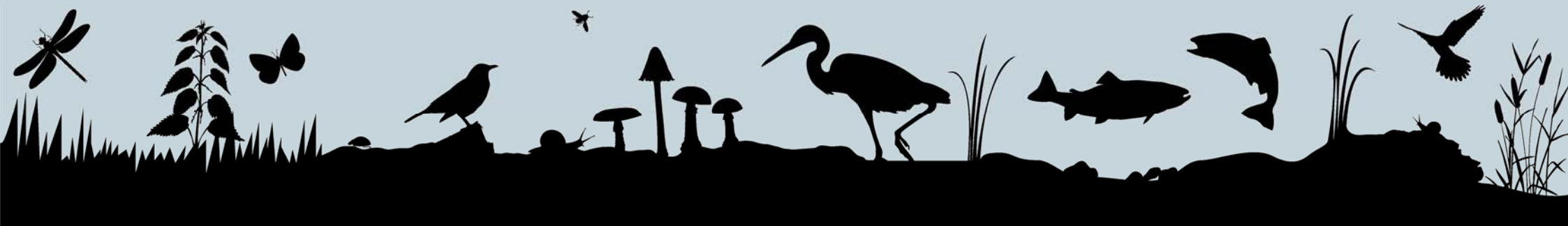
Transforming the Trent Valley: Natural Heritage Audit Summary Report

V. Bunter, D. Cadman & R. Middleton, 2018.

Staffordshire Wildlife Trust & Derbyshire Wildlife Trust.

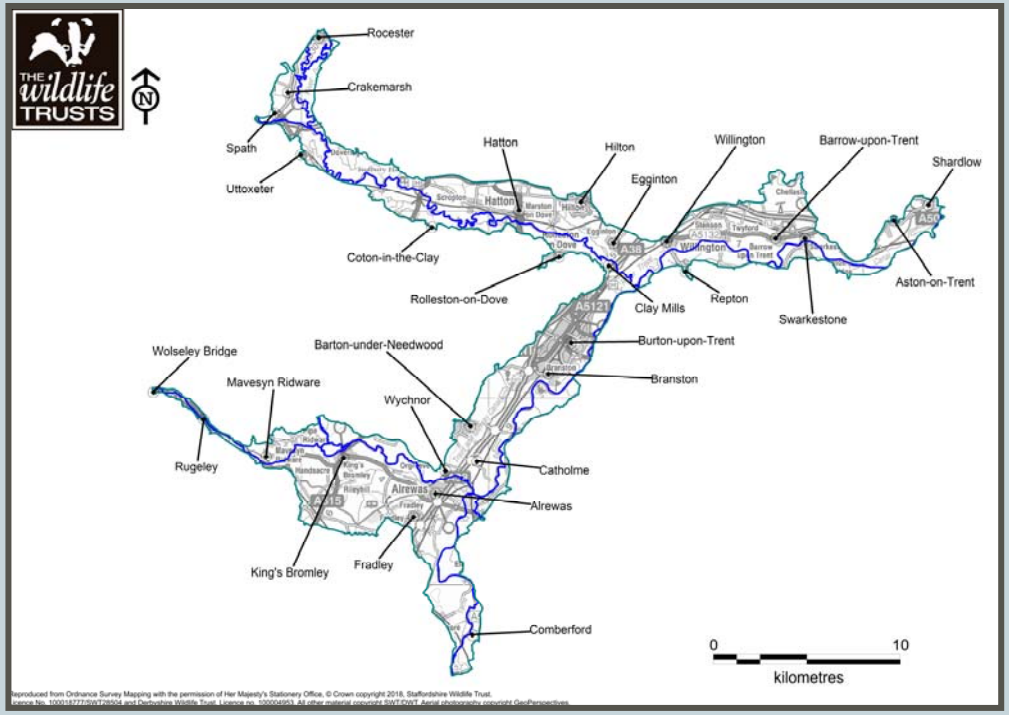
Wychnor Meadows



Section 1: Scope of Report and Introduction

The Transforming The Trent Valley (TTTV) project area is a landscape unified by its river network, with the Rivers Trent, Dove and Tame at its heart. It is characterised by its largely arable landscape, sand and gravel quarries, areas of permanent grassland, many of which support historical water meadows, remnants of the Needwood Forest and ancient woodland south of Fradley. The watercourses lack a complex riverine structure due to historical river engineering, and fish movement is impeded by man-made structures such as weirs. In order to restore natural floodplain processes, ecological opportunities were investigated.

The report forms an element of a series of audits that were undertaken to identify and refine the aims, targets and objectives of the delivery phase of the resulting project. The following report focuses on the natural heritage of the project area.



The aims of the report were to:

i) **Collate, analyse and present existing natural heritage data both from the partnership and other sources.**

ii) **Collate, review and update the 2006-2007 Biodiversity Audit of the Tame and Trent river valleys.**

iii) **Update the 2009 Staffordshire Washlands Assessment and recommendations for key sites including input from Derbyshire Wildlife Trust**

iv) **Use existing data sets that is publically available or held by partners, to undertake biodiversity opportunity assessment and mapping for areas that are not covered by existing biodiversity opportunity maps, within the scheme area.**

v) **Undertake a desk-based audit of river restoration opportunities in the project area with reference to maps showing historic channel patterns, floodplain character and current flood risks.**

vi) **Establish the condition of floodplain grasslands and water meadows and prioritise restoration opportunities across the project area. The Staffordshire Historic Water Meadow Survey, carried out in 2007-2008, is available on the Staffordshire County Council's website.**

vii) **Undertake an audit to identify opportunities for woodland restoration and opportunity areas for 'Woodland for Water' as part of Natural Flood Management (NFM).**

viii) **Identify opportunities for key species using existing data from across the partnership or publically available sources.**

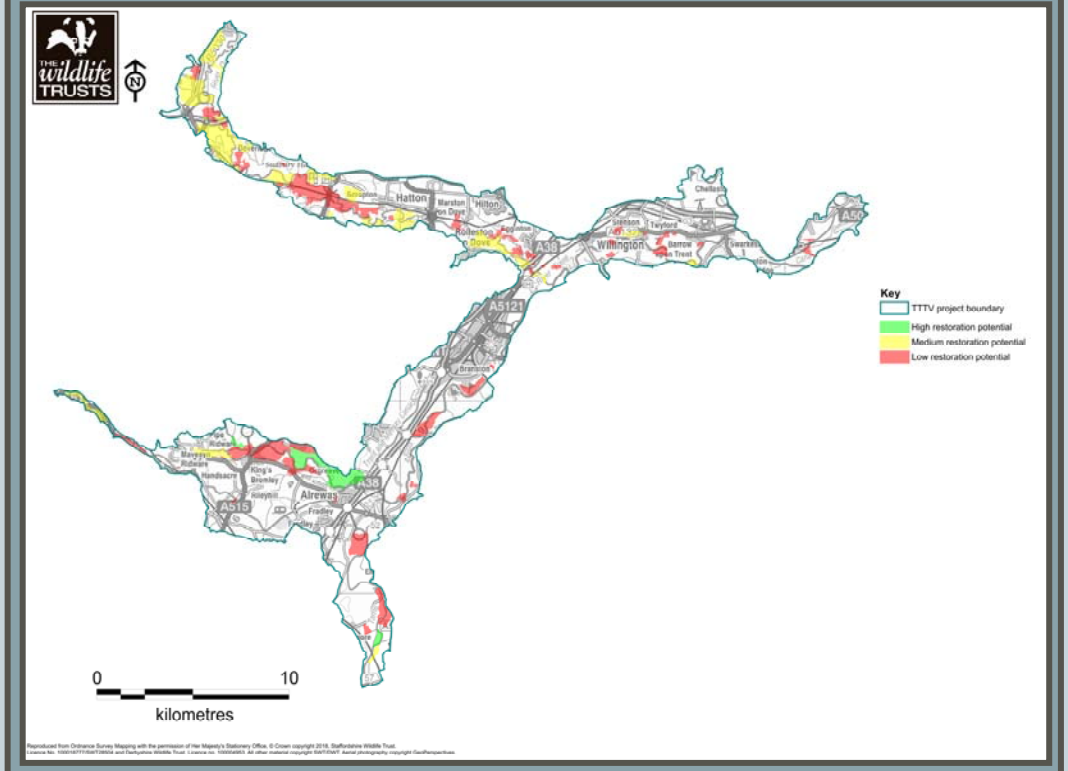
Section 2: Evidence Base and Opportunities

In order to inform the development of natural heritage projects to be carried out as part of the TTTV Heritage Lottery Fund (HLF) project, the biodiversity opportunity mapping used an extensive inventory of habitat, species and other environmental data sets across the area. This would form the baseline information to map opportunities and develop a suite of projects which will contribute towards the creation of a 'Living Floodplain' landscape. A number of analyses were then conducted to inform the opportunity mapping.

The various data sets were collated and updated where required. The initial analysis was to determine suitable potential restoration or creation targets for relevant priority habitats. This was carried out using the Habitat and Species Action Plans from the Derbyshire Local Biodiversity Action Plan (LBAP) and Staffordshire's Ecosystem Action Plans (EAP), which came into the project area and refined their targets. The most widespread priority habitat was Coastal and Floodplain Grazing Marsh. In order to identify opportunities, the condition was assessed according to flooding incidence and evidence of positive management. Potential historical water meadows were also found within the grazing marsh zone and a similar condition assessment was carried out. Other data used to inform opportunities included identifying palaeochannel 'hotspots', taking on board the Environment Agency's priority recommendations derived from river walkover surveys, incorporating Woodland for Water opportunity mapping to inform tree planting, which could contribute towards Water Framework Directive targets and investigating the potential value of natural capital that habitat restoration and creation could provide as part of a natural heritage delivery project.

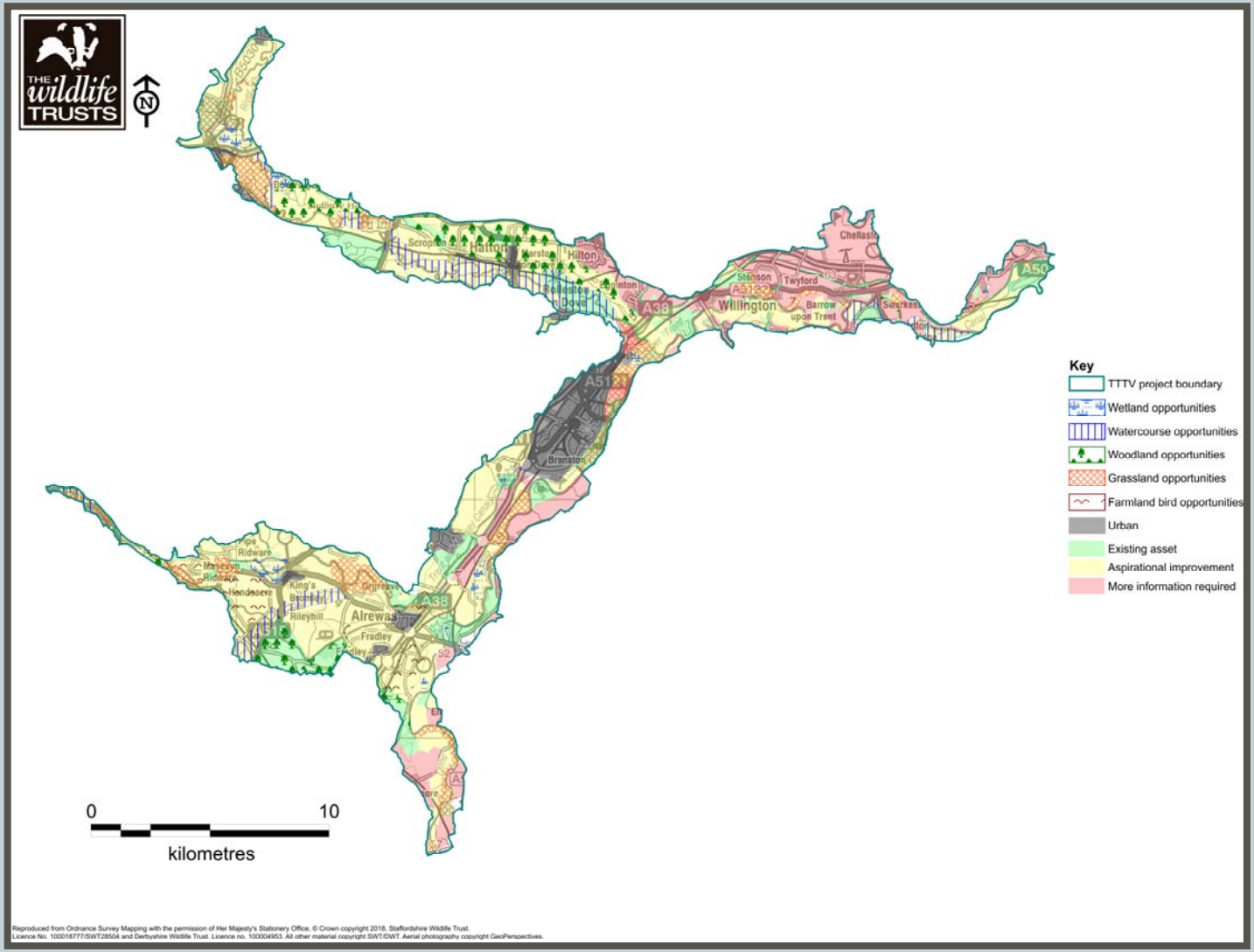
Case Study: Water Meadow Analysis

Water meadows are a prominent part of the landscape particularly alongside the River Dove, but also areas of the River Trent around Wychnor, with 2,931 hectares of potential water meadow identified in the project area. Historical water meadows are an important part of our agricultural heritage for managing land in the floodplain. The presence of water meadow features can also be an indication of relatively undisturbed semi-natural grassland, an important resource which has declined across the UK, the preservation of such can have both biodiversity and cultural benefits. Additionally, water meadows can capture excess nutrients before they enter watercourses, store water and reduce flood risk. 10% of the meadows were considered to have a high potential for restoration, 42% had medium priority and 48% has a low restoration potential. Specific projects which targeted water meadow restoration, are included in the broad-scale opportunity mapping.



Section 3: Broad-scale Opportunity Mapping

To ensure a standardised vision, broad-scale opportunity mapping was conducted across the project area following the format used for the opportunity mapping across the Central Rivers Initiative (CRI) project area in 2012, (which already covers a large proportion of the TTTV project area). The opportunities identified as part of the CRI have been updated and presented alongside the additional opportunity mapping across the TTTV project area and these are presented in the map. The mapping across the remainder of the project area uses the collated evidence described in the evidence base section. Key projects and target areas were identified at an opportunity mapping drop-in session held on the 28th February 2018 with project partners. These findings, together with the collated evidence base helped to inform the opportunity mapping process. The mapping methodology which followed that of the CRI project, identified existing assets where there were designated sites, Habitats and Species of Principal Importance, aspirational opportunities for habitat restoration or creation, and areas where insufficient information was required for recommendations to be made, which were mapped as unknown. Additionally, target areas for key habitat opportunity themes were identified including grassland, wetland, woodland, watercourse and farmland birds. This was all brought together into GIS layers showing the broad opportunities on a map with further detail held in the data files for interrogation as required.



Section 4: Review of Previous Audits

Two existing documents were analysed and reviewed as part of this audit: "Biodiversity Audit of the Tame and Trent River Valleys in Staffordshire (2007)" and "Staffordshire Washlands Assessment and Recommendations for Key Sites (2009)".

Tucklesholme Quarry restoration

A total of 17 sites from the reviewed documents were present in the TTTV area covering 3,336 hectares. The review includes publicly owned land, mineral extraction sites, existing nature reserves belonging to conservations NGOs and private landholdings. In total, approximately 80 specific project proposals were made across all the sites identified and reviewed.

The suite of projects identified, include both small and large-scale recommendations with differing aspirations, timescales and costs to account for any level of funding received. Recommendations made will help to deliver Water Framework Directive targets as well as provide

Case Study: Recommendations for further river re-profiling at Staffordshire Wildlife Trust Croxall Lakes Nature Reserve

River re-profiling works have previously been carried out at Croxall Lakes Nature Reserve, which successfully resulted in river channel braiding at the confluence of the Rivers Tame and Trent and included the creation of gravel islands, secured in place with living willow, providing excellent habitats for a number of species. An extension of this has been recommended as part of this audit just upstream of the area re-profiled previously. The recommended proposals being carried out will increase and strengthen the biodiversity benefits throughout the river channel and this stretch of watercourse.

River Trent re-profiling at Croxall Lakes

Section 5: Wider Project Opportunities

Further opportunities were developed alongside partners attending a drop-in opportunity mapping session. Biodiversity offsetting and other forms of ecological mitigation were important mechanisms used to support the delivery of ecological gains in the project area.

Dovecliff Weir

Linking with various organisations such as the Environment Agency, Lichfield District Council, HS2 and the quarrying industry within the area, highlighted possibilities for targeting mitigation works and expanding on existing mitigation plans. Additionally, projects that enhance and conserve areas around existing high quality priority habitat were also investigated, such as carrying out restoration around Sites of Special Scientific Interest land.

Case study: Burton Flood Risk Management Scheme

The Burton Flood Risk Management Scheme (FRMS) will improve 9 km of existing flood defences alongside the River Trent, protecting more than 4,000 homes and 93 businesses in the centre of Burton upon Trent. The area of the scheme covers the floodplain extent and its interface with urban areas, known as the Washlands. A visionary master plan will be developed to provide a tool with which to inform planning, engage with stakeholders and link with local strategies, as well as informing the development of ecological landscape of the FRMS area. In order to facilitate a joined up approach, the Natural Heritage Audit findings will be incorporated into the visionary plan, to be followed up through linking the FRMS project with delivering targeted projects through the HLF Living Floodplains delivery project for mutual benefit.

Upper Mills Farm, Burton

Section 6: Conclusions and Recommendations

A range of targets were developed for key habitats within the broad-scale opportunity mapping, culminating in 2,381 hectares (ha) of woodland opportunities, 441 ha of wetland opportunities, 1,771 ha of grassland opportunities, 800 ha of farmland bird opportunities and 36 km of watercourse improvements. A further 13 potential projects were identified from an opportunity mapping drop-in session with three of them also identified within the 2006-2007 Biodiversity Audit. The next steps will involve contacting relevant landowners and determine the feasibility of opportunities particularly with regards to biodiversity offsetting sites which may incentivise landowners' involvement.

A total of 17 sites noted in existing audits were reviewed covering an area of 3,336 ha generating approximately 80 small to large-scale practical project proposals. Having a suite of projects developed to rely upon with different associated costs is beneficial as this gives some flexibility within financial constraints and also being able to work with different landowners. As a result of the audit reviews, it was apparent that up-to-date ground-truthing was required and Local Wildlife Site surveys would be beneficial which would also help to develop further recommendations and landowner engagement. A desk-based study to identify suitable locations for the creation of woodlands and ponds was also proposed.

A list of priorities for next steps following this audit has been developed:

- Discuss project plans with landowners and establish their commitment.
- Ensure baseline surveys are completed for all project sites.
- Update project plans following surveys of project areas and produce more detailed costed proposals.
- Carry out feasibility studies if required using EA LiDAR data and undertake various tests such as water level and soil sampling, test pits, and analysing bathometric data to inform rewetting projects.
- Carry out water quality monitoring if required.
- For projects which involve work within watercourses, apply for the relevant consents. These will need to be applied for before work is undertaken, and can take several months to receive the consent.
- Great Crested Newt surveys may need to be conducted where work will affect existing ponds.
- For grassland restoration work, baseline surveys of vegetation composition should be completed to determine the level of restoration required as well as providing a means of reviewing restoration works and monitoring subsequent change.
- Source sites will need to be identified and surveyed for any habitat creation work utilising a seed source. Seed should be locally sourced and should be appropriate to the local area.
- Where land is in an existing Environmental Stewardship Scheme, a derogation request may be needed from Natural England (NE) where a variation is proposed to the management of the land, including habitat creation work.
- Work on a Site of Special Scientific Interest (SSSI) requires a 'Notice of proposal to carry out an operation on an SSSI' obtained from NE.
- Review and update the broad-scale key habitat opportunities, obtaining detail through survey work, as well as establishing contact with landowners to develop further projects as funding permits.
- Source contractors where required, to undertake work set out in the specifications of the project plans.

Further Information

Information Sources

All Photographs used in this report © Nick Mott SWT.

The Water Meadows map was produced with permission from Staffordshire County Council.

Further reading

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Acknowledgements

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