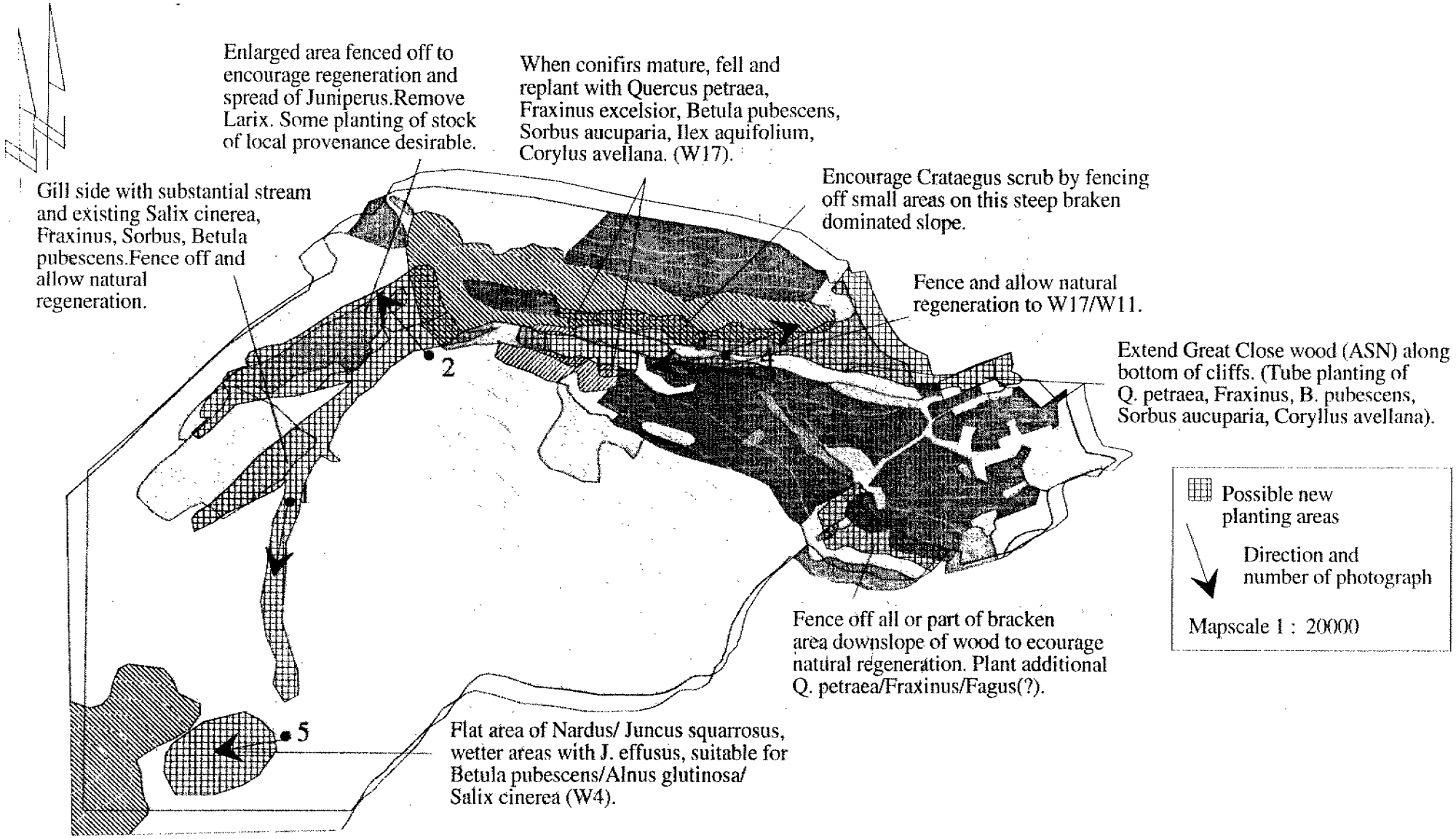
Lake District National Park

Figure 3.2.7

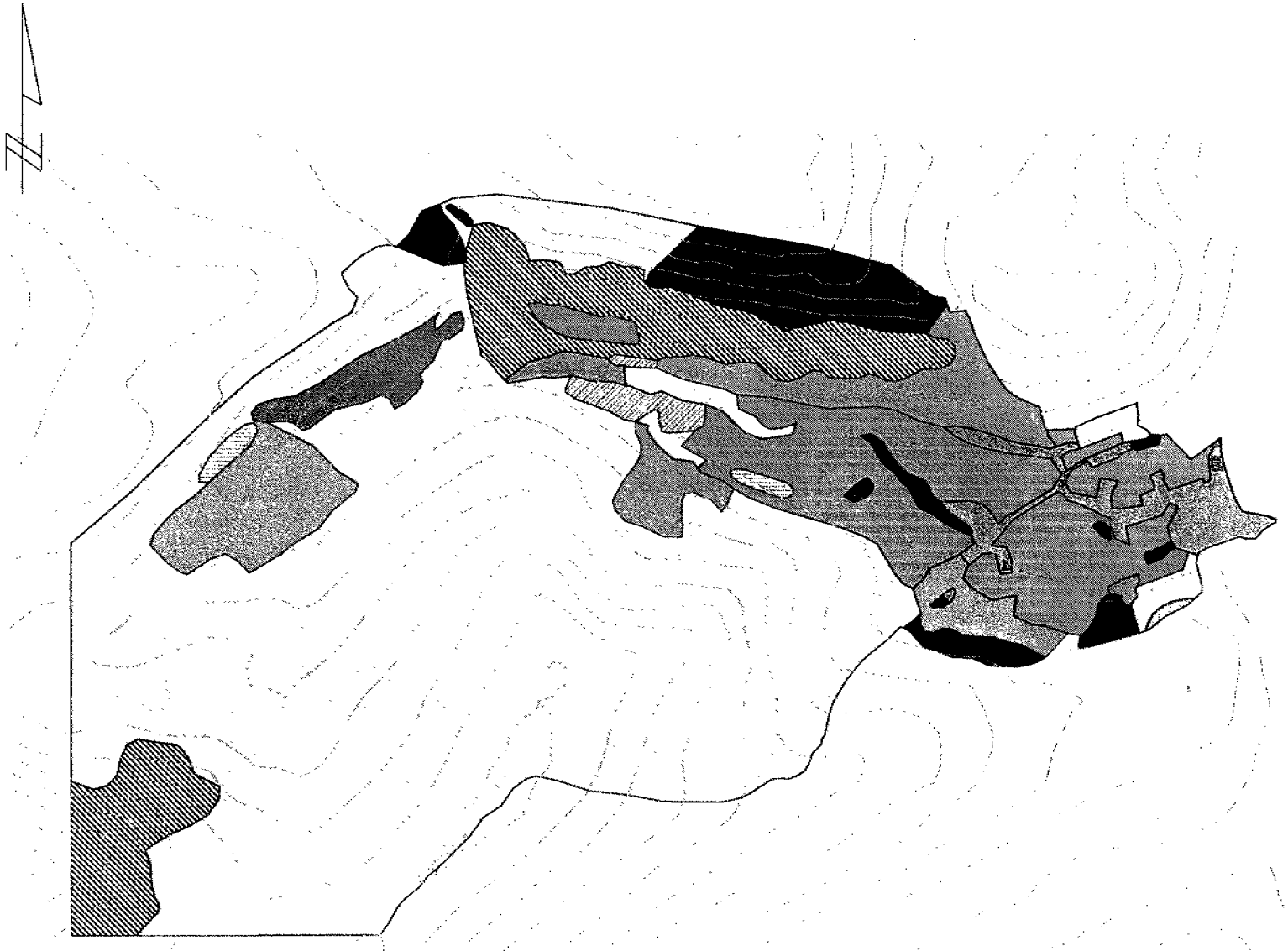
Smaller Study area –Possible woodland expansion – Glenridding



Lake District National Park

Figure 3.2.8

Smaller Study area –Land cover – Glenridding



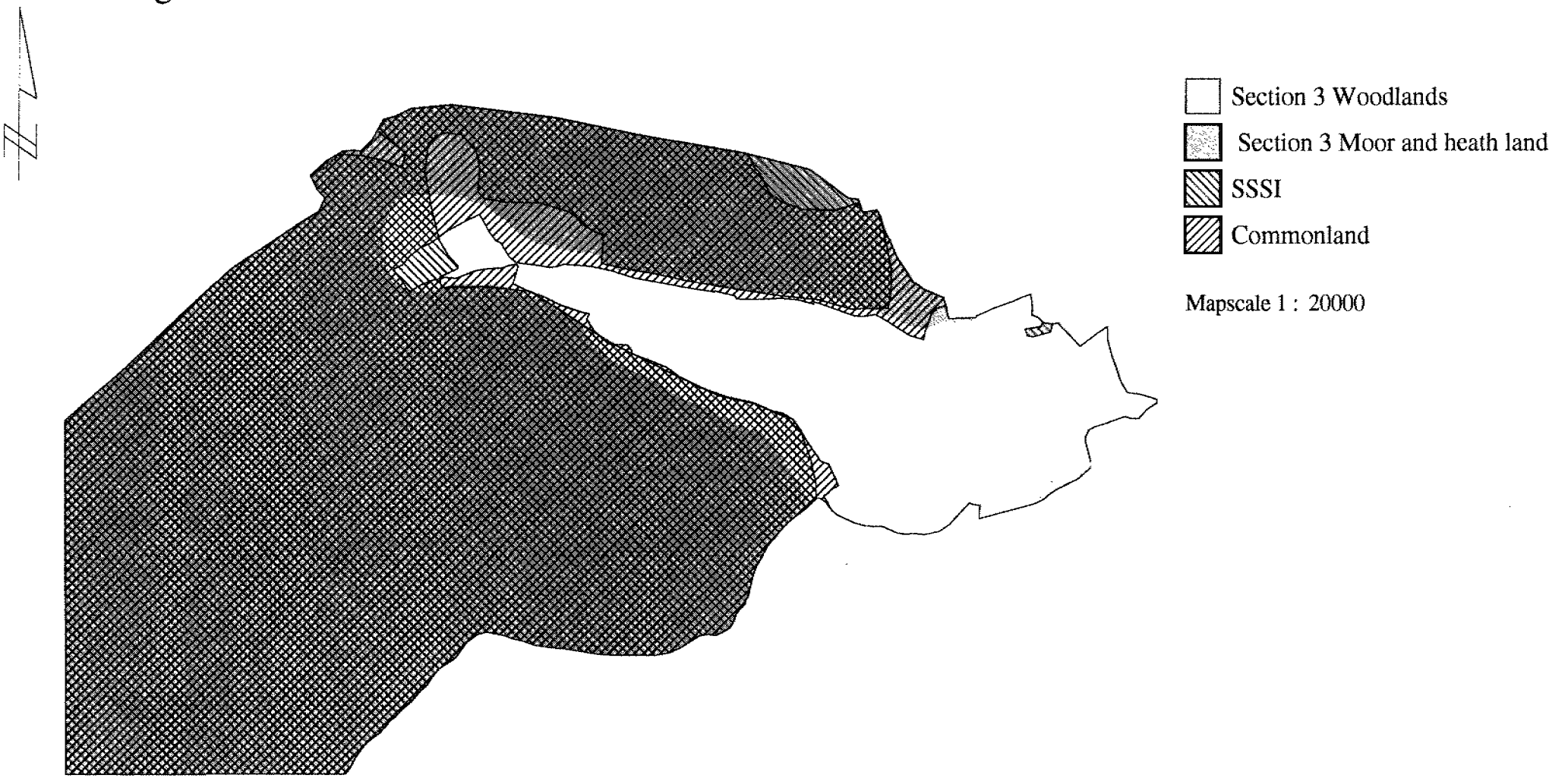
- Improved / Semi –improved
- Rough Pasture
- Coniferous Woodland
- Mixed Woodland
- Deciduous Woodland
- Scrub
- Open Deciduous Woodland
- Open Scrub
- Scree / Rock
- Bracken
- Upland Heathland
- Upland Grass Moor
- Built –up Areas
- Clear Felled
- New Woodland
- Hedgerows with mature trees

Mapscale 1 : 20000
Contour interval 50 m

Lake District National Park

Figure 3.2.9

Smaller Study area –Statutory Areas relating to possible woodland expansion – Glenridding



Lake District National Park - Photographs taken at Glenridding

Plate 3.2.1 View up the Red Tarn Beck in the upper part of the valley.

Plate 3.2.2 Juniper scrub on the cliffs and screes in the upper valley.

Plate 3.2.3 Improved/semi-improved pasture fields and unimproved rough pasture on the north facing slopes in the lower part of the valley.

Plate 3.2.4 Bracken cover over coarse scree with scattered hawthorn scrub on the south-facing slope in the lower part of the valley.

Plate 3.2.5 Area of flat ground at high elevation below the summit of Helvellyn.

Plate 3.2.1

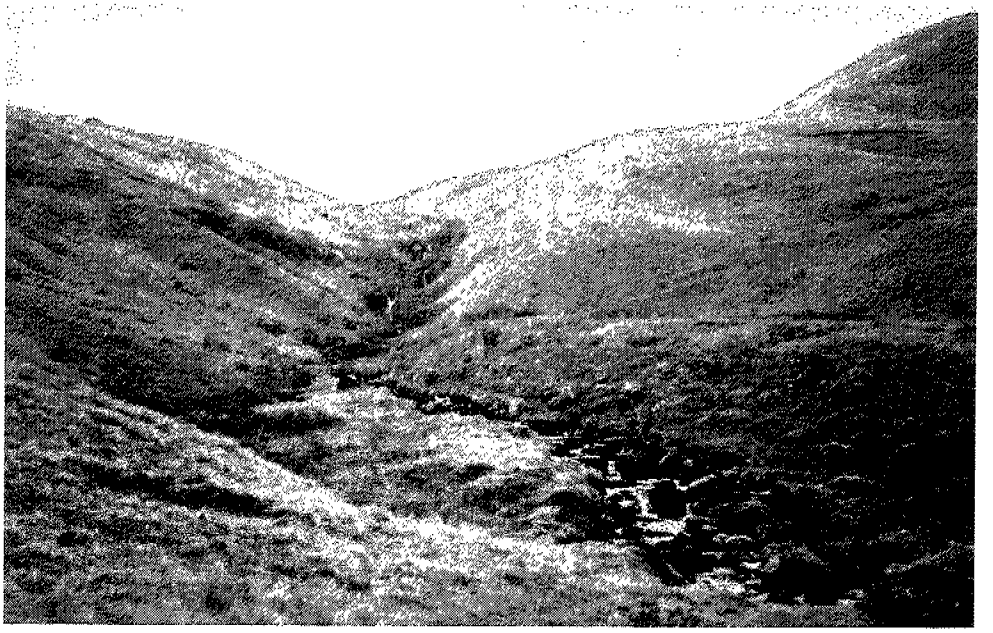


Plate 3.2.2

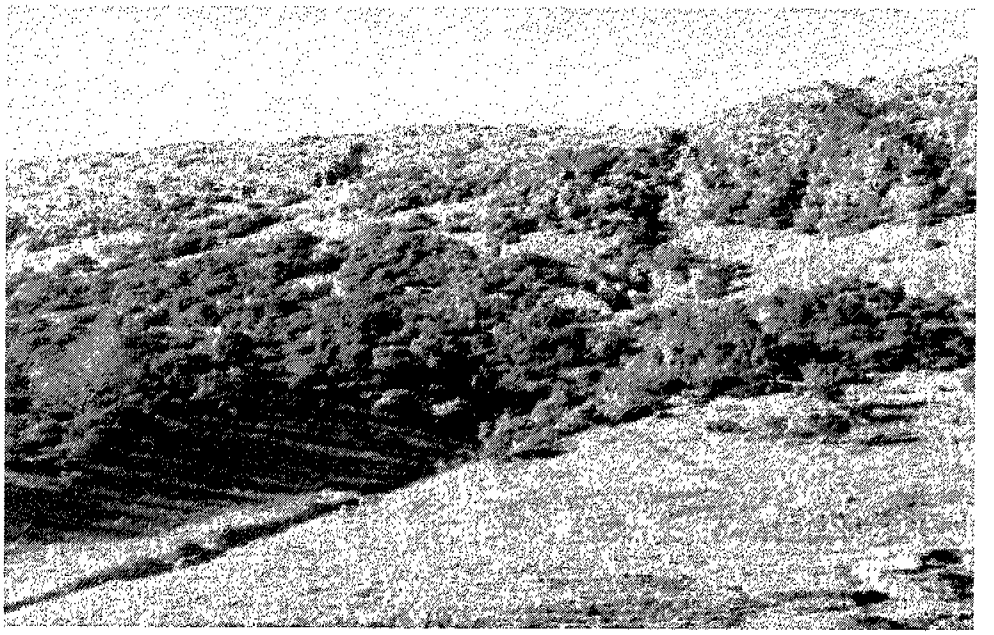


Plate 3.2.3

Plate 3.2.4

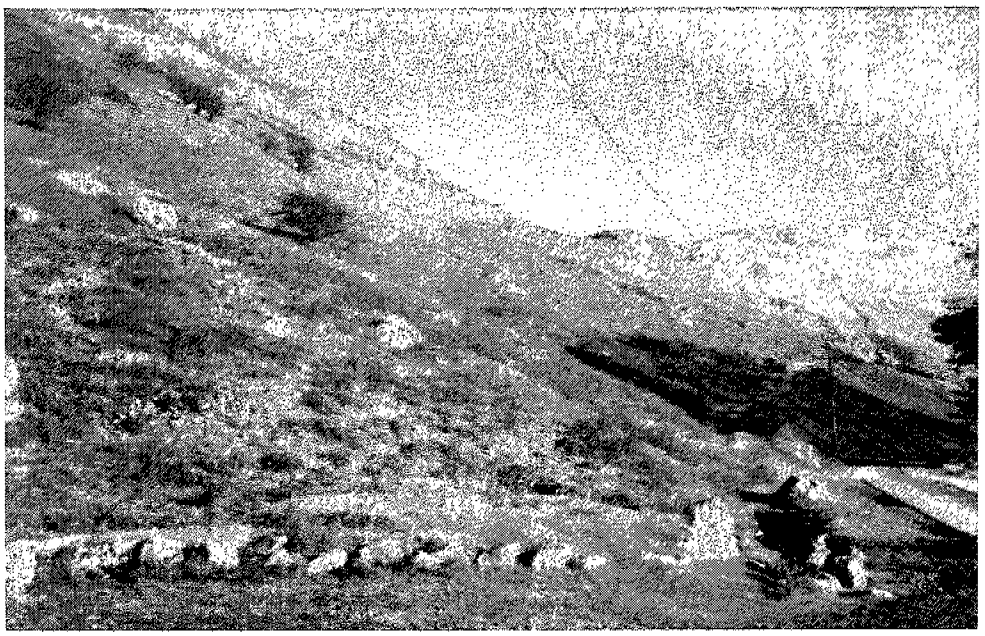


Plate 3.2.5

Table 3.2.1 Distribution of land by ITE land cover types in the Glenridding study area

Land Cover	Area (ha)	Proportion %
Improved/Semi-improved grass	57	10.8
Rough Pasture	9	1.6
Coniferous Woodland	4	0.8
Mixed Woodland	0	0.1
Deciduous Woodland	8	1.5
Scrub	10	1.9
Scree/Rock	49	9.2
Bracken	45	8.4
Upland Heathland	21	4.0
Upland Grass/Moor	312	58.7
Built-up Areas	16	3.0
Total	532	

Table 3.2.2 Distribution of possible woodland expansion area by land cover types in the Glenridding study area

Land Cover	Area (ha)	Proportion of land cover types (%)
Improved/Semi-improved grass	2	3.5
Rough Pasture	4	44.4
Scrub	9	90.0
Coniferous Woodland	4	100.0
Bracken	28	62.2
Upland Grass/Moor	28	9.0
Total	76	14.3

The upper section of the valley as well as being part of the Helvellyn and Fairfield SSSI and common land is also all within the Section 3 area of moor and heathland (Figure 3.2.9). The cover type is mostly white grass/moor vegetation, dominated by mat grass (*Nardus*) where the thin humic ranker soil predominates and purple moor grass (*Molinia*) in the flushed areas.

Small areas of wet shrub heath (including heather, but never as a dominant) with sphagnum occur in the wetter areas with deeper peat. There are two substantial ares of bracken on steeper slopes, one adjacent to the area of juniper scrub on the rocky outcrops and screes in the area known as The Stang (Plate 3.2.2). These vegetation types are also found on and above the very steep rocky slopes on the north side of the mine spoil heaps which dominate this upper section of the lower part of the valley. There is also a substantial area of upland heathland. Lower down on the north side of the valley there is a considerable area of dense bracken on very shallow brown soil over scree with a scattering of hawthorn scrub (Plate 3.2.4) On the south side of the valley, brown podzolic soils predominate on the lower, enclosed slopes supporting improved/semi-improved bent-fescue (*Agrostis/Festuca*) grassland, with varying amounts of bracken. There are scattered trees, mostly ash in these fields and beside the walls. Above the mountain wall the soil is thinner and the bracken more dominant and there are no trees, just scattered hawthorn scrub. There is a small amount of predominantly alder-ash woodland (NVC type W7) in the valley bottom along the stream banks and oak-birch woodland on the steep slopes above Gillside on the south side of the river. There are also two small conifer plantations (combined area 4 ha), predominantly of larch and Douglas fir below the Greenside Mine area.

Our suggestions for woodland expansion seek to develop practical options for the development of more or less continuous woodland and scrub of different types from the head of the valley below the cliffs of Helvellyn at >650 m elevation, right down to the valley bottom at Glenridding at 150 m. The area of semi-natural woodland created in the process might be considered modest, amounting to 76 ha (14.3% of the land area) mostly (56 ha) on bracken dominated land or upland grass/moor (Figure 3.2.7). In the upper part of the valley there is likely to be extreme sensitivity to any major development of woodland because of the statutory constraints (SSSI, Section 3 moor and heathland, common land), but also because this is a very open fell landscape with views to the summit of Helvellyn and Striding Edge. That woodland/ scrub development is possible, at least in the deeper ghylls is shown by the existing, sometimes substantial growth of grey willow (*Salix cinerea*), ash, rowan (*Sorbus aucuparia*) and birch. Given the likely difficulty in getting agreement for fencing out substantial areas of common land it seems sensible to build on this existing cover by fencing out narrow strips along the larger ghylls such as Red Tarn Beck (Plate 3.2.1). There is already a (controversial) plan to fence out an enlarged area around the existing substantial stand of juniper (Plate 3.2.2). We support this and have shown it on our plan but in order to save on fencing costs we have taken the fence down and across the stream to allow regeneration of wet scrub-woodland there. It might be necessary to put access points through this fence to allow hikers to reach the upper valley on the north side of the stream although at present the footpath on that side is closed and access to Red Tarn and Striding Edge is only (legally) via the south side. There are some self-seeded larches among the juniper, presumably blown up the valley from the plantations below; these should be removed. It would probably be necessary to raise some stock of juniper from local seed or cuttings if the enlarged area were to develop within the lifetime of a fence. If a fence were considered to be too intrusive it would be possible to regenerate the juniper by planting groups of plants in tubes. The flat area of mat grass and rushes in the extreme south west corner of the study area near Red Tarn (although not in sight of it) illustrated in Plate 3.2.5 is probably the most controversial area we have proposed for possible woodland establishment. We have included it, however, because it offers an opportunity to create an area of woodland of a type (W4) which is now very scarce in the uplands but which was probably more widespread in the past. It would be

interesting to see if it were possible to produce this types of birch-alder woodland at this elevation (c. 650 m) in the Cumbrian mountains.

The suggestions for possible expansion of native woodland in the lower part of the valley below Greenside Mine involve: replacement of the two small blocks of conifers with broadleaves to produce upland oak woodland and extension of that woodland along the river bank on rough and improved/semi-improved pasture; extending existing oakwood on the south side of the river downslope onto bracken-dominated grassland (natural regeneration would be likely to be particularly effective with a seed rain from above along a long boundary); extension of Great Close Wood (ASNW and part of the Glencoyne SSSI) along the bottom of the cliff/scree (Glenridding Dodd) by tube planting of appropriate species); encouragement of the hawthorn (*Crataegus*) scrub on the steep bracken covered slope below and to the east of the Heron Pike.

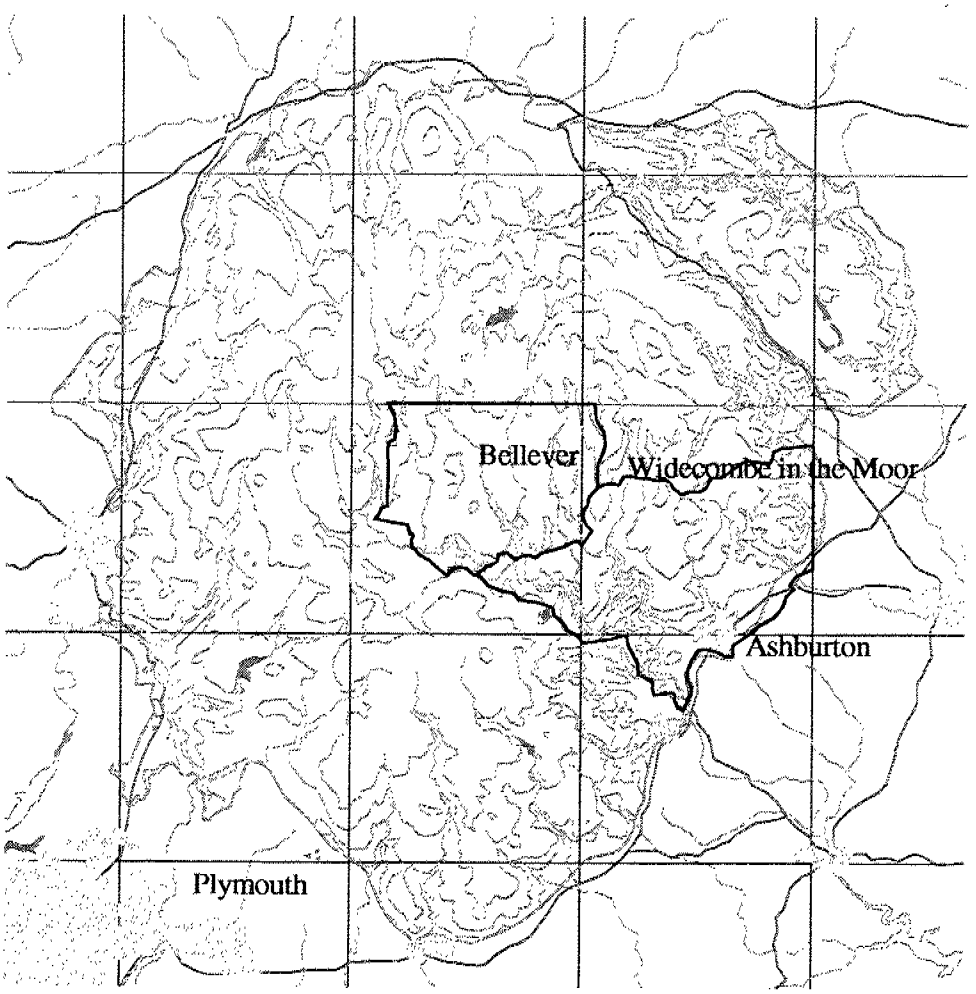
Clearly most of these suggestions for woodland expansion would need to be carefully considered before being put into practice.We have suggested very little planting on the improved land on the lower valley slopes and in the valley bottom but it might be thought that this would be the most appropriate area for woodland expansion on the grounds of its current rather low nature conservation value. There would certainly be little difficulty establishing upland oak woodland in these enclosures which would soon become wooded if left to nature.

3.2.3.4 Conclusions

The Glenridding Valley is an interesting area with its two, quite different sections offering different opportunities for woodland expansion and a different range of problems to be overcome if our suggestions were to be implemented. The objections to woodland expansion in the upper valley are likely to be based largely on landscape and environmental concerns whereas in the lower valley the loss of good quality grazing land is likely to be the main bone of contention. However, the development of woodlands of different types covering the whole altitudinal range as desired in the Local Accord will not be achieved anywhere in the LDNP without a struggle. As in the other NP's, when promoting extra woodland it is necessary to point out that what is being proposed is not an attack on open space and habitats but an attempt to redress to some small extent the havoc wreaked on our native woodlands since man first settled in these islands.

Dartmoor National Park

Location map



National Park / AONB Boundary

'10 x 10 km' Study areas

Main Roads

100 metre contours

Main rivers

Urban Areas

Lakes

Mapscale 1 : 330000

3.3 DARTMOOR NATIONAL PARK

The Dartmoor National Park (DNP) (Figure 3.3.1) covers an area of approx. 95,400ha of land. It contains the largest area of moorland in the south of England.The main land uses are hill livestock farming (sheep, beef cattle and dairy), tourism and recreation, military training, forestry, china clay extraction and water supply. Dartmoor is the largest expanse of unglaciated moorland in Great Britain and this is clearly seen in the absence of wide U-shaped valleys and the presence instead of deeply incised v-shaped valleys cut by streams and rivers through the underlying granite which run off the dome of the moor in all directions. A number of these rivers have been dammed to provide water for the surrounding urban areas. Perhaps the most notable landscape feature are the many tors which are the result of the loss through erosion of softer surrounding rocks. Rising as they often do from a more or less level surrounding terrain they give a rugged image which is different in character to that of any other upland area in Britain. The wildness of the area is also exaggerated by the lowland character of the countryside surrounding the National Park. Most of Dartmoor is above the 250 m contour with many of the higher hills and tors exceeding 500 m. There is considerable interest in the geology of Dartmoor which is reflected in no less than 22 sites that have been recognised as being of national importance through their inclusion in the *Geological Conservation Review*. These are spread over 20 proposed or notified SSSI's.

One third of all the unenclosed moorland on Dartmoor is covered by peat that is >50 cm thick, forming the nationally and in some cases internationally important blanket bogs and valley mires. As there is little potential for tree growth on such soils without extensive draining, which is inimical to their generally high existing wildlife value, these areas have been excluded for the 'potential areas' for woodland expansion. Much of the remainder of the Park is covered with shallow, acid soils with varying amounts of peat which are similar to those already described for the Northumberland National Park (NNP). As in Northumberland, it is the better drained of these soils (i.e. Moretonhampstead, Manod, Moor Gate series) on steeper ground which support the best examples of remnant native broadleaved woodland, and it is they which offer the best prospects for broadleaved woodland expansion.

The climate on Dartmoor is relatively mild compared with the NNP but has a similar temperature range to that of the Lake District National Park (LDNP)(mean January air temperature 4.8°C, mean July air temperature 15.7°C). It is wetter (c 1300mm yr^{-1}) than the NNP and the rainfall is more uneven with most occurring in the winter months.

In addition to the 20 Geological SSSI's already mentioned, Dartmoor has 27 other SSSI's which include representative examples of the 15 key wildlife habitats found in the area. Seventeen of these are oakwood SSSI's (the most of any of the NP's studied here). Dartmoor holds important extensive areas of heather moorland and unimproved grassland which support a characteristic upland bird community including low densities of breeding waders such as curlew, lapwing, snipe, golden plover and dunlin. These areas also support a good population of red grouse whose conservation is a key priority (RSPB, pers. comm.). Dartmoor also holds priority species such as woodlark and cirl bunting which breed in lowland mixed farmland and habitat mosaics at the moorland edge. Areas of scrub with gorse and bracken hold good numbers of breeding passerines including Dartford warbler, stonechat and linnet. Existing semi-natural woodlands, which are considered as one of the top priority habitats on Dartmoor and which include three NNR's and a provisional valley woodland Special Area for Conservation (SAC) provide valuable habitat for a wide range of common woodland birds as

well as species particularly characteristic of valley oakwood, including to pied flycatcher, wood warbler and redstart. Most of these birds are among the 27 species of plants and animals recognized as key species for Dartmoor in the draft EN *Dartmoor Natural Area Plan*. Species in other groups include otter, dormouse, greater horseshoe bat, two species of dragonfly/damselfly, high brown and marsh fritillary (perhaps the most important area for the latter in Britain), three species of orchid and two other nationally rare flowering plants and two lichens. Six of these 27 species are primarily associated with oak woodland.

The Dartmoor National Park is perhaps richer in archaeological terms than any other area of similar size in the British Isles.with hundreds of sites with dates ranging from the earliest period of man's habitation in the west of England to modern sites of industrial archaeological importance. These sites are scattered all over the moor and its fringes and it would be essential to determine their whereabouts and importance with experts before drawing up any concrete proposals for woodland expansion.

3.3.1 Native woodland in the Dartmoor National Park

It has already been noted that the Dartmoor National Park is, relative to most other upland areas in Britain, rich in native woodland, including a good deal of ancient semi-natural woodland (ASNW). The ITE Land Cover Map (LCM) recorded 7968 ha of deciduous and mixed woodland >2 ha in extent (8.56% of land area), the largest proportion in any of the five study areas (Table 3.1). About 2000 ha of this is recorded as ASNW in the provisional *Ancient woodland Inventory* for Devon but a 1996 survey, the results of which are soon to be published (Sue Goodfellow, pers. comm.) indicates that the true area is greater, approximately 2750 ha. It has been estimated that approximately 80% of the ASNW may be classified as oak woodland, but the survey already referred to should clarify this. About 61% of the ASNW is designated as SSSI's with almost a third now being proposed as the SAC referred to above. The 1996 survey shows that ASNW sites comprise 2000 ha under management plans (where occasionally the only prescription is non-intervention) and 775 ha which is under no management regime. 777 ha of the ASNW sites contain planted conifers and 13 ha have been lost to agriculture this century (*Dartmoor Native Woodland Accord*). Apart from the noted high altitude woodlands (Wistman's Wood, Black Tor Copse), most of this woodland is in the river valleys leading off the moor, predominantly on the east and south edges of the DNP (Figure 3.3.2).

Both sessile oak (*Quercus petraea*) and pedunculate oak (*Q. robur*) are found in the oakwoods, together with their hybrids. Other common trees are birches with rowan, hazel and holly in the understorey. A few woods have wild service trees (*Sorbus torminalis*) and/or small-leaved lime (*Tilia cordata*), both of which are nationally scarce. Beech is also frequent but is not thought to be native to the area. The woods on the poorer, more acid soils away from the river valleys are mostly NVC class W17 (oak-birch woodland) while on the more fertile and sheltered valley sides W10 (damp oakwood) tends to take over. On the river terraces in the valley bottoms alder-ash woodland (W7) is the commonest type. A full description of the flora and fauna to be found in these native oakwoods can be found in the draft EN Dartmoor Natural Area document.

In response to the 1993 national *Accord on New Native Woodlands* agreed between the National Parks and the Forestry Authority a local memorandum (*Dartmoor Native Woodland*

Accord) was drawn up between the NNP and the Forestry Authority local conservancy in 1996. Local objectives for native woodland on Dartmoor are:

- to encourage the appropriate management of semi-natural woodland
- to encourage the extension of semi-natural woodland
- to identify areas and circumstances where it is appropriate to encourage the creation or re-establishment of woodland which emulates semi-natural woodland in composition and structure
- to raise awareness and understanding of the management of semi-natural woodland, and to increase the skills available for their management, through education and technical advice

As part of the *Dartmoor Native Woodland Accord* the DNPA, in partnership with the Forestry Authority (FA), and in consultation with land owners and woodland management organisations, will prepare a Woodland Strategy for Dartmoor which is scheduled for completion in time for inclusion in the National Park Management Plan due for publication in 1998. Also under the woodland accord the DNPA will look to resource its own timber needs from its own woodlands while the DNPA and the FA will support initiatives to generate new markets for native hardwoods in the South West and the use of western provenance seed sources for new native woodland planting. Recognising that achieving the objectives set out in the accord depends on the support of private landowners and the availability of funds, DNPA and the FA actively support the establishment of partnerships with landowners. It is hoped that using European funding, Millenium grants and Lottery monies it may be possible to set up a demonstration woodland project to promote such partnerships.

3.3.2 **The 10 x 10 km study areas**

3.3.2.1 Criteria for selection

Two 10 x 10 km study areas were selected by the EN Devon, Cornwall and Isles of Scilly Team using the map of the DNP provided by ITE showing 'potential areas' for woodland expansion derived as explained in the Methods section (2.1) (Figure 3.3.2).

i Relatively well wooded - **Teignbridge**
The most heavily wooded area in the DNP including the whole of the 1007 ha Holne Woodlands SSSI. Non-wooded areas are a patchwork of improved and unimproved pasture, mostly in small fields separated by hedgerows.

ii With little woodland - **Bellever**
Incudes the upper reaches of the River Dart and its tributaries; predominantly open moorland with several large conifer plantations and little native woodland.

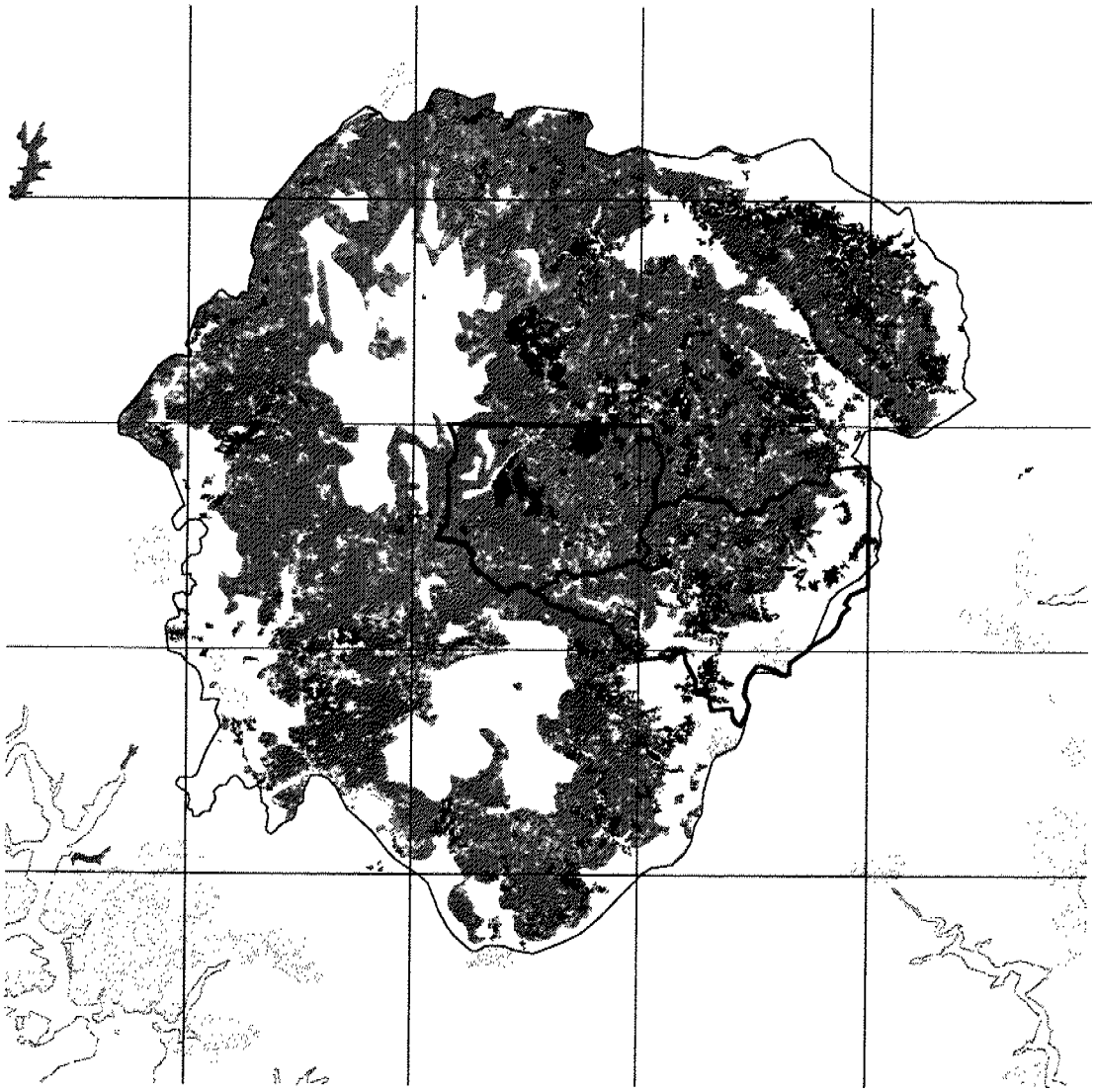
Reasons for choosing the two study areas rather than other similar areas within the NP were not received in time to be included here.

3.3.2.2 Current land cover and potential for woodland expansion

The location of the study areas are shown in Figure 3.3.1. Figures 3.3.3-3.3.4 show the land cover in each study area derived from the ITE Land Cover Map. Figures 3.3.5-3.3.6 show the existing areas of coniferous woodland, broadleaved/mixed woodland (including ancient

Dartmoor National Park

Provisional possible areas for upland woodland expansion



Possible Areas
Possible Additional Areas
Urban Areas
Lakes/Marsh Areas
Coniferous
Deciduous
Scrub/Orchard
National Park / AONB Boundary
'10 x 10 km' Study areas'

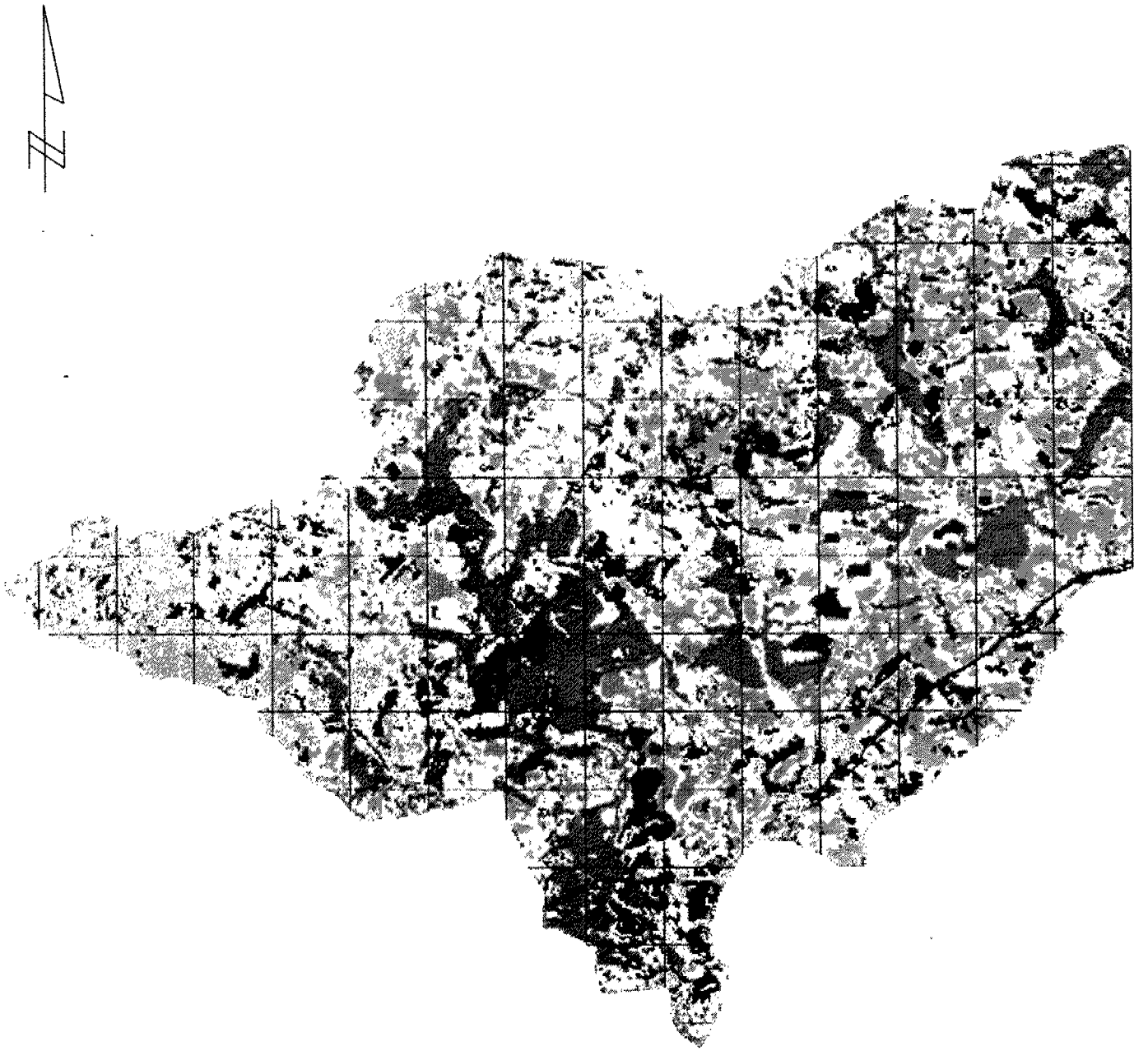
Mapscale 1 : 333000

semi-natural and secondary woodland digitised from the maps in the provisional Ancient Woodland Inventory for Devon) and scrub, and the areas with potential for woodland expansion. It can be seen from Figures 3.3.3 and 3.3.4 that the land cover differs significantly in the Teignbridge and Bellever study areas. Most of the Teignbridge study area has a moorland edge character, much of the land lying below the 200m contour and comprising a geometrical pattern of enclosure fields, mostly improved to some degree recently or in the past, separated by hedges, giving way to more open unimproved pasture near the moorland edge. Much of the less improved land has existing ecological, landscape or archaeological value so it cannot be assumed that because an area is less wild than the open moorland that it will necessary be suitable for woodland expansion. A good example of a possible constraint arises in the case of Rhôs pastures which are enclosed, species-rich purple moor grass and rush pastures. On Dartmoor they are found in valley systems away from the open moor, usually in a mosaic together with wet woodland, other species-rich grasslands and oakwood. There is approximately 1000 ha of Rhôs pasture on Dartmoor, representing 2% of the UK resource and about 20% of that in England. This habitat is favoured by the marsh fritillary butterfly, a species which is declining throughout Britain and almost every other European country and which is listed within the EC Habitats and Species Directive as requiring special attention. A total of 49 colonies are now known on Dartmoor, spread over 100 sites, mostly on Rhôs pasture, which is nearly a quarter of all English colonies. Clearly, it would be essential to ensure that any suggestions for woodland expansion in this study area took full account of the known (and possible unknown) occurrence of Rhôs pasture sites.

The heavily wooded middle valleys of the River Dart and its major tributary, the R. Webburn, and of other minor rivers (R.Lemon, R. Mardle) divide up this pastoral landscape and give most of the area a very well-wooded feel. This is reflected in the high area of deciduous/mixed woodland cover (1241 ha; 14.9% of the land area) picked out by the ITE Land Cover Map and shown in Figure 3.3.5 and Table 3.1. Most of the fairly substantial areas of plantation conifers (209 ha) are located within areas of native broadleaved woodland as is clearly shown in Figures 3.3.3 and 3.3.5. There is also 48 ha of scrub, mostly dominated by hawthorn (*Crataegus monogyna*), which Figure 3.3.5 shows to be scattered thinly over the more open areas. The study area includes relatively small areas of open moorland in the extreme western portion around Dartmeet and to the east of Widecombe in the Moor. Areas of scattered open scrub, sometimes with a few oaks or ashes are not uncommon on the open moorland, especially where the rock is near the surface and soil drainage is good as often occurs on the 'Clitter' (rock-strewn) slopes surrounding the many tors (Plate 3.3.6). It can be seen from Figure 3.3.5 that despite the high existing woodland cover in this study area there is a considerable area (1931 ha, 23 % of the study area) which is potentially suitable for woodland expansion (Table 3.2). Most of the land involved is unimproved or improved pasture (Figure 3.3.3), much of it adjacent to existing woodland areas. This would suggest, therefore, that there are plenty of potential opportunities to realise the objective raised in the draft *Dartmoor Native Woodland Accord* and noted above (Section 3.3.1) to "encourage the extension of semi-natural woodland". If we imagine for a moment that the potential areas shown in Figure 3.3.5 were actually established, the result would be a continuous (chiefly valley) native woodland stretching from Haytor Vale in the north to Holne Woods in the south with a spur running out to Bickington. There would also be a substantial new wood between the SW arm of Holne woods and Holne Chase. While woodland extension on this scale is no more than a theoretical possibility given current and future likely constraints, it is useful to contemplate in that Figure 3.3.5 probably provides as good a retrospective picture

Dartmoor National Park

10 x 10 km Study area –ITE Land Cover Map – Teignbridge

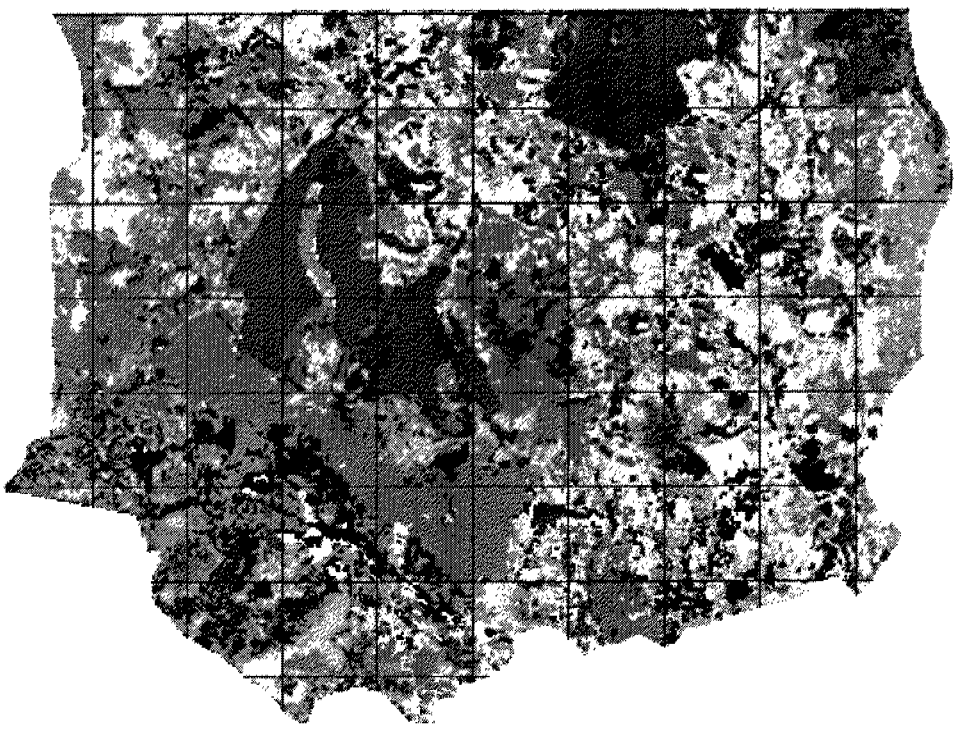


Mapscale 1 : 80000

- Inland Water
- Beach/Tidal Flats/Cliff
- Salt Marsh
- Dune/Lowland Heath
- Pasture/Amenity Grass, Mown
- Meadow/Verge/Unimproved Grass
- Marsh/Rough Grass
- Upland Grass/Moor
- Upland Grass/Shrub
- Upland Dwarf Shrub
- Bracken
- Lowland Shrub/Heath
- Shrub/Orchard
- Deciduous Trees
- Evergreen Coniferous Trees
- Upland Bog
- Arable
- Suburban/Rural Development
- Industrial/Urban
- Bare Ground
- Lowland Peat Bog
- Lowland Grass/Shrub Heath
- Unclassified

Dartmoor National Park

10 x 10 km Study area –ITE Land Cover Map – Bellever

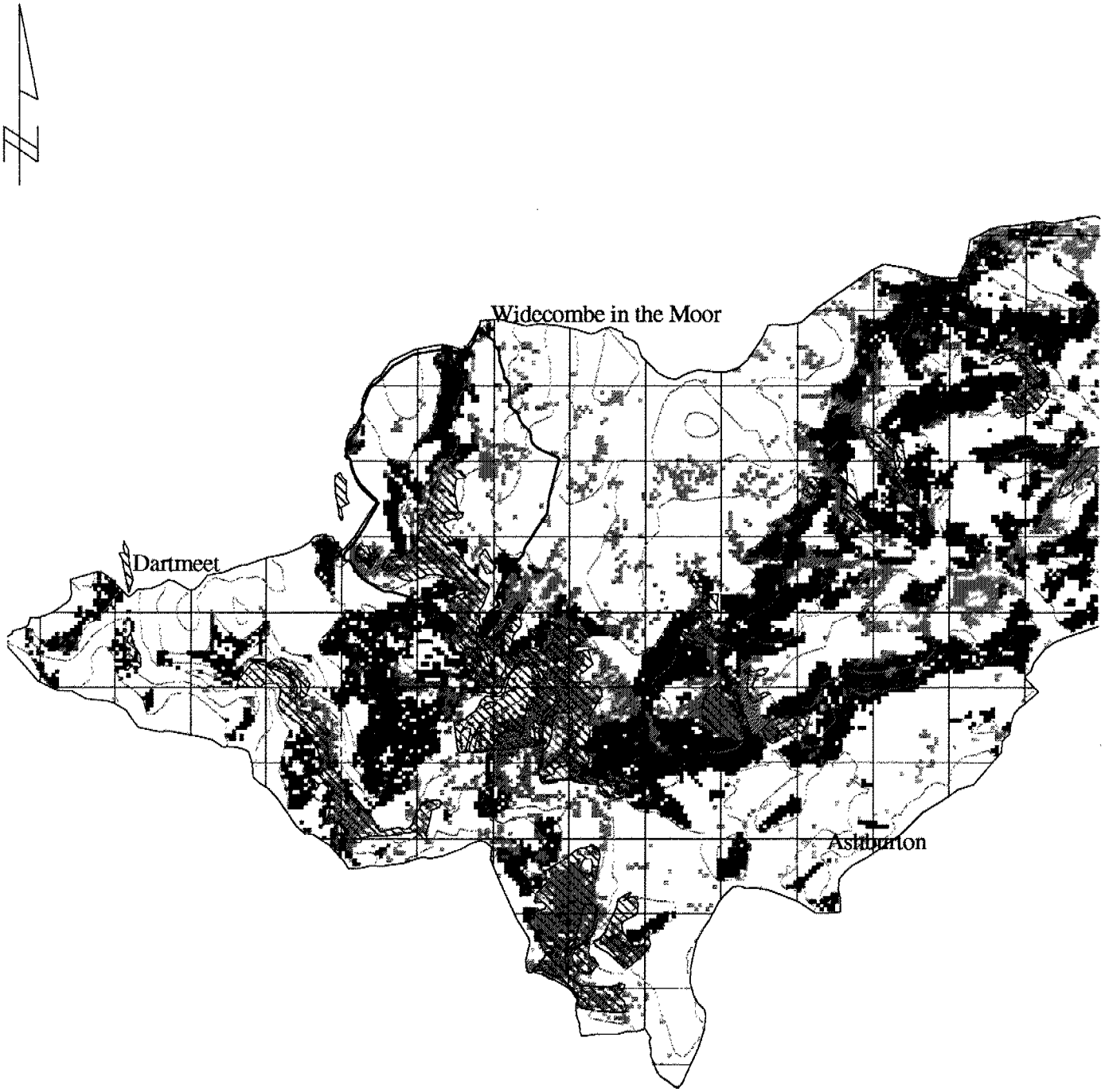


Mapscale 1 : 80000

- Inland Water
- Beach/Tidal Flats/Cliff
- Salt Marsh
- Dune/Lowland Heath
- Pasture/Amenity Grass, Mown
- Meadow/Verge/Unimproved Grass
- Marsh/Rough Grass
- Upland Grass/Moor
- Upland Grass/Shrub
- Upland Dwarf Shrub
- Bracken
- Lowland Shrub/Heath
- Shrub/Orchard
- Deciduous Trees
- Evergreen Coniferous Trees
- Upland Bog
- Arable
- Suburban/Rural Development
- Industrial/Urban
- Bare Ground
- Lowland Peat Bog
- Lowland Grass/Shrub Heath
- Unclassified

Dartmoor National Park

10 x 10 km Study area –Woodland –Teignbridge

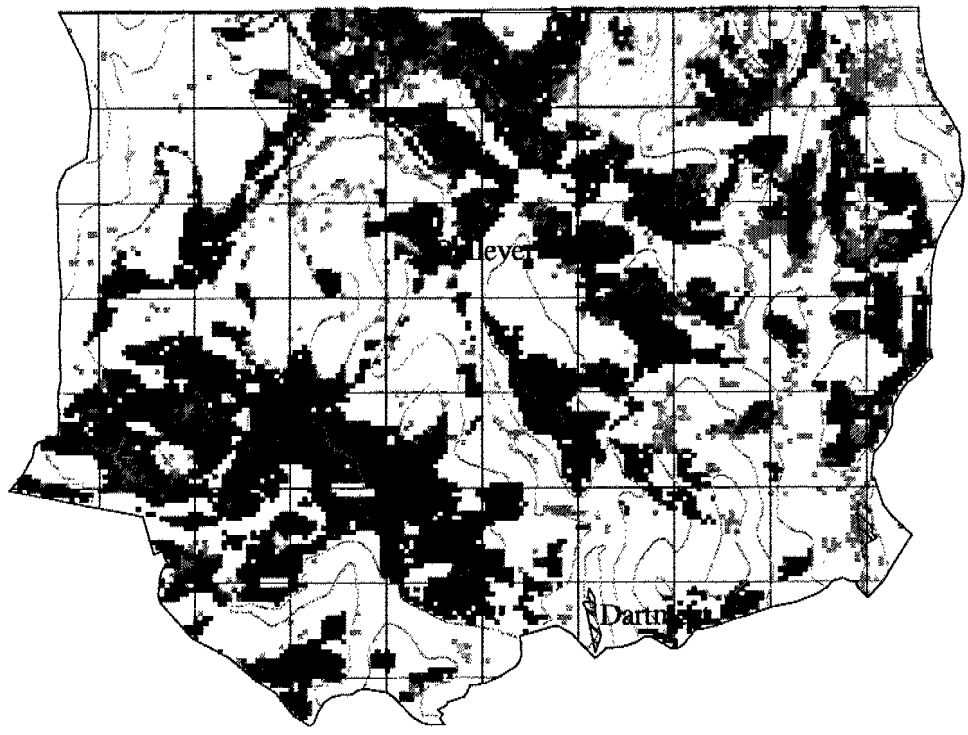


Mapscale 1 : 80000

- Potential areas
- Non –potential areas
- Existing Deciduous/Mixed Woodland
- Existing Coniferous Woodland
- Scrub
- Ancient semi –natural
- Ancient Replanted
- Cleared 1901 –1925
- 'Smaller' Study Area

Dartmoor National Park

10 x 10 km Study area –Woodland –Bellever



Mapscale 1 : 80000

- Potential areas
- Non –potential areas
- Existing Deciduous/Mixed Woodland
- Existing Coniferous Woodland
- Scrub
- Ancient semi –natural
- Ancient Replanted
- Cleared 1901 –1925

as we are likely to be able to produce of what the woodland cover of this part of Dartmoor would have been prior to man's early woodland clearance activities. It also provides useful guidance as to where are the most appropriate areas for woodland expansion.

As can be seen from Figure 3.3.1, the Bellever study area, unlike the Teignbridge study area, is located right in the middle of Dartmoor. Not surprisingly this area has a much more remote and wild feel. Much of the study area is above the 400 m contour, being a high plateau out of which rise the many tors, some of which exceed 500 m. The vegetation is predominantly upland grass/moor or unimproved pasture with substantial areas of heather moorland to the south of the West Dart River and around Dartmeet (Figure 3.3.4). The wetness of the blanket and valley mires which cover a substantial part of the area around the Bellever conifer plantation is shown by the fact that they are recorded by the satellite imaging system used to produce the Land Cover Map as 'inland water'. The small area of existing deciduous/mixed woodland in the study area (284 ha, 4.8% of the study area) is mostly located in the upper reaches of the E. Webburn River in the north-east corner, with additional scrubby woodland along the course of the E. Dart River north of the Bellever plantation. Coniferous woodland is almost restricted to the two large plantations shown in Figure 3.3.4 which, together with smaller fragments amount to 8.44% of the study area.

The distribution of potential areas for woodland expansion are shown in Figure 3.3.6 and quantified in Table 3.2, amounting to approximately the same area (1978 ha) as in Teignbridge but a higher proportion of the study area (34%). Much of the potential woodland area is on upland gently sloping grass/moor Figure 3.3.4 in the SW corner of the study area where the presence of bracken indicates free drainage; the deeper wetter peats are avoided. Figure 3.3.6 also indicates considerable potential for expanding woodland adjacent to remnant broadleaved/mixed woodland in the north and east of the study area and in shallow stream catchments running off the top of the moor. In all of these areas, except perhaps adjacent to existing woodland in the larger river valleys, there would probably be strong resistance to tree planting in what are seen as sensitive landscapes and which are littered with archaeological sites. In practice, limitations imposed by soils and exposure would probably make woodland establishment difficult and it is unlikely that productive woodland would develop in most instances. It should perhaps be said, however, that the well known Wistman's wood and Black Tor Copse, both of which are SSSI's, are just such environmentally suppressed woods which owe a great deal of their attraction to their obvious struggle with the forces of nature. It is worth asking whether, if these woods did not exist and we were therefore unaware of their considerable landscape and wildlife conservation values, we would ever think of trying to create them. Should we not be considering, at least, the establishment of similar types of high altitude oakwoods in appropriate locations on Dartmoor?

3.3.2.3 Conclusions

These two study areas, although adjacent, have very different characteristics in terms of terrain, land cover (including current woodland cover), potential for woodland expansion and likely constraints. The Teignbridge study area is mostly moorland edge with a high proportion of pastoral agricultural land and with extensive areas of broadleaved woodland, much of it ASNW in the mostly narrow, steep-sided river valleys. The Bellever study area, on the other hand, is typical moorland being open, wild and giving a feeling of remoteness, even though it is only c. 10 km as the raven flies from towns such as Tavistock and Okehampton. Perhaps it is because of this that its apparent remoteness and genuine ruggedness are so highly

regarded and zealously protected both by those authorities (notably the DNPA, EN) who have responsibility for ensuring its conservation, and the general public who have nowhere else quite like it to visit and enjoy. The richness of its archaeological heritage and the romance associated with the place also add to the special feeling that Dartmoor inspires in most who visit it.

For these reasons, even though an objective assessment suggests that there is very substantial potential for woodland expansion in the Bellever study area and places like it on Dartmoor, in practice opportunities are likely to be few and limited in scale. That is not to say that no consideration should be given to the possibility of creating new woods to mimic (as far as that is possible) the high altitude woods such as Wistman's wood; it would certainly present a challenge! Most realistic opportunities for substantial woodland expansion will, however, arise in moorland edge locations where, on the whole, there is a good deal of woodland already. There are fewer landscape constraints because the aim is to achieve 'more of the same' while the land required tends to have a lower wildlife conservation value (although, see the *caveats* in Section 3.3.2.2); also archaeological sites, while still present and often important, are less numerous. Our feeling is that it is easy to be overcautious when considering the potential for woodland expansion, particularly when it is recognised that what is being proposed is not something alien but the reversion of the landscape and environment to something approaching more closely what it would have been if man had not played such an overwhelming part in its development. Figure 3.3.5 which presents an objective, albeit incomplete view of what an area such as Teignbridge was probably like in ancient times, and which indicates how the remaining woodland would have fitted into a much more extensive forest, is worth careful consideration by those who are inclined to resist any substantial woodland expansion on conservation grounds.

One of the great advantages of expanding woodland cover in areas where there is substantial existing woodland, especially where, as on the fringes of Dartmoor hedgerows with seed-bearing trees divide the fields, is the good potential for natural regeneration. In many instances reduction or removal of grazing animals would be all that would be required to extend existing woodlands. This is in marked contrast to the situation in areas such as the Dark Peak, Northumberland and much of the Lake District (also the heart of Dartmoor) where trees and woodland are scarce and natural regeneration is often not an option. More is said of this in the next section on the smaller study area.

3.3.3 **The smaller study area - Widecombe in the Moor**

3.3.3.1 Criteria for selection

Following discussion with local EN and DNPA staff an agreed study area was delimited in the Teignbridge 10 x 10 km study area. Its location is shown in Figure 3.3.5. This area was chosen for the following reasons;

- moorland edge was considered to be the most appropriate situation for woodland expansion on Dartmoor;
- there is already substantial woodland, mostly ASNW within the area but it was felt that there was potential for extending it onto largely improved or semi-improved pasture much of which is of relatively low wildlife value;

- much of the ASNW has been 'coniferised' in the past and it was felt that this study area could highlight this problem.

3.3.3.2 Characteristics in relation to the 10 x 10 km study area and the National Park

This study area follows the valley of the East Webburn River from the edge of the open moor at Widecombe in the Moor due south to its confluence with the West Webburn River near Buckland in the Moor, a distance of some 4.5 km. The change in elevation over this distance at river level is only some 100 m. The area includes a relatively wide and open valley section with little woodland just below Widecombe, with small fields enclosed by hedgerows gently sloping up onto the open moorland on either side (Plate 3.3.1). Lower down, the valley largely looses its moorland character, becoming narrower and deeper, and heavily wooded (Plates 3.3.2 and 3.3.4), with a plateau on either side consisting for the most part of larger and more intensively managed pasture fields also enclosed with hedgerows but which contain more and larger hedgerow trees, chiefly of oak and ash (Plate 3.3.3). The study area is quite representative of the Teignbridge 10 x 10 km area as a whole and of other areas on the east and south edges of Dartmoor where river valleys run off the moor into the surrounding pastoral countryside. Soils are quite uniform over most of the study area being typical brown podzols of the Moretonhampstead series (the main soil type on the east side of Dartmoor) which are well drained gritty loams, with a humose surface horizon developing only where drainage is impeded. There are small areas of less well drained soils of the Laployd Series along the riverside near Widecombe which can be picked out on the land cover map (Figure 3.3.8) by the fact that they are the only areas with pasture which has not been improved.

3.3.3.3 Current land use and potential for woodland expansion

The current land use of the study area as recorded by the ITE land cover map (LCM) is shown in Figure 3.3.8 and Table 3.3.1, with our suggested opportunities for woodland expansion shown in the overlay (Figure 3.3.7), annotated to show the target woodland types and the preferred means of establishment. The occurrence of 'Statutory Areas' (SSSI's, DNP Section 3 woodlands, moor and heath land, Common land) are shown in figure 3.3.9.

As has been indicated above, and can be seen from Plate 3.3.1, the majority of the study area comprises enclosed pastures, nearly all of which have received sufficient improvement to be classified as improved/semi-improved by the LCM (450 ha, 63.1% of total land area). However, this land cover type includes a wide range of grassland from rough pasture which has been improved, perhaps at some time in the quite distant past by liming and/or the application of organic manures or artificial fertilisers, and which may still contain a diverse flora and fauna, to recently reseeded and fertilised pastures and grass leys. Nevertheless, they all share the characteristic of having a high proportion of live to dead biomass compared with unimproved (rough) pasture, which is what influences their reflectance and hence their separation from rough pasture and upland grass/moor by the satellite remote sensing equipment.