

= River Rother , West Sussex =

The River Rother flows from Empshott in Hampshire , England , to Stopham in West Sussex , where it joins the River Arun . The upper river , from its source to Midhurst , has been used to power watermills , with the earliest recorded use being in 1086 , when the Domesday survey was conducted . Although none are still operational , many of the buildings which housed the mills still exist , and in some cases , still retain their milling machinery . This upper section is also noted for a number of early bridges , which have survived since their construction in the fifteenth , sixteenth and seventeenth centuries .

The lower river , from Midhurst to its junction with the River Arun , has been used for navigation . Boats used the section from the Arun to Fittleworth following improvements made to the Arun in 1615 , and after the Arun Navigation was completed in 1790 , the Earl of Egremont made the river navigable up to Midhurst by constructing eight locks and some small cuts . The work was completed in 1794 , and many of the bridges built at that time still survive . With the opening of the Mid @-@ Sussex Railway branch to Midhurst in 1859 , traffic declined , and commercial use of the river had ceased by the 1880s . Pleasure boats continued to be used on the river for many years , and published accounts of journeys along the decaying navigation appeared in 1914 and 1920 . The navigation was officially abandoned in 1936 , after an undergraduate pointed out that it was still a public right of way .

The river flows through the South Downs National Park , and is a designated Site of Nature Conservation Importance , in recognition of its value for wildlife . It supports a wide range of fish , and its upper reaches are the only location in Sussex where native white clawed crayfish can be found . The quality of the water is generally good , and the river is measured at four gauging stations , three on the main channel , and one of the River Lod , just before its junction with the Rother . Water from the underlying Lower Greensand aquifer and the adjacent chalk aquifer helps to maintain the flows during the summer months , despite the fact that large volumes are abstracted from both the aquifers and the river for the public water supply .

= = History = =

Following improvements to the River Arun in 1615 , which allowed boats to reach Pallingham , they could also navigate part of the Rother , as far upstream as Fittleworth . The canal engineer William Jessop was asked to survey the river below Petworth Mills in 1783 , and was recalled in 1790 , when he surveyed it below Midhurst . In the same year , the construction of the Arun Navigation was finished , and in 1791 , George Wyndham , 3rd Earl of Egremont , who was based at Petworth House , obtained an Act of Parliament which would enable him to improve the Rother . The Act also authorised a branch canal to Petworth . Since he owned most of the land adjacent to the river , the precise route of the navigation was not specified , and he was free to improve the channel or make cuts as he saw fit . The only restriction was that cuts could not be made through gardens or enclosed grounds . Compared to most other canals at the time , the charges for using the navigation were low , as the Earl wanted to develop the region rather than make a profit .

The river 's lower section , below Midhurst , was made navigable by the construction of the Western Rother Navigation in 1794 . The length of the navigation was 11 @.@ 25 miles ( 18 @.@ 11 km ) of which less than 2 miles ( 3 @.@ 2 km ) consisted of new cuts , with the rest following the existing channel . It rose through 54 feet ( 16 m ) from Stopham to Midhurst by a series of eight locks , and cost £ 13 @,@ 300 to build . Traffic consisted of coal transported up @-@ river , with cargoes of timber , corn and Petworth marble in the other direction . A branch connected it to Petworth by the short Petworth Canal , which was 1 @.@ 25 miles ( 2 @.@ 0 km ) long with two locks , and terminated at Haslingbourne to the south of the town . It was opened in 1793 , having cost the Earl £ 5 @,@ 000 to build , but only lasted for a few years , until a turnpike road was diverted . This made access to Petworth easier , and the canal ceased to be used .

Unlike many canals , where navvies were brought into the neighbourhood to carry out the work , the Earl employed local men on the project , most of them already employed by him , and a clergyman

praised him for this when writing in 1808 , as it led to much less disruption , but provided increased income for those who worked on the scheme . Wages rose from 8 or 9 shillings ( 40 @-@ 45p ) per week to 14 or 15 shillings ( 70 @-@ 75p ) . During his life , the Earl invested some £ 100 @,@ 000 in waterways , some in his native county of Sussex , but also in attempts to build a canal from London to Portsmouth . Between 1802 and 1831 , the average income from the canal was around £ 550 per year . Competition arrived in 1859 , when the Mid @-@ Sussex Railway opened a line from Horsham through Pulborough to Petworth . Traffic declined , and by the 1880s , the navigation was no longer used by commercial boats , although it was not officially abandoned until 1936 .

= = = Closure = = =

Despite the navigation being closed , a guide to Midhurst published in 1895 advertised that skiffs could be hired , and fishing could be enjoyed . The boats were hired out by a plumber called William Port , and his business continued to prosper until 1912 , when his boathouse burned down . Rowing boats were also available for hire at Coultershaw and Fittleworth . Another book called A New Oarsman 's Guide , published in 1896 , suggested that the river could be canoed from Iping to the Arun , a distance of 19 miles ( 31 km ) , when there was sufficient water . By that time , none of the locks were workable , and boats had to be carried around them .

In 1887 , part of the river bank near Todham Lock , which bordered the Cowdray estate of the Earl of Egmont , had collapsed , and the Earl suggested that Lord Leconfield of Petworth , a successor to the Earl of Egremont , should pay for its repair . After some disagreement , a compromise was reached , under which the bank was repaired and a floodgate was fitted at the upper end of the lock , with both men paying half of the cost . Lord Leconfield assumed that when the Arun Navigation finally obtained an Act of Abandonment in 1896 , his responsibilities for the maintenance of the River Rother had ended . However , in 1903 heavy rain and floods destroyed the floodgate and part of the adjacent weir , resulting in river levels though the 8th Earl of Egmont 's estate dropping by 2 feet ( 0 @.@ 6 m ) . The Earl , Augustus Arthur Perceval , issued a writ against Lord Leconfield for damages . The case was heard in the High Court , at which it was agreed that the navigation was now useless , but that the two men would share the costs of rebuilding the floodgate , after which responsibility for its maintenance would pass to the Earl , who could also dredge the river above the lock .

P Bonthron , who published a book entitled My Holidays on Inland Waterways in 1916 , described a journey down the river that he had made with friends in 1908 , in a boat hired from William Port at Midhurst . They reached Arundel on the River Arun after two days , from where the boat was sent back to Midhurst by train . Another account of a similar journey made in 1914 by Eleanor Barnes and a friend appeared in As the Water Flows , first published in 1920 , which described canoe journeys on the rivers of southern England made by her over a period of seven or eight years . The warrant of abandonment was obtained jointly by the estates at Petworth and Cowdray after an Oxford undergraduate called Roger Sellman pointed out that the river was still officially a right of way , and that anyone could therefore offer to pay the appropriate tolls to use a boat on it , and expect the owners to rebuild the locks . The powers of the Railway & Canal Traffic Act 1888 were invoked to declare that the navigation was no longer necessary , and despite objections from the River Arun Catchment Board and a canoe club , the warrant was granted on 15 April 1936 . However , the Environment Agency noted in 2003 that although there used to be navigation rights on the river , " the existing status of the navigation is unknown . "

= = Hydrology = =

The river flows through the South Downs , an Area of Outstanding Natural Beauty and since 2011 , a designated national park . There are two large aquifers in the area , one consisting of chalk , to the south of the river valley , and the other the Lower Greensand Group , underlying the whole of the river . The aquifers are separated by a Gault Formation , which consists of clay . At the western edge of the region , both the chalk and the gault turn to the north , creating a scarp slope . The base

flow of the river consists of water from the Lower Greensand aquifer , and from springs along the bottom of the chalk scarp slope . These help to maintain the flows in the river during the summer months , although there have been significant periods where flows have been low , notably in the drought of the early 1990s , and again in 1995 / 96 . These led to declines in the populations of the macro @-@ invertebrates which are used to measure the health of a river , but these have subsequently recovered . In order to monitor the hydrology , the Environment Agency has a series of observation boreholes along the valley , and maintains gauging stations at Princes Marsh , close to the source , at Iping Mill , at Halfway Bridge on the River Lod just above its junction with the Rother , and at Hardham , just before the river joins the Arun .

Flows in the river are swelled by discharges from several sewage treatment works . The three largest are at Princes Marsh , Petersfield and Ambersham , all of which have outflows between 0 @.@ 22 and 1 @.@ 10 million imperial gallons ( 1 and 5 MI ) per day , with another three discharging between 0 @.@ 022 and 0 @.@ 220 million imperial gallons ( 0 @.@ 1 and 1 MI ) per day at Rogate , Coultershaw and Fittleworth . The entire river , including parts of some of its tributaries , is designated as a Site of Nature Conservation Importance by the local authorities through which it flows , in recognition of its value for wildlife . The upper reaches of the Rother are important for their fish populations of brown trout , grayling , juvenile sea trout , and the spawning and early development of salmonids . There are also populations of bullhead , eel , lamprey , minnow and stone loach . There has been some concern about declining fish stocks , thought to be partly caused by soil erosion , leading to silt and sediments being deposited on the river bed , which has been exacerbated by low flows in the river . Parts of the lower river support the same types of fish , but there are areas , particularly immediately upstream of weirs , where the major species are bream , pike and roach , with chubb , dace and perch on the lowest reaches . In order to assist the movement of fish along the river , particularly those that migrate to the headwaters to spawn , fish passes have been constructed around the gauging stations . The only known population of native white clawed crayfish in Sussex is located in the upper reaches of the Rother .

The quality of the water is generally good , helped by the fact that the groundwater in the chalk aquifer is of very high quality . However , some of the small streams in the upper reaches are polluted by discharges of effluent which are not licensed , and there are areas where the water in the aquifer , and hence the river , has raised levels of nitrates , largely caused by agricultural fertilisers . The Environment Agency has produced improvement plans to address a number of sources of both agricultural and urban pollution . Natural flows in the river are affected by the abstraction of water for the public water supply . There are many locations at which water is abstracted along the course of the river , including a site in the upper reaches where more than 1 @.@ 1 million imperial gallons ( 5 MI ) per day is abstracted from the aquifer , and another where the volume exceeds 2 @.@ 2 million imperial gallons ( 10 MI ) . Just above the junction with the River Arun , the Hardham Water Treatment Works removes more than 2 @.@ 2 million imperial gallons ( 10 MI ) per day from the river .

= = Etymology = =

The river takes its name from Rotherbridge , not the other way round . Rotherbridge is derived from the Anglo @-@ Saxon Redrebruge , meaning cattle bridge , which was also the name of the Saxon Hundred or administrative group of parishes . Before this the river was known as the Scir .

= = Route = =

The route description has been split into two sections . From its source to Midhurst , the river has powered several mills , but has never been navigable . Below Midhurst , it was navigable until the navigation closed in the 1880s . There were eight locks on this section , some of which bypassed additional water mills .

= = = Source to Midhurst = = =

The River Rother rises from several springs near Empshott in Hampshire . The main one supplies watercress beds , before passing under Mill Lane , to the south of the village . It continues eastwards , to reach Greatham Mill . The mill , together with the mill house and an attached barn , date from the late eighteenth or early nineteenth centuries , and are built of brick . Now Grade II listed . All of the original machinery of the mill is still in situ , but is not operational , as the water supply has been diverted . The stream turns to the south @-@ east , and passes under the A3 West Liss bypass , and Greatham Bridge , on the old route . It is joined by other streams , and turns south to reach Liss railway station . The railway and the river follow the same general route , and the river crosses under the railway five times before reaching Sheet . At the northern edge of the village , the river is joined by the Ashford Stream , and there is another mill . After passing under the A272 road , to the east of the village , it reaches Sheet Mill .

Tillmore Brook joins from the west , and the course turns to the east . At Durleighmarsh , a hamlet which forms part of the civil parish of Rogate , it passes the ruins of Durford Abbey , a Premonstratensian monastery situated on the north bank . It is a scheduled ancient monument , and the site includes a threshing barn with a water wheel and associated drive shafts . On the south bank is Durford Mill . This mill house is a grade II listed structure , and was built of clunch in 1770 . The mill itself has been modernised and enlarged , and is not listed . A little further downstream , Harting Road crosses the river at Durford Bridge , build in the early 1600s with four semi @-@ circular arches . It was restored in 1924 . To the north of Habin , another hamlet in Rogate , North Lane crosses the river on Habin Bridge , which has four round @-@ headed arches , and was probably built in the seventeenth century , but might be earlier . It is built of stone , and was restored in the eighteenth century .

To the north of Dumpford , a hamlet in the civil parish of Trotton with Chithurst , is Terwick Mill . It is a grade II \* listed structure , and consists of two mills , side by side . They were operational until 1966 . The north mill is a timber @-@ framed building , clad with weatherboarding , dating from the sixteenth century . The south mill was built of coursed stone rubble around 1750 . Although it has been converted into a house , it still contains two iron waterwheels , one for each mill , and its machinery . The earliest documentary evidence for the mill dates from 1635 . The adjacent mill house , parts of which date from the eighteenth century , is also a listed building . The river turns to the north to pass to the east of Trotton , and is crossed by Trotton Bridge , dating from the early 1600s , which has five ribbed arches . The river then turns to the east again at Chithurst , where Abbey House , an L @-@ shaped timber @-@ framed building dating from the fifteenth century , and the parish church , much of which dates from the eleventh century , are located on the north bank . An eighteenth century stone and brick bridge with two arches carries Chithurst Lane over the river .

Continuing eastwards , the river is crossed by Iping Bridge at Iping , a narrow stone bridge with five arches dating from the seventeenth century . To the west of the bridge is the site of Iping watermill . A mill was recorded there in the Domesday survey , completed in 1086 . By 1665 , there were the remains of a fulling mill at the site , and a wheat @-@ mill and malt @-@ mill , both part of the same building . It became a paper mill in the eighteenth century , and continued to operate until it was destroyed by fire in 1930 . At Stedham , part of the civil parish of Stedham with Iping , Stedham Lane crosses the river on a stone bridge with six segmental arches . Five of them date from the seventeenth century , with one later addition . The river then makes a large loop to the north , where Stedham Mill was situated . The mill building has been demolished , but the mill house is a listed structure . After the loop , Woolbeding Bridge , on the northern Edge of Midhurst , dates from the fifteenth or sixteenth centuries . It has four segmental arches , was restored in 1919 , and is a grade II \* listed structure .

After another loop to the north , the river passes between Easebourne to the north east and Midhurst to the south west . The bridge which carries the A272 road has two wide arches , and was of ashlar construction . Although this structure is still in situ , it is difficult to see , as a pedestrian bridge has been built on the north west side , attached to the original bridge by cantilevers , and one of the two arches was widened in 1912 by the addition of another arch outside it . Below the bridge

is the mill house and adjoining water mill of North Mill . The mill carries the date 1840 , and the house is of a similar age , although built in two stages . The river flows briefly to the south , passing Cowdray on the east bank , which is a scheduled ancient monument . It consists of a medieval fortified house , which is partly ruined , although some of it has been reused . It is situated within Cowdray Park , a grade II \* listed landscaped park , which forms the grounds for Cowdray House , a nineteenth @-@ century mansion some 0 @.@ 75 miles ( 1 @.@ 2 km ) further east . On the opposite bank is a motte @-@ and @-@ bailey castle , dating from the twelfth century . Below this point , the river was navigable .

= = = Midhurst to mouth = = =

The terminus of the Rother Navigation was on a side stream , at the southern edge of Midhurst . There was a wharf and basin , close to a road which is still called The Wharf , and an ashlar bridge crosses the navigation between the wharf and the junction with the main river . It was built in 1794 , and was restored in 1977 to commemorate the silver jubilee of Queen Elizabeth II . The first lock was near Little Topham farm . There was a lock cut across a loop to the north . Costers Brook , which flows north from springs near Cocking , and then alongside the river for a short distance , joins below the site of the lock . The bridge at South Ambersham was built of stone rubble in 1791 , with a main arch across the navigation and a smaller arch to the north , which has been repaired with brick . Moorland Lock was on a straight cut across a large meander to the south , close to Moorlands Farm . Lodsbridge Lock also bypasses a meander to the south , which fed Lodsbridge Mill . The mill building dates from the eighteenth century , and has been converted into a house . The seventeenth @-@ century timber @-@ framed mill house is also a listed building . There was a motte castle immediately to the south of the mill . A modern timber yard and saw mill is located to the north of the lock site , and Lods Bridge , which carries a minor road over the river , dates from the construction of the navigation . The River Lod joins on the north bank just below the bridge .

A widening in the modern river , close to the dismantled Midhurst branch of the London , Brighton and South Coast Railway , marks the site of Ladymead Lock , with a weir to the south and the lock structure to the north . The fourth lock was Coultershaw Lock . The river at this point runs to the south , and there was a large meander to the west with a weir at its head . The mill stream ran to the east , and the lock was built just to the west of the mill . Coultershaw Bridge now carries the A285 road over the mill stream , near which is Coultershaw Beam Pump ; it was built in 1782 to provide a better water supply to Petworth House . The pump is powered by a water wheel , cast at Cocking Foundry , which is 11 feet ( 3 @.@ 4 m ) in diameter . There were two corn mills and a malt mill recorded on the site in 1534 . The mill was modernised in 1910 , when turbines replaced the wheels , and standby engines were installed in 1919 . It was destroyed by fire in 1923 , and a steel @-@ framed concrete building replaced it . When it ceased to operate in 1972 , the building was demolished , but the beam pump , which was located beneath the building , was rescued and has been restored . The pump no longer performs its original function , but supplies a fountain near the visitor centre .

Shopham Lock was another where the lock cut was built across a large meander to the north . The bridge at the tail of the lock is built from red and grey brick , and has a single , round @-@ headed arch . It dates from the construction of the navigation , and is virtually unaltered . Nearby , the Petworth Canal headed northwards to Haslingbourne Bridge . Below the end of the cut , the river is joined by the stream from Burton Mill Pond , which supplied an iron forge built in 1789 . It is crossed by Shopham Bridge , built in the nineteenth century from red brick with grey headers and a parapet in stone , with three segmental arches . At Lower Fittleworth , there is another mill building , although it is unused and in poor condition . It was built in 1628 and enlarged in 1742 . It stands in the grounds of the mill house , which was rebuilt in 1913 . The lock cut ran along the south @-@ western edge of the site . Fittleworth Bridge consists of a southern section , originally built in the sixteenth century , which was rebuilt between 1717 and 1739 , and modified when the navigation was built , to enable boats to pass through the centre arch . A north section , adjacent to the millpond , dates from 1811 @-@ 12 .

Near its junction with the River Arun , the river loops to the south in a large meander . A cut ran from the start of the meander to join the Arun above the original junction , with a lock towards the downstream end . The meander fed Hardham Corn Mill . A lock bypassed the mill and the millstream , to enable boats to reach the Hardham Tunnel cut , which headed south from a junction above the mill . The Tunnel Branch was destroyed by the construction of a water treatment works , and the modern weir near the mouth is much closer to the junction than the lock was .

= = Conservation = =

The Arun & Rother Rivers Trust ( ARRT ) was set up in 2011 with the objective of enhancing and protecting the river and other connected waterways . It is a charity with further objectives concerning education , fisheries , biodiversity , access and pollution . The organisation is registered as a limited company , and has been asked to produce a Catchment Management plan by the Department for Environment , Food and Rural Affairs . It is working with the Arun and Rother Connections ( ARC ) Partnership and the South Downs National Park Authority to ensure that local opinion is adequately represented in the document .

= = Points of interest = =