSON

Debenham was engulfed with flood water during Storm Babet

George King, Suffolk and Luke Deal, in Framlingham and Debenham

20 October 2025

“nothing had been done to safeguard the town”

LUKE DEAL/BBC

Framlingham postmaster Roger Tripp said “nothing had been done” to safeguard the town

“needs to be more action”



LUKE DEAL/BBC

Business owner Bill Bulstrode says there needs to be “more action”

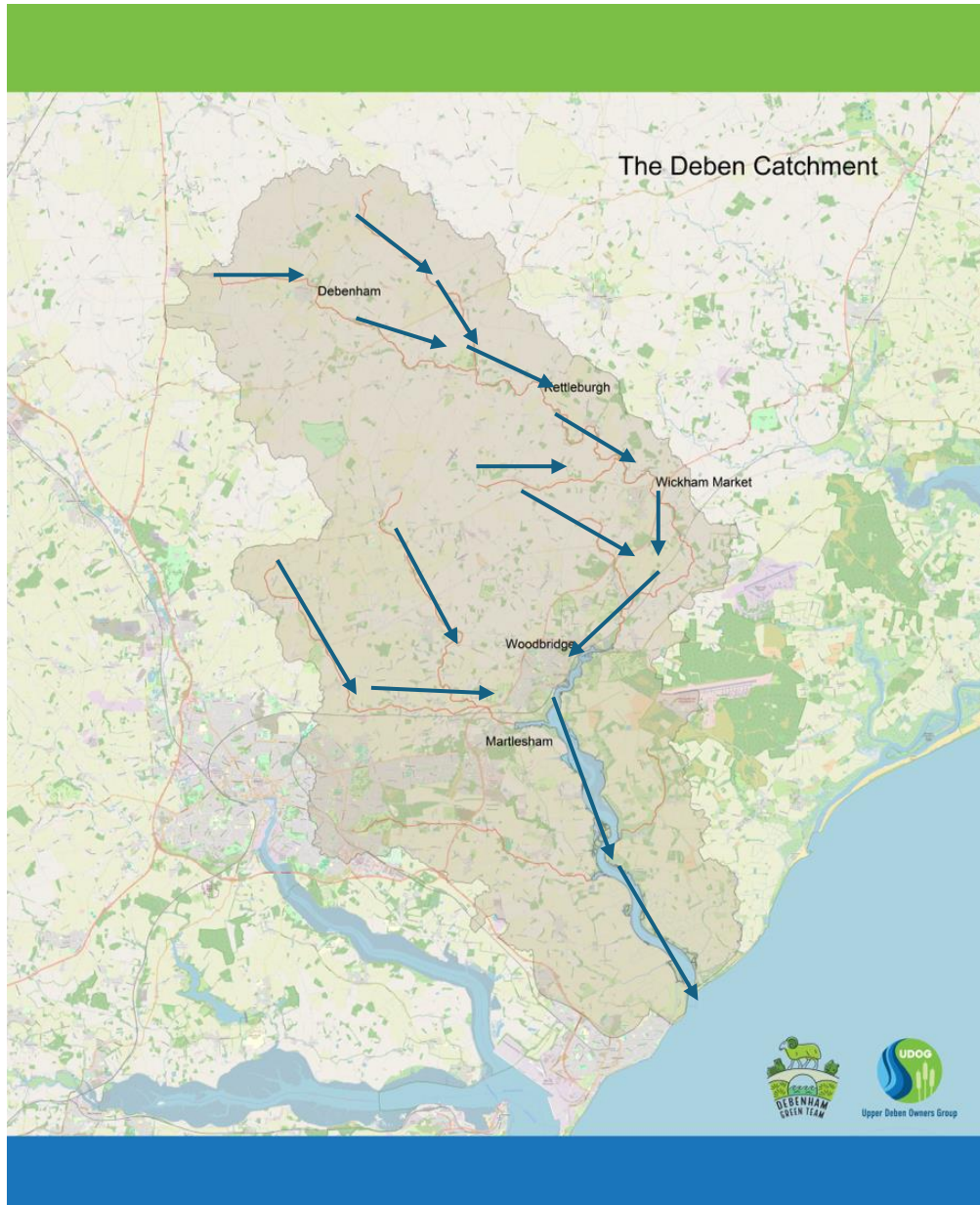
“frustrated by lack of joined-up thinking”



LUKE DEAL/BBC

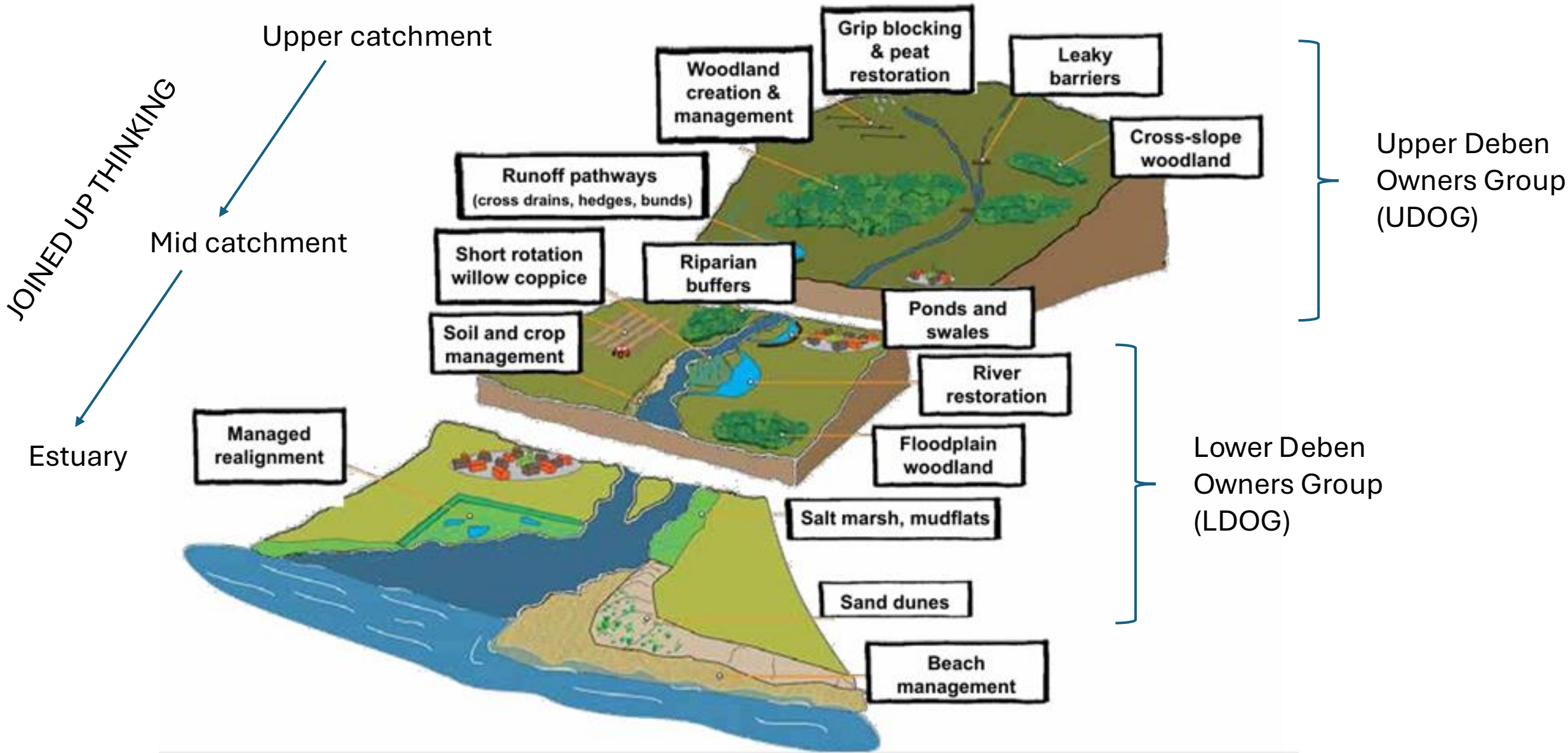
Jade Martin, from Debenham Veterinary Practice, is frustrated by a lack of “joined-up” thinking

JOINED UP THINKING?



DEFRA, The Environment Agency, Water Management Alliance, Natural England, Mid Suffolk CC, East Suffolk CC, Suffolk CC, 20 Parish Councils, Anglia Water

Catchment Management Partnerships





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Local Trustees supported by Advisors,
representing communities at risk

- Homeowners
- Business owners
- Riparian owners
- Neighbours

VISION

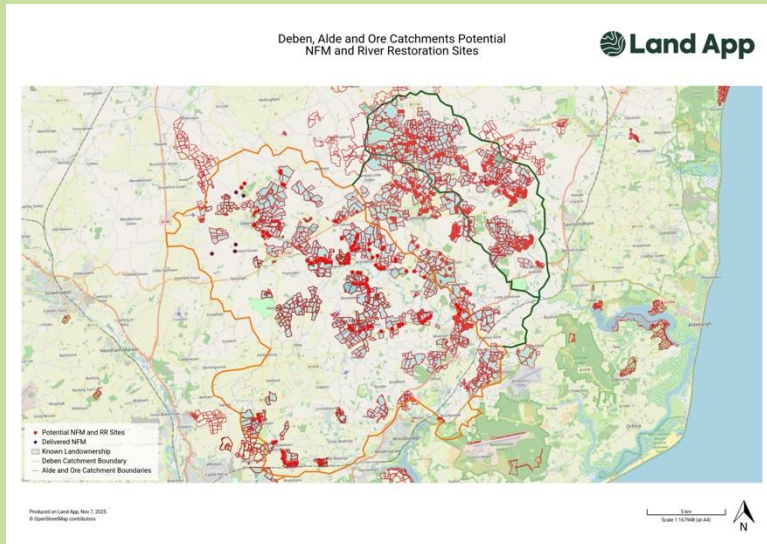
A Deben valley rich in biodiversity with a healthy river and thriving, resilient community free from the risks of extreme flooding and drought

Mission

- Accelerate and scale NFM
- Join up thinking to catchment scale
- Represent members to authorities
- Support community engagement

How?

- Accelerate and scale NFM



- Partnerships
- Landowners
- Parish Councils
- Access funding

£Significant available

- Join up thinking to catchment scale



- Represent members to authorities

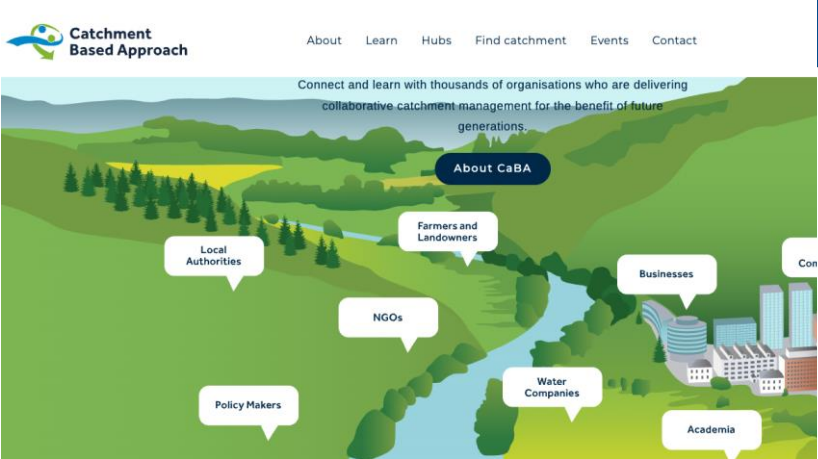
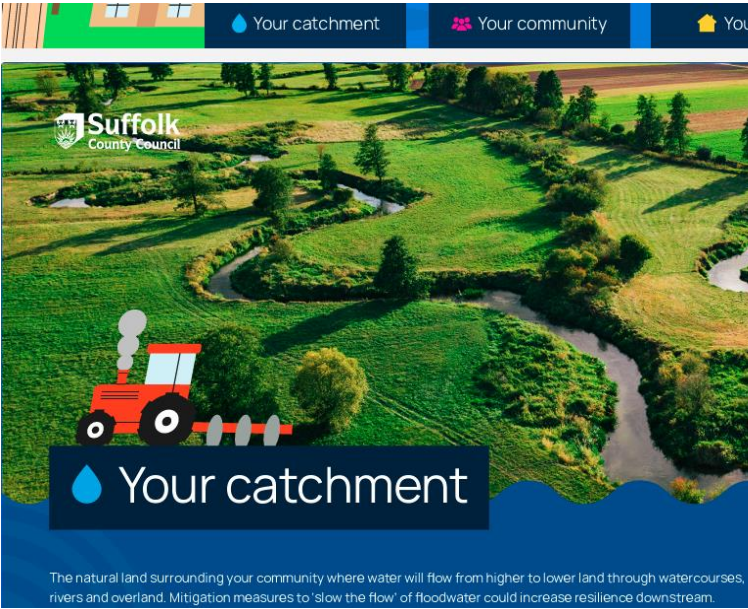


- Support community engagement



There are:

- Lots of resources available
- Including community how to guides (ILD)
- Many successful examples



Leaky debris dams

Leaky debris dams are a natural flood management technique that slows the flow of water during heavy rainfall events. They involve a network of in-channel barriers, installed on a local scale to control channel flows.

There are two common types:

- **Large Woody Dams:** Created by laying large tree trunks horizontally across the channel to rest safely on both banks, wedged in position. Greater timbers can be wedged in place between the larger ones.
- **Leaky Dams:** Constructed by securing a support across the channel and securing slats, either horizontally or vertically, to form a discontinuous barrier.

Why do we use them?

The features have proven successful at 'slowing the flow' of water and reducing the impacts of flooding during a storm event. They are designed to slowly leak, draining the trapped water once the flood period has passed. In-channel barriers could reduce flood peaks by up to 20%.

They are typically installed within channels to temporarily hold water back, but can be designed so that flood water spills onto adjacent floodplain for additional floodwater storage.

Where can they be installed?

- In-channel barriers are generally suited to smaller watercourses and ditches throughout the catchment, where holding water back is unlikely to create additional problems.
- In steep woodland in the upper catchment, and recommended alongside runoff attenuation features, such as understorey planting.
- They can also be used within fields on overland flow pathways.

Useful links

- GOV.UK | RPS2: Small leaky woody dams →
- GOV.UK | RPS3: Large leaky woody dams →
- GOV.UK | Species recovery & management →

Key points to consider

1. Dams can successfully reduce localised flooding
2. Sediment trapped behind each structure is nutrient rich and can be reused more than one time
3. The dams are set above normal stream level, so only flood flows are blocked and they don't interfere with normal flow conveyance
4. To ensure efficiency, many barriers are likely to be needed. Close liaison with organisations such as the Environment Agency and LLFAs is recommended
5. A permit may be required by the relevant Risk Management Authority ahead of installation
6. Periodic maintenance of dams is required

A photograph showing a leaky debris dam constructed from logs and branches across a stream. A caption below reads: 'Leaky debris dams installed by Suffolk County Council in Sturton, Suffolk.'

B B C





THE NFM UDOG Foxtrot

SLOW

SLOW

Quick

Quick

SLOW





We know the problems
We know what we need to do
We know it works

**Our river is in trouble.
If we don't fix it, so are we.**

THANKYOU!

UDOG Advisors

UDOG Trustees:

Dave Liddle, Jayne Jackson, Richard Parry, Kate Scott,
Nick Hughes, Henry Chevalier

What do you think? Will you join us?

Over to you.

www.udog.org.uk



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