

Yorkshire Dales Rivers Trust



www.yorkshiredalesriverstrust.com

More specific NFM information can be found at:

www.yorkshiredalesriverstrust.com/natural-flood-management

Daniel Turner

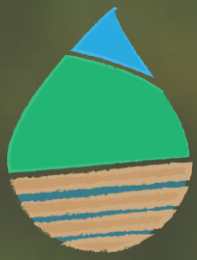
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Interreg
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NFM Farm Plans

These farm plans aim:

- Highlight a number of Natural Flood Management opportunities within the existing farm business.
 - Provide cases studies and relevant information around NFM
 - Provides breakdown of costs
 - Highlight funding opportunities
 - Highlight other existing projects and wider actions
-
- Through a Princes Countryside Fund we aim to help farmers implement some of these measures through follow up visits.



1. Opportunities

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Nethergill farm is an excellent example of how farming and nature can work together to complement each other. The farm illustrates an impressive mosaic of environmental achievements throughout the holding.

A number of these achievements could benefit Natural Flood Management (NFM), including:

- Several new woodland creation plantations
- Riparian tree planting and fencing
- Reduced stocking allowing for increased vegetation roughness

Collectively this will have a substantial impact on their ability to intercept, slow and hold water on their land, helping to manage peak flows and slow flood water.

However, there are a number of other opportunities that may not yet be realised. This plan aims to provide additional information, suggestions and evidence to help guide future aspirations.

Three main opportunities

1. Floodplain scrapes
2. Wet woodland
3. Riparian and catchment woodland creation

(The above have been prioritised as the top three recommendations; more detail can be found in section 7, additional opportunities can be found in section 5.)



2. Farm Information

2. Farm information

Nethergill farm is situated at the top of Wharfe valley on Oughtershaw Beck. The farm is a small, low intensity, upland beef and sheep enterprise that focuses on adding value to their product while working with nature to promote wildlife and diversity. In addition to this, they run a field centre and self-catering accommodation which has the ambition of reconnecting people with wildlife within a working farm environment.

Existing farm agreements:

- Entry Level Stewardship and Higher Level Stewardship, expires 2021
- English Woodland Grant Schemes, several throughout the holding which all expire at different times.

Waterbody information:

<u>Oughtershaw Beck from source to River Wharfe</u>	
ID	(GB104027069320)
Management Catchment	Wharfe and Lower Ouse
Operational Catchment	Upper Wharfe
Catchment Area	1315 ha
WFD Ecological Status	Good

Additional comments:



2. Farm Information

Waterbody information: Catchment Data Explorer

<http://environment.data.gov.uk/catchment-planning/>

SciMap: Diffuse pollution Risk Mapping

<https://my.scimap.org.uk/app/auth.php>



3. What is NFM?

3. What is Natural Flood Management

NFM aims to reduce the downstream flood peak or to delay the arrival of the flood peak downstream, increasing the time available to prepare for floods. This is achieved by restricting the progress of water through a catchment using a range of techniques. These techniques work with the natural features of the catchment to slow down or store flood waters:

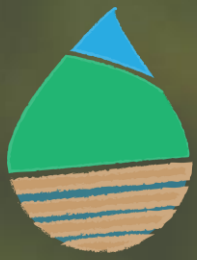
1. Increasing **soil infiltration**: free-draining soil will make saturation less likely, potentially reducing surface runoff.
2. Evaporation from vegetation and soil can also make **space for water**.
3. **Slowing water**: by increasing resistance to its flow, for example, by planting floodplain or riverside woods, blocking grips on moorland.
4. **Storing water** by using, and maintaining the capacity of ponds, ditches, embanked reservoirs, channels or land
5. Reducing water flow connectivity by **interrupting surface flows** of water, for example, by planting buffer strips of grass or trees.

NFM structures have been designed so that they do not significantly impact on farming, are typically small in size and can be considered an extension to the farm's land drainage system.

Each structure or technique performs a small amount of runoff storage/attenuation, gradually releasing flood water over 12 to 24 hours. It is the collective network of them, rather than individual features, that aim to provide flood mitigation in the immediate vicinity and further downstream.

For more information on the Natural Flood management, please refer to our NFM Handbook for farmers.

COPY AND PASTE



4. Slowing the Flow

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This section should highlight, existing projects to demonstrate what the potential opportunities are and be broken down into the three main focuses

1. Intercepting water (IW)- In wider catchment, moorland restoration, woodland creation, compaction and areas of land that could increase surface run-off.
2. Slowing water (SW)- breaking down pathways, planting, hedges, connectivity of habitats, increase catchment roughness
3. Holding water (HW)- attention feature, natural depressions that could be enhanced

Leaky Dams and Large Woody Material

Woody material such as trees and branches falling into the river channel is a natural occurrence. However this material is often removed as it is deemed to reduce channel capacity.



(Leaky Dams installed on Pickering Beck. Photo: Nick Odoni)

COPY AND PASTE:
From Case Study Sheet



5. What Could Happen?

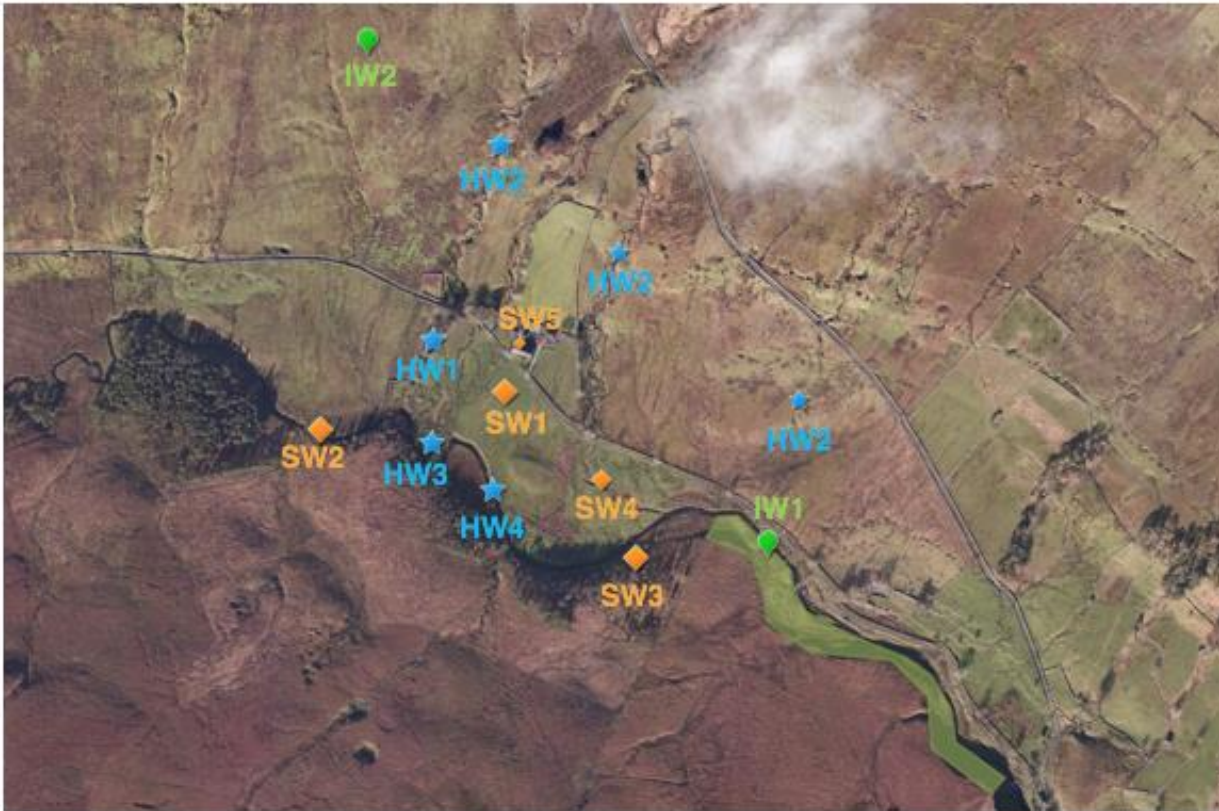
5. What could happen?

The Table below provides more information and detail in relation to opportunities and issues highlighted in Section 4.

Ref	Feature description	NFM Level	Description of measure	Estimated cost (£)	Further information
		1, 2 or 3	<i>What features or measure is likely to be of benefit</i>	<i>Lower and higher</i>	<i>Links to further information and reference to handbook</i>
SW1	Aeration	1	Soil management; Improved soil management could help reduced soil compaction. For example, use of aerator could help alleviate compaction.	£200-£500	Refer to NFM Handbook
HW1	Wet woodland	2	Installation of leaky dams and large woody material could enhance an existing woodland and improves its water storage benefit.	£500-£1500	Basic design in Section 6.
HW2	Leaky Dams in gills	2	A series of leaky dams on a number of the existing gill plantations. This could help slow and store water.	£500-£1500	Basic design in Section 6 www.thercc.co.uk/ manual-river-restoration-techniques
HW3	Floodplain Scrapes	2	A series of floodplain scrapes, enhancing existing low spots in the floodplain could help store water during high flow events	£2500-£5000	Basic design in Section 6 www.rspb.org.uk/images/scrape_creation_tcm9-255102.pdf



6. Map of opportunities



USE GOOGLE EARTH or ArcGIS



7. Top three recommendations

6. Top three recommendations

1. Floodplain Scrapes (HW3)
2. Wet Woodland (HW1)
3. Riparian and catchment woodland creation (IW1)

Floodplain Scrapes (HW3)

A series of floodplain scrapes could be installed within the floodplain enhancing natural low spots and enabling water to be stored during high flow events. They could also be enhanced to provide wider biodiversity benefit. Being situated in close proximity to the bird hide could provide a good learning facility.



Highlight top three recommendations

Bit of background to intervention

Picture of the Area

Construction Details

Timings

Consideration to constraints

Estimated costings and breakdowns



8. Wider Actions

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This section should highlight other opportunities that are happening in the catchment and sub catchment:

Call of Nature

The YDRT run a project called, Call of Nature, which aims to inform local rural communities about how to manage, look after and maintain septic tanks.

Attached is some leaflets which provide some advice.

For more information please visit: www.callofnatureyorkshire.info

Wensleydale Project- Yore Past, Ure Future

From an idea by local naturalist, Deborah Millward, has sprung the Wensleydale Project - a catchment scale landscape initiative within the heart of the Yorkshire Dales National Park. It has become a partnership of organisations, businesses, individuals and groups which have been brought together by the Yorkshire Dales National Park Authority (YDNPA) and the Yorkshire Dales Rivers Trust (YDRT) with the sole aim of improving the environment of Wensleydale and its tributary dales for the benefit of people and nature

For more information please visit: www.wensleydaleproject.com



9. Wider Actions

9. Funding

This section should highlight who could help and what funding opportunities there are.

Yorkshire Dales Millennium Trust (YDMT): Woodland Creation

Grant funding is available through the YDMT for woodland creation schemes that can demonstrate that it significantly conserves, enhances or adds to the natural heritage, accessible to the general public or be clearly visible from a public right of way, and be supported by the local community.

More information: <http://www.ydmt.org/news-details-cash-available-for-woodland-creation-24720>

Contact: Carol Douglas, carol.douglas@ydmt.org

Yorkshire Dales National Park Authority (YDNPA): Woodland Creation

The YDNPA have access to several funding pots and can advise what and how to apply for different woodland creation grant schemes, such as, Woodland creation under the new Countryside Stewardship which includes options for Large Woody Material.

More information: <https://www.forestry.gov.uk/england-countrystewardship>