URBAN WILDCAPES

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Sheffield is a remarkable city. In less than 200 years it grew from around 10,000 people to over 300,000. As a capital of world industry it covers roughly 300 square kilometres of varied landform. The urban core is centred on a series of river valleys and hills. Surprising to many, it boasts over eighty ancient woods, extensive heather moorland and bog, urban relict grasslands, and remarkable post-industrial sites.

This city of rivers and valleys runs from the high western ground down to the lowlands. The rivers are like the spokes of a wheel converging on the city centre, forming a network of green corridors that allow the persistence of semi-natural wildlife areas into the heart of the City.

This means that even in the urban heartland there are chances of relict, high-quality wildlife species together with urban colonisers - a heady and exciting mix.
River Don catchment and the great South Yorkshire fens: A lost wetland

Like many great rivers the Don draws its life from a vast catchment and watershed. For the most part, the rivers and streams run from the high western land, down to the lowland plains of Doncaster. For millennia the river, its tributaries and their marshes formed a great and significant barrier to people, politics and the economy across much of this landscape. This was a psychological and physical barrier for the ancient tribes, for the Romans, and then for the Anglo-Saxons, Vikings, Northumbrians and Mercians.

Along this vast network of streams and rivers, especially to the east where the waters spill out over the Doncaster plains, there were extensive marshes, bogs and reedbeds – the great South Yorkshire fens. Around 99% of this rich wetland resource has been destroyed. Oliver Rackham (1986) suggested that ‘about a quarter of the British Isles is, or has been, some kind of wetland’. On the same theme, Smout (2000) states that: ‘There are many thousands of hectares of what is now prime arable land, especially in northern England, that were in the 17th century, fen and mire’ and ‘it is surprising how […] Yorkshire […] fenlands have evaporated from general memory’. Indeed, for most Yorkshire people, almost all memory has gone. I describe the details of this elsewhere. But as the River Don runs from its Pennine source to the Humber, it changes dramatically. In its landscape, it metamorphoses from upland stream and clear-flowing brook, to urban watercourse and sometime sewer, to agri-industrial drain. Over time, it has ‘evolved’ from its origins as a wildlife-rich landscape of meandering channels and floodland. With two hundred years of industrial urbanisation, and agri-industry its flow has been constrained and its ecological soul has been gutted.
In Yorkshire, south of the confluence of the Ouse and the Trent, 70,000 acres of Hatfield Chase were constantly inundated before Vermuyden and his fellow Dutch undertakers commenced its drainage in 1626. At its heart was Thorne Mere, almost a mile across. Close by, 4,000 acres near Doncaster (known as Potterick Carr) fell to Smeaton and his engineers after a private Act of Parliament in 1764. This was one of many outliers known as the Yorkshire Carrs, and famous with local people for its bitterns or ‘butter bumps’.

Sheffield in the early 1900s: Urban expansion and decline of nature

By the early 1900s, Sheffield had grown from a minor medieval settlement on a significant river crossing, with a castle and a manor and one of the greatest deer parks in England, to a thriving industrial centre. One consequence of this development was that to all intents and purposes, the urban core was biologically dead. Many who lived and worked there would expect to live little more than into their early 20s. This driving force of British industry boasted some of the worst air and water pollution anywhere in the world. The air was heavy with dust, smoke and grime, and sunshine rarely penetrated. The rivers, once vibrant with life were now devoid of anything living. Used for cooling in industry as well as open sewers, they also ran constantly in the low 20s centigrade, a real urban heat island.

But gradually during the twentieth century, action was taken to control and constrain these impacts and claw back opportunities for nature to recover. This long and complex story is too much to deal with here. To understand the changes means looking at the collapse of much of the region’s big industries; and then the slow and painful re-emergence, socially and economically, of these landscapes.

However, at the end of a process of thirty years of dynamic change, the River Don is re-emerging as a central feature in the region’s urban ecology, and the lifestyles of city dwellers. By the 1980s, workers along the river were being entertained by herons and kingfishers, and at night the occasional red deer popped up to frighten passers-by. A revolution was taking place.

But this is not simply a re-colonisation of the natives. As noted by the late Oliver Gilbert, that pioneering urban ecologist, the wild river is by no means ‘natural’. Its recombinant ecology mixes native and exotic flora and fauna in equal proportion.
In the 1980s, figs were found growing along the River Don by naturalist/industrialist Richard Doncaster and local botanist Margaret Shaw. Oliver Gilbert followed these observations with detailed fieldwork and experimentation. The figs were largely derived from seeds contained in sewage that germinated in the high ambient pseudo-Mediterranean conditions of the industrial valley. Thermal pollution of water used for cooling heavy industry and the exudation of raw sewage combined to establish a major, urban fig forest along the River Don. This species is recognised and protected as ‘Industrial Heritage’ by Sheffield City Council, in its Sheffield Nature Conservation Strategy (Bownes et al., 1991). I believe that this is the only such case of protection of an exotic plant species in Britain.

The River Don has been a rich haven for species such as water voles, but in recent years, the exotic American mink has moved in to ‘hoover’ them up. It may be that growing populations of urban brown rats are also out-competing the voles. These mammals are frequently seen by local people walking the water-side footpaths. Bluebell and wood anemone, ancient woodland indicator plants are washed downstream from woods that line the upper River Don, and then re-establish under the canopy of – you guessed it – the Japanese Knotweed. This phenomenon was first described by Oliver Gilbert in the 1980s (Gilbert, 1989), and is a remarkable example of the new ecologies’ and species’ coexistence.

In the urbanised landscape there are huge environmental and even economic consequences of the straight-jacketed river. Drained and cajoled both upstream and downstream of the city, the river becomes ‘flashy’, rising and falling quickly and powerfully. Tributary rivers such as the Rother exemplify the impacts with massive floods in the 1940s and 1950s.
At the evening service on Sunday, June 22nd at the Parish Church I talked about the weather which had been so disappointingly cold and wet. I read from an old Birley Vale Magazine an account of the dismal weather in this area in 1872 and I quoted the following: July was an extraordinary month. 7.84 inches of rain fell. The barometer was unsettled throughout the year, except in July, when it gave up apparently in despair, and remained permanently very low.” Then I said “Surely we shall have a dry July this year, after the wetness of May and June!”

Nine days later I was beginning to think that the 7.84 inches of July 1872 would be beaten in the first week of this July, for the month commenced with a downpour which continued ceaselessly for 30 hours, during which time 2.17 inches of rain fell. This caused many rivers to overflow, and among them the river Rother. The result—great floods at Woodhouse Mill, and a night of grave anxiety (July 2nd) for everyone in the lower parts of Retford Road and Furnace Lane, and in Rodman Street.

Next to the terror of the coming of the floods, the most remarkable thing was the swiftness with which the water disappeared again. But the fields beside the Rother remained swamped for some days. The above picture was taken as the waters were receding. It is a view of Retford Road taken from lower Furnace Lane, July 3rd, 1958.
By the 1990s, many of the remaining washlands were themselves extensively drained. The main rivers were also comprehensively straightened and canalised. The once tortuous and sluggish meanders had been converted to clinical drains for the mere purpose of water removal at speed. Wildlife, landscape and sustainability were sacrificed to rigorous efficiency. In the urban areas too, the rivers were reduced largely to functionality and convenience.

Many smaller streams were lost underground to culverts and even sections of major rivers such as the Sheaf and the Porter were lost or under threat. The Sheffield Nature Conservation Strategy in 1991, finally established a baseline for a future vision of the rivers, once again re-connecting the threads of the Don catchment; but very little, very late in terms of corporate commitments to reinstatement.

A new life and a new living: Retail therapy for the river Don

So after around two thousand years of change, and mostly decline, the River Don is re-emerging. A major driving force behind this has been the Five Weirs Walk Trust, set up on the back of initiatives by the Sheffield Junior Chamber of Commerce and others in the late 1970s. As the rivers cleaned up, there was renewed demand for access to their banks – for wildlife watching, fishing, walking and cycling. A few brave souls even took up water-based sports like canoeing.

All these helped fuel the cry for an improved waterside environment. Then, following collapse of much of the industry, vacant warehouses and other industrial premises have been renovated to up-market, high quality residences for urban living. This is a remarkable turnaround in less than fifty years.

Some conclusions: How should we celebrate the new river and engage the public in its future, symbolic of the region’s post-industrial renaissance?

Although the River Don, its tributaries and its environs have changed almost beyond recognition, they are still at the heart of the region’s nature and its future. After suffering the worst of human excesses, this is in itself remarkable. But more than this, there is a new and vibrant ecology emerging from industrial wasteland. Here in the urban waterway both native and exotic species jostle for position; the final outcome is still in the balance. Indeed it will probably fluctuate in a dynamic and pulsating equilibrium as plants and animals come and go. There will be no long-term stability, but a dynamic continuum through time that, like the river, ebbs and flows. The urban rivers are perhaps a mirror to the bigger landscape and ecological trends of global climate change.
The new species that come in, like Buddleia and the figs, are winners in the re-shuffling of the environmental pack of cards. But this needn’t mean that natives will necessarily lose out. Many native plants and animals are now thriving in this recombinant ecology of the post-industrial city. As Oliver Gilbert pointed out so eloquently in the 1980s, these species were entirely removed by the gross pollution and other impacts over 200 years or so of industrialisation and urbanisation. The new ecosystems are bustling and dynamic mixes of old and new. This rich mixture is also reflected in the dynamic and exciting human populations that are also now re-colonising the urban heartland. Taken in this perspective, then surely the tale of the River Don, for all its pollution and depression, is one of heartening optimism for the future.

Above all, it is important to recognise and plan for the bigger role of the rivers. As witnessed in 2007, the way that we have managed the landscape, and the climate-induced extreme weather conditions, mean the river is still central to the region’s environment. It is important to learn the lessons of the recent floods and consider how we can work with the river and its floodplains to make a more sustainable future for all of us. This is a message that is easily overlooked. The newly-resurgent river offers opportunities for living and for recreation and business. A former Publicity Officer for Sheffield City Council once touted the image of ‘Sheffield by the Sea’, with candyfloss and ice-cream along the Meadowhall waterfront. His plans were somewhat flawed by the idea of damming the River Don to form a lake. This neglected the core functions of the river in its landscape and the impacts on the main trunk sewer for Sheffield that runs down the valley. He left not long afterwards, but I do wonder if he had a vision of the new urban community and river that is now emerging.

This new vision needs to take into account the nature and character and environmental significance of this great river. Will the communities of the future need to take to the boats as often as they once did? Only time will tell.

References

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