Management issues in urban ancient woodlands: a case study of Bowden Housteads Wood, Sheffield

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Summary

The problems of managing sustainably urban ancient woodland are discussed. Composition, structure and condition of a case study wood, prior to management in early 1988, are put into their historical and social contexts. This was the first active management intervention at the site for over a century. The implementation of management plans covering the periods 1987–1991, 2000–2005 and 2009–2013 are then described. Interpretation of vegetation condition and the monitoring of recovery following intervention demonstrated a remarkable ability for recovery. The fact that managing public amenity woods in a heavily populated urban area in the late twentieth and twenty-first centuries is as much about public relations as woodmanship and ecological principles is emphasised, as is the fact that managing publicly-owned amenity woodland is a long term process.

Key words: Urban woodland, ancient woodland, management plans, coppicing, selective thinning, group felling

Introduction

Bowden Housteads is an ancient wood covering 31.7 ha\(^{-1}\) that has survived in Sheffield’s inner city. An ancient wood is one that is known from documentary evidence or from a combination of archaeological, botanical and geographical evidence to have already been in existence at some critical threshold date in the past, George Peterken suggests AD 1600 (Peterken, 1981) and Oliver Rackham, AD 1700 (Rackham, 1980). The significance of these dates is that it was only after the end of the 17th century that there was large-scale planting of trees in England. This means that any wood already in existence by 1700 would almost certainly have been the descendant of a medieval working wood, an area of woodland conserved, named and managed. This was not wildwood, not natural woodland, but semi-natural woodland, influenced by human activity over hundreds and in some cases over thousands of years. These woods have the greatest heritage value. It is the inherited characteristics of ancient woods: their sites, locations, shapes, variety of plant life and fauna, their archaeology and often long documented history, which make them so special. They take us back to the roots of our history and are irreplaceable.

However, for almost a century, until the late 1980s, the publicly owned ancient broadleaved woods in the city of Sheffield were neglected and unmanaged, except where dead or dying trees were judged a danger to the public. The benign neglect of the woods made them much less attractive than in the past; increasingly even-aged with dense canopies and poorly developed shrub layers. They contained much poorer displays of spring flowers, and some breeding birds and butterflies that were once common were reduced in number, or no longer found. Local residents were increasingly afraid of walking in the woods because they were dark and gloomy and engendered
a fear of personal attack. The more accessible woods were sometimes heavily vandalised and full of litter. After having survived for hundreds, and in some cases for thousands, of years there was a real danger that Sheffield’s woodland heritage would be squandered. Our ancestors quite deliberately protected the woods by actively managing them. The twentieth century attitude until lately in urban areas seems to have been, at best, to let them take care of themselves, and at worst, to abuse them unmercifully. Since 1986, a succession of policies, projects and the implementation of a series of integrated management plans have attempted to alleviate the management problems in Sheffield’s ancient woodlands. This paper uses Bowden Housteads as a case study to highlight management issues in urban ancient woodlands and illustrate how they were tackled in this particular wood over the last thirty years.

**History of the site**

A summary of the history of the site helps to emphasise what was in danger of being heavily depleted and possibly lost altogether. Bowden Housteads Wood lies in a typical ancient woodland location on an ancient parish boundary (between Handsworth and Sheffield). Its shape is typical of ancient woodland sites, zigzagged in places, sinuous in others, a reflection of the fact that it
is the remnant of woodland clearing over millennia. Its boundaries are marked by banks and ancient stone walls, or a combination of the two. The wood was first mentioned in a document in May 1332 (Curtis, 1918), making it one of the earliest recorded ancient woods in Sheffield. The document in which it was first recorded was an inquisition post mortem, i.e. a document that was drawn up in medieval times at an inquest following the death of a large property owner to record the size of his estate and to establish his rightful heir. It was the inquisition of Thomas de Furnival, the lord of the manor of Hallamshire. In the inquest document, the wood was simply Baldwynhoustead. Baldwin is an Anglo-Saxon personal name and Houstead is made up of two Anglo-Saxon elements hus meaning house and stede which can mean a place, a building or a farm. The wood is therefore probably named after a nearby farm whose tenant was called Baldwin when the name was given.

In the 1332 inquisition, Bowden Housteads Wood was recorded in a list of woods and moorland as a pasture and this probably means that it was wood pasture. In a wood pasture, besides containing trees to be felled for use in buildings, for converting into charcoal and as the raw material for numerous crafts, the lord of the manor’s and/or his tenants’ farm animals were also allowed to graze from time to time. In wood pastures, besides cattle and horses feeding on the grass, acorns would be a valuable food for pigs during October (this was called pannage), new succulent Holly Ilex aquifolium would be cut for farm stock (this was called leaf fodder), and bracken would be cut for animal bedding.

As the population grew and the demand for timber trees and underwood increased, wood pastures declined in number, and the former wood pastures were fenced to keep grazing animals out and were converted into coppice woods. This is what happened to Bowden Housteads Wood in the late Middle Ages. By the end of the sixteenth century, Bowden Housteads was a well-established coppice wood. It is included in a long list of woods compiled for the 7th Earl of Shrewsbury who was Earl between 1590 and 1616. The list was entitled ‘A briefe estimate of the springe woods belonging to his lordship’s forges…’ A spring wood was a coppice-with-standards. In such a wood, most of the trees were cut back to ground level (coppiced) about every 20 years and they then grew back multi-stemmed. Among the coppiced trees some trees were left to grow as single-stemmed trees and these were the standards. The standards, which were mostly oaks Quercus sp., were used in building projects. The fact that the spring woods were said to belong to the Earl’s forges suggests that most of the coppice wood would be made into charcoal for smelting iron.

The wood was coppiced regularly for 300 years, and records in the nineteenth century are very full. An 1810 map survives showing the wood divided into five compartments to be felled in different years. In 1838, there are full details of bark peelers at work in the wood. This suggests it was still predominantly an Oak Quercus petraea wood as oak bark was the main constituent in the preparation of a liquor in which skins were soaked to make them pliable for working. When the contracts were set with the bark peelers, the Duke of Norfolk’s wood agent paid for ‘ale for the bark peelers’ to seal the bargain. There then follow details of the ‘pilling’ and ‘shaving’ of the bark which was then stacked, chopped, bagged and loaded on to carts to be taken to tanneries. Large fellings (called ‘falls’) were recorded in 1821, 1864 and 1875–77 and these give the tree species being felled: in 1864 Oak, Ash Fraxinus excelsior, Elm Ulmus sp., Willow Salix sp., Alder Alnus sp., Maple Acer sp., Crab Apple Malus sylvestris and Larch Larix sp.. The mention of Larch strongly suggests substantial planting of this exotic conifer had taken place before the mid-nineteenth century; coppicing was ending. This is confirmed by the Duke of Norfolk’s wood agent’s intention in 1898 to plant 25 acres in the wood with Oak, Ash, Birch Betula sp., Sycamore Acer pseudoplatanus, Sweet Chestnut Castanea sativa and Lime Tilia sp. eight feet apart and ‘filled up with Larch 4ft apart’. Bowden Housteads was becoming a plantation and this planting about 100 years ago is reflected in the substantial number of Sweet Chestnut and Beech Fagus sylvatica in the wood.
The State of the Wood on the Eve of Integrated Management in 1988

In 1916, the Duke of Norfolk sold the wood to Sheffield Corporation for £6,000 for use as a place of recreation. Since then, not only was it left virtually unmanaged for more than 70 years, but also a large section of the wood was lost through opencast coal mining in the 1940s. It was also bisected by the construction of the Sheffield Parkway (A630) in 1970 and the southern part of the wood was further sub-divided by the creation of the Mosborough Parkway in 1990. The wood became increasingly even-aged, with a dense canopy resulting from the closely planted trees, especially in those areas dominated by Beech, causing suppression of ground flora and erosion of bare soils on steep slopes (Rotherham, 1996). Because it was gloomy and monotonous, it was much less attractive to insects, mammals and birds, and visitors felt less safe walking there. Its ancient boundary walls were also in a state of great disrepair, it was heavily littered in places, and local householders made incursions into the boundaries of the site and tipped their refuse directly over the vestiges of the ancient woodland ground flora. A further potential problem that was largely unrecognised at first was that the woodland was becoming drier. This was because the water catchment had been significantly attenuated (Griffiths & Rotherham, 1996) and the water table had fallen, due to the acute urbanisation of the surrounding area. This had a dramatic negative impact on the woodland’s ecology, and combined with heavy shade from the maturing Beech, led to loss of ground flora and soil. We estimate that in some place 15–30 cm of topsoil, and of course the seed-bank, was lost. The remaining areas of native woodland ground flora were restricted to a few streamsides and to short stretches of the woodland boundary, giving a halo or ‘Polo-Mint’ effect, of an impoverished core and relics of woodland indicators on the outer fringes. Nevertheless, the wood was still a heavily used public open space. In June 1986, a user survey of the wood was conducted among a random selection of adult respondents in 236 households living in those parts of Richmond, Handsworth, Darnall, Manor and Woodthorpe lying adjacent to the wood (Jones, 1986). In answer to the question ‘If you visited a local wood which one would it be?’ 228 answered ‘Bowden Housteads’. Eighty-one per cent of these 228 respondents said they visited the wood on a daily, regular or occasional basis. 115 respondents took walks there, 76 walked a dog, 29 explored with young members of their family and 42 used it as a short cut. Eighty seven of the users said that when they visited the wood they went alone. Among serious problems in the wood, respondents cited chopping down trees, dumping rubbish, starting fires, using airguns, and off-road motor biking as serious problems. At the end of the questionnaire survey, respondents were asked to offer any other comments about the wood. Complimentary comments included ‘important for wildlife and relaxation’, ‘a precious place for children to go and come in contact with nature’, ‘we need woodlands, need bits of green’ and ‘somewhere different to walk in – best thing in the area’. However, these were balanced by critical comments that emphasised the lack of management such as: ‘once meant a lot; now it has deteriorated’, ‘very dark and gloomy’, ‘wants cleaning up’, ‘an unsafe place to walk in or for children to play in’, and ‘needs supervising by a ranger’. This then was the situation after nearly three-quarters of a century of public ownership: Bowden Housteads was still heavily used but in great need of sympathetic management.

Renewed Management: Phase 1, the 1980s

The wood saw a marked turn for the better in the 1980s. In 1979, a few experimental glades were created for Oliver Gilbert of the University of Sheffield (Gilbert, 1982) to demonstrate the speed and variety of regeneration by trees, shrubs and ground flora when group felling took place. The rapidity of re-growth assured those members of the Council staff and local councillors who were sceptical about such management and fearful of the critical reaction of local residents. Their concerns followed attempts to manage another wood by selective thinning which generated huge local opposition. Local users, up in arms, called the operations ‘a wildlife catastrophe of
major proportions’ going on to say that once the wood came to the attention of Sheffield City Council’s Countryside Management Service ‘the wood was doomed’. In the first, small (0.5 ha⁻¹) demonstration clearing in Bowden, Bluebell *Hyacinthoides non-scripta* flower numbers increased, from around 20 to >1,500 by year six. From then on until year 11, when monitoring finished, they declined as shrubs and trees closed the successional canopy. Other species from the seed-bank appeared: Bramble *Rubus fruticosus* agg., Common Figwort *Scrophularia nodosa*, St John’s Wort *Hypericum pulchrum*, Toadrush *Juncus bufonius*, Soft Rush *Juncus effusus*, and Wood Sedge *Carex sylvaticus*. Windblown seed brought Goat Willow *Salix caprea*, Rosebay Willowherb *Chamerion angustifolium*, Marsh Thistle *Cirsium palustre*, and Coltsfoot *Tussilago farfara*. In order to beautify the glade, Foxglove *Digitalis purpurea* was introduced as seed and established well.

In 1986, one of the authors was seconded to Sheffield City Council to carry out two research projects. One was to identify those woods in Council ownership that were ancient woods, use
archive research to record their history, and to write detailed biographies of each wood (Jones, 1986b). This was the first time that Bowden Housteads was identified as ancient. In that study thirty-one ancient woods were identified, 29 more than previously acknowledged. In another study later the same year, 45 ancient woods were identified in Sheffield (Jones, 1986c). The second research project was a series of household surveys around Ecclesall Woods, the Gleadless Valley woods and Bowden Housteads Wood as already noted. Both research projects added to the desire for interventionist management in Bowden Housteads.

Further impetus came from the adoption by the City Council in 1987 of a Woodland Policy (Sheffield City Council, 1987a). The policy document acknowledged that the city’s ancient woodlands were fragile, under great threat and that the Council was ‘both failing to conserve our woodland heritage and to make the most of what is a valuable asset.’ The primary aim of the Woodland Policy therefore was ‘To ensure the protection and perpetuation of woodlands within the city and to realize their full potential in as many ways as possible’. There then followed eleven objectives including to protect, conserve and encourage all forms of indigenous wildlife, to maintain and preserve historic and archaeological features, to manage the woodlands using sound silvicultural principles and to undertake research and experimentation relevant to the advancement and improvement of woodland management, use and wildlife conservation.

Finally, in the early spring of 1988, following the approval of a management plan (Sheffield City Council, 1987b), a major programme of thinning and group-felling began with operations designed to continue over a 5 year period. However, to underline the sensitivity of this interventionist management, Dan Lewis, the Council’s woodland officer, took a number of precautionary steps to allay fear among local residents. Before work began, public meetings and public ‘walk-abouts’ were organised for Council members and the public. These were to explain what was going to happen, why and when. At the same time, local residents living immediately beyond the woodland boundaries received letters informing them of the operations, and posters were distributed to local branch libraries and other community centres. Dan Lewis also went on local radio to explain the need for active vegetation management in the wood. Finally, a major feature was published in the local evening newspaper under the title ‘Massacre in a good cause’ (Pleat, 1988). The article noted that the Council was not expecting an easy ride when the intensive felling and thinning scheme began. Nevertheless, it pointed out that the public must accept it if they wanted to prevent the woodland from ‘becoming a tree and flower graveyard’. It is worth noting that City Council attention was in part focused on this wood, by the fact that the former leader of the Council and now local MP, David Blunkett, lived in a house the garden of which backed onto the site.

Fig. 3. A guided walk in the wood for the public prior to the implementation of the 1987–1991 management plan.
Fig. 4. Thinning operations during the early spring of 1988.
In the heavily eroded and compacted parts of the southern section of the wood, a more radical approach was adopted, and the site was shallow ploughed in order to break up the panned spoil to facilitate regeneration. Since the seed-bank was absent, succession was aided by the addition of Wavy Hair-grass *Deschampsia flexuosa* seed as an appropriate ancient woodland species. This was purchased at great expense, as UK native seed, from the only site licensed to supply it; a grassland Site of Special Scientific Interest in the English Midlands. However, its provenance has since been put into doubt by the appearance in the regeneration of White Wood-rush *Luzula luzuloides*, a European non-native in the UK, which is found naturalised in a few places.

This active management was designed to provide more space for native trees to develop and to help diversify the woodland by encouraging regeneration of the shrub layer and the flowering of the ground flora. The latter had been suppressed by lack of light reaching the woodland floor. The thinning was irregular, with several 30 m wide glades created by cutting trees to ground level, from which coppice growth subsequently grew. Young Hazel *Corylus avellana* trees, a major constituent of the shrub layer when the wood was managed as a coppice, were planted. Pathways were also improved. Altogether, some 350 tons of timber were extracted. Over the following 10 years, there was widespread regeneration of trees and shrubs and ground flora was much improved. In many parts of the wood, the thinning resulted in the dense growth of young Beech.

**Renewed Management: Phase 2: the Last 15 years**

A major influence on local attitudes to woodland management in the last two decades has been the South Yorkshire Forest Project (now Partnership). This project, established in 1991, is a partnership between Barnsley, Rotherham and Sheffield Councils, and formerly the Countryside Agency and the Forestry Commission. Its aim is to develop multi-purpose forests that will create better environments for people to use, cherish and enjoy. The South Yorkshire Forest area covers most of the Coal Measure country in the three metropolitan districts. Although not just concerned with ancient woodlands, among its objectives are commitments to protect areas of historical, archaeological and ecological interest (i.e. the existing ancient woodlands), to increase opportunities for access and recreation, and to encourage the development of timber-based industries, employment opportunities and woodland products. Following a year of public consultation, the South Yorkshire Forest’s first Plan was published in August 1994. This established a policy framework and a strategic approach to woodland management throughout the South Yorkshire Forest area, for private as well as publicly owned woods, and guided developments well into the twenty-first century. A key impact of the early days of the project was that money was forthcoming to survey and assess local woods and to produce management plans for them (Milego *et al*., 1995; Sheffield City Council, 2000a).

In 1997, the South Yorkshire Forest Team put together a £1½ million bid to the Heritage Lottery Fund for a 5 year action plan to restore 35 Coal Measures woodlands in Sheffield, Rotherham and Barnsley: called *Fuelling a Revolution - The Woods that Founded the Steel Country* (South Yorkshire Forest, 1997). In February 1999, it was announced that the bid had been successful and a 5 year Heritage Woodlands Project was launched in September 1999. Twenty-one of the 35 woodlands within the project, including Bowden Housteads Wood, were in the ownership of Sheffield City Council. There has been much activity on a broad front connected with the project: archaeological surveys, development of management plans (more than 30 council-owned woods have management plans), active woodland management programmes, interpretation for local communities, the development of educational materials and programmes and the commissioning of public art works.

As part of this project a second management plan for Bowden Housteads, to build on the work undertaken between 1987–1991, was compiled, covering the period from 2000–2005 (Sheffield
City Council, 2000b). In 1999 prior to the plan being put together, a small-scale household questionnaire survey was undertaken (100 persons) and a visitor survey (50 persons). Results of the surveys very much echoed those of the 1986 survey. People said they used the site because of the peace and quiet away from traffic, the wildlife and for exercise. They disliked the continued vandalism, litter, motor-bikers, and the feeling that it was not an altogether safe place. The improvements most frequently requested were a nature trail, information boards and guided walks, a staff presence and more wildflowers. Following work by Sheffield Wildlife Action Partnership in the early 1990s, a small ‘Friends of Bowden Housteads’ group had been formed in 1996. This group of enthusiasts funnelled local concerns to the woodland managers concerned.

The management plan for 2000–2005 reflected the desire of the city’s woodland team to try to solve the problems raised and the requests made by the public. The vegetation management objectives of the plan were to restore natural species composition by continued selective thinning of sycamore, whitebeam, and beech to encourage natural regeneration. Willow is encouraged in selected wet areas and the age diversity of the woodland is further encouraged through the reintroduction of group felling. Additionally, access would be improved through upgrading the path system (Trans-Pennine Trail and National Cycle Route (Sustrans) pass through the site), and educational and interpretive materials would be produced.

The most recent plan wood covers the period 2009–2013, with the site managed as a Local Nature Reserve in partnership with Sheffield Wildlife Trust. This aims to build on the work undertaken as part of the plans for 1987–1991 and 2000–2005. The vegetation management will consist of continued small-scale thinning to promote uneven-aged woodland and a diversity of species, structure and habitats. Operational methods that avoid excessive disturbance will be employed. Native tree and shrub species will be favoured and natural regeneration will be used wherever possible to provide new trees. During thinning operations, a proportion of trees will be allowed to develop to over-maturity and natural senescence. Where not a danger to the public, dead wood, standing and fallen, will be allowed to undergo natural decay processes.

Conclusions

Awareness of the cultural importance of local ancient woods has been raised to a much higher level than hitherto. Interest in their historical and nature conservation importance, and in their recreational and educational potentials, has been awakened and developed. However, what has also become clear to all concerned is that management of broadleaved public woodlands is not a one-off event; it needs to be continuous and long-term. The work that is currently taking place is very encouraging, but it is just the beginning; the challenge, as everyone well knows, is to sustain it in the medium and long term. What is equally clear is that managing public amenity woods in a heavily populated urban area in the late twentieth and twenty-first centuries is as much about public relations as woodmanship and ecological principles.

Problems remain despite the good work. Remarkably, in the 1990s, the surviving old woodman’s cottage, by then sadly neglected but nevertheless an important part of the woodland’s history, was without consultation, demolished on safety grounds and the plot sold to a local developer. Another blow to the woodland regeneration was the major development of adjacent land, when factories were demolished, as a major ASDA store and associated car park. This clearly impacted on the one remaining active watercourse in the northern section of the wood, and this by 2005 was dry. The woodland compartment that was the best for relict ground flora until the 1990s, was already in sharp decline. Nobody from either the City Council or ASDA was willing to comment. However, this sad incident did serve to confirm the importance of catchment theft in the deterioration of many isolated urban ancient woods.
Acknowledgements

The authors thank Sheffield City Council officers for valuable discussions and assistance over the years: Jim Kerr, John Gilpin, Dan Lewis, Nick Sellwood, David Bradley and Ted Talbot.

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