



# Targeting & Delivering Nature Based Initiatives in the Tweed Catchment

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**Tweed Forum**

# Land Use Changes, Challenges and Solutions

1. *If you don't own all the land.....reconciling different **land use objectives** and **scales** of those involved - the role of the 'Trusted Intermediary'*
2. How does **Tweed Forum** work?
3. **Stakeholders** – local communities as the key to engagement
4. The need for an **effective Land Use Strategy** when targeting nature-based solutions, multiple benefits, and **trade-offs**
5. **Examples** - Targeting & Delivering projects on Tweed

# What are the main Scottish land Use legislative drivers and policies?

Strategic Environment Assessment & Policy Analysis – part of LUS Borders pilot

- **Food production (livestock and crops)** – Scotland Rural Development Programme Farming for a better climate; Scotland's Food & Drink Policy
- **Timber and Woodland** – Scottish Forest Strategy; Scottish Government's Rationale for Woodland Expansion; Scottish Borders Woodland Strategy
- **Natural Flood Management** – Flood Risk Management Act; Flood Risk Management Plans; Tweed Wetland Strategy
- **Diffuse Pollution Control** – Water Environment & Water Services Act; Scotland, Solway/Tweed River Basin Management Plans
- **Carbon storage** - Climate Change Act; Scottish Climate Change Adaptation Programme; Low Carbon Scotland – emissions reduction targets; Scottish Soil Framework
- **Recreation** – National Planning Framework; Land Reform Act; Scottish Outdoor Access Code; Scottish Historic Environment Policy; Community Plans; Core Paths Plan
- **Biodiversity** – Nature Conservation Act; Wildlife & Natural Environment Act; Scottish Biodiversity Strategy; Scottish Borders Local Biodiversity Action Plan
- **Renewable Energy** – Scottish Planning Policy; Scottish Government's Routemap for Renewable Energy; Biomass Action Plan for Scotland; SBC Spatial Framework Wind energy
- **Development** – Scottish Planning Policy; National Planning Framework; South of Scotland Economic Development Plan; Scottish Borders Local Development Plan

# A disconnect with local, community & individual drivers

Communities and individuals have different pressures and different drivers for decision-making on land use at local scale

## Case study catchments

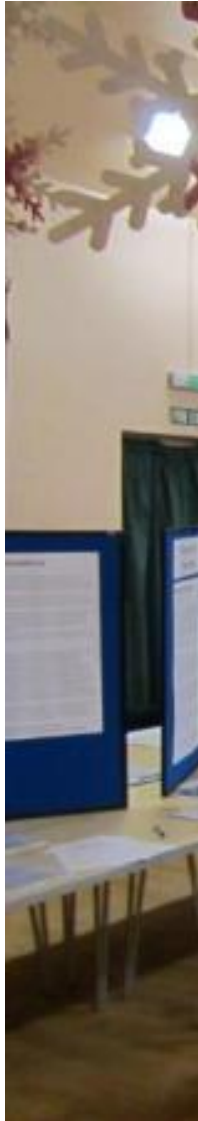
	<u>Cover the main issues &amp; initiatives in the Borders</u>		
Catchment	Environmental	Economic	Social
Ale water	Ale water initiative (SNH and Tweed Forum)	Business Biodiversity Group	Stakeholder engagement.
Eddleston water	River/Catchment Restoration project Natural Flood Management Biodiversity offsets	Flood protection	Stakeholder engagement with farmers and community Cuddy Action Group
Eye water	RBMP priority catchment. Diffuse pollution control programme EU Bathing waters/ Marine environment Biodiversity offsets	Berwickshire Coast. Onshore wind.	Bathing waters. Coastal Communities Fund.
Leet water	Diffuse pollution control Past project initiative on improving water quality	Food production/intensive arable	Past project initiative on improving water quality working with farmers
Gala water	SBC Flood Protection Scheme Natural flood management Biodiversity Offsets	Upstream storage & brownfield sites Flood protection Settlement expansion Borders Railway	Countryside Around Towns
Ettrick & Yarrow	SBC Flood Protection Scheme Natural Flood management Biodiversity offsets	Woodland expansion Onshore wind Water quality (Scottish Water reservoir)	Ettrick & Yarrow community development group Woodland Expansion (community impacts)

Individual landowners and farmers have tenancies, mortgages, crop prices, subsidies, Brexit & CAP reform, weather, flooding, family, inheritance.....

Tweed Forum undertook a series of meetings in 6 representative areas, asking about land use priorities, ecosystem service maps, opportunities and conflicts



# Case study catchments - key issues



15

10  
km

# Tackling the disconnect - **Tweed Forum** as a 'trusted intermediary' between state (national priorities) & Communities (local desires)

**We work often as a meeting place for ideas**

- *Participatory catchment-wide* NGO – *true partnership operation*
- *Based in the community* – understand local desires and challenges – staff with land management expertise
- Looking to maximise benefits from projects across the spectrum – '*right measure in the right place*' – natural, historical, social and cultural
- *Stakeholder engagement* key to developing plans and projects
- **Looking to** use our understanding of political and policy direction **as opportunities**

Range of National priorities and strategies



**Tweed Forum**

align and gain max value from multiple benefits for all



Community ideas and concerns



# Who we are

## GOVERNMENT DEPARTMENTS AND AGENCIES

Department for the Environment  
Food and Rural Affairs  
Environment Agency  
Forestry Commission Scotland  
Natural England  
Scottish Environment Protection  
Agency  
Scottish Government  
Scottish Natural Heritage  
Scottish Water  
Scottish Enterprise Borders  
Visit Scotland

## PRIVATE / VOLUNTARY SECTOR

Borders Anglers Federation  
Borders Forest Trust  
Northumbrian Water  
Northumbrian Wildlife Trust  
River Tweed Commission  
Royal Society for the Protection of Birds  
Scottish Agricultural College  
Scottish Borders Rural Partnership  
Scottish Rural Property and Business  
Association  
Scottish National Farmers Union  
Southern Uplands Partnership  
Scottish Wildlife Trust  
Tweed Foundation

## LOCAL AUTHORITIES

Northumberland County Council  
Northumberland National Park Authority  
Scottish Borders Council



**Governance** - Limited company, with independent Trustees  
and 8 staff, backed by a Steering Group of the membership



# The Development of Tweed Forum

*Building collaborative momentum over the years*

## Three Phases:

(1) 1991 – 1999: **Forum** (talking shop)

(2) 1999 – 2008: formed **Limited company** to deliver the *Heritage Lottery programme* (staff, premises, and **Catchment Management Plan**)

(3) 2008 - wider **Stakeholder “institution”** and **regional land management delivery partnership**



- Increasing engagement with both statutory bodies and the community
- Trust and delivery are key – ‘learning by doing’ (mistakes and all!)
- Increasing scale of ambition and connections – piloted the Scottish Government’s Land Use Strategy – focus on multiple benefits

# Four key roles in targeting delivery:

## ➤ **Facilitate and Enable actions on the ground**

- mediator/honest broker – defuse potential conflicts
- promote integration, coordination and cooperation
- pool resources and secure funding
- deliver on Multiple benefits

## ➤ **Seize Opportunities where/when others cannot**

- light on our feet (NGO can go places agencies can't!)

## ➤ **Fill Gaps in funding & policy**

- encourage others to action, or
- take direct action

## ➤ **Communicate**

- improve flow of information
- articulate and promote collective aims and objectives

**Tweed Forum has no powers**  
just its reputation for delivery,  
value for money, trust and  
independence – it has to  
balance when to say no!

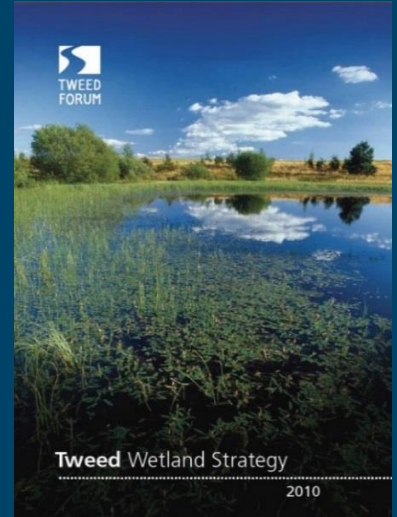
# Key is understanding local community and environment

## Targeting community issues and participants

### Scale of Engagement:

The *best scale for engagement* appears to be that of the **sub-catchment or local community**.

Neighbours and land managers see opportunities and the potential added benefits and relevance of working together, as well as any 'trade offs' that need to be resolved



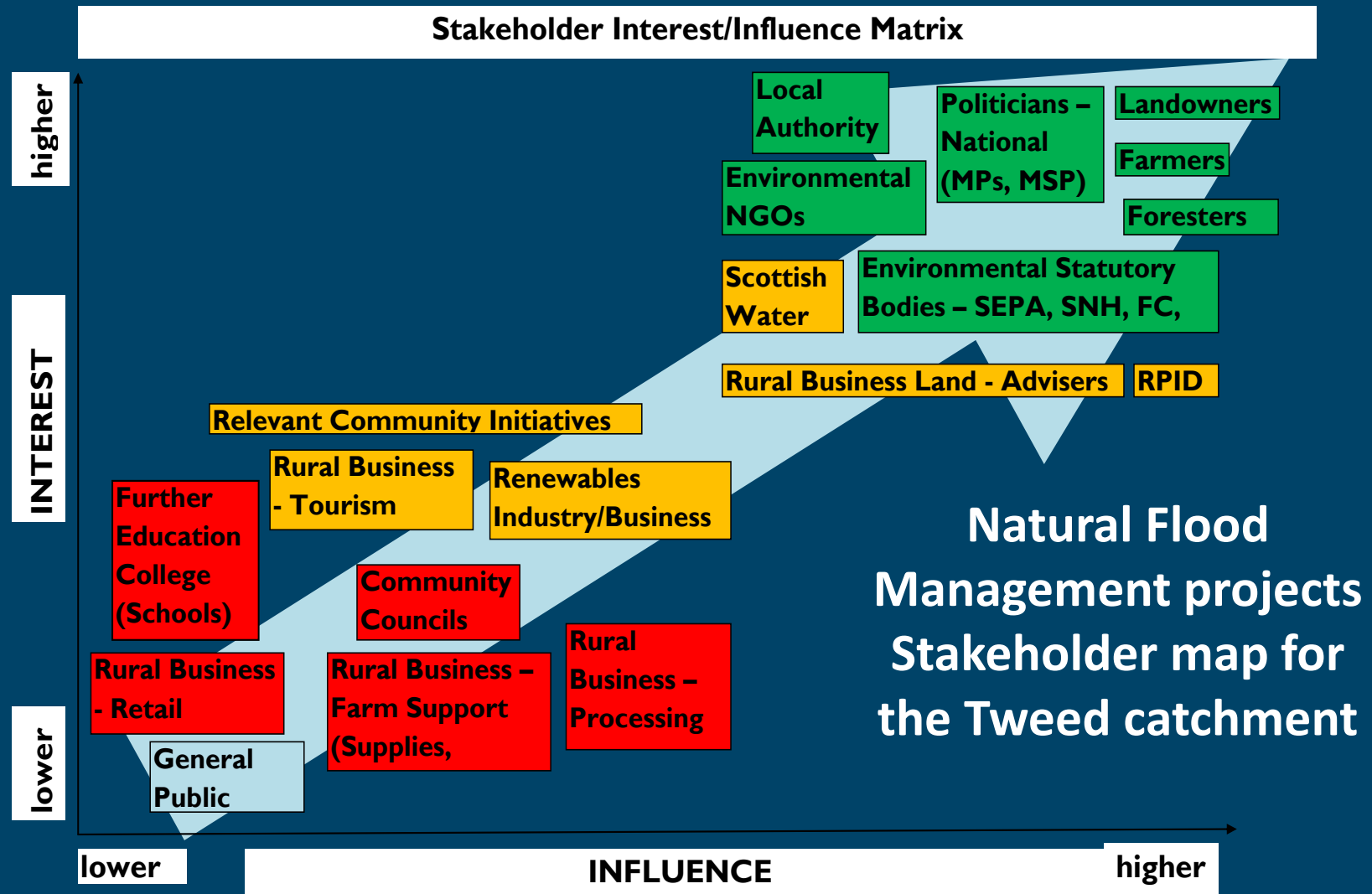
Knowing your local communities and engaging is a key task at all times. Initially it helped frame what we did, how and where, and the communication needed to **reach large numbers of people** involved in making decisions on land use, and **tap in to their ideas, their resources and enthusiasm**.



# How to identify the important stakeholders

Assess stakeholders on the matrix → Organisations can be identified for their potential contribution to different actions and projects

- Ecosystem service / location / season / .....



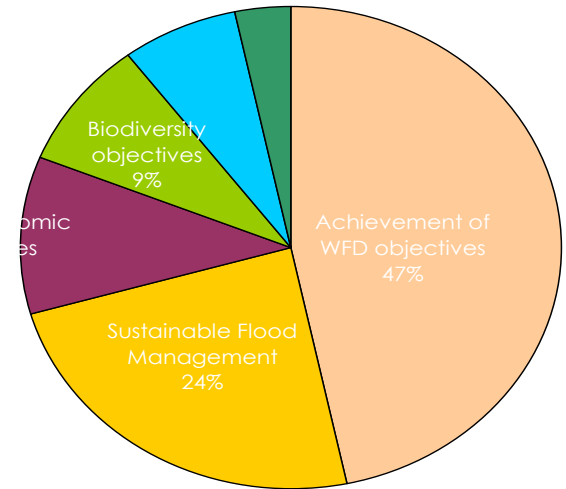


# Many ideas for catchment initiatives can start at local level

Projects often start opportunistically with a single keen or enlightened landowner or group

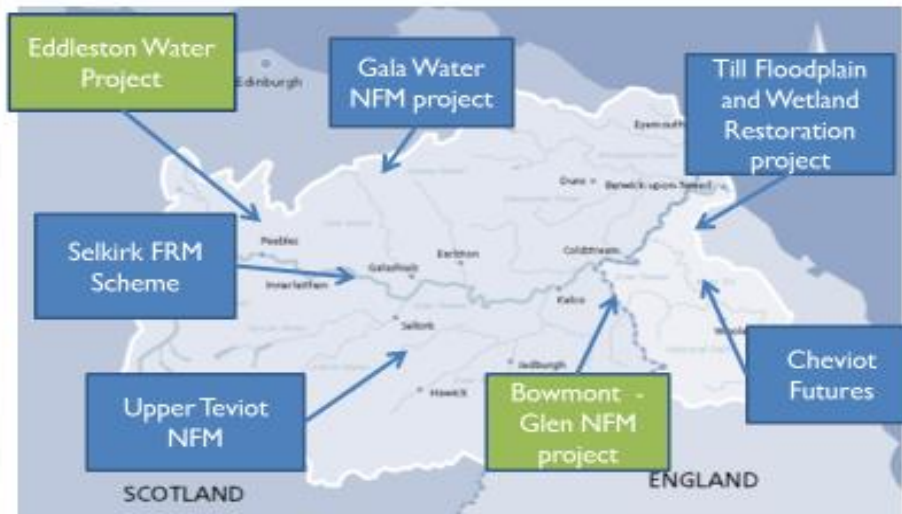
- David Byrne at Cringletie
- Simon Henderson on the Till
- John Tullie, Upper Teviot

Once you have initial purchase, buy in from others is much easier.



**Strategic Level:**  
*Participants opinions on Main Drivers for future River Restoration Initiatives in Scotland (Gilvear, Casas-Mulet & Spray 2011)*

**Natural Flood Management projects in the Tweed catchment**



**Communities of Interest & Communities of Place**

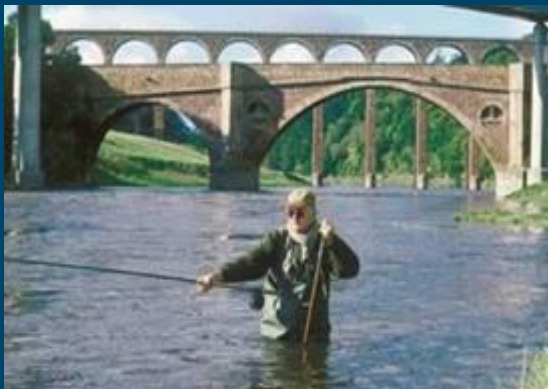
# Recognise that land management work with different drivers may have *similar* nature-based ‘solutions/prescriptions’



- Black grouse populations
- Woodland expansion
- Salmon fishing
- Climate change
- Flooding
- Diffuse Pollution



**Tree planting, ditch blocking, wetland creation, etc.** all improve biodiversity, and also increase roughness, slow the flow, manage carbon, improve water quality.....



**Delivers multiple benefits and multiple policy agendas**



# But Life and Land Management is not all Win-Wins

**Borders LUS Pilot** - Identified key interactions between the different land uses and ecosystem services - Stakeholder consultation - **Interaction/multiple benefits matrix**

		Existing ecosystem services								
		Existing Land Use								
		Food production - livestock and crops	Timber and Woodland	Renewable Energy (wind farms)	Natural flood management	Diffuse pollution control	Carbon storage (soil & vegetation)	Recreation	Development sites	Biodiversity
Possible New Land Use	Food production - livestock and crops		-- <sup>1</sup>	+	--	--	-	- +	-	--
	Timber and Woodland	--		0	- +	++ --	+(+)	+ -	-	-
	Renewable Energy (wind farms)	0	-		-	-	--	--	+	-
	Natural flood management	--	+	+		++	+++	+	--	++
	Diffuse pollution control	-	+	+	+		+	+ -	- +	+++
	Carbon storage (soil & vegetation)	- (+)	0	+ - -	+	++		+	--	++
	Recreation	-	+++	--	+	-	+ -		- +	-
	Development sites	--	--	- +	--	--	--	-		-- +
	Biodiversity	-	+	+	++	++	+	+	+	

## Proposed expansion of service

**Yellow** - interaction maps (9) incl. softwood conifer plantation

**Blue** - Multi-benefit maps (15) incl. native woodland expansion

The matrix was designed by considering mainstream, land use scenarios within the Scottish Borders rather than specialist features. For the existing land use 'Recreation' would include specialist playing fields and footpaths etc. Biodiversity refers to sites being managed to enhance biodiversity either through designation or individual farming practices. Natural flood management are where an existing scheme is present. To read the interactions, for example, at <sup>1</sup> the negative effects would be from a situation such as the felling of farm woodland to grow crops, rather than agro-forestry (which could produce a neutral effect), as this is currently not a common or likely land use in the SBC area. Renewable energy in SBC at present concentrates on wind energy and therefore only wind energy has been considered. Development here refers to standard planning development, rather than environmentally sensitive development.



# Scottish Land Use Strategy pilot

LUS focuses on a new “**approach to land use in terms of delivering multiple benefits, working in partnership with nature and linking people more closely with the land**”

**Scottish Land Use Strategy pilot** – using ecosystem services mapping as part of an Ecosystems Approach in the Scottish Borders

## *The main parts*

**Baseline mapping:** - of the provision of ecosystem services

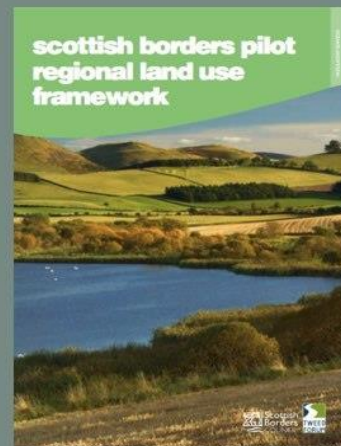
Creation of a series of **opportunity, multiple benefit and interaction maps** - for a selected set of ecosystem services

Production of **draft Framework** and **public consultation**.



### A Land Use Strategy for Scotland 2016-2021

Info: [www.tweedforum.org/projects/current-projects/lus](http://www.tweedforum.org/projects/current-projects/lus)



Core project team  
Scottish Borders  
Council, Tweed  
Forum, Dundee  
university & Scottish  
Government

download on: [www.scotborders.gov.uk/downloads/file/2216/lus\\_framework](http://www.scotborders.gov.uk/downloads/file/2216/lus_framework)



# Targeting & Delivering projects on Tweed

Share experiences (Challenges & Opportunities) of  
4 projects:

- 1- Native & Riparian woodland planting programme
- 2- Natural Flood Management
- 3- Peatland Restoration
- 4- Invasive Non Native Species

# Land Use Strategy Pilot

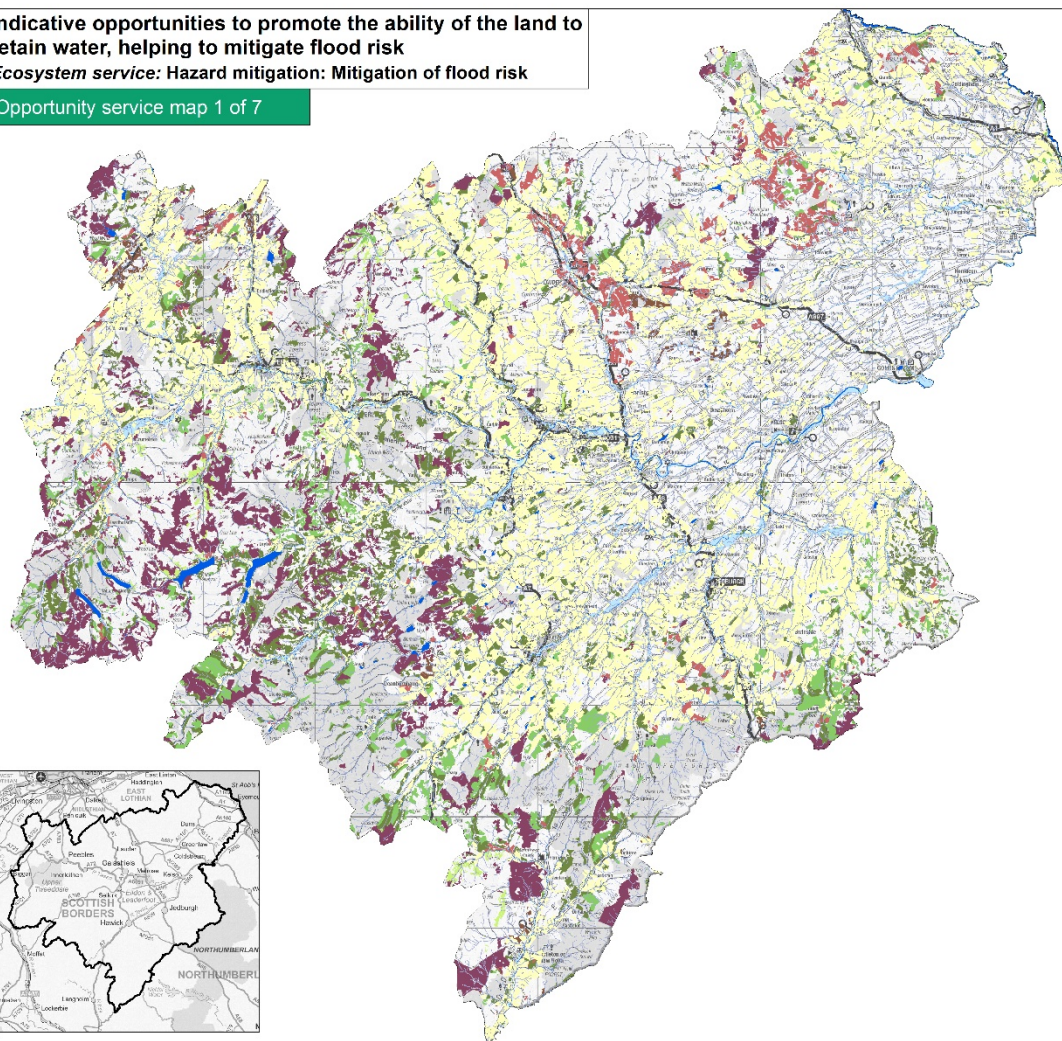
## Mapped our Natural Capital Assets

Undertook Opportunity Target Mapping-  
(i.e. Natural Flood Management)

Indicative opportunities to promote the ability of the land to retain water, helping to mitigate flood risk

Ecosystem service: Hazard mitigation: Mitigation of flood risk

Opportunity service map 1 of 7



### Legend

- some planting opportunities
- moderate planting opportunities
- most planting opportunities
- infiltration opportunities
- opportunities for restoring upland habitats
- opportunities for re-wetting shallow peat
- opportunities for re-wetting deep peat
- opportunities for creating wetlands
- floodplain management opportunities

### How to interpret the map:

This is 1 of 7 maps that show opportunities to enhance the environment and promote ecosystem goods and services. The purpose of the map is to indicate possible courses of action for discussion. Information on the classes can be found in the **Rules box** below.

### Ecosystem service:

Hazard mitigation: opportunities to increase the lands ability to retain water, therefore helping to reduce flood risk.

### What the service is:

This map shows where the environment could be enhanced to slow the movement of water over and through the land and into rivers, this is called overland flow.

### Why the service is important:

Flooding of homes, businesses and land is becoming increasingly problematic in the Borders. Several types of activity have the potential to reduce overland flow and help mitigate the risk of flooding. This map indicates where these actions could be implemented.

### How the map was created:

The map was created using principles adopted from; restoration ecology techniques, habitat management, woodland strategies and water modelling data. These were used to categorise land with potential for different types of water regulation activity i.e.

- Areas suitable for tree planting to slow run-off
- Areas of degraded upland habitats, such as blanket bogs, which hold more water if restored
- Areas which could be returned to wetland habitats near streams and on flood plains

### Rules box:

Key ecosystem service factors	Data used	Example attributes	Indicative value
Areas suitable for tree planting	Phase 1 habitats	Acid grassland	Suitable
	Scottish Borders Woodland strategy	Scrub Bracken	Most suitable
Habitats which can be re-wetted and restored to promote water infiltration	Phase 1 habitats	Degraded habitats	Suitable for restoration
Drainage routes suitable for re-wetting	SCIMAP	Output of drainage routes	Suitable

0 4.75 9.5 19  
Kilometres

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# Project 1- Native & Riparian Woodland Planting

- Planted over 650ha of Native Woodlands

## Objectives:

- Slow the flow of flood water &
- Increase habitat connectivity for wildlife
- Reduce diffuse pollution
- Enhance soil quality
- Increase carbon storage

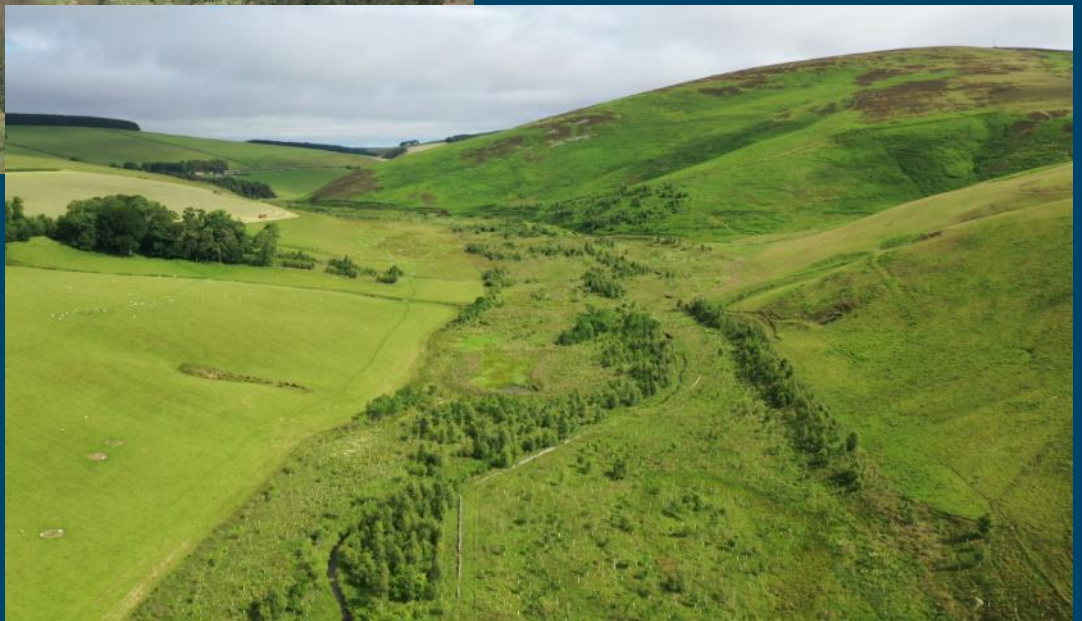


# Project 1- Native & Riparian Woodland Planting



2012

2020



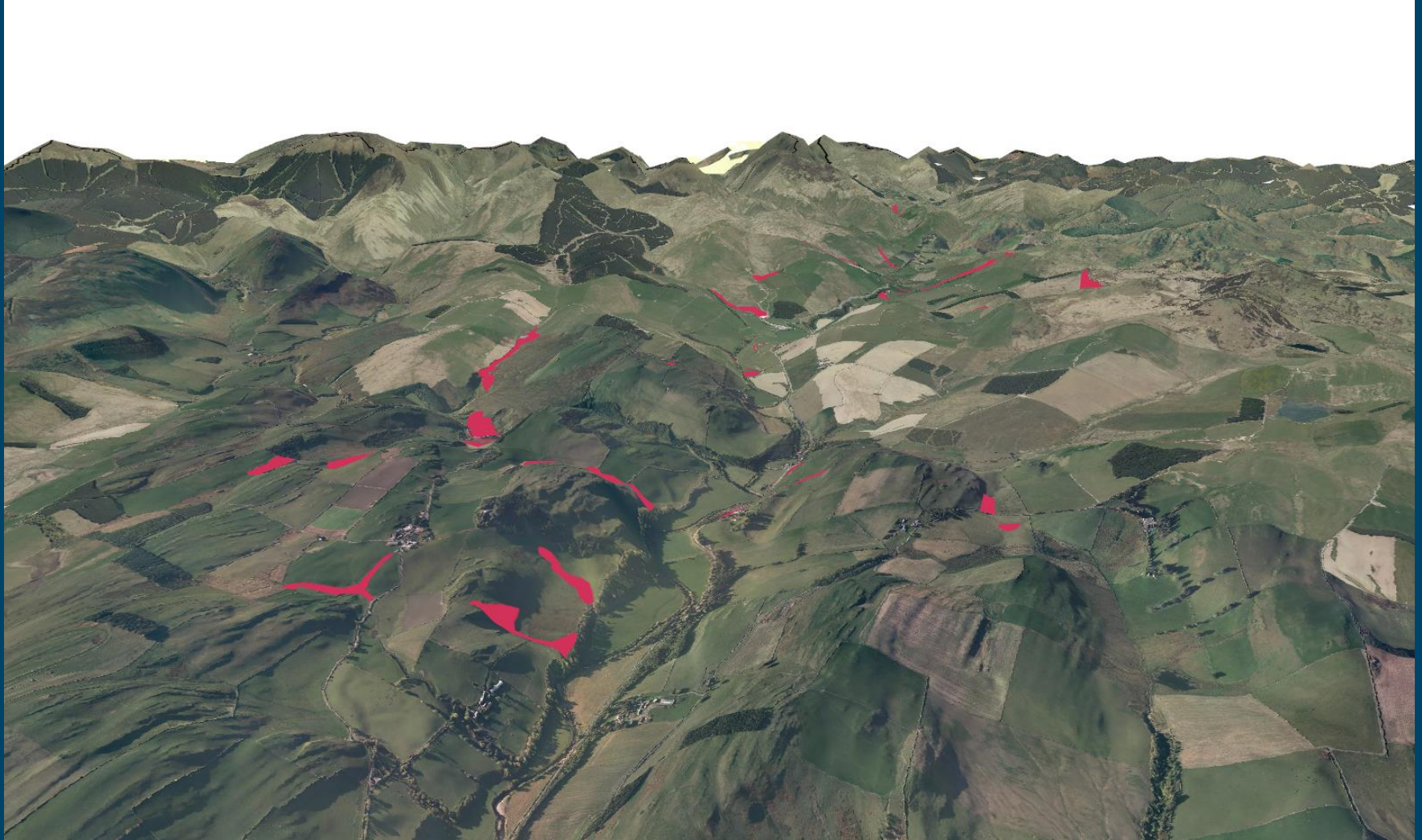
## Project Partners

1. Scottish Forestry grants
2. Wind farm mitigation funds
3. Forest Carbon
4. Scottish Borders Council



# Project 1- Upper Teviot Riparian Woodlands

Facilitated through Langhope Rig Windfarm Biodiversity offset,  
negotiated by SBC



# Project 1- Native & Riparian Woodlands

## Challenges & Solutions?

- Project facilitation is key
- Finding the Shortfall in funding is crucial
- Have made extensive use of SBC facilitated windfarm mitigation funds
- Accessed Carbon funding (via Forest Carbon)
- **But..** We do require more value added to Native Woodlands in recognition of their public benefits
- Scottish Forestry could offer grants for: ponds, wetlands, leaky barriers, alternative livestock watering facilities, (as part of a functioning woodland ecosystem)

## Project 2-Natural Flood Management Programme

### Eddleston Water (NFM) project outputs

(A project in partnership with – Scottish Government, SEPA, Interreg & Dundee University)

- 207ha of native woodland planted
- 21,000m of stock/deer fencing erected
- 2.9km river re-meandered
- 116 water flow restrictors put in place
- 28 flood storage ponds created
- The water body status has gone from 'Bad' through 'Poor' to 'Moderate'



# Project 2-Natural Flood Management Measures

## Water Retention (Wildlife Ponds)





# Project 2-Natural Flood Management Measures

## Leaky barriers





# Project 2-Natural Flood Management Measures

## River re-meandering in Eddleston Water



# Project 2-Natural Flood Management Measures

## Challenges & Solutions?

- Project facilitation is key
- We must overcome deep rooted attitudes to land management change
- NFM schemes must be run in conjunction with an effective awareness raising programme
- Proposals must be practical, cost effective and realistic.....and sit well within a farm (or land management) business model.
- **We need to develop markets** for Nature Based Services
- Attract more private money into the system, to get businesses to invest (through Natural Capital Accounting)

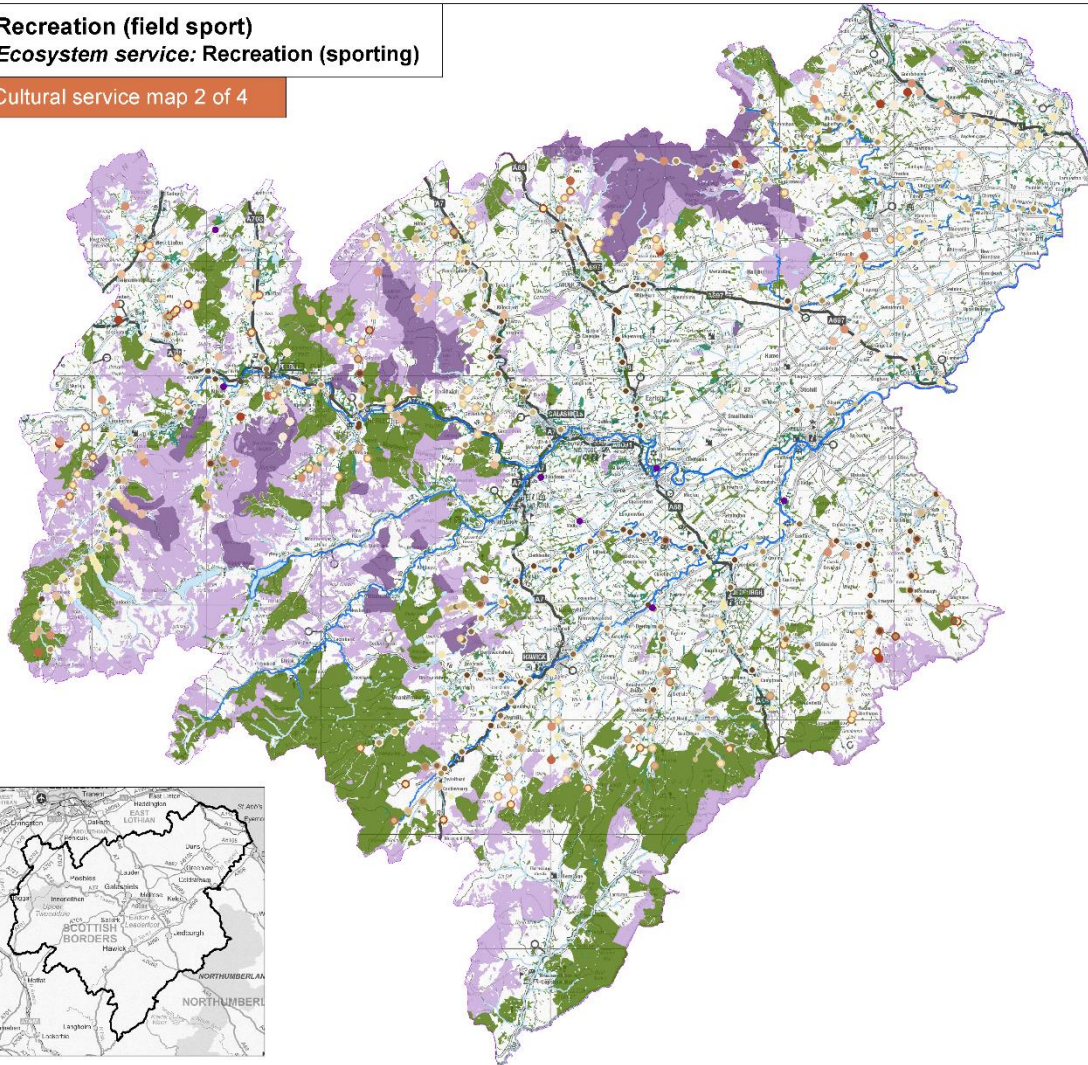


# Project 3-Peatland Restoration Programme

## Mapped Peatland Resource

**Recreation (field sport)**  
**Ecosystem service: Recreation (sporting)**

Cultural service map 2 of 4



### Legend

- Displaying Muirburn pattern
  - Other heath and bog potentially used for shooting
  - Broadleaved and mixed woodland
  - Coniferous woodland
  - Rivers and Lochs potentially used for fishing
  - Main fishing beats
  - Known clay pigeon shooting
- | Average Salmonoid numbers | Average Trout numbers |
|---------------------------|-----------------------|
| ● <10                     | ● <10                 |
| ● 10 - 20                 | ● 10 - 20             |
| ● 20 - 30                 | ● 20 - 30             |
| ● 30 - 40                 | ● 30 - 40             |
| ● >40                     | ● >40                 |

### How to interpret the map:

The map shows the areas, which host the most sporting recreational activity in the Scottish Borders.

**Ecosystem service:**  
 Recreation (sporting)

### What the service is:

Sporting recreation is the use of the outdoors for fishing, hunting and shooting.

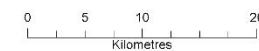
### Why it is important:

Sporting recreation is an extremely important ecosystem service in the borders which brings valuable income into the area through tourism and day trips.

### How the map was created:

The map shows the key sporting recreational setting of the Scottish Borders it has been modelled from the habitat map with assistance from the British Association for Shooting and Conservation, and is based on the likely usage of the land type. Additional data on fishing beats and clay pigeon shooting sites have also been included. The map does not show specific informing relating to 'bag' or catches. If a full sporting local usage recreational study is needed detailed field work and surveys will be needed.

Key ecosystem service factors	Data used	Example attributes
Many woodlands in the Borders are used in some way for shooting	Habitat: Phase 1 habitat layer	Semi-natural woodland
Distinctive management of heathland indicative of grouse moors	Derived grouse moors	Grouse moor presence
Management of fish stocks	Fishing data	Rivers and lochs stocked for fishing



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# Project 3-Peatland Restoration

## Eroding peat hags and gullies



# Project 3-Peatland Restoration

## Ditch Blocking & Peat Hag re-profiling





## Project 3-Peatland Restoration

### Outputs

- 127ha of upland blanket bog restored
- 92ha of lowland raised bog restored
- We followed the peatland (carbon) code.
- Are actively exploring more peatland project sites, to promote the climate & biodiversity benefits of peatland restoration

### Main Partner

NatureScot & the Peatland Action Programme

# Project 3-Peatland Restoration

## Lessons learned?

- Timing of works on the ground - Best window of opportunity is in Autumn, however funding offers are not always awarded early enough for works to be started in Autumn. This can mean working in challenging winter conditions.
- Competition for a small number of experienced peatland contractors can mean delays to projects starting on the ground, even after funding is offered.
- Single year funding spend period – not always sufficient time to deliver projects within the year.
- Start the tendering process early. Try to combine sites in similar geographical areas, as larger projects are more attractive to contractors.



# Project 4 –Invasive Non Native Species Programme

## THE TWEED INVASIVES PROJECT

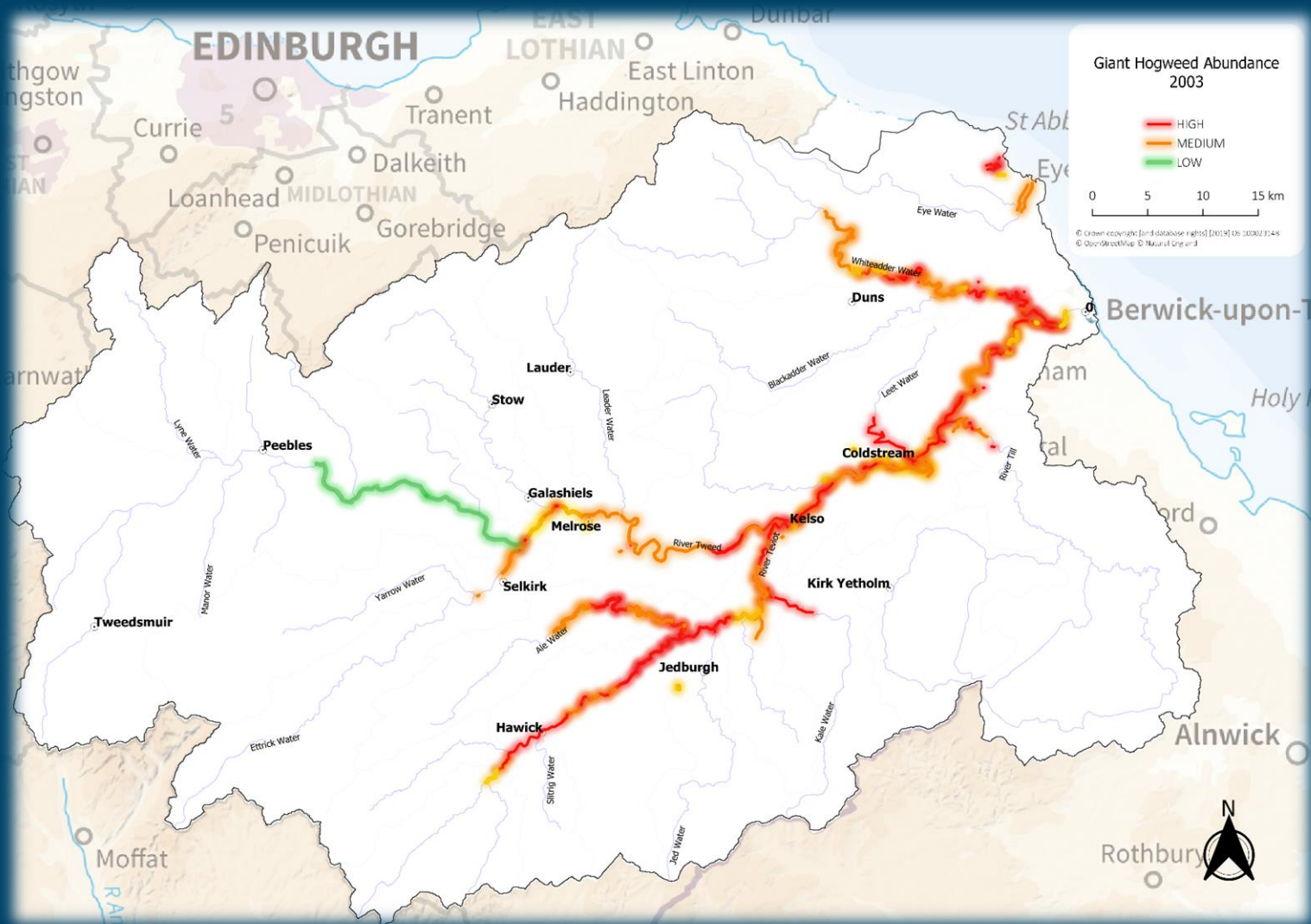
18 years  
*of catchment-wide  
control*



- Giant Hogweed
- Japanese Knotweed
- American Skunk Cabbage
- Himalayan Balsam

# Project 4 –Invasive Non Native Species Programme

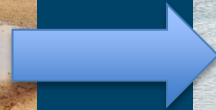
## A Co-ordinated Approach is necessary





# Project 4 –INNS

## Giant Hogweed 2007 & 2020



## American Skunk Cabbage 2017 & 2020



## Project 4 –INNS Programme

### Lessons learned?

- Programme has been very effective
- It has to be a long term project & catchment wide
- Securing annual funding is challenging
- Requires a dedicated project facilitator
- Takes time to build relationships with land owners
- Trust is hard won, but easily lost



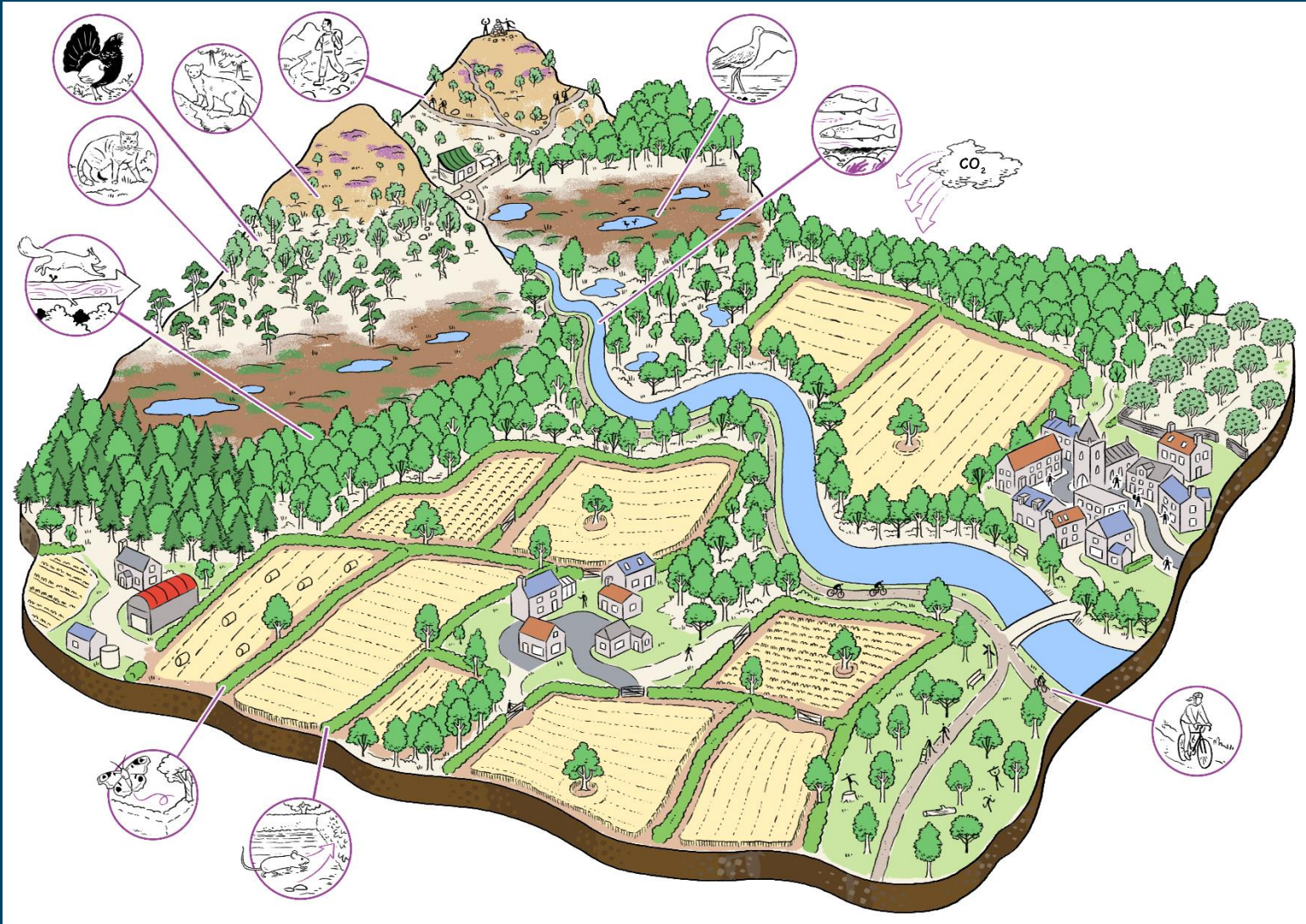
# Agri-Environment Schemes & Forestry Planting Schemes

Need to be better targeted and integrated



# Especially, if we wish a fully functioning rural environment?

(Right land use, in right place, at right scale)





# In Conclusion – We are all trying to grapple with 3 basic questions?

- 1- What does society want the uplands to look like (and be used for)? Ultimately, it's up to Society to decide what it wishes to financially support, but needs better alignment of top-down government priorities and bottom-up landowner and community desires.
- 2- Where (and how) do we target public finances to help achieve the desired objectives? Through defining clear national land use priorities, with regional delivery targets. A clear role for the Regional Land Use Partnerships.
- 3- How do we encourage greater farmer co-operation? Through the deployment of trusted intermediaries, that can help 'translate' national priorities in to individual financial support packages, that are attractive to land managers, at a regional level.