National Character Area profile:

69: Trent Valley Washlands

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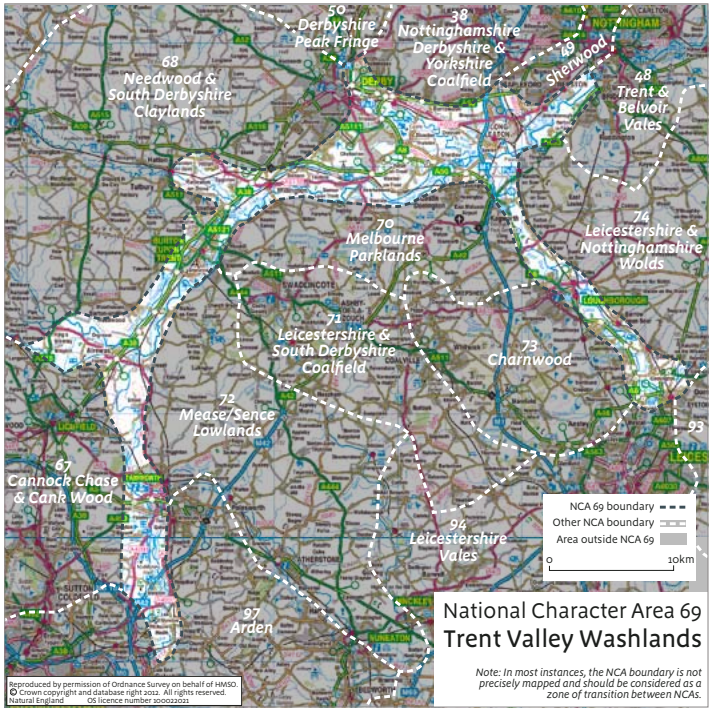
Summary

The Trent Valley Washlands National Character Area (NCA) comprises the river flood plain corridors of the middle reaches of the River Trent's catchment in the heart of England. It is a distinctly narrow, linear and low-lying landscape, often clearly delineated at its edges by higher ground, and it is largely comprised of the flat flood plains and gravel terraces of the rivers.

A washland is described as an area of flood plain that is allowed to flood or is deliberately flooded for flood management purposes.[4] Thus the Trent Valley Washlands are strongly defined by the riverine environment and periodic inundation. The key ecosystem services provided are related to water, its availability and regulation of flow. Thick superficial deposits of alluvium and river terrace gravels dominate the Washlands' geology. Variations in these, the resultant soils and the differences in elevation above and below flood levels have determined both settlement pattern and agricultural land use. Arable crops are by and large located on the freely draining soils of the river terraces and on the higher ground where fields are big and hedgerows are small with few trees. Pastoral farming generally takes place on the river flood plains, where soils are subject to frequent flooding or are naturally wet. Here fields are usually smaller and the hedgerows fuller with more tree cover. Overall woodland cover in the Washlands is very limited, although riparian trees, especially willows, provide an important component of the landscape.

The broad rivers, their riparian vegetation and the semi-natural parts of the flood plain form the main habitats of the Washlands, with flooded former gravel extraction sites introducing new wetland habitat into the area. Characteristic species are those associated with these wetlands such as grey heron, lapwing and kingfisher.

The rivers have attracted humans from the earliest times, especially the gravel terraces and crossing points. Traditional buildings are typically made of red brick with clay plain tile roofs with the occasional survival of some earlier timber-framed structures, while grander dwellings and churches are often built from sandstone.



Click map to enlarge; click again to reduce.

[4] *Working with Natural Processes to Manage Flood and Coastal Erosion Risk*, Environment Agency (2010)

Statements of Environmental Opportunity

SEO 1: Carefully plan and manage new development within the NCA to ensure that landscape character and ecosystem services are strengthened, that heritage features, wildlife habitats, woodland and the hedgerow network are enhanced, and that opportunities for creation of multifunctional green infrastructure are realised so that this landscape is resilient to the forces of change that it is experiencing.

SEO 2: Manage and enhance the Trent Valley Washlands' river and flood plain landscape to combine its essential provision and regulation of water role with landscape enhancement, nature conservation, climate regulation, farming, recreation and a resource for understanding geodiversity.

SEO 3: Protect, manage and enhance the pastoral landscape of the Trent Valley Washlands, seeking to join up and expand areas of pasture and associated attributes and habitats, to preserve heritage features, enhance biodiversity and geodiversity, protect farmland and provide additional recreational opportunities.

SEO 4: Protect and enhance the historic environment of the Trent Valley Washlands and their characteristic historic landscape. Increase awareness of the richness of this resource, protect it from neglect and physical damage, and ensure that future development complements and enhances the sense of history of the NCA.

Pasture with willows in the Trent flood plain near Weston-on-Trent.

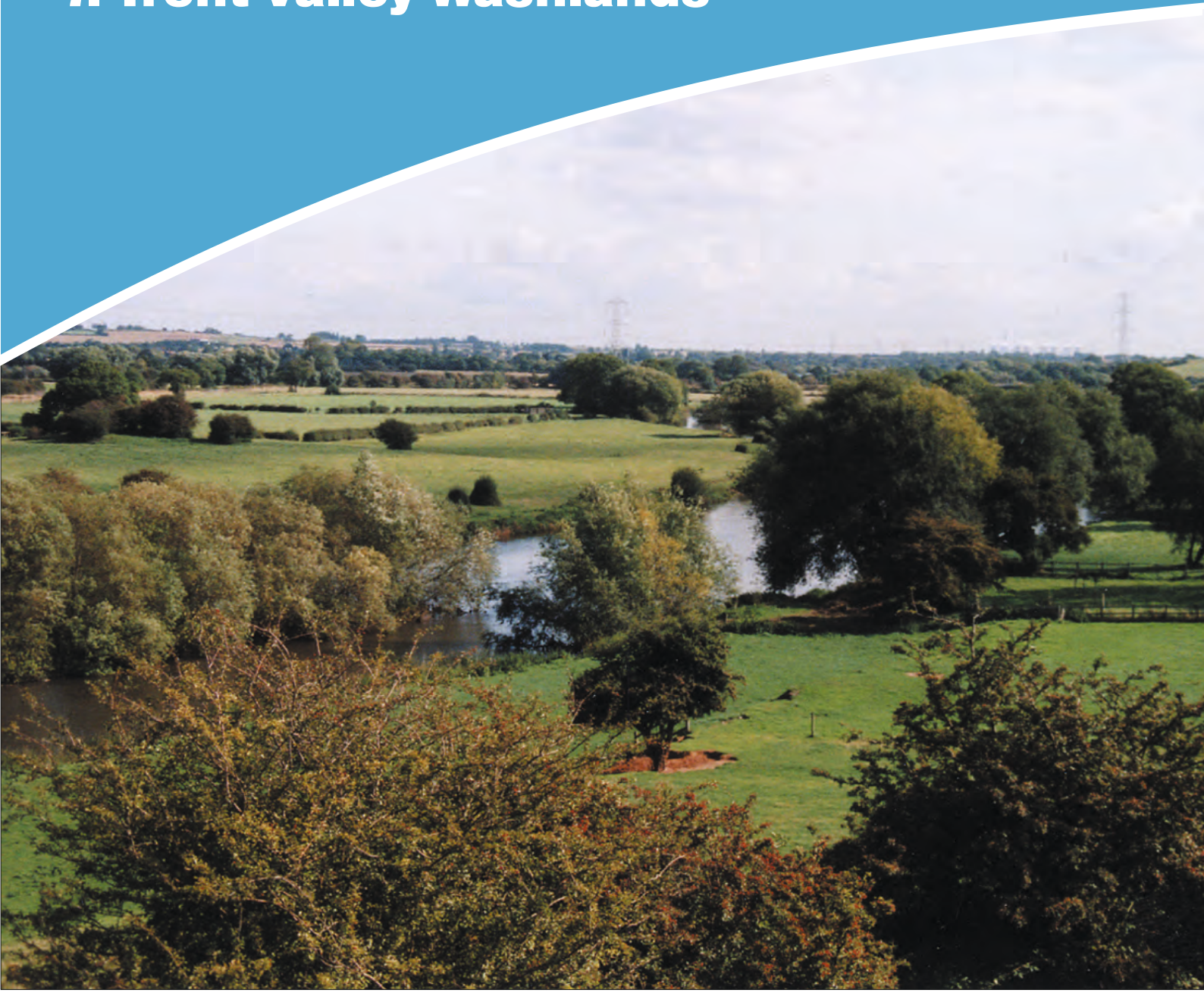
Key characteristics

- Distinctly narrow, linear and low-lying landscape largely comprised of the flat flood plains and gravel terraces of the rivers and defined at its edges by higher ground.
- Geology dominated by superficial alluvium and gravel river terrace deposits underpins the contrast in arable and pastoral agricultural use, arable crops predominating on the free-draining soils of the river terraces, with grassland more commonly located along the alluvial river flood plains where soils are subject to frequent flooding or are naturally wet.
- Flood plain pastoral areas where riverside pastures are subdivided by thick, full hedgerows with some trees contrast with arable areas with larger fields divided by low, small hedgerows with few trees.
- Limited tree cover, but local concentrations give the impression of a well-timbered landscape in many places. Riparian trees, especially willows, provide an important component.
- A landscape strongly defined by its rivers and their flood plains with the extensive canal network adding significantly to the watery character and providing major recreational assets for the area.
- Diverse range of wetland habitats supporting notable species such as spined loach and bullhead fish, otter, water vole, white-clawed crayfish, shoveler, bittern, lapwing, snipe and redshank.
- Rich history of human settlement and activity reflected in the archaeology and historic buildings with a particular focus on river crossing points and the gravel terraces, as well as being significant for early Christianity in the Midlands, and later for its canal and brewing heritage.
- Settlement pattern heavily influenced by flood risk, confining villages to the gravel river terraces and to rising ground at the edges of the flood plains. Traditional buildings are characteristically of red brick and clay plain tile with earlier timber frame and grander dwellings and churches typically built from sandstone. Red brick and Welsh slate of 19th- and early 20th-century urban expansion prominent in larger settlements along with modern housing and development.
- A landscape heavily used as transport and communication corridors along the rivers and canals, for major roads and railways, and for power lines.
- A landscape marked by extensive sand and gravel extraction, power stations and prominent urban-edge industrial and commercial development.

The Soar Valley diplaying some of the key characterisitics of the Washlands.

Part One: Landscape Character Descriptions

7. Trent Valley Washlands



Landscape Character Types

- Lowland Village Farmlands 7.4
- Wet Pasture Meadows 7.9
- Riverside Meadows 7.13

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Trent Valley Washlands

LANDSCAPE TYPE: LOWLAND VILLAGE FARMLANDS

This is a large scale, open, gently rolling lowland landscape associated with the lower slopes and terraces of broad flood plains. A mixed farming landscape defined by medium to large regular fields with thorn hedges, punctuated by villages.

Key Characteristics

- Gently rolling, almost flat, lowland with river terraces
- Low slopes and summits give a sense of elevation over a broad flood plain
- Mixed farming with arable cropping and improved pasture
- Thinly scattered hedgerow trees including some willow pollards
- Scattered, locally dense, watercourse trees
- Medium to large regular fields with thorn hedgerows
- Discrete red brick villages with farms and cottages
- Large red brick outlying farms

Geology and Landform

The underlying geology comprises alternating bands of Permo-Triassic Mudstones and Siltstones. Within the Trent Valley, the bedrock has been overlain with a variety of fluvioglacial drifts, river terrace deposits and alluvium.

Soils and Land-Use

The soils are variable, relating to the underlying geology and drift material. Soils developed from the fluvial drift and river terrace deposits are deep and permeable. They are variably affected by ground water which supports short-term grassland and cereals. Other soil types are slowly permeable and seasonally waterlogged comprising of reddish, fine loamy clays and other clay soils derived from Permo-Triassic Mudstone and alluvium. These support winter cereals, short-term grassland, dairy and stock rearing. Fields respond well to under-drainage but the less permeable soils can suffer from cattle poaching and a limited autumn season for sowing crops.

The traditional land-use is mixed farming with arable crops and improved pasture, reflecting the variation in the underlying soils. Grassland is now restricted to the areas of heaviest soils and smaller field parcels associated with the villages. The presence of fluvioglacial and river gravels has led to localised quarrying.

Ecology

With a long tradition of mixed farming with intensive cropping, this landscape is ecologically poor. Terrestrial corridors, in the form of hedgerows, streams and ditches persist but these are becoming poorer owing to neglect, drainage schemes and further agricultural intensification.

Developing habitat at Willington

Canals and standing open water provide additional habitat opportunities for wetland flora and fauna, such as those found at the Hilton Gravel Pits SSSI. Further gravel extraction is providing opportunities for increasing wetland habitats but there are constraints due to issues such as the proximity to East Midlands Airport, flood flows and availability of suitable fill.

Tree Cover

Tree cover is variable throughout this landscape character type, although it is rarely visually prominent. Sparsely scattered hedgerow trees are locally prominent where the fields are smaller, particularly in association with villages. Hedgerow trees are generally a mix of oak and ash with some willow. Many of the willows have been pollarded and form visually distinctive features. There are scattered, locally dense trees along watercourses; predominantly alder with some willow. There are localised parkland trees and avenues around Elvaston Park, and small amenity tree groups are found adjacent to scattered farmsteads. In areas of former common, tree cover is very sparse.

Woodland is largely absent from this landscape, or occurs as small, sparsely scattered blocks. There are some small estate woodlands in the proximity of Elvaston.

Enclosure

The enclosure pattern is an important characteristic in defining the scale of this landscape type. Hedgerows, predominantly hawthorn, enclose medium to large semi-regular and regular fields. In areas of former common, as at Etwall Common and around Hilton, the regular field pattern is particularly prominent. In areas of earliest enclosure, immediately surrounding settlements, hedgerows tend to be more mixed in composition and fields tend to be smaller and more sub-regular. Some of these smaller fields have patches of ridge and furrow, indicative of earlier medieval field systems. Many hedgerows are now poorly managed being over-flailed and becoming gappy. Some hedgerows have been lost to agricultural intensification.

Transport

Country lanes are few and most are organic in character with irregular width verges. These lanes connect the villages and scattered farmsteads, and connect with crossing points in the Trent Valley. There are also lanes running parallel to the flood plain taking advantage of the slight elevation to avoid the risk of flooding.

The importance of this landscape as a transport corridor is still evident, with the expansion and construction of roads like the A50 and A52, both forming important east-west connections. These are busy routes and form a prominent visual intrusion in the landscape. Modern roads have also impacted on the character of the traditional lanes, many of which have been widened to pass over new roads or been truncated by them

The Trent and Mersey Canal was once a major industrial transport route. It now caters mainly for recreational water traffic crossing the area from south-east of Egginton eastwards to Swarkestone.

Built Environment

Settlements are generally nucleated and some are much extended. Early settlement in the flood plain was constrained by both flooding of the valley bottoms and by heavy clays. As a result, settlements are located on the gentle slopes and gravel river terraces, immediately off the flood plain, where drainage is better. In fact, the gravel terraces were settled and utilised from early prehistoric times, particularly from the Neolithic onwards.

Villages are compact, with cottages and farms built in the vernacular style of red brick with Staffordshire blue clay tile roofs.

Aston-on-Trent

Between the villages there are sparsely scattered farmsteads, again built in red brick. Adjacent to former commons there are small collections of wayside cottages.

A significant feature within this landscape is Elvaston Castle with its formal grounds and estate plantations.

The combination of proximity to Derby and Nottingham, and location on good transport corridors, has led to the rapid expansion of many villages, particularly noticeable at Hatton, Hilton, Borrowash and Breaston. Today the urban fringes are characterised by large modern housing estates.

Other impacts in this landscape relate to power stations like that at Willington with its extensive plant, pylons and overhead power lines. There have also been major changes to landscape character as a result of large scale mineral extraction.

Summary

The soft rocks of Permo-Triassic Mudstones and Siltstones with drift deposits have weathered away to form a very subdued, gently rolling lowland landscape that has strongly influenced the cultural patterns of the landscape. Soils reflect the geological variation, with heavy seasonally waterlogged soils over mudstone, and more permeable soils over localised drift and river terrace deposits. The resultant land-use is typically mixed, with cropping on the flatter, more cultivable, soils and improved pasture in damper areas.

A key feature of this landscape is its nucleated settlement pattern. Villages like Hatton and Weston-on-Trent are located on relatively high spots or better drained land immediately off the flood plain, in order to reduce the risk of flooding. The enclosure pattern reflects a diverse history. Immediately adjacent to the villages, fields are medium size, semi-regular, with areas of ridge and furrow reflecting the enclosure of medieval open fields. The hedges that enclose these fields are species-rich. Beyond the villages there is a more regular pattern of fields suggesting a period of later enclosure and typically, the hedgerows are single species hawthorn. The more regular fields are most obvious in areas of former common like Etwall Common and Egginton Common.

Villages are traditionally compact with cottages and farmsteads built in the local material of red brick with Staffordshire blue clay tile roofs. Some of these settlements like Hatton, Hilton, Breaston and Borrowash have undergone rapid expansion with the construction of new housing estates to serve the city of Derby.

Much of the original character of this landscape has been seriously impacted upon by modern large scale development. Large power stations dominate views across the landscape as do the many pylons carrying the resultant electricity. The gentle topography above the flood plain has always been attractive for road construction and modern roads, like the A50 and A52, pass through this landscape. The underlying mineral deposits have resulted in sand and gravel extraction, and the restoration of these sites has created areas of immature agricultural land and large water bodies.

Planting and Management Guidelines

Open, mixed farming landscape with thinly scattered plantations and hedgerow trees.

Primary woodland character:	Thinly scattered small plantations
Primary tree character:	Thinly scattered hedgerow trees
Woodland vision:	Widespread interconnecting woodland
Tree vision:	Thinly scattered hedgerow trees

Typical woodland size range:	0.5 - 10ha	small
Woodland pattern:	Regular plantations	

- Ensure the use of indigenous tree and shrub species, including a proportion of large, long-lived species.
- Conserve and enhance the tree groups that occur within and around rural settlements and isolated farmsteads.
- Encourage the continuing practice of pollarding to maintain the traditional riparian character of the landscape.
- Ensure new woodland does not conflict with features (e.g. ridge and furrow) that help to define landscape character.

Note
This guidance may be subject to variation following the emergence of the Trent Valley Vision and Strategy.

Woodland Species Mix

Neutral/ Base-Rich Soils

Primary Tree Species 50%

Fraxinus excelsior	Ash
Quercus robur	Pedunculate Oak

Secondary Tree Species 20%

Major

Acer campestre	Field Maple
Ilex aquifolium	Holly

Minor

Malus sylvestris	Crab Apple
Populus tremula	Aspen
Sorbus aucuparia	Rowan
Tilia cordata	Small Leaved Lime

Shrubs 10-30%

Major

Corylus avellana	Hazel
Crataegus monogyna	Hawthorn

Minor

Prunus spinosa	Blackthorn
Rhamnus cathartica	Purging Buckthorn
Salix cinerea	Grey Willow

Open space 0-20%

Waterlogged Conditions on all soil types

Primary Tree Species 50%

† *Alnus glutinosa*	Alder
† *Salix fragilis*	Crack Willow

Secondary Tree Species 20%

Major

Betula pubescens	Downy Birch
Fraxinus excelsior	Ash

Minor

* *Populus nigra ssp. betulifolia*	Black Poplar
Quercus robur	Pedunculate Oak
Salix caprea	Goat Willow

Shrubs 10-30%

Major

Salix cinerea	Grey Willow
Sambucus nigra	Elder
Salix aurita	Eared Willow

Minor

Crataegus monogyna	Hawthorn
Frangula alnus	Alder Buckthorn
Rhamnus cathartica	Purging Buckthorn
Salix viminalis	Osier
Viburnum opulus	Guelder Rose

Open space 0-20%

† **Watercourse Trees** - tree species most appropriate for planting as watercourse trees.

* Plant only **native** Black Poplar (sub species betulifolia). Contact Derbyshire Wildlife Trust for more information.

Hedgerow Species Mix

Suitable hedgerow plants

Primary 70-75%

Crataegus monogyna	Hawthorn

Secondary 25-30%

Acer campestre	Field Maple
Corylus avellana	Hazel
Ilex aquifolium	Holly
Prunus spinosa	Blackthorn

Occasional 0-5%

Rhamnus cathartica	Purging Buckthorn

Suitable hedgerow trees

Primary 95-100%

Fraxinus excelsior	Ash
Quercus robur	Pedunculate Oak

Secondary 25-30%

Acer campestre	Field Maple
Tilia cordata	Small Leaved Lime

Occasional 0-5%*

Malus sylvestris	Crab Apple
Populus tremula	Aspen
Sorbus aucuparia	Rowan

* only to be used if occurring locally within the landscape character type