

NRA Thames 168

Fact File

RIVER CHERWELL



GUARDIANS OF THE WATER ENVIRONMENT



NRA

*National Rivers Authority
Thames Region*

Fact File - RIVER CHERWELL

FACTS IN BRIEF

- The River Cherwell rises at Charwelton in Northamptonshire and flows south to its confluence with the Thames near Iffley Fields, Oxford.
- From its source to the Thames confluence, the river is 96.4 kms long and falls 100 m.
- The Cherwell catchment drains an area of 906 sq.km and the average annual rainfall within the catchment is 700 mm.
- The Oxford Canal runs parallel to the Cherwell and in places they run in the same channel.
- The catchment of the Cherwell is predominantly clay, making it liable to flooding in winter and sluggish flows in summer.
- The river passes through the historic town of Banbury, where the largest cattle market in Europe is located.
- The Cherwell valley is predominantly rural with many farms and small villages. The main towns are Banbury, Bicester and Kidlington, and part of Oxford is also within the catchment.

THE NATIONAL RIVERS AUTHORITY

Established on 1st September 1989, the NRA is an independent public body charged with safeguarding and improving the natural water environment. It is responsible for flood defence, regulating the quality of rivers and groundwaters, balancing the needs of various water users, protecting and improving fish stocks and promoting water-based recreation of all kinds. The NRA is committed to improving wildlife habitats and conserving the natural environment in all it undertakes.

PLANNING LIAISON

The NRA aims to work with local planning authorities to protect catchments from undesirable development.

TRIBUTARIES

As it flows in a southerly direction towards the Thames, the River Cherwell is joined by a number of tributaries. These include the Byfield Brook, Ashby Brook, Highfurlong Brook, Farthinghoe Stream, King's Sutton Stream, Charlton Brook, Sor Brook, the River Swere, Ockley Brook and Deddington Brook.

At Islip, the River Ray system joins the Cherwell and shortly before the Thames confluence, the Bayswater Brook flows into the main river. In addition the route of the Oxford Canal follows the River Cherwell valley and the two watercourses interconnect in several places.

BIOLOGY

The River Cherwell and its tributaries are regularly sampled by NRA biologists for aquatic invertebrates. These animals indicate the ecological quality of the watercourses studied. The main rivers within the catchment are generally of good quality with a wide range of invertebrates, including pollution sensitive mayflies, stoneflies, dragonflies and caddis-flies. Rivers and streams in and around the urban areas of Banbury, Bicester and Oxford are of a lower ecological quality and have fewer animals, including pollution-tolerant midges, leeches and worms. Poor ecological quality can be detected in some small tributaries which suffer from pollution incidents.

FISH IN THE CHERWELL

The Cherwell hosts a variety of fish species. Upstream of Banbury, the population is dominated by roach, dace and chub, with a small number of grayling and trout present in the Cropredy area. The fish stocks in the stretch from Grimsbury Water Intake to Twyford are severely affected by abstraction for public water supply. Consequently, fishing in this area is generally poor. However, further downstream stocks do recover, with the river below Twyford holding excellent stocks of all major coarse fish. Specialities of the River Cherwell, include numbers of large carp, especially in the impounded reaches, and large barbel with individual fish of over 12 lb having been caught in recent years.

An NRA fishing survey into the numbers and species of fish in the Cherwell was undertaken during 1988 and 1989. Copies of this survey are available from the National Rivers Authority at a small charge.

CONSERVATION

Riverside flood meadows at the lower end of the River Cherwell are of a high conservation value and a number of Sites of Special Scientific Interest (SSSIs) are located alongside the river in this region. The flood meadows host summer breeding waders and are herb rich.

Several in-channel enhancement projects have been undertaken to improve the river habitat both up and downstream of Banbury.

There is recent evidence of otters inhabiting the upper reaches of the catchment with two sightings being recorded.

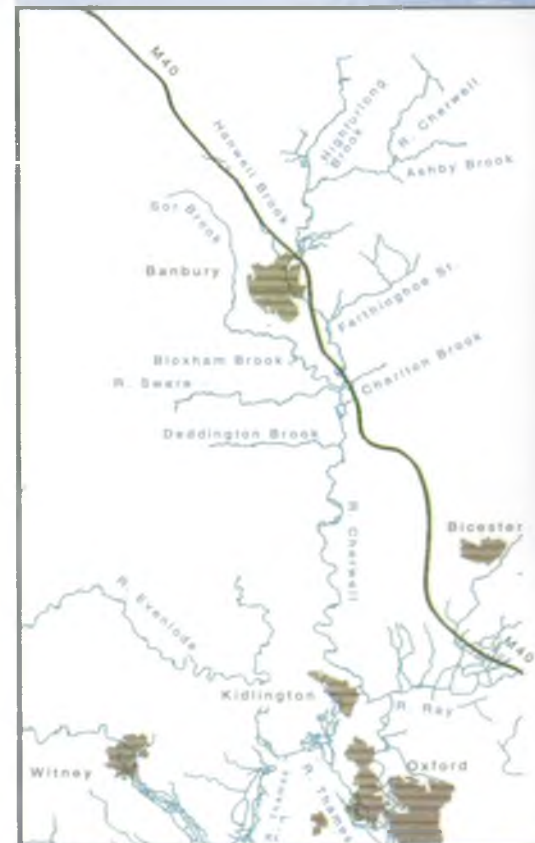
FLOOD DEFENCE

Reducing the risk of flooding from the Cherwell and its tributaries on a day-to-day basis and planning flood defence projects in the Cherwell catchment forms a large part of the NRA Thames Region's work.

The flood control room at Reading keeps a round the clock check on weather conditions and river levels. Staff interpret the information and give the local emergency services early warning of possible floods.

A flood defence team is based at Oxford to carry out regular river maintenance work. This includes dredging, weedcutting and the removal of blockages. This team is mobilised during flood emergencies to keep rivers clear of obstruction so that flood waters can be conveyed away as quickly as possible. They also provide assistance to environmental quality staff in cleaning up after pollution incidents.

The NRA is committed to protecting and improving the natural river environment, and wherever possible our flood defence work includes features of environmental conservation and enhancement.



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DISCHARGES

The following are the major discharges into the Cherwell and its tributaries. The figures given are the maximum amount permitted to be discharged per day.

Discharge	Cubic Metres per Day	Type of Effluent
CHERWELL		
Chipping Warden STW	1836	Sewage Effluent
Cropley STW	1890	Sewage Effluent
Banbury STW	46800	Sewage Effluent
Heyfords STW	1743	Sewage Effluent
Tackley STW	459	Sewage Effluent
Blue Circle Industries, Oxford Cement Works	620000	Trade Effluent
Blue Circle Industries, Chalk Quarry, Shipton on Cherwell	25003	Trade Effluent
BYFIELD BROOK		
Byfield STW	2890	Sewage Effluent
ASHBY BROOK		
Eydon STW	258	Sewage Effluent
CULWORTH BROOK		
Culworth STW	648	Sewage Effluent
HIGHFURLONG BROOK		
Priors Marston STW	360	Sewage Effluent
FARTHINGHOE STREAM		
Greatworth STW	690	Sewage Effluent
RIVER SWERE		
Barford St. Michael STW	573	Sewage Effluent
RAY (OXON)		
Bicester Garrison Swimming Pool	240	Swimming Pool
Grendon Underwood Village STW	495	Sewage Effluent
Charlton-on-Otmoor STW	390	Sewage Effluent
Islip STW	657	Sewage Effluent
CHACOMBE BROOK		
Chacombe STW	2010	Sewage Effluent
WASHLE BROOK (Trib. of Farthinghoe Stream)		
Middleton Cheney STW	2370	Sewage Effluent
KING'S SUTTON STREAM		
King's Sutton STW	2190	Sewage Effluent
OXFORD CANAL: Upper Section		
Claydon STW	230	Sewage Effluent
SOR BROOK		
Broughton STW	1365	Sewage Effluent
BLOXHAM BROOK (Trib. of Sor Brook)		
Bloxham STW	3000	Sewage Effluent
SHUTFORD STREAM (Trib. of Sor Brook)		
Shutford STW	927	Sewage Effluent
HOOK NORTON BROOK (Trib. of Swere)		
Hook Norton STW	1900	Sewage Effluent
CROUGHTON BROOK (Trib. of Ockley Brook)		
Croughton STW	1965	Sewage Effluent
MUXWELL BROOK (Trib. of Oxon Ray)		
Calvert Landfill Site	1000	Trade Effluent
LANGFORD BROOK (Trib. of Oxon Ray)		
Bicester STW	27000	Sewage Effluent



Due to the rural nature of much of the Cherwell catchment there are a number of small sewage treatment works serving isolated settlements, schools and public houses. These are all monitored on a regular basis by NRA staff.

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WATER QUALITY

The Cherwell is of a good quality above Banbury. Immediately below the town the river quality is dominated by the discharge of treated sewage effluent and urban run-off, but recovers fairly quickly to be of a fair quality down to its confluence with the Thames. Most of the tributaries are of a good quality with the notable exception of the Oxon River Ray, which is of a poor quality. The catchment of the Ray is very flat and in the summer naturally low flows, aquatic plant growth, the effect of agricultural run-off and the discharge of sewage effluent all combine to reduce water quality, particularly affecting levels of dissolved oxygen.

There are 32 sampling points within the Cherwell catchment which are sampled regularly by NRA pollution control staff to check the quality of the water.

WATER QUALITY OBJECTIVES

From	To	Length (km)	Objective
CHERWELL			
Source	Banbury Water Intake	34	1B - Good
Banbury Water Intake	Banbury STW	3.1	1B - Good
Banbury STW	King's Sutton Stream	7.3	3 - Poor
King's Sutton Stream	Thames	52.1	2A - Fair
BYFIELD BROOK			
Source	Westthrop	2.7	E*
Westthrop	Cherwell	3.5	1B - Good
ASHBY BROOK			
Source	Moreton Brook	5.8	E*
Moreton Brook	Cherwell	7	1B - Good
CULWORTH BROOK			
Thorpe Mandeville	Cherwell	4.3	1B - Good
HIGHFURLONG BROOK			
Priors Marston	Priors Marston STW	1.9	E*
Priors Marston STW	Cherwell	13.8	1B - Good
FARTHINGHOE STREAM			
Marston St. Lawrence	Cherwell	10.1	2B - Fair
RIVER SWERE			
Source	Cherwell	24.9	1B - Good
DEDDINGTON BROOK			
Source	Cherwell	16.1	1B - Good
RIVER RAY (OXON)			
Source	Cherwell	31.9	3 - Poor
CHACOMBE BROOK			
Source	Chacombe STW	5.7	E*
Chacombe STW	Cherwell	3.2	1B - Good
SOR BROOK			
Source	Cherwell	27.6	1B - Good
OCKLEY BROOK			
Source	Cherwell	6.8	1B - Good

E* - Ephemeral: stream is regularly dry. When flowing it should comply with the objective of the downstream reach.

WATER RESOURCES

The River Cherwell derives its flow from direct run-off from the Lias Clays and the Oxford Clay and from a small groundwater contribution. More than half the rainfall falling on the area is lost through evaporation and the growth of plants. The remainder provides the resource of water which must be shared between river flow to support the natural environment and the community's need for water supplies to homes, industry and agriculture.

In order to ensure that there is sufficient information on river flows the NRA carries out regular measurements and has a number of fixed gauging stations. The flow of the River Cherwell is measured at Banbury and Enslow, and its tributary, the River Ray, is measured at Grendon Underwood.

ABSTRACTIONS

Water can only be abstracted from rivers and groundwater under licence granted by the NRA. In the Cherwell sub-catchment rivers are the most important source of supply, with groundwater only being available to a limited extent. The total amount licensed in this sub-catchment is about 23 Ml/d (million litres per day). All licences specify the maximum amount that may be taken and are checked by the NRA's Licence Inspectors.

Potable water is abstracted for public supply at Grimsbury, in Banbury, on the main River Cherwell. A further abstraction site for potable water is situated on the Sor Brook.



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ENVIRONMENT AGENCY



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