Summer 2004

ARK

ACTION FOR THE RIVER KENNET

Newsletter Number 9

ARK Map and Guide to the River Kennet

The launch of the ARK Map and Guide to the River Kennet attracted over 100 people, including many ARK members and the local press, to Marlborough Town Hall. The event was generously sponsored by the Marlborough Area Development Trust.

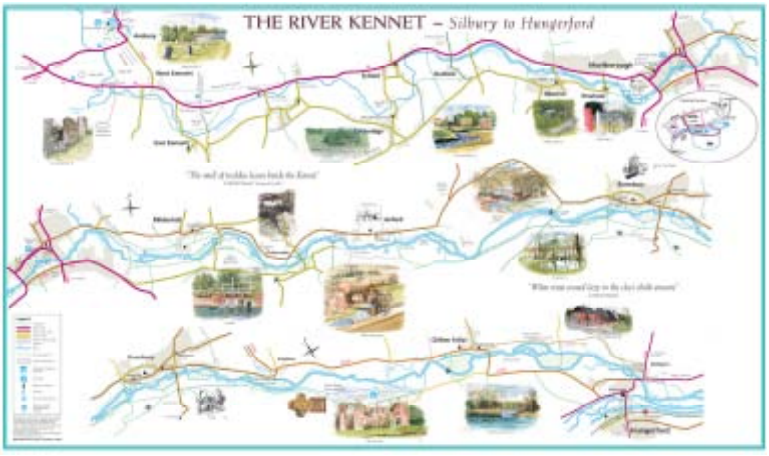
Thank you to everyone who joined us, and to all those who have congratulated ARK on the map and expressed their thanks and made donations.

ARK's president, Lord Kennet.

The launch was a chance to celebrate the success of ARK's work so far and an opportunity to raise awareness of the river again. ARK chairman and founder, Jack Ainslie was presented with a framed map in recognition of his dedication to protecting the river.

The Map and Guide is now available at outlets in Marlborough, Ramsbury, Hungerford and Devizes, or by mail order through ARK.

If you are an ARK member you will have received a free map. If you have not received a copy, or you would like to purchase another, please contact ARK.



Life in the River

Come and see it for yourself on Sunday October 3rd. 2pm— 5pm

Find out more about what goes on in the River. You are warmly invited to join us at the Marlborough College Science Department to discover more about what lurks below the surface of the Kennet.

An amazing variety of invertebrates, fish and plants will be on show. Many of these are too small to see with the naked eye so they will displayed under microscopes allowing you to marvel at their beauty and complexity. From rat-tailed maggots to leeches and lampreys there will be something for everyone!

The event is free. Please bring your friends and family. Tea and cake will be on sale.

Sean Dempter, Head of Biology, Marlborough College

Inside this issue:

Contact ARK: We love to hear from you. If you have any suggestions or would like to contribute to the newsletter, please get in touch. Email: riverkennet@hotmail.com Tel: 01672 513672.

The mystery of the floating slime

Peter Marran

In the first really warm days of spring you often see a disgusting-looking brown slime floating on the river, especially on its slower backwaters.

This 'sewage fungus' is in fact is a cocktail of sediment and microscopic algae called diatoms. Like the green slime produced in garden ponds and ditches in the spring, the brown gunk is produced by the multiplication of countless millions of diatoms triggered by the increased sunlight and warmth. Like other plants, diatoms turn carbon dioxide and water into food and, fortunately for animal life everywhere, give off oxygen as a byproduct. In the late spring they produce so much oxygen that the gas effectively lifts some of the diatoms from the riverbed, along with the mud they are attached to, and takes them to the surface. There they float gently downstream on a raft of oxygen.

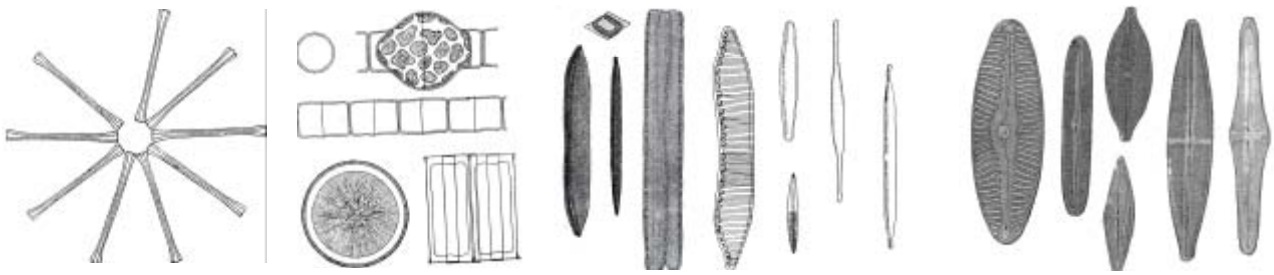
Under the microscope, diatoms are exquisitely beautiful, with cell walls made of silica instead of cellulose. They are effectively made of glass!

Diatoms are single-celled, and unique among plants in having cell walls made of silica instead of cellulose. This means that the cells themselves are practically indestructible, like snail shells, and survive in the mud long after the living plant has died. Indeed, a lot of the fine clay lining the river will consist of dead diatoms. Each diatom consists of two parts fitting together like a box and its lid. They come in all sorts of shapes, some solitary and shaped like little boats, or round pillboxes. Others, mainly the free-floating ones, will hang together to form chains, fans or even star-like arrangements. The living diatom is brown because they contain browny-orange carotenoid pigments as well as green chlorophyll. Many species secrete sticky mucilage to attach themselves to stones or plants (some can even propel themselves along on a slow jet of slime). This is why, seen en masse, diatoms are slimy as well as brown. How strange that the 'crystal plants' of the microscope should look to the unaided eye like the worst forms of pollution.

Diatom slime, Mildenhall June 2004

So should we be worried about the diatomaceous slime in the water? Well, mostly no, but possibly yes. The seasonal abundance of diatoms is a natural event in the ecology of the river, especially one with a lot of silica (from flints) like the Kennet. They are effectively the river's grass, grazed on by snails and insect larvae, especially mayflies, caddisflies and chironomid midges. Without the diatoms there would be no flies, and hence no trout. But you can have too much of a good thing, and those who know the river well say that the floating brown muck of the Kennet has increased over the last ten or so years. If so, why should that be? It almost certainly means that the basic nutrients on which diatoms feed – nitrogen and phosphorus – has increased. The new phosphate-strippers on the river don't remove all the phosphorus, and there's plenty left for the diatoms to use (there's even a theory that phosphate stripping makes conditions better for certain kinds of diatoms, but lets not get into that – it's very complicated!). It might mean that the diatoms are being grazed less. Last year was, by all accounts, a bad one for mayflies, one of the principal grazers. What has caused their demise must be speculative, but it could mean that something nasty has got into the water which is affecting mayflies, and, if so, probably other invertebrates. Yet another theory is that less ranunculus and other plants in the river means more room for diatoms on the bare mud.

The diatom blooms are probably harmless in themselves, but they are a sign that there are more nutrients in the river than there used to be, and that the Kennet is carrying heavier loads of silt. Whether they point to sinister changes to food-webs in the river isn't known for sure. But we needn't blame the little glass plants. They are a symptom, not the cause. The cause, as usual, is us.



A selection of Diatoms found in the River Kennet, , highly magnified

ARK committee

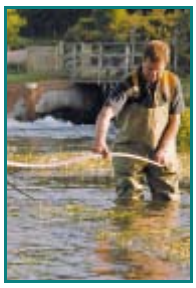
The second in a series of brief biographies of the ARK committee

Ken Carter is responsible for the stretch of the Kennet in Manton, above Marlborough College and has a keen interest in the general health of the river and protection of its environment.

Val Compton lives in Marlborough. She made much progress with Kennet District Council, Waitrose and other riparian owners in the town to take their river-keeping responsibilities seriously. She in turn actively helps the river environment by regularly clearing rubbish out of the river.

Sean Dempster, is Head of Biology at Marlborough College. He read Zoology at Trinity College, Dublin before going on to Manage the Lake Titicaca Fisheries Development Programme in Bolivia.

Martin Gibson, ARK Treasurer, lives in Mildenhall. The Kennet flows through his garden at Durnsford Mill House and he farms some of the land near the River.



John Hounslow is the River Keeper for Savernake Fly Fishers. He maintains the stretch of river between Marlborough and Axford. His knowlegde of the river is almost infinite and he has campaigned with ARK to protect the river. He contributes the 'State of the River' Report to the ARK newsletter.

Peter Marran lives in Ramsbury. He is a renowned naturalist and regularly writes for the National Press. He is the author of the article on diatoms in this edition of the ARK newsletter.

State of the River — Spring 2004

Report by John Hounslow, River Keeper

River flows in April were still well below average, approximately 40% down throughout the catchment, however, the weather in April and early May was relatively wet and cold so groundwater levels increased. The Berkshire and Wiltshire Downs received 175% of the long term average and it was the 8th wettest April for the catchment in 85 years.

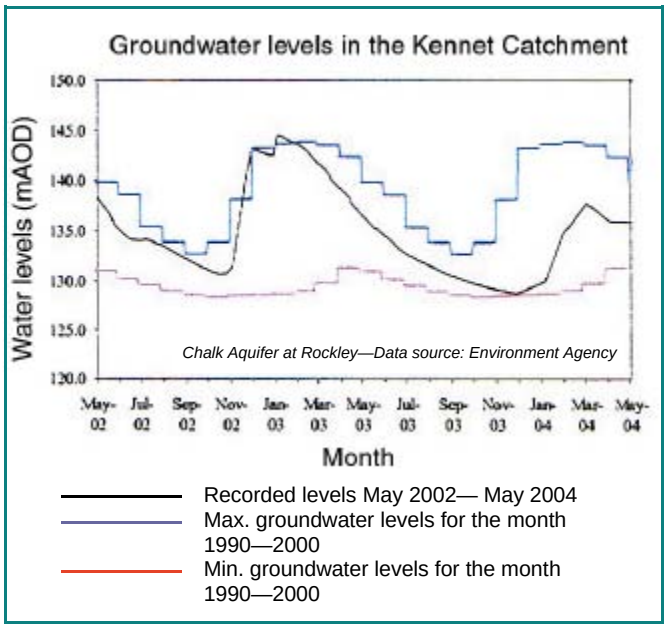
This recharge of water levels meant that river flows have been constant until now (late June). The rainfall has really saved the river from the extreme low flows predicted. Levels will be low again by Autumn. To maintain the river's health winter rain must begin in September, rather than in November as in 2003.

River clarity in April was very good but by the start of May, warm weather stimulated diatom activity and clarity deteriorated (see page 2). Weed growth was poor due mainly to low autumn flows. Ranunculus needs a good strong flow to stimulate it to grow. Throughout the winter months it grows very slowly only bursting into full growth in April when daylight hours become longer and sunlight feeds its growth.

By late June the River below Marlborough through Minal to Axford is looking in good health. Diatoms have disappeared and Ranunculus and Starwort are growing well. The water clarity has improved but is not as clear as a chalkstream should be.

Fly life has been rather disappointing with only small hatches occurring.

Waterfowl and wildlife. Last year saw an invasion of the Kennet by Mink. These vicious animals caused severe damage to birdlife and water-voles. The Mallard duck nests were cleared out by the mink and duck populations were very low. The river keepers from Marlborough down to Hungerford worked with the Wiltshire Wildlife Trust to try and tackle the situation. Wiltshire Wildlife Trust has set up a water-vole recovery project. Last year we captured 25 mink. Hopefully continued trapping can reduce the number further.



Environment Agency 'Kennet Chalkstream Restoration Project'

Geoffrey Findlay, Vice-chairman, ARK

ARK is delighted to report that the Environment Agency (EA) has announced this project. Its objectives are completely in line with ARK's. We welcome it and have started discussions with the Agency's leader of the project Brian Hughes.

The project aims to restore the clarity of the river and enhance its value to wildlife and as a recreational fishery

Commenting on the role of ARK in prompting this project, Brian Hughes said:

'*ARK have played a part, along with others, by ensuring that the profile of the Kennet has remained high and that we in the Environment Agency are kept aware of its national importance as a chalkstream*'.

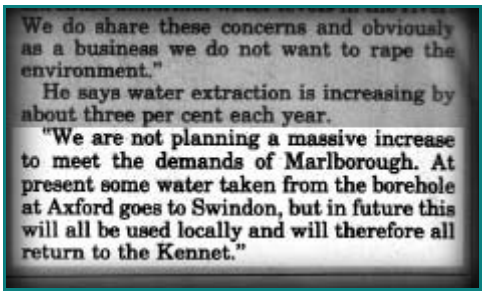
Over the last year the EA has identified shortfalls in knowledge, and has started to develop partnerships and formulate actions. Now it wants to make more rapid progress in planning the necessary actions and finding the funding and partnerships to deliver those actions. The agency plans:

? to undertake more research into the Kennet
? to develop partnerships in restoring the River
? to secure external funding.

The project team will be lead by the EA and comprise representatives of other external bodies, which we hope will include ARK. It will consult widely with all interested parties and keep them informed of progress. A charitable trust will be set up to co-ordinate the fund-raising and oversee the deployment of funds. The action plan will include both short term (0-5 years) and long-term (5 years plus) actions. The Agency plans to establish the basic mechanisms and trust fund this year so that real actions can start in 2005. ARK looks forward to participating fully in this exciting new development.

Fourteen years ago

On 18th January, 1990 the Marlborough-Pewsey Gazette and Herald reported on their front page **'Dwindling water levels spark fears over Kennet'**.



We do share these concerns and obviously as a business we do not want to rape the environment."

He says water extraction is increasing by about three per cent each year.

"We are not planning a massive increase to meet the demands of Marlborough. At present some water taken from the borehole at Axford goes to Swindon, but in future this will all be used locally and will therefore all return to the Kennet."

Thames Water's resources planning manager was quoted (see left).

ARK wonder when 'in future' will be?

The River Clean Team

Val Compton

A group from Marlborough's Christchurch known as "The Noise" offered their services for any project I might have in mind. I asked rather tentatively if cleaning the river through Marlborough would be the sort of thing they might tackle. The answer was instant and in the affirmitive. Having exchanged maps and collected waders a group of young and not so young people duly waded into the river and cleared all they could find - including scouring the riverbank.

It was a real joy to take a walk the following morning and for the first time in many weeks I could look over the bridge in the George Lane Car Park and see no litter at all on the river bed. What a difference had been made! Heartfelt thanks to "The Noise" whose slogan is "Actions Speak Louder", for being as good as their word!

'The noise' in action

Sewage Sludge Cake

John Hounslow, spotted a huge pile of sewage sludge cake stockpiled by the Water Meadows near Silbury Hill. Sewage sludge is a by-product from sewage treatment and is used as a fertilizer to improve farmland. The sludge was being stored very close to the river corridor — a downpour of rain could wash a torrent of nutrient loaded water into the river.

The landowner had followed all the correct procedures and permissions to store the sludge, the problem was that permission was granted according to a map grid reference. The field identified was enormous, and should have been assessed more carefully for its suitability.

The Environment Agency acted promptly when it heard of the problem, and the landowner moved his stockpile to a more suitable location, which was good of him, because he was not acting illegally.

As a result of ARK's intervention the Environment Agency are altering their procedures to ensure that in future any sites close to a River will be assessed more carefully to prevent potential water pollution.