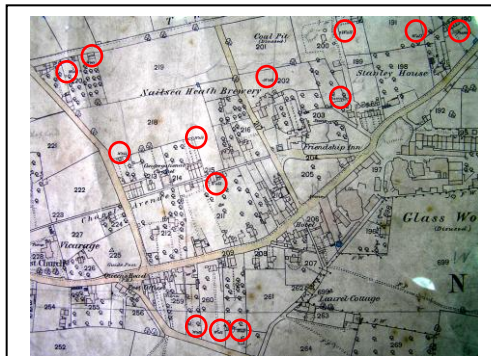


The Hydrology of Nailsea

Terry Smith
6th July 2013



Ordnance survey map dated 1884 showing wells and pumps (in red circles).

Water is essential for our lives, and until the coming of mains water to Nailsea in 1905 the daily chores of our ancestors were centred on the collection of water for food preparation and washing, as is still the case in many countries across the world. Prior to the 20th century the inhabitants of Nailsea would collect enough water to last the day, a task often assigned to the children. Wraxall Mill was one place where water was freely available. Children would be sent there with buckets before going to school to collect water from the Land Yeo, using steps built into the bridge. We now turn on the tap, often forgetting that there were those who were - and many worldwide who still are - unable to have such a luxury.

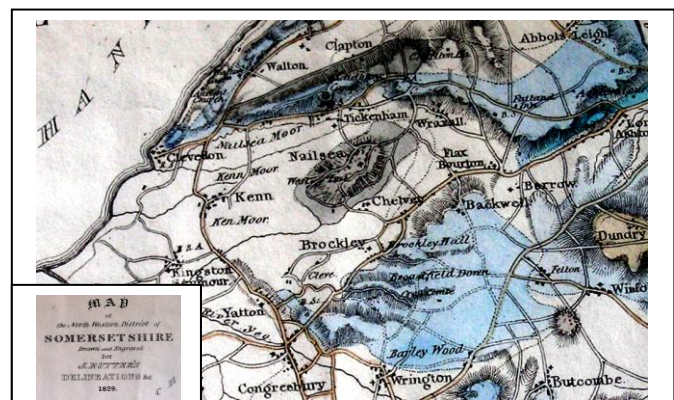
In 1843 at the time when Christ Church was being built in Nailsea, most water was drawn from wells. It is doubtful if any house could claim to have a bathroom at that time. Some of the affluent may have had a stone sink and conditions were mostly rather unhygienic. Even now, at least one billion people still live in this way and are unable to access clean water (www.wateraid.org/uk).

Closer to home, our insatiable demand for energy now extends to the exploitation of gas shale deposits in proximity to sources of underground water. Hydraulic fracturing, or 'fracking' is a method used to exploit unconventional sources of gas, such as shale gas and coal bed methane. Such methods can cause contamination of this water (from additives or from the natural compounds found in the shale) and for this reason it is important that we understand the underground flow patterns. Concerns have already been raised that this controversial process could pose a threat to Bath's world famous hot springs. Similar considerations apply to the leakage from landfill sites, and particularly now in regard to the proposed deposition of asbestos waste at Stowey Quarry on the Mendips.

In writing this short article I have tried to summarize the history of the water supply to Nailsea and the surrounding area. In doing this I have received much assistance from local residents, and from those in statutory organizations, some of whom are listed at the end of this article. Without their help, this article would have been greatly diminished.

Geology

The community of Nailsea arose on a small hill surmounting the coal measures in the valley formed between the rivers Kenn and Land Yeo, (Yeo is the old local name for 'river') both draining westwards towards the sea. The River Kenn joins the Blind Yeo which enters the sea to the south of Wain's Hill in Clevedon, and the Land Yeo enters the sea a short distance to the north, after flowing through Clevedon. The Tickenham ridge lies to the north of



Map reproduced from Rutter's Delineations (1829) showing the topography and geology of Nailsea



Environment Agency remote monitoring station on the Land Yeo at Wraxall House ST483715

Moorend Spout, and the Backwell hills are to the south. In the 1700s, much of the land was a wild marsh (or moor), and of little value for agriculture. The Romans tried to drain this land, but in the last 200 years much more effort was made, mainly by the construction of the rhyes, and by laying underground land drains. This work was closely associated with the enclosures of the early 19th century. (A rhye, pronounced 'reen', is a minor man-made watercourse, draining into a river. It is probably closely related to the word 'Rhine', the main river in Germany.)

Rain water falling on the limestone ridges percolates through the rocks until it reaches the relatively impermeable Pennant Sandstone (this is named after the place in Wales where this

sandstone is found), when it appears as springs. Around Nailsea there are also deposits of impervious clay, which can contract on drying, causing structural instability to the foundations of buildings. Rain falling on hills may travel a long distance before it emerges. It is said that some of the water in our local springs originates in Wales, while the water in the springs at Bath probably comes from the Mendips, and is most likely to be between 6,000 and 10,000 years old (The Hot Springs of Bath; BANES)

Similar geological limestone (karst) landscapes give rise to caves on the Mendips eroded by the flow of water. Flint implements dating to the Mesolithic about 8000 years ago have been found in springs in Towerhouse Wood. The prehistoric seasonal



Engine house at Middle Engine Pit. The tank on top of the tower was used to store water for the Elms private house. ST 482 706

encampment in the field to the south of that Wood probably

depended on those springs for a supply of fresh water, while food in the form of fish and wildfowl would have been abundant.

The water supply to Nailsea

For Queen Victoria's Diamond Jubilee, the Ashton Court Estate provided a water supply to its farms, generally to the east of Tickenham Church, from the bore hole at Tickenham Mill. It became polluted (possibly post-WWII) and all water now comes from Clevedon. Some is pumped to the tanks which now belong to Bristol Water on Cadbury Camp Lane (the wind pump now gone) to serve the eastern part of the Lane.



Gauge at Jacklands Bridge marked at 10 cm intervals ST 469 717

During the war and for a time afterwards Georges Brewery in Bristol delivered beer by steam driven lorries, replenishing their tanks on the north side of Jacklands Bridge; The bridge was replaced after the war.



Well at Youngwood House Farm,
ST 4706 6907

Mains water was laid to Tickenham in 1936, and prior to that, water was obtained from wells and also from the 'whirly pool' near Moorend Spout, which the children called 'Morning Spout'. (Tickenham Domesday Festival, 1986, page 26) The precise location of this source is not known although it may refer to the waterfall (sluice). Wraxall was connected to the water mains in 1911.

When the Severn Tunnel was cut, a large flow of water was encountered in 1879 which

had to be diverted, and much is now pumped out of the tunnel and used in Wales. It seems that this may have changed the behaviour of many of the springs around Nailsea. The flow in some of the springs in the locality was said to be greatly reduced, including those in Towerhouse Wood. However, in view of the distance, it seems more likely that the springs in this area would arise from water falling on the Tickenham Ridge.



Pump at Youngwood House
Farm



Well capstone from Nowhere, was at ST 482 704, demolished 1965, now at Moorside Farm, ST 482 694. (Photograph by Mike Thomas; by courtesy of Frank Smith).

The water levels of the Land Yeo are monitored visually by the Environment Agency in the vicinity of Nailsea at Jacklands Bridge and on land belonging to Tickenham Court, and there is a remote sensor at the head of the Birdcombe Valley opposite Wraxall Mill. The deeds of Wraxall House were unfortunately destroyed by flood in a Bedminster bank vault in 1968 and some of these issues may never be resolved (see

Mills on the Land Yeo - Further

Discoveries by Ruth Poole, Norma Knight, Phyllis Horman, Jane Lilly and Wilfred Rew 2006).

The well in the garden of Heath Cottage is about 20 meters deep with the water table normally at about 10 meters below ground level, although it has been known to rise close to the surface. The sides of the well are colonized by Hart's Tongue Fern (*Phyllitis scolopendrium*).



Well in the front garden of a house in Heath Road (ST 47443 71058). (photograph by courtesy of Lin and Mel Capon).

Water analysis in Jacklands Rhyne -

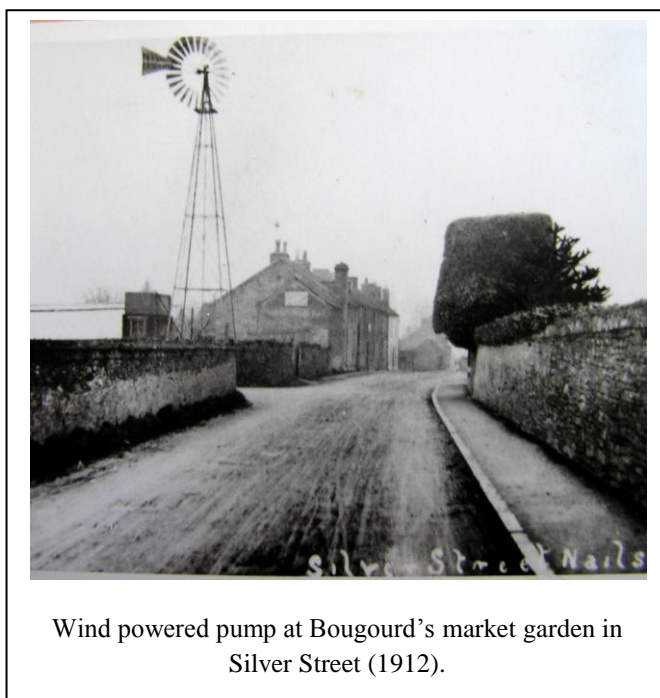
Survey Date	mg/l P	Dissolved oxygen Percent	Conductivity μ Siemens/cm	pH
20 January 2012	0.10	79	755	7.74
27 January 2012	0.05	79	780	7.82
14 February 2012	0.14	116	801	7.60
21 February 2012	0.13	89	820	7.64
28 February 2012	0.22	109	812	7.59
02 March 2012	0.54	105	838	7.50
06 March 2012	1.05	107	817	7.62
08 March 2012	0.40	105	823	7.66
13 March 2012	0.20	82	798	7.55

(Kate Pressland;AWT)

Data from the
Environment Agency

Watercourses of 'Good Ecological Status' have phosphorus 0.12mg/L P or lower. This standard was achieved on only two of the sampling dates.

A scum often forms on the surface of Jacklands Rhyne, lasting usually about 2 weeks. Under the microscope the scum was somewhat bacterial, but there were also diatoms (*Closterium*) and some filamentous algae (*Spirogyra* and *Zygnema*) in addition to rotifers and other protozoa. This is probably due to an increased nutrient status of the water, mainly associated with a high phosphate level due to pollution in the upper reaches of the rhyne.



Wind powered pump at Bougourd's market garden in Silver Street (1912).

Wells

Many wells have been sunk to access water, but some owners were disappointed. Most of the wells were unreliable and tended to dry up after periods without rain. Great prominence was given to the positions of wells on the ordnance survey map of 1884 (see page 1). A deep well was dug in the garden of a house in Silver Street without finding water. The owners collected rainwater from the roof of the house, storing it in a tank under the kitchen prior to the arrival of mains water. This house is on the south side of Silver Street near the Methodist Church with the garden sloping towards Meadway Avenue, which runs along the side of the shallow valley that becomes more pronounced along Rock Avenue, nearer to the Butcher's Arms. It may have been a water course before it was

built up (David Stacey, personal communication).

In 1914 a report by Dr W.G. Savage said that 85 houses in Nailsea were supplied by Bristol Water, 20 by a private company owned by W.H.Shepstone (Buckland's well in coal measures) and 50 from a spring. The mine shaft which was exposed in 1998 at Engine Pit on land adjacent to the Garden of Rest (see photograph) was used as the source of water for nearby houses (Pennant 30 p.7).

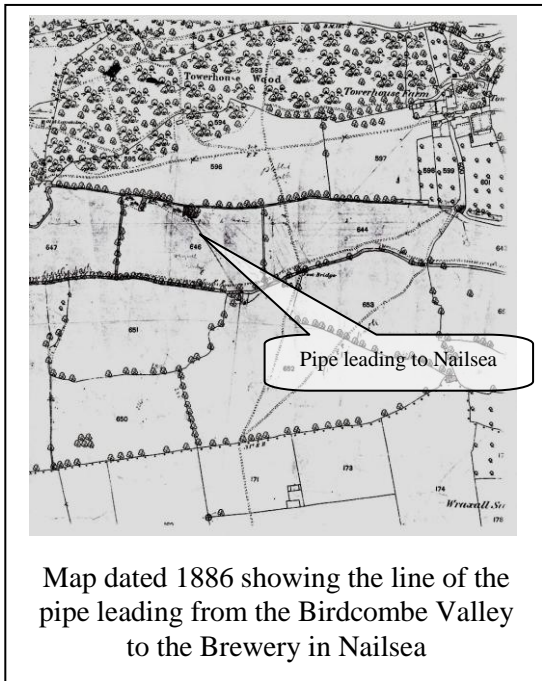
A well sunk close to Youngwood Farm is still open, surmounted by the original pump probably made in 1875. The cylinder may still be in the well, the pump head actuating the plunger by a connecting rod which may be seen in the photograph.

There were at least two wells on Harry Wyatt's farm. One of these was probably somewhere in Valley Gardens (possibly in Valley Close) where there is now an electricity sub-station. This was about 60 feet deep and the pump at the bottom of the well was wind-powered. This was replaced with a long canvas belt that had pockets in it and was driven by an electric motor. Once at the surface, the water was electrically pumped to the milking parlour and was also used to fill the ponds when they were low. The belt broke quite frequently and had to be removed for repair.



Pond on the Elm Farm development
Number 12 in the pond list - ST 4867 7101

This was difficult as the hook lowered down the well to retrieve the belt used to snag on the old windmill-operated pump that remained at the bottom of the well (David Stacey, personal communication).



Map dated 1886 showing the line of the pipe leading from the Birdcombe Valley to the Brewery in Nailsea

The wells in Tickenham to the north of Moorend Spout (in the farms - Hales, Wellhouse, Batch, and Luggards Cross) may be connected by an underground stream, although there is no firm evidence for this. If so, this may be the same underground source that feeds the borehole and well that is operated by Bristol Water near to Clevedon Court. The borehole at Wraxall Service Station ST 4800 7111, made in about 2002 to supply water to the car wash, has not been known to run dry. It is about 50m deep and works with a submersible electric pump. A borehole at Chelvey ST 4737 6795 supplies a significant amount of water for domestic consumption.

A photograph taken in about 1912 looking along Silver Street from outside Four Oaks School shows a wind pump on the market garden that was run by Cliff Bougourd who had the greengrocers that now belongs to Ashley Olsen ('Nailsea Village Institute', Christine Milton, 1995). The well sunk in 1900 was about 60 feet deep. The pump was dismantled in 1921/22.

Several water towers were built to provide a head of water for local domestic supply, but few of these remain. The engine house at Middle Engine Pit (closed *ca* 1850) was used to support a cistern to supply water to the



Clearing one of the ponds in the carr at Moorend Spout. (A carr is a wet woodland, usually with willow and alder). This pond is more like a swamp and it can be dangerous! ST 4661 7154



Remains of the pipe ducting water from Knightswood spring in Birdcombe valley to Nailsea
ST 475 717

nearby house known as the Elms. One at Vyne's Farm was recently destroyed during the construction of the Elms Development in Wraxall. A converted engine house from the remains of the Buckland's Batch pit on the corner of Trendlewood and Station Road also housed a water cistern.

The water supply at Tyntesfield was obtained from the spring at Watercress Farm ST 502 707 using pumps powered by two overshot water wheels, one in the spring and the other in the Land Yeo. After connection to the mains, only one of these pumps was powered, using electricity for irrigation water on the estate.

During surveys for the proposed Westbury development to the NW of Nailsea, trial boreholes led to an outflow of water at ST 464 712 (above the 10m contour) and at ST 459 706, between the 5 and 10m contours.

During the construction of the Elms housing estate, a flow of water was found issuing from the ground, which may have been coming from a disused mine (ST 483 708).

Ponds

List of locally significant ponds

1) Trendlewood Park in Pennant Sandstone Quarry. This is an ephemeral pond, unlike the pond in the nearby private garden, part of the same quarry, which is permanent. ST 4796 7026

2) Backwell Lake (an artificial balancing lake, introduced to prevent flooding from the river Kenn) constructed in 1974. This is a good place to see water birds. ST 4775 6950

3) At Nailsea School ST 4743 7053 the pond is fed by the runoff from the local car parks. Surplus water is ducted below the police station and it emerges some distance away

4) Stockway North Nature Reserve (SNNR, an artificial pond with a butyl liner). ST 4715 7086 was installed by the Avon Wildlife Trust and the Friends of SNNR in 2001 and funded by a grant from Bristol Zoo Gardens Millennium Awards for Conservation.

5) Towerhouse Wood (spring-fed bubbling pond, see Pennant 28, p 20) ST 4737 7183

6) Trout Farm (spring-fed, unlined, artificial). Owned privately and operated on a commercial basis. This field used to remain flooded for much of the winter. ST 4710 7164

7) Youngwood Lane ST 4576 6870

8) Morgan's Hill (a shallow pond at the base of a hill, surrounded by trees) ST 4664 6939

9) Netcott's Meadow (a small pond close to Backwell Lake) ST 4762 6955

10) Wraxall Mill Pond (possibly part of a leat) ST 4851 7150

11) Nailsea Ponds - Borrow Pits excavated in 1841 to provide fill material for the railway embankment. These are traversed by a public footpath but are in private ownership and used as fish ponds. ST 4708 6875



'Heath mineral water' bottle
Found in the garden of a house in Friendship Road 'Heath Mineral Water - Nailsea' ST 4760 7099

12) Pond on the Elm Farm development in Wraxall parish. The water here is quite turbid. This pond is owned and managed by North Somerset Council. ST 4867 7101. The pond is shown as being rectangular on the 1885 25"/mile OS map so it seems that it was purpose built and was not a quarry

13) The spring marked on the Ordnance Survey map in the SE of Nailsea close to Backwell Lake (Pathfinder 1182) at ST 479 695, which is in a private garden, seems to have a high concentration of iron. This has been incorporated into a large artificial pond.

14) Spring-fed pond in private garden, Stonehenge House, West Hill Tickenham ST 47095 71872

Other smaller ponds may be found at ST - 488 715, 486 697, 482 694 473 695, 474 494, 480 696, 475 693, 457 697, 456 695 458 696. Many of these ponds are on private land.

In 1910 -18 there were two bathing pools, one in the river to the west of Towerhouse Farm (Birdcombe Farm?) and another about 1 metre deep, as a flood hatch (sluice) in an enclosure near to Tickenham Church. A third was at Nailsea Court, with a spring diving board and where the facilities were very good.

There is a reed bed contained in a grass-covered rectangular bund at ST 4860 7125 near to the old lime kiln. It appears to be a water drain feature having a gridded inlet and outlet (into the Land Yeo?) the two being joined by a concrete channel. Presumably the reed bed is to absorb any water that overflows the channel. This feature does not appear on the current 1/50000 or 1/25000 maps and not on the larger scale maps up to 1961, but it is very clearly shown on Google maps. It may have been part of the development of the Elms housing estate.



Water pumped from the Land Yeo was stored in a reservoir adjacent to the Friendship Inn, (white tower to the left)



Stone engraved with 'Jubilee' now built into a wall at the Friendship Inn. This was at the top of the water tower.

Flooding in coal mines.

Flooding was a problem with the coal mines in Nailsea, and was one of the factors that eventually made them unprofitable. Often 10% of the coal mined was used to fuel water pumps. Other constraints were imposed by the narrowness of the seams, and the availability of inexpensive Welsh coal.

Many of the mines had large steam engines installed with the prime purpose of preventing submergence. This could have tragic consequences. The owner of one pit in Nailsea (Double Screen) accused the owners of Farler's pit of trespass, but Farler's pit gave a truculent denial, whereupon the manager at Double Screen pit stopped pumping, allowing water to enter Farler's, drowning two men (quoted from an undated letter by Basil Greenhill). One of the men (John



Mine shaft at the Garden of Rest extension prior to capping.
ST 4703 7083

Wright) left a wife and six children. The bodies could not be retrieved and the parson read the burial service at the pit head.

Powered pumps for the supply of water to Nailsea Thatcher's brewery was founded in 1740, operating on the site now occupied by Heath Road and Friendship Road. Glass blowing is an occupation in which there is a need to replenish water lost due to the heat of the furnaces. The brewery therefore flourished when the glass works were established in 1788 by supplying drinks to the glass workers. The Glasshouse Inn was therefore established to serve the workers, and 70 years later the name was changed to 'The Friendship'. The brewery also produced lemonade with the slogan 'Heath for Health'. Several bottles have been recovered on the site bearing the name 'Heath Mineral Water Nailsea'. The local glassworks had closed in 1873 and these bottles marked JL&Co appear to come from John Lumb of Castleford, Yorkshire. A water pump powered by an undershot wheel in the flow of the Land Yeo was installed at Knightswood spring in the Birdcombe Valley by Thatcher's brewery at a cost

of £200 in ca 1850. A small steam engine was used to pump the water when the flow in the river was insufficient. A pipe was laid to carry the water to Nailsea and way-leave was offset by allowing access to the water in three of the fields traversed by the pipe. Some of the pipe work still remains in the river in the Birdcombe Valley (see photograph), and there have been reports of the pipe being exposed when foundations were put in for the houses on the estates in Woodland Road in 1969. There was a large cistern (now destroyed, see photograph) next to the Friendship Inn in 1968. It seems that this was built as a tribute to Queen Victoria for the storage of the water that was sourced from the Land Yeo (Basil Greenhill, in 'Old Nailsea' 1959). Any water that the brewery did not need was made available to the local people. A stone carved with the word 'Jubilee' (probably referring to Queen Victoria's diamond jubilee in 1897) is all that remains of the water tank. This stone was originally inserted at the top of the brickwork of the tank. The pump fell into disuse in 1905 when mains water was provided for the Town.

It seems that there was a similar system on the Land Yeo for pumping water to Tickenham from a borehole, powered by the water mill at Middletown, with the water pumped to tanks at Cadbury camp from a well in Tickenham Court (David Stacey, personal communication). The Mill at Tickenham is sited on a fault line which gives a 12 feet head from an over shot or high breast



Access shaft for Jacklands Tunnel at Moored Spout (26 February 2012)
ST 4669 7155

shot wheel. Mills have probably been located on this site since 1148 when the canons of the Augustinian Priory in Bristol were granted the patronage of Tickenham. The mill is now a private dwelling house.

Some of the mines were used as a source of water. The shaft at Engine Pit on the site of the Garden of Rest extension (Pennant 30, p7) was said to supply the neighbouring cottages with water.



Bubbles arising in one of the ponds in the carr at Moorend Spout. Similar bubbles are found in other spring-fed ponds in this area.

Gas arising from ponds The pond in Towerhouse Wood (ST 475 719) is well known for the production of gas bubbles apparently associated with the spring water that fed the pond. Analysis by British Gas showed that this gas was mainly air with 8% of carbon dioxide. An investigation by Sarah Davies of the Environment Agency (EA) in 2008 showed that the temperature of the water in the vicinity of the springs was 2°C higher than that of the surrounding water.

This may not be so surprising in view of the hot springs that are found at Bath and also in Hotwells Road in Bristol. Although this may seem to be a small differential, I understand from the EA that in this area any water emerging as a spring with a temperature in excess of 10°C is likely to be of thermal origin. The results therefore seem to be in agreement with a 'hot rock' hypothesis for the production of the bubbles (See Pennant 28, p.20). A pond in the carr at Moorend Spout similarly produces large gushes of bubbles at intervals (see photograph above). The occurrence of hot rocks close to the

surface in this area might increase the prospect of a source of geothermal energy. Such heat source has been used in many places in the world, and which has been exploited in Southampton.

British Gas used a mass spectrometer to measure the ratio of carbon 12 to carbon 13. This ratio can be used to establish the origin of the carbon dioxide. In this case, the gas was relatively recently produced, probably by bacterial decay, rather than from the coal deposits under Nailsea. There was no evidence for the presence of methane or other hydrocarbons.

The results of the analysis by the Environment Agency were as follows -

	Temp °C	Conductivity µSiemens/cm	Salinity parts/1000	Oxygen mg/ litre	pH
Vicinity of Bubbles	12.75	775	0.38	56.2	7.26
Elsewhere in pond	10.78	819	0.40	58.3	7.33
Stream inflow	10.55	825	0.41	57.6	7.35

One theory for the production of these bubbles depends on the water travelling a long distance and passing through hot rocks, but the true origin of these bubbles is still not established (Possible mechanisms are discussed in the book 'The Natural History of Nailsea' by Terry Smith p.8).

The exsolved gas in the spring water at the Roman Baths contains 96% nitrogen and 3.5% carbon dioxide; there are also traces of radioactive gases. The oxygen has probably been depleted by oxidation of marcasite, pyrite and siderite during its passage underground. The ratio of the gases therefore depends on the character of the rocks through which it flows. Radioactive gases like radon may arise from granitic rocks as a decomposition product of radium. No trace of these was found in the water at Towerhouse Wood, although significant amounts can be found in some areas around Nailsea, with 5- 10% of homes above the action level.

Moorend Spout

The Nailsea Environment & Wildlife Trust (NEWT) now owns the six acres of land (ST466 715) adjacent to Moorend Spout, a short distance to the west of Jacklands Bridge. The trust, which is a registered charity, manages this as a nature reserve (see www.newt.btck.co.uk). There are many springs to the west of the site within the wet woodland (carr), which is composed mainly of willow and alder. The spout may refer to the weir adjacent to the public footpath, although there is some disagreement in the literature on this, and the name may refer to a spring of water which cannot now be identified. A certain Dr White, well known for his long beard and iron leg, who lived in Nailsea was said to send his patients to bathe in the 'spout' (or waterfall) to cure various illnesses ('The Nailsea I Knew', Jack Hart, 1977).



Photograph of a picture post card showing the sluice at Moorend Spout, posted in 1931

To the east of Moorend Spout is a Trout Farm, where the water is sourced from a natural spring. 'Jacklands' may be a corruption of the words 'Jack O'Lantern' (Pennant 40 p.6) with reference to the marsh gas (methane) that was probably found in that area. To the west is an area of unimproved moorland with stands of Reedmace (Bulrushes, *Typha latifolia*).

Planning permission has been granted for the installation of 5 ponds at Moorend Spout (application no 11/P/0599/F). It was hoped that these ponds would be filled naturally from ground water, so it was disappointing to

find that the water table at Moorend Spout can be quite low, at least 1 metre below ground level. It now seems that these ponds will have to be lined, which adds to their cost. The Land Yeo runs at a much higher level than the field since it was constructed as a leat by the Augustinian Monks for their mill at Middletown in Tickenham in the 12th century, and also to ferry the corn to their granary in Bristol. The river does not therefore run on the lowest point of the valley floor. Hopefully NEWT can draw water from the river for filling the ponds, since as riparian land owners, there is a right to take 20 cubic metres per day from the river.

Some of the springs that arise at the foot of the Land Yeo embankment and in the carr may result from a leakage of the water from the Land Yeo, although it seems more likely that they arise from water percolating under the river from rain falling on the adjacent hills.

The pond in the carr is a swamp and it could trap the unwary. Several volunteers working on the nature reserve have found it difficult to extricate themselves from the mud. It could be quite difficult to escape if working alone. There seems to be no firm base to the ponds so the most dangerous pools have been covered with dead hedging. There is a record of a possible fatal entrapment in 1959 (See Somerset Magazine, August 1999).

Some of the water that originally flowed in the field is ducted in a pipe about 2 metres below the surface, now known as Jackland's Tunnel. This drain carries quite a large quantity of water, which apparently originates at the sluice on the Clevedon Road. There are (at least) two

inspection shafts (one is in the six acre field that belongs to NEWT, see photograph). This drain was laid in 1804 when much of the marsh was drained. The style of the ironwork above the shafts supports the suggestion that they are very old. The tunnel (marked Jacklands Tunnell, sic.) is shown in the map on page 40 of the book by David Franks, (*The Story of Tickenham*, 2000). The height of the water table may be also reduced by Jackland's Tunnel, which acts as an efficient drain.

Streams

Many minor watercourses in Nailsea were largely lost with the development of the new town in the early 1970s when the population grew from 3000 to its present size of about 20,000 accompanied by the establishment of several large housing estates.

In 1965 there was a stream running along the eastern boundary of the Nailsea School playing field at the back of Horwood Road which then turned west along the field boundary. Part of the stream was opened up to make the small pond for the school 'Field & Stream Club'. The stream then ran parallel with what is now Stockway South, at the bottom of the bank on the south side, below Valley Gardens. The stream lined up with a pond west of the Mizzymead Farm track from Silver Street at the east end of Meadway Avenue. This was well before the car parks were built. On the title map, a stream arises along the line of Greenhill Close, at the other end of Meadway Avenue, below the line of Silver Street. The stream line follows the northern valley/fault line and joins the stream below the Whitesfield allotments at the bottom of Kingshill. The stream is now ducted as the overflow from the Nailsea School pond. Many similar streams were diverted to culverts and drains, and are now lost.

Conclusion

The recent drought in the South East of England (albeit temporary!) and the much more severe droughts in other parts of the World suggest that we should treat water as a finite commodity, to be used in a sustainable way. It has been suggested that global warming is causing extreme weather events, leading to drought or flood. The expanding world population is also putting pressure on our water reserves, giving rise to the prospect of conflict on a global scale over water resources. Knowledge of the past history of water usage can help us to appreciate the factors which are likely to confront future generations and help us to plan for the improvement of our life on this planet.

Nailsea / Uganda Water Project.

Nailsea is raising money to support a water conservation scheme in Uganda (nuwaterproject.org.uk). The aims of the project are :

A) To provide a safe water supply and sustainable sanitation infrastructure for six rural villages in Muhabura Diocese/Kisoro District to improve their general health through the reduction of water borne diseases.

This will be achieved by

- 1) Providing training in the construction of rain water harvest tanks for households and some public institutions like schools and health facilities. The project will help with purchasing special equipment such as taps, pipes and cement.
- 2) Providing training in the communities in preparation and support for the improved safe water and sanitation services. This will include the promotion of hygiene, sanitation and behavioural change

- 3) Providing facilities and training to the local Technical Team in the modern technologies and management strategies for efficient and effective management and implementation of water projects.

B) To contribute to the protection of the environment through resources protection and the use of appropriate technologies in water and sanitation interventions.

C) To free people from the burden of collecting water from a distant source and improve the socio-economic situation and the opportunities for the people living in these rural communities.

Donations to this project would be gladly received.

Acknowledgements

Amongst others, I am grateful to Phil Barclay (Nailsea Town Council), Susan Fox (Roman Baths and Pump Room Heritage Services), Francis Farr-Cox, Sarah Davies and Becky Griffin (Environment Agency), David Franks (Tickenham resident), Richard Ivens (ex North Somerset Council), Dave Sowdon (Nailsea Environment & Archaeological Team), Mel and Linda Capon; David Gray, Richard Kefford, Roger Evans, Duncan Martin and John Strouts, Mike Thomas (Nailsea residents), David Stacey (ex Nailsea resident), Philip Tout (Manager, Wraxall Service Station), Ray Llewellyn (Tyntesfield), Rod Brake (Youngwood House Farm), and Peter Wright (local historian) for their help in this work. I would be grateful to hear from anyone who can add to this account. I also acknowledge the assistance of the staff at Nailsea Public Library.

Further reading (available in Nailsea Public Library) –

Bodman, Martin. Mills on the Land Yeo 1989
Forrest, Denys. The making of a manor 1975
Franks, David. The story of Tickenham, Somersetshire 2000
Greenhill, Basil. J. Old Nailsea Somerset 1959
Hart, Jack. The Nailsea I knew
James, Eleanor M. A. short history of the village of Tickenham 1933
Thomas, Margaret The Heritage Book of Nailsea 1984

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