

Thames Valley

Environmental Records Centre



Sharing environmental information in Berkshire and Oxfordshire

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GREEN CORRIDORS IN CHARVIL

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GREEN CORRIDORS IN CHARVIL

SUMMARY

Thames Valley Environmental Records Centre (TVERC) has identified a network of green corridors in Charvil to support preparation of a Neighbourhood Plan. These corridors are based on modelled habitat networks and Public Rights of Way and facilitate the movement of wildlife and people through the landscape. There is one main existing woodland and wetland corridor principally running North-South along the eastern boundary of the parish following the Old River arm of the River Lodden. There are also corridors along the northern boundary following the River Thames and St Patrick's Stream. A number of proposed corridors have been identified that principally run East-West to habitat that's outside of the parish. The identification of these green corridors accords with NPPF paragraph 179 in identifying and mapping ecological networks and wildlife corridors.

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1. INTRODUCTION

1.1 GREEN CORRIDORS

Green corridors are corridors that allow people and wildlife to move through the landscape. They are important both in connecting patches of habitat to allow wildlife to find food, homes and mates, but also in helping people to access the countryside and to experience wildlife first hand.

1.2 GREEN CORRIDORS IN NEIGHBOURHOOD PLANS

Many Neighbourhood Plans are identifying green corridors and including policies which specifically address the protection, creation and enhancement of new and existing green corridors.

Paragraph 179 of the National Planning Policy Framework (NPPF)¹ states: 'To minimise impacts on biodiversity and geodiversity, planning policies should:... identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation;...'.

The identification and mapping of green corridors is therefore in accordance with the NPPF.

1.3 GREEN CORRIDORS IN CHARVIL

Charvil parish council asked Thames Valley Environmental Records Centre (TVERC) to identify and map green corridors in their Neighbourhood Plan area. This report describes the methods that TVERC used to identify green corridors in the parish of Charvil and presents a map of the final green corridors that resulted from this process. Maps of the green corridors can be found in Section 4.

¹ <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

2. METHOD

Green corridors are defined in this report as areas where connected habitat networks for wildlife and Public Rights of Way coincide. As such they are corridors for the movement of both wildlife and people through the countryside.

TVERC has detailed mapping of habitats and land use for the whole of Berkshire, information on the location and value of Local Wildlife Sites and access to data for the Public Rights of Way network via Wokingham District Council. We used these data to propose green corridors in Charvil.

This information was translated into primary and secondary codes of the UKHAB classification (where not already classified) to enable consistency and combined into a single Charvil habitats layer (Map 2). Priority Habitats² (S41) were derived from the UKHAB classification (Map 3). These were grouped into woodland, comprising Lowland Mixed Deciduous Woodland and Wet Woodland; grassland, which was just Coastal and Floodplain Grazing Marsh in the parish; and wetland habitats, comprising Eutrophic standing waters and Reedbeds. The wetland and woodland are the most important habitats within Charvil and provide the focus for the green corridors.

Having identified priority habitats in the parish, TVERC then modelled connectivity between these patches of habitat. Habitats are well connected where the landscape is permeable to species and they are able to move easily between core habitat patches via corridors and stepping stones. Habitats are poorly connected when the landscape is not permeable and core habitat patches are isolated from each other due to barriers to movement e.g. roads, railways and built development.

TVERC modelled habitat connectivity for woodland and wetland habitats in Charvil. We used a Cost-Distance² method which identifies the ecological energetic cost to species moving across the landscape between habitat patches (see Appendix 1 for technical details). The output of the model shows the connected habitat network for each of these habitats in Charvil (wetlands and woodlands).

TVERC identified green corridors where the habitat and Public Rights of Way networks coincided. This map was used as the basis for a discussion with members of the parish council and other interested residents to gather local information on the parish, the proposed green corridors and to identify any additional or aspirational green corridors for the parish. Using the output of the workshop discussion TVERC then mapped all of the existing and proposed green corridors in Charvil (Maps 5 & 6).

² CATCHPOLE, R.D.J. 2006. Planning for Biodiversity – opportunity mapping and habitat networks in practice: a technical guide. English Nature Research Reports, No 687

3. RESULTS

3.1 IDENTIFIED GREEN CORRIDORS

TVERC has identified two existing corridors in Charvil parish (Map 5 & 6). There is one main existing woodland and wetland corridor principally running North-South along the eastern boundary of the parish following the Old River arm of the River Loddon. There are also corridors along the northern boundary following the River Thames and St Patrick's Stream.

These existing corridors were further highlighted through discussion with the parish, which also identified known routes already used by people (along permissive paths), and that had connecting habitat, primarily in the form of hedgerows and blocks of trees that tree preservation orders.

A network of proposed corridors was also identified. These corridors would enhance the connectivity throughout the parish, by linking up the existing corridors with each other and the habitat network especially to habitat that's outside of the parish. In order for these to function as green corridors there would need to be public access along them, as well as creation, restoration or enhancement to semi-natural habitats in the landscape to provide landscape permeability for wildlife.

3.2 LIMITATIONS

TVERC has identified the following limitations to this study:

- Hedgerows are not well mapped in Berkshire and these can provide significant connecting habitat, particularly for woodland habitats. Therefore, woodland connectivity may be significantly better than the modelled habitat networks indicate. A number of potential and existing green corridors were identified on the basis of discussions with the Charvil parish council and residents, and their on-the-ground knowledge of the locations and extent of hedgerows along public access routes. The survey and mapping of hedgerows would therefore undoubtedly improve the connectivity modelling.
- The habitat data on which the models are based are a snapshot in time. While the data are updated where possible using survey data, there may have been changes in the habitat or land use in Charvil that have not been captured in TVERC's habitat mapping. As such there could be differences in the permeability scores applied to the landscape and as a result the connectivity models may be different where these changes to be included. However, there are unlikely to be large differences in habitats and land use in the area and small differences would not significantly affect the output of the modelling.

4. MAPS

Map 1 Local Wildlife Sites in Charvil

Map 2 All habitats (using UKHab methodology) in Charvil

Map 3 Priority habitats in Charvil

Map 4 Rights of Way and TPOs in Charvil

Map 5 Wetland connections for green corridors in Charvil

Map 6 Woodland connections for green corridors in Charvil



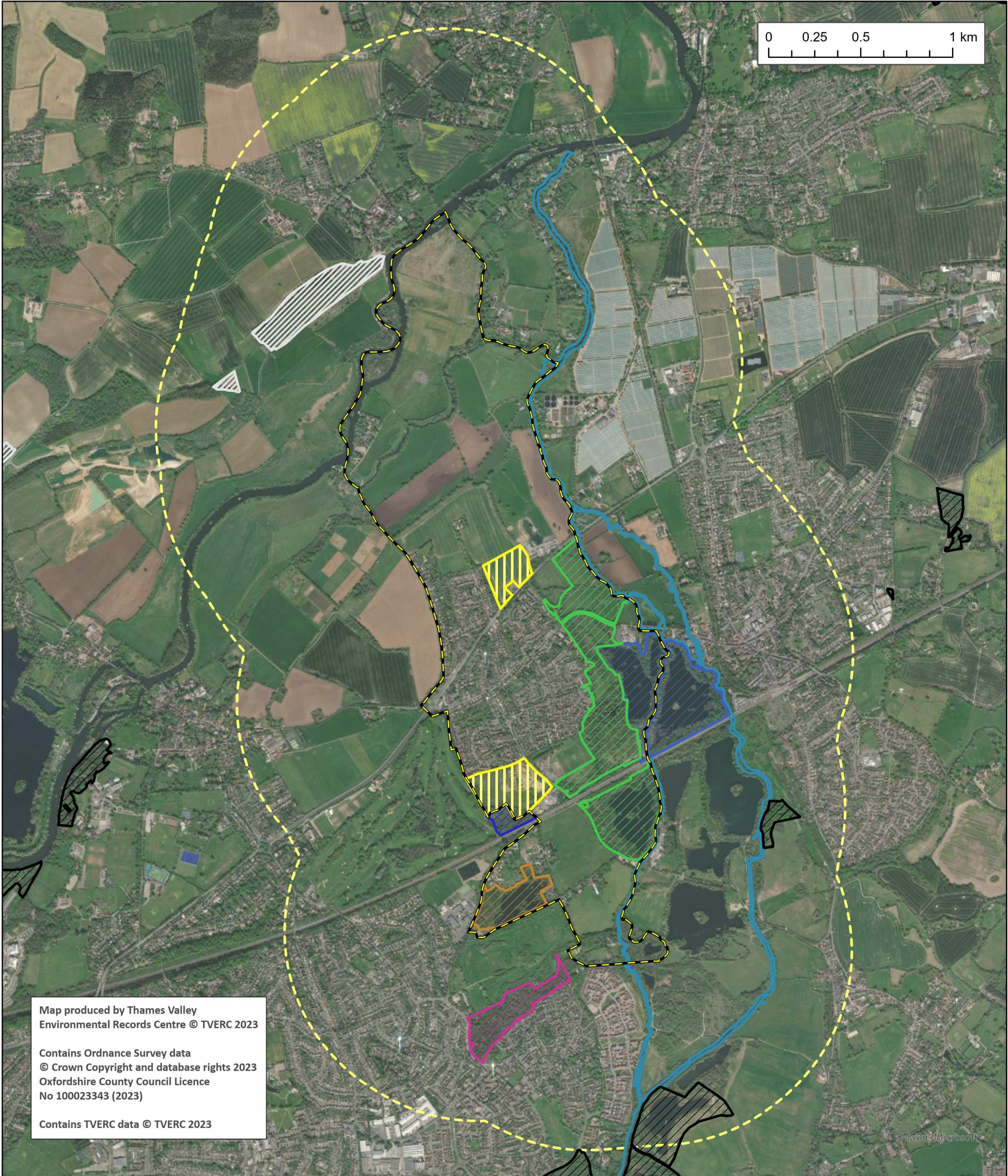
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Charvil Green Corridors: Local Wildlife Sites

Berkshire Local Wildlife Sites

- Alder Moors
- Charvil Country Park West & Charvil Meadows
- Loddon River (part)
- Norris' Copse Bird Sanctuary
- Sandpit Copse
- Twyford Gravel Pits (Loddon Reserve & Charvil Country Park)
- Other Berkshire LWS

- Oxfordshire Local Wildlife Sites
- Charvil Parish Boundary
- Charvil Allocated Sites
- Charvil 1km buffer



Map produced by Thames Valley
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Charvil Green Corridors: Habitats (UKHAB)

- Charvil Parish Boundary

Charvil Habitats (UKHAB)

c - cropland

c1 - arable and horticulture

c1c - cereal crops

f - wetland

f2 - fen,marsh and swamp

f2e - reedbeds

f2f - other swamps

g - grassland
- g1 - acid grassland

g2a - lowland calcareous grassland

g3 - neutral grassland

g3c - other neutral grassland

g4 - modified grassland

h3 - dense scrub

h3a - blackthorn scrub

h3d - bramble scrub

h3h - mixed scrub

r - rivers and lakes

r1 - standing open water and canals

r1a - eutrophic standing water

r1a6 - other eutrophic standing waters

r1e - canals

r2 - rivers and lakes

r2a - rivers (priority habitat)

s1d - other inland rock and scree

u - urban

u1 - built-up areas and gardens

u1b5 - buildings

u1b6 - other developed land

u1d - suburban mosaic of developed/natural surfaces

u1e - built linear features

w - woodland

w1 - broadleaved, mixed and yew woodland

w1d - wet woodland

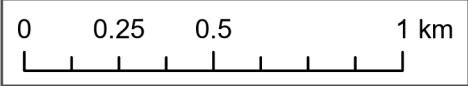
w1f - lowland mixed deciduous woodland

w1g7 - other broadleaved woodland types

w1h - other woodland, mixed

w2 - coniferous woodland

w2c - other coniferous woodland



- UKHAB Habitat Mosaic**
- Scattered scrub

Scattered trees

Tall herb

Ruderal/ ephemeral

Scattered scrub, Scattered trees

Scattered scrub, Scattered trees, Tall herb

Scattered scrub, Tall herb

Scattered scrub, Tall herb, Ruderal/ ephemeral

Scattered scrub, Ruderal/ ephemeral

Scattered trees, Tall herb

Map produced by Thames Valley
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Charvil Green Corridors: Habitats (UKHAB)

 Charvil Parish Boundary

Priority Habitats

 Coastal and floodplain grazing marsh

 Eutrophic standing waters

 Eutrophic standing waters, Coastal and floodplain grazing marsh

 Lowland calcareous grassland

 Lowland mixed deciduous woodland

 Reedbeds

 Rivers

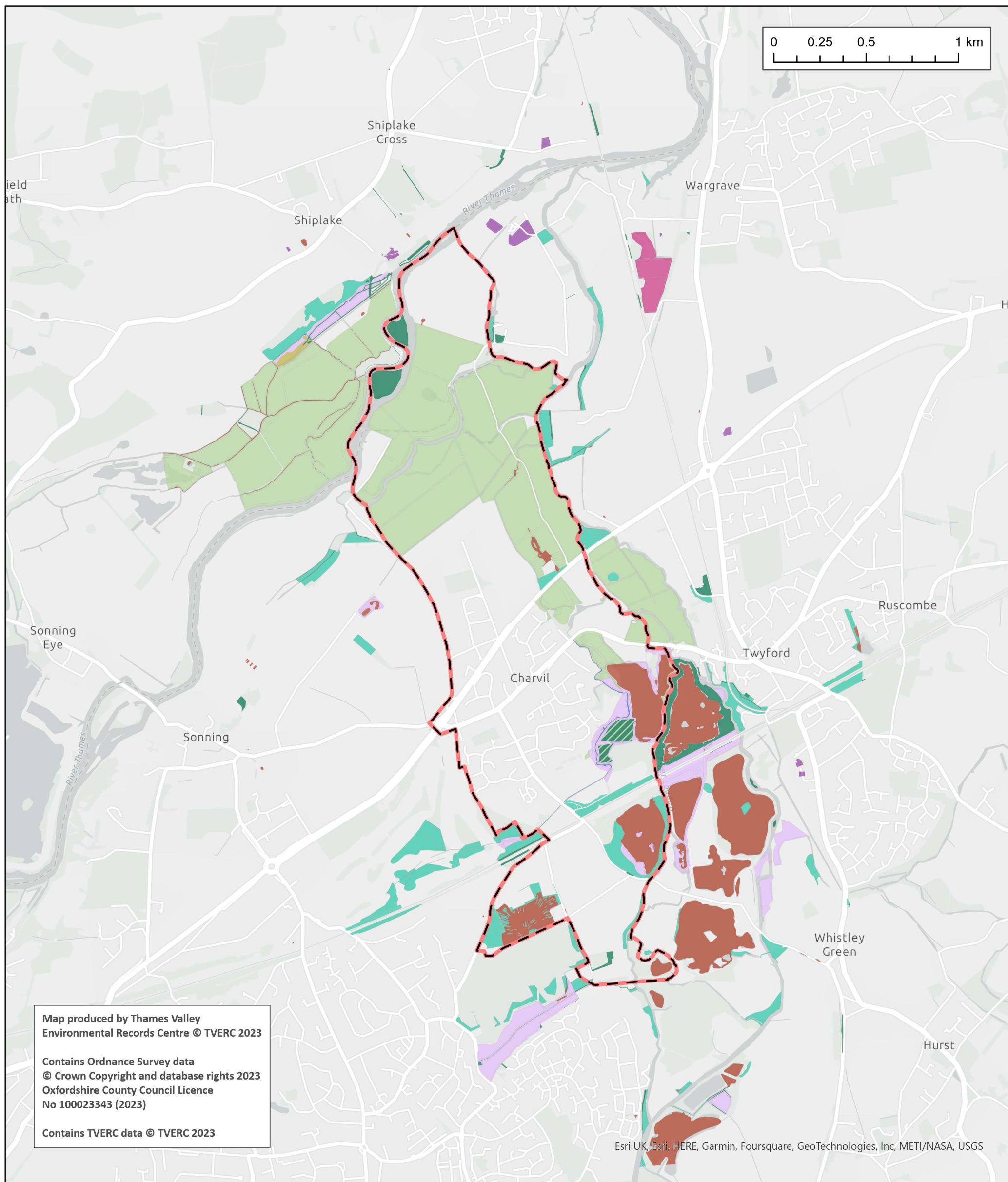
 Traditional orchards

 Wet woodland

 Wet woodland, Coastal and floodplain grazing marsh

 Deciduous woodland (NEPH)

 Deciduous woodland (NEPH), Coastal and floodplain grazing marsh





Charvil Green Corridors: Rights of Way & TPOs

Public Rights of Way

- Bridleway
- Byway open to all traffic
- Footpath
- Footpath with limitations
- Restricted Byway

Charvil Boundary

- Charvil Boundary
- Permissive footpaths

Greenway Routes

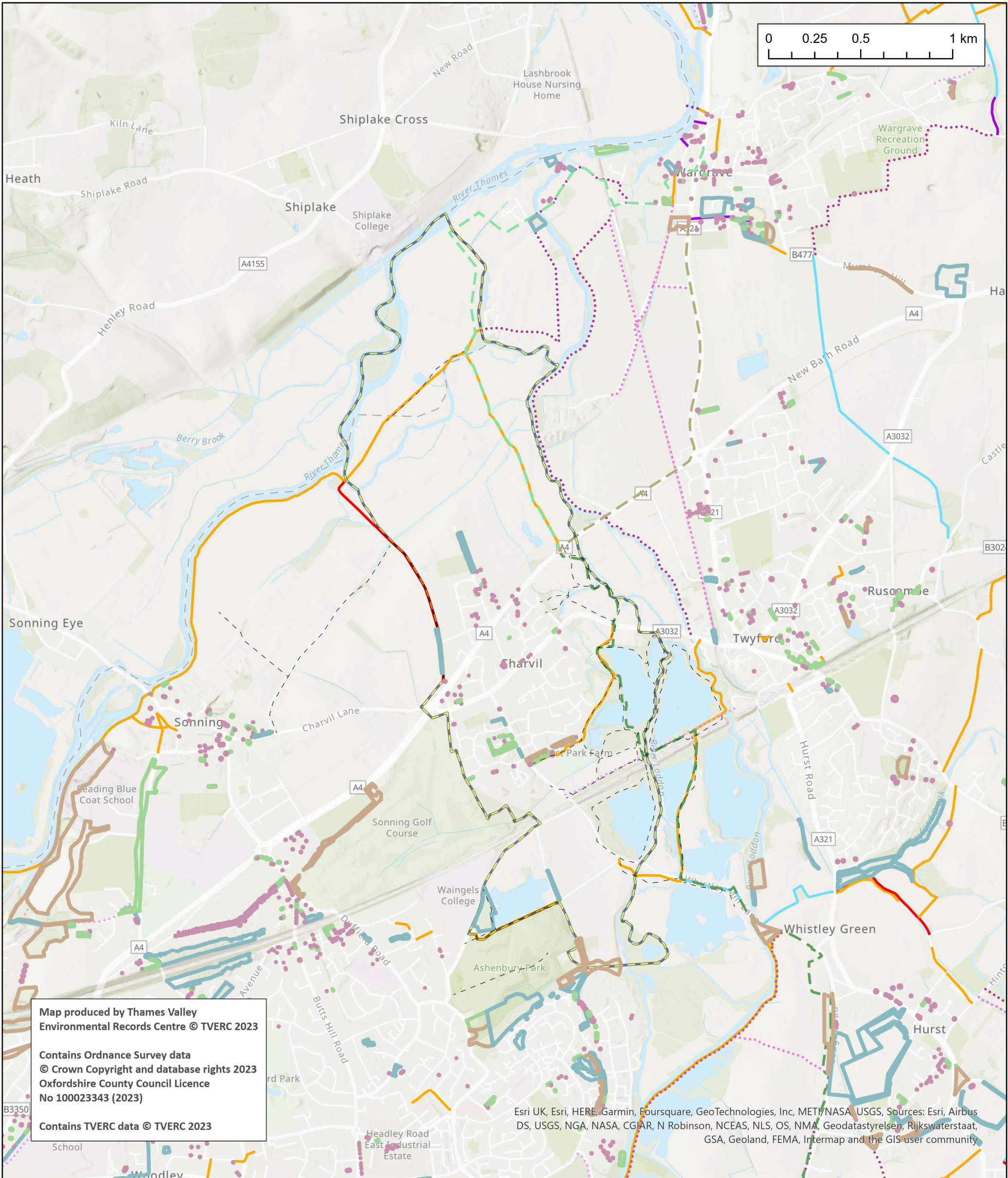
- Loddon Long Distance Path
- Loddon Long Distance Path - Alternate
- Loddon Long Distance Path - Not Consented

Rights of Way Improvement Plan

- New Bridge
- New Bridleway
- New Footpath
- New Footpath or Bridleway
- New Permitted Bridleway

Tree Preservation Orders

- Single
- Group
- Area
- Woodland





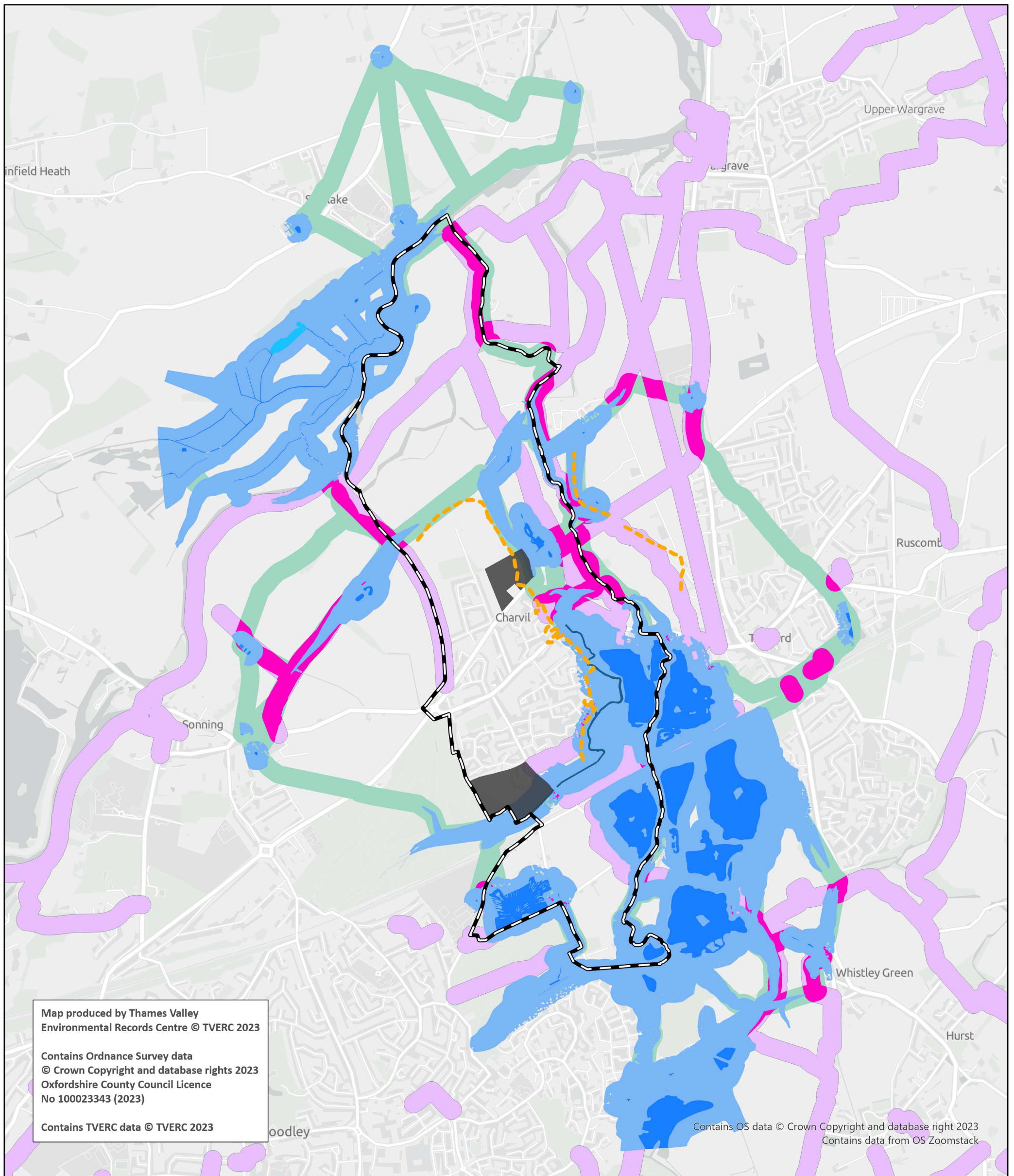
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Charvil Green Corridors: Wetland Connections

Charvil Wetland Priority Habitats

- Eutrophic standing waters
- Eutrophic standing waters, Coastal and floodplain grazing marsh
- Reedbeds
- Rivers
- 2014 flood limit

- Charvil Parish Boundary
- Charvil Allocated Sites
- Potential Wetland Connections
- Existing Wetland Connections
- Access Corridors
- Wetland/Access Corridor overlap





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Charvil Green Corridors: Woodland Corridors

 Charvil Parish Boundary

Charvil Woodland Priority Habitats

 Lowland mixed deciduous woodland

 Wet woodland

 Deciduous woodland (NEPH)

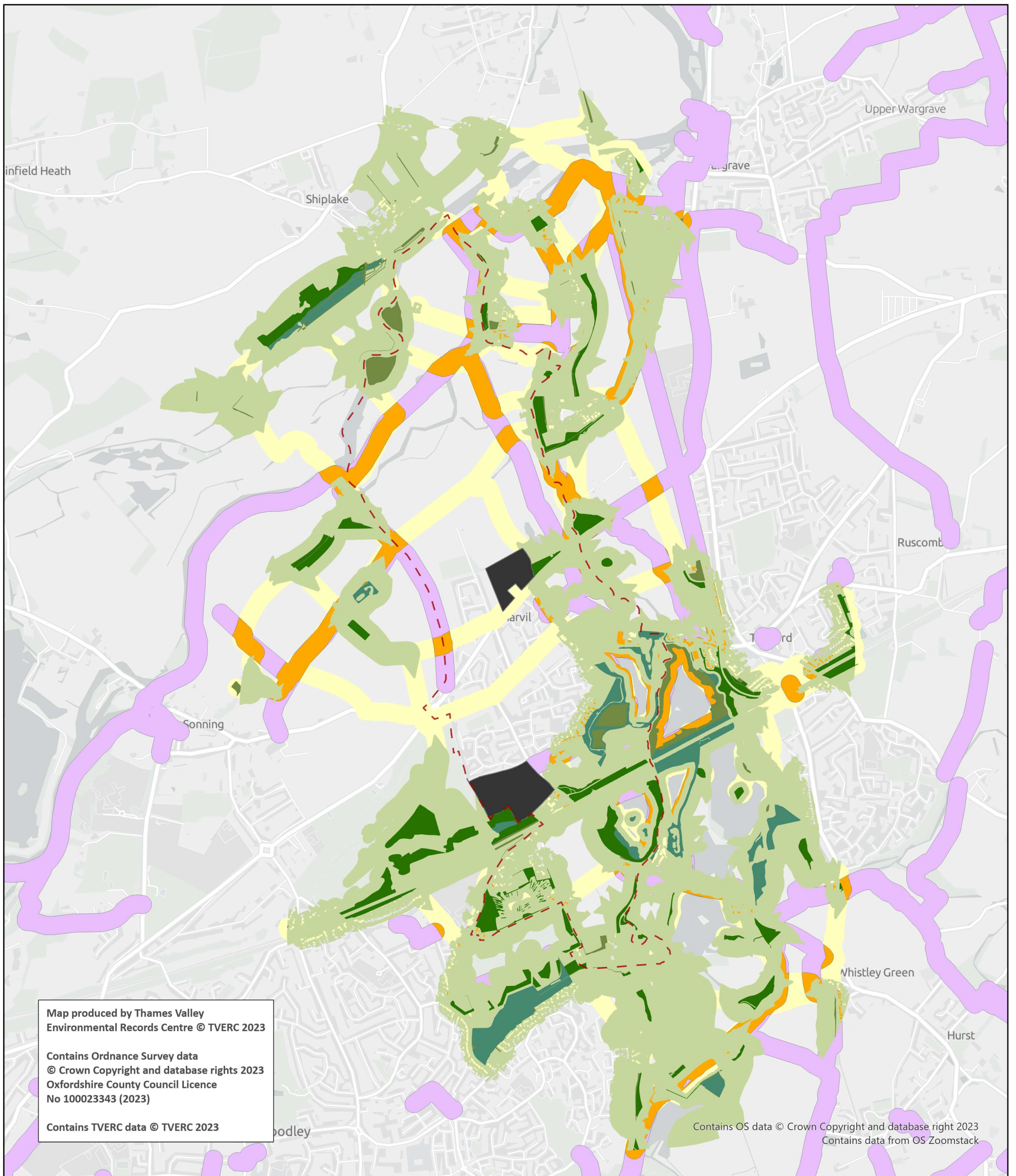
 Charvil Allocated Sites

 Woodland: Existing Connection

 Access Corridors

 Woodland Connection Corridors

 Woodland/Access Corridor Overlap



5. SUMMARY AND RECOMMENDATIONS

Thames Valley Environmental Records Centre (TVERC) has identified a network of green corridors in Charvil to support preparation of a Neighbourhood Plan. These corridors are based on modelled habitat networks and Public Rights of Way and facilitate the movement of wildlife and people through the landscape. There is one main existing woodland and wetland corridor principally running North-South along the eastern boundary of the parish following the Old River arm of the River Lodden. There are also corridors along the northern boundary following the River Thames and St Patrick's Stream. A network of smaller proposed corridors has also been identified. The identification of these green corridors accords with NPPF paragraph 179 in identifying and mapping ecological networks and wildlife corridors.

Charvil Neighbourhood Plan will be examined by a Planning Inspector prior to adoption. TVERC recommends that an appropriate policy is included to support the protection and enhancement of existing green corridors, and the creation of proposed green corridors. Should the inclusion of these green corridors be upheld by the Planning Inspector, it would be helpful if a copy of the agreed final neighbourhood plan is provided to TVERC so that the location of the green corridors can be shared with potential developers and the local planning authority. This will ensure everyone has the knowledge they need to make responsible decisions concerning our environment.

RECOMMENDATIONS FOR FURTHER WORK

TVERC recommend the following work to support green corridors and ecological networks in Charvil:

- Survey and map hedgerows in Charvil. Hedgerows provide important connective habitats for many species, in particular woodland species. Currently hedgerows are not well mapped in Berkshire and knowledge of hedgerow distribution and diversity would greatly improve the understanding of habitat connectivity across the parish.
- Prepare a biodiversity action plan for Charvil. This would highlight the key habitats and other features of importance in the parish and set out steps for protecting and enhancing those assets. This would also serve as a focus for community action, such as practical conservation work or biological recording in the community. It was clear from the workshop that residents of Charvil regularly spot wildlife, so a programme of consistent monitoring and recording to establish baseline data against which population trends can be compared and the success of conservation and mitigation strategies can be measured would be beneficial.

6. ABOUT TVERC

Thames Valley Environmental Records Centre (TVERC) is a 'not for profit' organisation covering Berkshire and Oxfordshire. We are run by a partnership and are one of a national network of local records centres. We are a member of the Association of Local Records Centres (ALERC) and the National Biodiversity Network (NBN). Our funding partners include all the local authorities in Oxfordshire & Berkshire plus the Environment Agency. We also work closely with the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust.

WHAT WE DO

We provide our funding partners with annually updated species and sites information as GIS tables and undertake surveys of local wildlife sites. We also carry out data analysis for the monitoring of local authority Local Plans. We provide information to parish councils, local people, conservation bodies, land-owners, students and commercial organisations such as ecological consultants and utilities companies via data searches, data licensing and data exchanges. We provide other services such as ecological surveys, data analysis & presentation and training.

OUR RECORDS

We hold over 4 million records of flora and fauna in Berkshire and Oxfordshire plus information about Local Wildlife and Geological Sites, NERC Act S41 Habitats of Principal Importance (previously called UK Biodiversity Action Plan (BAP) habitats) and Ecological Networks (Conservation Target Areas and Biodiversity Opportunity Areas). We collect this data from the general public, skilled volunteer /amateur recorders, professionals working for wildlife charities (BBOWT and RSPB), professionals working for government agencies (the Environment Agency & local authorities) and ecological consultants. This information is used:

- by planning authorities and developers to make informed decisions on the design and location of sustainable development
- to help farmers, land-owners and conservation organisations manage land in the best way to enhance biodiversity
- by nature partnerships to direct wildlife conservation work
- by teachers, students and scientists for education and scientific research.

For more information, please visit our website: www.tverc.org

7. APPENDICES

APPENDIX A: INVESTIGATING CONNECTIVITY USING A COST-DISTANCE APPROACH

The approach to modelling connectivity for the Charvil Green Corridors was based on that used for the Berkshire Nature Recovery Network (TVERC 2021). ArcGIS Pro was used for the process.

Habitat connectivity describes the degree to which different patches of the same habitat are connected to each other, either physically or functionally. Maintaining and improving connectivity is one of the key principles identified by the Lawton Review³ that protected sites should be 'more joined up'.

There are a number of different approaches to mapping and modelling habitat networks which can be broadly split into structure-based approaches and species-based approaches⁴. Structure-based approaches investigate the physical connections between habitat patches, whereas species-based approaches investigate the functional connections between habitat patches based on the abilities of species to move between them.

For this study TVERC have taken a species based approach to habitat connectivity. TVERC have used a cost-distance (or least-cost) approach to modelling habitat connectivity, based on the habitat requirements and dispersal abilities of General Focal Species (GFS). These are model species that are representative of a range of species found in a particular habitat. Following the process for previous green corridor projects each habitat was assigned a GFS (General Focus Species) score for Woodland, Grassland and Wetland derived from the primary and secondary UKHAB codes. These figures are also available for heathland, but no heathland habitat was recorded within the 1km buffer area, so this was omitted. GFS scores reflect the ability of a species specialist for the habitat type to live in and move through the whole range of habitats, low values representing suitable habitat and high values unsuitable. Values were adjusted for areas adjacent to field boundaries and linear water features to reflect the increase value of hedgerows and other linear features for wildlife and to make connections along these features score more highly.

³

<http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

⁴ <http://www.snh.gov.uk/docs/B831805.pdf>



The GFS values of the three habitat types were used to produce cost surface layers for each. These map the cost of living in or moving through the whole study area.

A Distance Accumulation process was carried out using the cost surface layers and the following mapped priority habitats:

- Woodland: Lowland mixed deciduous woodland, Wet woodland and Deciduous woodland. Natural England Priority Habitat Index (NEPHI) does not differentiate between different types of broadleaved woodland priority habitat.
- Wetland: Eutrophic Standing Water, Reedbeds, Rivers

Grassland was excluded from this part of the analysis as there was only a single area of Lowland calcareous grassland in the project area and the Coastal & floodplain grazing marsh formed a pretty much contiguous block.

The Cost-Distance approach works by assigning a cost (financial, temporal, energetic etc.) to a surface (e.g. landscape) and calculating the cumulative cost of moving across that surface. For habitat connectivity modelling, the ecological energy cost to a GFS of moving through different habitat types is assigned to a landscape. Table 1 shows how costs are related to habitat suitability. The cost surface can be thought of as the permeability of the landscape to the GFS. For example, roads have a high energetic cost and can represent barriers to many species, whereas woodlands for example have a low energetic cost to woodland GFS.

TABLE 1: HABITAT COST SCORES AND HABITAT SUITABILITY⁵

Cost Score	Habitat suitability	Habitat suitability	Likelihood	Description
1	Optimal	Core habitat	Core habitat	Excellent food, shelter, breeding opportunities
2	Near Optimal	Core habitat	Core habitat	Good food, shelter, breeding opportunities
5	Good	Core habitat	Core habitat	Good food, shelter, breeding opportunities
10	Reasonable	Potential habitat	Occasionally	Reasonable food, shelter, breeding opportunities; may be missing one or more
20	Fairly Poor	Poor habitat	Rarely	Lacking either food, shelter or breeding opportunities
25	Poor	Poor habitat	Rarely	Lacking either food, shelter or breeding opportunities
30	Very Poor	Poor habitat	Rarely	Lacking either food, shelter or breeding opportunities
35	Extremely Poor	Poor habitat	Rarely	Lacking either food, shelter or breeding opportunities
40	Unsuitable	Unsuitable habitat	Very Unlikely	Few food, shelter or breeding opportunities
50	Very Unsuitable	Unsuitable habitat	Very Unlikely	No or little food, shelter or breeding opportunities

To model a functionally connected habitat network a maximum cumulative cost, based on a maximum dispersal distance of the GFS, is used to show habitat patches that are functionally connected in the landscape. Maximum dispersal distances and maximum costs for each GFS are shown in Table 2.

⁵ http://jncc.defra.gov.uk/pdf/BRAG_HabMan_EnglishNatureResearchReport687-Planningforbiodiversity-opportunitymapping&habitatnetworks.pdf

TABLE 2: MAXIMUM COST AND DISPERSAL DISTANCES FOR EACH GENERAL FOCAL SPECIES⁶

General Focal Species	Maximum cost	Dispersal distance
Woodland	1,500	3 km
Grassland	1,000	2 km
Heathland	600	1.2 km
Wetland	500	1 km

Costs were assigned to different habitats for each of the General Focal Species based on the work of Roger Catchpole for Natural England⁶ and adapted by TVERC for use in the Berks NRN project. The main differences to the previous studies were using 9999 for impermeable surfaces (e.g. buildings and hardstanding) and using a standard value (150) for roads, railways and refuse tips. The same score (150) was used for all roads, rather than assigning different scores to different categories of roads (A roads, B roads). This is because we did not have polygon data for different road types.

Following initial testing, where connectors appeared to ignore rivers and lakes for terrestrial connections, the value for these habitats was set to 100 for the non-wetland GFS categories.

Work for the Berkshire NRN report used phase 1 habitats as the basis for GFS scoring. As the 2023 TVERC habitat layer was available in the UKHAB classification categories and work had been done to translate Ordnance Survey MasterMap polygons to UKHAB, this was chosen as the basis for assigning GFS scores. Translation of the scores for phase 1 habitats to UKHAB was carried out, with the values in table 3 used to generate GFS values.

⁶ http://jncc.defra.gov.uk/pdf/BRAG_HabMan_EnglishNatureResearchReport687-Planningforbiodiversity-opportunitymapping&habitatnetworks.pdf

Green Corridors in Charvil

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TABLE 3: GENERAL FOCAL SPECIES SCORES FOR EACH UKHAB CODE

UKHAB primary code	UKHAB description	Woodland GFS score	Grassland GFS score	Wetland GFS score	Heathland GFS score
c	Cropland	50	50	50	50
c1	Arable and horticulture	50	50	50	50
c1a	Arable field margins	50	20	50	50
c1a5	Arable margins sown with tussocky grasses	50	20	50	20
c1a6	Arable margins sown with wild flowers or a pollen and nectar mix	50	20	50	20
c1a8	Game bird mix strips and corners	50	20	50	20
c1b	Temporary grass and clover leys	50	50	50	50
c1c	Cereal crops	50	50	50	50
c1c5	Winter stubble	50	50	50	50
c1d	Non-cereal crops	50	50	50	50
c1d6	Short-rotation coppice	20	20	40	20
c1d7	Vineyards	50	50	50	50
c1e	Intensive orchards	20	20	40	20
c1f	Horticulture	50	50	50	50
f	Wetland	20	5	1	30
f2	Fen marsh and swamp	20	5	1	30
f2a	Lowland fens	20	5	1	30
f2a5	Calcium-rich fen dominated by great fen sedge (H7210)	20	20	1	30
f2a7	Calcium-rich spring water-fed fens; lowland (H7230)	20	5	1	30
f2b	Purple moor grass and rush pastures	20	5	1	30
f2d	Aquatic marginal vegetation	20	20	1	30
f2e	Reedbeds	20	20	1	30
f2f	Other swamps	20	5	1	30
g	Grassland	50	50	50	50
g1	Acid grassland	30	2	20	1
g1a	Lowland dry acid grassland	30	2	20	1
g1a6	Other lowland dry acid grassland	30	2	20	1
g1c	Bracken	20	10	30	20
g1d	Other lowland acid grassland	30	2	20	1
g2	Calcareous grassland	30	2	20	1
g2a	Lowland calcareous grassland	30	2	20	1
g2a5	Dry grasslands and scrub on chalk or limestone; lowland (H6210)	30	2	20	1
g2a6	Dry grasslands and scrub on chalk or limestone; important orchid sites (H6210)	30	2	20	1
g3	Neutral grassland	30	1	30	30
g3a	Lowland meadows	30	1	20	30
g3a5	Lowland hay meadows (H6510)	30	1	20	30
g3c	Other neutral grassland	30	1	30	30
g3c5	Arrhenatherum neutral grassland	30	2	20	30
g3c6	Lolium-Cynosurus neutral grassland	30	2	20	30
g3c8	Holcus-Juncus neutral grassland	30	2	20	30

Green Corridors in Charvil

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UKHAB primary code	UKHAB description	Woodland GFS score	Grassland GFS score	Wetland GFS score	Heathland GFS score
g4	Modified grassland	50	50	50	50
h1a	Lowland Heathland	25	10	5	1
h1a5	Dry heaths; lowland (H4030)	25	10	5	1
h1a7	Wet heathland with cross-leaved heath; lowland (H4010)	25	10	5	1
h1b6	Wet heathland with cross-leaved heath; upland (H4010)	25	10	5	1
h2	Hedgerows	5	20	20	20
h2a	Hedgerow (priority habitat)	5	20	20	20
h2b	Other hedgerows	5	20	20	20
h3	Dense scrub	1	20	30	10
h3a	Blackthorn scrub	1	20	30	10
h3a6	Other blackthorn scrub	1	20	30	10
h3d	Bramble scrub	1	20	30	10
h3e	Gorse scrub	1	20	30	10
h3f	Hawthorn scrub	1	20	30	10
h3h	Mixed scrub	1	20	30	10
r	Rivers and lakes	100	100	20	100
r1	Standing open water and canals	100	100	20	100
r1a	Eutrophic standing waters	100	100	20	100
r1a6	Other eutrophic standing waters	100	100	20	100
r1b	Mesotrophic lakes	100	100	20	100
r1b5	Calcium-rich nutrient-poor lakes lochs and pools (H3140)	100	100	20	100
r1c	Oligotrophic and dystrophic lakes	100	100	20	100
r1e	Canals	100	100	20	100
r2	Rivers and streams	100	100	20	100
r2a	Rivers (priority habitat)	100	100	20	100
r2a5	Rivers with floating vegetation (H3260)	100	100	20	100
r2b	Other rivers and streams	100	100	20	100
s	Sparsely vegetated land	40	20	40	30
s1	Inland rock	40	20	40	30
s1d	Other inland rock and scree	40	20	40	30
u	Urban	30	10	50	30
u1	Built-up areas and gardens	30	10	50	30
u1a	Open Mosaic Habitats on Previously Developed Land	10	10	20	10
u1b	Developed land; sealed surface	150	150	150	150
u1b5	Buildings	9999	9999	9999	9999
u1b6	Other developed land	30	10	50	30
u1c	Artificial unvegetated, unsealed surface	50	50	50	50
u1d	Suburban/ mosaic of developed/ natural surface	30	10	50	30
u1e	Built linear features	150	150	150	150
w	Woodland and forest	1	20	50	35
w1	Broadleaved mixed and yew woodland	1	20	50	35
w1c	Lowland beech and yew woodland	1	20	50	35

Green Corridors in Charvil

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UKHAB primary code	UKHAB description	Woodland GFS score	Grassland GFS score	Wetland GFS score	Heathland GFS score
w1c6	Beech forests on neutral to rich soils (H9130)	1	20	50	35
w1d	Wet woodland	1	20	20	35
w1f	Lowland mixed deciduous woodland	1	20	50	35
w1f7	Other Lowland mixed deciduous woodland	1	20	50	35
w1g	Other woodland; broadleaved	1	20	50	35
w1g6	Line of trees	1	20	50	35
w1g7	Other broadleaved woodland types	1	20	50	35
w1h	Other woodland; mixed	1	20	50	35
w1h5	Other woodland; mixed; mainly broadleaved	1	20	50	35
w1h6	Other woodland; mixed; mainly conifer	1	20	50	35
w2	Coniferous woodland	20	20	40	20
w2c	Other coniferous woodland	1	20	50	20

To account for secondary codes the following additional scores were allocated:

- Grassland with secondary code 120 – Wet: set to 20/5/5/20
- Grassland with secondary codes 10 – scattered scrub, 11 – scattered trees or 21 – Traditional orchard: woodland GFS set to 10

To account for hedgerows and other boundary features mapped as linear features by OS:

- OS linear features described as 'Obstructing features' and outside 'urban' areas buffered by 5m
- Grassland and crop polygons divided by this linear feature buffer
- Areas of grassland and crop polygons now within linear feature buffer had GFS scores for woodland and grassland reduced to 20 if they were higher than this, lower values remained unchanged.

To account for aquatic habitat margins:

- OS linear water features, including ditches and river/lake edges buffered by 5m
- Non-urban and non-water habitats (codes not starting with u or r) divided by linear water feature buffer
- Non-urban and non-water polygons now within linear water feature buffer had GFS scores for woodland reduced to 10, grassland reduced to 20 and wetland to 5 if they were higher than the respective values, lower values remained unchanged



This produced a cost-distance layer showing how connected the whole study area is to the areas of priority habitat for woodland and wetland species.

Areas with a cost-distance value of less than 3000 are considered to be connected to the priority habitat area. For example, this represents up to 3km of suitable habitat, between 60-300m of less suitable habitat, 20m of road/hard standing, less than 1m of buildings or a combination of these. Areas with cost-distance values up to 3000 were extracted and are shown on the corresponding maps.

An Optimal Regions Connection process was run to find the best routes for connecting existing priority habitat woodlands and wetlands. This process helps to identify the routes along which habitat improvements are most likely to help connect the existing areas of priority habitat. It uses the priority habitats and cost-surfaces to produce lines connecting the habitat areas along the least cost routes. Sites allocated for development were excluded from this process, so all routes will avoid them. Connection routes have been buffered by 50m as habitat improvements adjacent to these routes will also be of high importance in connecting existing habitats.

Existing rights of way and routes mapped as proposed for new public access within Wokingham District were buffered by 50m. Routes of permissive paths were available but were largely within the country park or aligned with other routes so it was not felt necessary to include in the process. The buffered ROW network indicates the areas where habitat improvements are most likely to be experienced by residents of and visitors to Charvil and adjacent areas.

An intersection process was carried out between the habitat connection buffer areas and the Rights of Way buffers to show the areas that are likely to be of greatest benefit in terms of both wildlife connectivity and public experience.

APPENDIX B: DATA SOURCES

TVERC habitats database March 2023

Supplementary habitat data from:

Natural England Priority Habitats inventory (November 2023) – [Natural England Open Data Geoportal \(arcgis.com\)](https://naturalengland-open-data-geoportal.arcgis.com) Contains public sector information licensed under the Open Government Licence v3.0.

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Local Wildlife Sites – Berkshire_Local_Wildlife_Sites_March_2023 (TVERC 2023)

Greenway routes & ROW Improvement Plan – Wokingham DC

<https://services.arcgis.com/Uk58AEewwvNNTAX2/arcgis/rest/services/Highways/FeatureServer>

Rights of Way, Tree Protection layers – Wokingham DC

<https://services.arcgis.com/Uk58AEewwvNNTAX2/arcgis/rest/services/Consult/FeatureServer>

Charvil Parish Boundary – taken from OS boundaries (September 2023) -

<https://osdatahub.os.uk/downloads/open/BoundaryLine> - Contains public sector information licensed under the Open Government Licence v3.0.

2014 Flood Limit layer, Permissive Footpaths & Country Park paths supplied through attendees of the consultation meeting.