Conservation Plan for Teme Bridge, Tenbury Wells, Worcestershire and Shropshire

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# **Conservation Plan for Teme Bridge, Tenbury Wells, Worcestershire and Shropshire**

## Tom Rogers and Shona Robson-Glyde

## 1. Introduction

#### 1.1 **Circumstances of the Conservation Plan**

The Highways and Contracts and Programme Unit of Worcestershire County Council intend to carry out repairs and structural changes to Teme Bridge at Tenbury Wells. The bridge spans the River Teme between Tenbury Wells and Burford and carries the A4112 across the River Teme. The bridge is a listed building and Scheduled Monument (Worcestershire 332). English Heritage were consulted and a brief detailing the requirement for a Conservation Plan was prepared by Anthony Fleming, Inspector of Ancient Monuments in order to inform both the design of the proposed infrastructural works and future measures which might affect the bridge (EH 2011).

A project proposal (HEAS 2011) was prepared and this document conforms both to the brief and to the proposal.

#### 1.2 Scope of Plan

The plan considers the Teme Bridge which spans the River Teme between Tenbury Wells in Worcestershire and Burford in Shropshire and is divided between the two counties. The National Grid reference is 359553, 268590. The study includes a causeway on the southern side of the bridge.



#### 1.3 Authorship

The principal authors of the Conservation plan were Tom Rogers

Plate 1: Tenbury Bridge, July 2011, from the south west

and Shona Robson-Glyde. The project manager responsible for the quality of the project was Simon Woodiwiss and further specialist input was provided by Hal Dalwood.

## 1.4 **Relationship with any other relevant plans**

Tenbury Wells was included in an Extensive Urban Survey, undertaken as part of the Central Marches Historic Towns Survey (Dalwood 1996).

No other plans specific to the historic interest of the bridge have been uncovered in the course of research.

#### 1.5 Who has been consulted on plan

Stakeholders in the bridge are judged to be the residents of Tenbury, other drivers and pedestrians using the bridge as a through route, visitors to Tenbury including tourists, and authorities who have an influence upon its future either through the planning process or by statutory regulation. A standard email and letter were sent to the following bodies, outlining the scope and aims of the project and requesting the type of feedback required:

- Worcestershire County Council Historic Environment Planning Officer
- Worcestershire Historic Environment Service

- Shropshire Council Conservation Officer
- Shropshire Council Historic Environment Officer
- Malvern Hills District Council Conservation Officer
- Tenbury and Burford Civic Society
- Tenbury Historical Society
- Tenbury Town Council
- Tenbury Museum
- Heart of England Tourism
- Ed Wilson, Senior Archaeologist, The Environment Agency

Replies were received from Mike Glyde (Worcestershire County Council Historic Environment Planning Officer), Victoria Bryant (on behalf of the Worcestershire County Council Historic Environment Record), Nicky Wardroper (Conservation Officer, Malvern Hills DC), Dawn Worgan (Town Clerk, Tenbury Wells Town Council) and Fran and Alan Eachus (Tenbury and Burford Civic Society). Telephone conversations were held with Peter Bevis (Tenbury Historical Society) and Val Swanwick (Tenbury Museum).

A further email was sent out inviting stakeholders to attend a meeting at Tenbury Town Council Offices in the Victorian Pump Rooms on 8<sup>th</sup> August 2011 to discuss their views on the values of the bridge. This meeting was attended by Alan Eachus (Tenbury and Burford Civic Society) as well as Mark Willis and Mary Drummond, both town councillors. Two further town councillors, Stephen Bowkett and George Smith contributed by email.

The results of this feedback are incorporated into the Section 3 of this report.

#### 1.6 When and by whom plan adopted

**This is a draft report.** It is intended that the plan, when complete, will be adopted by The Highways and Contracts and Programme Unit of Worcestershire County Council.

## 2. **Understanding the site**

## 2.1 Brief history of Tenbury Wells and Burford

The earliest feature in the vicinity of Tenbury Wells is an earthwork mound known as 'Castle Tump' This feature, a Scheduled Ancient Monument (SAM 1008392), lies in a pasture field to the north of the town, on the Shropshire side of the river. Despite the name, there is disagreement in historical sources as to whether it represents a castle motte or a prehistoric barrow (Roberts 1983, 9). The only other evidence for the pre-Conquest period is a carved late Saxon cross shaft in the church but the provenance of this is not known (Roberts, 1983, 12).

Tenbury is first described in Domesday Book when it was held by Osbern Fitz Richard, the lord of Richard's Castle in Herefordshire (VCH Worc 4 364). The earliest recorded forms of the placename Tenbury are *Temedebyrig* and *Tamedeberie* meaning the burh (defended settlement) by the Teme (Mawer and Stenton 1927, 83). An early reference in an 11<sup>th</sup> century charter to a 'port street' may indicate there was a market at this time (Dalwood 1996, 2).

The manor of Tenbury was held by the Clifford family from the early 13<sup>th</sup> century (VCH Worc 4, 365-6) and in 1248, Henry III granted Roger Clifford a weekly market on Tuesdays and a yearly fair on the vigil and feast of the Translation of St Thomas the Martyr (7 July). A triangular market place remains at the top of Church Street. It has been suggested that at this time settlement centred upon the Market Place and Church Street. This was the main thoroughfare, at the northern end of which was an early river crossing, probably a ford (WSM 05314, Roberts 1983, 22).

In 1305 a grant of 'pontage' for five years to Robert Clifford allowed him to build a bridge and extract tolls (Dalwood 1996, 2). Sir Thomas Clifford was in possession of seven burgages in Tenbury in 1454–5, and fifteen burgages in the town are mentioned in a suit of 1566. It is certain that at this period Tenbury had legal status as a borough. Teme Street lies to the east of the earlier settlement and is characterised by regular tenement plots. It is thought that the street was a planned addition to the original settlement, and was planned with Teme Bridge at one end replacing the original crossing point (*ibid*). Evidence for this survives in the name of the park immediately east of the street, The Burgage.

There is evidence that the economic fortunes of the town declined in the 17<sup>th</sup> century. In 1615 a petition was made in the Quarter Sessions that the surrounding parishes contribute to the repair of the bridge after damage from a flood (Wayland Joyce, 1931, 118) and in 1635 a grant was obtained for two new fairs, because the original fair was 'allmost obscurde and forgotten' (VCH Worc 4, 364).

In 1770 the nave of the church was largely washed away and there were further major floods in 1794, 1851, 1886, 1901, 1924 (Wayland Joyce, 1934, 121) and most recently in 2007.

The Leominster to Mamble canal reached Leominster in 1795. Originally designed to stretch to Stourport, this section was never completed and instead it survived only until 1858 taking coal from the Wyre Forest coalfield into Herefordshire. The wharf to serve Tenbury Wells was on the Burford side of the river.

Tenbury Union Workhouse (WSM40247) was built at the northern end of Teme Street, adjacent to the bridge in 1837. In 1937 the building was converted to house the Tenbury Rural District Council offices and fire station and later the town council but is now derelict.

In 1839, Septimus H Godson uncovered a spring while searching for a drinking water supply in the gardens of The Court (WSM 15711), a large moated brick house which stood at the southern end of Teme Street until the 1960s, Analysis showed the water to contain iodine, which was regarded as medicinal. A second well was dug and in 1862 an elaborate sheet iron Pump House was built (WSM 03394) and opened as a spa. It was at this time that the town adopted the name Tenbury Wells. The spa was not a successful enterprise and it was closed by 1900 although opened briefly again in 1911 with the addition of a steam engine and bottling plant (MHDC 2008, 11).

In 1861 the railway line from Wooferton to Bewdley was opened and Tenbury had a station on the Shropshire side of the river at Burford. It was built partly on the former Leominster to Mamble canal bed. The line operated until it closed to passenger traffic in 1961 and completely in 1963 (Shrops HER 05093).

Tenbury Wells remains a small market town. The town is still subject to flooding and most recent development has been on the Burford side of the river. Burford is still largely reliant on Tenbury Wells for most commerce and infrastructure, although the hospital is on the Shropshire side.

#### 2.2 Main historical building phases of Teme Bridge

Unless otherwise stated, all the primary documents referred to in the following sections are held at Shropshire Archives under the reference SR 143, DP 180 1-2.

## 2.2.1 **14<sup>th</sup> to 16<sup>th</sup> centuries**

The first known documentary evidence for the existence of a bridge at Tenbury is a 1305 grant of pontage to Roger Clifford which gave him the right to build a bridge and extract tolls (Dalwood 1996, 2). Little is known of the form of this bridge but it is likely to have been built to align with the newly laid-out Teme Street.

John Leland visited the town in 1539 as part of his tour of northern counties from which his itinerary was compiled. He describes Tenbury as a market town on the right bank of the Teme with a stone bridge of two arches over the river (Chandler 1993, 387).

Before 1931, the county boundary between Shropshire and Worcestershire, which currently runs along the centre of the Teme, performed a wide loop around the Castle Tump in the meadow on the north side of the river (Ordnance Survey 1904, Fig. 4). This has been suggested as the former route of the River Teme (Roberts 1983, 7), followed by the county boundary. This interpretation would appear to have been verified by the existence of earthworks in the same area. However, the earthworks are more likely to be the remains of the boundary of the castle, built within a meander loop of the river. Hayes (2007) records that the river broke through the loop in a flood of 1580, although the article does not state where this event is documented and cannot therefore be verified. However it is possible that the three southern arches of the bridge were rebuilt or at least repaired at this time, with simple sandstone semi-circular arches.

#### 2.2.2 **17<sup>th</sup> and 18<sup>th</sup> centuries**

A flood in 1614 damaged the bridge and (as mentioned in Section 2.1 above) the strain its repair put upon the local populace is demonstrated by a note at the Worcester Quarter Sessions in 1615 which records (quoted from Wayland Joyce, 1931, 118):

'Whereas right worshipfulls by the great and sudden floud of waters happeninge in or about the midest of March last past by forces whereof it hath overthrowne and driven downe part of a greate stonne Bridge and the most part of a wooden Bridge standinge uppon arches of stone over the River Teame in Teamburie afforsaid beinge a Market Towne and great Thoroughfare leading From the most places of Walles to the Cytie of London the charge for reedifieing wille be soe greate that your poore peticioners are not able to sustaine as by the sight and Judgement of Massons and Carpenters we are given to understand for that they assure us the xxx li will not amende and repaier the same againe.'

The note goes on to suggest that the neighbouring parishes should contribute to the suggested repairs and that furthermore both bridges required repair. Clearly two bridges were in use at the time, one stone and another wooden, standing on stone piers (in a typical medieval form).



Plate 2: Engraving of Teme Bridge, from the north reproduced from Nash's History of Worcestershire, 1791

It is not evident where the wooden bridge is located, but it is possible that the original crossing point at the top of Church Street remained as a ford with a wooden footbridge (Dalwood, pers comm).

In 1986, several large timbers were rescued from the Teme about two miles downstream of Tenbury. These were taken to Avoncroft Museum of buildings at Bromsgrove and were dendrochronologically dated (Hayes 2007, 66). The growth period had begun in 1371 and the

felling was between 1590 and 1595. It is likely that this was the wooden bridge referred to in the 1615 petition as being swept away in a flood, in which case it would have been 20-25 years old at the time.

Wayland Joyce (1931) records that the Shropshire half of the Teme Bridge was swept away by a great flood of 1770. This was the same flood which ruined the nave of the church although the documentary source for this event is not stated. It is likely that it was in response to this flood that the ribbed arches on the Shropshire side were built to replace the earlier structure.

In Nash's History of Worcestershire (published 1791), he recorded a stone bridge of six arches standing and included an engraving of the bridge from the Shropshire side. This is the earliest known depiction, and shows a narrow bridge with a stone or brick parapet and six sharply projecting buttresses, from one of which three smallish trees are growing (Plate 2). The engraving also depicts the town stocks against the parapet on the Shropshire side.

#### 2.2.3 **1810-1820**

In 1810 the inhabitants of Worcestershire and Shropshire were indicted by the inhabitants of Tenbury for non-repair of Teme Bridge. In 1810 there was a fatal accident on the bridge and a copy of the presentment was furnished to the local coroner to enable him to report to the Sessions on the narrowness of the bridge.

Thomas Telford, then County Surveyor for Shropshire, was employed to survey the bridge. He travelled to Tenbury from Ellesmere to carry out the assessment in April 1812. The survey was detailed and included a good description of the bridge as it stood. He described the bridge very much as depicted in Nash's engraving, with piers, abutments, and arches of stone and brick parapets and even mentions trees growing from the arches. He recorded that on the easternmost side the width of the roadway was 12 feet between the parapets, whilst on the Tenbury side it was only 9 feet 10 inches. Telford also noted that the river had changed its course. He suggested that the bridge, being at the extremities of two counties, had not received the attention it deserved which was evident from accidents resulting in deaths and the state of the foundations. He prepared two estimates: one for repairing the bridge at the same width and another for widening the roadway by 5 feet 4 inches and other improvements.

In 1813 the Worcester Quarter Sessions produced an order for the repair and widening of the bridge. On several occasions advertisements for the tender for the work were put into local newspapers. Only one estimate was received from Mr Simpson, a builder from Shrewsbury the sum being £1,543. The specification for the work, prepared by Telford in 1812, was detailed and included all the repairs he had detailed as well as the widening of the roadway. The width of the road was expanded by the use of iron ribs 18 inches wide and secured in place by cast iron cross ties. The brick parapets were rebuilt, a 'strong pavement with a side curbing' of 2 feet 8 inches was added and iron railings along each side for protection.

Simpson was accepted as contractor and carried out the works between 1814 and 1815. The repaired bridge was inspected by magistrates in April 1815 and found to be satisfactory. The total cost (including extras) was £1,781 of which the County of Worcester paid two thirds amounting to £1,187 and Shropshire one third at £594.

Telford's plans of the bridge are reputed to have hung in the former Malvern District Council offices in the former workhouse, but it is not now known whether they survive.

Willis-Bund (1912) noted that in 1813, a petition was made by the hundred of Doddintree that the bridge should be made a county rather than a hundred bridge. He recorded that the hundred of Doddintree, alone amongst the Worcestershire Hundreds, was liable for its own bridges until an Act of Parliament of 1905. This liability dated from a time when the inhabitants of the hundred were obliged to destroy their bridges during raids from the Welsh.

#### 2.2.4 **1824-46**

In 1824 it is recorded that the surface of the bridge was repaired using 22 tons of stone and the cost shared between the two counties. The road on the Shropshire side was again repaired in 1837-8 and both sides of the bridge were repaired in 1846.

#### 2.2.5 **1868**

In 1868 a memorial was presented to the Justices of the Peace for the Counties of Salop (Shropshire) and Worcester from the inhabitants of Tenbury parish, drawing attention to the state of the bridge. This was as follows:-

#### To her Majesty's Justices of the Pease for the Counties of Salop and Worcester

We the undersigned inhabitants of the parish of Tenbury and its neighbourhood beg to draw your attention to the state of the bridge over the River Teme at Tenbury.

The bridge is situate on the entrance of the Town, to which it is the only approach from the railway station as well as from the Turnpike Roads leading from the towns of Worcester, Ludlow and Cleobury Mortimer and from a large number of parishes whose inhabitants frequent the Market of Tenbury and the railway station there.

That in consequence of the opening of the Tenbury and Tenbury and Bewdley railways the traffic over the bridge has during the last three years very greatly increased.

That the bridge as at present constructed is so narrow that two conveyances cannot pass each other on any part of it and much inconvenience constantly arises from stoppages upon it and accidents frequently occur from the same cause.

That your memorialists have reason to believe that only a very moderate amount of outlay would be required to widen the bridge to such an extent as to afford the necessary facilities for the speedy and safe transmission of the traffic.

Your memorialists therefore trust that under the circumstances stated this manner may at once be taken into your consideration and that the necessary orders be given for the widening of the bridge and that thus the danger and inconvenience now so universally complained may be henceforth avoided.

At the Worcestershire Easter Quarter Sessions of the same year, it was recommended that, following the recommendations of the County Surveyor, the bridge should be widened to 21 feet wide by adding a further 6 feet to each of the piers although it was noted that the County of Shropshire would require a voluntary contribution from the inhabitants of Tenbury to cover their third of the costs.

Accordingly public subscription amounting to £420 was raised and underwritten by three local businessmen. An advertisement was released tendering for contractors to carry out the widening. The specification for the works are extensive and included making good the foundations, shoring the walls, rebuilding the parapets and refixing railings. The widening was to be effected by the removal of Telford's cast iron ribs and the insertion of wrought iron joists, covered by corrugated iron and concrete onto which the road surface was laid. Wrought iron lattice girders were to be fixed to the side of the bridge.



Plate 3: Elevation and plan of the 1868 proposals for widening the bridge

Plans of this phase of the bridge survive (WRO r121 BA299) and are reproduced in Plate 3. These clearly show the wrought iron lattice girders and railings in the main section of the bridge, but solid parapets to the side. The lattice girders are depicted on several surviving photographs of the bridge.

#### 2.2.6 **1880s**

In 1886 a memorial was presented from the inhabitants of Tenbury to the court of the Quarter Sessions of the County of Salop (Shropshire) that the town had been put to great inconvenience by the recent flood and that this was partly because one of the arches on the Shropshire side had been allowed to fill with sand and rubbish. Furthermore, the brick parapet had been destroyed and it was suggested that this be replaced by iron railings to allow the free flowing of water. These refer to the railings at either end of the bridge.

This was the third such document complaining of this blockage. An 1881 note from Shropshire Sessions concluded that despite the recent communication with the inhabitants of

Tenbury, they saw no reason to alter their conclusion from the similar memorial of 1867 that it was not incumbent on their county to protect a town in Worcestershire.

A letter of 1887 from H Montague Spencer to Shropshire County complained that in recent repairs outlets had been made to empty on Lord Northwick's land and that furthermore the iron railings had not yet been attached to the bridge.

#### 2.2.7 **1908**

The bridge was again considered for further widening and strengthening in the light of further traffic problems in the early 20<sup>th</sup> century. This was carried out under the supervision of J H Garrett (County Surveyor) in 1908. The method of construction employed the use of 'ferro-concrete', now known as reinforced concrete, of the Hennebique system. This system of reinforcement of concrete with iron or steel, invented by François Hennebique and patented in Britain in 1892, was the first to make systematic provision for shear reinforcement of beams and to use reinforced concrete in monolithic frameworks. The construction of the bridge in 'ferro-concrete' at this time was an indication of the importance of this growing industry and is an early example of the use in the county, preceded only by the 1905 Stanford Bridge.

#### 2.2.8 **1940s**

During the Second World War a road block was maintained on the Tenbury Wells side of the bridge by the Home Guard (Mick Wilkes pers comm.).

#### 2.2.9 **1960s**

During the 1960s, steel joists were placed beneath the concrete widened section of the bridge for strengthening purposes (D Barnett, Halcrow Ltd, pers comm.).

#### 2.2.10 **1990-2011**

A watching brief was carried out on gravel removal in the bed of the river. No features or artefacts of archaeological interest were recorded (Wychbold 1992). A further watching brief of gravel removal was carried out in 1995 (Topping 1995). It was concluded that the removed gravels were of recent origin.

A watching brief was carried out on trenches either side of the bridge by Transco in 1998 (Cook 1998). Recorded deposits were disturbed or of modern date.

In 2007 test pits excavated on the bridge were subject to a watching brief (Sworn 2007). The medieval fabric of the bridge was exposed and recorded. The medieval fabric of the bridge was identified within three trial holes excavated along the eastern side of the parapet. It comprised roughly hewn red sandstone blocks at a depth of 0.32m below the present road surface.

In 2011 an archaeological watching brief was undertaken on behalf of the Highways Contracts and Programme Unit, Worcestershire County Council, at Teme Bridge, Tenbury Wells, Worcestershire as part of investigative works for the bridge structure to comply with Scheduled Monument Consent for the current proposed works. The earlier sandstone structure of the bridge was recorded along the west side of the carriageway, between 0.42-0.56m below the present road surface. To the east the structure was largely comprised of concrete which related to the 1908 refurbishment and widening of the carriageway. The access holes into the voids below the southern ramp on the south-east side of the bridge revealed the earlier sandstone wall, butted by the later brick arches, which were in turn butted by concrete arches used to widen the carriageway. The foundation of the southern pier was constructed of concrete, 0.50m deep below the present surface, and bedded directly onto the natural mudstone (Arnold and Vaughan 2011).

#### 2.3 **Description of important features**

The bridge over the River Teme at Tenbury is formed partly of a sandstone structure with reinforced concrete abutments. It has six spans with five large piers, the central being the largest, and is formed of two parts set at an angle and joining in the middle at the central pier.

The southern (Worcestershire) part has a concrete causeway and is aligned south-south-east to north-north-west. The northern (Shropshire) part is aligned north-north-east to south-south-west.

The sandstone bridge has large semi-circular arches with triangular cutwaters and modern concrete starlings. The southern three spans have simple arches with keystones. The stonework on these arches has been heavily eroded and there is evidence of repair and the use of iron ties to prevent further movement of the structure. The northern three spans have been constructed in a different style. These arches are ribbed, springing from a string mould.

The concrete bridge sits above the stone structure creating a wider roadway. The concrete structure has segmental arches with concrete corbels above. The spandrel walls over the arches are of concrete marked to represent ashlar construction. Sitting adjacent to the roadway are cast iron railings with posts. A plaque marks the date of the concrete structure and the county boundary is also marked on the railings.

#### 2.4 **Topography, geology and soils**

Tenbury lies at the head of a broad fertile valley of mixed pasture and arable landuse, with woodland on the valley margins. The river gently meanders along this stretch in which the channel varies from broad and shallow to fast and deep. Apart from Tenbury itself, the larger settlements in the valley tend to be on the northern side of the valley, where the A456 carries traffic towards Worcester and Birmingham. On the southern side of the valley the settlements tend to be scattered and joined by small lanes. Historically hops were grown along the valley, dried with the sulphurous coal of the Wyre Forest coalfield to the north east and picked by workers brought from Birmingham on the train. The area was also known for its orchards. Hops are still grown in the area and orchards survive on the valley margins.

The River Teme is a tributary of the Severn, rising in the Kerry Hills in Powys in Mid-Wales. Its source is in a disused quarry called Bryn Coch, on the slopes of Cilfaesty Hill (Hayes 2004). Rising at 1500ft above sea level, the river runs for 75.6 miles, part of it along the Welsh Border, to empty into the River Severn below Worcester. The main tributaries of the Teme are the rivers Clun, Onny, Corve and Rea.

The soils in the Tenbury area are typical argillic brown earths of the Bromyard association and brown alluvial soils of the Lugwardine Association (Ragg *et al* 1984). The underlying geology consists of Downtonian Raglan Mudstone and riverine alluvium. (British Geological Survey 1:125000 sheet 52° N-0.4°W).

#### 2.5 **Topographical and landscape setting**

The town of Tenbury is sited largely on a tongue of land formed between the Teme and its tributary the Kyre Brook, which rises in the higher ground on the south side of the valley. Burford lies on the northern side of the road on slightly higher ground. The bridge carries the A4112 over the river at the northern end of Teme Street, the main thoroughfare through Tenbury and meets the A456 at a T junction on the Burford side.

The river at Tenbury is wide and shallow with outcrops of rock exposed when the water is low. Beneath the bridge, on the Tenbury side is a wide beach of gravel which sometimes forms small islands in the river channel. This can reached from the Tenbury side by a ramp which leads down from Teme Street adjacent to a section of causeway. The river channel is lined with trees on both sides downstream and on the northern side upstream, beyond which the Castle Tump, visible as an earthwork mound, is preserved in an open meadow.

Looking south towards Tenbury the mock-timbered Bridge Inn is prominent to the right of the road, while the brick former workhouse and Town Council Offices is partially hidden by a line of conifers on the left. Between the trees and the river a river walk runs along the southern bank downstream towards the town's park. Looking north toward Burford, the most prominent building is the former Swan Hotel, on the opposite side of the A456, with four bow windows in a brick Georgian frontage. On the right hand corner of the two roads is the Swan Garage, a petrol station partly hidden from the bridge by a horse chestnut tree and to the left is a triangle of grass between the road and the meadow beyond.

#### 2.6 Main features of site

The construction of the bridge can be broken down into its constituent parts as follows:

- Sandstone structure on northern (Shropshire) side of the river (spans 1-3, piers 1-3);
- Sandstone structure on southern (Worcestershire) side of the river (spans 4-6, piers 3-5);
- 19<sup>th</sup> century repairs and alterations to the sandstone structure;
- 1908 repairs and alterations.

Chronologically these elements can be phased from the 14<sup>th</sup> century onwards. In the early 14<sup>th</sup> century a bridge was built across the river from the north end of Teme Street. This formed the first roadway across the river and was distinct from the putative ford and footbridge at the end of Church Street. The bridge was constructed of sandstone and probably had ribbed arches. It would have been narrow, allowing only the passage of a single horse, or horse and cart, at any one time. The surface would have been metalled but it would not have had a parapet for protection.

It is possible that parts of this 14<sup>th</sup> century stone bridge still exist within the sandstone structure on the southern side of the river (Plate 4). This consists of three semi-circular arches (spans 4-6) with three piers (piers 3-5). For much of the year the two most southerly of these arches (spans 5 and 6) pass over the 'beach' of the river with the river passing between the arch of span 4. The arches are not ribbed but have central keystones on the arch rings. The stonework of the spans has been considerably weathered on the upstream side of the bridge, and repairs to the spandrels have been carried out, along with the addition of cast iron ties to across the interior face of the arch ring of span 6. Whilst it is likely that some repairs were made to this part of the bridge in the 16<sup>th</sup> century, following the major floods of 1580, the amount of erosion (Plate 5) on the stonework suggests that at least some of the fabric is of 14<sup>th</sup> century date.



Plate 4: Sandstone bridge, span 5 from the west



Plate 5: Interior of span 5, showing erosion on right, from the north



Plate 6: Northern ribbed arches, from south east

#### The sandstone structure on the

northern side of the river consists of three spans (spans 1-3) formed from three semi-circular arches and three piers. The arches are strengthened with ribs (Plate 6) springing from a flat-topped roll-moulded string. The cutwaters, designed to deflect the water through the arches of the bridge, are triangular and form the piers of this part of the bridge. Piers 1 and 3 also have starlings, to protect the pier bases from the effects of scour to the river bed. This part of the bridge was probably rebuilt in the late 18<sup>th</sup> century after the major flood of 1770. The style of

the bridge, using ribbed arches, was probably based upon the style of the original structure. It



Plate 7: Early 19th century repair on cutwater of pier 5 (blue brick is 1908 repair)



Plate 8: Telford period cast iron posts



is possible that some of the original 14<sup>th</sup> century structure may still exist within the fabric of this later structure and was used as a foundation for the rebuilding of these arches.

The early 19<sup>th</sup> century saw the repair and widening of the bridge as specified by Thomas Telford. Although it is recorded that much of the Telford-era bridge was removed during the 1880s alterations to the bridge, some of the repair work carried out at this time can still be discerned. Documents from the 1812 and 1813 specifications of the work to be carried out mention the removing of 'decayed and injured' stonework on the piers and replacing it with 'others of a proper quality' and pointing with lime mortar. The upstream cutwaters of the southern part of the bridge show the evidence of this repair taking place (Plate 6) and patches of repair can also be seen on the spandrel walls above the arches. It is probable that cast iron posts (Plate 7) on the west abutment of the Tenbury side of the bridge, located outside the house adjacent to the river, belong to this

phase of work.

The 1880s repairs were a period of redesign for the bridge with all of Telford's repairs and widening being removed. The 1908 repair and widening of the bridge removed all of this earlier work also. The gas lamp (Plate 8), however, on the east side of the north abutment, Shropshire side of the river, probably dates to this period and is a rare survival of such a feature.

The 1908 bridge of 'ferro-concrete' of the Hennbique system is also a rare survival. Between 1892 and 1908 there

were only 89 Hennebique bridge constructions in the country (Cusack 1987, 65). Although the elegance of the earlier Stanford Bridge is not visible at Tenbury. largely because the pre-existing stone bridge would not allow for such a design, nevertheless the use of the material and resultant design is important within the county. The concrete structure visible today is primarily the 1908 Hennebique system bridge. Little has been altered with the exception of the re-rendering of the spandrel walls in the 1970s. The original cast iron railings of J H Garrett's design, and J O Bartlett's engineering, (Plate 10) are still in place, along with their upright posts. Even the graffiti of this phase of construction is discernible, carved into the stonework of the south west pier of Span 6 (Plate 11).

#### Other relevant information 2.7

Teme Bridge is scheduled under the Ancient Monuments and Archaeological Areas Act 1979 as Worcestershire 332. This scheduling protects the whole structure and fabric of the bridge and any works proposed require the consent of the Secretary of State for Culture Media and Sport.

Plate 9: Gas lamp on north side of bridge

The bridge is a listed building and is recorded under Worcestershire Historic Environment

Record as WSM 05309. It is maintained by The Highways and Contracts and Programme Unit of Worcestershire County Council.

Tenbury Bridge spans the River Teme, which is a Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended). It lies within Unit 3 of this designation. The citation of this status describes the channel of special interest as a representative, near-natural and biologically-rich river type associated with sandstone and mudstones, characteristic of the Welsh Marches. The Teme demonstrates a close relationship with the underlying geology as a short, rapid flowing upland section, with nutrient-poor and relatively acidic waters, changing to a more basic and naturally nutrient-rich system for most of the river's length as it passes over Silurian shales and mudstones, and the Old Red Sandstone strata. These attributes and the high water quality, support significant river plant, fish and invertebrate communities and otter populations (SSSI citation for the River Teme 1996).

The bridge lies partly within the Tenbury Wells Conservation Area. The area is described in the Conservation Area appraisal (MHDC 2008) as providing a 'cohesive townscape of good quality buildings which reflect the historic development of the town and the impact of its medieval development'. Teme Street is further described as a continuous streetscape of groundfloor shopfronts with divisions which represent the medieval burgage plots, although it is noted that the street layout to the north is irregular with a number of gap sites which detract from the overall coherence.

#### 2.8 **Documentation (sources & archives)**

Relevant information on the history of the site and past land-use was collected and assessed. Records of known archaeological sites and monuments were obtained from Shropshire and Worcestershire Historic Environment Records (HERs). Published sources were consulted at Tenbury Library and primary archives

were consulted at Worcestershire and Shropshire Record Offices and at Tenbury Museum. Other sources were obtained from the Client and from the internet.

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Plate 10: 1908 period railings and post



Plate 11: 1908 graffiti

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WRO s250.1 BA3690 1-4 Plans, elevations and sections, including two signed by JH Garrett, Surveyor of County Bridges

WRO 970.06 BA6145 Shropshire Quarter Sessions Archives. Photocopies of Records concerning Bridges

WRO 121 BA7 Bridges, correspondence, reports, accounts, copy deeds and other papers

SRO 143 DP180 1812-1887 Various documents relating to Tenbury Bridge on the River Team

SRO 144 DP180/1 1812-1846 Various documents relating to Tenbury Bridge

SRO 145 DP 180/2 1812 Various documents relating to Tenbury Bridge

SRO 275 QA/4/5/1 1879-1887 Inspection returns of main roads and bridges

The following sources have also been cited in this assessment.

- HEAS 2011 Proposal for an archaeological Conservation Plan of the Teme Bridge, Tenbury Wells Historic Environment and Archaeology Service, Worcestershire County Council, unpublished document dated 7th July 2011, **P3730**
- English Heritage 2008 Conservation principles; policies and guidance for the sustainable management of the historic environment
- Citation for the River Teme Site of Special Scientific Interest designation. Viewed at <a href="http://www.sssi.naturalengland.org.uk/citation/citation">http://www.sssi.naturalengland.org.uk/citation/citation</a> photo/2000102.pdf
- English Heritage list entry summary for Tenbury Bridge, List Entry Number: 1005267

## 3. Assessment of significance

#### Evidential

- Teme Bridge is a complex structure comprising elements from a wide range of historical periods.
- The bridge is located at a place which is likely to have been a river crossing for many centuries. The early placename suggest that the origins of Tenbury lay in the Saxon period or earlier and the wide, shallow stretch of river at Tenbury with a firm base of bedrock is likely to have made a good fording place. The burh element of the name Tenbury also suggests that the location of the settlement was chosen for defensive reasons.
- The bridge is likely to have formed a vital part of the development of Tenbury from a relatively small settlement to a borough, and the consequent creation of a money market from which taxes and tolls could be derived. Without a usable crossing over which goods could flow at all times of the year, this market could not have functioned.
- The function of the bridge remains significant to the local economy but over time its function has changed. Traffic from and to Tenbury now crosses in order to reach the A456, but formerly the Leominster to Mamble canal wharf was situated on the Burford side and similarly the railway station was also on the northern side of the Teme until its closure in 1963.
- Until relatively recently the bridge was a gateway to the major settlement of Tenbury while Burford existed as little more than a scatter of cottages centred on the Swan Hotel. During the late 20<sup>th</sup> and early 21<sup>st</sup> centuries Burford has grown considerably in relation to its larger neighbour and now the bridge is as much a link between two parts of a larger settlement as a single settlement's major link to the outside world.
- The distinctive bend in the bridge is a significant feature, and in present forms shows a chronological difference. It is not entirely clear how and why this arrangement arose, but it is possible that it reflects a change in the course of the river.
- There is a potential for the survival of hidden elements of earlier phases encased in the concrete of 1908.

#### Historical Value

#### Illustrative

- The original stone bridge was constructed prior to 1539. This would have been at considerable expense to the local population and illustrates the importance of the a bridge over the River Teme to the local economy.
- Two phases of sandstone arches survive at the core of the bridge. The southern and older section may date from the 15<sup>th</sup> or 16<sup>th</sup> century, whilst the northern ribbed arches were rebuilt after the flood of 1770.
- References to the bridge before the beginning of the 19<sup>th</sup> century are quite scarce but significant. These illustrate not only the bridge's great importance to the people of

Tenbury and the local economy but also the burden its upkeep placed upon them, as clearly illustrated in the 1615 petition to the quarter sessions.

- A great many documents survive which relate to the upkeep and widening of the bridge from 1810 onwards. Much of this is correspondence between magistrates within Worcestershire and Shropshire and illustrates a sometimes fractious relationship between the authorities within the two counties.
- Plans and elevations of the bridge survive from the late 19th century onwards illustrating several building phases
- Teme Bridge appears in many photographs of the town from the late 19th century onwards. Many of these are used in literature promoting the beauty of the town.

#### Association

- The bridge is associated with Thomas Telford, the famous road, bridge and canal engineer who carried out improvements in the early 19<sup>th</sup> century. Although many of his features are likely to have disappeared in the later works of 1868 and 1908, it is his name which is generally connected to the bridge in local literature and it is often referred to as Telford's bridge.
- The bridge is associated with many of the stories of floods which are well known within the town, in local histories and other documentation. Flooding episodes punctuate the history of the settlement and the bridge often figures in these locally important stories.

#### Aesthetic

- Despite the many phases of the bridge it remains an attractive feature both when viewed from below, where the sandstone arches can be seen beneath later concrete additions, or on top where the iron railings and gas lamp lend a Victorian character to the entrance to the town.
- Within the Conservation Area Appraisal (MHDC 2008), the bridge features in three of the named key views across the town. These are
  - South from Tenbury Bridge along Teme Street
  - East from Tenbury bridge along the northern conservation area boundary
  - West along the river path to Tenbury Bridge
- The setting of the bridge is attractive. The Teme at Tenbury Wells is wide and shallow with outcrops of bedrock visible beneath the water and attractive beds of water weeds. Downstream of the bridge is a changeable landscape of gravel beaches and islands framed by banks of trees, and the river here often attracts ducks and other water birds. Unlike many towns where the river has been canalised or smoothed out by a weir downstream, the channel is rural in nature and the bridge is a central focus both as a platform to view the scene and a feature which spans it when viewed from below.
- A classic view of Tenbury Wells, often photographed or painted is the view down Teme Street, showing the varied architectural building styles and the attractive shop fronts. The bridge is framed by this view and forms an end point to the streetscape.

#### Cultural

- The Teme Bridge forms a part of the main thoroughfare through the town joining directly to the commercial centre of the Tenbury Wells, an arrangement which has continued for many centuries. The bridge continues to link the town to the main route up and down the valley as well as to the settlement of Burford.
- The bridge is regarded as a gateway to the town. It has been observed that to cross the bridge after a spell away from the town brings a sense of homecoming (A Eachus pers comm).

- The bridge is an important visual marker of the border between two counties.
- The bridge is a landmark of the town and part of a wider suite of features which encourages tourists to visit the town and others to move to and stay in the town. Such activity helps to maintain the economic survival of the town.

#### 3.1 **Overall summary of significance**

The Teme Bridge comprises three main elements; the sandstone arched medieval bridge on the Worcestershire side of the river, the later ribbed sandstone arches on the Shropshire side, and the 1908 concrete widening on the downstream side of the bridge. Other elements include the iron railings dating from the 1870s and 1880s, a record of the 1908 widening of the bridge and modern features such as the bench and road surface. It is possible that other elements from other phases of widening or repair survive within the bridge but are not visible and were not recorded during recent investigation works.

#### Significance of main elements of the bridge

- Sandstone arches on the Worcestershire side Early indication of stone bridge
- Sandstone arches on the Shropshire side Rebuilding of medieval bridge
- 1908 concrete widening Early use of strengthened concrete

#### Significance of the bridge as a whole

- The bridge is a key element in the history of the town. Its complex history illustrates a great deal about the importance of the crossing to the town as well as the burden it placed upon the inhabitants.
- The bridge is a gateway to the town of Tenbury Wells and is an important crossing not only of the River Teme but of the county boundary
- The bridge continues to function as the main thoroughfare through the town and main access to the commercial centre.
- The bridge is a key element of the townscape of Tenbury Wells/Burford and part of a suite of features which characterise the town.
- The bridge is a striking feature in a picturesque setting. It provides a platform for appreciation of the riverine environment in this location. It is important as a draw for tourists and thus contributes to the economy of the town.
- The bridge is associated with the bridge, road and canal engineer Thomas Telford.

#### 3.2 **Issues/Vulnerability**

The Teme Bridge remains a functioning structure linking Tenbury Wells to Burford and linking the larger settlement to the main route along the Teme Valley. However it also remains an important component of the cultural landscape of Tenbury Wells and Burford and consequently a balance needs to be struck to allow the vital function of the bridge to continue whilst its significance and character are preserved. The key vulnerabilities of the bridge can be summarised thus:

- The bridge is currently vulnerable to damage from vehicles passing across it. There are two carriageways capable of taking heavy traffic in either direction, but a problem lies in the central bend in the bridge. Heavy goods vehicles frequently cannot pass at this point without one either reversing or mounting the pavement (D Worgan pers comm). Such manoeuvres risk damage to the structure of the bridge by placing too much weight upon the pavements or to the street furniture such as the railings or bench.
- The bridge is vulnerable to natural decay. This is exacerbated by the frequency of flooding on this stretch of the river and care should be taken that repairs to the bridge in the immediate wake of water damage are carried out with respect to the overall integrity of the bridge rather than in a piecemeal fashion.

- The bridge is vulnerable to weathering which can be exacerbated by periods of neglect. The railings have not been painted for some years and are very rusty and in danger of irreversible decay.
- Both the structure itself and access to it are vulnerable to future maintenance projects, strengthening works and changes to the nature of traffic and pedestrian movement if the heritage values of the bridge are not properly considered in these processes. Major works are often considered with heritage values in mind but there is a danger that smaller interventions can have a major impact on how the bridge functions, appears or can be accessed.

## 4. **Conservation Policy**

#### The function of the bridge

- Continuation of the use of the bridge as the main route into Tenbury will maintain its status as a gateway to the town and a functioning landmark.
- Pedestrian access across the bridge should be maintained and if possible enhanced to allow safe pedestrian passage between Burford and Tenbury and allow views of the river channel in either direction or over the railings into the river. A wider pavement, if only on one side, would allow pedestrians to walk side by side or the passage of mobility scooters.

#### The structure of the bridge

- Visibility of the sandstone arches at the core of the structure is an important reminder of the origins of the bridge and should be preserved.
- The distinctive bend in the centre of the bridge is an unusual characteristic which enhances the experience of entering or leaving the town and should be retained.
- Despite being modern relative to the age of the bridge, the current appearance of the bridge in its 1908 form is now over a century old and thus no living person can remember it being different. The current and future proposals should take this into account and ensure that this general form is altered only in a sympathetic fashion. Proposals for substantial changes to the appearance of the bridge should be subject to public consultation.

#### Visitor management

- Access to the river below should be maintained, and could be enhanced by the use of information boards presenting a history of the bridge, its association with Thomas Telford, and information about the natural history of the river and environs. Attention should be drawn to the different elements of the bridge so that the earlier sandstone elements can be easily identified. Information boards could effectively be placed below the bridge next to the gravel beach, on the riverside walk, or at the top of the ramp adjacent to the causeway.
- The street furniture on the bridge should reflect something of the historic nature of the bridge rather than being simply a continuation of the road either side. There should be a marked difference to highlight to drivers and pedestrians that they are crossing a bridge and a significant boundary.
- One of the important features of the bridge is its division between two counties. The current marker illustrating this or similar should be maintained.

#### **Future research**

• Future research for the bridge may include the consultation of documents which are beyond the scope of this Conservation Plan. These might include documents within the Shropshire and Worcestershire Record Offices, for example court rolls or borough records relating to Tenbury or other records which have not been indexed.

#### 4.1 **Implementation and review**

This plan will be reviewed by Anthony Fleming, Inspector of Ancient Monuments, English Heritage and when complete will form the basis for discussions between English Heritage and Worcestershire County Council about the forthcoming proposed repairs and strengthening of the bridge. It will also serve to inform future repairs or alterations to the bridge.

## 5. Acknowledgements

The Service would like to thank the following for their kind assistance in the successful conclusion of this project: Richard Attwood, Engineering Project Manager Highways Contracts and Programme Unit, Worcestershire County Council and Tony Fleming, English Heritage. Replies have been gratefully received from stakeholders but special thanks are due to Dawn Worgan, Town Clerk of Tenbury Wells, for assistance in setting up the meeting and providing contacts.

#### **Teme Bridge - Timeline**

1305 Grant of Pontage for five years to Robert Clifford 1549 Leland refers to stone bridge of two arches 1580 Reference to the river changing course and construction of Worcestershire side of bridge 1590-95 Timbers felled to form a wooden bridge 1614 Bridge swept away through flooding 1615 Petition that the expense of the bridge might be shared with surrounding parishes 1770 Flood destroys church and possibly sweeps away Shropshire side of the bridge 1809 County of Worcester was indicted for non repair of the bridge 1812 Thomas Telford carries out survey and makes estimates for repair and widening 1813 Petition that it might be made a county bridge rather than a Doddingtree Hundred Bridge 1815 Bridge widening and repairs completed by J Simpson 1824 Twenty tons of stone provided by George Rushout Bowles for repair of the bridge **1837** Repair of the road over the bridge by Joshua Slack 1868 Memorial from the inhabitants of Tenbury to the Justices of the Peace of Worcester and Salop for the widening of the bridge 1874 Widening under direction of Gordon Page **1881** Shropshire refute need to unblock bridge arches 1886 Memorial to Salop re blocked arch on Salop side of bridge **1886** Flood destroys parapet on Shropshire side – replaced with railings 1887 Iron rails replace brick parapet at either end of the bridge to allow free passage of water 1908 Widening and improvements by JH Garrett 1924 Tenbury Wells flooded - no damage to bridge recorded 1960s Addition of iron girders beneath widened section 1986 Timbers of 1615 bridge recovered from the river downstream

1993-2007 Various watching briefs undertaken on bridge desilting and test pits









Appendix 1 – Scheduled Ancient Monument description



Historic Environment and Archaeology Service: **Historic Environmental Record** 

WR10053

ENGLISH HERITAGE RECORDS OFFICE Here and Worc (SEMESTERS 12) 

Source No: SCHEDULED ANCIENT MONUMENTS RECORD 21-MAR-1988 

COUNTY NO. Here and Worc 322

SAM PRN 33215 PARTSH Tenbury SO 595686 NGR HT OD (METRES) 50

DISTRICT/BOROUGH Malvern Hills

FILE AA 90978/1

SITE NAME Tenbury Bridge

#### DESCRIPTION

Bridge crosses the river Teme partly in Worcs and partly in Shrops.. There does not appear to be any record when it was first built, probably Cl6th but possibly much earlier. It has been twice restored during last century. In the Worcs Sessions records it is mentioned as early as 1615.{1} The bridge, of sandstone, has 6 arches and is V shaped. It was extensively altered early this century, widened and rebuilt from the arches up with new railings, therefore only the arches and piers are old. There is a large central pier and 4 smaller ones with triangular cutwaters. The arches are not ribbed on the Tenbury side, but strengthened with ribs in the further side. The downstream, i.e. E side of the bridge has been most widened; the girders are covered with concrete, the arches are concrete covered, as are the piers, with lines to resemble masonry, though the N part has been less widened and has more stone showing. The 2 outermost arches are well above normal water level and for floodwater. The iron railings are 2 tiered. There is a seat and (modern) lamp post in the central refuge where the bridge changes angle. A drainage pipe runs at road level. A notice on the bridge states it was partly rebuilt and widened by the CCs of Worcs and Shrops in 1908, Engineer, J.H. Garrett of Worcester. Another sign marks the county boundary. There is public access to the river and beach on the SE side, none on the N side. {2}

SITE TYPE Bridge SPEC. PERIOD C16	PERIOD Medieval FORM Other structure	
PROPORTION SCHED. 1	SURVIVAL WITHIN AREA 3 CONDITION B AREA	HA
LAND CLASS ON SITE LAND CLASS AROUND SITE	Other 2 - Other 11 bridge Other 11 road Open Fresh Water 1 stream	
SITE STATUS	SAM	
ARCHAEOLOGICAL HISTORY		
VISITS Name Leigh, J., FMW	Date 27 07 1987	
SOURCES Type Desc text		

ENGLISH HERITAGE RECORDS OFFICE Here and Worc (SEMESTERS 12) \_\_\_\_\_\_

SCHEDULED ANCIENT MONUMENTS RECORD 21-MAR-1988

COUNTY NO. Here and Worc 322 (Continued)

Collection AM7 Other -

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Type Desc text Collection AM107 Author Leigh, J. Other -

Ref No. 1

Date 1987 Ref No. 2

DATE OF COMPILATION 19 10 87



## Appendix 2 – SSSI citation

#### COUNTY: HEREFORD AND WORCESTER/ SHROPSHIRE/POWYS

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authorities: SOUTH SHROPSHIRE DISTRICT COUNCIL, Shropshire County Council, Hereford & Worcester County Council, Worcester City Council, Leominster District Council, Malvern Hills District Council, Powys County Council

National Grid References: SO 121848-SO 850525

134.3 (km.)

4.7 (km.)

Ordnance S	Survey She	ets:			
1:50,000:	136, 137,	138, 150			
1:10,000:	SO 18 SW, SE		SO 57	NW, SW	SO 85 SW
-	SO 17 NI	Ē	SO 56	NW, NE	
SO 27 NW, NE, SE		SO 66 NW, NE			
	SO 37 SW, SE SO 47 SW, SE, NE		SO 75	NW, NE, SE	
			SO 76	NW, SW	
Length			Area		
R. Teme in	England	109.6 (km.)		England	419.8 ha
R. Teme in	Wales	24.7 (km.)		Wales	44.2 ha

Total139.1 (km.)Date of Notification: 19 July 1996

Other Information

Total of R. Teme

R. Clun

This is a new site. The site supports the following species covered by Council Directive 92/43/EEC on the conservation of Natural Habitats and of Wild Flora and Fauna:

Total

464 ha

Annex IIa, Va;
Annex IIa
Annex IIa
Annex IIa, Va;
Annex IIa
Annex Va
Annex IIa, IVa;
Annex IIa, Va
Annex IIa, Iva

Otter, Atlantic stream crayfish, and freshwater pearl mussel are also listed under Schedule 5 of the Wildlife and Countryside Act 1981, as amended.

The Welsh section of the river lies within the Radnor Environmentally Sensitive Area (ESA). The English section of the river runs through the Clun ESA and Shropshire Hills Area of Outstanding Natural Beauty.

The site incorporates part of Downton Gorge SSSI and National Nature Reserve, as well as Temeside and Temebank geological SSSI.

Description and Reasons for Notification:

The River Teme is the second largest tributary of the River Severn, draining a hilly, predominantly rural catchment of Silurian and Devonian rocks. The notified channel is of special interest as a representative, near-natural and biologically-rich river type associated

with sandstone and mudstones. This type has a mainly northern and western distribution in Britain but is especially characteristic of the Welsh Marches.

The Teme demonstrates a close relationship with the underlying geology. A short, rapidflowing upland section, with nutrient-poor and relatively acidic waters, changes to a more basic and naturally nutrient-rich system for most of the river's length as it passes over Silurian shales and mudstones, and the Old Red Sandstone strata. At its lowest section, the Teme is a sluggish, lowland river on soft deposits.

These attributes and the high water quality, support significant river plant, fish and invertebrate communities and otter populations. A small section of the lower River Clun is included in the SSSI for a notable species.

The Teme rises at 460 m on Cilfaesty Hill, Powys and falls steeply to Knighton, descending 122 m over 1.6 kms of the English/Welsh border. It then flows through a more gentle landscape via Ludlow and Tenbury Wells to join the River Severn just below Worcester. The river is actively eroding and fast flowing, with many shingle bars, especially above Leintwardine. Where the river cuts through the sandstone, the bed is often formed of submerged rock platforms. The banks are well tree-lined with alder *Alnus glutinosa*, with some willow *Salix* spp. stands.

There are extensive areas of rough grassland and wet flushes dominated by mosses and sedges on Cilfaesty Hill Common, but thereafter the adjoining land use is mostly permanent pasture, arable fields, hop-yards and orchards. Parts of the river run through deciduous woodland, mainly of oak *Quercus* spp. and ash *Fraxinus excelsior*, some of which occurs in steep ravines. Wetter areas hold small alder carrs, on both shingle and alluvial soils. Little flood plain wetland has survived, though some of the early river engineering schemes have left cut-off meander loops which have developed marsh vegetation.

#### Geology and Topography

Near to the source the young river drains an upland area based on Silurian siltstones, the bedrock geology being the dominant influence on the river bed. Numerous peaty flushes and several small moorland tributary streams join the river here as it passes through a small, steep-sided rocky gorge. The Ring, an active land slip located on Cilfaesty Common, deposits silt and gravel into the channel which has a locally enriching effect on the nutrient status of the waters. After leaving Cilfaesty Hill the Teme flows through the narrow valley of Cwm Owyn to Felindre and from there on to a wider floodplain. Downstream from here the river shows a variety of fluvial geomorphological features such as back channels, storm flow channels and cut-off pools.

Down to Brampton Bryan the rocks are predominantly shales and mudstones of neutral base status but below this they change to more calcareous types and sandstones. Devonian Old Red Sandstone is the bedrock from Downton to Knightwick, with Triassic Mercian Mudstone from there to the confluence. From Felindre down to Leintwardine the river has a well developed pool and riffle system, with a cobble and pebble river bed. There are also extensive lateral gravel banks. After Downton Gorge and past Ludlow, submerged sandstone rock platforms become a feature. The lowest reaches near to Worcester traverse clays and silts to give a lowland and mature river.

Such variations in geology, flow and substrate give rise to diverse river plant and animal communities, ranging from species-poor upland spate types, to those more characteristic of slow flowing, alluvial rivers.

#### Flora

The highest section of the river has many small falls and pools with a good cover of the moss *Amblystegium tenax*, along with other bryophytes such as the liverwort *Marchantia polymorpha* and the moss *Fontinalis squamosa*. A small side pool supports the stonewort *Chara vulgaris* var. *vulgaris*. Characteristic higher plants in these upper stretches are round-

leaved water crowfoot *Ranunculus omiophyllus* and intermediate water starwort *Callitriche hamulata*, with the reed canary grass, *Phalaris arundinacea*, as a marginal species. There are also algal communities covering the pebble and small boulder-strewn river bed throughout its length, with various species of filamentous green algae and the distinctive red alga *Hildenbrandia rivularis*, the latter reflecting the high water quality.

With an increase in calcareous influence between Knighton and the Clun confluence, beds of the water crowfoots *Ranunculus fluitans* and *R. penicillatus* v *psuedofluitans* appear. The outcropping of the Lower Old Red Sandstone around Ludlow allows the river to cut deeply into the bedrock, with a subsequent change in the aquatic flora. There tends to be one major water plant community in these lower reaches, with the river water crowfoot *R. fluitans* dominating. The large algae *Enteromorpha* is found, together with pondweeds such as fennel pondweed *Potamogeton pectinatus* and perfoliate pondweed *P. perfoliatus*. Vigorous stands of the branched bur reed *Sparganium erectum* occur as a marginal species, along with water plantain *Alisma plantago-aquatica* and water figwort *Scrophularia auriculata* 

The river banks between Tenbury Wells and Knightwick are often dominated by dense stands of comfrey *Symphytum officinalis*, with some areas suffering invasion from the alien Himalayan balsalm *Impatiens glandulifera*.

#### Mammals

The otter *Lutra lutra* has well established populations on the Teme, the stronghold being between Ludlow and Knighton, but they are found all along the river from Cwm Gwyn to Powick. Mink *Mustela vison* are also reported to be widespread in the catchment.

#### Invertebrates

The Teme has a good population of Atlantic stream crayfish *Austropotomobius pallipes*, a globally threatened and seriously declining species. The extensive shingle shoals hold a particularly interesting and rare riffle beetle community, with some 17 species being recorded. Of these, *Normandia nitens* is classed as Vulnerable, with *Macronychus quadrituberculatus* being nationally rare. The nationally scarce beetles *Riolus subviolaceus* and *R. cupreus* are found in the channel, with the nationally scarce carabid beetle *Bembidium semipunctatum* occurring on the banks. The SSSI also holds a population of the freshwater pearl mussel *Margaritifera margaritifera*, a rare and specially protected species.

#### Fish

The River Teme has long been recognised as a quality salmonid and coarse fishery. The fish communities strongly reflect the ecological changes in the river as it descends the catchment.

The lower and middle reaches have eels *Anguilla anguilla*, dace *Leuciscus leuciscus*, barbel *Barbus barbus*, bream *Abramis brama*, perch *Perca fluviatilis*, roach *Rutilis rutilis* and chubb *Leuciscus cephalus*. The latter species is typical of the slow and deep flows of the lower and middle river and is found upstream as far as Ludlow, whereas the brown trout is found most commonly above this point. Salmon *Salmar salmo* and grayling *Thymallus thymallus* are also present up to the weir at Buckton. Brook lamprey *Lampetra planeri*, stone loach *Noemacheilus barbatulus* and bullhead *Cottus gobio* can be found in the fast and rocky stretches, though bullhead and stone loach do occur low down the river at Knightwick. Bullheads occur even in the very shallow and fist flows on the open hill near the source. Sea lamprey *Petromyzon marinus* has been recorded on the lower reaches of the Teme.

Of particular conservation interest are the records of the very rare twaite shad *Alosa fallax fallax* in the very lowest reaches of the Teme. This may represent an extension of the spawning ground from the Severn, which is one of only four confirmed breeding sites in the UK.

Breeding Birds

The bird community is typical of that found along medium to fast flowing rivers. The dipper *Cinclus cinclus* is to be found in almost all the rocky sections together with the grey wagtail *Motacilla cinerea*, though the latter species is equally at home on the silt banks of the lower reaches. Both kingfishers *Alcedo atthis* and sand martins *Riparia riparia* readily utilise the eroding earth banks which the river produces as it meanders, and common sandpipers *Tringa hypoleucos* occur on the shingle bars above Ludlow. There are also records of goosander *Mergus merganser*.