

Clough Woodland Project

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Clough Woodland?

Clough?

- Term used in Peak District & further north
- Steep sided moorland valleys & watercourses
- Convey runoff from moor to river
- OS Maps – 1:25,000, 1:10,000

Woodland?

- Native broadleaf woodland
- Oak-Birch with bilberry NVC W17/W16
- Birch with purple moor-grass NVC W4
- Open ground, natural & varied structure

Not blocks of conifers.



**Not on the blanket bog.
SAC Priority Habitat.**



Not to adversely affect Qualifying Features of SAC & SPA or integrity of the European Site.

- Blanket Bog
- Dry Heath
- Wet Heath
- Acid Flushes
- Golden Plover
- Merlin
- Short-Eared Owl
- Peregrine
- Dunlin

Something like this...



Moors for the Future

Or like this...



Or like this...



Or like this...



Or like this...











Project Partners



Key Objectives

- Raise awareness of benefits of clough woodland
- Identify priority sites
- Advise landowners
- Facilitate funding applications
- Consents guidance
- Create quality native broadleaf woodland



Ring Ouzel (Bob Garrett, 2014)

Decline in Clough Woodlands

Factors:

- Historic management
- Grazing pressures
- Air pollution
- Clearance

Impact:

- Degraded habitats
- Species supported
- Erosion & sediment
- Loss of riparian shading
- Hydrology



Black Grouse (RSPB)



Project Drivers

- Dark Peak – BAP Objectives & Targets
- PDNP Landscape Strategy & Action Plan
- Lower Derwent Flood Risk Strategy
- Woodlands for Water
- High Peak Moors Vision
- MFFP Business Plan



Wood Warbler (John Richardson, 2014)

Lower Derwent Flood Risk Strategy

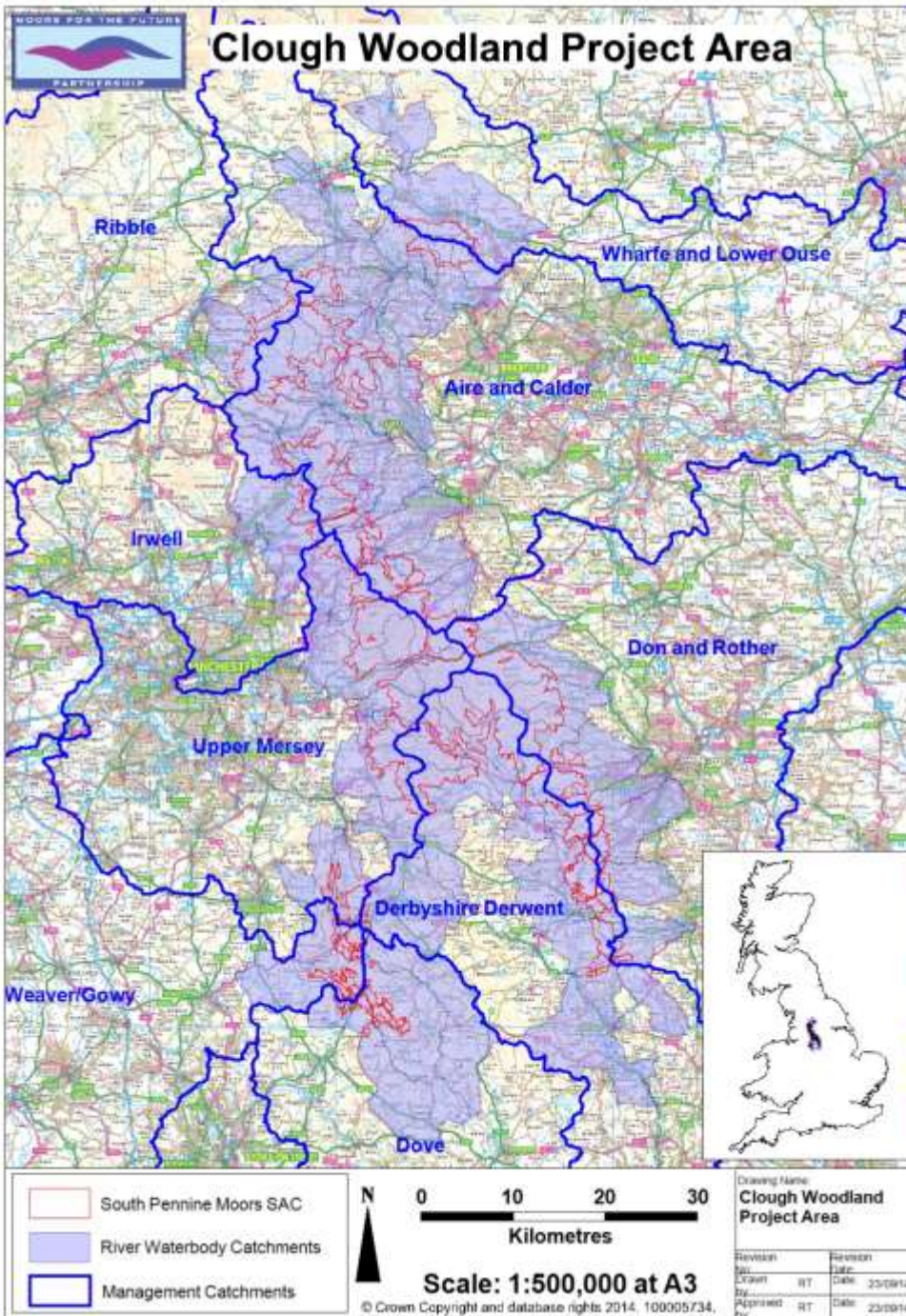
Modelling work completed as part of Lower Derwent Flood Risk Management strategy 2011, assessed how certain land management options, including afforestation, could help reduce peak flood flows.

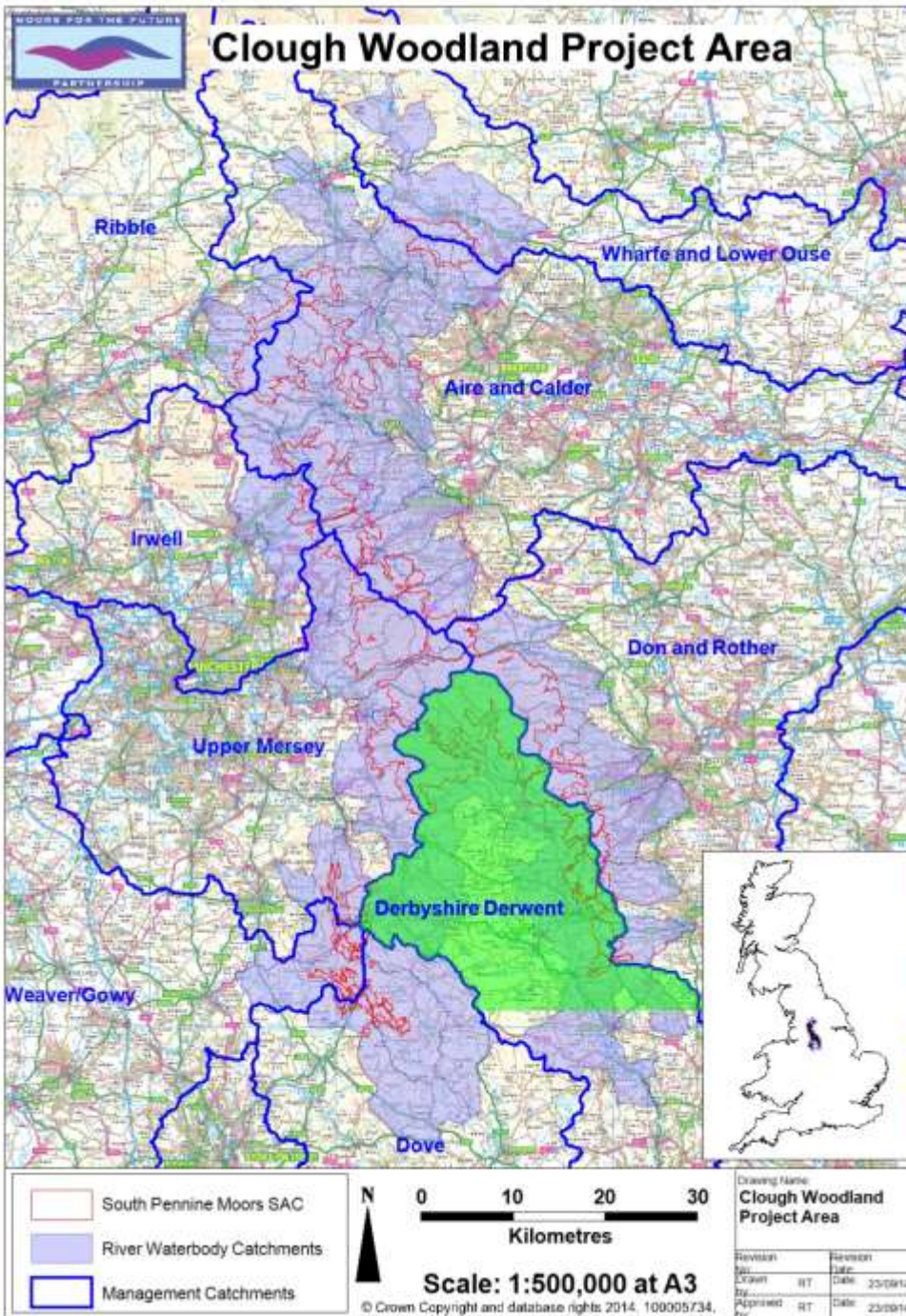
Results showed afforesting 60% of the catchment resulted in reduced downstream water levels (up to 340mm at St Mary's Bridge Derby) and could reduce flood risk.

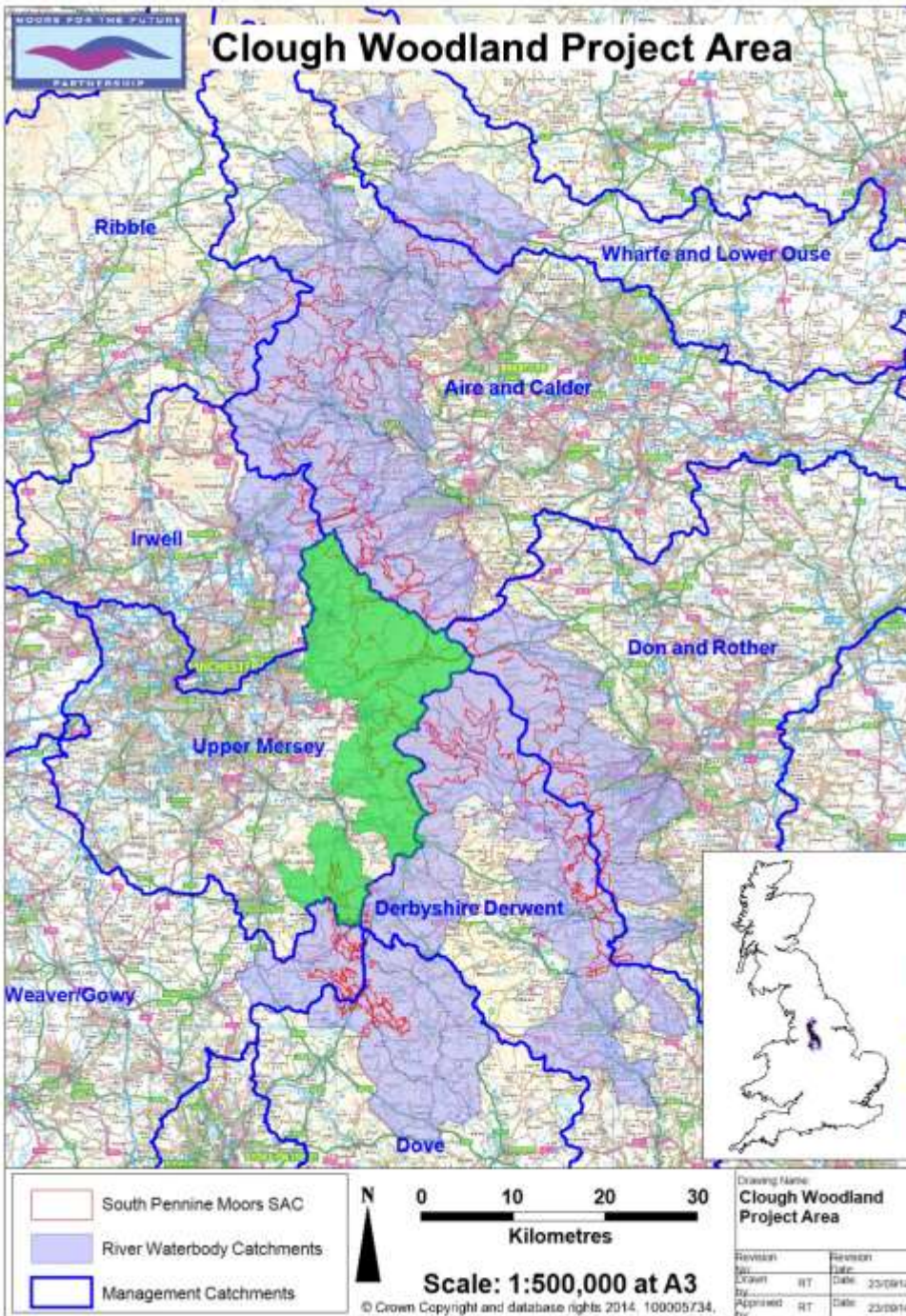
Environment Agency, 2011

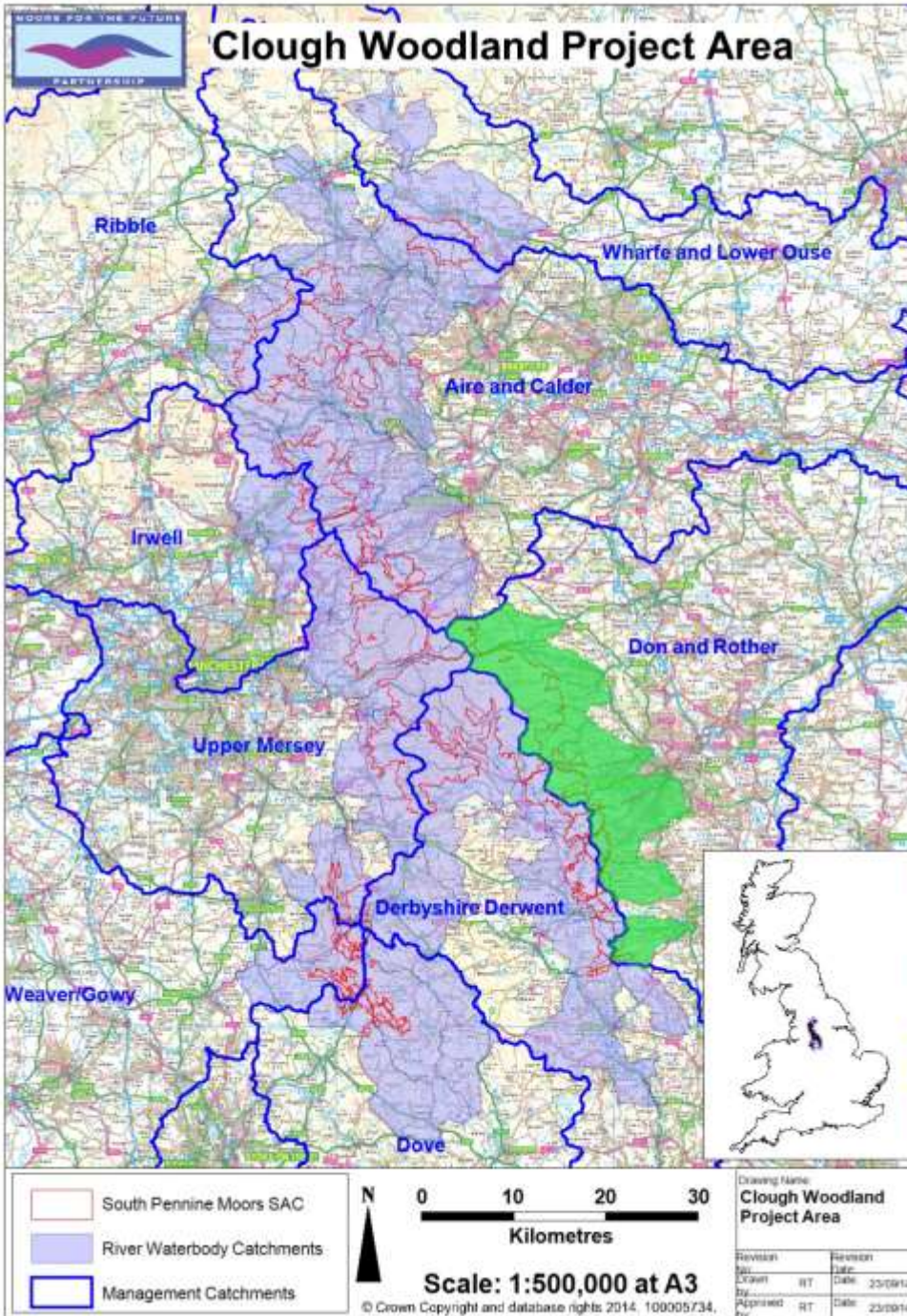


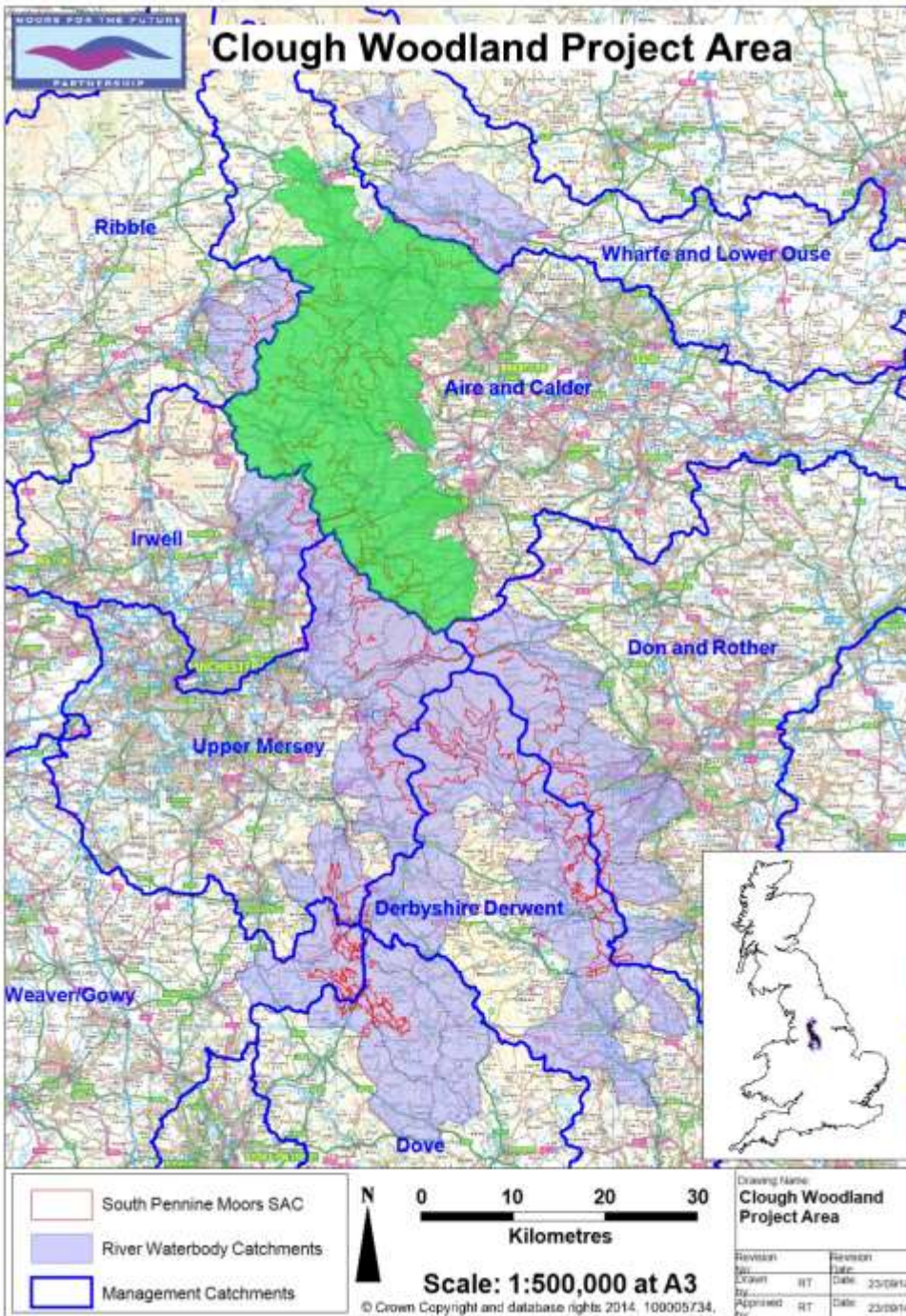








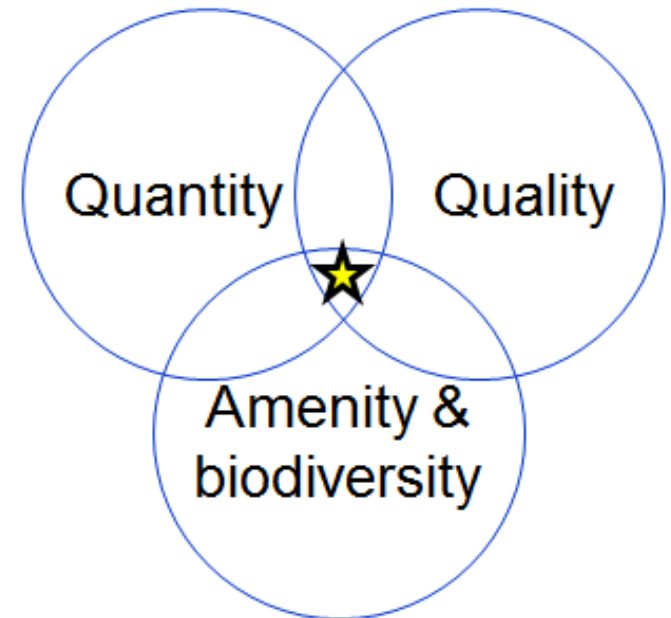




Opportunities

Strategic approach to identifying priority cloughs in Upper Derwent to inform landowner/manager engagement

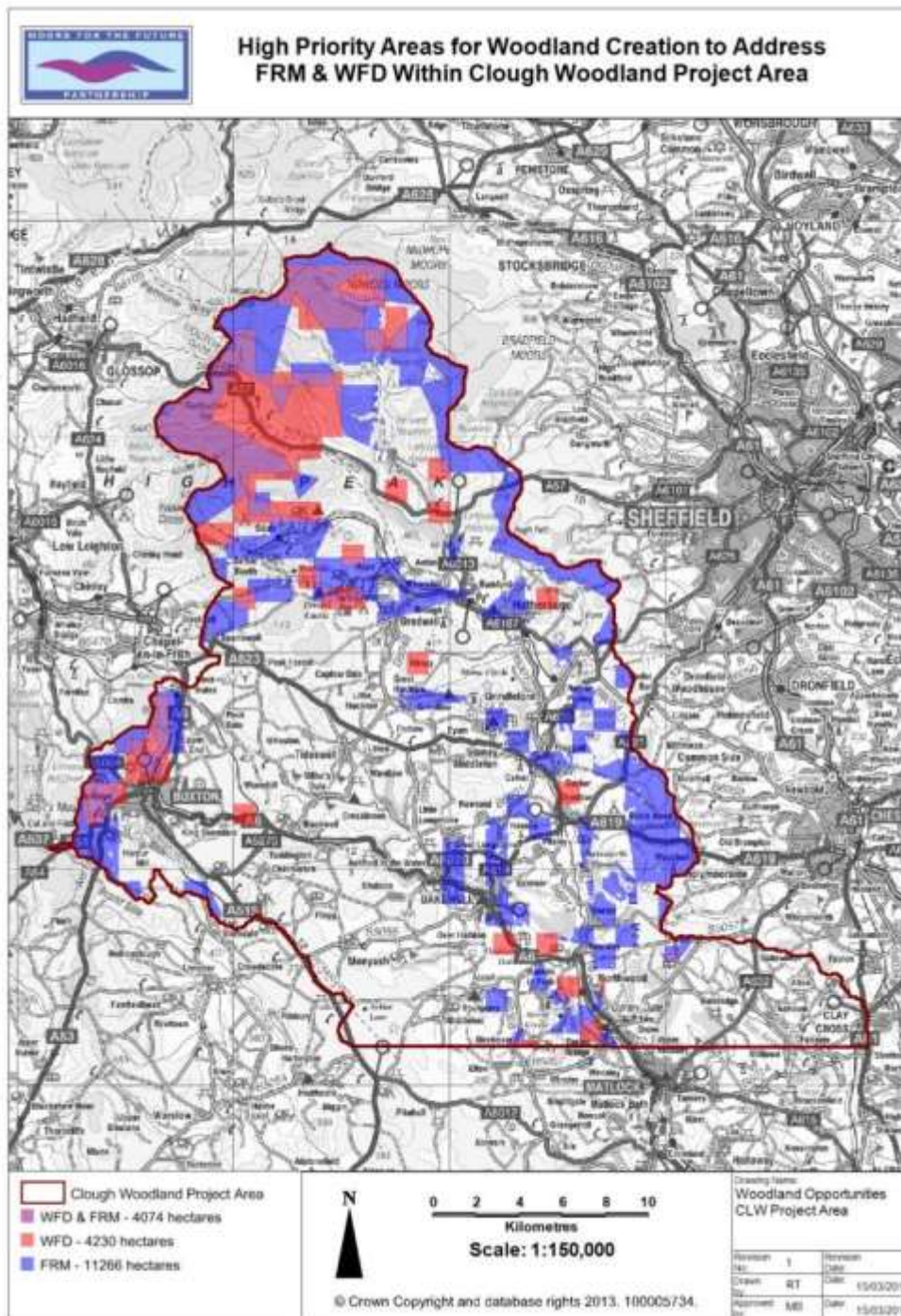
- Woodlands for Water
- PDNP - habitats & landholdings
- Dark Peak Upland Oakwoods GIS Project - FC, UU, PDNP



SUDS Manual (CIRIA, 2007)



Map 1



Extract data within Clough Woodland project area

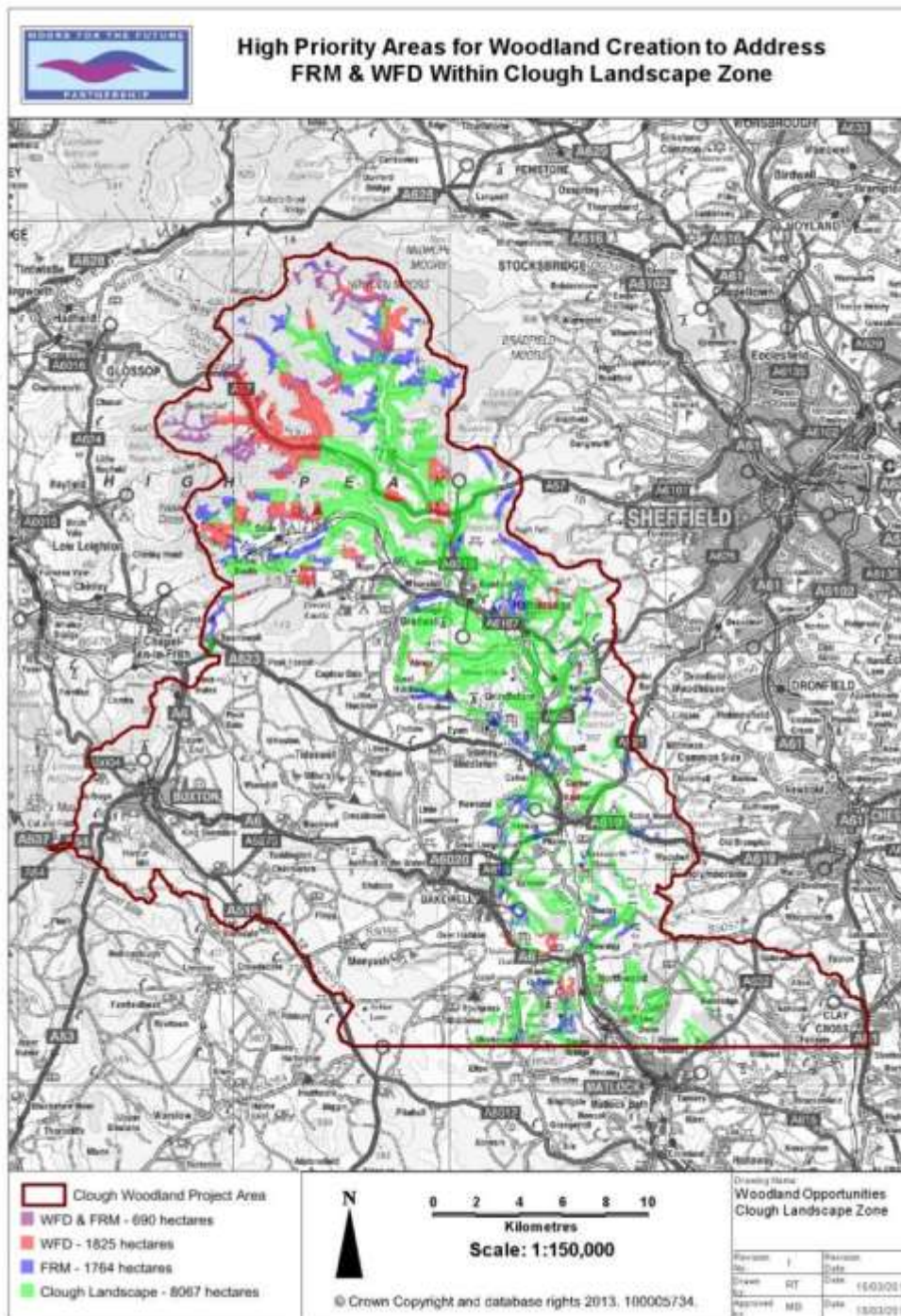
Resampled data to 50m grid

0.25 hectares

Calculated area delivering WFD & FRM combined benefits

Calculated area delivering WFD or FRM

Map 2



Extract data within Clough Landscape Zone

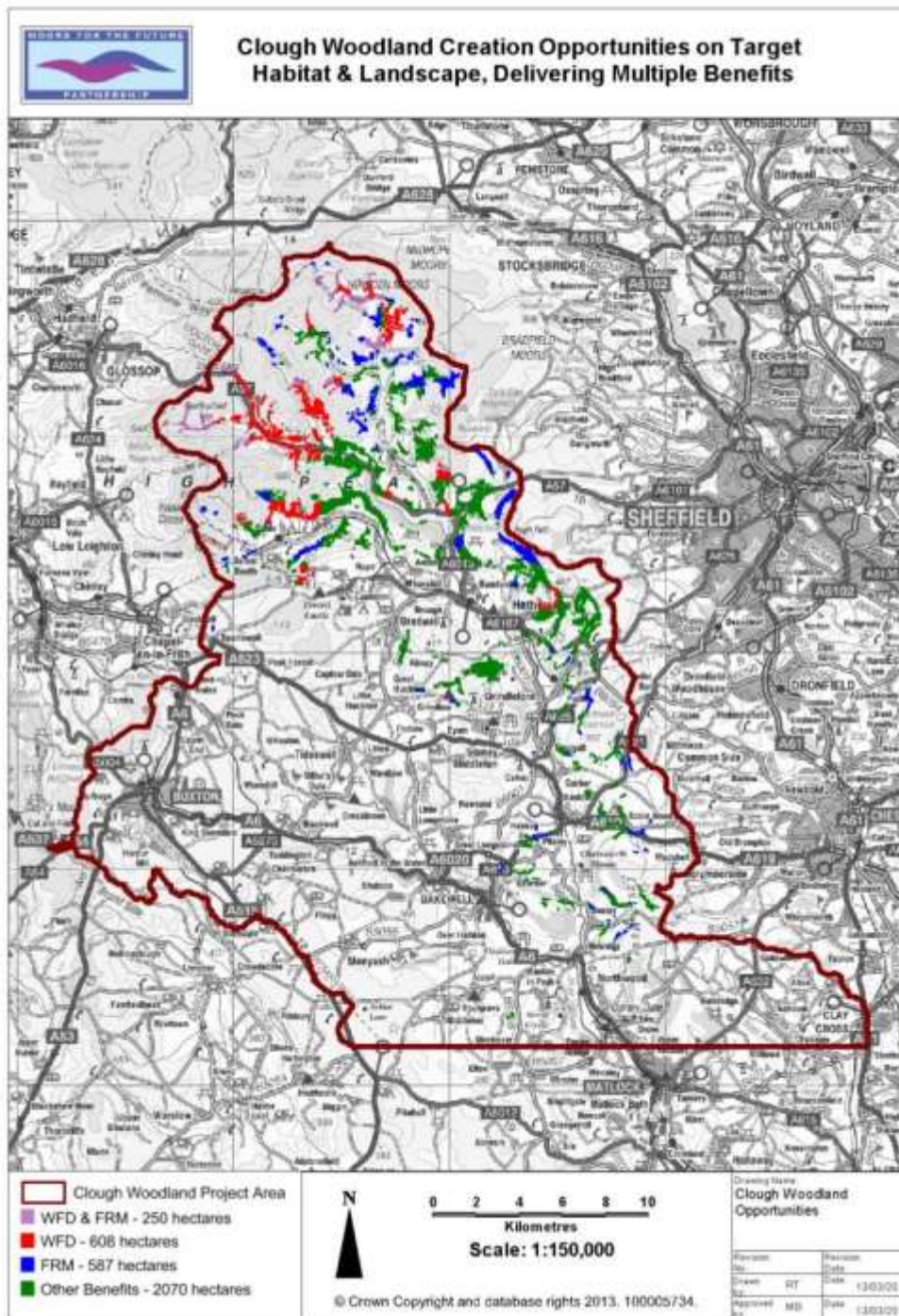
Resampled data to 50m grid
0.25 hectares

Calculated area delivering WFD & FRM combined benefits

Calculated area delivering WFD or FRM

Calculated remaining area within Clough Landscape Zone

Map 3



Extract data within Clough Landscape Zone on Bracken or Acid Grassland

Resampled data to 50m grid

0.25 hectares

Calculated area delivering WFD & FRM combined benefits

Calculated area delivering WFD or FRM

Calculated remaining area within Clough Landscape Zone on Target Habitat

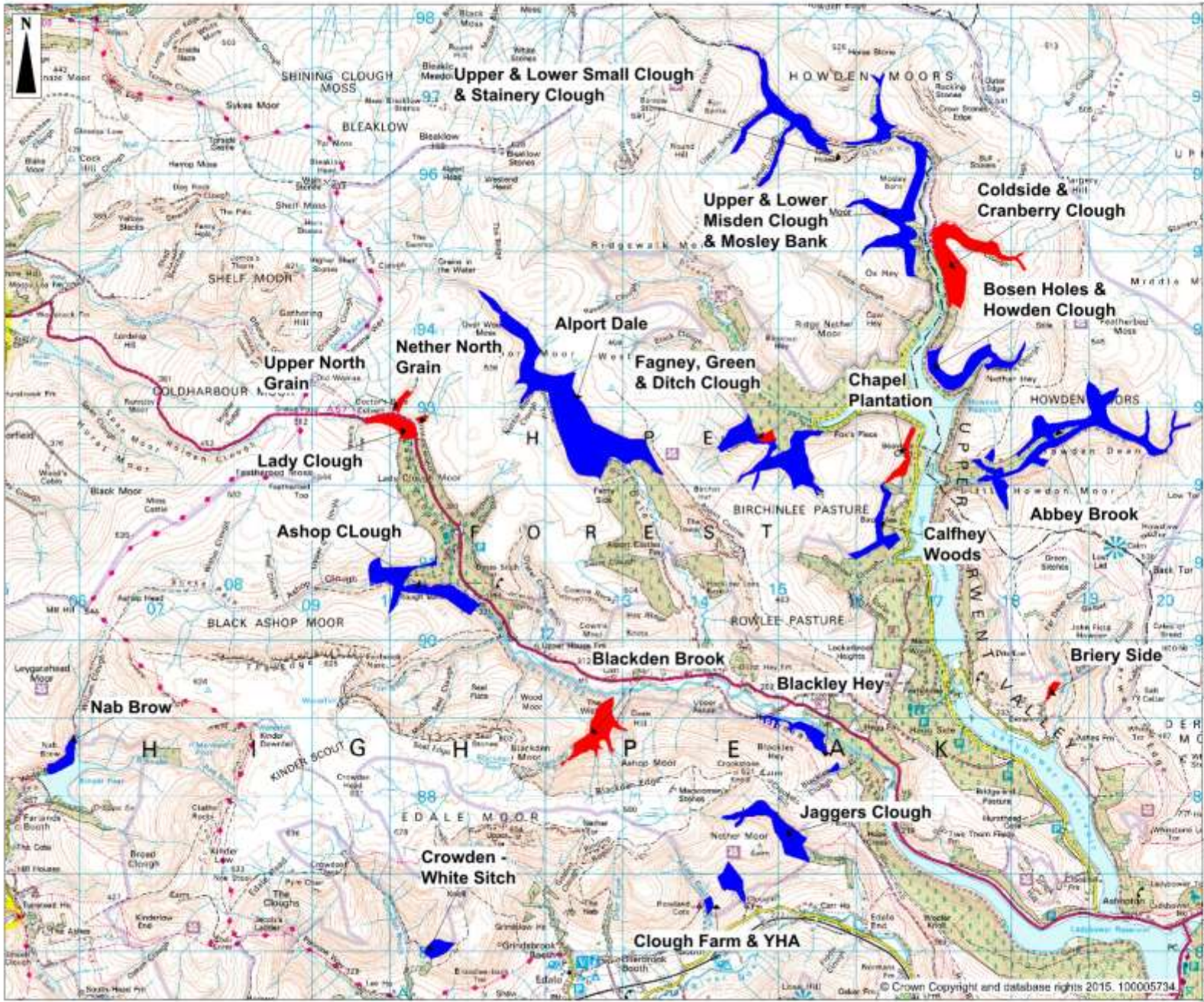
Site Prioritisation

- Extends or links woodland(s)
- Size
- Dominant vegetation
- Public access routes
- Naturalness of establishment
- Landscape enhancement
- Shelter & shade for livestock
- Water quality & quantity

- **Countryside Stewardship scoring for woodland creation**



Short-eared owl (John Richardson, 2014)



■ 33871
■ 33872

AREAS SHOWN ARE
 MAXIMUM AREAS
 APPROVED FOR
 FUNDING

0 0.5 1 1.5 2
 Kilometres
 Scale: 1:45,000 at A3

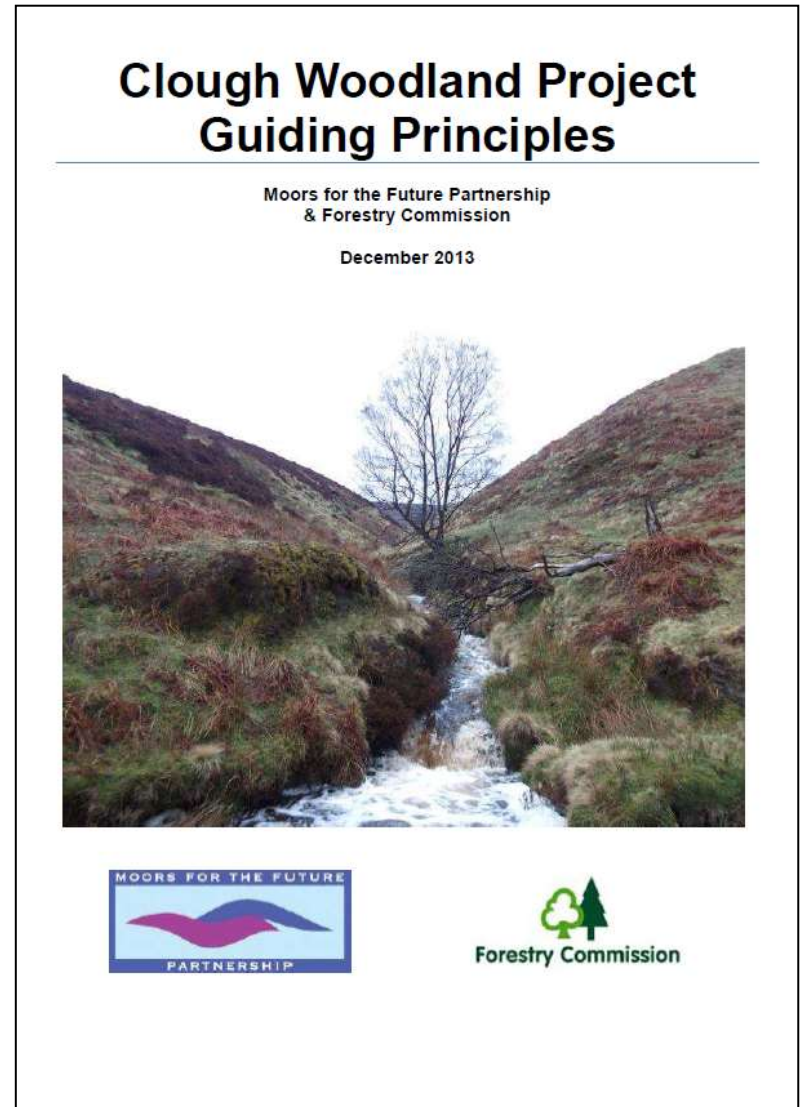


Drawing Name	
National Trust Approved EWGS	
Revision No.	Revision Date
Drawn by	Date
Approved by	Date
RT	02/03/2015

Guiding Principles

Mitigate potential adverse impacts

- National Park
- SSSI:
 - Wildlife
 - Geology
- SAC Habitats
- SPA Birds
- Archaeology
- Access land
- Upland farming

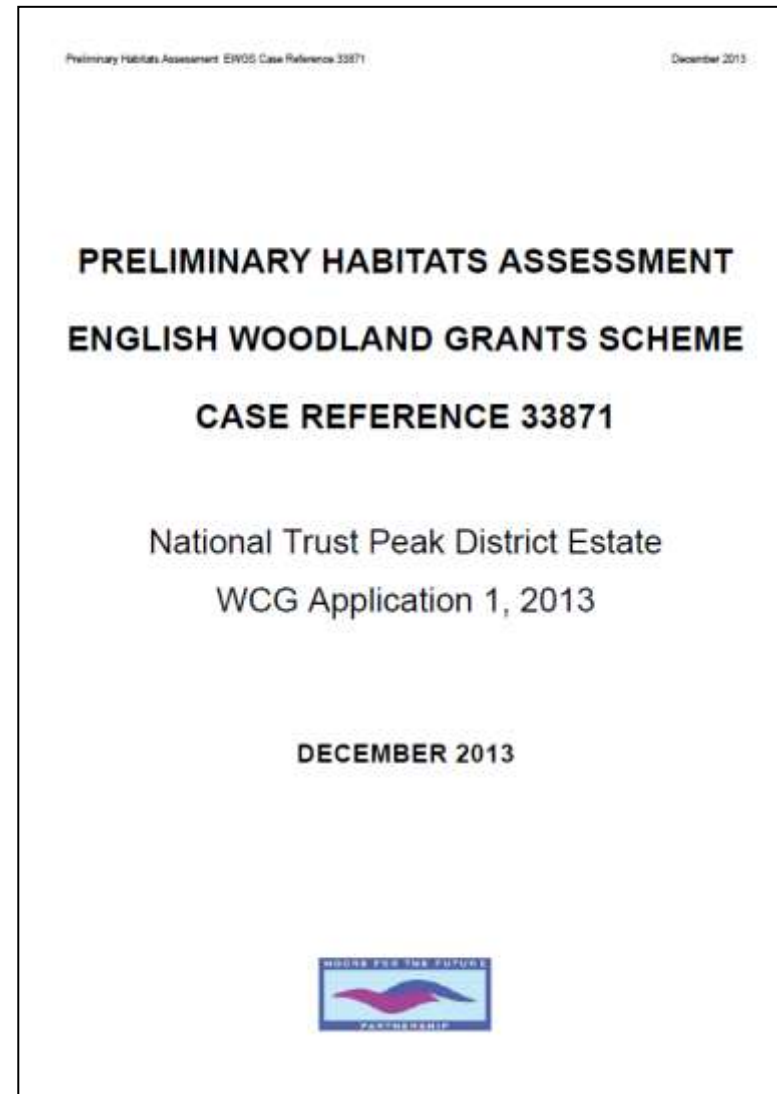


Consent – SPA, SAC

Appropriate assessment required under Habitat Regulations:

- Mapped habitats from APs & survey data
- Ground truthed acid flushes
- Mapped site constraints
- GIS analysis

- **Notional Potential Woodland Areas**



Impacts of work

- Identified potential opportunities in Upper Derwent catchment

Hectares (ha)	Priority & Benefits
250	High priority to address WFD and FRM
608	High priority to address WFD
587	High priority to address FRM
2070	Other benefits e.g. biodiversity, landscape, shelter for livestock

- Up to 490 ha approved for EWGS WCG on NT Peak District Estate - **Potentially up to £2.5 million**
- 70 ha approved for increased tree & shrub cover under HLS options



















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HOWDEN MOOR



MIDDLEWAY
→
WALKERS ONLY
←



















Habitat for Insects

- Upland broadleaf woodland
- Species– maximise benefits
- Closed canopy
- Edges, open space
- Rides and glades
- Food source



Small pearl-bordered fritillary (Peter Eeles, 2015)

Habitat for Birds

- Food, nest sites, shelter
- Support declining birds
- Changes with time
- Closed canopy
- Open canopy and scrub
- Woodland edge
- Predators



Willow tit (RSPB)

Habitat for Birds

- Food, nest sites, shelter
- Support declining birds
- Changes with time
- Closed canopy
- Open canopy and scrub
- Woodland edge
- Predators



Black Grouse (RSPB)

Habitat for Birds

- Food, nest sites, shelter
- Support declining birds
- Changes with time
- Closed canopy
- Open canopy and scrub
- Woodland edge
- Predators



Redstart (RSPB)

Habitat for Birds

- Food, nest sites, shelter
- Support declining birds
- Changes with time
- Closed canopy
- Open canopy and scrub
- Woodland edge
- Predators



Tree pipit (RSPB)

Habitat for Birds

- Food, nest sites, shelter
- Support declining birds
- Changes with time
- Closed canopy
- Open canopy and scrub
- Woodland edge
- Predators



Tree pipit (RSPB)

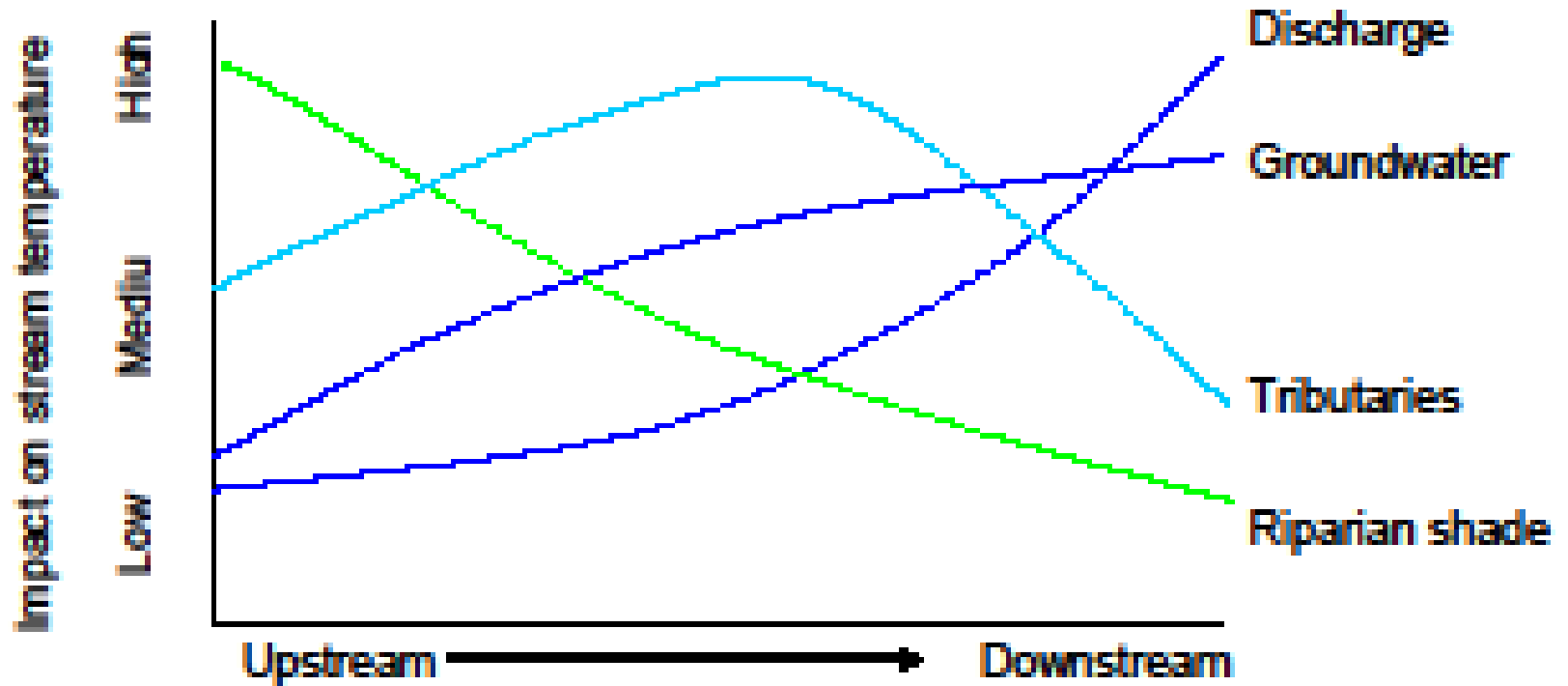
Habitat for Mammals

- Shrews
- Voles
- Mice
- Deer
- Fox
- Weasel
- Stoat

And not forgetting...

- Fungi
- Bats
- Reptiles
- Amphibians
- Freshwater invertebrates
- Fish – Salmonid
- Mosses & Lichens!

Keeping Rivers Cool



Conceptual impact of riparian shading, tributary influences and discharge on stream temperature from catchment headwaters to outlets (based on Poole & Berman, 2001). Environment Agency, 2011.

Water Quantity & Water Quality

- 2 Demonstration sites
- 2 Control sites
- Flows & turbidity
- Hazen - proxy for DOC
- Funded to Dec 2014

Monitoring the Impact of Broadleaved Clough Woodland Creation in the Dark Peak



Multiple Benefits

- Biodiversity
- Landscape enhancement
- Health & wellbeing
- Water quantity & quality
- Erosion & sediment
- Carbon storage
- Climate change resilience
- Shelter & shade for livestock
- Plant health resilience
- Evidence base

Thank you! Any questions?



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