



The Eye

The annual publication of the Eye Brook Community Heritage Project

An Eye to the Future

Perhaps surprisingly for a project based on a stream catchment, this third issue of The Eye is the first to include articles on water. The movement of water from stream to river to sea is an inevitable process. In contrast, the quality of that water and the health and productivity of the land from which it comes is very much determined by human activity. Land, water, and climate are affected by what we do, whether we are farmers, residents working out-

side the area, or visitors to it. We will influence the nature of the Eye Brook area in the future, just as very many previous generations have in the past.

Understanding that process is what the Eye Brook Community Heritage Project is all about. The project is managed and carried out by local people. If you are not already, become one of them. For details of how to get involved, see the back page.



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Hydro-Power

Eyebrook Reservoir

About the Eye Brook Community Heritage Project

The Eye Brook starts at Tilton on the Hill and extends southeast to Eyebrook Reservoir and Caldecott. Just downstream of Caldecott it joins the River Welland which enters the Wash near Boston. The Eye Brook Community Heritage Project focuses on the past and present management of land and other natural resources such as water and wildlife, with a view to informing future sustainable management of the area in which we all live. The project combines scientific knowledge arising from research carried out in the catchment, with the local knowledge of those living and working in the area.

Water Mills

There are records of at least three mills at any one time along the Eye Brook in the nineteenth century and there were more than that in earlier times. For example, the Domesday Book records mills in Stockerston, Allextion, East Norton,



Detail of 1847 Tithe map showing Loddington Mill and its leet.

Loddington and Skeffington in 1086. The first three of these were taxed at 2 shillings and Loddington and Skeffington were taxed at 16d and 12d respectively, probably reflecting the smaller size of these mills in the upper catchment. Belton has three mills recorded in 1650, of which one was a windmill and another may have been the water mill at Allextion. The other water mill is thought to have been on a tributary west of the village where there are earthworks and remains of a duct made from hollow logs which may have been part of the out-fall from the mill bypass. There is also evidence of a mill pond which would have been essential on such a small stream. Such mills were only used during winter. Nineteenth century maps reveal that Loddington and Allextion mills had long leets feeding water from the main stream into long thin ponds which provided a head of water for the water wheels. Loddington Mill was demolished a



Caldecott Mill drawn by JRH Prophet from an early twentieth century photograph.

century ago, and its house eventually suffered the same fate, but Allextion Mill remains as a private house.

The mill at Caldecott was built in the late 1870s (with a large water wheel originally from Ayestone in Leicester) and continued in operation until 1910. A smaller stone and slate mill was demolished when the new mill was built. This was located 200 metres upstream where the sluice gates are today. Records from 1831 reveal that it had two pairs of millstones and a bakehouse.

Water power in the form of hydraulic rams was also used to pump water to houses. Manor Farm at Tilton had spring water supplied in this way until the 1940s, with the hydraulic ram being powered by water from the stream. The village of Wardley had a similar arrangement through the 1930s and '40s, but with a spring providing both the water and the power for the ram. The Wardley water supply was not very secure during the summer and a more reliable means of supplying water had to be found when water consumption increased in the 1950s. That marked the end of a long history of local hydro-power.

This article is based on information provided by Rob Griggs and Sheena Girvan (Caldecott), Sheila Sleath and Robert Ovens (Belton), the late Harry Clements (Domesday records), and Ken Farnsworth and Ray Green (Hydraulic rams).

The reservoir was built between 1937 and 1940 and the first water was drawn from it in December 1940. It was built to supply the Corby steel works by Stewarts and Lloyds which became British Steel and is now Corus Tubes (part of TATA Steel). The proposal to build the reservoir seems to have been met with interest locally, and very little opposition. 580 acres of land were bought, mainly from the Marquis of Exeter, with some from the church and private land owners. The reservoir itself covers 406 acres.



The reservoir and farmland at Hollyoaks, viewed from the north.

An Act of Parliament was necessary to permit the reservoir to be built. Conditions of the Act were the provision of 700,000 gallons of 'compensation' water each day to maintain the stream flow, and the provision of water for Corby, Market Harborough, Kettering and Uppingham. German prisoners of war helped with the construction of the mains supply. The mid-Northamptonshire Water Board took over the domestic distribution system in 1948 and water continued to be supplied to the Station Lane Filter Station for this purpose until 1957 when only the supply to the steel works was maintained.

The water for the steel works passes through 24 inch pipes to Caldecott Pumping Station a mile away, and is pumped from there to Rockingham Hill from where it travels under gravity to a reservoir in the Corby Works. The potential regular yield of the reservoir is 3.6 million gallons per day, but 7 million gallons can be drawn off when the reservoir is full. In 1955, 16 siphons were added, enabling the top water level to be raised from 225 to 227.5 feet, thereby increasing the capacity by 261 million gallons.

In May 1943, the dam was used for low-level flying practice by Lancaster bombers of 617 Squadron, culminating in the destruction of the Mohne Dam in the industrial heartland of the Third Reich by what became known as 'the Dambusters'.



The dam under construction in the late 1930s.

Photo source: Philip Johnson

The reservoir was stocked with brown trout as soon as it was completed in 1940 and Stewart and Lloyds employees caught a total of 25 fish in 1942. In 1952, the fishing was opened to the public and stocking with brown trout continued until the 1970s when a switch to rainbow trout was gradually made. It is not known whether wild brown trout from the stream enter the reservoir, but anglers today are encouraged to return any brown trout caught. In 2007, 12,119 rods caught a total of 27,954 fish, the largest being 11.04 lbs.

The reservoir was designated a Site of Special Scientific Interest (SSSI) in 1956 because of its nature conservation importance for wintering waterfowl. Counts by the Leicestershire and Rutland Ornithological Society have revealed recent peaks of nearly 3,000 tufted duck, 2,000 wigeon, 1,000 teal, and around 500 gadwall and pochard. Smaller numbers of pintail, goldeneye, goosander and smew are also frequently recorded.

Material for this article was provided by Alan Jermy.

How is the Eye Brook?

The Eye Brook is healthier than many streams across the country and has reasonably good water quality. The stream supports numerous species of fish and insects although it is not without its problems. Brown trout is a species that is of interest to many people, including those who like to fish, those who simply like to see trout in the stream, and those who just want to know that they are there. Surveys carried out by the Allerton project in 2004 and 2008 have revealed that this and other fish species are present throughout the length of the stream. Numbers of trout are low though, and breeding success is very low indeed. This is because of sedimentation of stream bed spawning sites, as trout need clean gravel in which to lay their eggs.

Sedimentation is particularly associated with soil erosion from arable land and the Allerton Project has carried out a lot of local research into this issue in collaboration with other research organisations. Soil gets into ditches and streams by two routes: erosion associated with surface runoff during storms, and the field drains which are there to ensure that fields do not become waterlogged. There tends to be more sediment in surface runoff than drains, but drains flow for a longer period of time. Sediment cores taken from the Eyebrook reservoir suggest that sedimentation rates increased three-fold during the second half of the last century as the arable area increased and new field drains were installed. The problem of erosion is not likely to go away, especially as climate change predictions are for more intense storm events in the future.

Phosphorus is the main nutrient causing problems in streams and ponds and is very much associated with particles of sediment. More stream insect species are present in water with low phosphorus concentration than in water with high phosphorus levels. The number of algae species is also higher where phosphorus levels are low. However

the overall amount of algae is highest where the phosphorus concentration is high. This situation will be familiar to anyone with a pond covered with blanket weed!

Research at Loddington suggests that minimum tillage can often reduce the loss of soil and nutrients from land to water. Minimum tillage involves shallow cultivation, without turning over the soil, instead of traditional deep ploughing in which the soil is inverted. The tramlines left through fields for vehicle use can be a major pathway for erosion if they run up and down slopes, so anything that disrupts them and encourages infiltration of water can reduce damage to streams. Returning straw to the soil each year and encouraging a build up of earthworms also helps the soil to act like a sponge, slowing the movement of water to the stream. This can also reduce flood risk downstream.

Pools designed to receive water from field drains before it gets into streams act as sites for sedimentation to take place and help to protect the stream. Current research attempts to improve the design of these ponds, while minimising the amount of productive land they take up. Research at Loddington reveals that ponds created for this purpose can also be good for wildlife.



Electro-fishing survey of potential trout spawning sites.



Tilton contractor John Farnsworth excavates a prototype field corner wetland for new water quality research at Loddington.

What You Can Do

Although growing crops certainly has an impact on the stream, the recent research reveals that household septic tanks are also having an impact, for example by contributing higher concentrations of phosphorus than farmland does. The two sewage treatment works in the catchment also

make a contribution to nutrient concentrations in the stream. What is clear from this research is that all of us living in the catchment can contribute to looking after the Eye Brook. See the box for ideas to reduce your impact.

THE FOLLOWING TIPS WILL HELP REDUCE YOUR IMPACT ON THE STREAM:

- Make sure that rain water from your roof and driveway does not go into your sewage system or septic tank. Collect rainwater in a water butt for garden use
- Reduce your water use
- If you have one, get your septic tank de-sludged each year
- Do not put the following down the drain: cooking fat and oil, undiluted disinfectant and bleach (septic tanks only), garden chemicals, paint and solvents such as paint brush washings*
- Use environmentally friendly detergents, 'eco-balls' and washing powders, and do so sparingly
- Consider a reedbed or Package Treatment Plant for household sewage if you are not on a mains sewage system

Following this advice will also help to avoid blockages and keep down water treatment costs.

* Animal fats can be left to solidify in plastic pots (e.g. yoghurt pots) and then put in your black wheelie bin or fed to birds in winter. Left-over paint can either be given to community projects or left to dry out and put in your black wheelie bin. Used vegetable cooking oil and used engine oil can be taken to the Recycling Centre at Somerby. For solvents and garden chemicals phone the Waste Management Customer Services Centre on 0116 305 0001.

SEWAGE DISPOSAL

Ken Farnsworth recalls Tilton's pre-sewage system days of the 1930s. "There were lots of cottages with pans. There was a cart that came round once a week and they emptied these pans into it. They used to come around about lunchtime and the smell was violent. They used to call it the 'Violet Cart'. Some of those cottages used to have to bring the pans through the house!"

CHANGES IN WATER USE

Jim Inchley, who farmed at Loddington Mill in the 1930s, recalls his grandparents collecting two buckets of water each day (equivalent to about 15 litres per person) from the well, which was located about 200 metres from the house. Today, we each use about 150 litres of water per day.

Changing Land Use

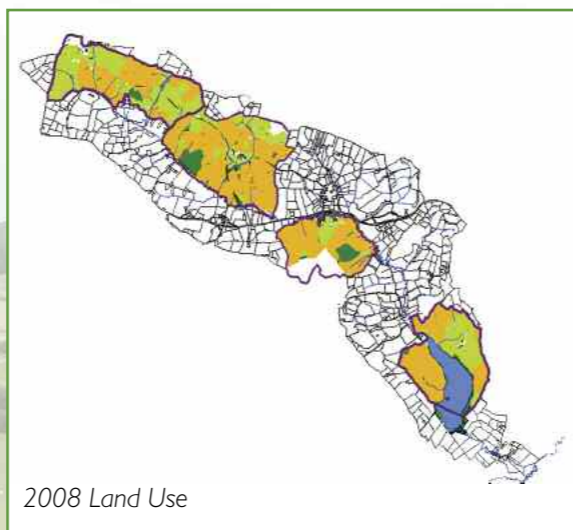
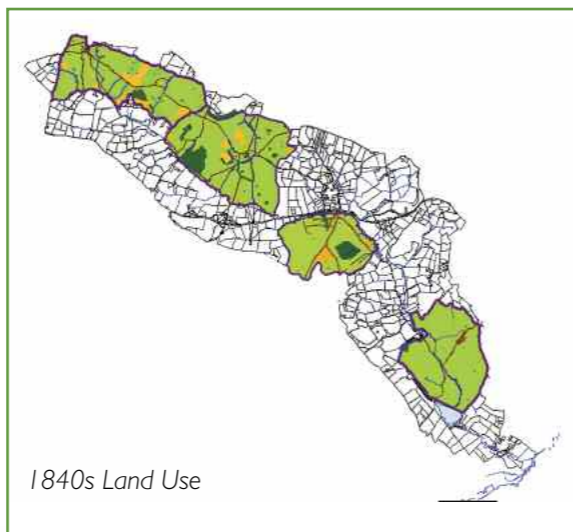
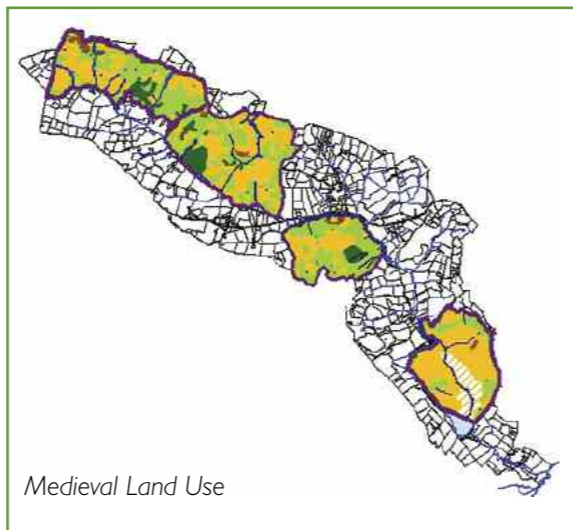
The landscape that we are now familiar with developed quite quickly during and after the Second World War when food was rationed and the area of cropped land expanded at the expense of grass. Prior to that, little had changed for a couple of centuries. The maps on this page show the areas of grass and arable for the medieval period, the 1840s and the present day for four Eye Brook parishes.

Medieval maps are based on 1940s aerial photos which show where the ridge and furrow evidence of medieval cultivation remained. Some ridge and furrow had already been cultivated by the time the photos were taken (as revealed by the 1840s arable fields), and the arable area on the map is therefore a minimum. We do not know much about where the medieval woodland was but some of the present day woodland was certainly cultivated in medieval times. Although not all the arable land was cultivated every year, a large area was needed as the population was high and crop yields were very low.

Following the plague, the arable area declined and livestock production increased. By the time of the Tithe maps in the 1840s, the land had been enclosed with hedges and most of it was down to grass. This remained the case until the Second World War when the arable area increased again. Today, the population is again increasing and the issue of food security is rising up the political agenda. Land use will continue to change, just as it has over the centuries, with increasing demands for fuel and fibre, as well as food.

Government environmental targets, such as those for water quality and wildlife conservation have been set in recent years. In a historical context, such targets are inevitably subjective. Small streams were no doubt sometimes used as a means of disposing of 'waste' from medieval settlements and were polluted by livestock at that time. Today, domestic waste water still enters the stream and of course there were no field drains during the medieval period. Expert opinion sought during the preparation of these maps suggests that water quality has gradually declined through history. Allerton Project research aims to develop the means to meet targets for water quality and wildlife conservation in the face of our increasing pressures on land.

This article is a summary of work carried out by Pippa King as part of her MSc project with University College London. Land use in the catchment for the medieval period (minimum cultivated area based on 1940s aerial photos showing ridge and furrow), 1840s (based on Tithe maps), and the present day (based on field walking). Woodland is indicated by dark green, pasture by light green, and arable by orange.
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This is Climate Change

Migratory birds are arriving earlier, many bird species are nesting earlier, and spring flowers are appearing earlier than in the past. Local observations also support these records of wildlife change. Within the past five years, Little Egrets, until recently found only in southern Europe, have become a regular sight at Eyebrook Reservoir. This north-westward spread across the country has also occurred for other animals. A decade ago there were no grasshoppers or crickets at the Allerton Project farm at Loddington. Now there are six species, some of them very common. Grasshoppers and crickets are amongst the insects to be expanding their range across the country in response to climate change. Roesel's Bush Cricket, now common locally, was confined to the London area in the 1980s. Listen out for it in summer. It sounds rather like a diminutive free-wheeling bicycle. While we may welcome new species to the area, they also represent a warning of the serious negative impacts of climate change such as drought, storms and flooding that affect us all.



Roesel's bush crickets now occur throughout our area.



Little egrets are newcomers to the reservoir.

How Green is Your Community?

Tugby primary school is to become an "eco-school" under a scheme supported by Leicestershire County Council. The scheme will bring wide-ranging benefits to the school, including environmental education, cost saving energy efficiency measures, and other resource benefits. The Eye Brook Community Heritage Project will contribute local knowledge and support to this process.

The Three Villages Conservation Trust comprises the villages of Belton, Allextion and Wardley and was set up four years ago, primarily to establish and manage a 6.5 acre community woodland.

Contact: Vivian Anthony 01572 717 400
vsa@webleicester.co.uk

Tilton Green is a group of people from Tilton and Halstead who promote sustainable living within the parish, including energy efficiency and recycling. The group arose out of the recent parish plan and is supported by ENABLE's (Environmental Action for a Better Leicestershire) Climate Friendly Community programme.

Contact: Miriam Stoate
0116 259 7609
miriamrenner@aol.com



Events



Visit to Eyebrook Reservoir in 2008.

This is the programme of main events for 2009. Check village newsletters and notice boards for other events during the course of the year. Please get in touch if you have ideas for site visits, evening talks or workshops for 2010. **To book a place for any of the events below, please contact Natalie Augustzynyi on 01572 717220 or naugusztynyi@gct.org.uk**

So, what has the Eye Brook Project achieved? Wednesday 25 February, Tugby Village Hall (evening talk)

Chris Stoate will provide a comprehensive update on the Eye Brook Community Heritage Project and what it has achieved so far.

Management and Wildlife of Tugby Wood Saturday 14 March, Tugby Wood

Few woods are still managed to produce traditional products such as riven rails, and stakes and binders for hedging, benefiting woodland wildlife in the process. Tugby Wood is an exception. Owner and manager Mick Winterton will tell us how he does it.

Sewage Treatment Works Saturday 11 April, Tilton Sewage Treatment Works

Don't like to think about it? Come along and find out what happens to your sewage! Anglian Water's Pete McCabe will tell us about how the sewage treatment works at Caldecott and Belton work, as well as providing a tour of the Tilton site and an account of their history.

Visit Beaumont Chase Farm Wednesday 20 May (evening visit)

Find out from farmers Joe and Mary Nourish how they adapt the management of their farm to meet the requirements of wildlife. One of the most beautiful sites in the valley with numerous wildlife species.

The Important Bit: What You Can Do

There are many ways in which you can contribute to the project.

- Contact your local history society or the Allerton Project to share your local knowledge.
- Search out information and documents such as photos, maps and census data relating to historical management and use of the land and other 'natural resources'.
- Provide records of past or present plant and animal species.
- Attend the events listed on this page and suggest topics for future events.
- Distribute copies of 'The Eye' and encourage others to participate in the project.



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