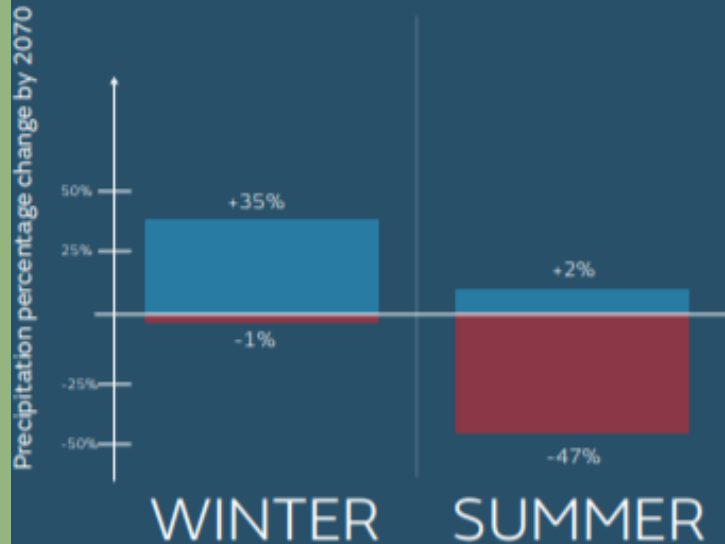


Changing Patterns

In England and Wales there is now a 1 in 3 chance of a new monthly rainfall record in at least one region each winter

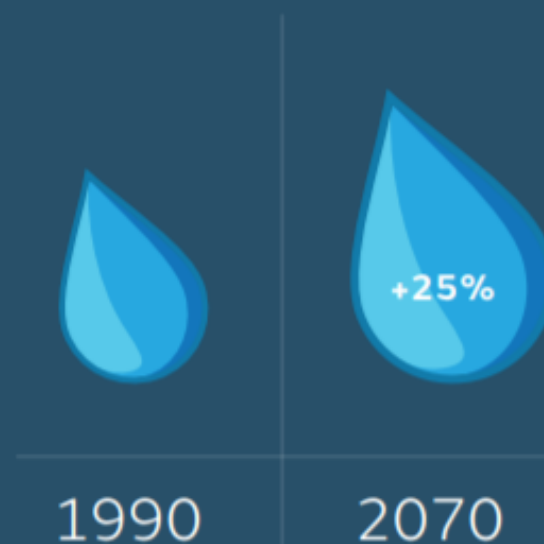
WETTER WINTERS, DRIER SUMMERS*

UKCP Probabilistic (25km) projections show that by 2070, under a high emission scenario, average winter precipitation is projected to increase, whilst average summer rainfall is projected to decrease.



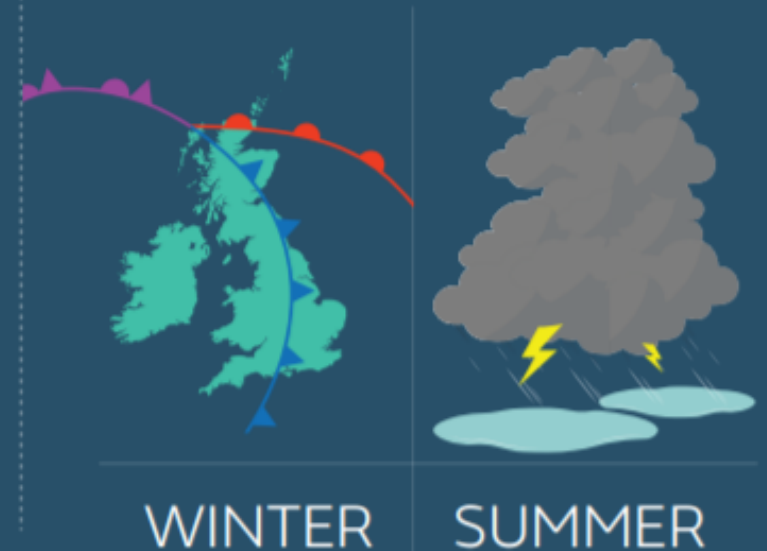
FUTURE INCREASES IN EXTREME HOURLY RAINFALL INTENSITY

By 2070, extreme hourly rainfall intensity associated with an event that typically occurs once every two years increases by 25%.



CHANGES IN THE TYPE OF RAINFALL

By 2070, Local (2.2km) projects more of the rain in winter will come from frontal rain events of higher intensity and in summer from short lived high intensity showers.

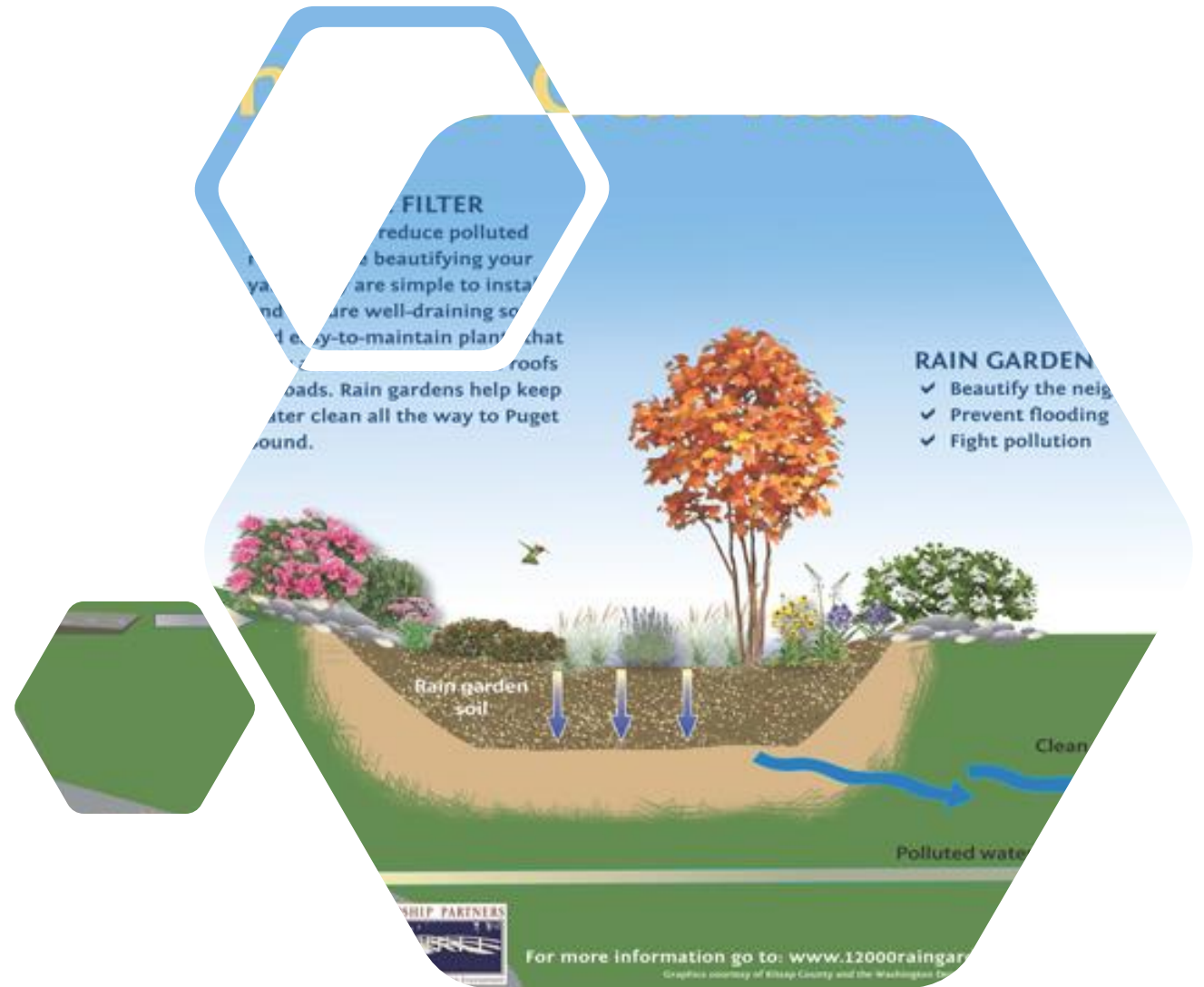


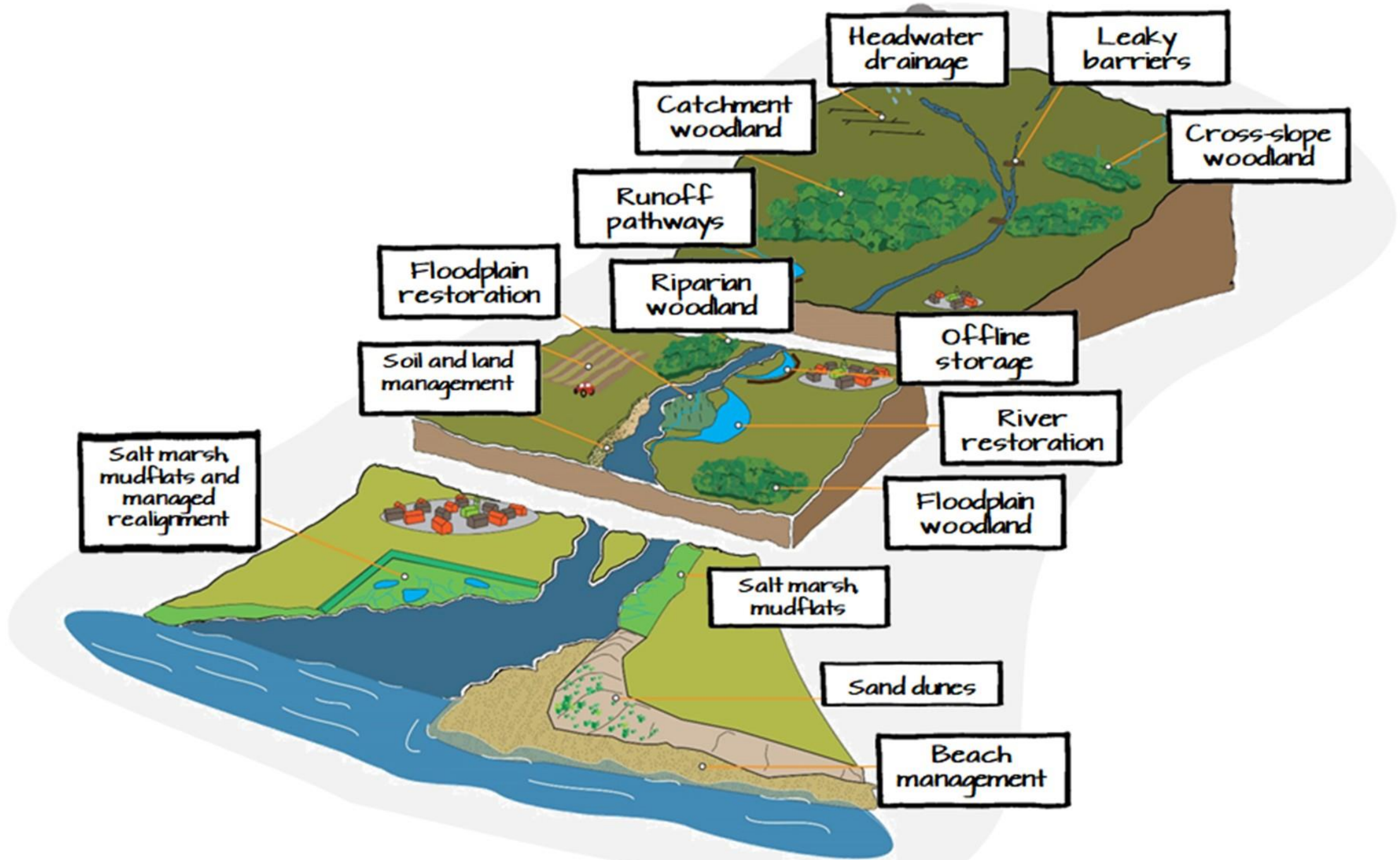


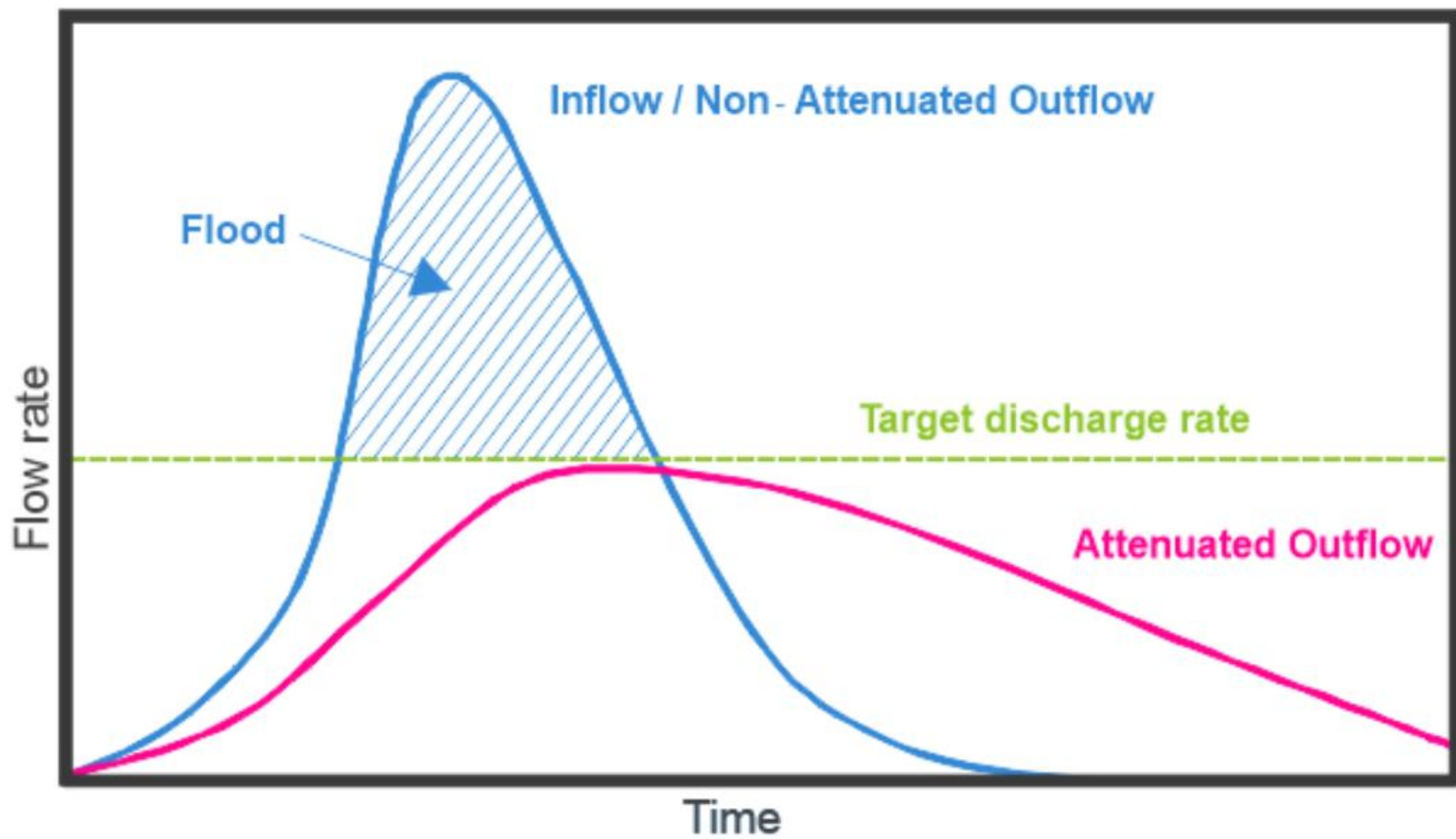


Nature-Based Solutions can help!

- Complements and supports traditional flood risk reduction
- Multiple benefits
- Often low cost
- Can be used from Household Scale to Landscape Scale







Steve Dury, SCC
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Interreg EUROPEAN UNION

2 Seas Mers Zeeën


TRIPLE C

European Regional Development Fund

'Every field, every farm, every stream has a part to play in reducing flooding, water conservation and erosion control'



TRIPLE C (Climate resilient Community based Catchment planning & management) will reduce flooding in the participating catchment areas by demonstrating and validating, through a series of pilot projects, how farmers can create cost-saving water retention and erosion control measures upstream.

LP1	 UK	Somerset County Council
PP2	 UK	Farming and Wildlife Advisory Group – (FWAG South West)
PP3	 UK	Devon Wildlife Trust
PP4	 UK	Kent County Council
PP5	 NL	Brabantse Delta WaterBoard
PP6	 NL	ZLTO (Southern Dutch Farmer and Horticulturists Organization)
PP7	 BE	Province of Antwerp
PP8	 BE	Inagro
PP9	 BE	ABC Eco ² (Agroenvironmental management centre Eco ²)
PP10	 BE	Province of East Flanders (PCM)
PP11	 BE	Vegetable research centre East Flanders (PCG)
PP12	 BE	The Flemish Environment Agency

NATURAL FLOOD MANAGEMENT & WATER RETENTION MEASURES



Somerset catchments

Somerset



Upper Darent Catchment'

Kent

West-Noord-Brabant & Antwerpen



Catchment Kleine Aa/
Molenbeek



North Devon catchment

Devon



Catchment Rivierbeek

Brugge & Tielt

EROSION CONTROL MEASURES



Somerset
catchments

Somerset



Upper Darent
Catchment'

Kent

Brugge & Tielt



Catchment
Rivierbeek

Catchment the
Bovenschelde



Triple C in Somerset has been working as part of the wider Hills to Levels project to slow the flow and reduce flooding and soil erosion.

FWAG SouthWest have worked with farmers, landowners and local stakeholders to provide:



- 1:1 advice
- Demonstrations
- Focus Groups
- Capital grants for Natural Flood Management (NFM) including water retention and erosion control measures
- Monitoring of NFM measures
- Modelling the benefits of NFM measures delivered

This has used match funding from the Somerset Rivers Authority.

Over the past 5 years, as part of the Triple C project FWAG SW have delivered:

- Over 550 farm visits
- 83 water retention measures
- 27 erosion control measures
- 49 soil husbandry visits
- 8 demonstration and trial sites with monitoring
- 4 water retention sites monitored
- 15 events and workshops



Results:

- 40,000m³ of runoff reduction, and 50% reduction in flood risk at local flooding 'hotspots' in the catchment.
- €2.1M (£1.81M) cost savings compared to cost of traditional adaption measures.
- €0.44M cost savings due to reduced need for dredging of River Parrett
- 174 households with enhanced
- 30% of catchment with improved adaptation capacity
- A 30% reduction in soil erosion over 16,020 ha - based on reducing soil erosion incidents or occurrences by 30% on 150 farms of average size 100ha
- €0.417M (£360,000) will be saved on cleaning roads, jetting culverts, cleaning highway ditches and road sweeping over 4 years

Additional achievements:

Through the Hills to Levels project, Triple C in Somerset has received national recognition:

- Included as a case study of Working with National Processes and Natural Flood Management in the UK Government 25 Year Environment Plan in 2018
- Winner of the UK Rivers Prize in 2018
- Volunteer Flood Warden working with the project was recognised as a River Champion in 2019
- Presented at the 2020 Rivers Conference
- Project film winner of the Interreg 2 Seas film award



It has also helped in the development of other projects in the South-West to continue the legacy of the Triple C work, including projects to reduce flood risk and erosion in the Stour Headwaters, Somerset Frome and Brue catchments.



How to set up a successful catchment-scale project:

An example action plan, lessons learnt and testimonials from the Triple C project



Hills to Levels – Triple C Project in Somerset

Hills to Levels – Triple C flood works in Somerset

Interreg 2 Seas Mers Zeeën TRIPLE C European Regional Development Fund

EUROPEAN UNION

FWAG SouthWest

Watch later Share

TRIPLE C PROJECT

Catchments, Communities, Climate Change

SOMERSET

Working with farmers across Somerset and partners from the Netherlands and Belgium, FWAG SW has delivered a variety of water storage and erosion control measures over the last 4 years. This film has been put together to highlight some of the achievements of the project. You can read more about the Triple C Project by clicking here...

<https://www.fwagsw.org.uk/natural-flood-management-videos>

Co-Adapt

Climate Adaptation through
co-creation

- 13 partners in 4 countries
- 2019-2023
- Co-Adapt has received €7 million from the Interreg 2 Seas programme and is part funded by the European Regional Development Fund
- SCC lead partner
- 3 projects in Somerset:
 - Porlock Vale Streams (Nat Trust)
 - Adapting the Levels (SCC, SWT, FWAG)
 - Connecting the Culm (BHAONB)

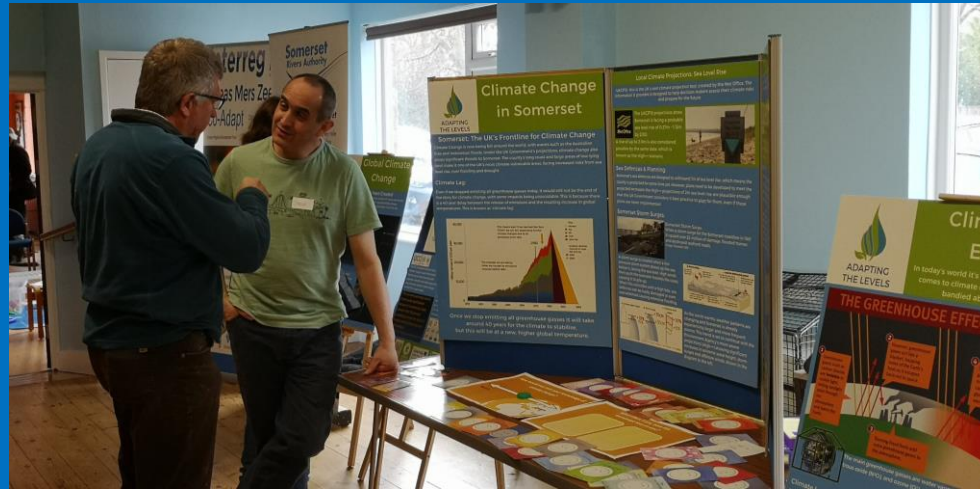


Interreg 
EUROPEAN UNION

2 Seas Mers Zeeën
Co-Adapt

European Regional Development Fund





Adapting the Levels

- ‘Climate Adaptation through Co-Creation’
- 12 partners in 4 countries – SCC lead partner
- Co-Adapt has received €7 million from the Interreg 2 Seas programme
- 40% of Adapting the Levels funded by Somerset Rivers Authority
- FWAG, Somerset Wildlife Trust and SCC partners on Adapting the Levels

Sometimes the solutions are right under our noses! Lots of people had ideas about how our homes can be part of the answer – how we build them, the rules on what we build, and how we can improve them.

“Working together has to be the way forward. This is the biggest challenge we all face.”

“Stop covering driveways with impermeable surfaces.”
 “All new housing built to the highest environmental standards- Renewable energy, insulation, rainwater capture. MAKE the developers change and Regulate, Regulate, Regulate.”
 “Sharing good practices- informal open gardens, tree planting, composting how to.”
 “Stop building on the flood plains.”
 “Start local scheme and supply water butts.”

“Education support for small local projects enabling individuals to implement small, beneficial changes.”

“Local events that attract locals and neighbours to attend and interact with landowners & farmers.”

There are lots of ways we can use the power of nature to help reduce the risks of flooding and drought- these are known as nature-based solutions or NBS.

“Slow the flow in upland areas of catchments.”

There are more answers right under our feet – in the soil that feeds us and soaks up rainwater. Improving relationships between farmers and local communities, changing the subsidy systems for farming, being mindful of what crops are grown where and protecting the Levels’ carbon-rich peat were all topics that came up.

“How do we change farming, so that it suits the new climate and is part of the solution not the problem?”

“Floodwater storage on agriculture land/ payment for landowners.”

“More use of flooded fields and compensation for farmers.”

“Stop blaming farmers for problems we all created and need to solve together.”

“Maize!”

“Deep-rooted grasses on moors. Rotation crops.”

“Make all our public buildings SuDs friendly.”

“Don’t plant trees on old pasture which is still home to the wildflowers, these are carbon sinks in themselves.”

“Planting of hazel plantations on slopes above floodplains. Willow in flood areas.”

“Terminate all ongoing peat extraction and licences.”

“Make space for water so the rivers can flood onto the floodplains.”

More ideas came up with an eye on the future, on how we safeguard our communities, prepare for changes that are coming, and work with nature to adapt.

“Communities need to re-think normalcy of flooding.”

“...Adaptation is about what we can do in advance, and so much better (and cheaper) than trying to clear up after the event.”

“Accept that change is coming, work with nature to adapt.”

“Find areas to make space for flooding.”

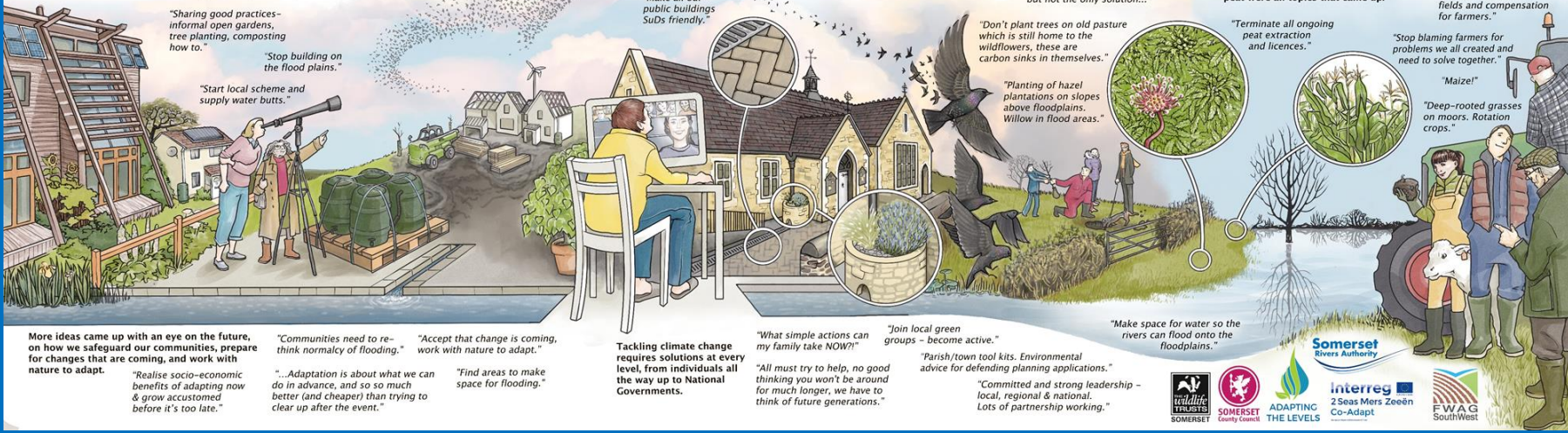
Tackling climate change requires solutions at every level, from individuals all the way up to National Governments.

“What simple actions can my family take NOW?”

“All must try to help, no good thinking you won’t be around for much longer, we have to think of future generations.”

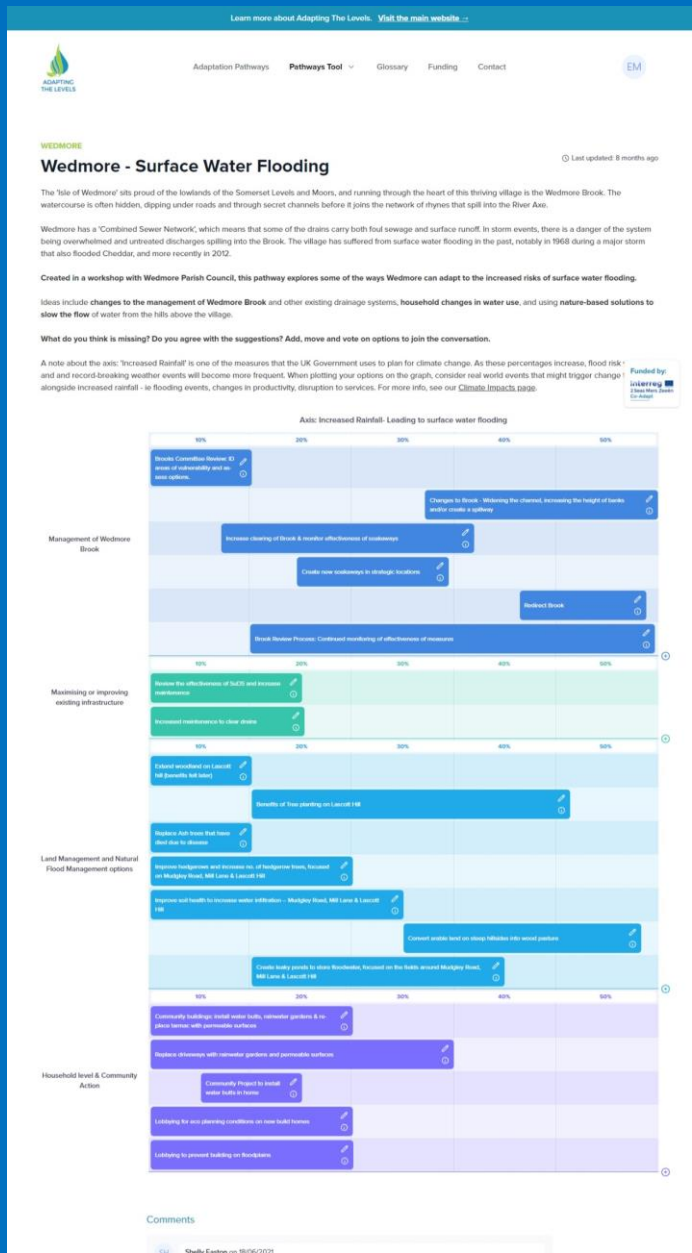
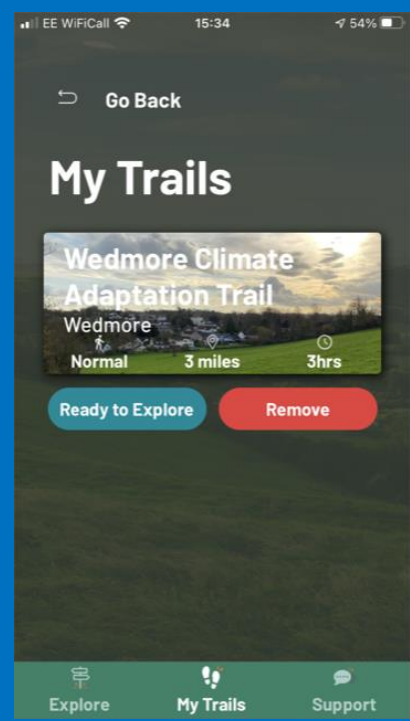
“Join local green groups – become active.”

“Parish/town tool kits. Environmental advice for defending planning applications.”
 “Committed and strong leadership – local, regional & national. Lots of partnership working.”



Online work

- Report drawing together opinion and findings from public events
- Mobile app – Somerset Trails
- Online Adaptation Pathways tool
- Online workshops



Community Work

- School visits – workshops with interactive tools
- Engagement Team instrumental in setting up Langport and Huish Episcopi Flood Group
- Work with existing flood groups such as Martock and West Somerset Flood Group
- Always looking for innovative ways to engage on flooding





Riverlands

Porlock Vale Streams
River Aller floodplain reconnection



What?

Floodplain reconnection

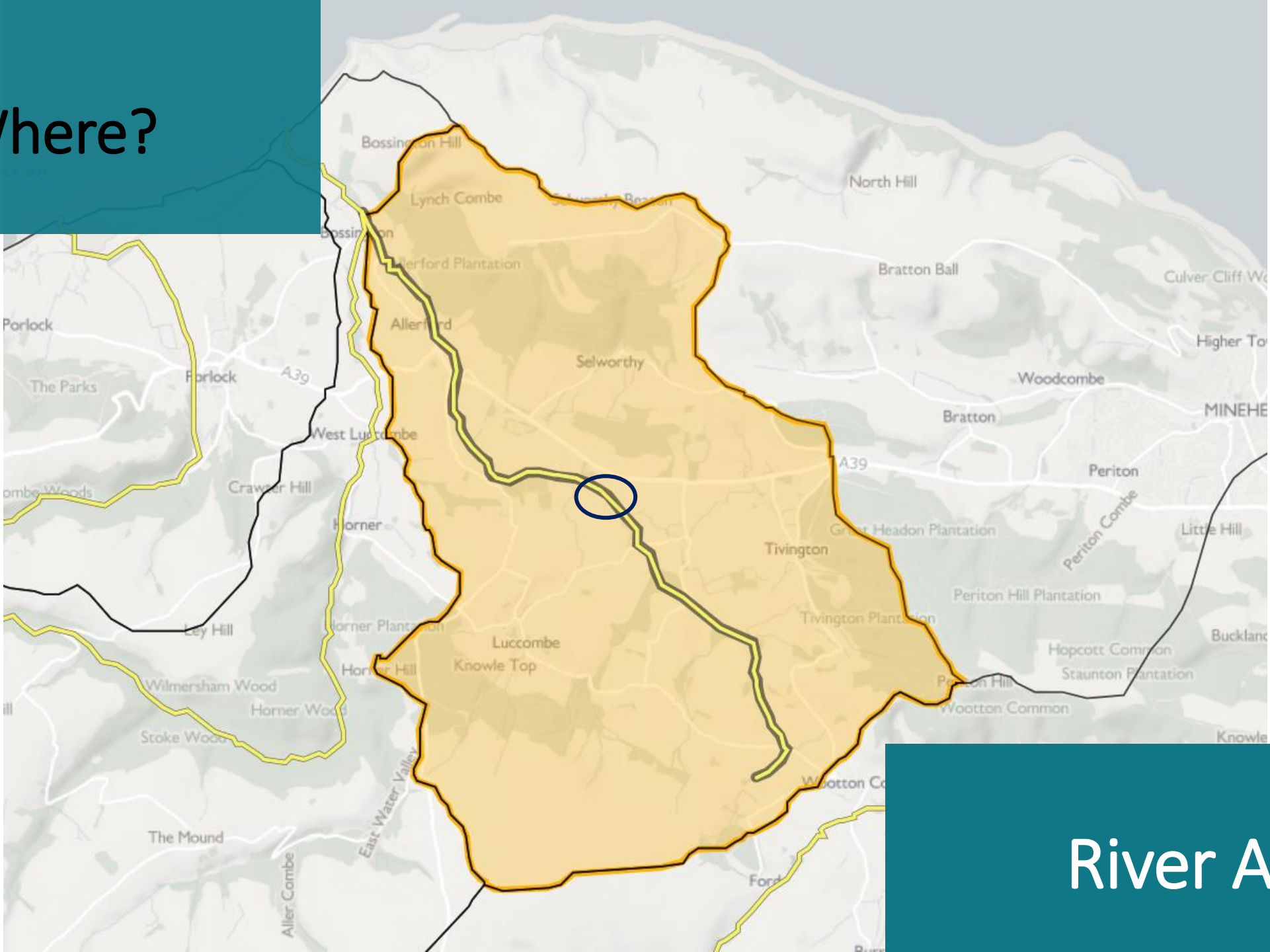
- River restoration
- Creating space for water
- From drainage to habitat
- Working with agriculture - not farming vs wildlife
- Resilient river catchments
- (a bit) messier



Where?



Where?



River Aller

Why?

- Climate emergency – extreme weather
- Habitat loss – 90% of wetlands since Roman era
- Biodiversity crisis – nature in crisis
- Farming – economic, policy/funding, environmental
- West Somerset – social deprivation



Why?

- **25 – year environment plan.** ‘deliver cleaner air and water in our cities and rural landscapes, protect threatened species and provide richer wildlife habitats. It calls for an approach to agriculture, forestry, land use and fishing that puts the environment first’.
- **Somerset’s Climate Emergency Strategy.** Reduce carbon emissions in the county and make Somerset a county resilient to the inevitable effects of Climate Change.
- **Exmoor NP Nature Recovery Vision.** Exmoor’s farmers, land managers, conservationists, communities and public bodies will work together to deliver ‘a Nature-rich Exmoor National Park’ which is great for wildlife and great for people.
- **EA2025** - by 2025 air will be cleaner and healthier, rivers, lakes, groundwater and coasts will have better water quality and will be better places for people and wildlife, nature and land will be better protected and enhanced
- **National Trust** - Healthy rivers and catchments, rich in wildlife, enjoyed and cared for by all.



Why?

- Protecting communities and infrastructure from extreme weather
- Restoring natural process – immediately and profoundly
- Landscape rich in wildlife
- Cleaner water & Healthier soil
- Tourism
- Evidence – nature based solutions

Opportunity



what we are not doing

- Taking land out of production
- Re-wilding
- Flooding upstream
- Flooding downstream
- Working outside our remit
- Working in isolation

