



Yorkshire Dales Rivers Trust

Delivering Natural Flood Management

Bishopdale Beck

www.yorkshiredalesrivertrust.com

Daniel Turner
Senior Project Officer

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Yorkshire Dales Rivers Trust

Today's Presentation

- Background to Bishopdale Project
- Delivery mechanism and tools we use
- What has been achieved so far
- Monitoring Plan
- Future Plans and aspirations

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Bishopdale Beck

Bishopdale Beck NFM Project:

Tributary of the River Ure

Downstream flood risk communities

Delivering NFM at a catchment scale, not targeting 'properties effected'

Previously worked in the catchment and built up good landowner relationships

Working with YDNPA and Wensleydale CSFF



The Delivery Mechanism

NFM FARM PLAN

Yorkshire Dales Rivers Trust

Natural Flood Management Plan
(Slowing the flow and reducing run-off)

Farmer Name: Raymond Bell

Farm Name and Address:

North Yorkshire

Catchment: Ure

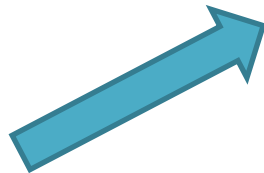
Project Officer: Dan Turner

Telephone: 07818532650

Address: 8 Kings Court, Pateley Bridge, HG35AP

Visit date: 17/01/2019

Date of Report: 04/02/19



Scoring Criteria

| Intervention | Code | Scoring | | | Overall weighting |
|----------------------------|------|------------|---------------------|-----------------------------|-------------------|
| Intercepting Water | | NFM | Biodiversity | Location/size/number | |
| Catchment Tree Planting | IW1 | 10 | 5 | 1 | 50 |
| Moorland Restoration | IW2 | n/a | n/a | | |
| Acreation | IW3 | 5 | 2 | 1 | 10 |
| Slowing Water | | | | | |
| Riparian woodland | SW1 | 10 | 4 | 1 | 40 |
| Riparian Buffer Strip | SW2 | 7 | 3 | 1 | 21 |
| Targetted Hedge Planting | SW3 | 6 | 4 | 1 | 24 |
| Large Woody Material | SW4 | 5 | 4 | 1 | 20 |
| Cross Drains | SW5 | 5 | 1 | 1 | 5 |
| Cover Crops | SW6 | n/a | n/a | | |
| Holding Water | | | | | |
| Scrapes/ Offline Ponds | HW1 | 9 | 4 | 1 | 36 |
| Low level earth bunds | HW2 | 9 | 4 | 1 | 36 |
| Swales | HW3 | 8 | 4 | 1 | 32 |
| Sediment trap | HW4 | 6 | 4 | 1 | 24 |
| Wetland feature | HW5 | 8 | 5 | 1 | 40 |
| Field Corner | HW6 | 8 | 4 | 1 | 32 |
| Leaky Dam | HW7 | 7 | 2 | 1 | 14 |
| Removal of Flood Bank | HW8 | 10 | 5 | 1 | 50 |
| Restoring Natural Features | HW9 | 10 | 5 | 1 | 50 |

£10k Grant available



1025

DATE: _____

PAY TO THE ORDER OF: _____ \$ _____

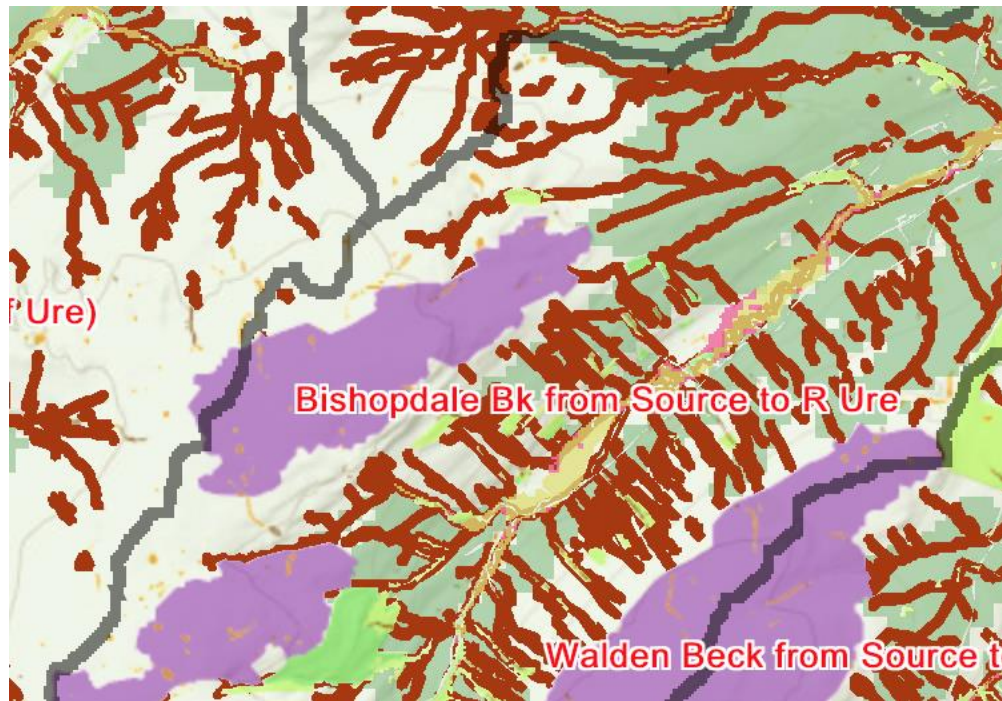
_____ DOLLARS

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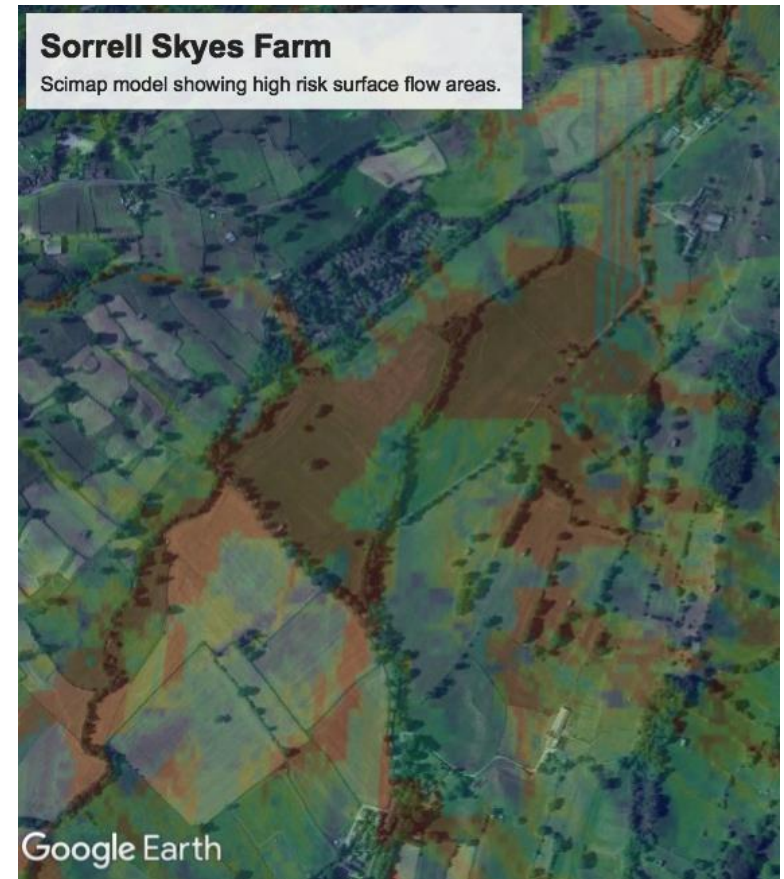
Tools we use

WWNP- Maps



<http://www.arcgis.com/home/webmap/viewer.html?webmap=7315f943998847e2b3797a85665f5438>

Scimap- Surface flow



www.scimap.org.uk

What have we done so far?



De-culverting



Tree Planting



Buffers Strips



Leaky Dams



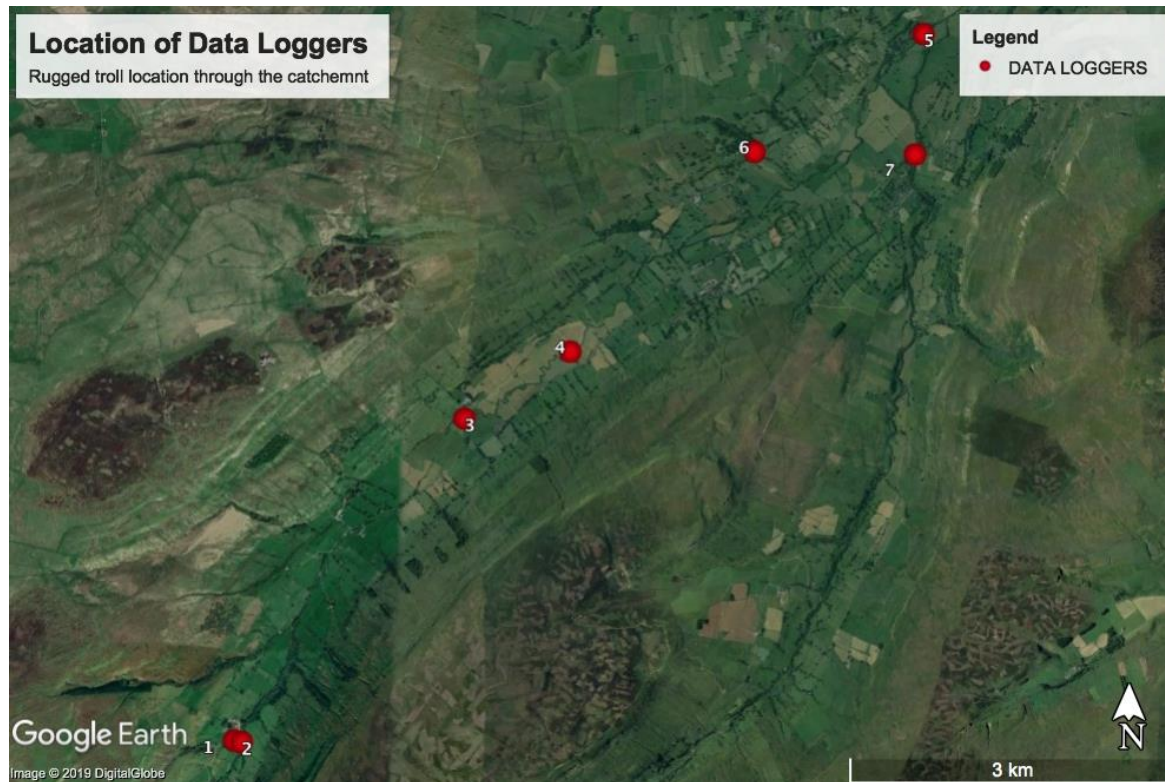
Hedge Planting

Monitoring Plan

Aim:

To evaluate Natural Flood Management interventions:

- effect on flow and discharge during high flow events
- form and function
- additional environmental multi benefits created
- social and economic impacts
- on-going maintenance cost per structure or intervention.



| Monitoring activity | Equipment | Purpose |
|-------------------------|--------------|--|
| Flow gauges | Rugged Troll | Measure effects of flow rates and discharge |
| Weather Station | TBC | Measure rainfall into catchment |
| Fixed point photography | Brinno | To evaluate the function and effectiveness of NFM interventions. |
| River Habitat Survey | n/a | To analyses habitat changes and benefits as a result of NFM Interventions |
| Electric Fishing | E-Fish | To analyses habitat changes and benefits as a result of NFM Intervention |
| Kick sampling | Riverfly | Using baseline data to compare changes to invertebrate populations as indicator species. |
| Questionnaires | Desk Based | To evaluate social and economic impact of NFM Projects |

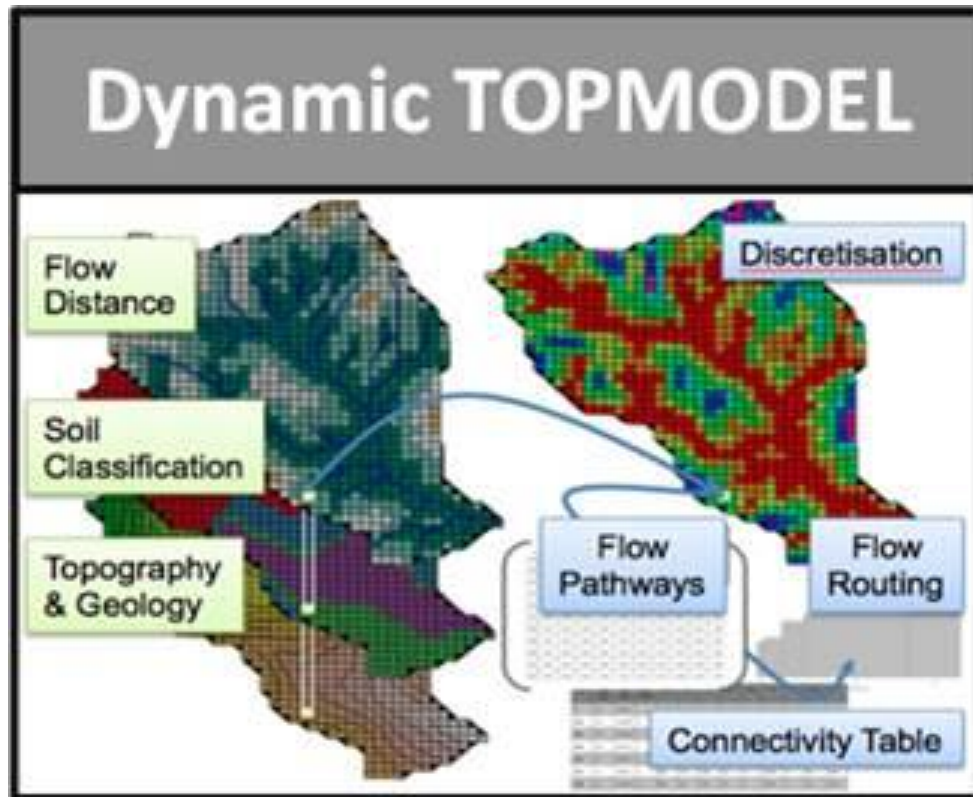


Monitoring Plan- Costing

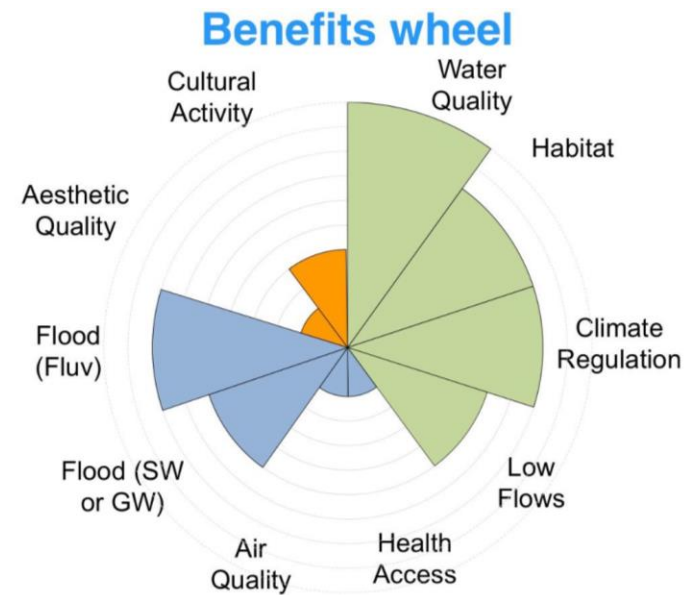
| Monitoring activity | Equipment | Quantity | Total Cost |
|-------------------------|--------------------|----------|-----------------------------|
| Flow gauges | Rugged Troll | 7 | £3206 (£458 per unit) |
| | Baro meter | 1 | £323 |
| Weather Station | TBC | 1 | £2500 |
| Fixed point photography | Brinno | 8 | £1434.56 (£179.32 per unit) |
| River Habitat Survey | n/a | 4 days | £1000 (£250 per day) |
| Electric Fishing | E-Fish | 3 days | £1500 (£500 per day) |
| Kick sampling | Riverfly equipment | 3 days | No cost (in-kind) |
| Questionnaires | Desk Based | 3 days | No cost |

Evaluation

Top Model

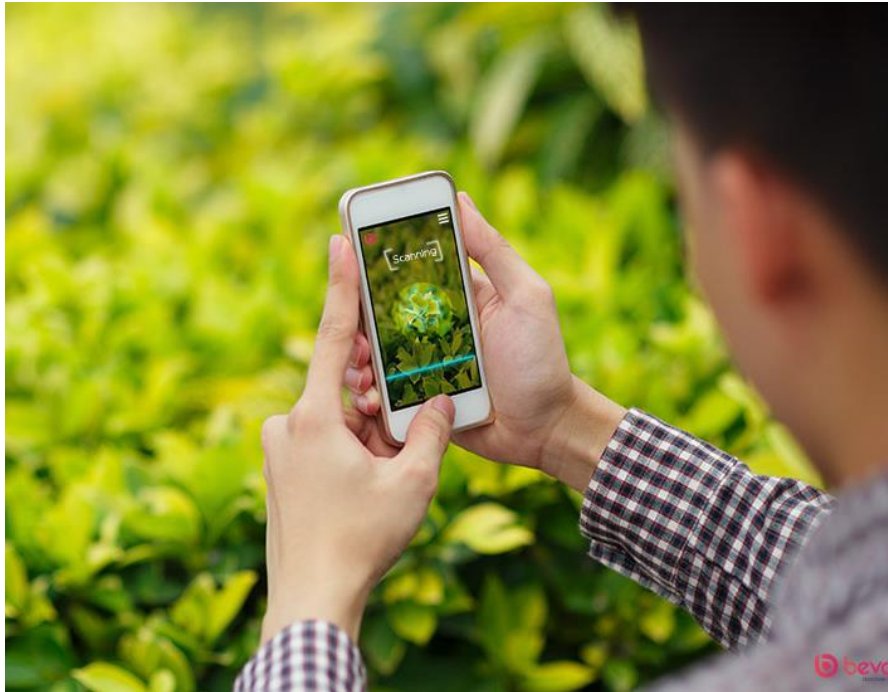


Benefit Wheels



Future Aspirations

Augmented reality



How we can use innovation and technology to visualize NFM interventions in our landscapes. Use within ELMS?

Community engagement



How we can better engage and communicate with local communities and partners. More effective approach

More information

[Advice and Guidance](#)

[Downloads](#)

[Gallery](#)

[Links and Resources](#)

[CSFFF](#)

[Tools](#)

[For Farmers](#)

[For practitioners](#)

[Oughtershaw demonstration area](#)

Naturally Resilient



Welcome to Naturally Resilient

For all things Natural Flood Management

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