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LLYN CLYWEDOG



NRA

National Rivers Authority



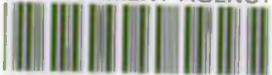
ENVIRONMENT AGENCY

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ENVIRONMENT AGENCY



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GUARDIANS OF THE WATER ENVIRONMENT

The National Rivers Authority is an independent public body responsible under the Water Resources Act 1991, for protecting and improving the water environment in England and Wales. It is the strongest environmental protection agency in Europe.

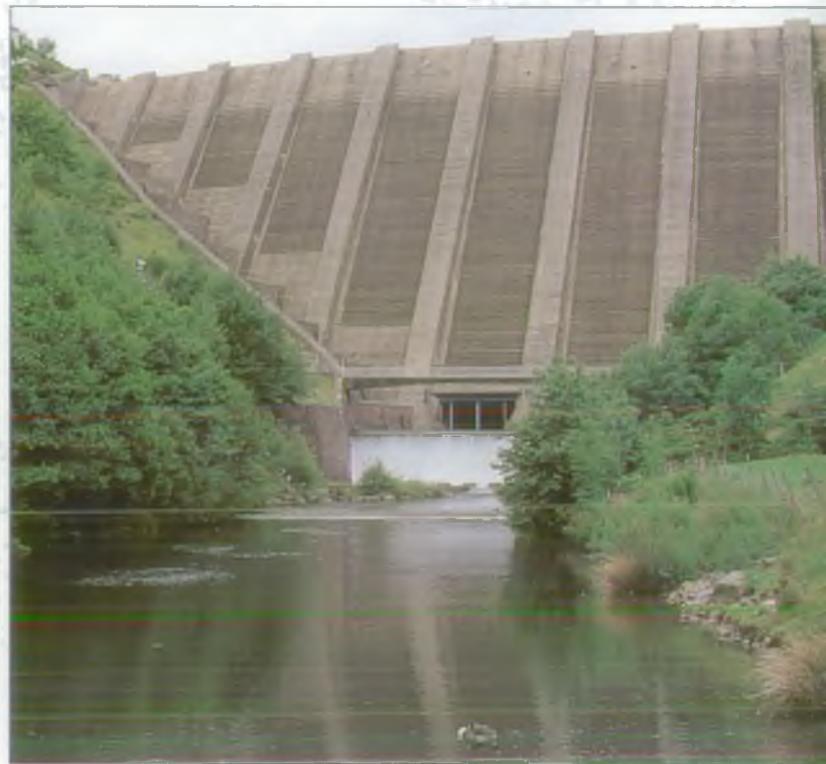
The Severn-Trent Region is the second largest of the 10 NRA regions in terms of both area and population and covers a diverse area of 21,600 sq km (8,337 sq miles), containing 6,191 km (3,870 miles) of rivers, streams and canals.

Based on the catchments of two of the country's greatest rivers, the Severn and the Trent, our area stretches from the Humber estuary in the north to the Severn estuary in the south and from the Welsh mountains in the west to Rutland Water in East Anglia. Our responsibilities include managing water resources, including licensing of abstractions; fighting pollution; setting standards for and policing all discharges to the water environment; protecting against flooding; looking after fisheries; conservation and promoting water-based recreation.

REGULATING THE RIVER SEVERN

The River Severn is 354 km (220 miles) long from its source in the Welsh mountains to its outflow into the

Severn estuary. It is a top quality river and provides drinking water for six million people. Every day millions of gallons of water are taken from the river by water supply companies, industry and agriculture. The river also supports first class fisheries and is an



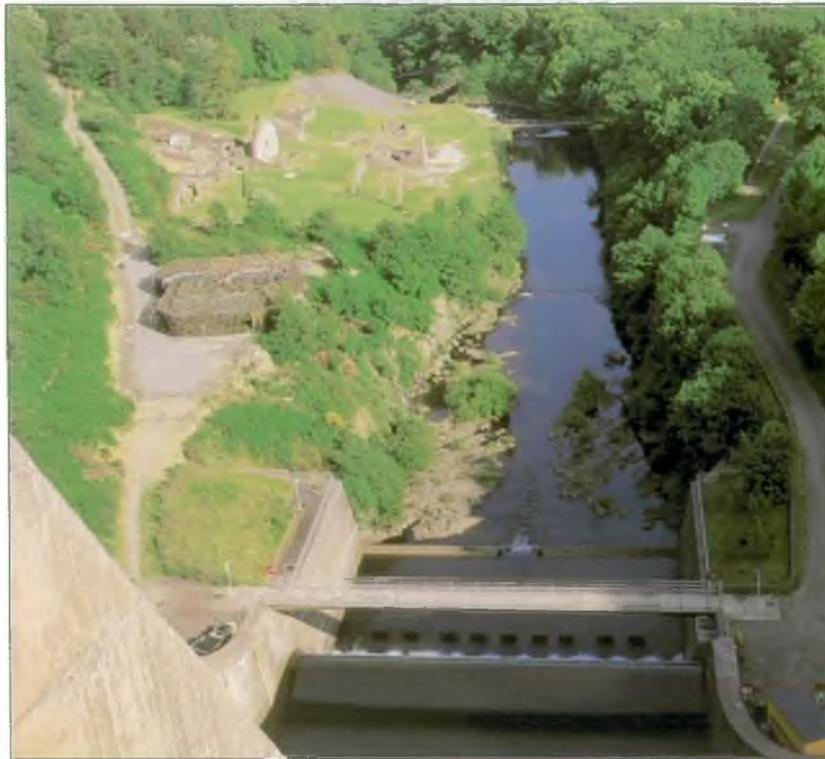
Clywedog dam

important recreational amenity.

During the winter river flows are adequate but in the summer flows often need to be topped up so that there is enough water available for vital water supplies. We do this by releasing water from Clywedog Reservoir and sometimes from Lake Vyrnwy, situated at the head of the River Vyrnwy in Wales. Additional water can also be pumped from sandstone in Shropshire into the river,

this is called the Shropshire Groundwater Scheme. (615 acres).

Clywedog dam was built specifically to provide extra water that could be released into the river during low flows. The reservoir is also frequently credited with reducing flooding problems further down the River Severn but there is little truth in this myth. There are so many tributaries joining the Severn downstream of Clywedog that it can only provide a very limited amount of flood level reduction and even then, only upstream of the Welsh marshes.



River Clywedog from the top of the dam

RIVER CONTROL POINTS

We decide when and how much water to release from Clywedog by analysing information from our highly sophisticated flow forecasting system

at our regional headquarters in Solihull. This gathers together information about rainfall from weather forecasts, radar screens and our own rainfall records, as well as expected levels of abstractions and river levels recorded at our river control points.

The main river control point is at Bewdley, on the River Severn, where we have an extremely accurate river flow gauge installed, and our releases from Clywedog are

CLYWEDOG RESERVOIR

Clywedog reservoir was built between 1964 and 1967. It is owned by Severn Trent Water who release water from the reservoir under instruction from the NRA. Sitting at the head of the River Severn, on the River Clywedog upstream of Llanidloes, the reservoir is 9½ km (six miles) long and covers an area of 250 hectares

intended to maintain a minimum river flow that is measured at Bewdley.

A release of water from Clywedog can take four days to travel downstream to Bewdley in Worcestershire so it is important that we get the timing and duration of releases right.

ABSTRACTIONS FROM THE RIVER SEVERN

Anyone who wants to take water from the River Severn must apply to us for a licence to do so. We set the amount that can be taken so as not to harm the river or affect abstractors further downstream. We also set conditions under which we may limit the amount of water an abstractor can take.

As much as 1000 MI (220 mg) a day can be taken from the Severn when it is being supported and flows are good. But this figure can be reduced if we feel it is necessary for the good of the river.

The main abstractors from the river are:

Severn Trent Water

Shelton 38.6 MI/d (8.5mg/d)

National Power

Ironbridge 31.8 MI/d (7.0mg/d)

South Staffs Water

Hampton Loade 220.0 MI/d (48.4mg/d)

Severn Trent Water

Trimpley 180.0 MI/d (39.6mg/d)

Severn Trent Water

Worcester 47.5 MI/d (10.5mg/d)

Severn Trent Water

Upton 120.0 MI/d (26.4mg/d)

Severn Trent Water

Mythe 125.0 MI/d (27.5mg/d)



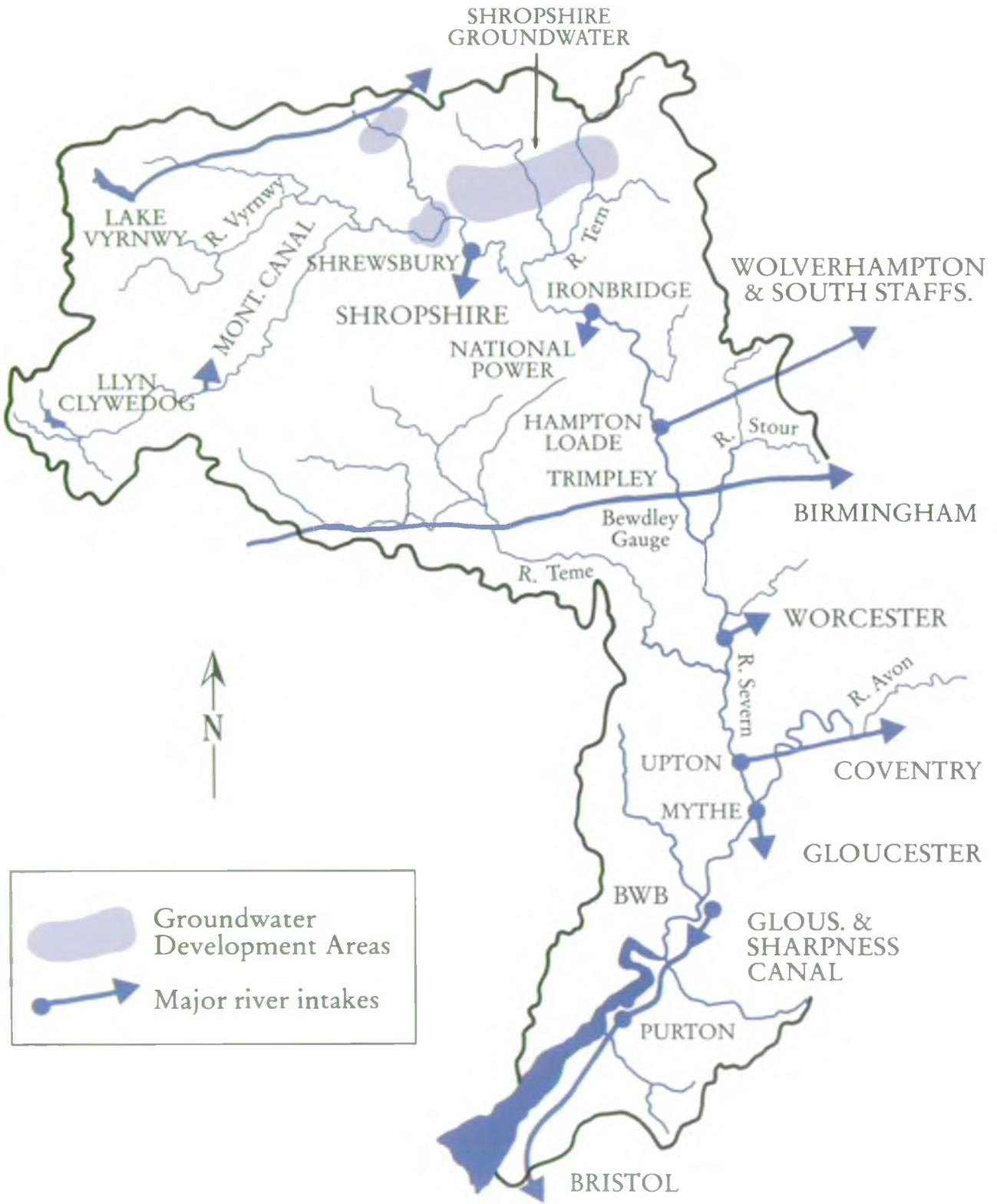
Bewdley gauging station

Bristol Waterworks Co.

Purton 215.0 MI/d (47.3mg/d)
(from Gloucester and Sharpness Canal)

Spray Irrigation in the Severn Basin can also account for 480.0 MI/d (105.6 mg/d) and other, varied, uses add up to 333.0 MI/d (72.6 mg/d).

MAJOR ABSTRACTION POINTS ON THE RIVER SEVERN





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NRA

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Severn-Trent Region*