TWEED FORUM

GALA WATER, EDDLESTON WATER AND BOWMONT WATER.

TWEED FORUM

Hugh Chalmers, Collaborative Action Coordinator, Tweed Forum

TWEED FORUM

Integrated Catchment Management.

What are the issues? Reduced resilience to extreme weather events, flooding, increased sediment movement, loss of stability, straightened rivers, loss of habitat.

Can ICM or Natural Flood Management provide a solution?

Pragmatic approach to funding. Facilitation. Using SRDP, SEPA Restoration Fund, SBC partnerships.

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Bowmont – two very large floods in 2 years, 2008 and 2009

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Bowmont. Ex-silage field at Woodside

Climate Proofing the Cheviot Hills – Royal Haskoning report	March 2008
Major Flood on the Bowmont/Glen	Sept 2008
Major Flood on the Bowmont/Glen	July 2009
SEPA post flood impact hydromorphology report	August 2009
Meeting of landowners and agencies at Sourhope. Flood Committee formed	17th Sept 2009
Bowmont Valley Post Flood Impact Report – Halcrow	Sept 2009
1st meeting of the Bowmont Flood Committee. Agreed to look into long-term solution to flooding – find money to engage consultants. 'Road Map' produced.	5th Oct 2009
Bowmont Valley Farm reports – Twed Forum	Nov-Dec 2009
MNV Consultants produce 1st Draft of report and do presentation in the Borders Hotel.	March 2010
Visits by Tweed Forum staff to all farms in the Bowmont to see how interim report ideas can be carried out.	March 2010 onwards
One to one visits to farmers with Jossellin Rouillard of Dundee University to discuss socio-economic impact	March 2010 onwards
Tracy Hall joined Tweed Forum as a Project officer in January 2011 with the Cheviot Futures 2 project. – increasing rural resilience to Climate Change	January 2011
Final detailed designs report from MNV March 2011	March 2011
SEPA Restoration Fund submission,	September 2011

BOWMONT – GLEN CATCHMENT INITIATIVE.

TIMELINE OF EVENTS

TASK	By Whom	When	Funding	
Increase understanding			Scotland	England
Geomorphological - modelling, sediment budgeting etc.	Consultants, agencies.	Dec-Feb 09	SEPA, SBC, Roxburghe Estate, Tweed Forum	Natural England, Environment Agency
Economic-land use mapping	Bowmont Committee, Consultants, Tweed Forum.	Dec-Feb 09	"	"
Harnessing local knowledge	Bowmont Committee, Tweed Forum, consultants	Nov - Feb 09	"	"
Draw up Management Plan	Tweed Forum, Bowmont Committee, Agencies	Feb - May 09	"	"
History	Consultants, Bowmont Committee	"	"	"
Mapping of high/sensitive points	Consultants, Bowmont Committee	"	"	"
Future scenarios	Consultants, Bowmont Committee	"	"	"
Management options	Consultants, Bowmont Committee	"	"	"
Cost benefit Analysis	Consultants, Bowmont Committee	"	"	"
Costed Action Plan	Consultants, Bowmont Committee	"	"	"
Regulation - Consents				
Discuss - negotiate short term consents for 2009	Land managers & agencies	Feb - March 2010	NA	NA
Draw up long term/open ended consents.	Land managers & agencies	Feb - March 2010	NA	NA
Decide ground rules	Land managers & agencies	Feb - March 2010	NA	NA
Implementation				
Short term fixes - bank revetment, road/bridge protection etc	Land managers, contractors, SBC	July-Sept 2010	SBC, Land owners, SEPA Restoration	EA, HLS, Flood levy, land owners
Long term - land use changes (planting - hill slopes, cleuchs, floodplain, retention/dissipation areas, washlands, wetlands etc)	Tweed Forum with land managers	2010 - 2012	SRDP, SEPA Restoration Fund, SBC. land owners.	EA, HLS, Flood levy, land owners

•THE ROAD MAP. Oct 2009

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BOWMONT – GLEN CATCHMENT INITIATIVE.

SEPA licensed sediment management

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Bowmont - Glen Catchment Initiative

Fluvial sediment dynamics, river channel adjustment and flood risk management in the Bowmont – Glen Catchment

Report 2: Main Report

October 2010

MNV Consulting Ltd.

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River Restoration and SFM techniques (R= Riparian, F=Floodplain, C=Catchment-wide)

Technique	Example	R	F	C	Potential locations	Key goals	Notes
Wetland restoration		✓	✓	✓	Flat upland areas, hillfoots and floodplains prone to waterlogging	To enhance flood storage capacity throughout the catchment	Can be online (i.e. physically linked to watercourse) or offline (e.g. on flat hilltops)
Gully woodland planting		✓		✓	Upland gullies	To impede rapid runoff entering steep channels and to contribute LWD to channel	May require livestock fencing
Native mixed woodland on hillslopes				✓	Deforested and drained hillslopes	To intercept rainfall and enhance soil storage capacity, and to reduce erosion	Planting on north-facing slopes, gullies and corries can enhance snow-pack retention, desynchronising winter flood peaks
Floodplain 'leaky barriers'			✓		Key floodplain zones (not close to buildings or important infrastructure)	To intercept overland flows and enhance floodplain storage potential for both water and sediments	Living walls of woven willow spiles can be constructed to disrupt flow paths over floodplains
Planting riparian buffer zones, or water margins		✓			All watercourses, particularly heavily modified watercourses and those within artificially drained areas	To impede overland flow, enhance soil storage capacity and intercept mobilised debris and sediments	May require fencing and provision of alternative water sources for livestock

Technique	Example	R	F	C	Potential locations	Key goals	Notes
Hedgerow planting and management			✓	✓	Planted across-slope along existing field boundaries	To enhance infiltration and storage within soils, and to impede overland flow of water and sediments	Perhaps suited to more intensive agricultural landscapes

TWEED FORUM

Cheviot Futures 2. Innovative bank Protection works.
Protecting valuable arable land. Before...

TWEED FORUM

Cheviot Futures 2. Innovative bank Protection works. Protecting valuable arable land. After. FILTREXX

TWEED FORUM

Cheviot Futures 2. Innovative bank Protection works. Protecting valuable arable land. Traditional Bank Protection Log Jam with willows.

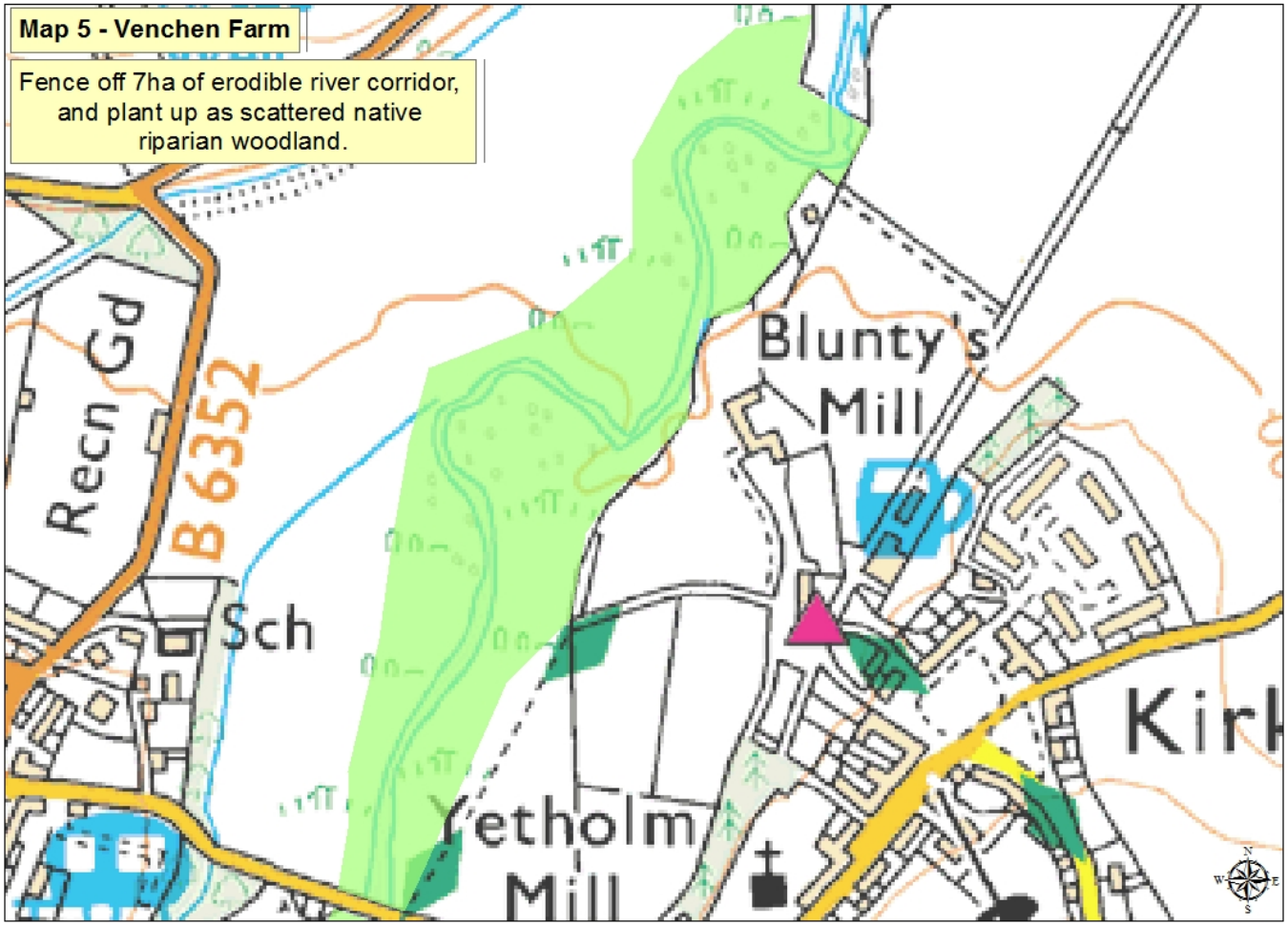
TWEED FORUM

Cheviot Futures 2. Innovative bank Protection works. Protecting key infrastructure. Engineered Log Jam based on MNV suggested design.. Before

TWEED FORUM

Cheviot Futures 2. Innovative bank Protection works. Protecting key infrastructure. Engineered Log Jam based on MNV suggested design. After.

TWEED FORUM



Cheviot Futures 2. Stabilisation of erodible river corridor. Venchen.

TWEED FORUM

Cheviot Futures 2. Stabilisation of erodible river corridor. Venchen.

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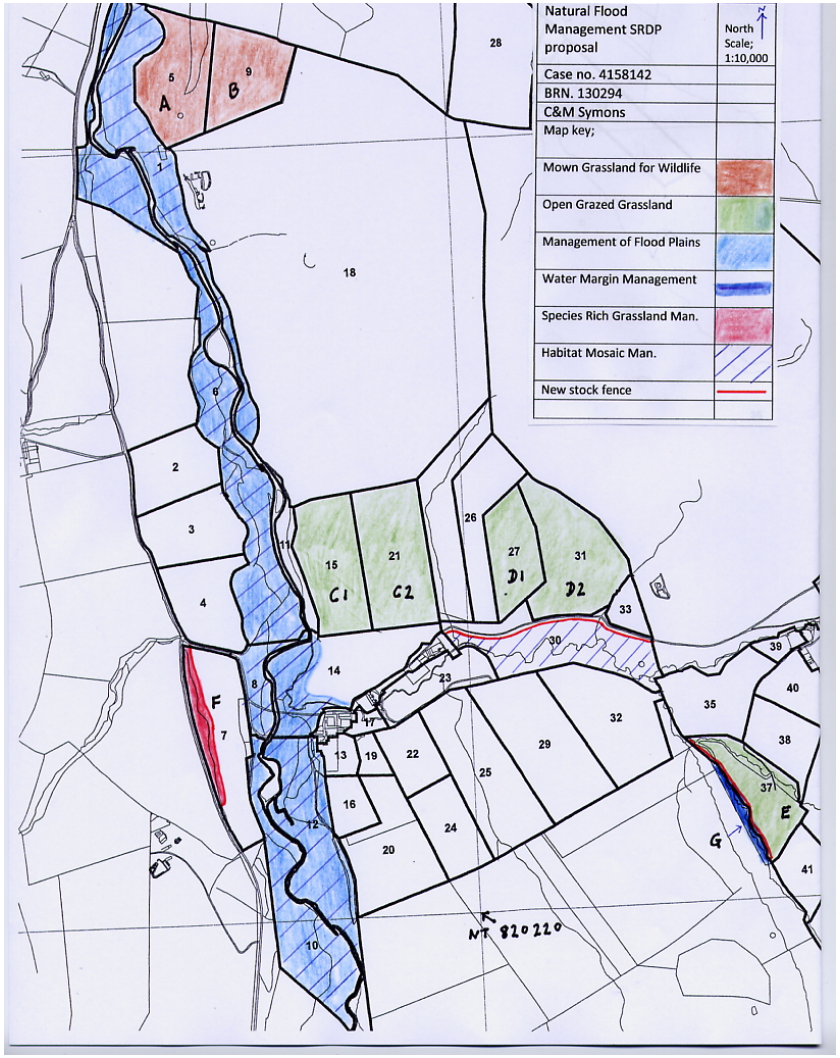
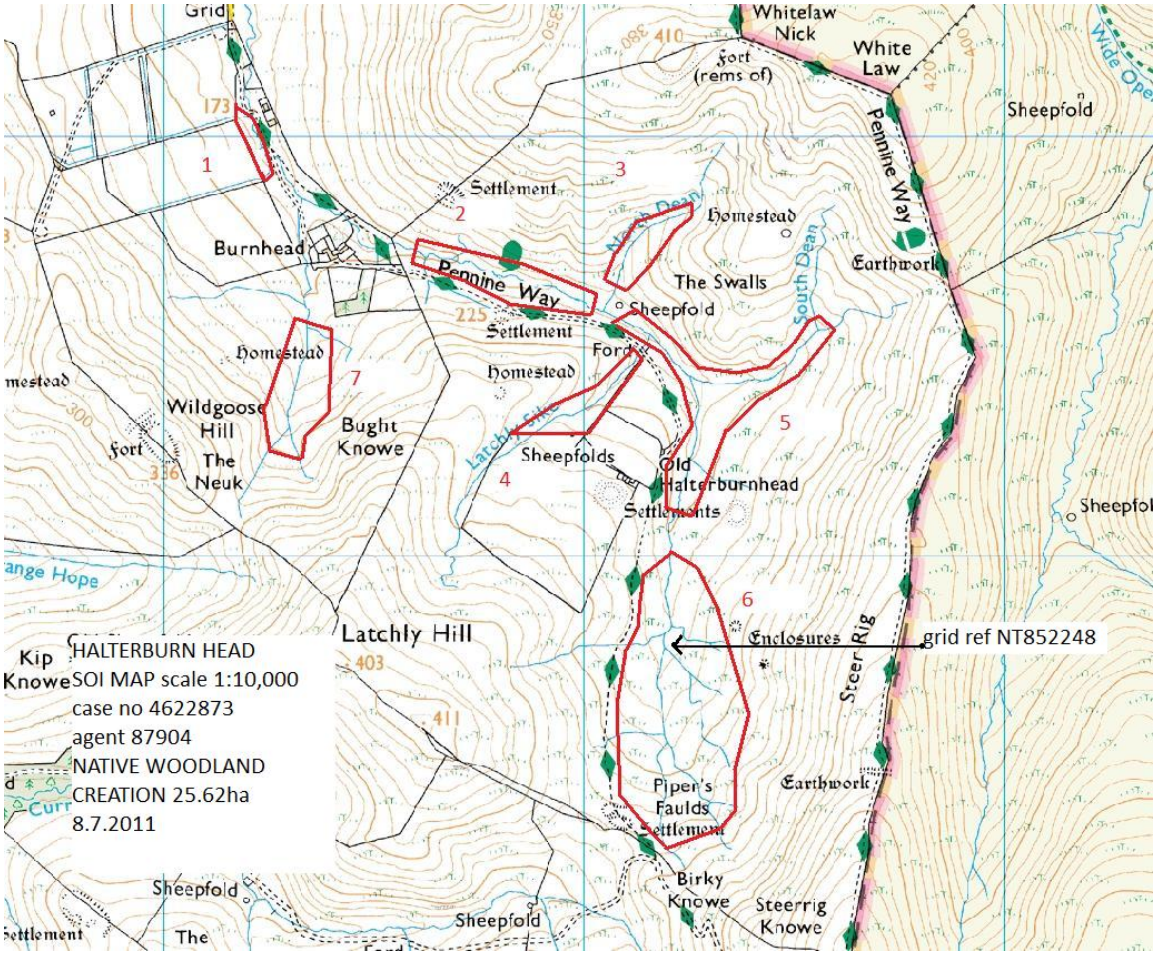


Tweed Forum. Application to SRDP. Floodplain Management.

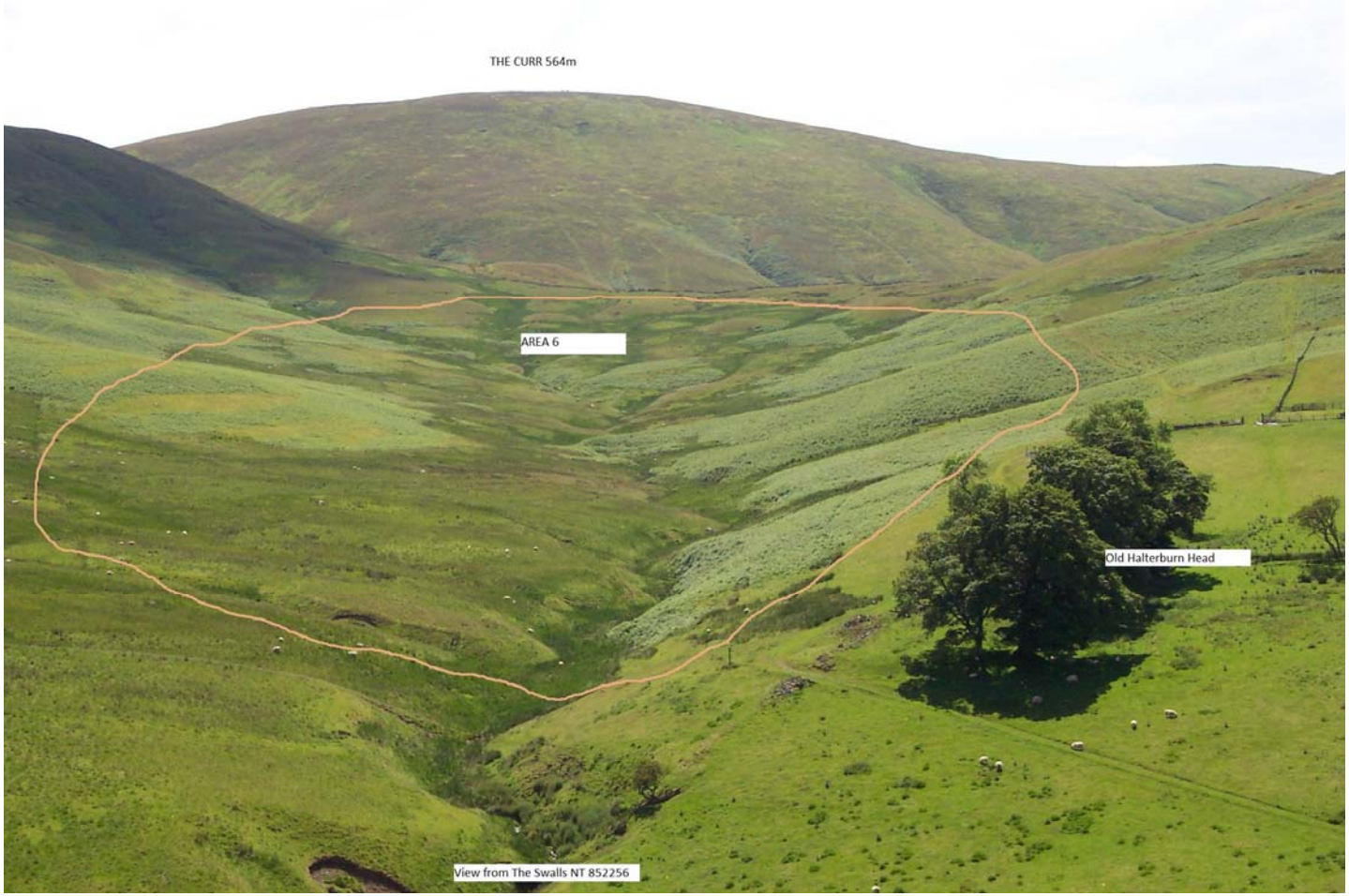
TWEED FORUM

Tweed Forum. Application to SRDP. Floodplain Management.



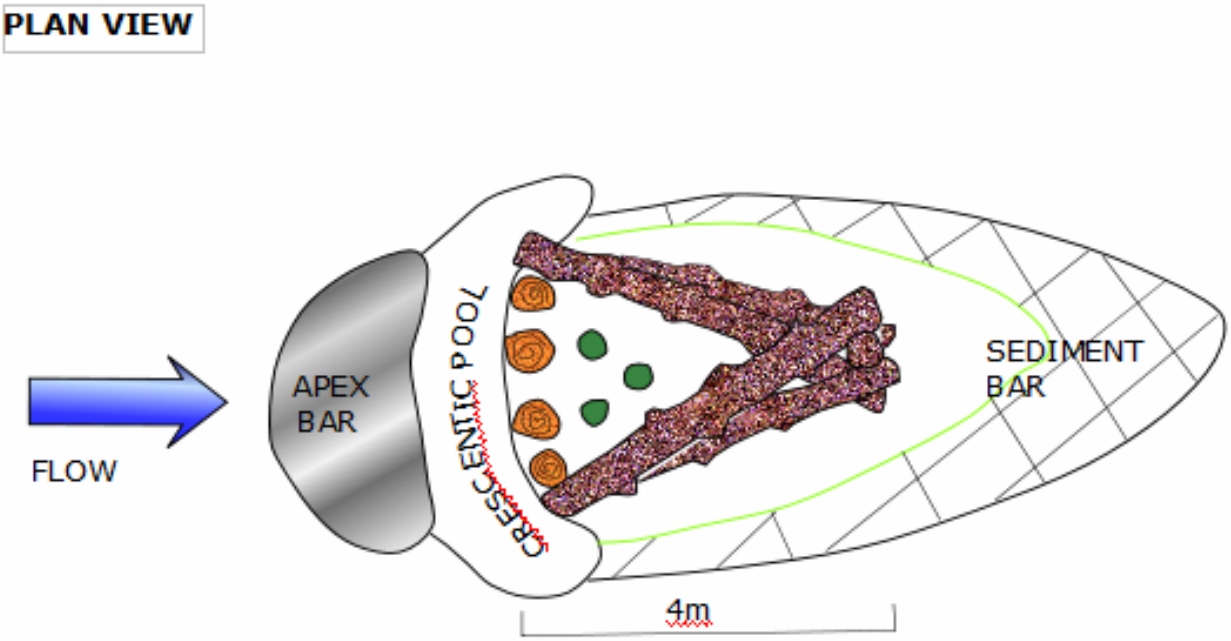
Tweed Forum. Application to SRDP. Upland gully planting.

TWEED FORUM



Tweed Forum. Application to SRDP. Upland gully planting. Under consideration by FC.

TWEED FORUM

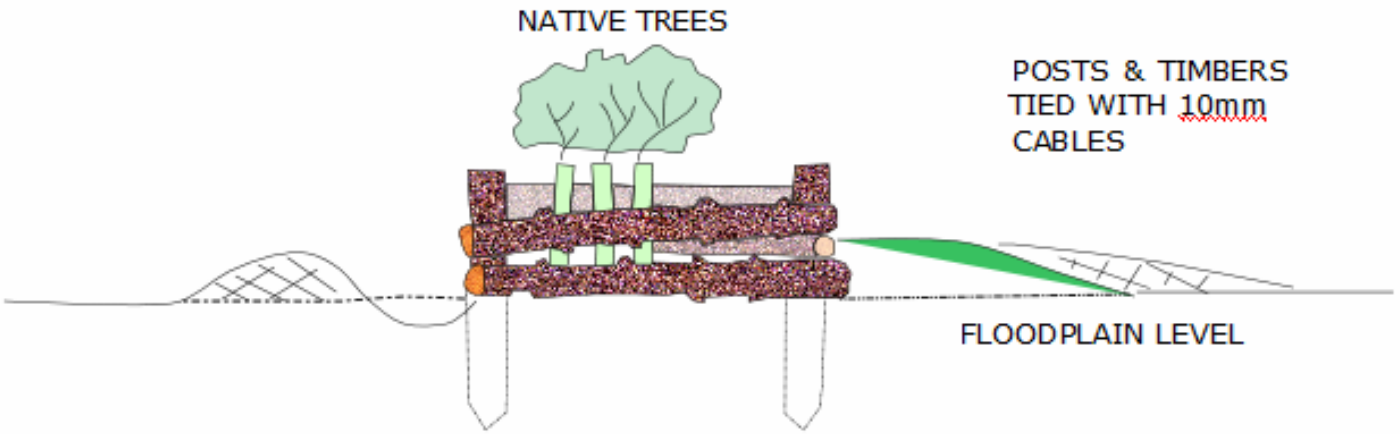


Tweed Forum. Application to SEPA Restoration Fund 2011.

Innovative techniques to reduce sediment movement and create natural habitat

TWEED FORUM

SIDE VIEW



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Innovative techniques to reduce sediment movement and create natural habitat

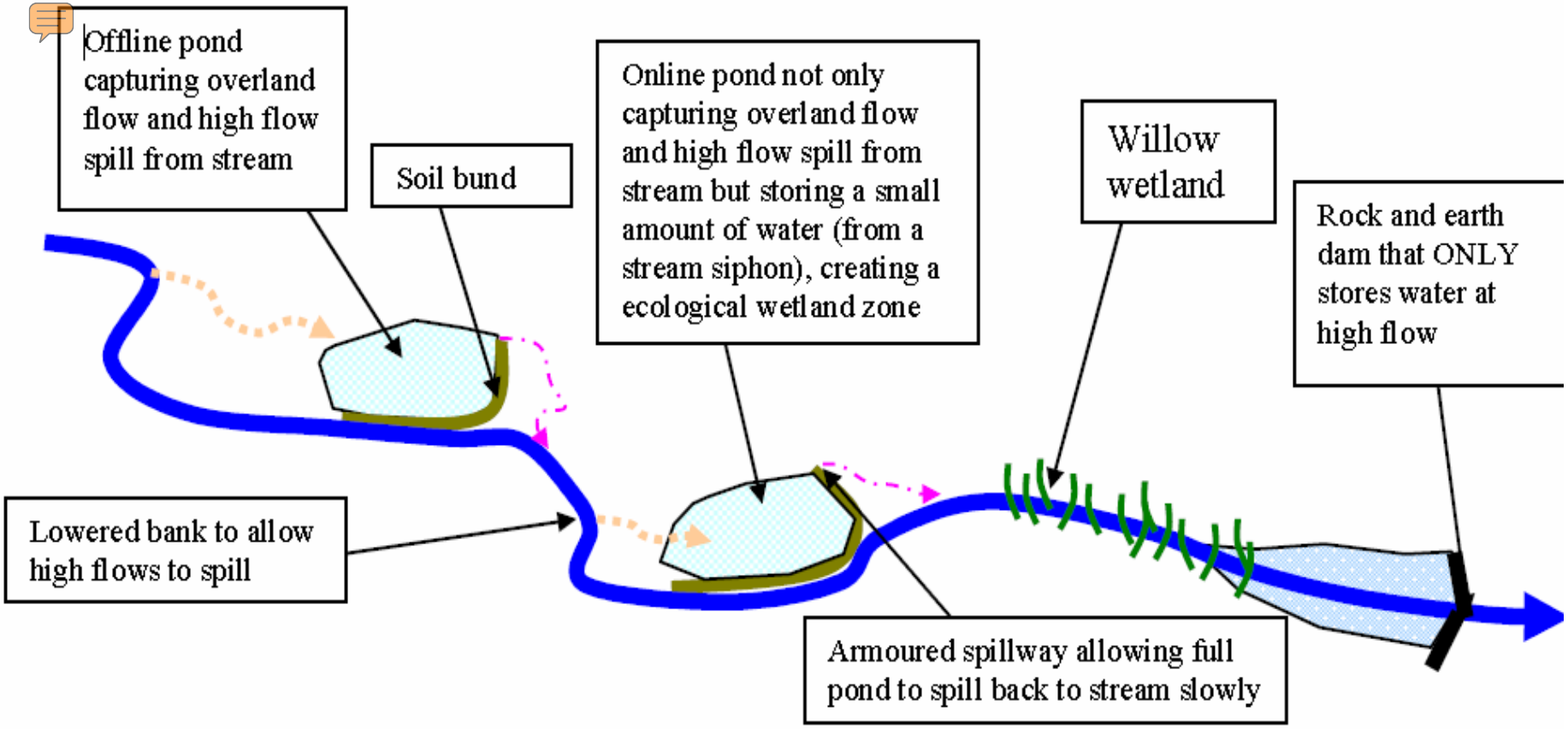

Figure 6: A diagram of a series of flow attenuation features being planned at one site in the Belford catchment (trial site 2)

Tweed Forum. What next? Demonstration sites. More of the same. Copy good examples, e.g. Belford in Northumberland.- such as proposals being developed at Elilaw

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Off-stream flood storage pond at Belford, Northumberland.

TWEED FORUM

GALA WATER – SCOTTISH BORDERS COUNCIL.

DUN LAW WINDFARM EXTENSION HABITAT COMPENSATION PROJECT

Using developers funds to install Natural Flood Management measures on the upper Gala Water.

Native riparian woodland 40ha, water margins, off-stream flood storage ponds, floodplain leaky barriers.

working together to protect the tweed and its tributaries

working together to protect the tweed and its tributaries

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TWEED

working together to protect the tweed and its tributaries

working together to protect the tweed and its tributaries

Gala Water; SRDP drawdown c £240,000. SBC Partnership funding £42,000

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Eddleston Water (The Cuddy). Partnership with Scottish Government, SEPA, Dundee University, Forestry Commission, British Geological Survey. - Hydrometric network. Can we measure NFM?

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working together to protect the tweed and its tributaries

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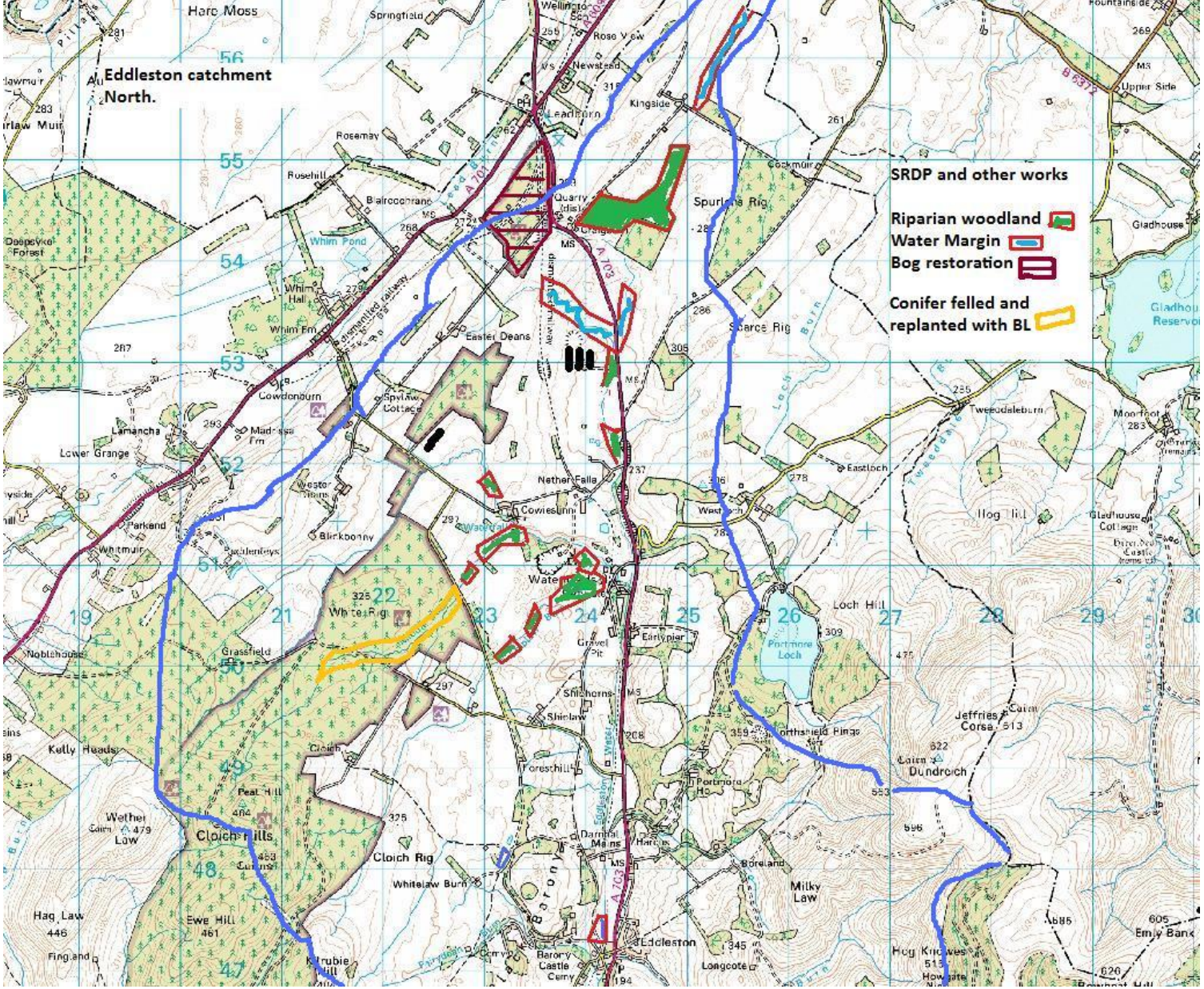
Can we measure NFM? Planned measures include (so far) riparian woodlands, water margins, re-meandering, engineered log jams, wetland enhancement, flood storage ponds, peat bog restoration.

Other benefits, apart from Flood Peak Reduction;

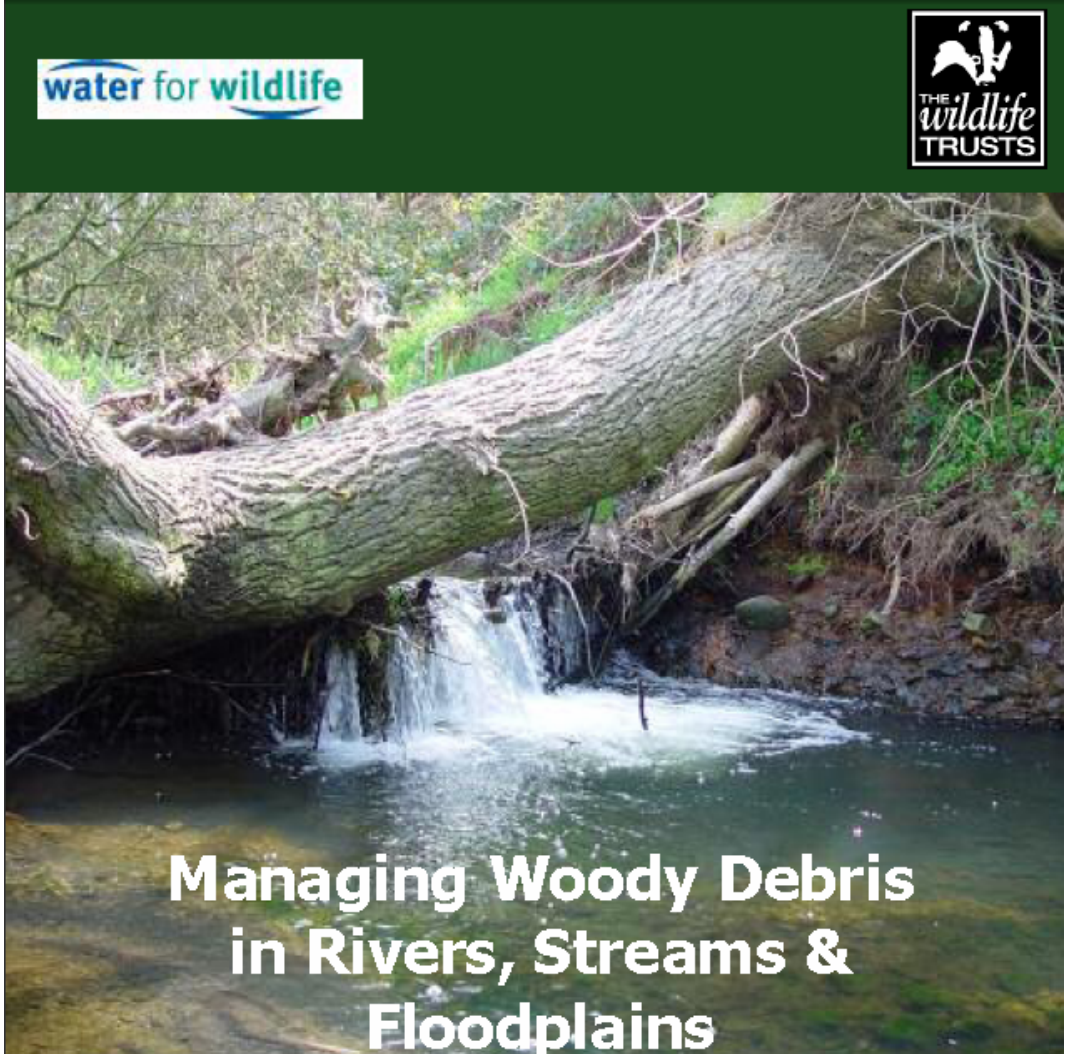
Improving WFD MIMAS (Morphological Impact Assessment) scores, Habitat connectivity, landscape enhancement, farm business resilience, farm livestock health, fish habitat...

TWEED FORUM


Eddleston catchment
North.
SRDP and other works
Riparian woodland
Water Margin
Bog restoration
Conifer felled and replanted with BL

working together to protect the tweed and its tributaries

TWEED FORUM



Tweed Forum. What next? Demonstration sites. More of the same. Copy good examples, e.g. Woody Debris

TWEED FORUM

Provides habitat for fish

LWD provides shelter from high velocity flows, shade, feeding, spawning and nursery sites, territory markers for migratory fish and refuges from predators. Research in the USA found that pools created by logs and branches provide over 50% of the salmonid spawning and rearing habitats in small streams.

Tweed Forum. What next? Demonstration sites. More of the same. Copy good examples. Fish live in trees!


TWEED
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