CHAPTER 7. WOODLAND AND WATER

Woodland and Water

Aside from the moorlands and fells, two of the key characteristic features of the Lake District are water and woods. It is the relationship of the lakes, rivers and woodlands with the fells, farmland and valleys that give it value as one of the finest landscapes in Europe.[1] For the eighteenth century tourist interested in the Picturesque, the lakes, rivers and cascades were an essential part of the scenery, particularly juxtaposed with the high fells.[2] Indeed, the mountains could be seen as a backdrop to the lakes and shores, which formed the focal point of described views. Thomas West, for example, provided 'Stations' or viewpoints around the lakes, which could be compared with one another,[3] for example his description of Station 1 at Coniston Water.

> "*From the rock, on the left of the road you have a general prospect of the lake upwards. … On the opposite shore, to the left, and close by the water's edge, are some stripes of meadow and green ground, cut into small enclosures, with some dark coloured houses under aged yews. Two promontories project a great way into the lake; the broadest is terminated by steep rocks, and crowned with wood*".[4]

Woodland and ancient trees were another important element in Picturesque idealisation. William Gilpin saw the essential Englishness of our landscape as being a combination of the peculiar "*intermixture of wood and cultivation*", English oak, clear skies and atmosphere, embellished gardens and park scenes and ruined abbeys. His perception of landscapes in France, Italy and Spain was that the areas of cultivation and woodland were separated – trees grew in,

> *"detached woods; and cultivation occupies vast, unbounded fields. But in England, the custom of dividing property by hedges, and of planting hedge-rows, so universally prevails, that almost wherever you have cultivation, there also you have wood. Now although this regular intermixture produces often deformity on the nearer grounds; yet, at a distance it is the source of great beauty*".[5]

The English oak was considered to have particularly scenic values, and at a distance was considered to form itself "*into beautiful clumps, varied more in shape; and perhaps more in colour, than the clumps of any other tree*".[6] Gilpin found his views marred, however, when the woodlands were economically exploited, especially when used as coppice. When Gilpin visited Buttermere he noted the woodland on the eastern side of the lake, but it did not coincide with his concept of picturesque beauty as it was "*periodically cut down, and was not in perfection, when we saw it*".[7]

Gilpin and his fellow travellers admired the fells, crags, woods and water as 'natural', wild and untamed elements of the landscape, as opposed to the farmed landscape of enclosures and artificial woodland plantations. To a large extent, the scenes described and the pictures they painted of a wild, untamed landscape were done to portray a particular set of ideas and ideals, rather than being an expression of their true observations. Indeed, the

[1] MAFF 1997, 2
[2] Nicholson 1955, 79
[3] See case study 'Through a Glass Darkly'
[4] Nicholson 1955, 57
[5] Gilpin 1786, 7-8
[6] Gilpin 1786, 9
[7] Gilpin 1786, 222-3

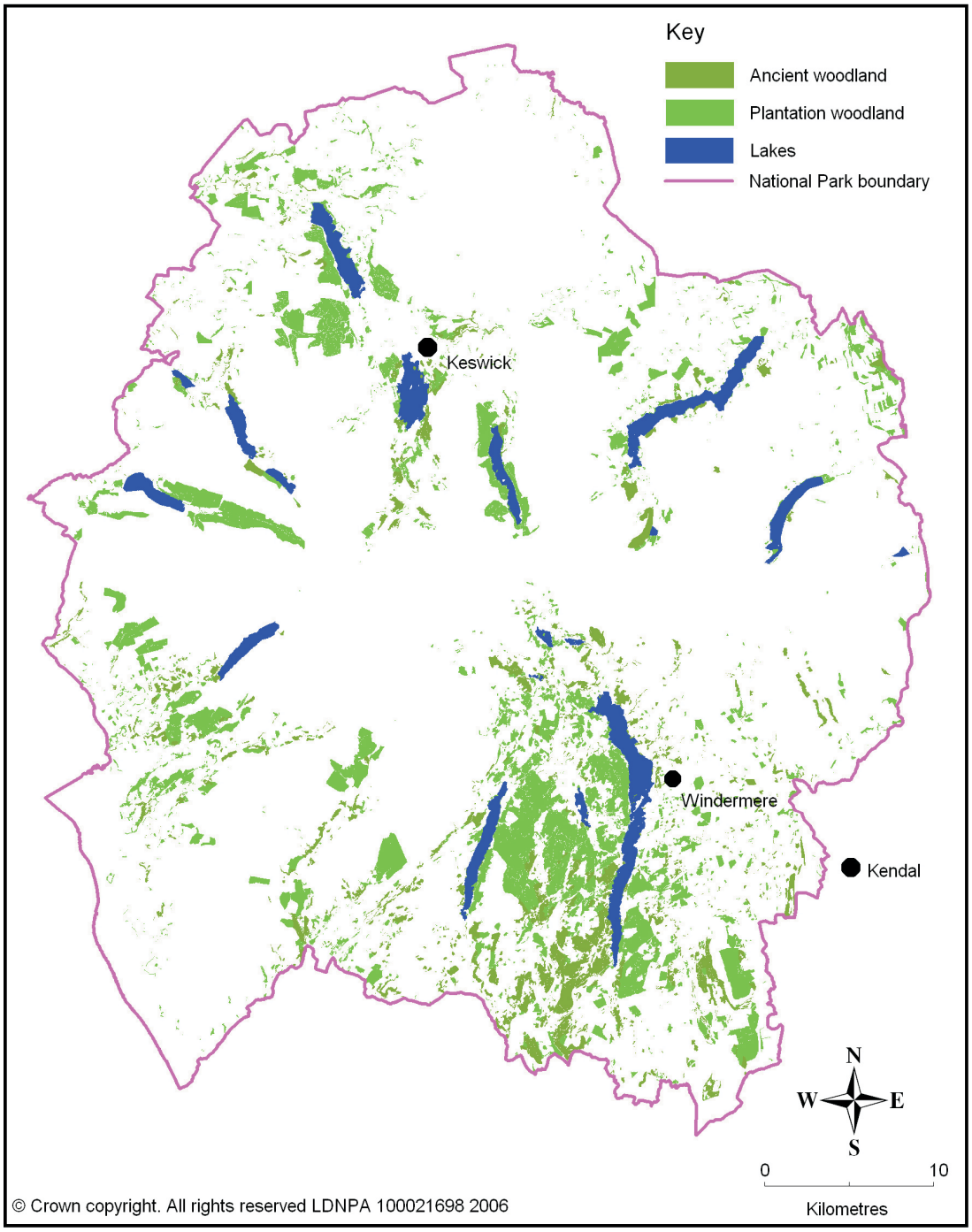

Figure 25: The distribution of ancient woodland and plantation woodland in the Lake District National Park

rivers, lakes and woods had been intensively exploited and managed for hundreds of years, and it is likely the woodlands would not have survived without having considerable economic value.

Woodland

The HLC mapping process divided woodland into two types: ancient woodland and plantation. The definition of ancient woodland was used for any piece of woodland shown on the first edition Ordnance Survey maps and marked as broadleaf woodland but not marked as plantation. The term plantation was used for any piece of woodland which clearly post-dated the first edition Ordnance Survey maps, or if in existence on those maps was either

shown as conifers or marked as a plantation.

The Lake District National Park has a woodland coverage of around 26,310 hectares, comprising 11.5% of the total area of the Park.[8] This conforms quite closely to the national average of woodland cover for the country, which was almost 12% in 2005. Woodland cover in the United Kingdom has grown significantly over the past century, from around 5% in 1924, much of this increase comprising conifer plantation. Since 1980 the area covered by forest and woodland has expanded by around 30%, with broadleaved species increasing by around 47%, though there has been little change in conifer forest cover, with a decline in new planting.[9] The Lake District National Park is the most wooded area of the North West region, which only has an average woodland cover of less than 6%, rising to 7% in the county of Cumbria[10] which has large areas of plantation in both the Lake District National Park and on the north-east border of the county in Kielder Forest. Thus the Lake District National Park is the most densely wooded area in the North West region, and has some of the most historically and ecologically significant woods because of its large proportion of surviving ancient woodland.

Ancient Woodland

Definition and Distribution

The nature conservation definition of ancient woodland, used by Natural England and other bodies, refers to woods which have been in existence for at least 400 years and many of which are believed to be surviving relicts from prehistoric wildwood. Although the term ancient woodland does not carry with it a statutory designation for protection, they are considered irreplaceable, rich habitats for wildlife and reservoirs of historical information,[11] even where they have been replanted. There are two types of woodland included in the definition of ancient woodland:[12]

- *ancient semi-natural woodland*: composed predominantly of trees and shrubs native to the site, that do not obviously originate from planting. They include stands that may have been managed by coppicing or pollarding in the past, as well as those where the tree and shrub layer has grown up by natural regeneration.
- *ancient replanted woodland*: also called plantations on ancient woodland sites, these are areas of ancient woodland where the original native tree cover has been felled and replaced by planted stock most commonly of a species not native to the site, for example conifers such as Norway spruce or Corsican pine, but also broadleaves such as sycamore or sweet chestnut.

The nature conservation definition of ancient woodland applies to 9,572 hectares, or approximately 39%, of all woodland in the Lake District National Park. Of this, approximately 70% is semi-natural and 30% is replanted. Within the HLC, ancient woodland was mapped for a total of 7,166 hectares of the Lake District National Park, comprising 27% of all woodland cover. The difference in the total area of

[8] This figure differs from that provided in the National Park Local Development Framework, which estimates the figure as 28,931 hectares or 12.6% of the total area of the Park (LDNPA 2005), though the HLC figure is closer to the figure of 25,074 hectares of ancient and secondary woodland given in the Cumbria inventory of ancient woodland; Phillips 1994, 14

[9] DEFRA, www.defra.gov.uk/environment/statistics/land/kf/ldkf06.htm

[10] DEFRA www.defra.gov.uk/erdp/docs/nwchapter/section14/NW142.htm

[11] Woodland Trust, www.woodland-trust.org.uk/woodsunderthreat/guide/ancient/cguidecoll02.htm

[12] Ancient Woodland Inventory, www.english-nature.org.uk/pubs/gis/tech_aw.htm

ancient woodland recorded almost certainly lies in the way in which ancient woodland is defined by the HLC. The HLC, by using only nineteenth- and twentieth-century map evidence to identify ancient woodland, has recorded some areas of ancient replanted woodland as plantation, particularly where replanting was with coniferous trees. Taking into account areas of ancient woodland considered lost through replanting since the first edition Ordnance Survey maps of the mid-nineteenth century, the total area of ancient woodland within the Park rises to nearly 8,500 hectares. The remaining difference, of around 1,000 hectares, between the ancient woodland inventory and the HLC mapping may be accounted for by areas of woodland replanted before the first edition Ordnance Survey maps, which would have thus been recorded only as plantation by the HLC.

The majority of ancient woodland, as mapped by the HLC, is concentrated in the area of the Furness Fells, between Windermere and Coniston Water, and across the low fells around the River Leven, Rusland Pool, Haverthwaite and Newby Bridge. A second significant concentration was identified in the south-east sector of the National Park, around Witherslack in the Winster Valley and north of Brigsteer. In this latter area only the ancient woodland extends southward beyond the national park boundary, where it appears to be associated with a former medieval deer park. Elsewhere, ancient woodland appears to be restricted largely to valleys, mostly covering only small areas. The HLC mapped surviving ancient woodland in most of the lakeland valleys, including in Longsleddale, Troutbeck, around Ambleside and Grasmere, the Langdales, Dunnerdale, the Duddon Valley, Eskdale, Wasdale, around Buttermere, Loweswater, Borrowdale, Ullswater and Patterdale.

Historical Background

Following the retreat of the ice, the vegetation of the postglacial (Holocene) period, starting around 10,000 BP, was dominated by grasses and shrubs such as juniper and dwarf willow. As temperatures rose, birch woodland cover spread, followed by hazel which dominated from around 9,000 BP. Oak and elm then spread widely, until forest cover dominated the landscape by around 7,000 BP.[13] By the time ash and small-leaved lime appeared around 6,000 BP, most of the native trees and shrubs were present, with oak predominating in the lowlands and into the uplands.[14] Significant tree clearance began with the appearance of the first farmers in the Neolithic period, and vegetation changes around 5,000 BP have been recorded near sites of known early Neolithic activity, such as the axe factory sites of Great Langdale. Some tree cover reduction was taking place because of soil changes, but elsewhere trees were cleared and burned to create clearings for cultivation.[15] Early clearances may

Plate 44: Pollarded tree. A method of tree management which allowed the tree to be regularly cropped for wood, but prevented animals from grazing the new shoots (© LDNPA)

[13] Halliday 1997, 42-3
[14] Millward and Robinson 1970, 72-3
[15] Halliday 1997, 46

have only been temporary,[16] as the populations are likely to have been in part nomadic and to have abandoned clearings once fertility began to wane. Permanently cleared areas may not have occurred until the late Bronze Age. On the heavier acid soils clearance may have only begun during the Iron Age or Romano-British periods,[17] when deforestation generally seems to have increased in the Lake District as elsewhere in the North West.[18] Woodland clearance continued throughout the prehistoric period, a process that was carried forward by Anglo-Norse farmers of the ninth and tenth centuries, and by medieval farmers.[19]

Where woodland survived, or was replanted, it has been intensively managed and exploited. In the medieval period, for example, the exploitation of woodland was strictly controlled under the jurisdiction of the manorial courts, just as with the rights to the common waste. An important distinction was made between wood and timber. Wood referred to either underwood, brushwood, the cut poles produced from coppicing, pollarding or controlling suckers, or to cut or fallen tree branches. Timber, on the other hand, was wood of a certain size and used for planks or beams in building.[20] Wood rights were controlled in a similar way to common waste, in that a tenant might be granted a 'dale'[21] of woodland in which to exercise their rights to estovers, housebote, haybote and ploughbote.[22] Haybote, the repair of enclosure boundaries was particularly important, as many

Plate 45: Woodland pasture in Rydal Park (© Egerton Lea Consultancy Ltd)

[16] Hodgson and Brennand 2006, 31
[17] Hoaen and Loney 2003, 64
[18] Wells 2003
[19] LUAU 2000
[20] Rackham 1986, 23
[21] A defined piece of wood
[22] The rights to gather dead wood for fuel, and more specifically wood for the repair of a house, enclosures or plough Winchester 1987, 102

boundaries would have been built of dry hedges, requiring frequent maintenance with brushwood.[23] The loppings from pollarded trees were also an important form of winter fodder for cattle. The larger timber would have been marked out and assigned to tenants as necessary. Whilst limited areas were coppiced, and was an important resource in the medieval period, it does not seem to have been managed on a systematic basis, with wood being cut frequently though at irregular intervals.[24]

Woodland was also valuable as pasture. Unenclosed woodland was commonly used to pasture cattle. Pigs, too, were grazed in significant numbers in the medieval period, a custom which can be traced in documents through payment of pannage.[25] In Derwentfells pannage was paid on more than 250 pigs in 1282, and the actual number of pigs pastured there may have been more, as that would not have included tenants who did not pay separate pannage.[26] Grazing animals such as these could cause significant damage to woodland, by eating and trampling new shoots, and preventing the regeneration of certain types of woodland. At worst, where standing timber was felled and animals allowed to graze the new shoots, woodland could be converted to open moorland. Generally, grazing prevented the regeneration of more edible species, such as ash, elm, hawthorn, hazel and lime, as well as holly which was sometimes pollarded to provide fodder[27]. This allowed less palatable wood, such as oak, to dominate in areas of commonly grazed woodland pasture. Damage from grazing animals in woodland was often reduced by the use of pollarding,[28] which would have produced new shoots above the browse line of animals. Although pollarding was replaced by coppicing in many areas, pollarded trees in the Langdale Valley and throughout the Lake District are still considered and important aspect of the landscape.[29] The income from pannage declined in the fourteenth century, indicating that there was a decline in pig farming. This may be the result of active discouragement in order to protect woodland, but may also be a reflection of the growing importance of sheep and cattle stock farming.[30]

Even with the active management of woodland, there was a decline in woodland across the county as a whole in the medieval period. Part of the reason for this was an expansion of settlement between the twelfth and fourteenth centuries, with land cleared for cultivation or pasture on the lower areas of common waste. This was probably particularly true of those areas dominated by dispersed farmsteads, where unenclosed and unimproved land between existing holdings would be enclosed through piecemeal intaking. Documentary evidence for this process is scarce, and although much of the newly enclosed land would have been taken from common pasture waste, at least some of it would have been unenclosed woodland. The continuing process of enclosure and intaking, the development of more sophisticated pasturing systems, and the conversion of arable to pasture from the fourteenth century, would have reduced the reliance on wood pasture.

There is evidence to suggest that woodland may have been less highly valued by the sixteenth century than it

[23] See chapter on ancient enclosures
[24] Rackham 1976, 72-3
[25] A common right to pasture pigs in manorial woods, or a payment for that right
[26] Winchester 1987, 101
[27] Rackham 1986, 140-1
[28] A tree cut 2.5m to 3.5m above ground-level and allowed to grow again from the stump (known as the bolling) to produce successive crops of wood
[29] Lund and Southwell 2002
[30] Winchester 2000, 123

had been earlier in the medieval period. The availability of pasture outside the woodland pastures and the breakdown of the feudal system were contributory factors. Woods were grubbed up and converted to other uses, for example in 1520 a farmer at Brackenthwaite in Derwentfells was presented at the manorial court for destroying wood for making arable.[31] As the process of intaking continued in many areas, the only woodland to survive would be in the more inaccessible and unimprovable areas, such as steep valley sides. A number of such gill woodlands were mapped as ancient woodland by the HLC, for example at Waberthwaite on the western side of the National Park. Here, a number of small areas of ancient woodland survive on the steep slope on the south side of the River Esk, although some areas have been replanted with conifers, and a gill woodland survives along Mill Gill at Broad Oak.

Medieval manorial regulations for woodland developed to protect an important resource, even so the demand for firewood, fodder and other wood for repairs sometimes limited the supply of good building timber. Manorial records document how cutting, topping and lopping trees produced aged and stunted trees of little use as timber. At Glencoyne in 1589, for example, the woodland consisted mainly of "*decayed trees of oke and ashe … which the tenauntes are accustomed yerely to loppe and toppe*".[32] Where woodland survived into the sixteenth century the trees were often overly mature. The perceived scarcity of timber in the post-medieval period has led to a view that both wood pasture and regular cropping of trees was detrimental to woodland. This is inaccurate; it was the quality of the available standards and not a lack of woodland that was the issue. The process of regularly coppicing or pollarding trees actually assists their longevity. Coppicing, in particular, is self-renewing, and even when the heart of the original tree decays, the outer ring of the stool continues without loss of vigour.[33] Nevertheless, as the values attributed to woodland were in flux, its survival was only assured through new values provided by industrial uses.

Plate 46: Duddon Furnace. Massive barns stored the large quantities of charcoal from local coppiced woodland required to fuel the furnace (© Egerton Lea Consultancy Ltd)

Woodland Industries

The production of charcoal was an important woodland industry from the medieval period. Medieval charcoal production was largely reliant on dead wood as a fuel, and manorial court rolls document the granting of rights to charcoal burners to collect dead wood alongside the tenants who were still exercising their rights to the underwood, in places such as Ennerdale and the Furness Fells.[34] Charcoal was used as fuel for the smelting of iron and other metals, and a large number of bloomery sites have been identified within the Lake District National Park, many of them of probable medieval date. There is a concentration of such sites in the heavily wooded area between Windermere and Coniston Water, west towards Broughton in Furness, along Eskdale and in Wasdale. Other bloomery sites are scattered across

[31] Winchester 1987, 101

[32] Winchester 1987, 103
[33] Rackham 1976, 28-9
[34] Winchester 1987, 104

the north of the Lake District National Park, along Borrowdale, Lorton Vale and around Ennerdale.[35] Many of these sites coincide with surviving areas of semi-natural ancient woodland, and the archaeological survival of bloomery sites is partially a consequence of the unchanging nature of much of this type of woodland. Other woodland occupations documented from the late medieval period included tanning using oak bark, the burning of wood into potash for soap making,[36] cooperage, basket-making and the manufacture of other wooden goods.[37]

It is likely that it was industrial demand which lies behind the increasing national and local evidence for active woodland preservation from the fifteenth and sixteenth centuries. The monastic woodlands of Low Furness in the early sixteenth century, for example, were managed on a coppice with standards system, both to ensure supplies of timber and fuel[38] Coppice with standards allowed the underwood to be cut on a regular cycle, producing annual returns of wood, whilst the standard trees were left for longer to yield valuable timber. By the sixteenth century, coppice management appears to have been much more systematic than in the medieval period, and there is a clear move away from medieval forms of woodland management. At Dunmallard Hill, near

Plate 47: Extensive areas of coppiced woodland within the Lake District National Park supplied charcoal fuel for the iron and gunpowder industries as well as material for numerous small-scale tool and basket manufactories (© LDNPA)

[35] LDNPA Historic Environment Record
[36] The soap was used in the textile industry, for cleaning wool and cloth, an industry which was important to the Kendal area from the sixteenth century
[37] Winchester 1987, 104-5

[38] Winchester 1987, 105

Ullswater, woodland previously used for grazing and pannage was, in 1568, retained by the lord of the manor to protect the brushwood. Winchester speculates that the stimulus for this change was the contemporary expansion of the lead mines near Keswick, by Mines Royal.[39] Copper, too, created demand for both timber and charcoal in the Keswick and Coniston areas.[40] Increasing industrial demand, however, did not lead to extensive clearance of woodland as has been claimed traditionally.[41] Indeed, not only has this view been refuted but it has been demonstrated that industrialists who required a plentiful supply of timber had an incentive to protect woodland.[42] This is particularly clear in relation to the eighteenth-century charcoal blast furnace industry. Leighton Beck furnace, for example, had a beneficial impact on the woodland management of both the Arnside Silverdale area and the Sizergh Castle estate.[43] The charcoal blast furnace industry continued in the Lake District into the twentieth century, later than anywhere else in the country, because of the continued local supply of coppiced wood. Today, these former coppiced woodlands of the Furness Fells are still the most heavily wooded part of the Lake District National Park.[44]

Coppice woodland was also a major resource for gunpowder manufacturing in Cumbria. Charcoal was a major ingredient in the production of black powder, and other coppiced wood went to the manufacture of barrels and packing crates. The location of the production sites within woodland meant that they were kept away from centres of population, and the trees minimised the effects of any explosions. Gunpowder was produced at a number of site across Cumbria, including three within the Lake District National Park, at Elterwater,[45] Low Wood[46] and Blackbeck.[47] Established from the eighteenth century they produced explosives for the mining and quarrying industries, and continued in production until after the First World War. In the nineteenth century, the extensive coppice woods became an important resource in the development of the bobbin industry. Places such as Stott Park bobbin mill, built in 1835,[48] served the numerous Lancashire textile mills, which required cotton bobbins and reels for the spinning and weaving machines. Although most of the former bobbin mills are in the southern part of the Lake District National Park, where there was a concentration of coppiced woodland providing the raw materials, there was also a bobbin industry in the north. The Howk bobbin mill, Caldbeck, for example, would have been supplied with raw material from woodland on the north side of the Cald Beck valley, some of which is replanted ancient woodland.[49]

It is possible that the post medieval industrial requirement for charcoal and timber may have led to an expansion of woodland outside those areas defined within the HLC as plantation. Some areas of defined ancient woodland clearly contain enclosures, but it is not obvious whether these represent the enclosure of areas of existing woodland as intakes, or whether pre-existing enclosures were planted up or recolonised with trees. The HLC mapping process cannot distinguish between the two possible interpretations. Woodland planting to provide coppice woodland for industry is known to have taken place, at least from the end of the eighteenth century,

[39] Winchester 1987, 107
[40] Millward and Robinson 1970, 80
[41] Fell 1908, 100
[42] Bowden 2000, 7
[43] Newman 1999, 14
[44] Phillips 1994, 8
[45] Jecock *et al* 2003
[46] Jecock *et al* 2004
[47] Dunn *et al* 2004
[48] Scheduled ancient monument no 27708
[49] Phillips 1994, Map 8

for example on Meathop Fell,[50] but close by at Witherslack, ancient woodland occupies enclosures which, had they not been wooded, would be assumed to be intakes.

The Landscape of Ancient Woodland

The extent of surviving ancient woodland, then, can to a large part be attributed to their continuing value as a resource for industry. Although coppicing has largely ceased, apart from at the scale of a woodland craft industry, the ancient woodlands are still considered to have a high value, although now for primarily ecological reasons. It is the intimate mixture of trees and shrubs of ancient woodland, governed by geography, soils and history, that have created important habitats for wild plants and animals.[51] The Borrowdale Woods, for example, running along the Borrowdale Valley, contain the best examples of ranges of woodland flora because of the variable soil acidities and high rainfall.[52] The steep hill-sides surrounding Coniston Water, too, supports richly varied ancient woodland habitats. Pollen cores from the lake provide evidence for woodland from the Neolithic period, with the later opening up of the landscape to pasture. Oak is found throughout the pollen sequence, and later oak pollen is probably related to charcoal production.[53] The ancient woodland on Meathop Fell, near Lindale, was designated a Site of Special Scientific Interest in 1963 and is documented from the late twelfth century. The history of Meathop Woods encapsulates the development of many areas of ancient woodland in the Lake District.[54] In the medieval period, they were managed as common wood, used as wood pasture and had associated rights of estover. Place names indicate that there was some woodland clearance in the medieval period, although it later either regenerated naturally or was replanted. From the seventeenth century, the woods were intensively exploited on a coppice rotation. They produced charcoal for the iron industry, oak bark for tanning, barrel hoops, spokes, poles, wood for swill baskets and other material for woodland industries. Within the woods, the remains of four huts, 32 charcoal pitsteads, with pottery and broken tools, were noted during soil sampling. More generally, the importance of woodland, and woodland industries, is reflected in some of the surnames found commonly in South Lakeland, such as 'Ashburner' and 'Turner'.[55]

Ancient woods are the product of centuries of human use and exploitation, and as such they are a living record of traditional management practices. "*The existing, implanted vegetation of ancient woods, the associated animal life, the undisturbed soil and drainage patterns, historical features and characteristic landscapes comprise an irreplaceable asset of great importance to nature conservation which once destroyed can never be recreated*".[56]

Woodland Plantation

Plantations form the largest type of woodland in the Lake District National Park. They cover 19,150 hectares, which is around 73% of all woodland cover. The HLC definition of plantation was largely applied to woodland planted after the first edition Ordnance Survey maps of *c* 1865. Where woodland was extant by the mid-nineteenth century, it was classified as plantation where the Ordnance Survey had clearly labelled it as such in the nineteenth century, or it clearly comprised coniferous woodland at that date. The distribution of plantation woodland is concentrated

[50] Satchell 1984, 98
[51] Phillips 1994, 2
[52] Phillips 1994, 8
[53] Pennington 1997, 48-50
[54] The following information is all taken from Satchell 1984
[55] Marshall 1971, 24-5
[56] Phillips 1994, 2

Plate 48: Large-scale coniferous plantation on the former common land at Matterdale (© Lake District National Park Authority)

in the south of the National Park, in Dunnerdale, north of Broughton in Furness, the area east of Windermere, with the largest concentration between Windermere and Coniston Water, running north as far as Skelwith Bridge. There are also smaller concentrations in Eskdale and Wasdale, on the fell slopes east of Gosforth, around Ennerdale, the Whinlatter Pass, Bassenthwaite, south of Keswick and around Matterdale.

With the exception of areas of coppiced woodland, planted to supply industry in the post medieval period, large scale plantations began in the late eighteenth century, particularly in association with the enclosure of the common waste. The process of afforestion was undertaken mainly by the owners of large estates, and trees offered an alternative means of income for poorer quality land.[57] At Claife Heights, on the low fells above the west shore of Windermere, John Christian Curwen planted larches on his allotments in 1794, whilst the Bishop of Llandaff afforested Gummers How at the south end of the lake.[58] Other plantations were established by the Marshall family in the nineteenth century, again at the south end of Windermere, and on the south side of the Whinlatter Pass where Hospital Plantation was created.[59] Towards the end of the nineteenth century, the creation of Thirlmere as a reservoir led to the Manchester Corporation planting the surrounding area with spruce to reduce siltation in the reservoir. The area around Thirlmere is still heavily wooded with coniferous plantation, even though it immediately attracted opposition because of the resulting dark and forbidding atmosphere.[60] Current woodland policy at Thirlmere, however, and elsewhere is promoting the replacement of conifers with broadleaved native species.

The biggest expansion of plantation woodland cover came in the twentieth century, following the establishment of the Forestry Commission in 1919 to

[57] Whyte 2003, 78-9

[58] Whyte 2003, 33
[59] Millward and Robinson 1970, 88
[60] Millward and Robinson 1970, 88

create a national reserve of timber after the First World War.[61] This led to a rise in the hectarage of plantation from just under, 18,000 hectares of woodland mapped in 1865, to over 19,000 hectares today. This figure disguises the more than 1,000 hectares of nineteenth century plantation that has been removed and does not reveal the total impact of new plantation as much of it involved the replanting of former ancient woodlands. In total the HLC recorded an extra 8,360 hectares of new woodland planted since 1865, of which 6,300 hectares is coniferous. This took the form of large-scale planting across many of the Lake District fells such as Ennerdale where new areas were planted, Thornthwaite Forest near the Whinlatter Pass and Grizedale, where the existing plantations were extended greatly. The poor quality of the afforested land, the rigidity of the planting schemes and the dominance of spruce led to a great deal of opposition from the public and amenity groups. This opposition led to an agreement in 1935 to exclude the central mountainous core, and the renewal of this agreement in 1954 included more sympathetic planting schemes.[62] Amongst these was a change in the varieties of trees planted, with areas of larch as well as spruce, and amenity planting of broadleaf varieties, particularly used as screens to the conifer plantations. The development of Grizedale Forest allowed a greater mix of commercial and amenity planting, because of the surviving extent of the coppiced woodland where the bigger trees were allowed to develop. The commercial need for such large-scale plantation no longer exists, and environmental, economic, social and cultural benefits all play an equally important role in the Forestry Commission's present management of the woodlands.[63] Both Grizedale and Whinlatter are now Forest Parks, where the emphasis is on public amenity with forest trails and visitor centres.

Further tree planting took place in association with the spread of villa development around the lakes, as wealthy estate owners attempted to enhanced the picturesque quality of the landscape.[64] Tree planting was also carried out on parkland estates for amenity and scenic value.[65] The well-wooded vistas around the shores of lakes such as Windermere and Rydal are now seen by many visitors to the Lake District as typical lakeland scenes, but they owe much to nineteenth century ornamental tree planting schemes. Native trees such as oak, ash and yew, with earlier introductions such as chestnuts and sycamore, were enhanced with the planting of more exotic species such as conifers from America and Japan. Together these produce a vivid landscape of colour in Spring and Autumn. One of the best examples of ornamental planting can be seen at Rydal Hall, where the 1909 designed gardens of Thomas Mawson expand out into a rolling landscape with scattered trees and copses.[66] More formal parkland plantations can be seen at Lowther Park, where existing areas of broadleaf woodland, the remnants of woodland associated with the extensive deer park,[67] have been supplemented by mixed woodland around the ruins of the former hall, whilst geometric blocks of coniferous plantation mark the outer reaches of the park.

The Changing Countryside

"*Our ancient woods are quintessential features of these much loved landscapes, irreplaceable, living historic monuments, which inspire us and*

[61] Brodie 2004, 7
[62] Millward and Robinson 1970 88-90
[63] The Grizedale Project, Forestry Commission, www.forestry.gov.uk/forestry
[64] Millward and Robinson 1970, 80
[65] Millward and Robinson 1970, 81
[66] See case study on Rydal Park
[67] LUAU 1997b

provide us with a sense of place and history".[68]

The management of the woodland pattern is critical to the character of the Lake District National Park and HLC can be used to determine whether any proposed planting is typical for specific areas within the Park. It can provide clues as to the shape and size of planting and with some enhancement can also identify woodland features which should be protected from planting. The need to retain woodland character is already recognised in the National Park Management Plan[69] in policy L12 which aims to:

"*Promote the conservation, planting and management of woodlands and trees that is sympathetic with the character of the location. Resist planting that does not contribute positively*".

It is now the Forestry Commission's policy to conduct a major programme of tree felling and thinning in ancient woodlands which have been converted to plantations in the twentieth century. Millions of conifers and non-native species will be removed from the English landscape over the next two decades and be replaced with native species, such as oak, ash and beech, which will be allowed to seed and regenerate naturally, rather than with mechanically planted rows of 'alien' species.[70] This will have an impact on landscape character, particularly in those areas where most plantation exists at Ennerdale, Thornthwaite Forest near the Whinlatter Pass and Grizedale, but the process will be gradual and the change in species and age rather than the scale of individual plantations.

The same policy has committed the Forestry Commission to increasing the number of native woodlands in England and in recent years there has been substantial grant aid for new native woodland creation in the Lake District. At Barkhouse Bank where such a scheme was proposed, charcoal pits were discovered when mounding for the new native woodland planting. This indicated that the new woodland was in fact replacing a medieval woodland. HLC can help to identify the likely impact on historic character of any additional native woodland planting in proposed new areas. HLC can also be used to identify assarts, either through field shape (usually small irregular hedged enclosures with curved boundaries sandwiched between woodland and former open field or ancient enclosures), or with enhancement, through the use of field names[71] such as 'sart', 'assart', 'ridding', and 'stubbs' and thus areas which have been wooded in the past. This may provide an indicator for potential new native woodland planting, although this would need to be weighed up against other effects on landscape character, including the potential loss of field pattern, a factor often forgotten in planting proposals.

The major threats to woodland, mostly ancient woodland, are in the form of inappropriate management and over grazing. Small woodlands in particular are easily damaged and isolated from similar habitat types and gill woodlands are often overgrazed by sheep and deer. Timber prices have decreased which could result in more woodlands being neglected. A number of non-native species have been introduced into the National Park in the eighteenth and nineteenth centuries in order to create parkland areas around villas, however some of these species such as Rhododendron and conifers reduce the ability of ground woodland plants to thrive.

The management of woodland provides an interesting predicament

[68] Rural Affairs Minister, Jim Knight in Forestry Commission and DEFRA 2005
[69] Lake District National Park 2004, policy L12
[70] Forestry Commission and DEFRA 2005
[71] Muir 2004, 6-7

for the landscape manager. On the one hand, the planting of trees can damage or destroy archaeological remains within the woodland (such as charcoal platforms and woodland boundaries), but it can also help to retain the historic landscape character which has become much valued by visitors and residents alike.[72] The contribution of woodland towards biodiversity is already well understood. It is therefore important that ancient woodlands are recognised for both their ecological and archaeological value and that management should be holistic with the involvement of Lake District (or National Trust, where appropriate) archaeologists and ecologists.

To minimise damage to archaeological remains within woodland, felling programmes may have to be agreed with the National Park archaeologist which specify how trees are cut down and removed from site. Where new planting is proposed, open spaces may have to be designed into the new planting to protect features within. This can be unsatisfactory, leaving an unmanaged island within the woodland where the remains become buried beneath bracken and made inaccessible. Such features within the woodland should be made accessible and used as part of outreach or interpretation work.

Ancient woodland lends itself to gradual change while plantation woodland in the past has often been clear felled causing public alarm and outrage:

> "*Wood is the only feature which can have suffered any considerable change. In this indeed great devastation hath been made in several of the northern lakes, especially in that of Keswick*".[73]

So wrote Gilpin having seen the bare mountain sides after the Trustees of the Greenwich Estate clear felled the woodlands for timber after 1715. He also noted a distinctive variation in woodland management between the north and south of England. In the south, only mature trees were felled, leaving the younger specimens to grow to maturity, while in the 'barbarous' north, clear felling resulted in dramatic and unpalatable change. However even Gilpin had to acknowledge that the regrowth of underwood "*added some degree of richness to the mountains, and promontories around the lake….It is true, there will ever be a great difference between the grandeur of a wood, and the poverty of a copse…but in all the distances of these extensive views, it will not be so easily observed*".[74] Modern woodland management tends to favour the southern approach and the Lake District National Park Management Plan recognises that the "*Clear felling of plantations…can be dramatic and intrusive, but as new planting establishes, initial change disappears*".[75]

There is a tendency for nature conservation-led management of woodlands to favour native species, but in some instances, particularly in areas of recreational plantation along lakeshores, woodlands consist of a number of non-native exotics. If the character of these woodlands is to be maintained, then replanting of these woodlands needs to include exotics and so may conflict with those parts of the National Park Management Plan and Forestry Commission policy which favour native species.[76]

The broad brush approach of HLC is not yet sufficiently detailed to collate and map specific woodland

[72] Hodgson 2000, 83-3
[73] Gilpin 1786, x-xii
[74] Gilpin 1786, xii-xiii
[75] LDNPA 2004, 18
[76] For example policy L13, 'ensure that the full range of woodland types, native to the Lake District, is represented across the National Park'. LDNPA Management Plan 2004, 19

Plate 49: The large-scale coniferous plantations around Thirlmere are gradually being replaced with native species © Lake District National Park Authority)

management characteristics such as coppicing or pollarding, although the more detailed case studies have been able to collate this information. This provides an opportunity for future enhancement as HLC develops.

> *The 5840 trees in the area "are very much abused by cutting of the topes, their being not one in sixty with the top on, and they are generally topt about 7 or 8 foot hight".*[77]

Where traditional management techniques, such as pollarding, have been identified, they may need to be reintroduced in order to maintain the character and longevity of the woodland type. As a general rule old pollards should be cropped on a regular basis in order to retain them as parts of the living agricultural landscape. The cropped poles may be stacked along the Pollard or piled in a field corner to be nibbled by stock. In some cases it may be possible to create new pollards from existing stock, particularly in those areas which have been pollarded in the past.[78]

A few case studies have highlighted the possibility that not all ancient gill woodlands have been identified in the mapping process. This may be because the contemporary woodland cover is too sparse to be mapped or simply human error when rapidly assessing a landscape from historic mapping. Such sites offer a potential to increase woodland cover and as a result an important wildlife habitat, but without adversely changing the landscape character. However it is also important that such proposals avoid archaeological remains, including mining remains such as spoil tips etc. This can be difficult as recently discovered in the Caldbeck Fells where tree planting in the gills has been proposed by Natural England. As HLC is refined and developed, checks should be made to ensure that such woodlands are included in the data.

The HLC definition of ancient woodland and plantation woodland differs from that used by the nature

[77] National Trust 1997, 59 citing a survey of trees in Eskdale, Wasdale and Miterdale in 1717/18 (D/Lec/169. Westray to Coles)

[78] National Trust 1997

conservation bodies.[79] In order to avoid confusion future HLC users should be provided with a clear definition of the woodland types in a guidance document.

Shaping the future: Recommendations

- HLC can be used to identify possible new sites for native woodland to help the Forestry Commission and DEFRA meet their policy objectives of increasing the amount of native woodlands in England. It can also help to identify the resulting changes in character where new planting is proposed and assist in determining whether those changes are acceptable.
- Woodland management plans should aim to conserve historic woodland management features, such as woodbanks, pollards and saw-pits, and consider the potential of enhancing such attributes for educational, recreational and tourism benefit. These and any relic landscape features, such as derelict mills, ponds and leats that may be located within the steep sided wooded valleys, should be identified and assessed early in proposals for change.
- Future enhancement of HLC should include woodland features, such as pollarding and coppicing and place name evidence which might help to identify former woodland sites.
- The use of traditional management techniques in woodlands should be encouraged.
- Opportunities for managing woodlands using traditional methods such as coppicing and pollarding should be considered and the potential benefits for the historic landscape, education and interpretation realised.
- Woodland management strategies should take a holistic approach to conservation ensuring that both historic and natural attributes are managed appropriately.
- Parkland woods contain non-native and exotic species. These require active management to maintain and sustain their historic character. Policies within the National Park Management plan and other woodland management plans may need to change in order to reflect the historic importance of non-native species.
- The use of locally derived species and methods of planting can be incorporated into the design of new plantations and especially in relation to landscaping.
- Use of woodland and other grants may be applicable to safeguard particular elements – these include the Forest Authority Woodland Grant Scheme, DEFRA Entry and, Higher Level agri-environment schemes and Farm Woodland Premium Scheme.
- Future HLC users should be provided with a clear definition of the HLC woodland types to avoid confusion with those terms used by nature conservation bodies. The gradual change from plantations to native woodlands proposed by the Forestry Commission and DEFRA may in future blur the differences in definition.

[79] see p98 above

Water

Water is one of the main topographic attributes of the Lake District landscape, indeed as it name implies it helps to define it. The plentiful rainfall feeds the numerous fast-flowing water courses which form part of the drainage system of the central mountains. This has created a radiating pattern of deep glaciated valleys with extensive lakes, tarns, rivers, streams and waterfalls. As well as an essential element of the Picturesque landscape, water was a key element in the area's development. Although little is known about pre-Conquest territorial units, in many cases both medieval administrative and ecclesiastical boundaries followed natural features such as lakes, rivers and watersheds,

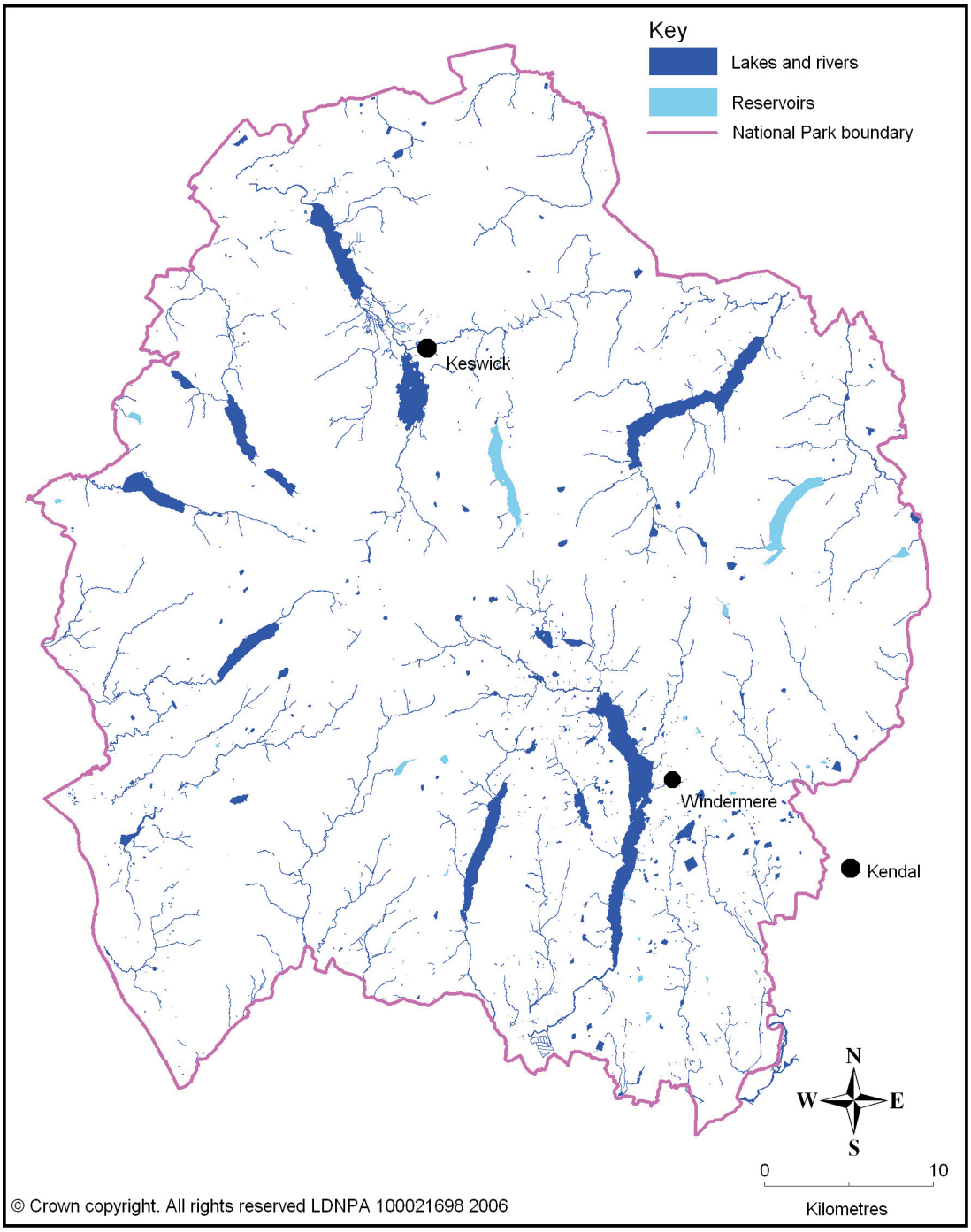

Figure 26: The main rivers, lakes and reservoirs of the Lake District National Park

and may have earlier origins. The boundaries of the wards[80] and deaneries certainly seem to be based on such natural divisions, and their names, 'Allerdale', 'Kendale', 'Lonsdale' also indicate the importance of topographical units in early territorial formation.[81] Although the counties of Cumberland, Westmorland and Lancashire were not defined until the later twelfth century, their boundaries also used rivers and lakes in many places as natural divisions. The northern boundary of Lancashire, for example, followed the River Duddon along its length, over the watershed at Wrynose, and then through the Little Langdale Valley along the River Brathay to Windermere, and then down the River Leven to Morecambe Bay.[82] The River Duddon was also the Cumberland boundary as far as the Wrynose watershed. From there, the boundary separated Cumberland from Westmorland. It continued along watersheds across the high fells to Helvellyn, following the ridge as far as the source of Glencoyne Beck. The boundary then followed along the centre of Ullswater, and continued along the Eamont River.[83]

The county boundaries divided the lakes of Windermere and Ullswater, the former lying in both Lancashire and Cumberland, the latter in Cumberland and Westmorland. The Windermere boundary also marked the division between the estates of Furness Abbey and the Barony of Kendale, set out in charters dated to 1157 and 1196. Access to the waters, and the rights to fish them, were of great importance, as fish was an essential part of the medieval diet, and fishing rights provided an important source of income. The subsequent disputes over fishing rights between the Abbey and the Barony indicate just how important.[84] Fish was essential in the medieval diet, as it was a source of protein on the many religious observance days when meat eating was proscribed. Fresh-water fishing was controlled by the lord of the manor, and documents indicate that even the smallest lakes and tarns were exploited, as the income could be substantial. Lakes and tarns were usually fished by means of nets, fed out from the shore and hauled in by hand, although boats were also used.[85]

Plate 50: Buttermere and Crummock Water (© Lucy Drummond)

The rivers and streams, too, were fished, though most commonly by means of fish traps, or fish weirs, known as fishgarths. These were wooden structures in the water, which guided fish in towards a central basket or trap. They aimed to catch migratory fish, such as salmon, trout and eels, the latter being the most common catch on the smaller rivers. On the larger rivers, where the fishgarths were built principally to catch salmon, the traps could be very large, and

[80] The equivalent to hundreds or wapentakes, and were the administrative structure used in Cumberland and Westmorland; Winchester 1987, 13
[81] Winchester 1987, 16
[82] Yates 1786
[83] Donald 1774; Jeffreys 1770
[84] Kipling 1972, 156-9
[85] Winchester 1987, 110-11

were known as coops. Although outside the National Park, the fishgarth at Cockermouth was 36 feet long, with seven floodgates, and 40 wooden bars to stop the passage of fish.[86]

The numerous fast-flowing streams also provided a plentiful power source for water-powered industries. In the medieval period, most manors would have had a manorial corn mill where the tenants would have had to take their corn to be ground, even in an area where arable production was rarely carried out at more than a subsistence level. From using the water-wheel to grind corn, the technology was adapted to operate hammers, bellows, sawmills and pumping gear in a variety of industries across the Lake District.[87] One of the first adaptations was the use of a water-wheel to operate hammers to pound woollen cloth in fulling mills. The earliest recorded fulling mill was at Cockermouth by around 1200, and soon after others were recorded at Kendal and Carlisle, with others soon spreading into the countryside by the later thirteenth century, for example at Staveley by 1274.[88] The production of woollen cloth appears to have been particularly important across the uplands, where pastoral farming dominated, and the distribution of fulling mills, which like corn mills were also manorially controlled, reflects this.[89] By the post medieval period, the range of industries which employed water power had grown significantly, and included metal smelting, forges for tool making, gunpowder manufacture, flax and leather fulling, bobbin making, paper-making, hat-making and saw mills, amongst others. Many of these were concentrated in the south-western part of the Lake District,

Plate 51: Leathes Water and Wythburn Water, which were dammed and enlarged to create Thirlmere at the end of the nineteenth century (© LDNPA)

[86] Winchester 1987, 108
[87] Davies-Shiel and Marshall 1969, 16
[88] Winchester 1987, 117
[89] Winchester 1987, 118; Somervell 1938, 237-8

where there was ample supplies of woodland as raw material and for fuel.[90] The suitability of the water courses meant that by the nineteenth century, most large streams or rivers had a succession of mills along their length, and the most intensively utilised was probably the River Kent, which is reckoned to have had ninety mills between 1750 and 1850.[91] The plentiful water supply, and the lack of other economically viable power sources especially in the eastern Lake District, meant that water continued to be the prime power source well into the nineteenth century.

Even though the Kent could support so many mills, variations in its flow led to the construction of the Kentmere Reservoir in the nineteenth century. This regulated the flow and ensured an adequate supply to the mills along the river. Other reservoirs began to be constructed from the late nineteenth century, as a means of ensuring regular water supplies to industry, such as the tarns created at Strickland Roger to supply the paper mills in Burneside.[92] Towards the end of the nineteenth century, the Manchester Corporation looked to the Lake District as a source of good drinking water for its rapidly expanding population. Following an act of Parliament, work began on the construction of the Thirlmere Reservoir above St John's in the Vale. Created out of two small tarns; Leathes Water and Wythburn Water, the reservoir was contained by England's first masonry dam, and water was piped to Manchester along a 96 mile aqueduct, which opened in 1894.[93] Two further reservoirs were built to supplement the Manchester water supply; Wet Sleddale and Haweswater. Haweswater, which was begun in 1929 and completed in 1941, involved the enlargement of the existing Haweswater lake and resulted in the drowning of the village of Mardale. The reservoir has the first British mass concrete buttress dam,[94] and the hundreds of workers recruited in Manchester and West Cumberland were housed in a model village built close to the dam by the Manchester Corporation. The village, called Burnbanks, provided 66 self-contained bungalows of cast-iron construction, with electricity, hot and cold running water, and modern kitchens and bathrooms. There was also a mission hall, recreation hall, dispensary and shop.[95]

The Changing Countryside

The presence of the picturesque lakes were one of the major factors leading to the popularity of the Lake District to tourists, while the creation of the reservoirs led to the growth of the conservation movement that ultimately led to the creation of National Parks and The National Trust. Their character is therefore vital to the continuing popularity of the National Park landscape and culture.

The National Park Management Plan recognises the importance of the lakeshores and watercourses in policy L11, which seeks to:

"*Maintain the diversity of the lakeshores and watercourses by conserving and restoring their naturalness where appropriate and achievable*".[96]

However naturalness is not always appropriate, as recognised in the Park Plan. For many centuries the lakeshores have been peppered with jetties and other structures and this has been recognised in the

[90] Somervell 1938; Davies-Shiel and Marshall 1969, 52-104
[91] Millward and Robinson 1970, 251
[92] Whyte 2003, 86-7
[93] Industrial History of Cumbria, www.cumbria-industries.org.uk/water.htm
[94] Industrial History of Cumbria, www.cumbria-industries.org.uk/water.htm
[95] Bampton and District Local History Society, www.bampton-history.org.uk/burnbanks
[96] LDNPA Management Plan 2004, 19, policy L11

Countryside Character Area of the Cumbrian High Fells:[97]

> "*Relatively formal lakeshore landscapes of managed grassland with occasional boathouses and dwellings, and broadleaved woodland and individual trees in a parkland setting*".

Such lake shore structures can be vulnerable to change. Recent proposals to allow flooding where historic canalisation is now causing problems, could result in a change of character and the loss of these features. While jetties and boat houses are readily identifiable, more ephemeral structures such as fish traps may lie unrecognised. Further the water logged conditions can also lead to good survival of palaeo-environmental deposits. Therefore any proposed changes to lakeshore and watercourse edges, should be assessed and where appropriate evaluated before being approved. River corridor management surveys can be used to identify such features and should also consider the contribution to landscape character that they make. For example, the presence of jetties and boat houses along Derwentwater has been a part of its character for over 200 years.[98]

The North West Regional Research Strategy[99] has identified the major river valleys as a possible theme for landscape research. Such river valleys have received little assessment to date and offer considerable potential in that they cross-cut the region, formed both boundaries and transport routes and have high palaeo-environmental potential. The Strategy suggests English Heritage, the Heritage Lottery Fund and Landfill Tax as possible sources of funding, however approaches could also be made to United Utilities PLC, the Forestry Commission and the Environment Agency. If research was to encompass the natural environment

Plate 52: Derwentwater from the north shore (© Egerton Lea Consultancy Ltd)

[97] Countryside Commission 1998, 31-7

[98] see the HLC case study – Through the Glass Darkly

[99] Brennand *et al* 2007

it may also open up other avenues of funding via Natural England.

When the reservoirs were first constructed, they were met with much opposition from the conservation movement and led to the formation of the Lake District Defence Society, formed in 1883 by Octavia Hill, Canon Rawnsley, Robert Hunter and John Ruskin. The flooding of the valley at Thirlmere was painful to many who had loved the hourglass shape of the lakes, linked by wooden bridges resting on stone piers.

> *'The old charm of its shores has quite vanished, and the sites of its old legends are hopelessly altered, so that the walk along either side is a mere sorrow to any one who cared for it before; the sham castles are an outrage, and the formality of the roads, beloved of car-drivers and cyclists, deforms the hillsides like a scar on a face*".[100]

However today the reservoirs are now part of the landscape character and of some historic interest. At Haweswater Reservoir the submerged farm of Mardale Green can still be picked out with its associated field system, church and roadway during times of drought and at Thirlmere the old farming village of Wythburn was drowned when the land around flooded by the creation of the dam. Such sites have remained fossilized examples of agricultural life and may offer research potential in future. During the construction of the reservoirs, entire settlements were constructed to house the workers and today these buildings have become of archaeological interest, while the memories, traditions and archives held by former residents and workers have become the subject of local history groups and community projects.[101]

Shaping the future: Recommendations

- Special consideration needs to be paid to water-edge features, be they on riverbanks or on the side of man-made water bodies. These areas are the most sensitive to change (through erosion or through exposure during periods of drought or flood) and contain the greatest concentration of features of historic or archaeological interest.
- This landscape type has considerable potential for buried and hidden archaeological remains, either within lakes or reservoir sediments, under expanses of water (submerged buildings) or within and below alluvial deposits. Awareness raising with the appropriate authorities (particularly of the historic dimension of the Water Act 1973), the maintenance of high water levels and alluvial deposits are all considered to be priority measures for implementation.
- Improved management through river corridor survey, establishment of good practise guidance and monitoring should be maintained and enhanced in partnership with the Environment Agency, Natural England and United Utilities plc.
- Active management of watercourses can also be carried out using DEFRA Entry Level and Higher Level agri-environment schemes.
- Major river valleys should be targeted for their research potential.

[100] Quote by WG Collingwood, cited in Lindop 2005, 91

[101] Bampton and District Local History Society, www.bampton-history.org.uk/burnbanks