

WATER IN THE THETFORD AREA



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NRA

*National Rivers Authority
Anglian Region*

WATER IN THE THETFORD AREA

Winter rainfall in the Thetford area soaks into the underlying chalk. The average amount of rain which does this is equivalent to 60 million gallons of water (mgd) every day of the year. Sufficient to fill the Wembley Stadium every day. Some of this water subsequently emerges as spring flows which sustain the rivers Thet, Little Ouse and Black Bourn, and some is used to meet the needs of farmers and of the public supply.

Of this 60 mgd –

- ★ less than 7 mgd is committed to abstraction by farmers;
- ★ 12 mgd is committed to abstraction for public water supply. This *includes* 5 mgd for the future needs of Cambridge.

Apart from the future Cambridge supply most of the public water supply returns to the Little Ouse, mainly through Thetford sewage treatment works. This means that:

THE NET AMOUNT OF WATER BEING ABSTRACTED IS LESS THAN 13 PER CENT OF THE AMOUNT AVAILABLE.

When the Cambridge supply is operating at its full licensed capacity the TOTAL abstracted and not returned locally will be about 20 per cent.

This percentage compares favourably with most other areas in the region.

This favourable long term balance in the Thetford area means further use can be made of these resources providing their use does not have unacceptable effects at times of short term difficulties such as the present drought. Current hosepipe bans in Thetford imposed by Anglian Water Services are not due to any fundamental lack of water, but reflect the need to conserve water in a serious drought.

THE LONG TERM: MEETING THE NEEDS FOR WATER

Water for Cambridge

Cambridge Water Company's use of water from Thetford is designed *not* to combat the effects of the drought but to help meet the needs of the Cambridge area towards the end of the century and beyond – it is an example of long term regional water resource management.

Cambridge Water Company applied to the National Rivers Authority in May 1989 for licences to abstract water from three boreholes near Rushford and Euston to the south east of Thetford. The applications were advertised in the local media and the *London Gazette*, which is a required statutory procedure. Subsequently two objections were received, from the Nature Conservancy Council (now English Nature) and the Essex Water Company.

In arriving at its decision to grant the licences, and following consultation, the NRA considered four main issues –

- ★ whether there would be sufficient water to meet the application?
- ★ would the abstraction adversely affect other abstractors in the area?
- ★ would there be an adverse effect on the water environment?
- ★ would there be proper use of the water?

The NRA concluded that there is sufficient water, the protected rights of other abstractors would not be damaged, the water environment could be protected by conditions in the licences, and that public supply is a proper use. Conditions in the licences include a requirement for the water company to reduce abstraction if levels fall below those which the NRA considers necessary to protect the environment.

Water for Thetford

There is water still available in the Thetford area to meet local needs. Any application to the NRA to take more water would be judged on exactly the same basis as those already granted.

Water for Industry and Farmers

The same applies to local use for industrial or agricultural purposes, such as spray irrigation. However, it will always be difficult to authorise abstractions near sensitive sites such as the Breckland Meres.

Water for the Environment

All abstractions of water affect the water environment. However, the impact on wetlands and similarly sensitive areas can be eased by the careful siting of boreholes, and low river flows can be sustained artificially. There are sufficient long term resources in the area to do this.

THE DROUGHT

Droughts go in cycles. They arrive, they continue, they end.

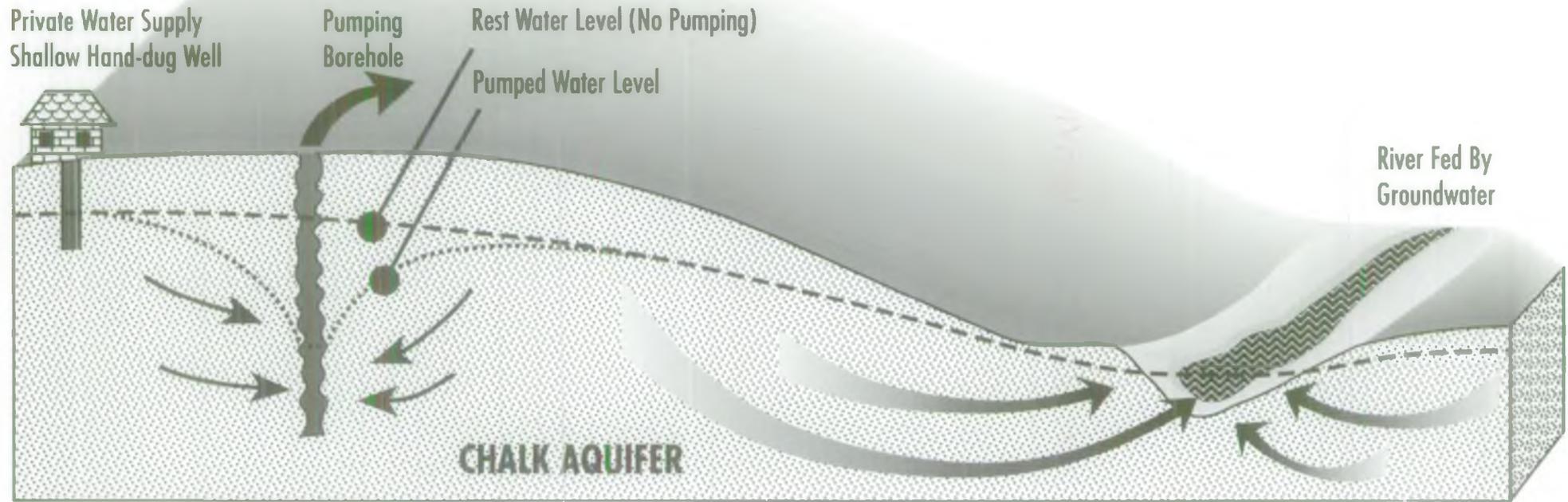
The current drought is the most prolonged period of dry weather in this region within living memory. It is still with us, and it is causing problems to rivers and wetlands, and to farmers and the public.

It is not realistic to think that all these problems can be eliminated. They cannot.

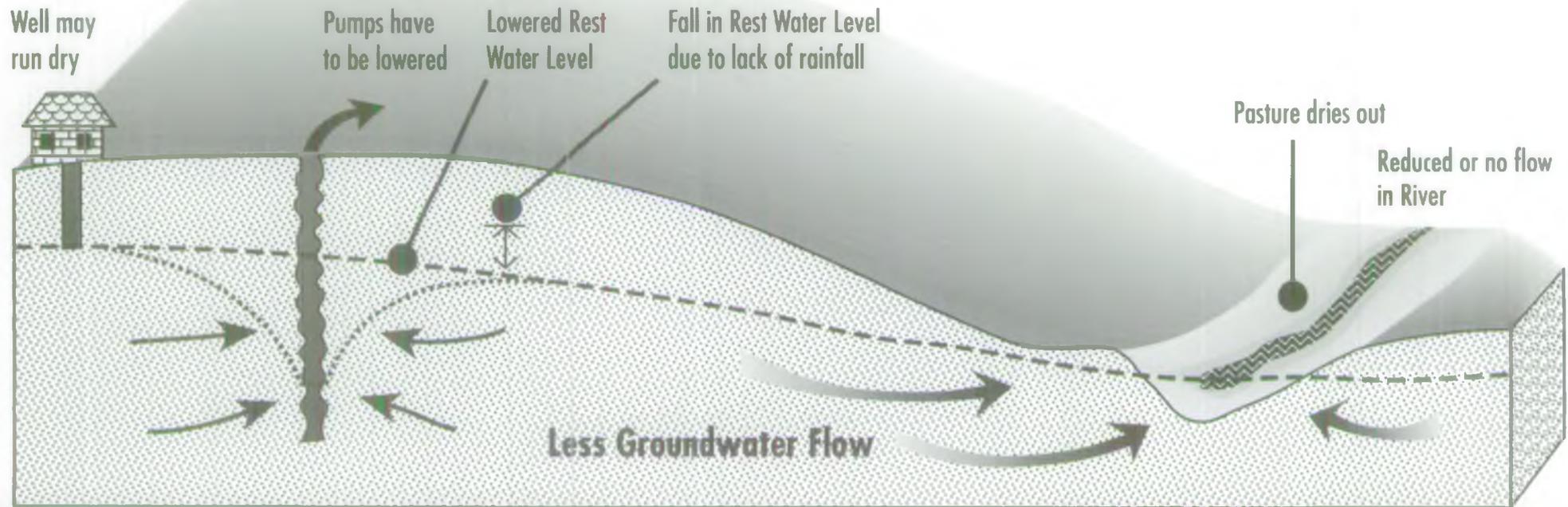
But a great deal can be done to minimise them.

It is important not to confuse the local effects of the current drought with long term plans for water resources, which can, in fact, include measures to ease these effects.

NORMAL CONDITIONS



DROUGHT CONDITIONS



THE SHORT TERM: MITIGATING THE EFFECTS

Short term issues highlighted by the drought include:

Effects on abstractors

Abstractions from underground in the Thetford area, whether for public supply or irrigation, are little affected by drought. This is because of the enormous volume of water stored in the chalk – many times the volume of major reservoirs such as Rutland Water (which is itself as big as Lake Windermere). This large storage evens out the natural fluctuations in weather over periods of many years. The only exceptions are:

- ★ if an abstractor's pump is set too shallow, or
- ★ if the local consequences cause the NRA to curb abstraction.

Effects on Rivers

All net abstractions from underground sources reduce river flows. If abstractions are allowed to increase progressively there comes a point where the effect on the lowest flows is judged unacceptable. There are some well publicised cases in the London area and elsewhere where this is unquestionably happening. General publicity about 'low flows' has tended to colour perceptions of low flows in East Anglia which, though affected in some places by abstractions, are primarily due to three successive dry years.

When the 'unacceptable' stage is reached then either water supplies must be brought in from elsewhere or low flows can sometimes be artificially sustained by 'river support pumping'.

NRA Anglian region already does this for some Anglian rivers, including the Little Ouse and Thet. As a result flows in the Thet this summer have been much higher than they would have been naturally. We have been supporting the Little Ouse since the end of August. Support for the Black Bourn is to be included in our capital programme.

Effects on Wetlands

All abstractions of water from under the ground produce what is known as a 'cone of depression' in the surrounding groundwater table. Where the water table is at or near the surface this can have undesirable consequences both for abstractors with shallow wells, and for wetlands. Prime examples of such wetlands are the Breckland Meres, which occur where dips in the landscape intercept the water table. These are Sites of Special Scientific Interest whose 'specialness' depends on the fact that they dry out naturally, though only very occasionally. The job of the NRA is to manage abstractions in such a way as to have minimal effect on the natural regime of the wetlands. It is for this reason that abstractors relatively near to the Meres have controls on their abstraction.

The licences granted to the Cambridge Water Company are subject to various conditions designed specifically to protect the Meres, and the NRA anticipates that any future abstractions in the area will be subject to such conditions or, better still, located well away from sensitive wetlands.

SUMMARY

In summary there is sufficient water in the chalk aquifer in the Thetford area to meet both local needs and legitimate uses elsewhere. Development of these resources will require great care to ensure that abstractions are correctly located and the water environment suitably protected. This is the task of the NRA in its role as guardian of the water environment.

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