Clean Rivers Trust

Registered Charity Number 1037414

The 1st 25 years.

An investigation into the activities of the organisation over the last 25 years since its foundation in 1990.

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Clean Rivers Trust is a registered charity with the Charity Commission for England and Wales. Charity Number 1037414.

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The Trust's web-site at www.cleanriverstrust.co.uk will demonstrate the breadth and complexity of the organisations current research and activities.

The Trust Library is open to the interested public for research. It is accessible by appointment only as a guide is necessary to locate certain documents.

Preface.

I happened to hear some clips on the radio recently. They were from an interview that was recorded during the miners' strike in the mid-1980s, about the Battle of Orgreave. What struck me most was the

way that people spoke. The reporter, in her clipped manner, referred to the miners' leader as 'Mr. Scargill'. The miner responded in a thick Yorkshire accent, highly eloquent and with perfect grammar. Both spoke in very matter-of-fact tones despite the violence and passion of the Orgreave clash; swirling emotions rarely surfaced in that distant era. The interview seemed very alien and I was left musing about the passage of time and how things change without my noticing.

Harvey retains a little of that earlier world. He keeps alive a spirit of challenge against the odds, of genuine concern for righting the wrongs, for keeping calm whilst driven by passion. Just recently, I stood with him at the Orgreave site. The mine is long gone, replaced by a modern Innovation Centre. We were there to meet the custodians of the mining legacy, mostly vast expanses of waste land being gradually reclaimed by nature. Harvey has spent many years, working through the Clean Rivers Trust, helping to clean up minewater, near and far, and now looking to gather heat energy stored underground in the flooded shafts of the abandoned mines.

Flash back again, to 1990, when we were on the brink of a new era. The Berlin wall had fallen; James Bond villains were no longer Russian; Mrs Thatcher left her role as the miners' nemesis – both sides disappeared. In 1990, my son was born and so was the Clean Rivers Trust. Whilst I tucked my baby boy in his cot one cold December night, 130 miles away Harvey Wood sat, drawing on his pipe, in the Old Kings Head at Newark. Two anglers sat in front of him, pouring out their concerns for the future of fishing in the River Trent. The river was dying and something must be done. Harvey already had form – he was an ardent environmentalist with years of experience in Greenpeace. He was becoming something of a local celebrity, appearing on TV and radio to spread the 'green' message. The Nottingham Anglers Association felt he was their man and so he was.

The Clean Rivers campaign became viral, with over 650 people squeezed into the tiny room at Newark Town Hall to support the cause. They came from far and wide. As any campaign, there was resistance - from the local water company and those responsible for rivers and canals. The force of the 'ordinary man', with Harvey at the helm, won the day, with 90,000 people signing a petition and the local MP on his feet in the Commons. Improvements were made and the Trent was cleaned up.

The end of this campaign saw the start of the Clean Rivers Trust. Twenty-five years on and Harvey is still campaigning. He has spent half of his working life tirelessly, cleaning up the mess that others make. One in seven of us lack access to clean water and one in three has no decent toilet facilities. The Trust has worked in all continents of the World, with projects in Egypt, Yemen, Ethiopia, Spain, Romania to name a few. It retains a remarkable library of records, documenting water, geology, mining and the natural environment, which is available to everyone. Now we look forward to the future with new projects awaiting – a quarry lake in India to be cleaned and a book on Blue Carbon to be published. There remains plenty to do.

As the newest Trustee, I have spent a fascinating year hearing about the current and future projects and really enjoyed reading the full history of Clean Rivers. So, turn the page and learn more about Harvey and his many exploits. Here's to the next 25 years!

Dr Melody Stokes, Trustee.

Authors Preface.

The Clean Rivers Trust means a great deal to me personally as having been involved with its foundation 25 years ago and with every step of its journey to the present. It has afforded me the opportunity to work with many notable individuals and organisations that have touched and influenced changes to the environment and through that many of the population not just in this country but across much of the world. Though the main emphasis and focus of the Trusts work has always been rooted in the muddy banks and streams of the UK and never let that change, it has been able to advise and assist governments and communities elsewhere.

Clean Rivers Trust has acted on the behalf of multinational companies with turnovers far greater than many countries total annual expenditure and for individuals sat near the bottom of the social hierarchy in the poorest nations. Neither have been given more or less attention. That has been a guiding principle of the Trust and one it attempts to demonstrate on a daily basis.

The organisation has always and will continue to into the future encourage novel and innovative solutions to pollution, not so much the high tech but the ones that might be emulated where there is need. The development of wetlands has been a treatment method that is one example and much derided as space hungry; this we have demonstrated as incorrect. They take up available space on steep hillsides as much as in river valley plain. Such work has allowed the Trust to demonstrate a lateral turn of mind where a pollution is likely or taking place it needs immediate attention but after that to ensure its long-term absence needs routes for pollutants that might channel them to a more productive final end. Many wastes have been shown to hold economic values that had been previously overlooked. This has allowed access to many institutions whose students and research groups have influenced us as an organisation.

Along the road that Clean Rivers Trust has travelled in the 25 years there have naturally been disappointments; projects that have if not failed but gone elsewhere. Hypotheses that were incorrect or even on retrospect plain barmy. The majority of actions taken have been of benefit to the water environment and humanity. The organisation has not preached or proselytised but it has found it has gathered followers along the way. Few people have found the advice that we have given too onerous: at the same time no issue has been underplayed.

Harvey Wood.

Introduction.

It was one wet December evening in 1990 at a public house in Newark upon Trent that a meeting took place between two anglers and two environmentalists to discuss the parlous state of many of Britain's rivers, the main focus being the River Trent itself. The National Rivers Authority (NRA) had recently published a report on the rivers of England and Wales that demonstrated that that waterway and its water quality were in decline.

This decline was demonstrated most graphically by the anglers' tale in that what had been a great fishery - the Mecca and focus for match angles from across the North of England as well as the Midlands - they were seeing their catches in freefall. The NRA report outlined that the Trent had been reclassified as a polluted watercourse with no outline of how this state of affairs could be turned about.

It is now hard to comprehend that the agreement and accord reached at that meeting in an upstairs room at the Old King's Arms that dismal evening in Newark just a stone's throw from the river could have developed as it has or the rollercoaster of a personal journey for myself and the amazing things that have and continue to be achieved since that day.

1990

The First Twenty Days.

December of that year was damp and raw, the meeting at the Old Kings Head in Kirk Gate, Newark was not the most salubrious establishment but its upstairs room was available to us as environmentalists at that time free of charge; it hosted some remarkable fund-raising gigs in those days to help us campaign, Julie Felix and Vikki Clayton both came and helped the cause. That night Brian Richmond and Simon McCormac from Nottingham Anglers Association met myself and Patricia Hewis: we were later to marry. At that time we were appearing regularly on television and radio news programs and in the print media raising green issues and being involved in campaigns. We represented over the years Greenpeace, Friends of the Earth, being involved with local anti-nuclear dumping and generating groups; Pat with LAND at Fulbeck, myself at the Sizewell B enquiry. A lot of the time thinking globally and acting locally. Pat and I raised a good deal of green haze around the East Midlands on many issues that have now become part of the normal fabric of 21st Century life.

This notoriety had caught Brian Richmond's eye and he and Simon got leave from Nottingham Anglers Association to talk with us; we had first met when I had attended a public meeting five or six weeks earlier, at another public house in Newark about worries about the Trent where there was a consensus that somebody should do something but no agreement on who or what. This initial meeting of the subject was dispiriting; that there had been no agreement to do anything had made me ask what the point was of the gathering.

The anglers had decided at the meeting in the upstairs room that the group that was there; the four of us were to be the nucleus of an organisation christened the Clean Rivers Campaign with the additional banner of Notts; to make it locally attractive to anglers and focused on the fishing on the River Trent. The meeting left all concerned that this was a moment of note and the Anglers returned to their committee with the understanding that I would give the project two years of my life. Little did I realise.



The Old Kings Arms on a brighter day.

Two days later just before Christmas and at about the same time as the tunnelers joining up England and France were recovering from their party in celebration of creating the historic union of the two countries deep below the Channel, both the BBC and ITV news programs were filming at the Trent outfall of Stoke Bardolph Sewage Treatment Works, the news reports had me criticizing the recently privatised water company, Severn Trent, for allowing this sewage works to be the cause of the Trent's

plight. That night when the news programs had finished the telephone never seemed to cease ringing; anglers from Manchester Leeds, Sheffield and Nottingham were excited that their river was in the spotlight.

It should be noted at this point that for more than half of geographic England the Trent was the only fishable river and due to the effects of the many power stations dumping their thermal waste into the flow it was a summer river even in midwinter. Fish even in midwinter were not skulking about at the bottom of the river but ranging their swims all year.

The next day there were further telephone calls, all bar one supportive. The one that was not was from the regional manager of Severn Trent Water. He was not miffed; livid, yes and fuming, though as it turned out not with the campaign but more the National Rivers Authority who wished they had the clout of their namesakes in the USA. The National Rifle Association would know how to shut up pesky environmentalists rocking a very rocky boat. It would also be true to say that several of the directors of Severn Trent were not enamoured of the criticism. This representative of the water company was John Ellis who was to the point; he needed a meeting urgently.



Stoke Bardolph Sewage Treatment outfall to the River Trent.

The next day the meeting took place at Severn Trent's regional office at Hucknall Road, Nottingham. It was a long meeting with several other people coming and going throughout the morning, John had been the plant manager at Stoke Bardolph in the 1970s and had written a short history of the site from its establishment in the 19th Century. He appeared to not be against our notion to upgrade Stoke Bardolph to see its discharge brought up to standard.

At that meeting it was explained that investment in plant modernisation was governed by AMP 1 the five yearly forecast of need in capital expenditure that was balanced with the needs of consumer which was regulated by OFWAT (Office of Water Regulation). These plans bound the water companies and were not flexible without proof of need and would support of the NRA. It was explained that there was an agreed plan to expend nearly eighteen million pounds but that was to keep the discharge at the present quality. To achieve the water quality being demanded by the Campaign required doubling that agreed expenditure. This was not feasible; it had not been done before in the short period since the water industry's privatisation.

Much was said that was meant to placate the Campaign and it was put to me that for such a development to rectify the River Trent and its malaise, the NRA would need to act and OFWAT would

need to agree to the plan. The question needed to be asked and was ‘was Severn Trent willing to invest over thirty six million pounds at Stoke Bardolph in the next two years if agreements were achieved with the Guardians of the River Environment and the Office of Water Regulation?’ The answer was to be given at a future meeting before the end of the week.

The next day the angling press; Angling Times and Anglers Mail published the news of the birth of Clean Rivers Campaign and the desire to clean up the river, criticised Severn Trent and quoted the NRA who had stated that they were the regulator for river care and said that the discharge at Stoke Bardolph was unfortunate but they were not going to act as the River Trent was of low priority environmentally, an industrial river and-as such-campaigning was undesirable. The river was a coarse fishery not a salmonid so making it a piscatorial non-priority.

By the next day many telephone calls had been received not just from anglers but politicians including Richard Alexander MP for Newark and Retford who knew his constituency well. The implication of the NRAs words was clear that salmon and trout fishing equalled clout and the coarse angler was ordinary Joe Bloggs who was less important. This attitude on the part of the National Rivers Authority was something of a conundrum as they were the body responsible for angling on the rivers and canals across England and Wales which they did well; fisheries staff who were second to none and a proud boast that there were 4,000,000 anglers in the two countries. This number appeared to be of no importance and, as with all regulators, the various sections of the organisation never talked to each other.

It was strange to find the fisheries and bank staff at the NRA supported the Clean Rivers Campaign. Help was offered, contacts established and as the end of December moved into 1991 the Campaign was established. The Campaign had been swift with endless talking and meeting people and it was dawning on those that were actively briefing that no one knew the river along its length and that no one had studied angling catch records from along its length. The major problem was blindingly obvious but no one understood the rivers entirety. The National Rivers Authority administered the River Trent as the upper and lower river and at that time communications were near non-existent between them.

1991

The year dawned with the angling press giving huge emphasis to the River Trent as did the local news print, radio and television. Anglers as individuals and as clubs and associations gave freely to fund the work now underway. The campaign needed in the first few months to learn the basics of the river, the geography, the chemistry, users and pollutions. All those who were interested in the work underway wanted a word picture of the river so that they could say that they understood the complexities of the river. The NRA hid behind the complexity saying that they knew what was best and the campaign was rocking the boat and that there were more important issues to be concerned about in other places and the desire to clean the Trent was not one of them. It was at the time that offices were beginning to display their corporate image and their logo of the leaping salmon. Corporate videos abounded showing that they were in control and then they found the carpets in the offices cost rather more than anticipated, hundreds of thousands of pounds of best Axminster were spread in every corner.

As winter gave way to spring the ‘all points’ tour of the Trent was underway. It is a large river not just the main flow buts its tributaries which makeup a remarkable and diverse catchment. It is a slow and gliding stream that meanders through much of the Midlands industrial and pastoral. It is also a rough rolling river falling out of the Derbyshire Peak District. It has been a well-used tool of a river one that has allowed Isaac Walton to write lyrically of fishing and Arkwright to build his model mill. It has supplied drinking water, transportation, defence, power; watermills, cooling water for the vast

numbers of power stations that once lined along its banks. It has made it into literature with Shakespeare pointing to its wandering nature and propensity to flood.

The tour of the river was to visit its source, its outfall to the Humber Estuary and all points between along its length; talk to people in bankside pubs; anglers and anyone else we could. It was a daunting prospect. There are not many books that describe the river: the two that had been were interesting but were travelogues with only passing reference to the river. A few local publications of Victorian photographs showing trows and barges that are always interesting but revelatory. The Trent trow was a semi flat bottomed barge that could use a slung sail, not unlike a dhow on the Nile, or could be towed by horse power from the bank.

Notes on pollution do not make fun reading and no one had thought of leaving records of the plight of the river to give a glimpse of when it was even worse; an open sewer, so investigation needed to trawl official reports and industrial records, local health committee records and similar dry reading.



The River Trent rising on Biddulph Moor.

From Biddulph Moor to Trent Falls, via the Potteries and the Black Country, Stone and Burton, some of the tributaries round Wolverhampton, Birmingham such joys are to be discovered or more correctly could then be found below Spaghetti Junction. Highlights included the Lee Marston lakes that filtered the crud from the River Teme as it struggled with its own weight in rubbish, let alone industrial discharge and the cleanest input treated sewage. The lakes, old gravel pits and now an important nature reserve collected much that was just thrown in by the public to put their waste out of mind. Aluminium beer kegs by the score, plastic bottles by the ton and much else that should not have been found.



The River Trent below Newark after the winters high flows left the banks covered in debris both natural and not.

At Stoke the Fowlea Brook entered the Trent, a stream that had about 15% naturally sourced water and the rest of the flow was not very nice. The even nastier fact of this brook is that it had from time to time flooded homes, industry and a hospital with its noxious spume.



The River Trent entering Stoke.

From Burton, where the heartening tale of pollution being noted and remediated over one hundred and fifty years previously on the river. Bass as a company were proud of letters complaining of yeast waste damaging the river 150 years ago and how the pollutant was found to be of use to some. You like it or you loath it but Marmite was the product that had cleaned up the river of the waste that had exercised people to complain.

The Trent has such a cross section of tributaries and hinterlands; not one but a diverse plethora unlike any other in the land. The Black Country rivers, the Derbyshire Dove and Derwent, the Leicestershire

Soar and Devon and the Nottinghamshire Idle; followed by the great fenland moors in the ancient muddle twixt land and water at the river's conjunction with those from Yorkshire and their amalgamation in the Humber Estuary.



The River Trent enters the Humber Estuary.

The organisation learnt well and met with the NRA at endless discussions on passing camels through eyes of needles. Oddly OFWAT, the industry regulator, did not need to be met with; they wrote and agreed that expenditure was required over and above that which Severn Trent had budgeted for. They agreed that this expenditure could go ahead as soon as the Nation Rivers Authority agreed.

It became apparent at this point that the River Guardian was not trying to save the environment but was going to drag its feet and deny the need to save face. The media enjoyed this, as did we: the need to overwhelm the NRA with public and political disgust was a tactic that came to mind, so a public meeting was called for 10 days' time. The ACA (Anglers Co-operative Association) Director, Malcom Edwards said he would support us and speak at the meeting, at the same time admitting that legally they could not use their legal and riparian skills to help.

That evening in late spring the Market Square in Newark was filled with cars, mini buses and coaches from Manchester, Rotherham, Sheffield, Leeds and even some people from Newark attended. TV, radio newspaper reporters all a hell of a hubbub. The Town Hall had been lent for the night as the issue was affecting the town economically and the fine ballroom with crystal chandeliers sparkled on a full house, five hundred chairs had backsides upon them, the aisles and round the walls people stood. The bar was open adjacent to the ballroom and was packed as well; its connecting doors were opened. Around 650 to 700 people turned to three people Brian Richmond who really did not like to be in the spotlight quakingly opened the meeting and introduced Malcom and myself. I remember being on my feet and seeing that sea of faces. I just recall the supportive words of the ACA and them the stage shook TO clapping and stamping. If anyone had had a hat that would have been the time to chuck it in the air. I spotted the NRA public relations lady with the reporters, she had a tape recorder and I

learnt later had taped the event. She sadly did not stay to have a drink afterwards and slipped away with skill.

The event had been a resounding success the Town Hall Caretaker said the meeting should not have been held as the room was only licensed for 400 and that was that; he certainly was not going to stop it going ahead; he did not dare and anyway he was an angler.

The next morning there was a telephone call from Severn Trent inviting us to see the plans for the upgrade to Stoke Bardolph Sewage Treatment Works; they were ready and 'by the way what a good meeting last night'.

The plans went in to the council planning system and were put on hold as the NRA would not support or go against them. Meetings were held, not just by us but the water company who had got their act together and they were being asked what was holding everything up, local MPs such as Ken Clark, Andy Stewart and Richard Alexander wanted to know. Richard raised the issue in the House. There was an Early Day Motion and there was the Humble Petition that had been written with the aid of the Clerk to the House of Commons. This strangely worded document was a petition in all aspects except it could not be refused by the House of Commons and would have had to be displayed in the Library of the House for a week. Nigh on 90,000 people signed that document, thousands were circulated around every angling club, the angling press inserted them in their publications, people signed and not one Mickey Mouse or D Duck was found when checked; a record and demonstration of peoples' feelings in itself.

Richard Alexander as Newark's MP was going to deliver it to the Clerk of the House but before he could he was informed that the petition was dead; it had served its purpose and the NRA had stated that they were naturally going to support the works at Stoke Bardolph but they wanted to have more improvements carried through. Severn Trent agreed the further works and the Water Guardians felt they had saved face and the angling press said some nice things about them; everyone did.

This was the start of a short lived attempt by the NRA to discredit those that had been involved and particularly the ringleaders. This did not develop further than some rather annoying articles in Environment Times and some other journals that were sporadically put together over the next twelve to eighteen months. It was hard to find anyone within the NRA who knew where these outpourings emanated from; it was likely a broom cupboard in Whitehall.

Wheal Jane in Cornwall started to pollute the Fall Estuary and Carrick Roads; the tin mining company who had operated the mine closed it at the end of 1990 and the water was always expected by the mining fraternity to be a concern. Clean Rivers had heard about this initial phase of discharge and minewater issues were being raised along the Trent as well.

1992

The second year was underway in caring for Trent based issues. Cotmanhey Angling Club on the River Erewash was having its own problems which were brought to our attention. The river and the canal that runs by its side were constantly changing colour from brown to black and at times yellow or red. There was also the perennial problem of people dumping rubbish or old household goods. This is

always being quoted and is often apocryphal but to see a sofa or chair float past followed by a broken television set is very strange and stays in the memory.

The colour issue was not too difficult to diagnose and with a joint effort with the NRA we talked to industry about solutions and economic issues regarding mordents and colour sources, chemical or natural dye sources. Such talk was productive, though the textile dyers were having a hard time of it economically at the time; most industry was. Several companies we worked with found fresh approaches to dye runs with investment in storage vessels found less costly than discharging each run's waste and mixing afresh. Some companies did go to the wall but there was nothing we could do could stop the inevitable. Within 9 months the river had changed it nature and the anglers no longer saw red.

The issue of the sofa, chair and TV goes on but not so much as charity shops now rehome the neglected furniture than once went down the cut. Though each winter the Campaign drew attention to the rubbish that after the winter high flows was left suspended in the bankside fences and along the banks as a strand line on a beach. The research into the makeup of this flotsam at Collingham Wharf and a kilometre downstream proved enlightening. The plastic bottles from chemists and pharmacies showed addresses where they had come from originally so some tablets were from Solihull and others were from Hull. Collingham is at the furthest reach of the tidal Trent fifty kilometres from the Humber. Syringes and condoms, refrigerators and hundreds of children's toys; straw and timber even a British Waterways skip which we tried to claim salvage on - we failed. Alongside this were the sad discoveries of a dead horse and a spaniel that we had to arrange to be removed.

Mining and minewater in Cornwall was something of an adventure for the Campaign, there was a developing panic with Wheal Jane but along the River Trent there had been some British Coal management issues that had caused pollutions on several tributaries of the Trent. The industry knew changes were afoot and a large number of miners are anglers and quick to tell us the issues, concerns and fears for the Trent and insisted we took an active involvement down in the South West. The need to tackle issues from the functioning coalmines and the abandoned metal mines across the country.



The River Carnon below Bissoe Bridge running at a pH of 4 to 4.5.

The pollutions were easy to complain about, miles of acidic and iron red streams and rivers. The answer was to take a lead in stating possible solutions, and this was where the industry seemed to

take to us; positive approaches with a set of schemes to come to grips with the issues, they were not very exciting but functional.

Chemical dosing, oxygenation, reedbeds, the mining consultants took note that their rather cosy existence was in the public view and there were rank amateurs dabbling about in the murky shallows. The Government then added an unfortunately timed set of announcements to the mix of worries regarding mining and pollution; the industry was to contract to prepare for the reprivatisation of the coal industry. The President of the Board of Trade, Michael Heseltine announced these measures in early November.

The Trust raised the issues of closing mines across whole regions, the pumps to be turned off across whole coalfields. The threats to the water environment were to be put in the hands of fate and what one knew to be unknown: a set of concerns unspecifiable, at locations that in many instances were unpredictable. The Trust's third report and its first on mining and water was launched at a committee room at the Palace of Westminster having all party support with Richard Alexander and the new member for Sherwood, Paddy Tipping, fronting the event and jointly tabling an Early Day Motion raising the issues we had outlined. This was the second week since the announcement. A good demonstration that the organisation could react quickly and produce documents that were not purely knee jerk reactions.

The organisation realised the need to carry on beyond the two years and the work being carried through had a far wider agenda than the River Trent though that was its core. The Charity Commission would be helpful in the transformation into the Trust and a registered charity by the summer of the next year.



The winter saw the Trust salvage two dredging skips that had broken free on the River Trent they were hard to stop going on down stream to cause damage.



Lashing the dredging skips together. Sadly no Admiral was available to claim the salvage.

1993

Research, delivering answers and bringing the work of the organisation; now called Clean Rivers Trust (CRT), to the attention of both industry and general public saw an increasing number of groups and individuals who wanted to see their rivers improve in quality and by so doing more valuable to the surrounding communities as resources turn to the Trust. The media were attracted to the organisation for its positive approach to curbing pollution and liked the photogenic locations that the work was carried out in; countryside or industrial, always some aesthetic focal point to pan in and out from.

Already improvements were noted in the River Trent by anglers and new threats to it were also developing. Some of our research proved to be hazardous: there have always been times when there have puerile threats such as to keep away from certain locations where 'dodgy dealings' were underway, or individuals have thought themselves above the law. One such incident occurred along the towpath of a river in the Midlands: a skip company hoping to be acquired by a major company and did not wish to be found to be jettisoning waste it could or should not have been handling in the run-up to its takeover. The old style was to get rid of problematic waste by any means was complete. They sprayed inert waste with toxics, dumped drums in ditches, emptied the contents of bowsers in public drains. Their security tried manhandling off a public path and then attempted to deposit their observer into the river but failed. Such events luckily have been few and always been carried out by security companies or in two incidents by policemen. Such is life.

The Trust was by now close to the operational staff at British Coal: we had not shouted at them, we had talked with them, and the outcome was to learn of past pollutions from mines and we learnt how the public did not learn of them. Damage to woodlands inundated by acidic mine drainage in several parts of the country, one in Nottinghamshire on the edge of the Newstead Abbey Estate demonstrates still the long-term consequences of such events. Some surveyors nicknamed it 'agent orange'.

Our work on the Trent had drawn the attention of industry and particularly those that had reputations that relied heavily on the public's perception of local water quality. Burton on Trent the premier

brewing centre of Britain was favoured by the gypsiphorous waters of the area: hard water makes good beer. Allied Lyons contacted the Trust to carry out a contamination study relating to local sites within Burton itself and a more general overview of perceived pollution across a 25 mile radius of their brewery. It was a fascinating piece of research and involved many contacts with industry across parts of Derbyshire, Leicestershire and Staffordshire. Such contacts continued the development of demonstrating accessibility that the Trust has always maintained.

Severn Trent Water along with all the other water companies had and to some degree still suffers from problems of non-degradable materials being flushed down lavatories. Condoms, sanitary towels, tampons and panty liners, in themselves small items in the numbers that they are used by a population of more than 60,000,000 people it causes a major problem in that they do not break down and if a sewer blocks or storm water discharges from storm drains their tell-tale presence in the rivers of the country are the predominating evidence of such events. After winter rains raise the water levels in rivers and streams have dissipated the seasonal vision of sanitary waste festoons the waterside fences and trees like wilting Christmas decorations in January; inappropriate.

Severn Trent commissioned the Trust to research and report on the subject. At the time several environmental groups were being commissioned by the water companies to raise awareness of their Bag It and Bin It campaign, the most memorable being the videos produced by Surfers Against Sewage, the connotations were nauseous.

The Trust was also commissioned to look into community recycling with particular reference to composting and its effects to groundwater and surface water. The development of such schemes never materialised as had been envisaged at the time by the Communities Council and after much research the project was ended in some official disarray though CRT published a modified report into our findings in rural Nottinghamshire.

Wheal Jane was under the media spotlight again as it had become clear that due to both legislation (1991 Water Resources Act) and the mining company's bankruptcy there would be no prosecution and no one responsible for the clean-up bar the state in the form of the National Rivers Authority who had bought land effected in the valley and what was proving to be a toxic nightmare in its own right they also gained rights to the site of discharge at Nan Giles Adit and land around the Jane Adit. The plan to treat the minewater was problematic as it was a novelty in the UK to have to tame such large volumes of acidic metal rich water. In the past minewater from abandoned mines was just allowed to flow from there, in some cases centuries old, drainage systems such as the County Adit that also discharged into the Carnon upstream of the Wheel Jane pollution site. That adit drained mines to the north (around St Agnes) and nearly twenty miles distant. Specialist mining consultants were employed to sort out the NRA's dilemma of what to do. A series of trial wetland were put in place. Newcastle University designed limestone drains to ameliorate the waters acidity which worked well for a few months but eventually after maintenance issues were abandoned and bypassed. The reedbeds planted into inert tailings suffered and the Trust became involved in the issue after being at the periphery with Camborne School of Mines (CSM) for some time. Some replanting, this time with plants from the area that were known to be tolerant of such waters and the rest had had to be fertilised to let the plants get established. It was from this point that CRT and CSM and Exeter University became collaborators across the minewater treatment field with the School's Director Professor Keith Atkinson making the Trust equal partners within his research group. An enviable position.

1994

Much of this year was taken up with issues regarding Wheal Jane; the research group at CSM, the disturbingly poor results of the trial reedbeds, the treatment of the main volumes of water into the Tailings lagoon at the top of the hill overlooking the small village of Bissoe: the tailings dam was filling up faster than the NRA's consultants anticipated. The toe drain leaked, a fresh rebound from Nan Giles. All these incidents took up a lot of time but all were sorted creatively.

Away from Cornwall the Trust was watching the River Trent steadily improve in water quality when in the spring some strange brown foaming discharges had appeared from Stoke Bardolph Sewage Treatment Works which had given some numbers of anglers concerns regarding fresh pollution but it was shown to be bacteria and alga brought about by new plant coming online and was shown by anglers to be attractive to fish.

A few months later a large drum drifted into our path on the Trent bank at Collingham; surrounded by dead fish a tern and gull. This was concerning and the NRA were called. The officer did not wish to visit that day; the attitude was that drums are always appearing and so are dead fish. Officers at the NRA were over worked and demoralised as they knew that a fresh environment regulator was about to be formed. The insecurity made many staff lose momentum for a while. Eventually though with the judicious use of the media they did attend the site and remove the offending container with what later turned out to be containing paint mixed with Tributyltin, an anti-fouling compound that was being used on barge and pleasure boat hulls to stop accretions of aquatic fauna and flora establishing on hulls. The use of this compound was banned on smaller pleasure boats from the 1980s but was still commonly used by boat yards boaters and bargemen at the time finally being prohibited in the UK in 1998. The Trust was criticised in Environment Times for panicking the NRA to action by using the media.

In the summer the International Mine Water Association held their World Congress at the University of Nottingham; a week of meeting people from all corners of the world, one or two in a class of their own and it was possible to pump information from the specialist scientists as well as the engineers from the US Bureaux of Mines, sadly now gone. Robert Heading; the champion of modern minewater treatment wetlands and carr systems, the star of the show.

The Ministry of Defence came into our sights when we were contacted by Roy Pallet who was responsible for the operation of private sewage treatment works at army camps across the UK; he needed support that was straightforward to give and brought the Trust into contact with the underbelly of sewage treatment; the small and often totally under resourced works that belong to local authorities. These sites were not passed on to the water authorities at the time of local government reorganisation in 1974.

The coal industry was reprivatized with the lion's share of the remaining deep coalmines going to RJB Mining plc with the others going to Coal Investments plc, shortly to become Midland Mining. This allowed the Trust such freedom of access to mines and pumping stations that many universities and other organisations who wished to demonstrate their methods of tackling pollution remediation. Many were patented technologies that there was no way they could be used as there was no surety what the process might be.

1995

Midland Mining came to the Trust's headquarters at the Wharf at Collingham in a blizzard that January and asked us to be actively involved in the environmental and water based issues at Annesley Bentinck Colliery in Nottinghamshire. The water pumped to protect which was a relatively dry mine was huge; 1.2 million gallons of water per day. The water was sent through two large lagoons placed on top of spoil heaps which cascaded down to a series of ponds, this was to remove the iron. The worst pollutant, chloride, could not be removed on site and needed dilution in a major river. The dilution was achieved by once the water was near iron fee it was discharged to a pipeline that transported it to the River Trent over 17 kilometres away to the south of Nottingham.



'Big A' Annesley Colliery head stocks.

We had to become acquainted with the sites, monitoring the lagoons, ponds and the attendant pipeline flow. There were the Dumbles, wetland ponds that treated the Annesley Colliery surface drainage. Only about ten years before, when Newstead Colliery was still functioning, acidic minewater had wiped out a woodland on the Newstead Abbey estate boundary that this drainage system passed through.

Peter Sheppard and Brian Rostron both directors of a group of opencast coalmining companies including Coal Contractors based in Chesterfield in Derbyshire gave fresh impetus regarding their company and influenced the environmental development that at that time the industry was sadly lacking. The Trust was called to work with the group to give views and make observations to plans that were in their infancy. Much of this work was discussion based and led to being side-tracked to the general issues of environment and mining. Their involving the Trust in such discussions led to several exciting proto-plans leading into the future.

The Trust, as already noted, will respond to the concerns of groups where they involve water and pollution. A group of subterranean mine explorers contacted us asking for help and guidance regarding mines in the Forest of Dean. They had identified an old shaft that had been used for years by a company to pour tank washings away. These liquids had, they understood been acidic or alkaline depending on what the tanks had been used for originally. The bottom of the mine shaft and their adjacent mine workings were at times of the year flooded and at others dry. The Trust did not waste any time in going down to Coleford to take a look and see what this really entailed.

We found the situation approximately as described and in talking with the owner of the company onsite learned that in the past his Grand Father had used the mineshaft at the engineering works as a

waste disposal route for acidic cleaning materials. The present owner was wishing to find a way of ameliorating the situation; he commissioned CRT to set the wheels in motion as the factory inspectorate and local authority were making the operation of his business on site difficult. Grandfather had died a little time ago and left his Grandson a business with greater legacies than he or his executors might have imagined.

The first port of call in the Forest of Dean being the Deputy Gaveller; Roy Piggott, a mining engineer of note and with a lusty sense of humour and respect for tradition. Over the months that turned into years of visits to his office and to sites within his domain he became a firm friend to the Trust and gave his expertise freely. His role was the care and economic wellbeing of the minerals in the Forest and to license mines and miners as laid down in ancient Acts of Parliament. The second visit was to the Site Director of the major employer in the area to let them know that CRT were researching the mines, particularly the iron workings in the area. The reception was positive and we were asked if the water that the company abstracted from one such mine shaft might be of potable use. We talked and agreed to find out and within three weeks CRT was commissioned to carry forward a two or so year project at the site.

Closer to home so to speak whilst surveying the River Trent early one morning an angler could be heard screaming and then seen running from his peg and up the flood bank away from the water. He pointed at the river and screamed 'shark' glancing back at the river expecting Jaws to be funnelling along the surface of the water, instead a dolphin started doing all the things that anyone who has watched the film Flipper know young dolphins' can do. It left the water in arching leaps, went back upon itself, one was quite spell bound standing watching this display. Nearly 50 kilometres from the sea. Five minutes the show lasted and a photograph was taken to prove the tale, the angler certainly needed one as well as ourselves. Later we were informed by the Harbour Office at Gainsborough that the juvenile had re-joined its mother who was anxiously waiting there. The last siting was their reunification at Trent Falls with their pod which then moved down the Humber Estuary.

The next day an angler phoned to say they had found a whale washed up at Gurton on the Trent bank; it turned out to be a rather rapidly decomposing porpoise which was removed with our help to the Natural History Museum for an autopsy to be performed on it. The cause of death being a form of liver fluke or worm infestation.

The Trust instigated a series of meetings that were carried out with the aggregates industry and British Waterways regarding fish refuges in worked out gravel and sand quarries located on floodplains rather than just having isolated water bodies linking the workings into the dynamic flows of the river systems. This development would allow juvenile fish to shelter within abandoned quarry backwaters at times of flood or high flows. On rivers such as the River Trent these discussions appeared to go nowhere due to the lack of participation by the NRA. Since those discussions and the establishment of the Environment Agency the concept has become accepted practice across the UK and in Europe.

1996

April 1st saw the foundation of the Environment Agency with much fanfare and promises of a strict value for money approach to its 'customers'.

The Environment Agency being aware of the work that the Trust was carrying out in the Forest of Dean commissioned an overview of the area for their own records; the report outlined the perceived risks and possible sites of contamination including likely pollutants. The report was a lesson in the history

of the area now designated as an Area of Outstanding Natural Beauty and a remarkable testament of the ability of nature to both hide and in several cases neuter contamination by binding to the soils or biota of the various areas. Little, if any, of the Forest of Dean is as it was several hundreds of years ago, it is a rejuvenated industrial area; mining, iron works, timber being all but consumed by the ship building industry and charcoal burning; not just for the iron works but for the production of poison gas during the First World War and as the raw material for the ink produced by Dane's Paints in Stratford in East London to print Bank of England notes in the middle of the 20th Century.

RJB Mining commissioned the Trust to research and produce a report looking at the historic repercussions of the cessation of mining; this covered both the national and local environmental consequences. The reportage covered the Stone Age mining of flints at Grimes Graves in Norfolk, the closure of the Kent Coalfield, the cessation of tin and copper mining in Cornwall. The research stretched from the South West up to the Scottish Highlands and the lignite mining of Northern Ireland.

1997

Working with a water utility company to identify possible new water resources operated by mining companies at the edge of their utility supply network area that might benefit both long term environmental protection and enable expansion of their supply range into neighbouring water company areas when some forms of competition might be allowed in the water industry. This was a developing issue at the time.

I delivered the Institute of Mining and Metallurgy Lecture at Royal School of Mines, Imperial Collage London; this brought the Trust into initial contact with Minorco; now better known as Anglo American. It also involved us in the planned 'celebration' of minerals under the careful stewardship of Dr John Groom. John developed the Trust's knowledge and understanding of the methods used to develop sustainable mineral extraction and ethical ways of working with communities and governments. Such foresight and vision from this one individual has been a hard act to follow for other mining companies and few would say they can equal his energy let alone surpass it.

The lecture itself was somewhat controversial at the time, regarding minerals and planning; an issue the Trust has always felt strongly about, the issues relating to involvement of communities during the initial pre planning stages so that the planning process can reflect community involvement, rather than local people only finding out at the stage of seeking planning permissions. (*A New Face for Environmental Action: Community Action and Involvement*. IMM Journal, October 1998.)

As with several areas in which the Trust has been working further projects materialised. In the Forest of Dean the largest employer, SmithKline Beecham, who was thinking of closing their factory at Coleford commissioned us to investigate and if suitable bring their minewater resource into use for product manufacture rather than purely a process water. The purpose being two fold; they were importing water onto site for manufacture in tankers from elsewhere in the Forest and to save money on this supply. It was a remarkable piece of research that lasted more than six months and at the end of which developed into a two year product introduction and study of water quality. The data generated on waters from the area and elsewhere in the UK and Europe was phenomenal.

1998

This year was as ever busy with work on minewater continuing at Camborne, water research in the Forest of Dean and various water company involvements; several were asking advice on specific areas for water availability and water qualities. The involvement continuing at both Silverdale at Newcastle under Lyme and Annesley Bentinck Colliery in Nottinghamshire. Midland Mining also started us off on another project to consider a well at Selston at the edge of their estate at Annesley. The water was considered for several uses over a two year timeframe where analysis of the water proved most instructive of local geological permeability and recharge flows.

The Trust was involved in several Minerals'98 events and educational schemes from local schools and raising the needs of modern life for mine and quarry products as well as for energy. The Natural History Museum Earth Galleries opened with much fanfare which we were involved with, the All Party Parliamentary Minerals Group attended several celebratory events.

The Labour Party Conference was seen by the mining industry and those involved with the rump of the industry to need lobbying for support. Environment, jobs, heritage, energy continuity all were issues of the moment. Clean Rivers Trust with Andrew Purcell and Jim Sorbie of Midlands Mining organised an event which went remarkably well but did little to alter the economic history of the UK.

By chance; a term that regularly appears alongside much in what the Trust becomes involved, led us to meet Albright and Wilson the UK's then major phosphate and phosphoric acid manufacturer and allied chemical producer. The two Gilmores, one leaving the company and one his successor came to the Trust's office and base on the banks of the River Trent. On the telephone we had been asked if we knew of water supplies that might be available at or about their site in Whitehaven in Cumbria to which the reply was in the affirmative. Before the visit the Trust's library had one volume on the area which revealed the history of the factory site, the mining, coal and anhydrite also close by iron and alabaster workings.

At the initial meeting all types of possibilities were explored and the Trust was engaged on a major work program to research the site; its history, geology, hydrogeology, and if practicable to see that water came to site to be used for all manner of purposes. So started a series of projects that went on for a number of years.

1999

The Forestry Commission under the auspices of the Deputy Gaveller commissioned a report on the site known as His Majesty's Chemical Works, as already noted was a historic operation that had an interesting product history. It is now only a few ruins in a pine plantation at a road junction. The findings were not overly alarming but part of the site was fenced off to avoid sheep or other creatures entering. One tree on the site demonstrated the natural ability of nature to come to terms with pollution at their roots by drawing it up by its roots and expelling a rank gum with the toxins locked inside. The gum was interesting and found to be an unusual and secure depository for some very nasty chemicals.

Scottish Coal introduced us to Westfield in Fife, once one of the largest open caste sites in Europe apart from the pre unification East German lignite mines of the River Spree region. Huge lagoons of acid water, expanses of black quicksand like substances and a thriving wildlife community of raptors

and prey species. This visit was to involve us in talks regarding land restoration and Land Art that would develop over at least nine years.

Selston Well at Annesley continued to be a focus with data being developed on a fortnightly testing regime with continues pumping being carried on till the end of the year when Midlands Mining closed both Silverdale and Annesley Bentinck Mines. With these closures the end of the Millennium seemed an end of an era for the Trust. This became very apparent in the next months with the cessation of contact after so long.

2000

With the new millennium, century and year beginning all at once there was little time to mourn the coal mine closures as there was much else to take up our time. Traveling up and down the M5 and M6 from Cornwall to Cumbria on an almost ten day cycle with stops each way in the Forest of Dean was remarkably time consuming and at the same time invigorating.

It was the year of flooding with the offices in Collingham being under two feet of water for ten days. An interesting experience which only coursed minor irritation and did not stop the work being carried out. Regular boat excursions to the village to ferry neighbours collect visitors who were more tourists rather than business guests and to carry out the odd rescue.



Flooding is to be expected when you live by a river.

We started some projects for the Home Office Estates section looking at water issues and concerns which were to lead to interesting insight into the human psyche over the next two years particularly at the Lowdham Grange estate that once was prison officer accommodation.

The Trust was lucky enough to win a substantial grant from BIFFAWARD to research and publish a book on minewater pollution and the methods of remediation. The work was to take Melany Brown from Camborne School of Mines and the Trust around all the minewater pollutions in the UK and several elsewhere in the development of the book.



The Whitehaven Factory.

There were Victorian period alabaster mines between St Bees Head and Whitehaven in Cumbria which were looked at separately from the other mines and minewater research being carried out there; which was to consider effects of factory discharges from the site on the geology of the mine mouth which was close by the rocky foreshore where the effluent pipe entered the sea.

2001

With January came the first word of Foot and Mouth Disease in the first weeks of the new year each visit to Whitehaven entailed driving over the Pennines on the A66 and at the summit of the pass from Yorkshire into Cumbria the view, usually breathtakingly beautiful if there was no rain or low cloud, was instead lost in a murk of smoke and the smell of burning fleeces assaulted the nose. The vision was almost overwhelming and so dispiriting.

Similar visions of bonfire pyres were to be seen on the M5 in Devon and the continuing journeys were made that bit worse. The research on the minewater book were hampered by movement restrictions in several areas though luckily most of the affected areas had been visited the previous year. The Cumbria research was a different thing altogether. The research received DEFRA permission to be carried out wearing white hooded jump suits which had after use to be burned on the roadside and our boots, shoes and any other clothing disinfected with a solution that made wellingtons rot. Cars were sprayed under the wheel arches and anywhere else. On leaving Cumbria the car had to be sprayed again and on entering the drive to the office in Nottinghamshire a disinfectant strip was laid to drive over.

The research was only slightly delayed and when summer came the restrictions began to be lifted. The countryside was strange and almost soulless without the sheep and cattle on the fell and in the valley behind St Bees.

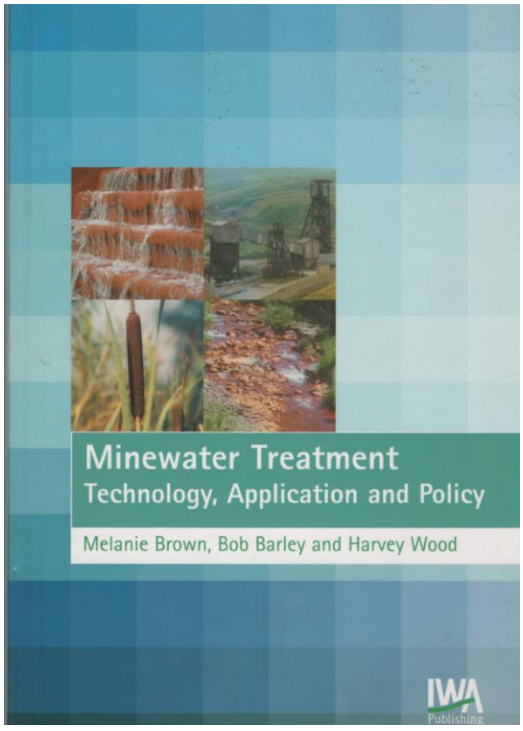
The Trust and the concept of the minewater remediation book went to Berlin for the International Water Association World Congress and found many people interested in the research we were

carrying out. Visits to the lignite mining areas to the south and east of the German capital revealed a strange land of inland seas of acidic water and vast open pits where giant drag lines looked lost in the vast voids they were excavating. The power stations close by were burning this high sulphur fuel and the trees of the area were yellow and the air in the early mornings had a green tinge. These visits and the meetings held at the time led later to activities that helped the restoration of several sites.

CRT made headlines in the News of the World and the Sunday People due to its involvement in research into silts of The Wash sandbanks and the sources of several important contaminant deposits. The whole episode rather fizzled out because of local and national governmental 'disinterest'.

2002

The publication of the book *Minewater Treatment Technologies* was celebrated and launched at the House of Commons.



The Whitehaven Project saw a borehole placed through the cap of a mine ventilation shaft abandoned nearly twenty years previously, this was located nearly a kilometre away from the site and set up on a meadow slope towards St Bees in a beautiful setting. The only industrial intrusion was the factory's iconic chimney top poking out from above a hill that separated the site from the factory. The use of one of the largest eight wheel drive mobile cranes available in Britain had to be shoehorned through narrow track ways and stone gate posted field entrances. The pump lowered over 100 metres down the shaft and attached to metal piping stretching the over a kilometre to the drain on the factory site. Anglian Water had agreed to work with us and bring the equipment pipes and a great deal of enthusiasm.

The pump was started and a telephone call came five minutes later to say that no water was coming out of the other end of the pipe, a quick run up the hill showed the problem a fountain erupting towards the sky at least 20 metres high. After running repairs to the pipe coupling all worked well. All

the environmental monitoring points arranged and monitored throughout the last year were again under scrutiny.

Pumping trials proved satisfactory and the water was passed fit for purpose and easier to treat for the cooling tower at the factory's power plant. It was not an easy task to demonstrate this source of factory water to the Environment Agency and the local water utility hated the project and spoke of sure failure. Anglian Water, the factory owners, the staff and the Trust were happy.

The Cypriot water utility had met the Trust in Berlin the year previously and now contacted us regarding the water supply of Cyprus. There is today a short fall in supply but it was a far worse situation at that time. The library at the Trust had a full set of water supply handbooks and hydrogeological memoirs published in the 1920s and 30s which had been acquired a few years previously. Now some heavy volume water users have a dedicated water supply emanating from old mine workings.

The Trust was called back to help the new owners of the mine site at Annesley just before Christmas, there were several problems with the now derelict slurry ponds that had developed drainage problems and were becoming unstable. A management plan was arranged and agreed with the Environment Agency after some timely earth moving and rearrangement of the tops of the slurry lagoons to redistribute the slurry mass that was still very free flowing. As there were numerous houses close by it was important that nothing untoward occurred. The scheme was successful.

The Trust moved to its current address in the autumn of the year.

2003

Clean Rivers Trust continued to work with Camborne School of Mines on minewater at the wetland trial site and also helped front an attempt to create a new minewater study centre that comprised a laboratories and exhibition areas that broke ground in energy conservation and energy demand designed by Mike Wood linked to the at the time derelict Perran Foundry close by which would have been linked together by a board walk through the wetlands of part of Restronguet Creek. Over the period of time that this was considered funding agreements from the European Union and the local authorities were withdrawn due to outside issues so the project failed to materialise. The Wheal Jane Wetland research site was eventually sold off to the County Council for token sums similar to those the National Rivers Authority paid in 1991/2. The majority is now managed as part of the Cornish Tramways Trail.

Imperial College London invited the Trust to be involved in their research project; Biostore which considered waste arising's to be an aid to regeneration of mineral sights in Yorkshire. Experiments were held at various locations in Yorkshire and brought the Trust into the unreal world of holding a waste site license which was an alarming experience once the experiment on a landfill site, for which it was needed, was deconstructed and placed in a proper landfill site. The Environment Agency wished to be paid to agree its final use and its long-term care. As it no longer existed three years later the penny dropped at the Agency and their policing of our licences was officially waved.

The Trust was still working on the projects in the Forest of Dean, Cumbria and with the Home Office.

2004

Rhodia the French phosphoric acid and chemical company bought Albright and Wilson and announced the end of the Whitehaven project. It was not the project but the whole site was to close, a site with over a hundred and fifty years of industrial scale contamination was to become derelict. The water project had proved the thesis and demonstrated that the use of minewater as a resource was an economically viable option.

The Trust became aware of a heronry in the East Midlands that was being decimated by a brittle bone syndrome; this was brought to a satisfactory conclusion after a long and complex piece of research. A full account of this research may be found as a report on the Trust's web site.

Scottish Coal involved the Trust in the rarefied area of Land Art with discussions with several land artists and landscape planners. Several sites especially in Scotland have been regenerated: derelict mineral sites with bold earth forms engineered to either blend in or stand out prominently within the landscapes.

Northumbrian Water encouraged the Trust to consider water availability within the abandoned mines of the Firth of Forth region, this involved sampling water from within several mineshafts. This project saw staff travelling with large (5 feet long) tool bags with rubberised wrenches and tubs of grease to ease shaft monitoring point lid plates off; some not having been removed for thirty years on the trains and buses of the area. Scottish Coal did much to aid this research.

In Cornwall the Trust worked closely with the County Council as well as Camborne School of Mines to set up a national/European centre of minewater remediation, though this failed to get the support it needed from other academic institutions.



Wheal Jane research site after closure and about to be removed from the Carnon Valley.



The railway viaducts across the Carnon Valley.

2005

Cormorants on inland waters have developed as a perceived problem to coarse angling fisheries over the last 35 years. There have been both licenced culls and some unofficial actions by anglers and riparian owners. The Trust carried out a research project and published a report on the situation including the known facts of the situation, though it took no stance as to the rights or wrongs of overpopulation or otherwise. It has more recently become apparent that the inland bird population has, since the report, developed a natural regulation of population across England and Wales.



Cormorants at Cromwell Lock and Wear on the River Trent.

The Trust worked with the Home Office, Severn Trent and the community of Lowdham Grange to place a new water main through this large Nottinghamshire ex prison estate of houses. The old water supply main was leaking and having an adverse effect on local streams. The whole project included looking at different options and methods of developing the supply.

2006

Lindholme village sewage systems and energy supply were researched with Severn Trent, Thames, Yorkshire and Anglian water companies; the Trust acting as the design conduit for the Home Office. The research lasted over half of the year with the Trust working with each company and acting as an honest broker. It allowed the organisation to develop new skills and develop further diplomatic ways of working.

Much work was carried out on land stability and movement in the South West of England; research into unusual weather patterns and the possible influences of global warming and climate chaos. The Trust's interests in this area involved hydrogeological flow paths within the surface rock formations, the reinvigoration of marls and clay bedding plains. This work is still continuing eight years on.

2007

The River Spree in Germany has since 2001 been an area of interest for the Trust and the acid seas left by the opencasting of lignite for power generation. The involvement of CRT saw the first restoration works come into action with large volumes of water ceasing to be acidic. Much redevelopment of marshland and establishment of proto peatbogs has also helped to improve water quality and hold large volumes of water that otherwise result in possible flood events downstream.

Working closer to home, Nottingham was the location of research into old wells and available water supplies for the Home Office. The purposes were several and gave a chance for the Trust to reacquaint itself with issues that had been much to the fore when it was looking at minewater and other water resources in the area a few years previously. The EA found that the work allowed for new monitoring locations in a local network of monitoring points.

2008

The Trust carried out a comprehensive study of mine drainage leats and streams around Princetown, Dartmoor. Such research leads one to understand the capabilities of mining engineers of several hundred years ago to be able to read landscape so as to move water at a gentle rate away from mines so that they did not scour the channels into cascading torrents that would have altered the makeup of the area. The research covered alternative water supplies and the possibility of developing energy from small inflow hydro schemes. Included within this work has been an effort to hold more water within the moor itself demonstrating the possible reestablishment of blanket bogs that are a shrinking feature of the South West's moorlands.



HM Dartmoor from the air.

Studies were begun into the Rio Tinto running out of the Iberian Pyrite Belt of South West Spain and its interrelationship with the coastal marshlands of the estuary and the development of their unique characteristics. This research is looking at the historic mining activity from Roman times to the 20th Century and the redevelopment of mining in the headwater that has in the last few years begun again. There are many conservation bodies lobbying for international intervention to stop further mining along the course of the river and within its catchment.



The Rio Tinto, Spain; a pH 3-4 a boot rotting river.

2009

The Trust was involved in projects in Leicestershire, Yorkshire and Warwickshire for government departments over much of the year as well as being engaged in ongoing research into reedbeds/carr systems contaminant removal or binding properties in both soils and water.

Work was carried out on mineral extraction related water issues along the South Coast and in the Yorkshire Wolds National Park. Both sites of concern in 2014 with the rise in interest in Shale Gas and the use of strata fracturing to allow the gas to flow.

The EA sold much of their land holdings in the Carnon Valley where the test wetlands were located. The cells being removed and deposited as structural fill to the tailings dam at the Wheal Jane impoundment and treatment facility above the northern slope of the valley. The Trust witnessed the end of the site's 16 years as a research facility.

2010

The Trust visited Yemen to consider water issues that were taxing the government of this wonderful country.

Qat (*Catha edulis)* the mild narcotic shrub which a large majority of the population chew daily in the afternoons, takes up to 40% of the fresh water available within the country and has a mixed effect on the social and economic as well as adverse environmental effects on this water starved country. The Trust worked with the Ministry of Water and Environment to outline that the habit could not be stopped overnight as was demanded by the Japanese Aid Agency who threatened to cease aid payments if it was not made a prescribed act.



Qat Seller in Sana'a Old Town



A bumper pack of Qat that was returned to the seller sampled.

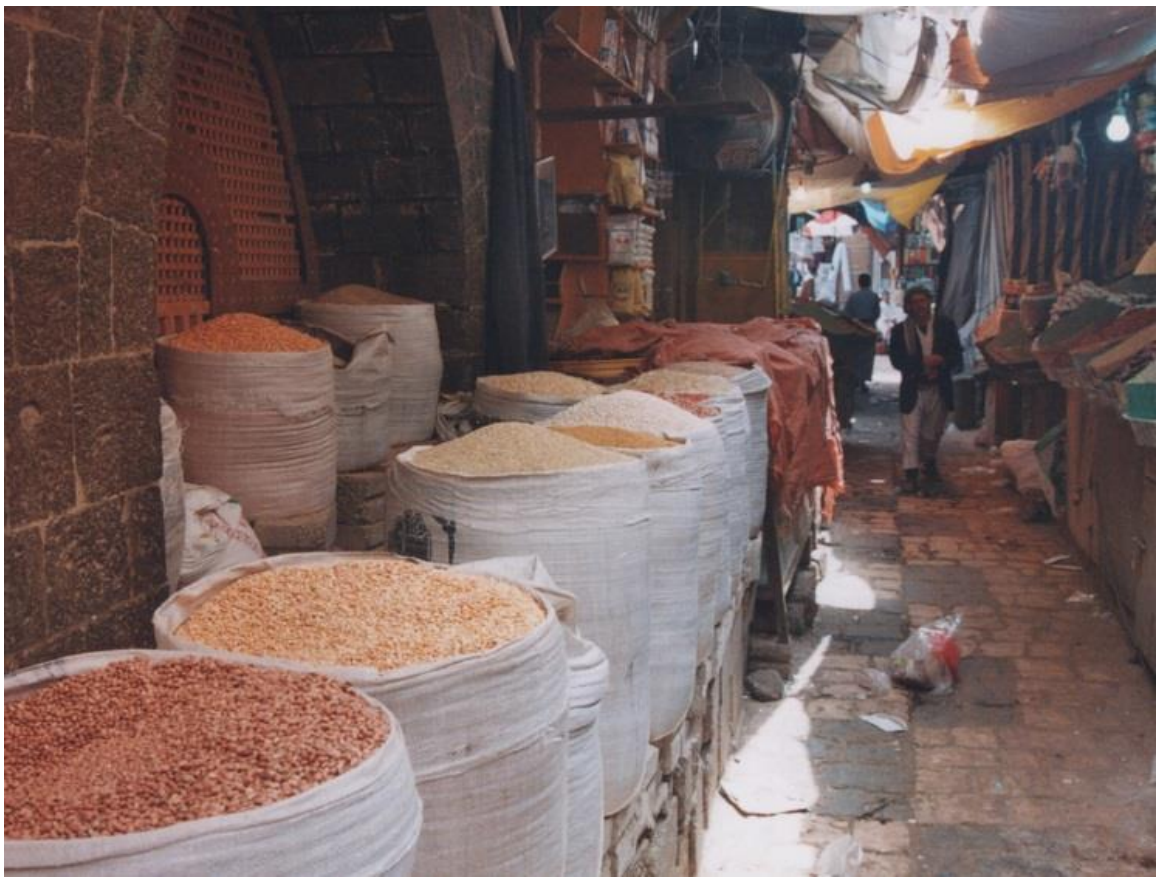
The capital Sana'a water supply was limited to around 10 years of supply and CRT looked at the methods available to maximise water husbanding techniques which have been successfully implemented putting back the deadline by a few more years and offers opportunities for when the security situation improves as it is at present.



A small water supply tanker in the Old City, Sana'a.



Sana’a Old City.



Sana’a Old City Spice Quarter no drainage except soakaways.



Workshop in the Old City of Sana'a all water for quenching is brought in buckets.



Grinding sesame seed for oil, the camel was well catered for with water unlike the miller.



Five stories up in a mud built building goats and sheep are kept



Sana’a ringed by mountains suffers from poor air quality.



A dry well in a courtyard in the Old City, Sana'a.

Issues regarding Addis Ababa the capital of Ethiopia were brought to the Trust's attention by several Ethiopian ministries who were fearful of future contamination of the city's water supply due to poor sanitation issues. CRT has supplied the ministries with a detailed planning brief to come to terms with the issues, but funding is holding progress up. The Trust has visited on several occasions.

CRT have helped a US Aid project in Giza, Egypt looking at sewage damaged irrigation water that was having detrimental effects on crops and people living close to the irrigation canal. The removal of some of the waste waters entering the system has proved to be beneficial.



River Nile and smog shrouded Cairo.



Drainage outside Cairo on Giza Road.



Pyramids in smog Giza, Cairo.

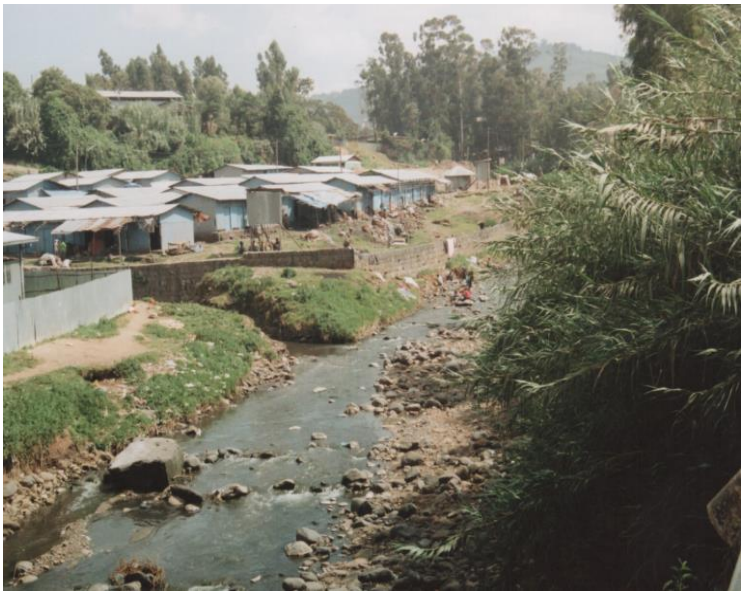
2011

The writing of a book on mine tailings and water impoundment structures took up much time this year looking at international and national legislation governing tailings dams and impoundments; their engineering and management so that such disaster could be better understood and to encourage better practise. This project was given a time scale of 6 months and was delivered in the time frame laid down.

The Yemen and Ethiopian projects dominated the work of the Trust, the Foreign and Commonwealth Office started involving the Trust in investment fora discussions away from aid related organisations and DIFID.



River Akaki, Addis Ababa

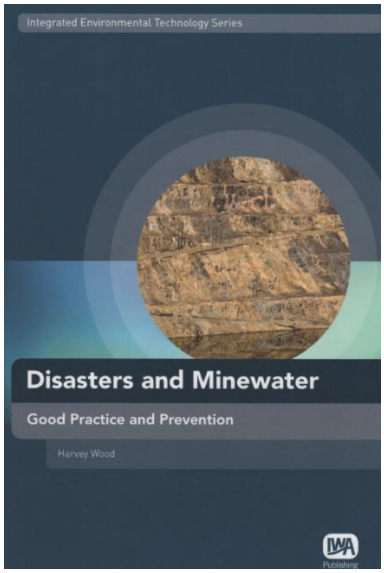


Shanty town in the centre of Addis Ababa draining into the River Akaki as does the rest of the capital.

The Trust was contacted and met with several African and Asian embassies, with CRT putting forward opinions on several issues and situations.

2012

Publication of the second minewater book took place



By chance the Trust visited Morocco and met the issues of desertification along the northern edges of the Sahara Desert. Work continues in this area of endeavour when funding allows.



The sands of the Sahara



A camel that did not return out of the sand wastes between Algeria and Morocco.



Sand dunes rise out of salt flats.

The Trust was invited to visit the communities around Lake Kakinga by Uganda Forestry Service personnel. CRT put together a set of self-help projects that could be implemented by the community, which the Trust supplied the plans and drawings for. Work has been going on since the visit.



Fishermen's' boats on the lake



Backwater of the lake.



More than 2 million cattle pass through the area every year driven by pastoralists.



Illegal logging and charcoal burning by the lake, we disturbed the armed burners and had an interesting couple of hours extracting ourselves from the situation.



Weaver Birds by the lake.

In Turkey the Trust was able to study the various methods of long term storing of water in various styles of built cisterns; the harvesting of rainwater being common across the country and in summer the only available supply during the arid summers.



Water cistern interior in Bodrum



Exterior of cistern in Bodrum.

2013

Many research projects carry on from year to year, though it is always a key element for the organisation to always be examining new territory and issues for research. Often these subjects appear by chance; there is never a time of idleness.

Oestrogens, their mimics and pharmaceuticals in waste water discharges from sewage treatment took up a lot of research time for the Trust and continues. This work has involved looking at methodologies for their removal and the political and economic wills of industry, government, regulator and society to see them removed. Much of this coming down to the questions related to who was to pay for their removal from such sewage treatment works discharges.

Issues of minewater as an energy source came again to the fore with several proposals being offered up for consideration by development companies, but finding no takers. The UK land holders constantly proving to be uncertain as to the use of alternative resources. 2014 might appear to be the year in which these proposals may come of age in the UK.

2014

The Trust has been looking at the causes of flooding in the Somerset Levels and pollution pathways from metal mining areas that have leached across the huge flood plain. It has found the floods were not so detrimental to the natural environment but more an inconvenience to residents who could not travel by usual routes to work in the surrounding towns and cities.

CRT have been working on a number of water/energy projects from North Warwickshire to Northumberland including the UK's first minewater energy scheme. So many years this has been put forward but now appears to be the right moment. One design that looked attractive was to use a group of flooded mines as a depository for waste heat from nearby power stations and to build the heat to the temperatures required to power turbines.



The site was one of the last operational coalmines, the last in the North East of England.



The site of the minewater pumping operation.

A short message came on 20th October 2014 from Lukanga Stanley of the Forestry Department at Kakinga saying that new work is now underway to stock fence the lake we visited in Uganda; the visit in 2012 has been bearing influence on the local population with the use of shadoofs and removing the need for young children from entering the lake to gather water. The fishermen have cleared the lake of water lettuce (Pistia stratiotes) composting the large quantities with human and cattle waste. More work is planned for the catchment protection scheme in January 2015. A project that flourishes on local action with no outside fiscal investment.



Water Lettuce (Pistia stratiotes).



Kakinga Lake fish stocks improved.

Postscript.

Due to a number of events in the life of the Director the Trust is starting its second quarter century at new premises in Edgbaston, Birmingham. The Director thanks the Trustees and others for allowing the move to be a welcomed event.

2015 to 2030, the next 25 years.

The next twenty five years sounds a daunting prospect and several of the present personnel will have retired by the fiftieth anniversary but it is the intention of all presently involved that the Trusts work will continue in the same manner as it started. The accidental issue and the ability to respond in a measured manner, ensuring that research is possible and with an ever developing knowledge base to aid the work in hand.

The intention of those involved is to see that CRT is fiscally secure and never lacking in enthusiasm.

Nothing is too complex and no issue is too small.

Acknowledgements + People and Organisations Worked With.

Parliamentarians;

Richard Alexander, Sir Paul Hawkins, Andy Stuart, Paddy Tipping, Bill Olner and many who are currently active in the Palace of Westminster.

Media;

The Times, Telegraph, Observer, Guardian, Sunday People, News of the World, Yorkshire Post, The Scotsman, Evening Post, Western Mail, East Anglian Daily Times, Eastern Daily Press, the Forester, Newark Advertiser, Burton Mail, Lynn News and Advertiser, British Medical Journal, Burton Mail,

Angling times, Anglers Mail, Canal Boat, ENDS, Environment Times, Field, Country Life

BBC News Nationally and in the Midlands, South West, Yorkshire, East and London.

BBC World Service.

ITN Nationally and in the regions; East, Yorkshire North East, South West, Midlands

Channel 4

Observer Film Company

Country File,

Academic;

Camborne School of Mines, Exeter University, The University of Nottingham, Nottingham Trent University, Oxford Brooks University, Leeds University, Welcome Trust, Sheffield University, Newcastle University, Strathclyde University, Imperial College London, Royal School of Mines, British Geological Survey, University of London, Middlesex University, New York University, Addis Ababa University, Cairo (American) University, Natural History Museum,

Companies;

British Coal, Staveley Chemicals, SmithKline Beecham and Glaxo SmithKline, Albright and Wilson, ERM, Coal Research, Midland Mining, RJB Mining, Scottish Coal, UK Coal, Bass, Marston's, Allied Lyons, Redruth Brewery, Best Foods (Marmite), Severn Trent, South West Water, Thames Water, East Sussex Water Company, Yorkshire Water, Northumberland Water, United Utilities, Hartlepool Water, Watkins Engineering, Wardell Armstrong, SRK, International Mining Consultants, Mining Journal, Coal Contractors, Terry Adams, Lyonnais des Eau, Port of London, Biffa, Cory, Rhone Poulenc, Rhodia, ADDC, Suez, National Power, Power Gen, Farley Engineering and many others.

There have been and continue to be some companies and organisations that we have ongoing confidentiality agreements with so their names are not present.

There were many individuals within industry with whom we worked with over the years; they are too numerous to mention but they know who they are and I hope accept our thanks.

Government Ministries and Executive Agencies;

National Rivers Authority, Environment Agency, Her Majesty's Inspectorate of Pollution, Clyde River Purification Board, Forth River Purification Board, Scottish Environmental Protection Agency, Ministry of Defence, Ministry of the Environment, Department of Environment, Food and Rural Affairs, Home Office, HM Prison Service, Forestry Commission, Coal Authority, House of Commons Library, HM Mines Inspectorate, Department of Trade and Industry, Office of the Deputy Gaveller (under two incumbents to the post; Roy Piggott and John Harvey), Scottish Parliament Water Section, British Waterways, Transport for London,

Overseas Governments and their Agents.

Ethiopia, designing sewage treatment and collection schemes for Addis Ababa that also relieve flooding, aid agriculture and protect the south east well fields.

Uganda, Kakinga Lake projects that are still being developed with the communities and the Forestry Department.

Yemen, groundwater development; agriculture, potable supplies, pollution remediation to both surface waters and aquifers. Qat (Catha edulis) irrigation methodologies and replacement cash crops.

Sierra Leone, equitable development of investment farming and mineral/gem issues from river gravels.

Egypt, Cairo sewage treatment and irrigation issues around the west bank of the River Nile. Nile water ownership discussions.

Romania, several issues regarding mines; tailing impoundment projects in Transylvania, and tailings dam failures resulting in damage to tributaries of the Danube.

Germany, worked over several years on the River Spree and the effects of lignite mining and large site reclamation.

Netherlands, studied high phosphate loadings to the waterways.

Kuwait, with New York University looked at wetland systems for sewage treatment.

Cameroon, minewater and other pollutions.

Morocco, worked on desertification and irrigation issues.

Cyprus, the state owned Water Company has availed themselves of our expertise and library regarding water supplies for the island.

Somaliland and Puntland. Looking at water supply, sanitation and infrastructure engineering such as roads protection and drainage, developing rainfall harvesting and usage.

Kenya. Organisation of treatment of sanitation effluents at a refugee camp.

Other Agencies and Organisations.

US Aid, UNESCO, UN, UPEP, EEA, EPA, US Bureau of Mines, IEA,

Trustees, past and present;

Past: Brian Richmond, Tony Warburton, Jes Healy, Andy Johnson, Peter Bass, Patricia Wood (Trust Secretary), Karen Hindle.

Present: Brenda (Rusty) Lewthwaite, Paul Southby, Peter Jones OBE, Dr Melody Stokes, Dr Keith Gregson, Lawrence Brooks, Simon McCormac.

Special Thanks.

Thanks is due to Dr Melanie Brown for her work over several years and for the production of the book Minewater Treatment. Melanie also carried out research on various aspects of the wetland site in the Carnon Valley and methods to keep the wetland facility functioning after the Environment Agency announced its plan to close and dispose of the research area.

Mike Wood for his work as an architect and designer for projects from Cornwall and Selby to Addis Ababa. A man of vision and a true friend. His friendship has been invaluable.

Jim Sorbie who as Managing Director of Midland Mining gave the Trust not just theory about minewater but gave access to mines and minewater and support for several years and has since been a strong supporter of our work.

The Library.

The library is the organisation's other major asset beside the people who work with us. It is a remarkable collection of books, guides and pamphlets, CDs and videos. The reports prior to this digital age cover the country with regard to documents published by the NRA, EA, SEPA, HMIP and many other official sources. Many reports that now are only published on-line have been printed to ensure the continuity of resource. The library has developed over the years and mirrors the many areas of interest and the research areas that the Trust has followed over the last twenty five years.

Some subjects are noteworthy within the total collection; British Coal publications and records of the Nottinghamshire mining areas, a comprehensive set of county floras of the UK, geological and water resource documentation covering the whole of the British Isles. The bound reports of the Royal Commission on Rivers Pollution reports going back to the1860s including the seminal volume into the water supply of the nation (including the royal palaces). Many of these volumes are annotated by Whittaker the great Hydrogeologist and author of many volumes of the Geological Survey.

There are sets of volumes that cover the geology of Cyprus, Uganda and the gold fields of South Africa, volumes coving pollution abatement technologies including many on the subject of abandoned mines. There can be found many volumes on the rivers of the UK and worldwide; the history and geography of most nations can also be found alongside county directories such as Kelly's which are invaluable to pinpointing historic industrial practises where no physical evidence now survives.

The library holds a remarkable collection of Ordnance Survey and other maps including estate and abandoned mine plans. There are maps of many areas that the Trust has carried out research and others ready to introduce new areas when required. Alongside these are a collection of photograph

albums of areas of research covered over the years that are an invaluable aid-memoir of many small investigations as well as those more major ones.

In the future much of the library will be digitised to make it available to all; the reports prepared over the years will also be held in this form including where those that were commission are allowed to be.