Part II:Landscape Classification and Management Guidelines

5. LANDSCAPE CLASSIFICATION

INTRODUCTION

5.0.1 In this section of the report the landscape character of the Tayside Region is examined. In examining the principal influences on landscape character, and identifying the combinations of features or qualities which are critical in defining that character, a basis for future landscape planning and management is established.

SUMMARY METHODOLOGY

5.0.2 In analysing and describing the Tayside landscape, the approach recommended in the document '*Landscape Assessment: Principles and Practice*' published by the Countryside Commission for Scotland (Land Use Consultants, 1991) was broadly followed. The guidance issued by the Countryside Commission in their document '*Landscape Assessment Guidance*' (Countryside Commission, 1993) was also taken into account. The method comprised three principal stages.

(i) **Desk Study** wherein a range of information on geology, landform, land use, land cover and settlement are mapped and analysed to identify draft landscape character types and draft landscape character units which group together areas with similar attributes. The desk study stage of the assessment also included a review of other descriptions of the landscape and consultation with relevant parties.

(ii) **Field Survey** when the draft landscape types and units are tested on the ground and the character of the landscape recorded, using both written description and photographs.

(iii) **Analysis and reporting** when the desk and survey information are brought together to produce definitive descriptions of each landscape character type.

Subjective Assessment of Character

5.0.3 Landscape assessment uses a combination of objective appraisal (which records the presence or absence of particular features such as hedges or buildings) and subjective appraisal during field survey and subsequent analysis. The latter is designed to record the observer's perception of the landscape. The character of the landscape is described under a series of headings, which are explained below and are used to describe each of the landscape types in the rest of the report.

Views	Views are influenced by topographical and landcover factors. They may be **distant** where there is a large expanse of uniform foreground (e.g. heather moorland) and the focal point (e.g. mountain summits) are at some distance. Views may be **framed** where there are strong vertical and horizontal elements, such as woodland or steeply rising slopes either side of a bay. Views may be **intermittent** where the view is interrupted by landform features such as drumlins or woodland cover in the foreground or mid-ground. Views are **panoramic** where expansive, long distance views can be gained for a third or more of the field of view. Views are described as being **corridor** where they are linear in nature, for example within a valley or along a woodland ride.
Scale	Here the overall scale of the landscape must be assessed once the factors that define it have been assessed. These factors include the degree of enclosure by landform or woodland and the main positions from which the landscape is viewed. Scale increases with elevation and distance. The scale may range between **intimate** (perhaps in the vicinity of a waterfall or burn in a secluded hollow), through **small** (where a network of small fields might give the landscape a fine grain), **medium** (where the principal elements are of some size but do not overwhelm the observer) to **large** where the scale of the landscape is such as to make the observer feel dwarfed. It is not possible to place hard and fast rules on the dimensions which fall into each category.
Enclosure	Where elements are so arranged that they enclose space, this has an effect on the overall composition so that the space and mass become as one. It is also closely related to scale, due to the interaction of the height of enclosing elements and the distance between them. Enclosure may be defined as **confined** within a very small-scale landscape (e.g. within a ravine, or a clearing in dense woodland), **enclosed** where views are restricted to the immediate context (e.g., within a small to medium-sized valley), **semi-open** where the containment of the landscape is less and views to surrounding areas are more exposed (e.g.. within a shallow valley), **open** where there is little physical containment, but where features such as hedgerows, boundary trees or wall provide some sense of shelter, to **exposed** where there is no shelter and the observer feels exposed to the surrounding landscape and the weather.
Variety	This reflects the number and diversity of landscape features. On the one hand, a **complex** landscape will have very many elements (e.g. woods, fields, field boundaries, waterbodies, hills and hillocks, buildings and structures). On the other hand, a **simple** landscape will contain just one or two elements, such as heather moorland or outcrops of rock.

Texture	This varies according to scale of assessment but may be influenced by the underlying landform, the pattern of landcover and land use including size of fields, nature of boundaries and types of crop. For example, open chalk grassland may be described as **smooth**, an agricultural landscape of fields, hedges and hedgerow trees may be described as **textured**, a craggy area of heather moorland might be described as **rough** while an upland corrie or a section of cliff coast might be described as being **very rough**.
Colour	This simply records the contribution of colour in the landscape. In winter, a moorland landscape of heather and bog might be described as being **monochrome**, an area of unimproved pasture might be **muted**, an area of birch woodland **colourful** in spring and even **garish** in autumn. The assessment should take into account changes brought by different seasons and in different weather conditions.
Movement	Movement within the landscape may take a number of forms, reflecting levels of activity and land use, the physical movement of vehicles or people, or natural flows of the tides and falling water. This movement may be **remote** where it occurs on the fringes of the landscape, **vacant** where it is slight or absent altogether, **peaceful** where movement is in harmony with the character of the landscape or **active** where the movement stands out as an element in its own right.
Unity	The repetition of similar elements, balance and proportion, scale and enclosure all contribute to the sense of unity. The degree to which elements fit within their landscape context also contributes to the degree of unity. A major road through an otherwise unified landscape could result in a high degree of disunity. Degrees of unity include **unified** where the landscape shows common patterns of elements, management and use, **interrupted** where the otherwise unified landscape has been modified by moderately discordant elements such as insensitive residential development, **fragmented** where changes such as new transport infrastructure, or the decline of traditional forms of management mean that only some areas retain the historic character; or **chaotic** where unrelated landscape elements destroy any pre-existing character but fail to create a unified new landscape.
Naturalness	Naturalness reflects the apparent extent to which human activity has modified the landscape. It is usually used to describe common perceptions of the landscape. In other words, areas of semi-natural or managed landscape such as heather moorland are often described as **undisturbed**, while enclosed areas of glens may be described as **restrained** and lowland farmland described as **tamed**. Areas adversely affected by activities such as mineral working might be described as **disturbed**.

Scale of Assessment

5.0.4 It should be noted that landscape assessment can be undertaken at many different levels and that landscape types may be defined at very different scales. Whereas, at a regional scale, it may be appropriate to identify the principal Highland Glens, and to draw broad distinctions between upper, mid and lower glens, based on combinations of typical characteristics, a more detailed assessment might differentiate between river corridor, floodplain, and the lower, middle and upper valley slopes for each section of glen. It is important that assessments undertaken at a regional level are not applied at a locally specific level. The converse also applies.

ASSESSMENT HIERARCHY

5.0.5 This approach enabled the landscape to be described in a hierarchical framework which established the pattern of variation in the landscape. This framework is based upon the identification and description of Regional Character Areas. Landscape Types and Landscape Units (or Local Landscape Areas) are defined as follows:

(i) **Regional Character Areas** are recognisable as distinct landscape regions at a broad scale, based upon general characteristics such as landform, geology, soils, land use, ecological associations, historical associations and urban and industrial activity. The principal regional character areas are described later in this section.

(ii) **Landscape Types** are tracts of countryside which have a unity of character due to particular combinations of landform, landcover and a consistent and distinct pattern of constituent elements.

Differences in landscape character reflect both physical and historical or cultural influences including geology, drainage, landform, landcover and land use. Each of these landscape types has a distinct and relatively homogeneous character. There are, of course, subtle differences within each of the landscape types, some of which are referred to in the descriptions. It should be noted that the descriptions of landscape types are generalised and that the boundaries between types often indicate transitions rather than marked changes on the ground. This is particularly the case in lowland areas where changes in relief (often a major direct or indirect influence on landscape character) tend to be more subtle. The bulk of the analysis and description for this study related to landscape types. However, there is also reference, where appropriate, to landscape units (described in point (iii) below). Landscape types are usually given generic names reflecting their key characteristics (e.g. Upper Highland Glen). A given landscape type may occur in more than one regional character area, though one would expect regional factors to influence its character;

(iii) **Landscape Units** are discrete geographic areas of relatively uniform character, which fall within particular landscape types. In one regional character area, the same landscape type may occur in a number of different landscape units.

LANDSCAPE CLASSIFICATION

5.0.6 The following table sets out the hierarchy of regional character areas, landscape types and landscape units.

Table 5.1: Tayside Landscape Character Assessment: Landscape Classification

Landscape Type	Regional Character Area	Landscape Units
1 HIGHLAND GLENS		
1a) Upper Highland Glens	Mounth Highlands	Glen Mark
		Glen Lee
		Glen Effock
		West Water Valley
		Glen Clova
		Glen Prosen
		Glen Isla
		Glen Shee
		Glen Beag
		Glen Fearnach
		Glen Brerachan
		Glen Tilt
	West Highlands	Glen Garry
		Glen Quaich
		Glen Almond
1b) Mid Highland Glens	Mounth Highlands	Glen Esk
		West Water Valley
		Glen Clova
		Glen Prosen
		Glen Isla
		Glen Shee
		Strathardle
	West Highlands	Glen Errochty
		Dun Alastair

Landscape Type	Regional Character Area	Landscape Units
1b) Mid Highland Glens (continued)		Strathbraan
		Glen Lyon
		Glen Artney
1c) Lower Highland Glens	Mounth Highlands	Glen Shee
	West Highlands	Strath Tay
		Upper Strathearn
2 HIGHLAND GLENS WITH LOCHS		
2a) Upper Highland Glens with Lochs	West Highlands	Loch Ericht
		Loch Daimh
		Loch Lyon
2b) Mid Highland Glens with Lochs	West Highlands	Loch Rannoch
		Loch Tay
		Loch Earn
2c) Lower Highland Glens with Lochs	West Highlands	Loch Tummel
3 HIGHLAND SUMMITS AND PLATEAUX	West Highlands	Ben Vorlich and the Forest of Glenartney
		Ben Chonzie/Sròn Mhór/Meall nam Fuaran and Craigvinean Forest
		Ben Lawers and Beinn Heasgarnich Group
		Carn Gorm/Schiehallion Group
		Meall Tairneachan Group
		Talla Bheith and Craiganour Forest

Landscape Type	Regional Character Area	Landscape Units
3 HIGHLAND SUMMITS AND PLATEAUX (continued)	Mounth Highlands	Forest of Atholl
		Forest of Clunie
		Forest of Alyth
		Caenlochan Forest/Glen Doll Forest
		Muckle Cairn/Hill of Glansie/Hill of Wirren
		Hills of Saughs/Mount Battock
4 PLATEAU MOOR	West Highlands	Rannoch Moor
5 HIGHLAND FOOTHILLS	Mounth Highlands	Clunie Foothills
		Alyth Foothills
		Kirriemuir Foothills
		Menmuir Foothills
		Edzell Foothills
6 LOWLAND HILLS	Tayside Lowlands	Gask Ridge
		Keillour Ridge
		Logie Almond/ Bankfoot Plateau
7 LOWLAND RIVER CORRIDOR	Tayside Lowlands	Strath Tay
		Glen Almond
8 IGNEOUS HILLS	Tayside Lowlands	Sidlaws
		Ochils
9 DOLERITE HILLS	Tayside Lowlands	Lomond Hills
		Benarty Hill
		Cleish Hills

Landscape Type	Regional Character Area	Landscape Units
10 BROAD, VALLEY LOWLAND	Tayside Lowlands	Strathmore
		Strathearn
		Strathallan
11 FIRTH LOWLANDS		Braes of Gowrie
12 LOW MOORLAND HILLS	Tayside Lowlands	Forfar Hills
13 DIPSLOPE FARMLAND	Tayside Lowlands	SE Angus lowland
14 COAST		
14a) Coast with Sand	Tayside Lowlands	Barry Links
		Elliot
		Lunan Bay
		Montrose
14b) Coast with Cliffs	Tayside Lowlands	Carnoustie
		Auchmithie
		Usan
15 LOWLAND BASINS	Tayside Lowlands	Loch Leven Basin
		Montrose Basin

REGIONAL CHARACTER AREAS

5.0.7 As noted above, regional character areas are recognisable as distinct landscape regions at a national scale as result of the distinctive combinations of geology, landform, drainage, landcover, historical and ecological influences and settlement. Chapter 3 of this report demonstrated the key influence of geology within Tayside. The Highland Fault runs south-west to north-east across the region, marking a rapid transition from the Highlands, to the north-west, and lowlands to the south-east. This physiographic division has had a fundamental influence on landscape character reflected in contrasting patterns of landcover, land use, communication and culture.

5.0.8 The area to the north and west of the Highland Fault, often described simply as the Grampian Mountains, may be further divided, reflecting important differences between the Highlands to the west and east of Glen Garry and Drumochter. To the west lies the central mountain ridge that extends northwards from Ben Lomond to Ben Hope in

Sutherland. To the east lies the mountain chain extending from Drumochter eastwards along the southern side of the Dee valley, diminishing in size as it approaches the North Sea near Aberdeen. Historically, this area of highland has been referred to as the Mounth.

5.0.9 These three regional character areas - the Tayside Lowlands, the West Highlands and the Mounth - are described in the following paragraphs.

Tayside Lowlands

5.0.10 This regional character area covers all of the south-eastern part of the Tayside region. Its geology is dominated by a combination of Old Red Sandstone and volcanic lavas and tuffs. The former rocks are comparatively soft and were subject to erosion during periods of glaciation creating the lowland valleys of Strathmore, Strathearn and Strathallan, and the Firth of Tay, together with the distinctive basin of Loch Leven. The harder lavas and tuffs were more resistant to erosion, resulting in their survival as the Ochil and Sidlaw Hills. Although rising to 500 metres in places, these hills attain neither the scale nor the appearance of upland areas to the north of the Highland Boundary Fault. At a local level, glacial deposition, modified by fluvial and marine erosion, has an important influence on landform, land use and character throughout much of this regional character area. Eskers, kames, kettle holes and dry meltwater channels occur throughout the area.

5.0.11 The Tayside Lowlands are among the most fertile areas in Scotland, with much of the land falling into Land Capability Classes 2 and 3(1), meaning that it is suited to a wide range of crops including cereals, ley grassland and root crops such as potatoes. Consequently, much of the area is in intensive agricultural use and many of towns and villages provide markets for farm produce or provide processing, machinery or distribution services to farming enterprises. Extensive woodland is rare in this area, reflecting the importance of land for agriculture. Exceptions include the less fertile and more exposed areas on higher ground.

5.0.12 The Tayside Lowlands also share a distinctive history of settlement. The area represents the northern fringe of Roman occupation, and, as reflected in the pattern of place names, formed the boundary between the more anglicised parts of Scotland to the south, and Celtic areas to the north and west. Furthermore, the productivity of the area, its relative proximity to Stirling and Edinburgh, and its location at the junction of key communication routes (the Edinburgh to Inverness road and the Glasgow to Aberdeen road) are reflected in the large number of wealthy landed estates. The formal and informal woodland, together with the associated structure of field boundary trees has a significant influence on the character of the area. The contrast between the richness of the Tayside Lowlands and the poorness of neighbouring Highland areas generated considerable conflict over the centuries as bands of cattle thieves from the Highland glens plundered the lowland. The density of hill-forts, medieval castles and fortified manor houses reflects this turbulent history.

The West Highlands

5.0.13 The West Highlands form the north-western part of Tayside, bounded to the south by the Highland Boundary Fault between Glen Artney and Strath Tay near Dunkeld, and to the east by Drumochter-Glen Garry- Strath Tummel and Strath Tay. Geologically, the area

has a structure similar to the Mounth Highlands to the east, dominated by the grits and schists of the Dalradian and Moine groups and outcrops of limestone. However, the pattern of faulting and ice movements have contributed to different patterns of glacial and fluvial erosion, and a different landscape has resulted. Glens tend to follow west to east fault lines, and are larger than the Angus Glens to the east. Several of the West Highland glens contain large lochs. Furthermore, the higher rates of precipitation in the western part of the region, caused a more rapid accumulation and movement of ice during periods of glaciation, resulting in the mountains gaining a sharper, craggier relief. The area was also more heavily dissected prior to the Ice Age and this was accentuated by glaciation.

5.0.14 Historically, settlement was influenced by the concentration of cultivable land within the principal glens, and by the existence of three major communication routes through the West Highlands towards the Atlantic coast. The first of these routes enters the Highlands at Comrie passes along the northern side of Loch Earn through Lochearnhead to Glen Ogle and beyond. The second route follows the Tay westwards to Aberfeldy and along Loch Tay. The third climbs past Loch Tummel and passes through Kinloch Rannoch to Rannoch Moor. The landscape is further influenced by the parklands and policy planting associated with the large houses and estates that occupy the lower sections of several glens. Examples include Blair Castle, Dunkeld House and Taymouth Castle. Large parts of the valley sides are clothed in coniferous woodland, while the expanses of highland between are under heather or grass shrub heath.

The Mounth Highlands

5.0.15 As noted above, the Mounth Highlands form a mountainous ridge extending eastwards from the West Highlands. The mountains form the north-eastern part of Tayside running from Drumochter-Glen Garry-Strath Tummel-Strath Tay eastwards to the Forest of Birse. The southern edge of the area is defined by the Highland Boundary Fault between Strath Tay near Dunkeld to Edzell in the east. Although dominated by the grits and schists of the Dalradian and Moine groups, there are also significant areas of granite (for example Ben Dearg) and areas of limestone. The landform has been substantially modified by glaciation, creating distinctive glaciated valleys and resulting in deposition of moraines within the glens. The lower accumulation of snow and ice in the drier Mounth, together with the preglacial landform, are reflected in the mountains having a more rounded and less craggy relief than those to the west. Along the Highland Fault the incidence of a range of different rock types, including volcanic lavas and tuffs, are reflected in the dissected pattern of hills and intervening glens which form the Highland foothills.

5.0.16 In contrast to the West Highlands, the glens along the southern side of the Mounth run from north-west to south-east, reflecting the natural fall of the land from the watershed. The glens tend to be smaller in scale, and shorter, with few providing modern routes through towards the Dee valley. Historically, however, many of the glens would have formed communication routes through the Mounth. The proliferation of castles and fortified houses at strategic points within the glens and at their mouths, reflected the need to control the movement of people and stock. Following the Highland Clearances, much of the Mounth was given over to deer hunting, a use indicated by the word 'forest' in the names of many of the upland areas. Commercial forestry has developed as an important

land use in the middle and lower parts of the glens. The uplands themselves remain as expanses of dwarf heather moorland.

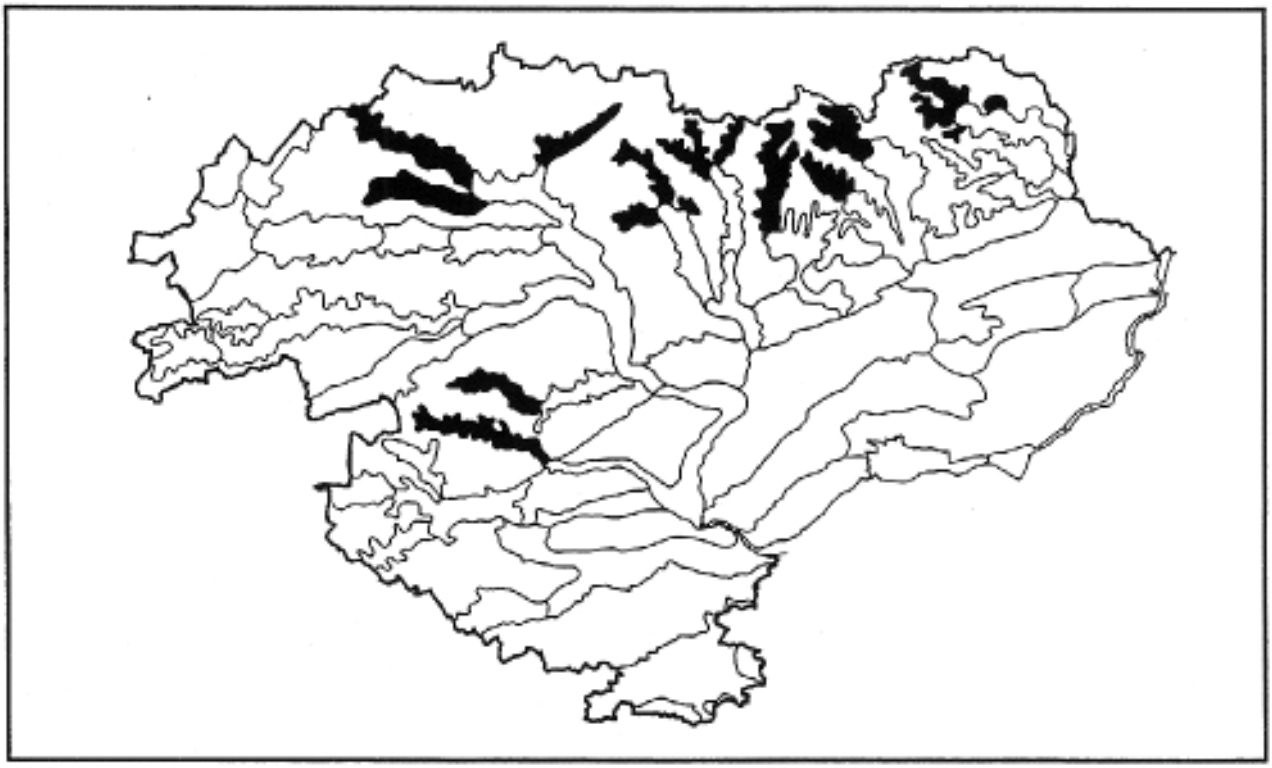
LANDSCAPE TYPE DESCRIPTIONS

5.0.17 The following sections of the report provide generalised descriptions of each of the landscape types identified by the landscape assessment. Reference is also made to the landscape units where these types occur. Where appropriate the variations in landscape character brought about by different regional character areas are described.

HIGHLAND GLENS (1)

5.1.1 Within that part of Tayside to the north of the Highland Boundary Fault, glens formed by the combination of glacial and river erosion provide one of the principal structural elements in the landscape. They also provide the focus for most human activity. In undertaking the landscape assessment, a distinction has been made between the upper, mid and lower sections of the glens. These are described below. It should be noted that those glens containing large lochs are described as a separate landscape type.

UPPER HIGHLAND GLENS (1A)



KEY CHARACTERISTICS

- *uppermost sections of principal Highland glens*
- *narrow*
- *dominated by the scale and proximity of enclosing mountains*
- *classic glaciated landforms and features*
- *sparse settlement and woodland cover*
- *upland, remote character*
- *in some areas the character has been weakened by recent development*

OBJECTIVE DESCRIPTION		Upper Highland Glens
Physical scale		1.5 kilometres wide at valley crest Valley floor 200-250 metres AOD Valley sides rise to 600-900 metres AOD
Woodland	broad-leaf	Virtually absent
	coniferous	Geometric plantations on valley floor and mid slopes, more natural shapes on upper slopes
Agriculture	arable	Absent
	pasture	Rough grazing on valley floor and slopes
	fields	Little or no enclosure
	field boundaries	Where they occur either dry-stone walls or post-and-wire fences
Settlement pattern		Predominantly unsettled. Scatter of isolated farms, lodges and cottages.
Building materials		Schists and granites with slate
Historic features		Castles, old routeways
Natural heritage features		Upland vegetation
Other landscape features		Rock outcrops, glacial features, hydro schemes
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium
Enclosure		Enclosed
Variety		Simple
Texture		Rough to very rough
Colour		Muted to monochrome
Movement		Remote
Unity		Unified/interrupted
'Naturalness'		Wild/slightly tamed

LOCATION

5.1.2 This landscape type comprises the uppermost sections of the most significant Highland Glens. They are distinct from the mid and lower sections of the valleys by their narrowness, the height and dominance of neighbouring mountains, the sparsity of settlement and the lack of enclosed or improved pastures on either the lower slopes or the valley floor. Within the Mounth Highlands, this landscape type occurs in Glen Mark, Glen Lee and Glen Effock (at the head of Glen Esk), the valley of the West Water, Glen Clova, Glen Prosen, Glen Isla, Glen Shee and Glen Beag (at the head of Glen Shee) and Glen Tilt. Within the West Highland mountains, it occurs at Drumochter Pass, and in Glens Quaich and Almond. In addition, there are many smaller glens within the Highlands which exhibit these characteristics, but equally form part of the upland landscape. These have not been identified separately.

PHYSICAL CHARACTERISTICS

5.1.3 While the glens in the West Highlands pass through Dalradian and Moinian grits and schists, within the Mounth the upper glens encounter a variety of different rock types including granites, limestones, quartzite and intrusive diorite. While these have local influences on topography (for instance forming the crags and scree slopes around Glen Doll, designated as an SSSI), it is glaciation that has had the most profound effect on this landscape type. Classic glaciated valley profiles, hanging valleys, corries and misfit rivers are all evident in these upper glens.

5.1.4 The upper glens are of comparatively small scale. With little or no floodplain, the valley sides rise steeply so that the glen as a whole is little more than 1 to 1.5 kilometres wide at the crest of enclosing hills. While valley floors are typically between 200 and 250 metres AOD, the enclosing mountains rise to between 600 and 900 metres. In the east, these summits are generally rounded. In the west they are craggier and more clearly defined. In both areas it is the mountains and the upland character that extends throughout the glen, that shapes perceptions and appreciation of the landscape.

5.1.5 These areas of upper glen are often of nature conservation importance, supporting a combination of moorland and lowland plant communities and fauna. The Dalradian limestone underlying Glen Tilt makes this of particular significance, supporting diverse calcareous and montane plant communities, and rare breeding birds. It is also of geological significance.

SETTLEMENT AND LAND USE

5.1.6 It is likely that, even before the Highland Clearances, the harsh environment of these upper glens would have discouraged settlement. However, many of the glens formed important routes through the highlands, particularly in the Mounth and, as a result, defensive castles (often northern outposts of larger castles or estates located in lower parts of the glen) were sited at strategic locations to control movements from the north. A good example is Invermark Castle, sited at the head of Glen Esk where three side valleys come together. A number of the old trackways through the Mounth survive as bridleways. In later centuries, these remote upland glens became popular for deer hunting and a significant number of large lodges were established.

5.1.7 Few areas of native woodland are found in the upper sections of the Highland Glens. More common are the areas of coniferous woodland established during this century by the Forestry Commission or major landowners. Within the Mounth, large plantations are found in the upper parts of Glen Clova and Glen Prosen. While conifer woods do not look out of place where they adopt 'natural' or organic shapes on the valley sides, the planting is less satisfactory where geometric shapes are imposed on the natural curves of the glaciated landform, or where plantations are established on the valley floor. The coniferous woodland around Glen Doll provides a range of examples. It is recognised that since these plantations were established, the Forestry Commission's approach to planting has changed substantially; however, as is inevitable in forestry, previous approaches endure over long periods.

5.1.8 The upper glens are at the same time accessible and remote. Roads along most of the glens provide access into the heart of the Highlands. Although sheltered within the confines of the valley, the dominance of the mountains and the undifferentiated nature of the vegetation across the glen give the landscape a distinctly upland character. Light and weather conditions can quickly reinforce this impression.

FORCES FOR CHANGE

5.1.9 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development. Although these areas have seen considerable change over past centuries as native woodland was cleared and the population removed, the upland glens retain a wild, untouched character. With little in the way of tree cover, views can be extensive within the glen and any development can intrude on this character.

5.1.10 **Transport.** For the most part, the Upper Highland Glens either have no roads at all or are served by minor roads, often ending in cul de sacs. Although visible in the open landscape, these roads tend to sit relatively easily in the landscape, following natural contours along the floor of the glen. It is important that the diminutive and low-key appearance of these roads is maintained and that minor improvements and signage do not compound to give an overly 'urban' effect. The principal exceptions to the above pattern are found in Glen Garry, where the A9 crosses the Drumochter Pass and Glen Beag (north of Glen Shee) where the valley is occupied by the A93. The A9 is a nationally important route which carries a substantial volume of heavy traffic. In the case of the A93, the two lane road is very visible at it climbs up towards the Cairnwell. In its lower sections the road follows the natural landform. Further up, comparatively recent improvements have created a road with a more even gradient, running up the hillside on a distinctive shelf. The remains of the old 'military road' are visible in the glen below. A programme of improvements along the A93 from Blairgowrie to the Cairnwell is planned. This is likely to increase the prominence of the road, particularly in its more exposed, upper sections. The effect of these roads, their traffic, and the development they have

stimulated, demonstrates how easily the remote character of the Upper Glens can be changed.

5.1.11. **Development.** A lack of settlement is an important feature of these Upper Glens. For the most part, development is limited to a scatter of lonely cottages and lodges. Again, the exception to this is Glen Beag where comparatively good road access, possibly allied to the proximity to the Spittal of Glenshee and the ski area, has stimulated the recent development of a number of isolated houses. The houses stand prominently in the open glen and contribute to a weakening of its seemingly harsh upland character.

5.1.12. **Forestry and woodland**. As noted above, the Upper Highland Glens include several areas of coniferous woodland. In most cases, the plantations have been established to supply commercial timber. In others, the aim has been to provide shelter for game or livestock. The scale and form of the woodland varies accordingly. Commercial plantations tend to be larger in scale, occupying areas of the valley floor and the valley sides. Shelter plantations are smaller and often geometric in appearance. Perhaps the greatest range of plantation types may be found in Glen Clova/Doll where visually intrusive plantations on the valley floor, and in the form of small coverts, sit alongside more naturalistic forms on the valley sides. It is probably true to say that much of the commercial woodland that can be found in the Upper Highland Glens, if established today, would be planted very differently, if at all. Harvesting of this woodland provides an opportunity to review the best locations and designs for replanting. This is considered further within the management guidelines.

5.1.13 It is probable that, without management to favour deer and grouse, native woodland would regenerate on many of the valley slopes. This would form a transition from sparse birch and pine woods, through dwarf woodland to the open vegetation of the highland summits and plateaux.

5.1.14 **Recreation.** Many of the Upper Highland Glens are remote and seldom visited except by a comparatively small number of walkers and climbers. There are two principal exceptions to this rule - Glen Doll at the head of Glen Clova, and Glen Beag. Glen Doll is a popular walking and climbing centre with a Youth Hostel, car park, toilets, campsite and picnic site and a mountain rescue post. The facilities have been designed and implemented in a comparatively low-key way, focusing on the re-use of Glen Doll Lodge. While it would be sensible to accommodate any further growth in walking/climbing within Glen Doll, rather than encouraging wider use of the other, quieter, glens, the scale of development should not be allowed to undermine the essential character of this upland area.

5.1.15 At the head of Glen Beag lies the Cairnwell and the Glen Shee ski area. Although all the ski-runs are concentrated to the north of the Tayside boundary, some of the chairlifts can be seen on the ski-line from some way down the glen. Future expansion of the ski area may bring pressure to provide new runs on the southern side of the mountain watershed, bringing them into Tayside for the first time. The provision of new parking and uplift facilities could substantially modify the local landscape around the Devil's Elbow area. While, from a landscape point of view, it would be preferable to concentrate activity to the north, and to prevent the development spilling south to affect Glen Beag, the existing developed character of the glen (relative to other Upper Highland Glens), and the topographic screening provided by the turn in the glen, may reduce the significance of

the impact. However, due to the sensitivity of the highland landscape, and the possibility that elements of the scheme would be visible over a considerable distance within this open landscape, a full visual impact assessment should be undertaken at the design stage.

5.1.16 **Tall structures.** The Upper Highland Glens are largely free from tall structures such as pylons and masts. An exception, mentioned previously, is the pylons associated with the lifts at the Glen Shee ski area. This landscape type would be very sensitive to any proposals for tall structures, be they pylons, masts or wind turbines, and be they within the glen itself or visible from within it. Such structures would undermine the wild, seemingly undeveloped character of the landscape.

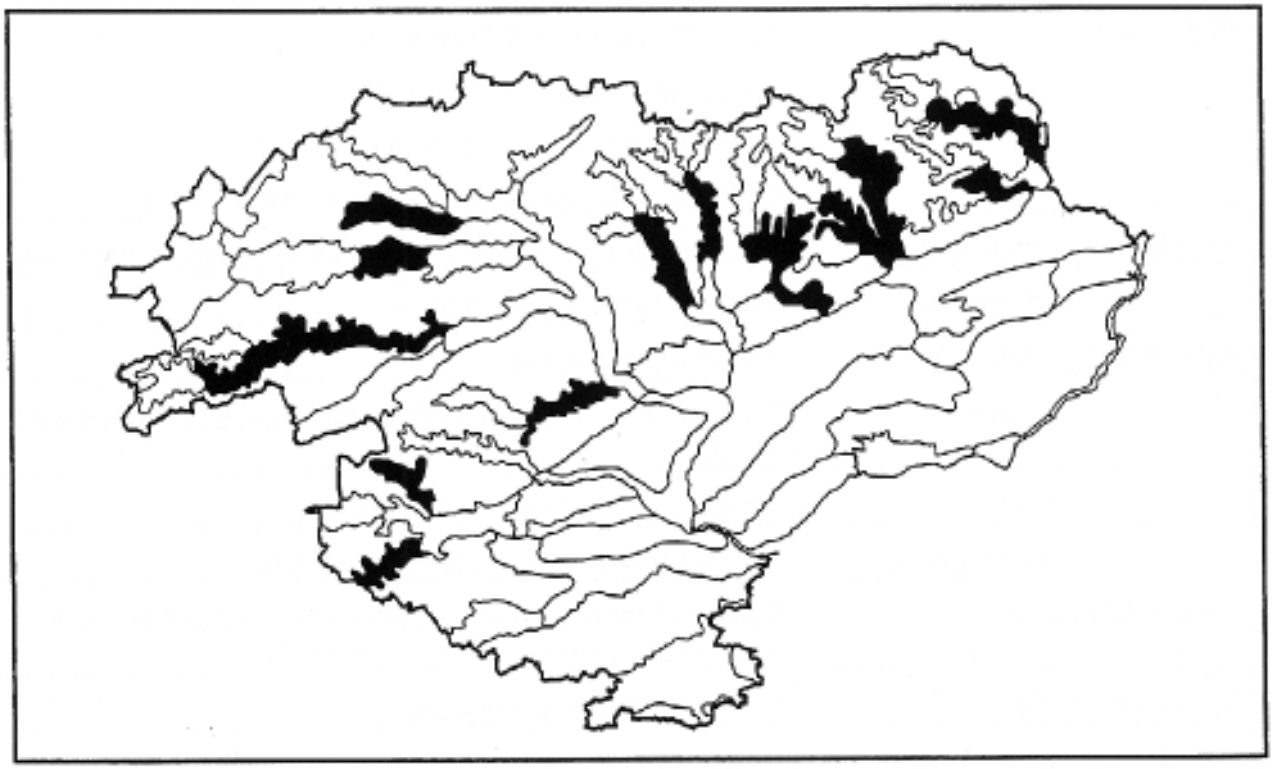
LANDSCAPE GUIDELINES

5.1.17 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the characteristic upland landscape with its open, predominantly unsettled moorland vegetation and to maintain the contrast with the more settled lowland sections of the glens.

Agriculture	• Encourage the conservation of dry-stone dykes in local stone with an emphasis on roadside walls and others in highly visible areas.
Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, road paint or features such as concrete kerbing.
Development	• Discourage development in the Upper Highland Glens. • Where development is permitted, ensure that buildings are located so as to minimise their impact on the landscape (utilising any natural screening provided by the landform) and that they adopt vernacular styles, building materials and colours.
Forestry and woodland	• Encourage good landscape design and appropriate scale for any new woodland areas. • Encourage the removal of small, geometric plantations, allowing equal increases in planting in more appropriate locations elsewhere. • Support the removal of poorly designed plantations on the floor of glens.

(Forestry and Woodland contd.)	• With respect to the replanting of existing plantations on valley slopes: - encourage the rationalisation of woodland to avoid isolated, small- to medium-sized areas of plantation woodland which appear very prominent in an otherwise open landscape; - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes. • Explore opportunities to modify management practices to allow the regeneration of native woodlands on some valley slopes, to create the 'natural' transition from valley woodland, through dwarf alpine woodland to the vegetation of the highland summits and plateaux.
Recreation	• Focus recreation activities at existing centres. • Maintain low-key level of provision. • Ensure that proposals for expansion of facilities are subject to rigorous visual impact assessment adopting, for example, the approach set out in the guidance published by the Landscape Institute and the Institute of Environmental Assessment (1995). • Expansion of ski-facilities into this landscape type should only be permitted if it is clear that: - the visual and landscape impact is limited; - there is no scope to accommodate expansion to the north; - the economic need for the scheme is demonstrated. • Indirect effects including traffic and the proliferation of related facilities (ski-hire shops) should also be taken into account.
Tall structures	• Discourage proposals for aerials, masts or wind turbines because of their likely impact on the harsh, undeveloped character of the Upper Highland Glens. • Ensure that any proposals are subject to rigorous landscape impact assessment. • Where new power or telephone lines are proposed or required, ensure that operators adopt underground cable solutions.

MID HIGHLAND GLENS (1B)



KEY CHARACTERISTICS

- *middle sections of the principal Highland Glens*
- *concentration of agricultural activity on narrow, but distinct valley floor*
- *predominance of rough grazing, bracken, heather moorland on valley slopes*
- *rapids, gorges and waterfalls where bands of harder rocks occur*
- *glacial and post glacial features including morainic deposition*
- *native birch and oak woodland*
- *moderately settled*
- *proliferation of forts and castles*
- *substantial areas of commercial coniferous forestry*

OBJECTIVE DESCRIPTION		Mid Highland Glens
Physical scale		0.5 to 1 kilometre wide floodplain Valley floor 100-200 metres AOD Valley sides rise to 300-600 metres AOD Gorges and falls where harder rocks cross the glen
Woodland	broad-leaf	Native birch and oak woodland on steeper and poorer ground
	coniferous	Substantial areas of plantation
Agriculture	arable	Almost entirely absent
	pasture	Improved pasture on valley floor, rough pasture on lower/mid slopes
	fields	Small, irregular, reflecting landform
	field boundaries	Dry-stone dykes and post-and-wire fences
Settlement pattern		Scatter of farmsteads and small villages, located to avoid flooding and to maximise shelter/sunlight.
Building materials		Schists and granite with slates
Historic features		Castles, old farmsteads
Natural heritage features		Native woodlands, gorge vegetation
Other landscape features		Waterfalls, glacial deposition features
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium to small
Enclosure		Enclosed
Variety		Varied
Texture		Textured to rough
Colour		Colourful
Movement		Peaceful
Unity		Unified
'Naturalness'		Restrained

LOCATION

5.1.18 This landscape type comprises the middle sections of the most significant Highland Glens. These sections of glen are distinguished by the concentration of agricultural activity on the narrow valley floor, and the predominance of rough grazing, bracken and heather moorland on the valley slopes. Within the Mounth Highlands, this landscape type occurs in Glen Esk, the valley of the West Water, Glen Clova, Glen Prosen, Glen Isla, Glen Shee, Strathardle and Glen Tilt. Within the West Highland Mountains, it occurs at Glen Errochty, Dun Alastair (between Lochs Rannoch and Tummel), Strathbraan, Glen Lyon and Glen Artney.

PHYSICAL CHARACTERISTICS

5.1.19 While the Mid Glens pass through Dalradian and Moinian grits and schists, they also encounter a variety of different rock types including granites, limestones, quartzite and intrusive diorite. Where bands of harder rock cross the glen the valley often narrows to a gorge and the river tumbles over a series of waterfalls. One of the best examples of this is found at Linn in Glen Isla, a narrow gorge 120 feet in depth. In just a short distance, the river descends some 80 feet. A similar gorge is found above Fortingall as the River Lyon descends to join the Tay. However, as with the upper glens, it is glaciation that has had the most profound effect on this landscape type. Classic glaciated valley profiles, hanging valleys, corries and misfit rivers are all evident in these sections of glens. Equally significant, particularly at the local scale, are the glacial deposits found along the valley sides and across the valley floor. Formed as the retreating glaciers dropped their load of scoured rock and soil, and modified by temporary meltwater channels, these deposits often create a hummocky landscape of drumlins and eskers. Misfit rivers meandering across the floodplains cut through the deposits, creating incised meanders.

5.1.20 While the surrounding mountains still have an influence on the mid sections of the glens, they are more open than their upper sections. There is now a well-defined valley floor ranging between 0.5 and 1 kilometres in width. In places, the river has cut a steep-sided inner valley, often cutting down into the glacial deposits (sometimes in response to the general uplift of the Highlands following the melting of glaciers and icesheets). Valley floors are typically between 100 and 200 metres AOD and the enclosing valley slopes rise more gently to between 300 and 600 metres. As before, these summits are generally rounded in the east and craggier and more clearly defined in the west. Within the West Highlands, the northern valley slopes (effectively dipslopes) tend to be gentler than those to the south (eroded escarpments).

5.1.21 Many of the Mid Glens are ecologically important, containing stands of native oak and birch woodland on steeper valley slopes and on poorer land on the valley floor. Much of this is semi-natural and long-established, and active management to exclude grazing is required to encourage regeneration. In places (e.g. near Gallin in Glen Lyon) sparse remnants of Caledonian pine woodland survive. More extensive are the native birchwoods that are found within Glens Prosen and Esk. Much of this is now over-mature and is not regenerating due to high levels of grazing. In addition, policy woodland is found in Glen Clova. Within the deeper gorges the cool, damp and shady conditions favour mosses, liverworts and some rare higher plants and invertebrate species. The upper valley slopes generally comprise a mosaic of heather moorland and grassland

which, together with rock outcrops and scree slopes, creates a textured and varied landcover.

SETTLEMENT AND LAND USE

5.1.22 The mid sections of the glens are more settled than the upland sections. Stone farmsteads, often whitewashed with slate roofs, are sited in the lee of spurs or small hillocks, or are associated with small farm woodlands. Solitary cottages are found throughout the Mid Glens. Fields are generally enclosed within networks of stone dykes, supplemented by post-and-wire fencing. Abandoned enclosures on the valley slopes are surrounded by crumbling walls and have been invaded by bracken and rough grassland. Improved pasture, ley grassland even arable crops are found on flatter fields and along the floor of the glen. Within the West Highland glens, settlement and farmland is often concentrated on the northern side of the valley, benefiting from a southern aspect and gentler slopes. Periods of clan warfare are once again reflected in a proliferation of castles and forts. Near Cashlie there are the remains of the ancient forts of Glen Lyon, while further down the glen, Meggernie Castle stands as an important hunting lodge. Modern development is scarce, limited to a handful of hydroelectric schemes and their associated pylons.

5.1.23 In addition to the semi-natural birch and oak woodland which makes a significant contribution to the landscape character, a substantial amount of commercial woodland is found within the Mid Glens. In many cases coniferous species have been mixed, integrated with surrounding broad-leaf woodland and designed to fit with the natural flow of the landscape. A good example is found along the southern slopes of Glen Errochty where larch, sitka and other species are mixed, creating a more natural, mottled appearance, and where broadleaves along field boundaries and burns push up into the plantations. These woodlands do need to be seen in the wider context however. Even in Glen Errochty there is an imbalance created by the concentration of woodland on the southern slopes and the retention of pastures and open moorland on the northern slopes. Older plantations are generally less well-integrated into the landscape, often comprising geometric blocks apparently unrelated to landform. Within some of the larger valleys, such as Glen Lyon, the presence of estates is signalled by policy woodlands and by the regular lines of trees along field boundaries.

5.1.24 These sections of the West Highlands and Mounth glens provide a transition between the upper and lower parts of the valleys. The presence of the mountains is still the dominant influence on landscape character and it is only on the narrow valley floor that agriculture has been able to bring the land into productive use. Despite the size of the mountains, the narrowness of the glens means that these are relatively small-scale landscapes. Settlement has generally taken the form of a scatter of buildings constructed from local materials. More substantial development, such as pylons, are very evident.

FORCES FOR CHANGE

5.1.25 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis

provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.1.26 **Agriculture.** As described above, most agricultural activity in the Mid Highland Glens is concentrated on the valley floor. In a few places the level ground created by valley terraces or morainic deposits also provides suitable land. For the most part, however, the valley sides are dominated by rough grazing, grading into craggy heather or grass moorland. Pastures dominate, with a variety of livestock grazed on the floor of the glen. In a few places, typically on higher, better drained and sunnier land along the northern side of the glen, root crops or other vegetables are grown. Where this occurs, the bright green leaves of the crop, or the brown of the tilled soil, contrasts with the more subdued browns and greens in other parts of the glen. In other places, the quality of pasture in the glens has been improved by the provision of drainage, reseeding and the application of fertilisers. Again, this creates an intensity of green which appears out of place in this semi-upland landscape.

5.1.27 **Transport.** For the most part, the middle parts of the highland glens are served by minor roads. These generally sit easily in the landscape, following natural contours along the floor of the glen, winding their way between drumlins and marking the boundary between the rough valley sides and the grazed floor of the glen. As in the upper glens, it is important that the diminutive and low-key appearance of these roads is maintained and that minor improvements and signage do not compound to give an overly 'urban' effect. Several glens, notably Glen Shee, Strathardle and Strathraan, contain main roads, bringing with them larger volumes of traffic and a greater amount of development.

5.1.28 **Development.** With significantly more farmsteads, cottages and houses than the upper highland glens, this landscape type is still comparatively sparsely settled. As noted above, older buildings tend to be sited so as to maximise shelter and sunlight. More recent buildings seem to be located more with access to the road in mind. Shelter and (to a degree) screening is often provided by conifers planted around the boundary of the property. In an otherwise open landscape, the screening itself draws attention to the building. While older buildings often share a vernacular of stone walls (sometimes whitewashed) and slate roofs, newer buildings adopt more ubiquitous designs and materials which hinder their integration into the landscape still further. A more effective approach would be to encourage new development to consolidate existing villages, hamlets or even groups of farm buildings, adopting designs which respond to their setting. There may also be some scope for the sensitive conversion of traditional farm buildings.

5.1.29 **Forestry and woodland.** The Mid Highland Glens exhibit a pattern of commercial forestry that is similar to that of the upper parts of the glens. Commercial plantations tend to be large in scale, occupying areas of the valley sides. Shelter plantations and coverts are smaller and often geometric in appearance. Many of the plantations were established following very different planting principles to those employed today. In places this has resulted in geometric blocks of even-aged, single-species woodland which appear as impositions upon the natural form of the landscape. Harvesting of this woodland provides an opportunity to review the best locations and designs for replanting. This is considered further within the management guidelines. It is also true to say, however, that well-designed commercial woodland in the middle parts of the highland glens is significantly less intrusive than in the upper sections. In part this reflects the

larger scale and more open character of the landscape (wider glens with lower hills) and the greater extent of human settlement and land use. There may be additional scope for commercial woodland in these glens, particularly in the lower, more wooded, sections.

5.1.30 The Mid Highland Glens are also characterised by areas of native birch woodland, concentrated particularly on steeper valley slopes and on less productive areas of drumlins. The birch woods have had a varied history with periods of regeneration and expansion (typically during wartime periods when grazing declined), followed by decline and even dereliction. Many of the woods that survive today are in a very poor condition, overmature and unable to regenerate due to the level of grazing within or around them. There is an urgent need to facilitate the regeneration of these woodlands, an aim which is being pursued by the Tayside Native Woodlands Initiative.

5.1.31 Moving beyond the survival of these woods, there is an opportunity to allow their expansion and growth through the glens and up the valley slopes so as to re-create the more natural patterns of woodland that would have characterised the glens before intensive management for deer and grouse dominated. Better management of the birch woodland could result in the creation of a marketable crop of high quality timber.

5.1.32 **Recreation.** Other than fairly low-key, informal recreation, there are few pressures within these middle sections of glen.

5.1.33 **Tall structures.** The Mid Highland Glens are largely free from tall structures such as pylons and masts. Although better able to absorb development than the simpler and smaller upper glens, this landscape type would be quite sensitive to any proposals for tall structures, be they pylons, masts or wind turbines, either within the glen itself or visible from within it.

LANDSCAPE GUIDELINES

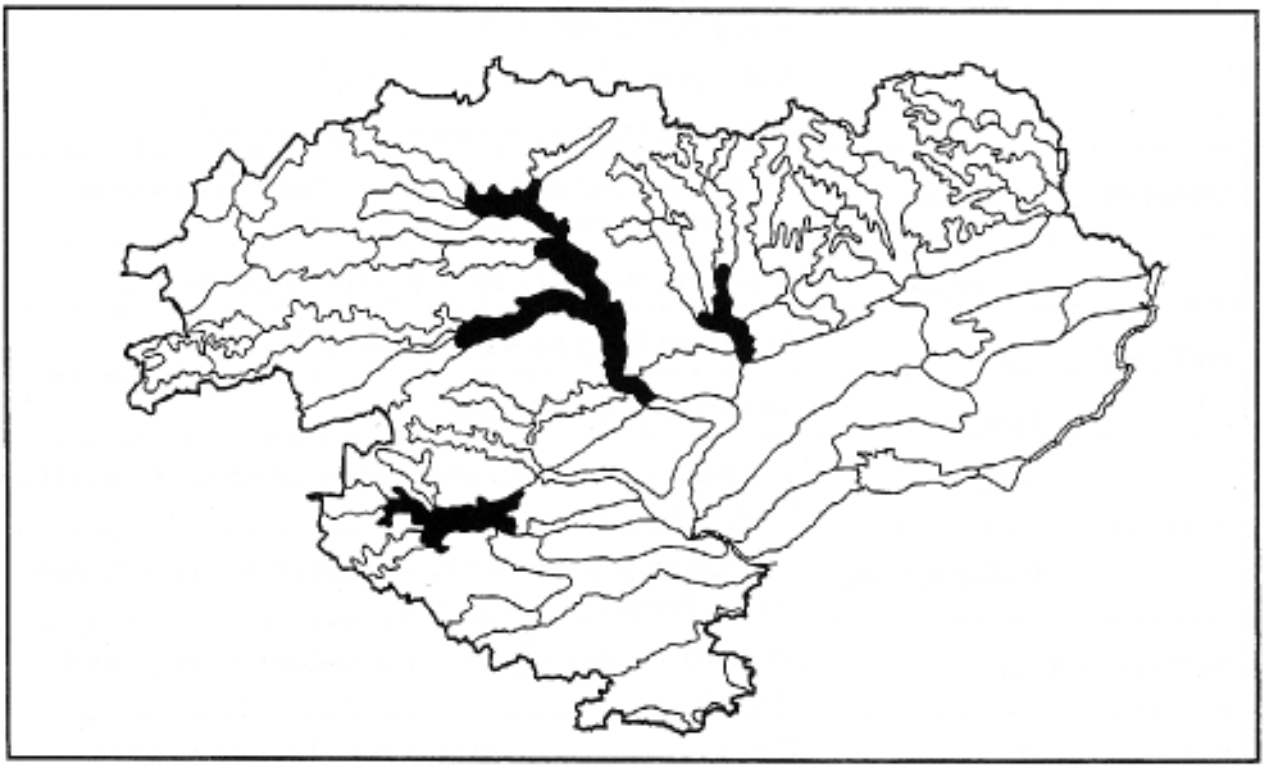
5.1.34 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the characteristically lightly settled landscape with agriculture on the valley floor enclosed by moorland-covered valley slopes. These areas provide a transition from the simple landscape of the upper glens to the richer lower sections - this role should be respected.

Agriculture	• Discourage further improvement of pastures and expansion of cultivation within the Mid Glens. • Encourage the conservation of dry-stone dykes in local stone with an emphasis on roadside walls and others in highly visible areas. • Use the agricultural development notification scheme to influence the design, colour, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to provide screening where appropriate.

Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, road paint or features such as concrete kerbing.
Development	• Discourage isolated developments in the open landscape. • Where development is permitted, encourage construction to consolidate existing villages, hamlets or groups of farm buildings, and favour sheltered locations. • Do not rely on screening where the screening itself becomes a prominent landscape feature. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles.
Forestry and woodland	• Support the removal of poorly designed plantations where they occur on the floor of glens. • With respect to the replanting of existing plantations on valley slopes: - encourage the rationalisation of woodland to avoid isolated, small to medium sized areas of plantation woodland which appear very prominent in an otherwise open landscape; - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes. • Manage grazing levels in and around birch woodland to allow regeneration and expansion. • Explore opportunities to modify management practices to allow the regeneration of native woodlands on some valley slopes, to create the 'natural' transition from valley woodland, through dwarf alpine woodland to the vegetation of the highland summits and plateaux.
Recreation	• Maintain low level of formal provision for recreation.

Tall structures	• Discourage proposals for aerials, masts or wind turbines because of their likely impact. • Ensure that any proposals are subject to thorough landscape impact assessment. • Where new power or telephone lines are proposed or required, encourage operators to adopt underground cable solutions.

LOWER HIGHLAND GLENS (1C)



KEY CHARACTERISTICS

- *lower sections of the principal Highland glens*
- *comparatively large-scale landscapes*
- *combinations of upland and lowland attributes*
- *broad floodplains, often with meandering rivers, interspersed with narrower, gorge-like sections where harder rocks cross the glens*
- *the most settled parts of the glens*
- *farmland on valley floor and slopes*
- *substantial and varied woodland cover*
- *influence of large estates, castles and Victorian development*

OBJECTIVE DESCRIPTION		Lower Highland Glens
Physical scale		0.5 to 1 kilometre wide floodplain Valley floor 50-200 metres AOD Valley sides rise to 500 metres AOD Gorges and falls where harder rocks cross glen.
Woodland	broad-leaf	Extensive: comprising semi-natural woodland on steeper slopes and managed estate woodland
	coniferous	Extensive: on valley sides and associated with estates
Agriculture	arable	Lower/mid valley sides and drained valley floor
	pasture	Valley floor and upper slopes
	fields	Large and rectilinear on valley floor, medium and rectilinear on gentler valley slopes
	field boundaries	Shelterbelts and post-and-wire fences on floodplain, hedges, trees and walls on valley slopes
Settlement pattern		Well settled with villages and large estates, some planted villages
Building materials		Transitional - granite, schist, slate and some sandstone
Historic features		Castles, lodges and estate features
Natural heritage features		Native woodlands, gorge vegetation
Other landscape features		Waterfalls, glacial deposition features
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium to large
Enclosure		Enclosed to semi-enclosed
Variety		Varied
Texture		Textured
Colour		Colourful
Movement		Peaceful
Unity		Unified
'Naturalness'		Managed

LOCATION

5.1.35 This landscape type comprises the lower sections of the most significant Highland Glens. These sections of glen are distinguished by their comparatively large scale, and the particular combination of upland and lowland attributes. Most of the glens within the Mounth Highlands change rapidly from upper and mid glen to the lowland and foothills, so this landscape type only occurs in Strathardle. Within the West Highland mountains, however, it occurs in Glen Garry around Blair Atholl, joining with the Strath Tummel and Strath Tay between Aberfeldy and Dunkeld.

PHYSICAL CHARACTERISTICS

5.1.36 The Lower Glens share the same geological structure as other parts of the highlands in Tayside. The area is dominated by Dalradian and Moinian grits and schists but there are also significant outcrops of other rocks. A broad band of Atholl limestone runs north-eastwards from the western end of Loch Tummel, across Glen Garry at Blair Atholl towards Beinn A'Ghlo. These softer rocks account for the broadening of the valley in the vicinity of Blair Atholl. The limestone is quarried on the western side of the glen. A little to the south, the glen is crossed by bands of harder quartzite rocks, this time resulting in the narrowing of the valley to form a dramatic gorge with waterfalls at Killiecrankie. While glaciation has had a significant effect on these Lower Glens, the valleys lack many of the classic features found higher up. Rivers tend to be larger, either meandering across broad, often level floodplains or flowing through narrow, incised channels. The valley floor lies typically at between 50 and 200 metres AOD, while the neighbouring hills rise to about 500 metres AOD. Where floodplains occur, they are generally about a kilometre wide.

SETTLEMENT AND LAND USE

5.1.37 These are the most settled parts of the Highland Glens. Historically, they provided important communication routes through the Highlands. Traces of General Wade's Military Road can be found in many of the glens (e.g. Glen Garry and Strath Tay at Aberfeldy where he constructed a grand bridge over the river) while the railway and A9 and A93 routes follow the same corridors. Other significant bridging points include the Bridge of Cally, Dunkeld and Tummel Bridge. As with the upper sections of the glens, the strife between highlanders and lowlanders, and the need to control movement through the glens resulted in the construction of many castles and fortified manor houses. Perhaps the best example is Blair Castle at Blair Atholl which is believed to date back as far as 1269. The clan warring reached its height during the 17th century at the Battle of Killiecrankie.

5.1.38 However, perhaps the most significant phase of settlement occurred during the 18th and 19th centuries as a result of growing wealth and the accessibility brought by railways. The dramatic nature of the landscape within the Lower Glens, particularly where they narrowed to enclose gorges and waterfalls, was favoured by followers of the picturesque and sublime. Historic estates such as Blair Castle and Craighall were remodelled to emphasise and accentuate the natural landscape. The creation of extensive parkland, including large areas of woodland on many of the steeper valley slopes contributes much to the landscape that we see today. New estate villages such as Blair Atholl were built to a uniform style and layout. Smaller estates with their own distinctive landscape and

architecture (e.g. Findynate and Derulich) were also created in Strathtay. In the 19th century the Tay Valley became known as 'little Switzerland' and attracted many visitors and travellers, resulting, in turn, in the growth of towns such as Pitlochry and Dunkeld. Visits by writers, poets, artists and members of the Royal Family underline the popularity of the area among the Victorians. Twentieth century development has continued this pattern of settlement, accelerated by the upgrading of the A9.

5.1.39 In contrast to the upper parts of the glens, these valleys include large areas of relatively fertile farmland. It is most productive on the floodplain alluvium but also extends much further up the valley slopes. The influence of large estates is often visible in the form of lines of hedgerow trees (e.g. along lower Strathardle) giving the valley a well-wooded and structured appearance. Within the Tay Valley, however, farmland is concentrated on the valley floor in large fields, often divided only by post-and-wire fences. Above Aberfeldy the floodplain is structured by bands of woodland running across the valley. Between these, fields are divided by wire fences.

5.1.40 Woodland is a vital element of the Lower Highland Glens landscape type. Broad-leaf woodlands, some ancient and semi-natural, clothe many of the steeper hill slopes, surround some of the lodges and estate houses, and trace the course of rivers along the glens. Coniferous woodland such as the larch plantations around Blair Atholl, or the woods on the crags around Dunkeld, further emphasise the landform and contribute to the sense of enclosure within the glens. With the bare summits which rise beyond, these coniferous plantations help create a dramatic upland atmosphere in a relatively lowland area. The combination of this woodland and the pattern of large estates, Victorian settlements and productive farmland gives this landscape type a rich yet dramatic character which contrasts both with the harsher upland areas, and with the more open lowland areas to the south.

FORCES FOR CHANGE

5.1.41 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.1.42 **Agriculture.** While agricultural activity in the Lower Highland Glens is concentrated on the valley floor, there are also many areas where pastures and even arable fields extend up the more shallow valley slopes. The network of walls, hedges and hedgerow trees is an essential element of this landscape, underlining its relationship with lowland areas, and adding texture and variety to the landscape of the glens. However, in some areas, this structure is in decline with once dense lines of trees becoming gappy and fragmented, and hedges and fences being replaced by 'invisible' post-and-wire fencing. Field boundaries on the broad floodplains, where they occur, are often marked by fences, though sometimes boundaries across the valley are marked by shelterbelts or lines of trees.

5.1.43 **Transport.** A number of Lower Highland Glens have provided important communication routes for centuries and today accommodate roads such as the A93 in Glen Shee, the A827 through the middle part of Strath Tay and, most significantly, the A9 through Glen Garry and the lower part of Strath Tay. For the most part, these roads and their traffic are relatively well-absorbed by the often well-wooded landscape of the Lower Glens. However, the A9, which has been improved as dual carriageway or high quality single carriageway along much of its length, is a much more prominent feature with its rock cuttings, embankments and overbridges. At points such as Killicrankie, the present road is considerably higher up the side of the glen than previous routes, meaning that the road structure is more visible, and the traffic moving along it has a much wider impact.

5.1.44 A little more subjective, perhaps, is the effect that a fast road has on a traveller's perception of the landscape. Parts of Strathtay around Blair Atholl and Dunkeld, for example, were remodelled during the 19th century to create a sublime landscape in which key vistas and the experience of travelling slowly through the landscape would have been particularly important. Today many people pass through at high speed, their attention focused within a narrow road corridor.

5.1.45 **Development.** Facilitated by better communication, more suitable land and access to the lowlands, this part of the Highlands has traditionally accommodated the greatest amount of settlement. Old market and bridging settlements such as Comrie, Aberfeldy and Pitlochry expanded during the 19th century as the area was opened up by the railways, and again during the 20th century as motoring brought the area within commuting distance of Perth. Generally, the growth of these towns has respected their original form. Pitlochry and Crieff for example have expanded up the valley slopes. In the case of Pitlochry, the historic linear settlement, represented by the main street, has expanded eastwards into the gentle bowl created by a tributary of the Tay. Twentieth century suburban development had its precedents in the form of grand Victorian hotels which were established with commanding views high on the hillside. This pattern of expansion is preferable to growth onto the Tay floodplain, or along the edges of the valley. Nevertheless, the elevation of much of the development means that it is more visible than it might otherwise have been.

5.1.46 At Comrie, which historically comprised two settlements, one each side of the bridge over the River Earn, recent growth has been concentrated on the Dalginross side. More recent development, however, has sometimes comprised low density, speculative estates of similar or identical dwellings which are crudely grafted onto the edge of these towns. The stark designs (often lacking any reference to vernacular designs or material) are usually unmitigated by planting, screening or landscaping, while the infrastructure of internal roads, footways, drives etc. appears over-engineered and overly suburban in this rural area. The growth of smaller settlements has been more limited, retaining the impression of a settled, rural landscape with a scattering of farmsteads and hamlets.

5.1.47 **Forestry and woodland.** Woodland is an essential component of this landscape type, comprising a combination of semi-natural woodland, commercial forestry, farm woodland and field boundary trees, policy and estate woodland. The characteristic interplay of woodland, farmland and areas of designed landscape is particularly important.

5.1.48 Several areas of Lower Glen are identified by the Tayside Indicative Forestry Strategy as having potential for new planting (Tayside Regional Council, 1997a). While there is

scope for additional woodland in these areas, it is important to maintain the overall balance of unplanted and planted areas and to conserve key views. It is also important to conserve landscape features such as field systems where these contribute to the grain and texture of the landscape. As elsewhere, there is scope to enhance the appearance of existing plantations as they come forward for harvesting and replanting.

5.1.49 **Recreation.** The high landscape quality, allied to the area's accessibility and the presence of a number of towns, means that tourism and recreation are important activities in the Lower Highland Glens, making important contributions to the area's economy. Generally, this development pressure has been steered towards existing settlements with, for example, the expansion of tourism facilities at Pitlochry. There are a handful of exceptions to this, the most notable being a major tourism facility at Bruar, north of Blair Atholl. Opinions about this particular scheme are mixed since, although its design attempts to reflect Scottish Baronial influences, the accompanying signage, car parking etc. indicates the presence of a more modern development. Furthermore, located close to the point where the southbound traveller leaves the sparse, dramatic landscape of the upper glen and enters the rich landscape of the lower glen, the new development reduces the positive visual impact of Blair Castle, a few kilometres to the east.

5.1.50 **Tall structures.** The Lower Highland Glens are subject to a range of pressures for tall structures such as pylons and masts, reflecting the more settled nature of these areas, and their suitability as routes for electricity transmission cables. Particular concerns relate to the provision of mobile communication infrastructure along routes such as the A9 which can result in the proliferation of telecommunications masts.

5.1.51 Within this landscape type there is unlikely to be significant pressure for wind turbine construction. However, the effect of proposals on higher ground which are visible from within the glens (particularly some of the more historic areas of designed landscape) should be considered carefully.

LANDSCAPE GUIDELINES

5.1.52 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the characteristically settled landscape of farmland, woodland and designed landscapes.

Agriculture	• Encourage the conservation of dry-stone dykes in local stone with an emphasis on roadside walls and others in highly visible areas. • Discourage improvements which result in further loss of field boundaries or field boundary trees. • Encourage farmers and landowners to replant trees along field boundaries, initially along roads, but also between fields. Species to include oak, maple, beech and ash. Use incentives to compensate for lower yields where mature trees are retained.

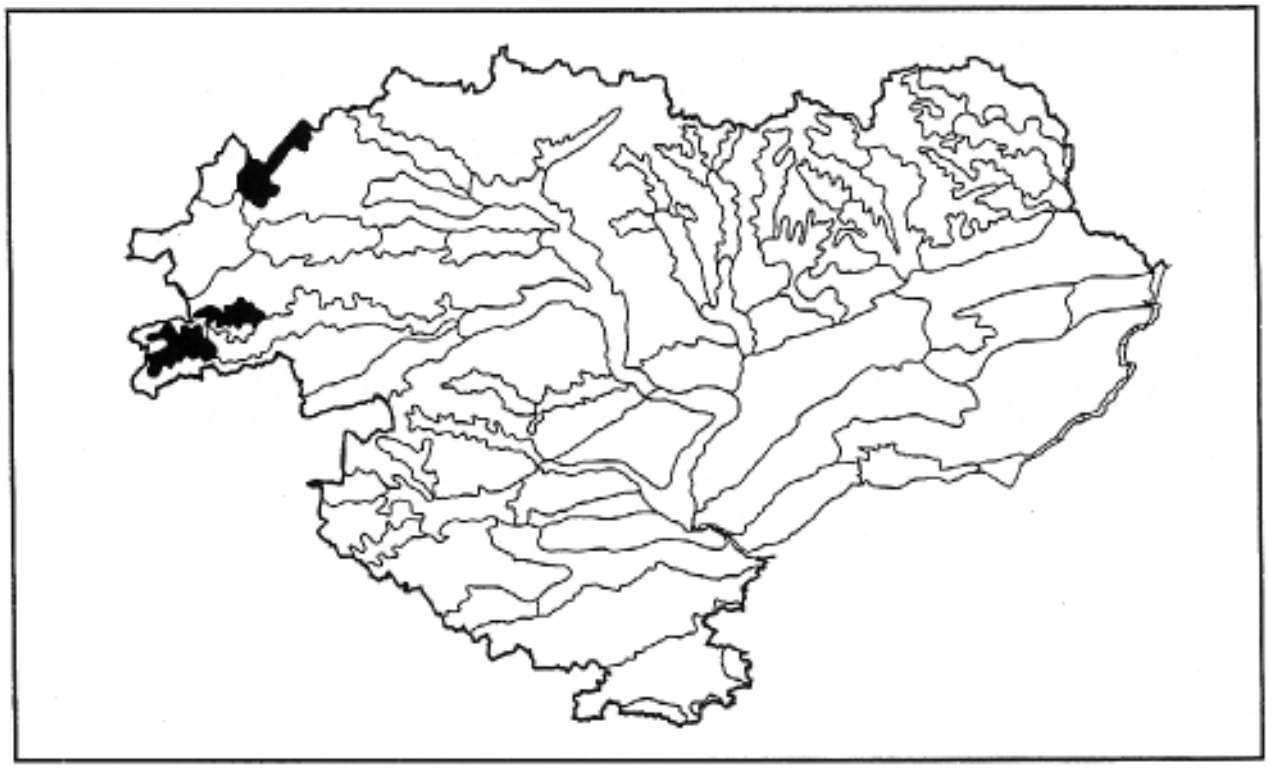
	• Explore the opportunities to increase woodland cover by creating new woodland belts, particularly where there is a need to screen development. • Explore development of market for hardwood from field boundary trees. • Discourage over-concentration of oil seed rape and similar crops. • Use the agricultural development notification scheme to influence the design, colour, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to provide screening where appropriate.
Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, or features such as concrete kerbing. • Explore opportunities for additional on- and off-site screening to reduce the impact of existing sections of improved road.
Development	• Focus new development in existing towns and villages so as to reinforce the historic pattern of settlements and to protect the rural character of other parts of the Lower Highland Glens. • Discourage the simplistic grafting of housing estates onto the edge of settlements. Encourage more imaginative schemes which respond to the existing patterns of layout, structure, massing and scale. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles. • Consider positive ways of addressing the interface between settlements and the surrounding countryside. These could include: - screening; - new buildings which address surrounding areas; - key vistas and views; - landmark features; - gateways and approaches.
Forestry and woodland	• With respect to the replanting of existing plantations on valley slopes: - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen;

(Forestry and woodland contd.)	- discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes. • Consider opportunities for new woodland planting in terms of: - the overall balance of woodland and open space; - the relative importance of different areas of existing woodland (e.g. commercial plantation versus policy woodland) and how this would be influenced by an increase in woodland cover; - the importance of key views and features within the landscape; - opportunities for provide screening within the Lower Glens; - opportunities to link isolated areas of woodland.
Recreation	• Concentrate tourist facilities within existing settlements. • Influence the design and provision of associated signage. • Influence the design of new tourism facilities, particularly where it is permitted in previously undeveloped areas. While modern and innovative design may be appropriate, it should respect local building styles, scales, materials and locations. Features such as signage and car parking should be designed to minimise the impact on the local and wider landscape.
Tall structures	• Assess proposals for aerials, pylons or masts in terms of their visual and landscape impact on the local landscape of the hills and surrounding areas. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact. • Ensure that any proposals are subject to thorough landscape impact assessment. • Where new power or telephone lines are proposed or required, encourage operators to adopt underground cable solutions.

HIGHLAND GLENS WITH LOCHS (2)

5.2.1 Lochs are an important feature of many Highland Glens. In undertaking the landscape assessment the influence of such lochs upon landscape character was considered carefully. In some cases (for example Loch Lee at the head of Glen Esk) the lochs are sufficiently small as to have a relatively minor effect on the overall appearance of the landscape. In others, the presence of the loch (most obviously in the cases of the largest lochs such as Loch Rannoch, Loch Tummel and Loch Tay) has a very significant influence on character. The latter cases justified inclusion as a landscape type in their own right. Again, the landscape classification draws a distinction between the upper, mid and lower sections of the glens.

UPPER HIGHLAND GLENS WITH LOCHS (2A)



KEY CHARACTERISTICS

- *geological and physical structure similar to Upper Highland Glens*
- *visual dominance of lochs, enlarged to provide hydroelectric power*
- *the expanse of water, changing its appearance according to the weather, adds to the sense of exposure, remoteness and desolation*

OBJECTIVE DESCRIPTION		Upper Highland Glens with Lochs
Physical scale		1.5 kilometres wide at valley crest Loch surface at 300-450 metres AOD Valley sides rise to 600-900 metres AOD
Woodland	broad-leaf	Virtually absent
	coniferous	Geometric plantations on mid slopes, more natural shapes on upper slopes
Agriculture	arable	Absent
	pasture	Rough grazing on valley slopes
	fields	No enclosure
	field boundaries	Not applicable
Settlement pattern		Predominantly unsettled; hydroelectric infrastructure (dams, turbine houses, pylons etc.)
Building materials		Not applicable
Historic features		Old routeways
Natural heritage features		Upland vegetation
Other landscape features		Rock outcrops, glacial features, hydro schemes
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium
Enclosure		Enclosed
Variety		Simple
Texture		Rough to very rough
Colour		Muted to monochrome
Movement		Remote
Unity		Unified/interrupted
'Naturalness'		Wild/slightly tamed

LOCATION

5.2.2 A number of the upper glens within the West Highlands contain lochs. Where these lochs are of a sufficient size, they have a significant influence on the landscape character of these upper glens. Examples of the Upper Highland Glens with Lochs landscape type include Loch Errochty, Loch Daimh, Loch Lyon and Loch Ericht.

PHYSICAL CHARACTERISTICS

5.2.3 The geological and physical structure of the Upper Highland Glens with Lochs is very similar to that described above in relation to Upper Highland Glens. The geology is dominated by grits and schists of the Dalradian and Moinian groups and the landscape has been highly modified by glacial erosion, creating typically glaciated valley cross sections, hanging valleys and corries. The lochs have been created where the ice sheets overdeepened the glens or where morainic material deposited during their retreat impounded water within the valley. Each of the lochs has been modified by the addition of dams, thereby increasing the available head of water for hydroelectric power generation.

5.2.4 The expanse of water, often disturbed by wind and rain, adds to the sense of exposure, remoteness and desolation experienced within these upper glens. Even the engineering structures associated with power generation are dwarfed by the scale and sweep of the enclosing mountains. The landscape is dominated by low moorland vegetation, with woodland limited to sheltered side glens or a handful of geometric coniferous plantations. In fine weather these glens form part of the dramatic upland landscape. In poor light or inclement weather, the atmosphere is less hospitable and can even seem threatening.

FORCES FOR CHANGE

5.2.5 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development. Although these areas have seen considerable change over past centuries as any native woodland was cleared and the population removed, the upland glens retain a wild, untouched character. With little in the way of tree cover, views can be extensive within the glen and any development can intrude on this character.

5.2.6 **Transport.** For the most part, the Upper Highland Glens with Lochs either have no roads at all or are served by minor roads, often ending in cul de sacs. Although visible in the open landscape, these roads tend to sit relatively easily in the landscape, following natural contours along the floor of the glen. It is important that the diminutive and low-key appearance of these roads is maintained and that minor improvements and signage do not compound to give an overly 'urban' effect.

5.2.7 **Development.** A lack of settlement is an important feature of these upper glens. For the most part, development is limited to a scatter of lonely cottages and lodges.

5.2.8 **Forestry and woodland.** The Upper Highland Glens with Lochs include areas of coniferous woodland, though these tend to be more limited than in those glens without lochs. In most cases, the plantations have been established to supply commercial timber while in others, the aim has been to provide shelter for game or livestock. The scale and form of the woodland varies accordingly. Commercial plantations tend to be larger in scale while shelter plantations are smaller and often geometric in appearance. Harvesting this woodland will provide an opportunity to review the best locations and designs for replanting. This considered further within the management guidelines.

5.2.9 It is probable that, without management to favour deer and grouse, native woodland would regenerate on many of the valley slopes. This would form a transition from sparse birch and pine woods, through dwarf woodland to the open vegetation of the highland summits and plateaux.

5.2.10 **Recreation.** Many of the Upper Highland Glens with Lochs are remote and seldom visited except by a comparatively small number of walkers and climbers.

5.2.11 **Tall structures.** The Upper Highland Glens with Lochs are comparatively free from tall structures. The exception occurs where power lines serve the hydro installations located adjoining the dams that impound the lochs. This landscape type would be sensitive to proposals for further tall structures, be they pylons, masts or wind turbines, either within the glen itself or visible from within it.

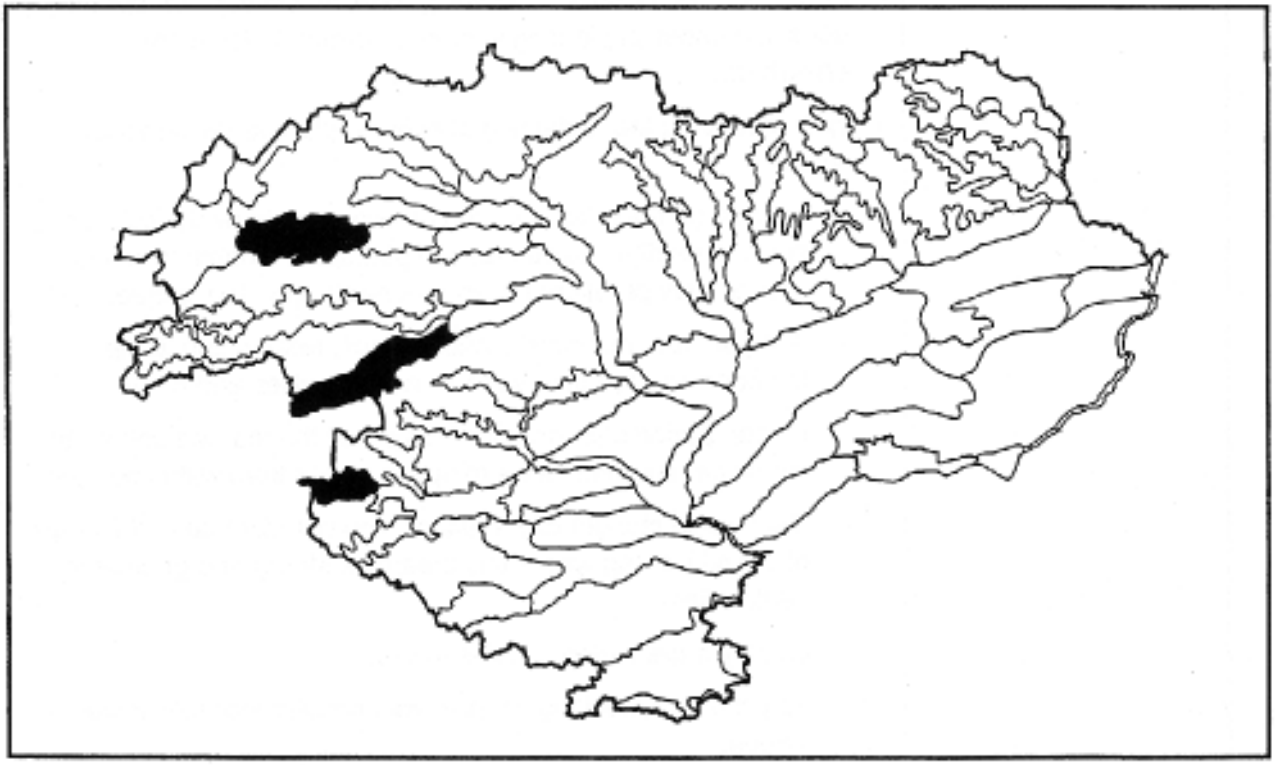
LANDSCAPE GUIDELINES

5.2.12 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the characteristic upland landscape of open, predominantly unsettled moorland vegetation. Maintain the contrast with the more settled lowland sections of the glens.

Agriculture	• Encourage the conservation of dry-stone dykes in local stone with an emphasis on roadside walls and others in highly visible areas.
Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, road paint or features such as concrete kerbing.
Development	• Ensure any woodland expansion complies with the principles of good forest design. • Where development is permitted, ensure that buildings are located so as to minimise their impact on the landscape (utilising any natural screening provided by the landform) and that they adopt vernacular styles, building materials and colours.

Forestry and woodland	• Discourage the creation of additional areas of coniferous forestry within the upland glens. • Encourage the removal of small, geometric plantations, allowing equal increases in planting in more appropriate locations elsewhere. • With respect to the replanting of existing plantations on valley slopes: - encourage the rationalisation of woodland to avoid isolated, small to medium sized areas of plantation woodland which appear very prominent in an otherwise open landscape; - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes. • Explore opportunities to modify management practices to allow the regeneration of native woodlands on some valley slopes, to create the 'natural' transition from valley woodland, through dwarf alpine woodland to the vegetation of the highland summits and plateaux.
Recreation	• Maintain low-key level of provision.
Tall structures	• Discourage proposals for aerials, masts or wind turbines because of their likely impact on the character of the Upper Highland Glens with Lochs. • Ensure that any proposals are subject to rigorous landscape impact assessment. • Where new power or telephone lines are proposed or required, ensure that operators adopt underground cable solutions.

MID HIGHLAND GLENS WITH LOCHS (2B)



KEY CHARACTERISTICS

- *geological and physical structure similar to Mid Highland Glens*
- *large-scale landscape created by the combination of expansive lochs and large enclosing mountains*
- *concentration of settlement and farming activity on lower slopes and at the ends of the lochs*
- *extensive woodland on lower slopes*
- *extensive corridor views*
- *clear transition from lower pastures through heather midslopes to bare upper summits*

OBJECTIVE DESCRIPTION		Mid Highland Glens with Lochs
Physical scale		1 to 1.5 kilometre wide loch. Loch surface at 120-200 metres AOD Valley sides rise to 300-600 metres AOD Lochs between 50 and 100 metres deep
Woodland	broad-leaf	Native birch and oak woodland on steeper and poorer ground
	coniferous	Substantial areas of plantation
Agriculture	arable	Absent
	pasture	Rough pasture on lower/mid slopes
	fields	Regular fields on smooth valley slopes
	field boundaries	Dry-stone dykes and post-and-wire fences
Settlement pattern		Scatter of farmsteads along shore of loch; greater concentration on sunnier, south-facing slopes
Building materials		Schists and granite with slates
Historic features		Old farmsteads, castles/estates concentrated on lower ground at each end of lochs
Natural heritage features		Native woodlands
Other landscape features		Mills, historic settlement sites
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium to large
Enclosure		Enclosed to semi-enclosed
Variety		Varied
Texture		Smooth to textured
Colour		Colourful
Movement		Peaceful
Unity		Unified
'Naturalness'		Restrained

LOCATION

5.2.12 Glacial overdeepening along faultlines in the West Highlands created a number of substantial lochs between 50 and 100 metres deep. Several of these occupy the middle sections of glens. Examples include Loch Rannoch, Loch Tay and Loch Earn.

PHYSICAL CHARACTERISTICS

5.2.13 The geology and landform of the Mid Highland Glens with Lochs landscape type are very similar to those already described in respect of Mid Highland Glens. The geology is dominated by grits and schists of the Dalradian and Moinian groups. Again, the landscape has been modified by glacial erosion, creating relatively straight, glaciated valley cross sections.

SETTLEMENT AND LAND USE

5.2.14 The lack of valley floor means that human activity has been pushed on to the lower slopes of the glen, or concentrated on alluvial deposits at either end of the loch. Small farmsteads tend to be located at fairly regular intervals along the northern and southern shores of the lochs, with access both to the more sheltered, often less steep, lower slopes, and the rough grazing provided at higher altitudes. The pattern is particularly well-developed along Loch Tay where, along the northern side of the loch, farms are found every kilometre or so. The remains of old farmsteads are very obvious here. Many of these would have formed part of a transhumance economy, with sheep and cattle being moved to the mountain pastures and shielings during the summer months. Settlement tends to cluster at points where the larger burns enter the loch. The water in these burns once powered mills - up to a dozen are said to have been built along the Lawers Burn, north of Loch Tay. A line of woodland along the lochside gives way to a band of pastures which extend a short way up the hillside. Each of the lochs also has substantial areas of woodland (broad-leaf, coniferous or mixed) along the lower slopes. One of the most significant of these is the Black Wood of Rannoch which survives as the largest areas of Caledonian pine forest in the area.

5.2.15 Each loch is encircled by roads, the more major of the two being along the northern side (reflecting the sunnier aspects of these slopes). The lochs would have formed important links in historic communication routes between the central lowlands and the west coast. This is reflected in a range of defensive structures found along these sections of glen including crannogs (e.g. Eilean nam Breaban on Loch Tay), forts (e.g. Dundurn Fort at the eastern end of Loch Earn) and castles. Numerous other historic sites such as stones, tumuli and crosses point to the historic importance of the lochs. During the Victorian era, loch steamers were popular with piers at Kenmore, Killin and other places.

5.2.16 Today, human activity is still focused on the lochs. The growth of tourism and recreation is reflected in the development of hotels, timeshare schemes, and a number of caravan and log-cabin sites. The lochs attract further activities such as sailing, powerboating, water-skiing and jet-skiing. This tends to be particularly the case on Lochs Tay and Earn, where activity is focused at either end of the loch. Loch Rannoch is much less intensively used, partly in response to stricter polices governing recreation development, and partly because of its remoteness. The lochs also form part of a major hydroelectric

power generating scheme, as signalled by the presence of high voltage power lines and power stations such as the one on the northern side of Loch Rannoch. Served by minor roads, the southern sides of the lochs are less developed and in places show signs of decline and abandonment.

5.2.17 These are amongst the largest scale landscapes in Tayside. The scale of the enclosing mountains and the expanse of open water creates a vast sense of space that belittles features such as farms or woods. Equally, however, it is an open landscape where intrusive features would be visible over a considerable distance.

FORCES FOR CHANGE

5.2.18 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.2.19 **Agriculture.** Most agricultural activity in the Mid Highland Glens with Lochs is concentrated in a narrow band on the valley slopes above the loch. Higher ground is dominated by rough grazing, grading into craggy heather or grass moorland. Pastures dominate. The pattern of farmsteads, pastures and hedgerow trees is an important feature of this landscape. However, the physically constrained location of these farms means there is little room to expand and there are several examples of derelict farm buildings and even apparently abandoned fields. In other cases, farm holdings have diversified into tourism, accommodating log cabin developments or static caravan parks. The decline of agriculture, and the deterioration of farm buildings, appears most pronounced on the lochsides served by minor roads (e.g. the southern side of Loch Tay).

5.2.20 **Transport.** Each of the lochs is encircled by roads. The main roads tend to be along the northern side of the glen and the more minor roads along the southern side. This distinction is reflected in the relative prosperity of the two sides of the loch and the degree of settlement and development. Along both sides of the lochs, it is important that the roads continue to be relatively minor features within the large-scale landscape. Improvements such as widening, realignment, lighting or the provision of more extensive signage should be resisted.

5.2.21 **Development.** Although with significantly more farmsteads, cottages and houses than the Upper Highland Glens, this landscape type is still comparatively sparsely settled. Older buildings often share a vernacular of stone walls (sometimes whitewashed) and slate roofs. Victorian buildings, concentrated within settlements found at the heads of the lochs and along roads leading out along the lochside, tend to continue use of local building material, providing interesting interpretations of vernacular styles. Newer buildings adopt more ubiquitous designs and materials which hinder their integration into the landscape. Developers of new buildings should be encouraged to select designs which respond to their location, both in terms of the landscape and the vernacular style. There may be some scope for the sensitive conversion of traditional farm buildings, particularly where these have become redundant or derelict.

5.2.22 **Forestry and woodland.** The Mid Highland Glens with Lochs have a mixture of semi-natural woodland, often marking the edge of the loch and extending up the hillside, and areas of coniferous plantation. The latter tend to be larger in scale, occupying higher areas of the valley sides. While the majority of these plantations sit comfortably within the wider landscape, sometimes the dominance of single species can be locally oppressive. Harvesting of this woodland provides an opportunity to review the best locations and designs for replanting. This is considered further within the management guidelines.

5.2.23 The Mid Highland Glens with Lochs also have some areas of semi-natural woodland, concentrated particularly on steeper valley slopes and on less productive areas along the lochside. Many of the woods that survive today are in very poor condition, overmature and unable to regenerate due to the level of grazing within or around them. There is an urgent need to facilitate the regeneration of these woodlands, an aim which is being pursued by the Tayside Native Woodlands Initiative.

5.2.24 Moving beyond the survival of these woods, there is an opportunity to allow their expansion and growth through the glens and up the valley slopes so as to re-create the more natural patterns of woodland that would have characterised the glens before intensive management for deer and grouse dominated.

5.2.25 **Recreation.** The Mid Highland Glens with Lochs are subject to a range of recreation pressures. This is particularly the case in relation to Lochs Tay and Earn. The remoteness and policy context means that pressures are far less on Loch Rannoch.

5.2.26 Recreation issues fall into two categories. Firstly there are those concerning the development of facilities. While most hotels, guest houses and bed and breakfast establishments are concentrated within, or on the edge of settlements such as Kenmore or St Fillans, there has been considerable historic development of static and mobile caravan parks within woodland along the lochside. There is a particularly large number of sites, both formal and informal, along the southern shores of Loch Earn. While individual static caravans sit within the woodland, some of the larger sites are more intrusive and are visible over a longer distance. There is an obvious concern that the use of mobile homes does not result into the gradual development of holiday cottages or other more permanent structures.

5.2.27 The second type of issue that affects both Loch Earn and Loch Tay is recreation activities such as watersports and walking or climbing. Both lochs have watersports centres (at Lochearnhead and Kenmore, respectively) and a number of smaller facilities along the waterside. The growth of motorcraft use, particularly powerboats and jet-skis, has led to concerns about the impact on the comparatively peaceful landscape of the lochs. Local authorities have pursued a policy which seeks to control the provision of additional motorised watersports facilities and which concentrates activity at the more developed ends of the lochs. As pressures and adverse effects continue to grow, the introduction of bylaws governing the use of the lochs is being considered.

5.2.28 Walkers and climbers generally have a much lower level of impact on the landscape. Problems may emerge, however, at popular locations (e.g. Ardvorlich, at the foot of Ben Vorlich) where there may be concentrations of parked cars. The most well-used routes may also suffer erosion resulting in local landscape and ecological impacts.

5.2.29 **Tall structures.** Each of the Mid Highland Glens with Lochs has a line of pylons running along the northern shore, linking components of the Tummel hydro scheme and serving settlements in the area. These pylons tend to run parallel to the road corridor and are often seen against a backdrop of rising hills. Their impact within the large-scale landscape of the lochs is therefore comparatively limited.

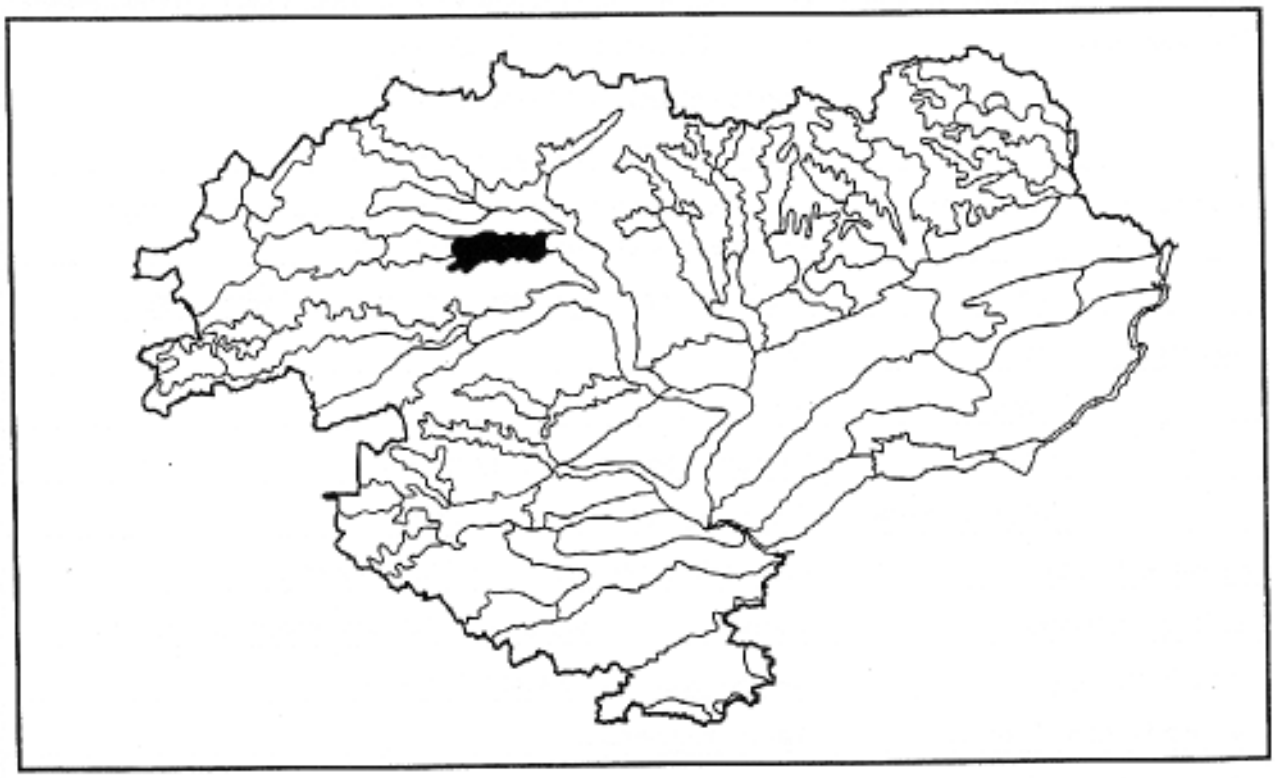
LANDSCAPE GUIDELINES

5.2.30 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the characteristic pattern of farmland, woodland and settlement around the fringes of the lochs, maintaining the tranquil nature of these large-scale landscapes.

Agriculture	• Support farming activities along loch fringes. • Encourage management of farm woods, hedges and hedgerow trees. • Encourage maintenance of farm buildings and structures.
Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, or features such as concrete kerbing.
Development	• Discourage isolated developments in the open landscape. • Where development is permitted, encourage construction to consolidate existing villages. • Do not rely on screening where the screening itself becomes a prominent landscape feature. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles. • Support the appropriate conversion of agricultural buildings where they have become redundant.
Forestry and woodland	• With respect to the replanting of existing plantations on valley slopes: - encourage the rationalisation of woodland to avoid isolated, small to medium sized areas of plantation woodland which appear very prominent in an otherwise open landscape; - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes;

(Forestry and Woodland contd.)	- vary the size of felling coupes, with smaller areas on lower slopes. • Manage grazing levels in and around semi-natural woodland to allow regeneration and expansion. • Explore opportunities to modify management practices to allow the regeneration of semi-natural woodlands on some valley slopes, to create the 'natural' transition from valley woodland, through dwarf alpine woodland to the vegetation of the highland summits and plateaux.
Recreation	• Restrict the creation of additional caravan parks and chalets. • Encourage more effective screening of caravan parks, consider use of alternative colours in most prominent areas. • Prevent upgrading of static caravans to more permanent structures. • Continue to restrict noisy watersports at the loch-ends. • Monitor levels of watersports activity and degree and extent of disturbance and bring forward byelaws to effect controls. • Monitor car parking patterns and erosion levels in areas popular among walkers and climbers.
Tall structures	• Where new power or telephone lines are proposed or required, encourage operators to adopt underground cable solutions.

LOWER HIGHLAND GLENS WITH LOCHS (2C)



KEY CHARACTERISTICS

- *geological and physical structure similar to Lower Highland Glens*
- *combination of lowland and upland attributes*
- *rich woodland enclosing the loch and providing a transition to upper slopes*
- *significant cultural and historic associations*
- *recreation and other development pressures*

OBJECTIVE DESCRIPTION		Lower Highland Glens with Lochs
Physical scale		0.5 to 1 kilometre wide floodplain Surface of loch at 140 metres AOD Valley sides rise to 500 metres AOD
Woodland	broad-leaf	Extensive: comprising semi-natural woodland on steeper slopes and managed estate woodland
	coniferous	Extensive: on valley sides and associated with estates
Agriculture	arable	Absent
	pasture	Mid slopes
	fields	Medium irregular on valley slopes
	field boundaries	Trees and walls on valley slopes
Settlement pattern		Well settled with villages and large estates.
Building materials		Transitional - granite, schist, slate and some sandstone
Historic features		Castles, lodges and estate features
Natural heritage features		Native woodlands.
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium to large
Enclosure		Enclosed to semi-enclosed
Variety		Varied
Texture		Textured
Colour		Colourful
Movement		Peaceful
Unity		Unified
'Naturalness'		Managed

LOCATION

5.2.31 The Lower Highland Glens with Lochs landscape type is confined to the area around Loch Tummel. Although sharing many of the characteristics of the Mid Highland Glens with Lochs, the area around Loch Tummel is subtly different. In part this is due to the lower hills (generally 500-600 metres AOD, compared with 600-1000 metres) and slightly shallower slopes. It also reflects the pattern of woodland since there is a higher proportion of broad-leaf woodland, and the cultural associations of Queen's View on Loch Tummel's northern side. The rich character of this area has more in common with the rich wooded valley to the east (Glen Garry and Killiecrankie) than with the more exposed areas to the west.

FORCES FOR CHANGE

5.2.32 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.2.33 **Agriculture.** Most agricultural activity in the Lower Highland Glens with Lochs is concentrated in a narrow band on the valley slopes above the loch. Higher ground is dominated by rough grazing, grading into craggy heather or grass moorland. The pattern of farmsteads, pastures and hedgerow trees is an important feature of this landscape, allied to rich policy and semi-natural woodland. As in the case of the Mid Highland Glens with Lochs, the physically constrained location of these farms means there is little room to expand and there are several examples of abandoned fields. In other cases, farm holdings have diversified into tourism, accommodating log cabin developments or caravan parks.

5.2.34 **Transport.** Loch Tummel, like the other large lochs is encircled by roads. The main road is along the northern side of the glen and the more minor road along the southern side. This distinction is reflected in the relative prosperity of the two sides of the loch and the degree of settlement and development. Along both sides of the loch, it is important that the roads continue to be relatively minor features within the large-scale landscape. Improvements such as widening, realignment, lighting or the provision of more extensive signage should be resisted.

5.2.35 **Development.** This landscape type is more wooded and less settled than the Mid Highland Glens with Lochs. Where they occur, older buildings often share the vernacular of stone walls and slate roofs. Victorian buildings tend to continue use of local building material, providing interesting interpretations of vernacular styles. Newer buildings adopt more ubiquitous designs and materials which hinder their integration into the landscape.

5.2.36 **Forestry and woodland.** Woodland is an essential component of this landscape type, comprising a combination of semi-natural woodland, commercial forestry, farm woodland

and field boundary trees, policy and estate woodland. The characteristic interplay of woodland and farmland with rough moorland above is particularly important.

5.2.37 Coniferous plantations tend to be medium to large in scale, occupying higher areas of the valley sides. While the majority of these plantations sit comfortably within the wider landscape, sometimes the dominance of single species can be locally oppressive. Harvesting of this woodland provides an opportunity to review the best locations and designs for replanting. A particular aim should be the visual integration of areas of broad-leaf woodland with the existing areas of coniferous plantation. These issues are considered further within the management guidelines.

5.2.38 The Lower Highland Glens with Lochs also have some areas of semi-natural woodland, concentrated particularly on steeper valley slopes and on less productive areas along the lochside. Some have generated on areas of former farmland. Some of the woods that survive today are in poor condition. There is a need to facilitate the regeneration of these woodlands, an aim which is being pursued by the Tayside Native Woodlands Initiative.

5.2.39 **Recreation.** Loch Tummel has attracted visitors at least since Victorian times, and a number of tourism facilities are found along its northern side. A particular example is the visitor centre and forest walks at Queen's View. Hotels, a lochside caravan site and other forms of visitor accommodation, including groups of log cabins are also found here. Although some of these facilities are locally incongruous, their impact on the wider landscape is generally more limited, partly due to the level of woodland cover. The principal exception to this is the caravan site located on a lochside promontory just to the west of Queen's View. This is a prominent and unscreened feature which detracts from the view out over the loch from Queen's View in particular.

5.2.40 **Tall structures.** Loch Tummel has a line of pylons running along the northern shore, linking components of the Tummel hydro scheme. These pylons run along the lower slopes and are seen against a backdrop of rising hills. Their impact within the large-scale landscape of the lochs is therefore comparatively limited. However, the linear nature of the power lines is emphasised by the very straight corridors that are cut through woodlands to accommodate them.

5.2.41 Within this landscape type there is unlikely to be significant pressure for wind turbine construction. However, the effect of proposals on higher ground which are visible from within the glen should be assessed and considered carefully.

LANDSCAPE GUIDELINES

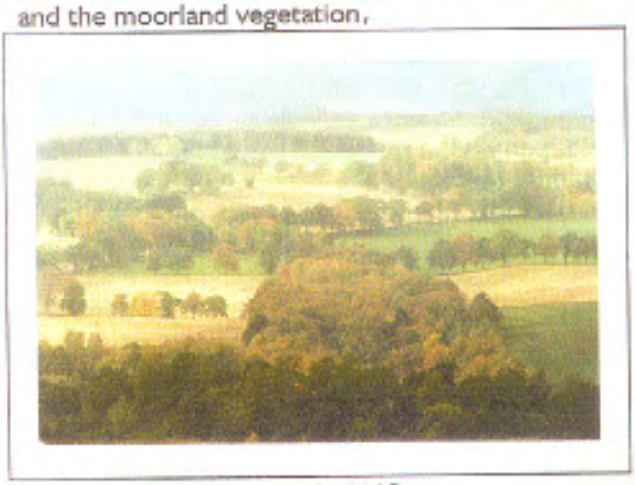
5.2.42 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the rich landscape of loch, woodland and farmland, and to minimise the intrusion of recreation facilities and activities upon it.

Agriculture	• Support farming activities along loch fringes. • Encourage management of farm woods, hedges and hedgerow trees. • Encourage maintenance of farm buildings and structures.
Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, or features such as concrete kerbing.
Development	• Discourage isolated developments in the open landscape. • Where development is permitted, encourage construction to consolidate existing villages. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles. • Support the appropriate conversion of agricultural buildings where they have become redundant.
Forestry and woodland	• With respect to the replanting of existing plantations on valley slopes: - encourage the rationalisation of woodland to avoid isolated, small to medium sized areas of plantation woodland which appear very prominent in an otherwise open landscape; - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes. • Manage grazing levels in and around semi-natural woodland to allow regeneration and expansion. • Explore opportunities to modify management practices to allow the regeneration of semi-natural woodlands on some valley slopes, to create the 'natural' transition from valley woodland, through dwarf alpine woodland to the vegetation of the highland summits and plateaux.

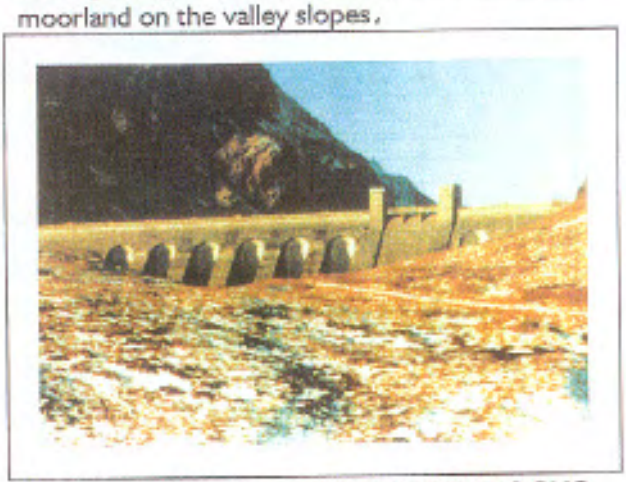
Recreation	• Maintain policy of concentrating tourist facilities within existing settlements. • Influence the design and provision of associated signage. • Encourage the re-location and/or screening of intrusive recreation provision.
Tall structures	• Where new power or telephone lines are proposed or required, encourage operators to adopt underground cable solutions. • Ensure that any proposals for aerials, pylons or masts are subject to thorough landscape impact assessment in terms of their visual and landscape impact, both on the local landscape of the loch and on surrounding areas. • Consider any proposals for wind turbines or other tall structures in surrounding areas in terms of their impact on key views and vistas from Loch Tummel and the valley sides.

UPPER HIGHLAND GLENS
Glen Beag, north of the Spittal of Glen Shee. A landscape dominated by the enclosing Highlands and the moorland vegetation.

MIDDLE HIGHLAND GLENS
Glen Shee. Improved pastures on the valley floor, grading into rough grazing, woodland and moorland on the valley slopes.



LOWER HIGHLAND GLENS
Strathardle near the Bridge of Cally - a rich landscape of dense woodland, hedgerow trees, pastures and arable fields, backed by rising hills.



UPPER HIGHLAND GLENS WITH LOCHS
Most of the lochs in the harsh landscape of the upper glens have been impounded by dams to generate hydroelectricity.

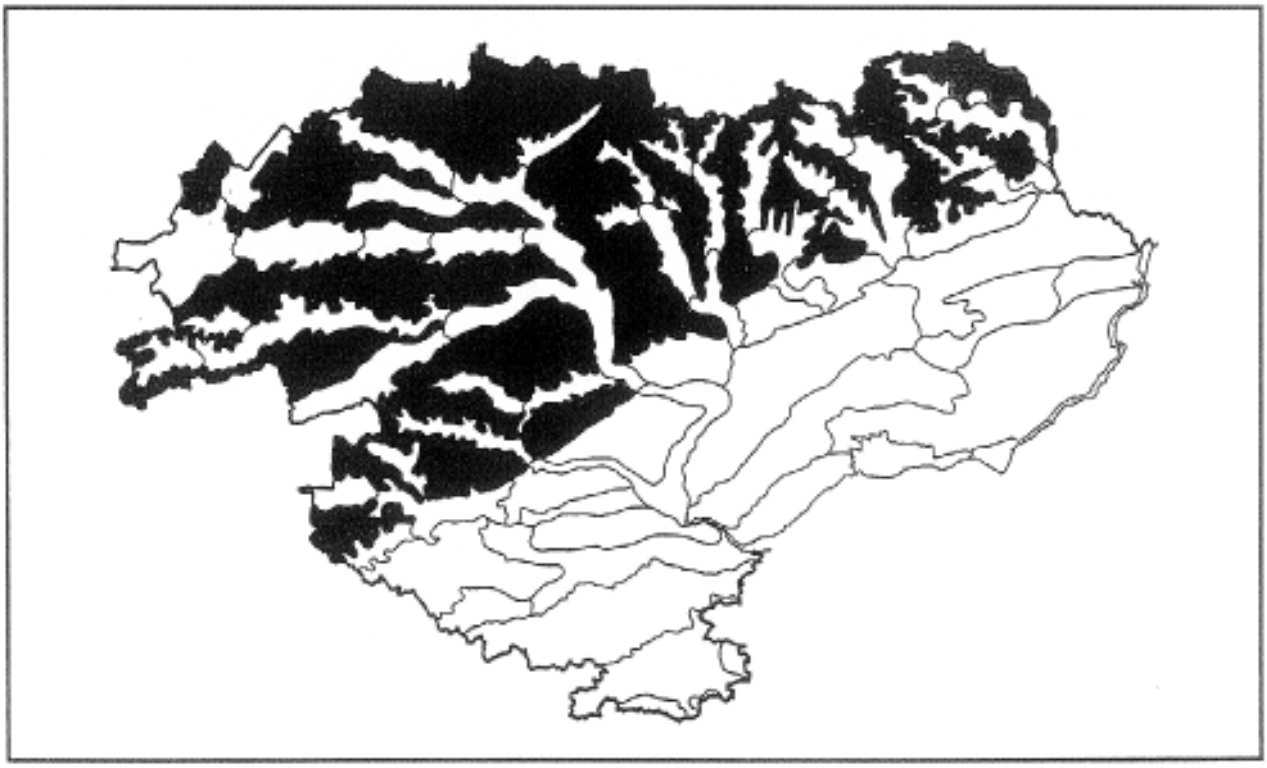
Photo: SNH

MIDDLE HIGHLAND GLENS WITH LOCHS
Loch Tay. A string of farms along the steep lower slopes, with exposed moorland rising above.

FIGURE 13

LANDSCAPE CHARACTER TYPES

HIGHLAND SUMMITS AND PLATEAUX (3)



KEY CHARACTERISTICS

- *areas of upland separating the principal glens*
- *West Highlands comprise distinct summits and ranges, separated by fault line lochs; the hills are sharply defined and often craggy*
- *Mounth Highlands comprise a more extensive area of upland with spurs extending southwards; the hills are more rounded than those to the west and rock outcrops are fewer*
- *vegetation patterns closely reflect altitude and exposure and include heather, grassland, blanket bog and arctic alpine plant communities; variations reflecting the underlying geology*
- *most of the area managed as open moorland*
- *little or no settlement*
- *some extensive plantations*
- *one of the remotest and wildest landscapes in the UK*

OBJECTIVE DESCRIPTION		Highland Summits and Plateaux
Physical scale		400 to 1000 metres AOD, forming individual groups of mountains or extensive upland tracts
Woodland	broad-leaf	A few areas of semi-natural woodland up to 600 metres AOD. Generally cleared by burning, cutting and grazing
	coniferous	Plantations up to about 450 metres
Agriculture	arable	Absent
	pasture	Rough and unimproved
	fields	Unenclosed
	field boundaries	Not applicable
Settlement pattern		Unsettled
Building materials		Not applicable
Historic features		Ancient routeways, former shielings
Natural heritage features		Rich arctic-alpine flora and fauna
Other landscape features		Rock outcrops, glacial features, expansive views
SUBJECTIVE DESCRIPTION		
Views		Panoramic
Scale		Large
Enclosure		Exposed
Variety		Simple to uniform
Texture		Rough
Colour		Muted
Movement		Distant
Unity		Unified
'Naturalness'		Undisturbed to managed

LOCATION

5.3.1 This landscape type comprises the areas of upland separating the principal glens, to the north of the Highland Boundary Fault. As with the glens described above, a broad distinction can be drawn between the West Highlands to the west of Glen Garry/Drumochter, and the Mounth Highlands to the east. While the hills generally reach similar heights, those in the west tend to be craggier and those in the east more rounded. This reflects the higher rates of erosion in the west due to the more rapid accumulation of snow and ice during period of glaciation and the pre-glacial landform. The West Highlands are more heavily dissected than the Mounth. The latter therefore includes more extensive areas of upland plateau. Furthermore, as noted above, east-west fault lines have determined the orientation of western glens while north-south valleys in the Mounth reflect the inclination of the massif.

West Highlands

5.3.2 The West Highlands can therefore be described as a series of comparatively discrete hills or ranges, as follows:

- Ben Vorlich and the Forest of Glenartney, south of Loch Earn;
- Ben Chonzie/Sròn Mhór/Meall nam Fuaran and Craigvinean Forest between Strathearn and Loch Tay/Strath Tay;
- Ben Lawers and Beinn Heasgarnich range south of Glen Lyon;
- Carn Gorm/Schiehallion range between Glen Lyon and Loch Rannoch;
- Meall Tairneachan Group between Strath Tay and Loch Tummel;
- Talla Bheith and Craiganour Forest between Lochs Rannoch and Tummel and Glen Garry.

Mounth Highlands

5.3.3 The Mounth Highlands form a more continuous area of upland with a series of spurs extending southwards towards Strathmore. The principal areas can be summarised as follows:

- Forest of Atholl north of Glen Garry;
- Forest of Clunie west of Strathardle;
- Forest of Alyth between Glen Shee and Glen Isla;
- Caenlochan Forest/Glen Doll Forest between Glen Shee and Glen Clova;
- Muckle Cairn/Hill of Glansie/Hill of Wirren between Glen Clova and Glen Esk;
- Hills of Saughs/Mount Battock, north and east of Glen Esk.

5.3.4 The rest of this section describes the whole of the Highland Summits and Plateaux landscape character type. It draws examples from within both the West Highlands and Mounth Highlands, as appropriate, but also highlights key differences between them, where they occur.

PHYSICAL CHARACTERISTICS

5.3.5 The geology of these Highland areas has already been described in relation to the intervening glens. Dalradian and Moinian grits and schists dominate, forming broad bands running south-west to north-east, parallel to the Highland Boundary Fault. These rocks were once the sediments of limestones, sandstones and shales, metamorphosed by heat and pressure to form huge schist mountains which, over millions of years, were reduced to the mountains we see today. The area also has significant intrusions of other rock forming parallel bands. These rocks include granites, limestones, quartzites and intrusive diorite. These differing rock types can have an important influence on local landform. Harder rocks result in outcrops, softer rocks result in eroded basins. They also influence vegetation patterns. Barytes has been quarried in parts of this area and further proposals for mineral extraction may come forward in the future.

5.3.6 Vegetation on the schists varies with altitude and exposure. On the moorland slopes below 600 metres, the land cover tends to be dominated by heather, mixed with sedge, rush, bog asphodel, cotton grass, and purple moor grass. On some of the shallower plateau slopes (for example on the Atholl upper moors) blanket bog has developed, with peat lying a metre or more deep. Heather is particularly extensive on drier moorland slopes, such as those in Glen Clova, turning the hillsides purple and pink in late August and September. Grass tends to dominate in the western part of the Highlands. At between 600 and 900 metres there is a pronounced transition from heather and grass moorland to the arctic alpine zone with many screes, rock outcrops and, where topography and soil accumulation allows, a low growth of blaeberry and crowberry, and sometimes a mat of prostrate heather. Otherwise, it is lichens which predominate in this exposed, often inhospitable environment. Periglacial features produced by freeze-thaw processes, are also evident in the higher areas.

5.3.7 Vegetation patterns vary with the underlying rock, however. Perhaps the most common of these variations occurs where calcareous schists and limestone rocks occur. Particular plant communities associated with these rocks are found on Ben Lawers, Carn Gorm, Beinn A'Ghlo and Schiehallion among others. A number of these summits are protected as SSSIs, while Ben Lawers, regarded by some as one of the finest examples of arctic alpine flora, is designated as a National Nature Reserve (NNR). Caenlochan is also a NNR.

5.3.8 Most of the vegetation of the Highlands is managed for grouse, deer and sheep. Tree and scrub growth is prevented by burning, grazing and tree-cutting. Although there are a few patches of semi-natural woodland on slopes up to about 600 metres, the tree roots and stumps that are sometimes visible in areas of bog point to the former extent of woodland on these moors. In other countries, where similar sub-arctic conditions occur, land uses have allowed the growth of vegetation such as dwarf birch and willow, forming a transition from lower habitats to the ground vegetation of the arctic-alpine zone.

5.3.9 The Highland areas support a variety of habitats. Notable species of birds found in the area include ptarmigan, dotterel, dunlin and golden plover on the higher ground and peregrine falcon, red and black grouse, snipe, curlew, hen harrier, siskin, lesser redpoll and capercaillie on the lower moors and in the remaining areas of woodland. Red squirrel, mountain hare and wild cat are not uncommon, while much of the area is inhabited by both red deer and roe deer.

SETTLEMENT AND LAND USE

5.3.10 Human activity is specialised in the upland areas. Long managed by the large estates for hunting and shooting (hence the term 'forest' which is used extensively throughout the area), the upland areas also once provided areas of summer grazing when transhumance (the seasonal movement of sheep and cattle between the lowland and upland pastures) was a common practice. The remains of the old shielings, often sited in the most sheltered parts of the upland, can still be found today, for example on the southern and eastern slopes of Ben Lawers above Loch Tay. Historically, there would also have been many tracks and paths through the uplands, providing links with areas to the north or west. Many of these were important droving routes, used when moving stock to and from market. Some of the best examples of these old routes are found at the head of the 'cul-de-sac' glens of the Mounth. Jock's Road, for example climbs out of Glen Doll, crossing a bealach south of the White Mounth before dropping down towards Braemar. Few modern roads follow these old routes, one of the exceptions being the A93 through Glen Shee which crosses the Mounth at Cairnwell. While these historic tracks, together with more recent stalkers' paths and footpaths, are an important recreational resource, the creation of additional tracks and paths could have a local landscape impact and could undermine the special character of these areas.

5.3.11 Other signs of human activity are generally limited to the patterns created by heather burning, and the comparatively small number of upland conifer plantations. Large coniferous woodlands on the upland plateaux (for example above Glen Garry) are less intrusive than within the glens or where the scale of the landscape is less expansive. Here they appear as a thin layer which does not upset the scale or drama of the highlands. The hills are largely free from tall structures with the exception of pylons serving hydroelectric schemes, particularly in the West Highlands. Depending upon the angle of view, the season and the light, these pylons can appear as light grey structures against an otherwise sombre landscape of browns and greens.

5.3.12 In summary, therefore, despite active management which favours heather moorland over other forms of sub-arctic vegetation, the Highland Summits and Plateaux comprise one of the wildest landscapes in the UK. Dramatic mountains, sweeping moorlands, extensive views throughout southern Scotland and constant exposure to changing, often extreme weather conditions, all shape perceptions of the landscape. Hidden from view are the more sheltered, fertile and settled glens. Remoteness is another important factor. With just a few roads climbing out of the glens onto the high moorland, these are relatively inaccessible areas requiring commitment on the part of those visiting them.

FORCES FOR CHANGE

5.3.13 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.3.14 **Transport.** For the most part, the highland summits and plateaux are inaccessible, served only by rough tracks or stalkers' paths. The highland massifs are comparatively dissected so many roads follow lowland routes. There are comparatively few highland passes, and these are generally minor in their impact on the upland landscape.

5.3.15 **Forestry and woodland.** The highland summits and plateaux contain relatively little commercial forestry. Notable exceptions include Craigvean Forest between Aberfeldy and Pitlochry and areas around Glen Isla.

5.3.16 The wider landscape impact of these woods is comparatively limited. In part this is because of the high ratio of open moorland to plantation. It also reflects the grand scale of the landscape, and the appearance of the woods as little more than dark shapes on an already sombre landform. This perception could change if the scale of woodland increased significantly so as to replace the mottled appearance of the heather moorland with more uniform areas of conifers. It is unlikely that such proposals will come forward since the regional Indicative Forestry Strategy describes much of the area as being 'unsuitable for tree crops'.

5.3.17 Much of the Highland Summits and Plateaux are managed for deer and grouse, preventing the natural regeneration of woodland where this could occur. To that extent, the upland landscape that we see today is highly managed and closely allied to the historic pattern of estate management and economy. Appropriate grazing management, supported by appropriate funding mechanisms, could help develop opportunities for natural regeneration of dwarf and other woodland on the lower and mid slopes.

5.3.18 **Recreation.** The management of the Highland Summit and Plateau landscape for game has been noted above. With the exception of this, recreation pressures are relatively few on this remote, harsh landscape type. The principal exceptions are the more popular peaks such as Ben Lawers, Schiehallion and Ben Vorlich where substantial numbers of walkers and climbers can cause local problems of erosion. The creation of new paths and tracks in this mountain environment should be avoided. There may be additional pressures for ski development, particularly at the head of Glen Beag where there are proposals to expand the existing facilities southwards. This would extend the zone of visual influence associated with the ski area. Elsewhere, there may be pressure to expand cross-country skiing, with the provision of cross-country routes in areas such as Ben Lawers.

5.3.19 **Tall structures.** The Highland Summits and Plateaux are comparatively free from tall structures such as pylons and masts. There are, however, a number of electricity pylons lines which link hydroelectric plants and which climb out of the highland glens to cross the exposed upland. Examples include the pylons between Tummel Bridge and Glen Garry, and the pylons between Appin of Dull and Glen Quaich. Though the lines of pylons are relatively small when set within the expansive uplands, they are a modern and functional intrusion into the highland landscape. Opportunities to bury these cables should be taken should they arise. Additional pylons should be resisted.

LANDSCAPE GUIDELINES

5.3.20 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the characteristic upland landscape of open, unsettled moorland vegetation and to maintain the contrast with the more settled and wooded glens and lowlands.

Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, or features such as concrete kerbing.
Development	• Discourage any development on the Highland Summits and Plateaux.
Forestry and woodland	• Ensure any new woodland proposals comply with the agreed standards of good forest design. • Encourage the removal of small, geometric plantations, allowing equal increases in planting in more appropriate locations elsewhere. • With respect to the replanting of existing plantations: - encourage the rationalisation of woodland to avoid isolated, small to medium sized areas of plantation woodland which appear prominent in an otherwise open landscape; - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes.

(Forestry and woodland contd.)	• Explore opportunities to modify management practices to allow the regeneration of native upland treecover in some areas.
Recreation	• Maintain low-key level of provision. • Avoid creation of new mountain tracks and paths. • Expansion of ski facilities into this landscape type should only be permitted if it is clear that: - the visual and landscape impact is limited; - there is no scope to accommodate expansion to the north; - the economic need for the scheme is demonstrated. • Indirect effects including traffic and the proliferation of related facilities (ski hire shops) should also be taken into account.
Tall structures	• Discourage proposals for aerials, masts or wind turbines or additional pylons because of their likely impact on the harsh, undeveloped character of the Highland Summits and Plateaux. • Ensure that any proposals are subject to rigorous landscape impact assessment. • Where new power or telephone lines are proposed or required, ensure that operators adopt underground cable solutions.

Photo: SNH

LOWER HIGHLAND GLENS WITH LOCHS

Loch Tummel - a richly wooded landscape enclosing the enlarged loch; settled and modified by designed landscapes.

Photo: SNH

HIGHLAND SUMMITS AND PLATEAUX

Exposed, craggy uplands along Glen Lyon, punctuated by surviving Scots pines.

Photo: SNH

PLATEAU MOOR

Lochans, blanket bog, granite boulders and grey tree stumps characterise the desolate landscape of Rannoch Moor

HIGHLAND FOOTHILLS

A complex landscape of interlocking, ridge-like hills and intervening valleys - here close to White Caterthun Fort.

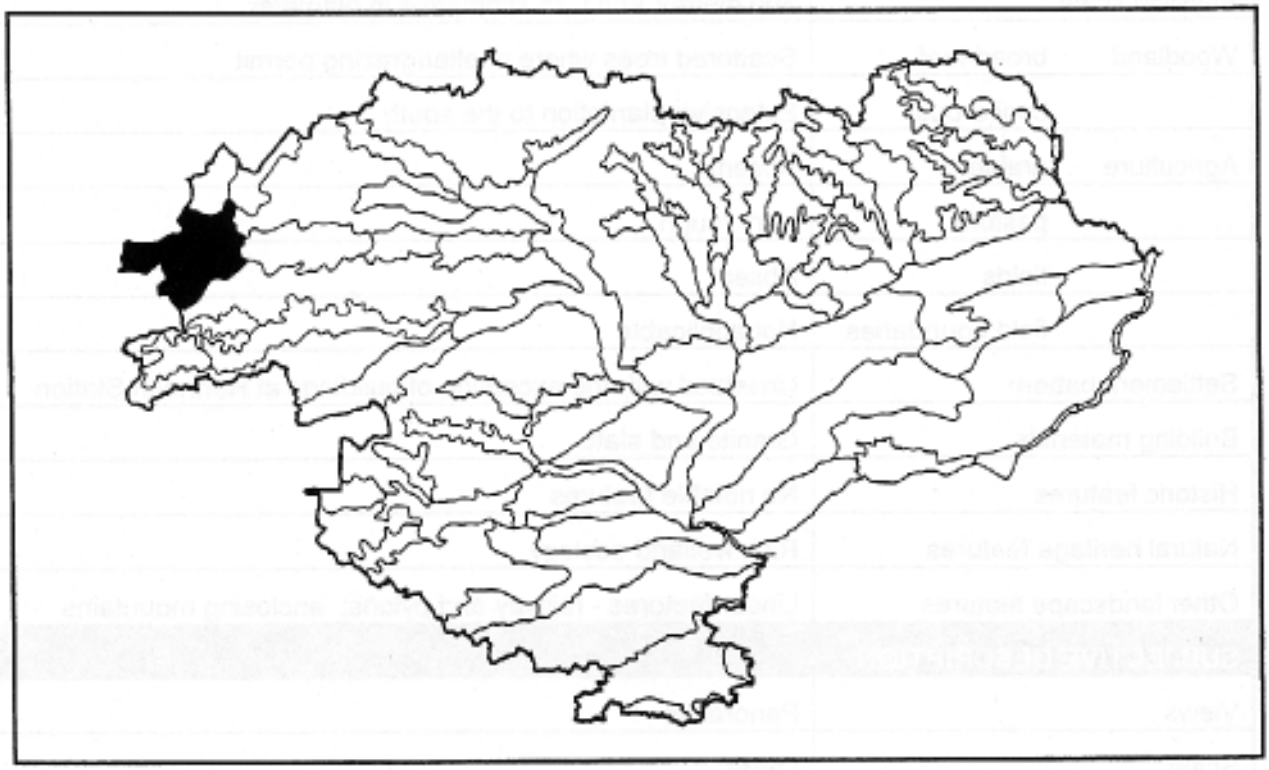
LOWLAND HILLS

The rounded upland character of the hills south of Comrie.

FIGURE 14

LANDSCAPE CHARACTER TYPES

PLATEAU MOOR: RANNOCH MOOR (4)



KEY CHARACTERISTICS

- *highly eroded granite basin overlain with glacial deposits*
- *mosaic of lochans, mires, hillocks and boulders*
- *extensive coniferous woodland to the south*
- *modern development prominent but fails to tame the landscape*
- *wild, exposed and remote*

OBJECTIVE DESCRIPTION		Plateau Moor
Physical scale		300 metres AOD, 25 kilometres in diameter
Woodland	broad-leaf	Scattered trees where shelter/grazing permit
	coniferous	Extensive plantation to the south
Agriculture	arable	Absent
	pasture	Very rough
	fields	Absent
	field boundaries	Not applicable
Settlement pattern		Unsettled with the exception of buildings at Rannoch Station
Building materials		Granite and slate
Historic features		No notable features
Natural heritage features		Rich wetland ecology
Other landscape features		Linear features - railway and pylons; enclosing mountains
SUBJECTIVE DESCRIPTION		
Views		Panoramic
Scale		Large
Enclosure		Exposed
Variety		Simple
Texture		Very rough
Colour		Muted
Movement		Remote
Unity		Unified
'Naturalness'		Undisturbed

LOCATION

5.4.1 At the western end of Loch Rannoch, the Dalradian and Moinian schists which are ascendant throughout much of the Highlands give way to an extensive basin of intrusive granite covering an area about 25 kilometres in diameter. At an altitude of about 300 metres, this is Rannoch Moor.

PHYSICAL CHARACTERISTICS

5.4.2 The moor's landform belies its geological structure. Granite usually comprises the most resistant rocks, remaining as upland when softer rocks around have been eroded away. However, Rannoch Moor formed the epicentre of the ice sheets that were formed during successive periods of glaciation. The elevated rates of accumulation and ice movement resulted in rapid and sustained scouring and erosion on the moor, and along the principal routes emanating from it (including the glens of Loch Rannoch, Loch Ericht and Glencoe and Glen Etive). This accentuated the erosion resulting from chemical weathering of the granite in the pre-glacial era. When the ice sheets melted, the area was left as undulating plateau of morainic deposits punctuated by hundreds of small lochans and a handful of larger lochs.

5.4.3 The vegetation that subsequently developed represents the most extensive area of western blanket mire in Great Britain. Plants include ling, bog myrtle, a variety of grasses and sphagnum mosses. The blanket bog grew under the cool post-glacial conditions that have prevailed since the last Ice Age, sustained by high levels of rainfall. Where shelter is greatest, a scatter of deciduous trees survives, remnants of what would once have been extensive native woodland. The stumps of many trees are preserved in the peat bogs on the moor.

SETTLEMENT AND LAND USE

5.4.4 Though wild and remote, signs of human activity are not absent from Rannoch Moor. Protected by snow fences and sheds, the West Highland railway crosses the moor with a halt at Rannoch Station, 10 kilometres west of Loch Rannoch. Loch Eigheach has been dammed and enlarged to generate hydroelectricity, and a line of grey pylons serving the power station marches defiantly across the moorland landscape. Finally, an extensive area of coniferous plantation (about 50 square kilometres) covers the moor to the south of Rannoch Station.

5.4.5 Like the Highland Summits and Plateaux, the Plateau Moor landscape type comprises one of the wildest areas and, for many, most forbidding landscapes in Scotland. Treacherous mires, boulder-strewn moorland, a complete lack of shelter, and exposure to winds and rain make this an inhospitable environment. Enclosing summits such as Sgor Gaibhre often disappear into the swirling clouds that often descend onto the moor. It is a constantly changing landscape, transforming itself according to the light, the weather and the season. Though these qualities are valued by many, most people prefer to hurry through, travelling along the West Highland railway line, or the A82 further to the west.

FORCES FOR CHANGE

5.4.6 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.4.7 **Forestry and woodland.** Though much of Rannoch Moor comprises a mosaic of lochans, bog and boulder strewn moorland, large areas were planted with conifers in the earlier part of the 20th century. These woods have matured and now comprise monocultures of even-aged trees which hide much of the variety of the underlying landscape. Since they were planted, opinions have changed. On the one hand, the wilderness of Rannoch Moor is now more valued as a landscape resource. On the other hand, as has been described in preceding sections, forestry practices have progressed to the extent that comprehensive, large-scale afforestation has been abandoned in favour of a more sensitive approach which takes into account more fully the importance of landscape. The challenge at Rannoch Moor is to decide how replanting, when it occurs, should create a more natural form. Much has to do with the nature of the woodland edge, the ratio of open space to woodland, the size and shape of planting and felling coupes and the degree of integration with native and semi-natural woodland.

5.4.8 Rannoch Moor includes a few areas of remnant native woodland. It is likely that grazing and other forms of management are preventing natural regeneration outside of fenced areas. There may be opportunities to change management practices so as to encourage regeneration, particularly where this allows integration with commercial forestry.

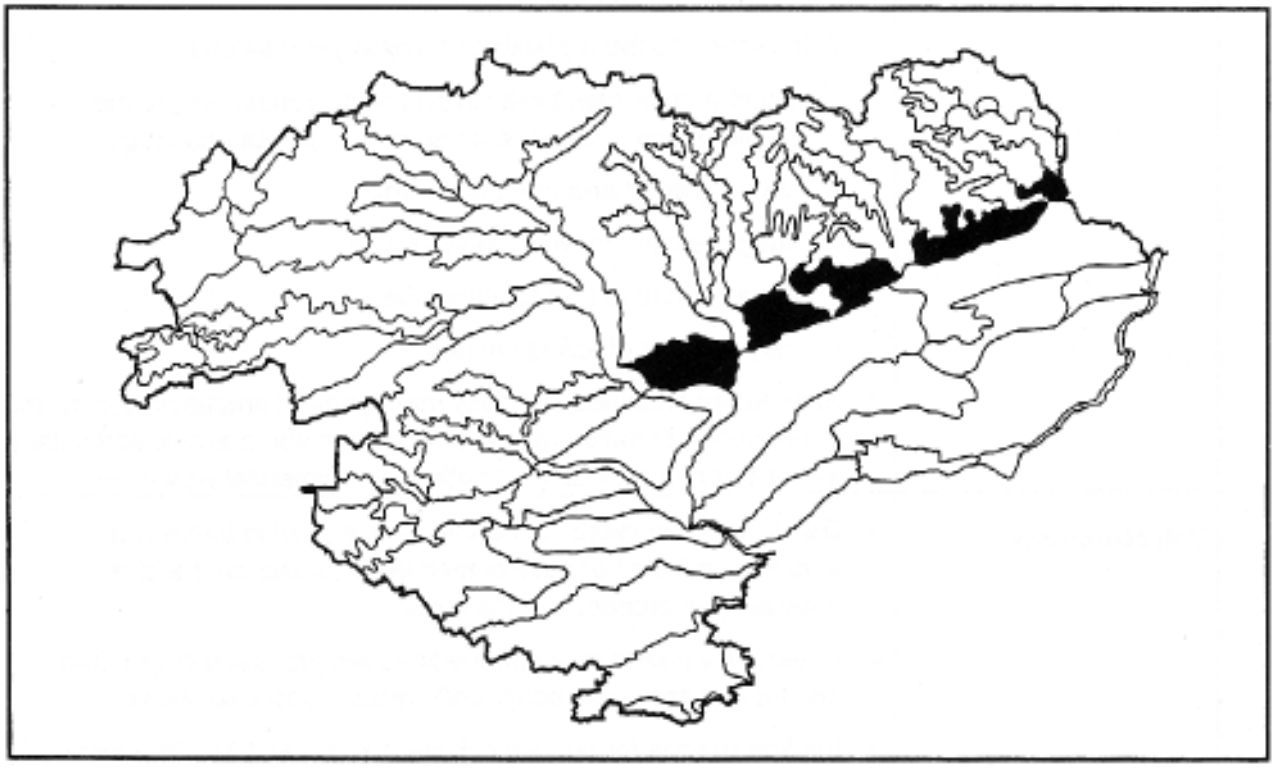
5.4.9 **Tall structures.** Rannoch Moor is currently comparatively free from tall structures such as pylons and masts. There is, however, a line of pylons which follows the road to Rannoch Station before turning south to follow the railway line. The grey of the pylons makes them stand out against the dark green of the conifer plantations. Though the line of pylons is relatively small when set within the expansive moorland, it is a modern and functional intrusion into the landscape. Opportunities to bury these cables should be taken should they arise. Additional pylons should be resisted.

LANDSCAPE GUIDELINES

5.4.10 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the exposed upland character of the moor and to reduce the impact of modern features such as commercial woodland and electricity pylons.

Forestry and woodland	• Ensure any proposals for further woodland expansion are rigorously tested by environmental assessment and comply with the principles of good forest design. • With respect to the replanting of existing plantations: - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins; - integrate conifers with native species; - employ more varied species mixes; - vary the size of felling coupes. • Explore opportunities to modify management practices to allow the regeneration of native upland treecover in some areas, particularly where this can provide a transition to commercial woodland.
Tall structures	• Discourage proposals for aerials, masts or wind turbines or additional pylons because of their likely impact on the harsh, undeveloped character of the moor. • Where new power or telephone lines are proposed or required, ensure that operators adopt underground cable solutions. • Explore options for burying existing cables, and for alternative colours for pylons to reduce their prominence in the landscape.

HIGHLAND FOOTHILLS (5)



KEY CHARACTERISTICS

- *complex geological structure resulting from their position along the line of the Highland Boundary Fault*
- *glacial deposits*
- *steep whale backed hills and south-west to north-east valleys*
- *winding, gorge-like main river valleys*
- *gateway to the Angus Glens with a rich historic heritage*
- *building materials reflecting geological transition*
- *complex, sometimes disorientating landscape with glimpses of Highland and lowland*

OBJECTIVE DESCRIPTION		Highland Foothills
Physical scale		Climbing from about 100 metres at their southern edge to summits between 300 and 400 metres AOD
Woodland	broad-leaf	Scattered areas of woodland
	coniferous	Small to medium sized coniferous plantations, often geometric in form
Agriculture	arable	On gentler, lower slopes, particularly along northern edge of Strathmore
	pasture	Extensive areas of pasture
	fields	Medium, regular shaped where landform permits
	field boundaries	Hedges, sometimes heathy in character and some dry-stone walls
Settlement pattern		Settlement concentrated on low ground, particularly where rivers have cut corridors through to the lowland
Building materials		Combination of hard rocks from the north and sandstones from the south
Historic features		Very rich in defensive sites, hill-forts, castles and fortified manor houses
Natural heritage features		Mainly confined to intervening valleys and gorges
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Intermittent
Scale		Small to medium
Enclosure		Semi-enclosed
Variety		Varied
Texture		Smooth/rough
Colour		Muted
Movement		Peaceful
Unity		Fragmented
'Naturalness'		Tamed

LOCATION

5.5.1 Along the Highland Boundary Fault, at the foot of the Mounth Highlands, a series of foothills mark the transition to the lowland of Strathmore. Dissected by the rivers that flow out of the highland glens, the Highland Foothills landscape type forms a series of units running eastwards from Dunkeld to Edzell.

PHYSICAL CHARACTERISTICS

5.5.2 The geology of this area is mixed, comprising areas of schist to the north-west and Old Red Sandstone to the south-east, separated in places by a variety of resistant conglomerates, intrusive and extrusive rocks including slates, lavas and tuffs. Superimposed upon this structure is a mass of glacial moraine, deposited as the ice sheets retreated into the glens. The complexity of the geology is reflected in a landscape of steep, whale-backed hills and intervening valleys, generally orientated on an east-west axis. Many of the Highland Boundary rocks are harder than those to the north and south, and rivers flowing off the highlands have been forced to find the least resistant route. Each turns north-eastwards before turning to the south once again. The hills are most distinct in the east. In the west, the hills between Dunkeld and Blairgowrie are less well-defined, though there are many signs of glacial deposition.

SETTLEMENT AND LAND USE

5.5.3 Much of the Highland Foothills landscape type is under intensive agricultural use, comprising a mixture of fertile grasslands and, on the more level, better drained land, arable fields. A small number of coniferous plantations are found on the foothills, while broad-leaf woodland is concentrated on steeper slopes, particularly along the narrow river valleys, or dens, that cut through the hills. Many of these valleys are ecologically important, supporting ancient woodland and the cool damp conditions favouring ferns and mosses. Many of the valleys are designated as SSSIs.

5.5.4 Historically, this area represented the gateway to the glens, the boundary between the highland and lowland glens, and the limit of Roman occupation. It is not surprising, therefore, that the Highland Foothills have a rich heritage of archaeological sites, ranging from sculptured stones and crosses, through hill-forts and Roman camps to dramatic medieval castles and fortified manor houses. Particularly significant examples of prehistoric hill-forts are found at Brown Caterthun and White Caterthun. A number of large houses, for example The Burns near Edzell, are located in this landscape type. Modern settlement echoes the past importance of the glens, most towns and villages of any size being sited close to one of the valleys emanating from the foothills. Building materials reflect the geological transition, comprising a mixture of grey schists and granites and the more colourful lowland red sandstones.

5.5.5 In contrast to the apparent simplicity of lowland Strathmore and the clear structure of the Mounth Highland and glens, this is a confusing, almost disorientating landscape. The hills and their intervening valleys mean that it is relatively well-contained, with only occasional glimpses to the heath moorland above, or open lowland below. Valleys appear to run in all directions, twisting up into the Highlands, running along the fault line and leading down to Strathmore.

VARIATIONS IN LANDSCAPE CHARACTER

5.5.6 The Highland Foothills are most pronounced, but also narrowest in the east. Here the whale-backed hills are sharpest in relief, enclosing a narrow valley running parallel to the Highland Boundary Fault to the north. Further west, the foothills are less pronounced, and their width increases to over 5 kilometres. There is a gradual transition in character and the area of foothills between Rattray and Dunkeld, which includes a series of small kettle hole lochs along the course of the Lunan Burn, is quite different in appearance from those areas near Edzell. The waterbodies are of considerable nature conservation importance, adding further interest to this landscape.

FORCES FOR CHANGE

5.5.7 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.5.8 **Agriculture.** The transitional nature of the Highland Foothills is reflected in the pattern of agriculture. Many farms straddle the transition, combining sheep and cattle rearing on the uplands with arable cultivation on the lowlands. This pattern of mixed farming means that farms have the opportunity to vary the extent of arable cultivation or grazing to reflect prevailing market conditions. The support mechanisms for cereal production in particular may have encouraged farmers to extend arable cultivation from the lowlands into parts of the foothills, in places weakening the contrast between the hills and the lowland strath. On the other hand, the Highland Foothills mark the approximate boundary of the Less Favoured Area which covers much of the Highlands, providing support for hill farming. This scheme offers income stability for sheep and cattle farmers on higher ground. However, as with all forms of support, it makes the economy potentially vulnerable to changes in national or European policy.

5.5.9 Many farms in the Highland Foothills have constructed modern agricultural buildings such as sheds and barns. These are generally of a smaller scale than those found in the lowland straths. Furthermore, the more complex landform provides a much greater degree of screening.

5.5.10 **Transport.** The Highland Foothills are laced with a network of minor roads, often bordered by hedgerows (sometime comprising gorse) or contained within steep banks. The circuitous nature of many of these roads emphasises the complicated nature of the landform. It is important that the small scale and rural character of these roads is retained. Hedges and hedgerow trees should be conserved and signage and 'improvements' such as widening or kerbing resisted.

5.5.11 **Development.** Though relatively close to the string of small towns and villages located at the mouths of the Angus Glens, development within the foothills is very limited, generally comprising little more than a scatter of farmsteads and a few small hamlets. While further residential development could be accommodated without major impacts on

the wider landscape, the effect on the local landscape could be significant. Although there may be some scope for residential conversions where traditional farm buildings have become redundant, generally new development should be focused outwith this landscape type.

5.5.12 **Forestry and woodland.** The Highland Foothills have a limited amount of woodland, in some places hidden within the complex of hills, in others crowning the hills overlooking the lowland straths. While much of this woodland is commercial in nature, some has been planted to provide shelter for game, stock or crops. The Tayside Indicative Forestry Strategy categorises much of the Highland Foothills landscape type as being 'preferred' or 'potential' areas for new planting. Taking a regional perspective it is evident that the foothills are relatively free from the constraints associated with the most productive agricultural land and the sensitive highland areas. At a more local level, there is obviously a concern that the scale of any new planting should not be such as to change significantly the landscape character of the foothills. Key factors to be considered include:

- scale of new planting relative to the landform and the proportion of unplanted land;
- species composition;
- relationship with existing semi-natural or planted woodland;
- retention of key views within and outwith the foothills;
- size of felling coupes;
- factors such as agricultural viability, nature conservation and historic sensitivities.

5.5.13 These issues are addressed by Forestry Authority woodland design guidance (see section 4.19.), and are summarised in the landscape guidelines presented at the end of this section.

5.5.14 **Recreation.** Access to the Highland glens, the proliferation of castles and other historic sites, and the particular nature conservation interest of areas such as the Lunan Valley, means that the Highland Foothills are popular for recreation and tourism. A number of caravan parks are found within or immediately adjoining the foothills. While these generally have a limited impact on the wider landscape, it is possible, however, that there may be pressure to expand these sites or create new ones. There may also be pressure for chalet developments or timeshare schemes. Where they are permitted, such developments should be located in less prominent lowland locations, exploiting the natural screening provided by the topography and existing woodland. Additional impacts on the landscape, including traffic levels on narrow roads, signage, an increase in the loss of tranquillity, should also be taken into account.

5.5.15 **Tall structures.** The Highland Foothills remain comparatively free of tall structures. The principal exception is the high voltage electricity transmission line which climbs into the foothills near Airlie before running north-eastwards through the hills. Given the comparatively small scale of the foothills and the intervening valleys, this line of pylons is a substantial feature in the landscape, conflicting with the area's otherwise rural character.

The effect is particularly significant where the pylons run across hilltops or along ridgelines, or where they run along narrow glens such as that of the Paphrie Burn.

5.5.16 Masts and aerials are largely absent from these hills. Given the growth of telecommunications and the position of the foothills overlooking the lowland straths, however, it is possible that proposals for new masts may come forward. Where possible, these should be resisted, but operators should be encouraged to develop a strategy that reflects the local and strategic landscape effects of masts. Given the density of hill-forts, castles and other significant sites, there must also be concern about the potential effect on the historic component of the landscape, and on people's enjoyment of historic sites in their wider context.

5.5.17 Wind turbines represent a further potential development pressure. Though wind speeds are likely to be significantly lower than in more elevated parts of the Highlands or the Sidlaws/Ochils, it is possible that the lower level of perceived constraint, together with the proximity to the existing electricity distribution network, could favour this area. This would be even more likely if the efficiency of wind turbines continues to improve, thereby making areas with lower wind speeds viable. It is acknowledged that development here could avoid the need to locate turbines in even more sensitive upland areas, or in less sensitive, but more populated areas closer to settlements. It would also mean that, from a distance, turbines would be viewed against a backdrop of higher ground. However, the insensitive development of wind turbines in this area would conflict with the small scale, historic and deeply rural character of the landscape. It would also weaken and confuse the area's role of providing a transition from the unsettled uplands to the fertile and settled lowland.

LANDSCAPE GUIDELINES

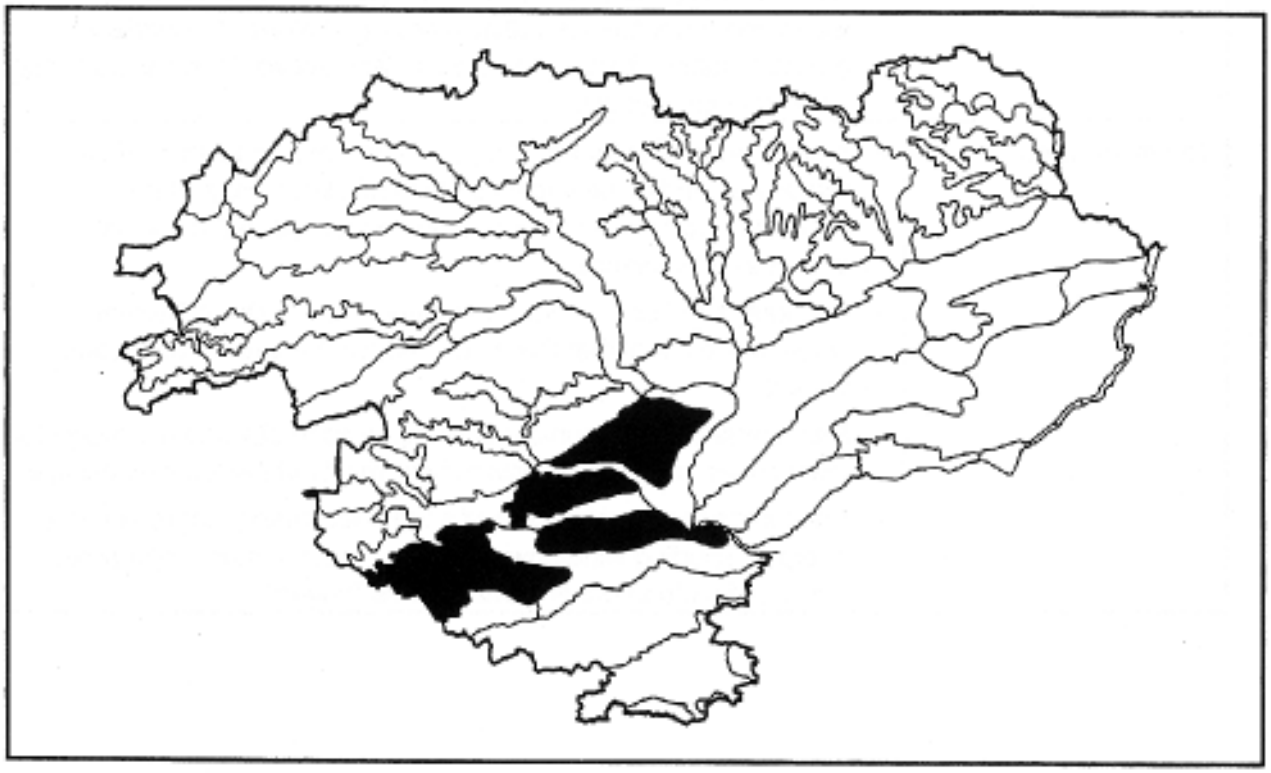
5.5.18 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the small-scale, rural and historic character of the Highland Foothills, recognising their importance in providing a transition zone between the highlands and the lowlands.

Agriculture	• Maintain the distinction between lowland cereals and highland grazing areas. • Encourage farmers and landowners to maintain and replant trees and farm woodlands. Species to include oak, maple, beech and ash. • Use the agricultural development notification scheme to influence the design, colour, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to provide screening where appropriate.

Transport	• Where road improvement schemes take place, ensure that hedges and hedgerow trees are reinstated. • Avoid the use of suburban features such as concrete kerbing in a rural setting unless absolutely necessary. Explore more appropriate alternatives. • Develop a road use hierarchy as a basis for management.
Development	• Discourage significant development in the Highland Foothills. Instead, encourage new development to reinforce the existing settlement pattern in surrounding areas, particularly within the lowland straths. • Where small-scale development is permitted, encourage developers to use local building materials and to adopt local vernacular in respect of density, massing, design, colour and location. Avoid standard designs and layouts. Assess and adopt existing traditional layouts. Consider the preparation of design guides as supplementary planning guidance. • Encourage the appropriate conversion of redundant farm buildings. Guidance should be provided on the way buildings should be converted (including the provision of drives, gardens etc.) to prevent the suburbanisation of the countryside.
Forestry and woodland	• New planting should conform to the Forestry Authority's design guidelines. In particular, it should respond to the small-scale nature of the landscape, complex topography, the importance of views within and out of the hills, and historic and ecological values. • Use new woodland planting to enhance the landscape and nature conservation value of the foothills. New woodland could link existing plantations and semi-natural woodlands in the foothills and lower parts of the Highland glens. • The broad principles of new woodland could include: - overall planting strategy that emphasises the transitional character of the foothills; - expansion/regeneration of native woodlands from highland glens into foothill glens; - mixture of broad-leaf (oak and ash) and conifer species; - small coupes to reflect the small scale of the landscape; - concentration of new woodland on steeper slopes, around the lower slopes of whale backed hills and through small glens towards highlands and lowlands; - retention of key views out from foothills.

Recreation	• Concentrate recreation and tourism developments, including caravan sites, chalet developments and timeshare schemes, in well-screened locations within valleys and glens. Secondary effects resulting from signage, traffic and activity levels should also be taken into account.
Tall structures	• Assess proposals for aerials, pylons or masts in terms of their visual and landscape impact on the local landscape of the Highland Foothills, and the broader landscape of the lowland straths and Highlands. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact. • Encourage telecommunication companies to develop a strategy for mast provision which reflects the sensitivity of the local landscape. • Encourage the development of a regional strategy for renewable energy, including wind power, in order that the most appropriate types of development and areas come forward.

LOWLAND HILLS (6)



KEY CHARACTERISTICS

- *low ridges and hills separating lowland straths and adjoining the nearby uplands*
- *composed of soft, red sandstones*
- *transitional character with pastures on lower slopes, giving way to rough grazing and even open moorland*
- *evidence of several phases of historic settlement*
- *extensive woodland, including forestry plantations*
- *influence of modern development*

OBJECTIVE DESCRIPTION		Lowland Hills
Physical scale		Broad ridges and rounded hills rising to between 150 and 600 metres AOD
Woodland	broad-leaf	Small farm woods and woodland along sheltered burns
	coniferous	Extensive areas of plantation
Agriculture	arable	Limited to lower slopes and some sheltered, gentler upper slopes
	pasture	Improved pasture dominant, giving way to rough grazing and moorland on upper slopes
	fields	Medium, rectilinear where landform allows
	field boundaries	Hedges on lower slopes and walls on upper slopes
Settlement pattern		Sparse scatter of farmsteads. Also masts, roads
Building materials		Sandstone and harder schists and granites
Historic features		Prehistoric, Roman, medieval and later influences
Natural heritage features		Moorland areas
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Panoramic/framed
Scale		Medium
Enclosure		Open to semi-enclosed
Variety		Varied to simple
Texture		Textured to rough
Colour		Muted
Movement		Still
Unity		Interrupted
'Naturalness'		Tamed to restrained

LOCATION

5.6.1 Between Strathallan and the Strath Tay at Dunkeld lies a series of low ridges and hills, separating the lowland valleys. The principal examples include the Gask Ridge west of Perth, the Keillour Forest south of Glen Almond, the Bankfoot Hills between Glen Almond and Dunkeld, and what we have termed the Knaik Hills lying to the south of Glen Artney.

PHYSICAL CHARACTERISTICS

5.6.2 Unlike the Highland Foothills (described above) which have a complex geological structure, the Lowland Hills lie to the south of the Highland Boundary Fault, entirely on the broad band of Old Red Sandstone which runs south-west to north-east across the region. A series of quartz-dolerite dykes run through several of the hills, however, contributing to their greater resistance to erosion. One such dyke runs westwards from Perth along the Gask Ridge to the River Earn near Crieff.

5.6.3 These Lowland Hills form the transition between the Highlands to the north and west and the lowlands to the south and east. They vary in height, the highest being the Knaik Hills which rise to over 600 metres AOD, and the lowest being the Gask Ridge which rises to just 150 metres AOD. In contrast to the areas of true upland to the north, these hills are generally smooth and well-rounded. Small valleys cut easily into the sandstone creating a series of convex ridges and valleys to the north of the lower part of Glen Almond.

5.6.4 The transitional nature of the hills is reflected in landcover and vegetation. Pastoral and even arable fields on the lower slopes give way to rough grazing and then to open moorland as height is gained. This is particularly evident on the Knaik Hills which, because of their scale and height, have a particularly upland character. Even on the low Gask Ridge, where farmland extends onto the summit line, and the land is quite fertile, the greater exposure contributes to the transitional character. There is a considerable amount of coniferous forestry in this landscape type, though this is concentrated where less fertile glacial till occurs. Large plantations are found on the lower slopes of the Knaik Hills, along the Gask Ridge and in the Keillour Forest. Smaller plantations are found along the valleys which drain the Bankfoot Hills. In places, stands of conifers are extremely geometric. Particular examples are found east of the A822 above Crieff where narrow bands of conifers extend up the hillside from the floor of the glen, pushing over the summit and beyond.

SETTLEMENT AND LAND USE

5.6.5 With the exception of their most elevated parts, the landscape of these hills shows evidence of thousands of years of settlement and land use. The hills are rich in prehistoric remains including standing stones (for example on the lower slopes of Dunruchan Hill south of Comrie, and in the vicinity of Fowlis Wester in the Keillour Forest), cairns, stone circles and hut circles. Roman occupation is equally well-represented by forts (e.g. at Braco and west of Buchanty at the head of lower Glen Almond), roads (e.g. along the Gask Ridge) and signal stations. The hills' location close to several 'gateways' to the Highlands is reflected in the number of castles and fortified houses. Examples include Huntingtower, Keillour and Drummond Castles. Many of these became transformed into landscaped estates over subsequent centuries. Today,

agriculture predominates. There are, however, signs of modern development including the busy A9 corridor where it climbs over the Gask Ridge to the west of Perth, the lines of pylons which fan out from the highland glens carrying power to the lowlands, and a number of telecommunication masts (e.g. on Kirton Hill near Perth) exploiting the hills' proximity to settled lowland. Large areas of the Knaik Hills are reserved for military use.

FORCES FOR CHANGE

5.6.6 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.6.7 **Agriculture.** The transitional nature of the Lowland Hills (like the Highland Foothills) is reflected in the pattern of agriculture with arable on some of the lower slopes giving way to enclosed pastures and eventually, in the case of the more exposed areas, to rough moorland grazing. As in the case of the Highland Foothills, the nature of this transition may vary according to market conditions and the level of support. In particular, it is likely that cereal production has extended uphill from the lowland straths onto parts of the lowland hills such as the Gask Ridge. This does not, however, seriously weaken the contrast between lowland, lowland hills and the highlands.

5.6.8 Many farms in the foothills have constructed modern agricultural buildings such as sheds and barns. These are generally of a smaller scale than those found in the lowland straths.

5.6.9 **Transport.** The Lowland Hills have a network of main and minor roads. These are generally small-scale and fit with the grain of the landscape. The exception is the A9 corridor which crosses the eastern part of the Gask Ridge and the Bankfoot Hills to the north of Perth. Existing coniferous woodland, together with cuttings provide a degree of screening. However there are a number of sections (particularly the length climbing onto the Gask Ridge from Strathearn) which have a much wider landscape impact.

5.6.10 **Development.** Development within the Lowland Hills is very limited, generally comprising little more than a scatter of farmsteads and a few small hamlets. Small, stone settlements such as Fowlis Wester and Findo Gask characterise the lower parts of this landscape type. Along the A9 corridor, particularly to the north of Perth, there has been some more recent residential settlement, in particular expanding villages such as Bankfoot. In others, such as Methven for example, land has been allocated for further housing development. There is scope to accommodate further development in the dissected lower parts of the Bankfoot Hills without major impacts on the wider landscape. The Perth Area Local Plan (Perth and Kinross District Council, 1996) indicates that the possibility of establishing a new village in the vicinity of Moneydie is the subject of early discussions between interested parties. The impact of housing developments in these Lowland Hill areas would have as much to with their layout, scale, variety, materials and vernacular, as with their location within the landscape. Housing developers should be encouraged to adopt layouts and designs which integrate new dwellings into existing

settlements, rather than simply grafting suburban estates onto the edge of villages and hamlets. There may also be some scope for sensitive residential conversions where traditional farm buildings have become redundant.

5.6.11 **Forestry and woodland.** The elevation, soils and prevailing climate of the Lowland Hills makes them well-suited to commercial forestry. This is reflected in the Tayside Indicative Forestry Strategy which categorises much of this landscape type as being 'preferred' or 'potential' areas for new planting. The area already includes a considerable number of coniferous plantations, particularly along the low ridges between Glen Almond and Strathearn. Taking a regional perspective it is evident that the Lowland Hills, like the Highland Foothills, are relatively free from the constraints associated with the most productive agricultural land and the sensitive Highland areas. At a more local level, there is obviously a concern that any additional planting should not be such as to change significantly the landscape character of the hills. Some areas already have about 50% planting, while others (particularly the Knaik Hills and the western part of the Bankfoot Hills) have an open, upland character that could be affected by new planting. Key factors to be considered include:

- scale of new planting relative to the landform and the proportion of unplanted land;
- species composition;
- relationship with existing semi-natural or planted woodland;
- retention of key views within and outwith the foothills;
- size of felling coupes;
- factors such as agricultural viability, nature conservation and historic sensitivities.

5.6.12 These issues are addressed by Forestry Authority woodland design guidance (see section 4.19), and are summarised in the landscape guidelines presented at the end of this section.

5.6.13 There is also a need to address the character of existing plantations, many of which were established many decades ago. A particular concern relates to the hillside shelterbelts to the east of the A822 between Crieff and Glen Almond. Here narrow, geometric strips of woodland run vertically up the hillside, one even crossing the hilltop and descending the other side. While such plantations may provide valuable shelter for stock or game, their landscape impact is high. Consideration should be given to removing them, in due course, and perhaps creating new woodlands elsewhere in compensation. Elsewhere, harvesting and replanting will provide an opportunity to remodel some of the more geometric plantations to create more naturalistic and sensitive woodland forms.

5.6.14 **Tall structures.** The Lowland Hills are comparatively free of tall structures. The principal exceptions are the high voltage electricity transmission lines which cross the area, and the masts that are sited on high ground overlooking Perth (e.g. near Methven and on Kirton Hill). It is possible that there may be pressure for additional masts as telecommunications traffic grows.

5.6.15 At a small scale, wind power has been important in this area for many decades, being harnessed by wind pumps to raise water. With the development of modern wind turbines to generate power, it is possible that this area may come under pressure for wind farm development. Though wind speeds are likely to be significantly lower than in more elevated parts of the Highlands or the Sidlaws/Ochils, it is possible that the lower level of perceived constraint, together with the proximity to the existing electricity distribution network, could favour this area. This would be even more likely if the efficiency of wind turbines continues to improve, thereby making areas with lower wind speeds viable. It is acknowledged that development here could avoid the need to locate turbines in even more sensitive upland areas, or in less sensitive, but more populated areas closer to settlements. It would also mean that, from a distance, and from some directions, turbines would be viewed against a backdrop of higher ground. However, the insensitive development of wind turbines in this area could conflict with the small-scale, historic and deeply rural character of the landscape. It would also weaken and confuse the area's role of providing a transition from the unsettled uplands to the fertile and settled lowland.

LANDSCAPE GUIDELINES

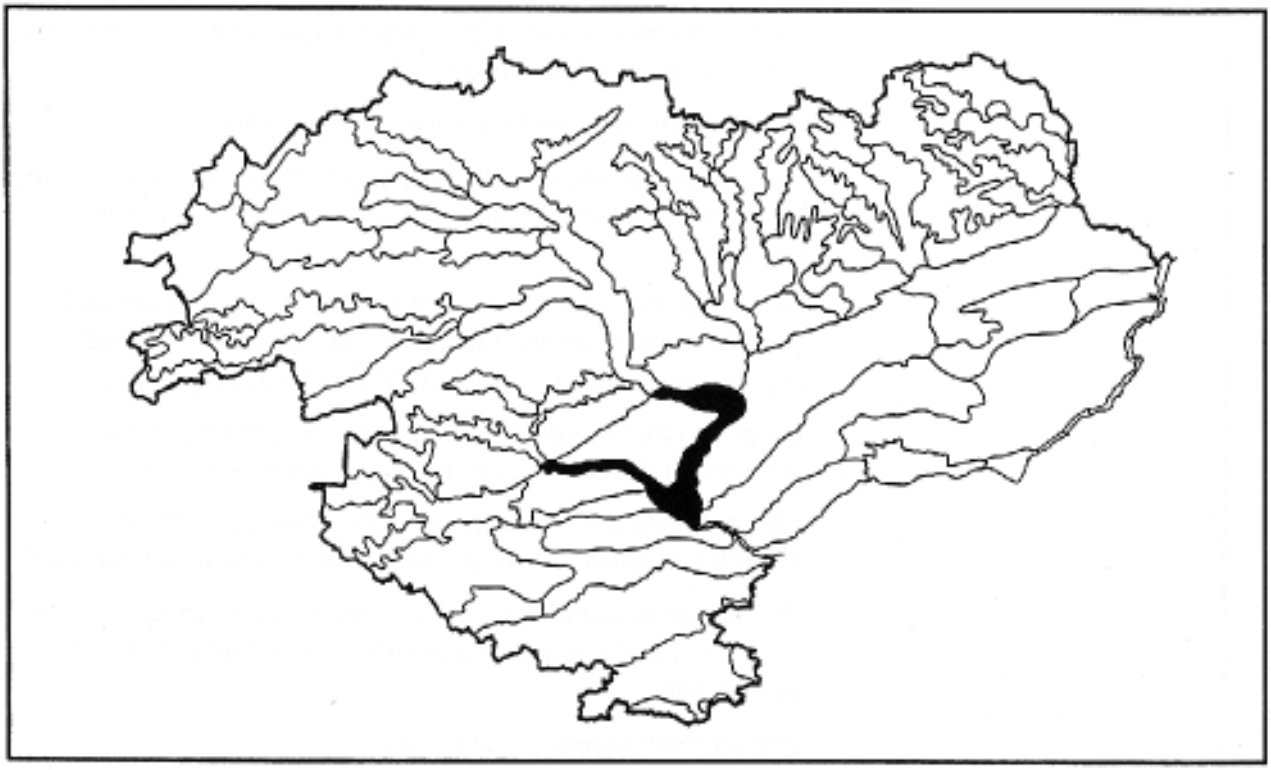
5.6.16 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the small-scale, rural and historic character of the Lowland Hills, recognising their importance in providing a transition zone between the Highlands and the Lowlands.

Agriculture	• Maintain the distinction between lowland cereals and highland grazing areas. • Encourage farmers and landowners to maintain and replant trees and farm woodlands. Species to include oak, maple, beech and ash. • Use the agricultural development notification scheme to influence the design, colour, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to provide screening where appropriate.
Transport	• Where necessary, explore opportunities to provide additional on and off-site screening of major roads. • Where more minor road improvement schemes take place, ensure that hedges, hedgerow trees, gates and other features are re-instated. • Avoid the use of suburban features such as concrete kerbing in a rural setting unless absolutely necessary. Explore more appropriate alternatives. • Develop a road use hierarchy as a basis for management.

Development	• Focus new development in existing towns and villages so as to reinforce the historic pattern of settlements and to protect the rural character of other parts of the lowland glens. • Discourage the simplistic grafting of housing estates onto the edge of settlements. Encourage more imaginative schemes which respond to the existing patterns of layout, structure, massing and scale. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles. • Consider positive ways of addressing the interface between settlements and the surrounding countryside. These could include: - screening; - new buildings which integrate surrounding areas; - key vistas and views; - landmark features; - gateways and approaches. • Where small-scale development is permitted, encourage developers to use local building materials and to adopt local vernacular in respect of density, massing, design, colour and location. Avoid standard or suburban designs and layouts. Assess and adopt existing traditional layouts. Consider the preparation of design guides as supplementary planning guidance. • Encourage the appropriate conversion of redundant farm buildings. Guidance should be provided on the way buildings should be converted (including the provision of drives, gardens etc.) to prevent the suburbanisation of the countryside.
Forestry and woodland	• New planting should conform to the Forestry Authority's design guidelines. In particular, it should respond to the small-scale nature of the landscape, complex topography, the importance of views within and out of the hills, and historic and ecological values. • The broad principles of new woodland could include: - overall planting strategy that emphasises the transitional character of the Lowland Hills; - focus new planting in lower areas, retaining more open, upland character of areas nearer the Highland Boundary Fault; - consider scope for regeneration of native woodlands on higher ground to provide a transition to more heavily wooded areas;

(Forestry and woodland contd.)	- favour a mixture of broad-leaf (oak and ash) and conifer species; - vary the size of planting and felling small coupes to reflect the scale of the local landscape. • With respect to the replanting of existing plantations: - encourage the removal of small, geometric plantations, allowing equal increases in planting in more appropriate locations elsewhere; - encourage the rationalisation of woodland to avoid isolated, small to medium-sized areas of plantation woodland which appear very prominent in an otherwise open landscape; - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes.
Tall structures	• Assess proposals for aerials, pylons or masts in terms of their visual and landscape impact on the local landscape of the foothills, and the broader landscape of the lowland straths and Highlands. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact. • Encourage telecommunication companies to develop a strategy for mast provision which reflects the sensitivity of the local landscape. • Encourage the development of a regional strategy for renewable energy, including wind power, in order that the most appropriate types of development and areas come forward.

LOWLAND RIVER CORRIDORS (7)



KEY CHARACTERISTICS

- *well-defined river corridors in broader lowland landscapes*
- *meandering, often incised course through softer sandstones*
- *semi-natural woodland on steeper slopes*
- *rapids, weirs and mills where harder rocks cross the valley*

OBJECTIVE DESCRIPTION		Lowland River Corridors
Physical scale		Narrow corridors up to 3 km wide, containing rivers incised by up to 40 metres; falls and rapids where river crosses bands of harder rocks
Woodland	broad-leaf	Semi-natural woodland on steep incised slopes
	coniferous	A few areas where plantations or policy woodlands extend to the river edge
Agriculture	arable	On higher ground either side of river
	pasture	On higher ground either side of river, on gentler slopes and on a few areas of level floodplain
	fields	Within inner valley, size and shape determined by topography; on higher, level ground, larger and more geometric fields
	field boundaries	Hedges and post-and-wire fences
Settlement pattern		A number of mill settlements sited close to rapids and weirs. Also historic houses and designed landscapes enjoying riverside location
Building materials		Red sandstone
Historic features		Historic houses and designed landscapes, castles and mills
Natural heritage features		Hanging woodlands, rapids
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Small to medium
Enclosure		Semi-enclosed
Variety		Varied
Texture		Textured
Colour		Colourful
Movement		Peaceful
Unity		Unified
'Naturalness'		Undisturbed to tamed

LOCATION

5.7.1 Two Lowland River Corridors stand out as having distinctly different characters from the surrounding landscape. The first is the River Tay corridor between the Highland Boundary fault and the Firth of Tay at Perth. The second, which is of a much smaller scale, is the lower section of Glen Almond from the Highland Boundary fault eastwards to Perth.

PHYSICAL CHARACTERISTICS

5.7.2 Unlike their upper reaches where both rivers are constrained within glens cut through the hard schists and grits, south of the Highland Boundary Fault they flow onto the softer Old Red Sandstones. Here the rivers have been able to meander more freely, though rising land levels following the end of the last Ice Age have resulted in both rivers developing incised channels. Where the more resistant igneous dykes cross the rivers, rapids and cataracts occur.

5.7.3 After crossing the Highland Boundary Fault near Murthly, the Tay swings in a series of broad meanders across a wide, flat floodplain. As it flows south the meanders tighten and the river enters an inner valley up to 40 metres deep. Within this incised channel, there is little or no floodplain and the fertile haughs found upstream are absent. Many of the steep slopes are clothed in deciduous woodland, further increasing the sense of enclosure which cuts the river off from the wider landscape. South of Stormontfield, the Tay valley broadens once more, forming the broad basin with river terraces occupied by Perth and Scone. However, encountering the hard igneous rocks of the Sidlaws, the river has cut a narrow valley, turning eastward to the Carse of Gowrie.

SETTLEMENT AND LAND USE

5.7.4 The River Tay has stimulated several phases of settlement. In prehistoric times, it is likely that the fertile haughs of the river attracted hunter-gatherers and the earliest settlers. However, as with other locations close to gateways into the Highlands, the defensive structures of Roman and subsequent eras have left a more lasting mark on the landscape. The strategic importance of Strath Tay, leading both north and west through the uplands is reflected in the presence of a Roman fort at Inchtuthill south of Spittalfield, and a series of smaller castles such as those near Kinclaven and Stanley. Medieval settlement was focused at Perth, a strategic location in the Tay gap, and at the lowest bridging point. The landscape quality of the river corridor contributed to the later development of landscaped estates associated with historic houses such as Murthly, Meikleour and Scone. The series of rapids that are found along the River Tay stimulated the development of watermills, powering Perthshire's textile industry during the industrial revolution. Mills were constructed at several places, most spectacularly at Stanley. Here the river turns through a tight meander, enclosed within a 40 metre deep gorge. A tunnel was built through the neck of the meander, leading water away from a weir to power mills further downstream.

5.7.5 The River Almond has some striking similarities with the Tay, reflecting its proximity to the Highlands and its common geological structure. Most notable perhaps is the deep, gorge-like valley that the river has cut through the sandstone and glacial deposits.

Although flowing in a meandering course, the river is entrenched within a valley 40 metres deep until it enters the open floodplain of the Tay above Perth. Many of the slopes are too steep to farm and are clothed in broad-leaf woodland. In the upper part of the glen, the river corridor is relatively unsettled, farms and hamlets clustering along roads on more level ground to the north and south. Fields along the northern side of the valley have a dense network of field boundary trees. The site of a Roman Fort at the western end of this part of the glen and the presence of large houses and institutions such as Glenalmond College, echo the pattern of development seen along the Tay. Furthermore, the River Almond also provided a series of mill sites along its lower reaches, where the river cuts through a series of igneous dykes. Here mills and associated houses are perched alongside the river, concealed from the wider landscape.

FORCES FOR CHANGE

5.7.6 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.7.7 **Agriculture.** Agricultural activity within these river corridors is concentrated on higher ground either side of the entrenched river. The network of hedges and hedgerow trees is an essential element of this landscape, extending the texture and variety of the straths up towards the lowland hills. In some areas, however, this structure is in decline with once dense lines of trees becoming gappy and fragmented, and hedges and fences being replaced by 'invisible' post-and-wire fencing. This is noticeable, for example, along the northern side of Glen Almond. Field boundaries on the broad floodplains, where they occur, are often marked by fences, though sometimes boundaries across the valley are marked by shelterbelts or lines of trees.

5.7.8 **Transport.** Main roads have tended to avoid the steep-sided and tortuous river corridors, favouring more level routes elsewhere. Where access to the river corridors is possible, it is usually gained by steep narrow roads which serve mills or riverside farms. The steep, twisting nature of these roads is a characteristic of the area and should be conserved where practical.

5.7.9 **Development.** The proximity of these areas to Perth, and their attractive, sheltered landscape (the Tay valley is designated as an Area of Great Landscape Value) means that there is some pressure for residential settlement. This is particularly the case to the north of Perth where villages such as Luncarty and Stanley lie close to the A9. Over-development in these areas could undermine the quality of the landscape, and development plans for the area seek to steer additional housing towards existing settlements. Almondbank, Luncarty and Stanley all include areas allocated for future residential development. Furthermore, the Perth Area Local Plan (Perth and Kinross District Council, 1996) raised the possibility of a 'new settlement' (termed Almond Valley Village) between Almondbank and Huntingtower on the north-west edge of Perth. This would result in the Perth Urban Area extending into the Almond Valley.

5.7.10 The alignment of the ring road/motorway, and steeply rising ground to the south-west and east broadly defines the physical extent of Perth and contains it within a section of the Tay valley which is relatively concealed within the wider landscape. A somewhat more ambiguous area lies to the north where development has been permitted to the north of the ring road but south of the River Almond. The latter is hidden in woodland, so for people travelling along the A9 there is no obvious physical boundary to the northern part of the town.

5.7.11 Concerns about the potential impact of new residential development reflect the patterns of recent growth. Often this has comprised low density, speculative estates of similar or identical dwellings which are crudely grafted onto the edge of these towns. The stark designs (often lacking any reference to vernacular designs or material) are usually unmitigated by planting, screening or landscaping, while the infrastructure of internal roads, footways, drives etc. appear over-engineered and overly suburban. The impact of additional housing in these river corridor areas would have much to do with their layout, scale, variety, materials and vernacular, as well as their location within the landscape. Housing developers should be encouraged to adopt layouts and designs which integrate new dwellings into existing settlements, rather than simply grafting suburban estates onto the edge of villages and hamlets. There is a role for design guides and imaginative design briefs. There may also be further scope for sensitive residential conversions where traditional farm buildings have become redundant, though this will do little to meet the demand for housing in the area as a whole. Again, guidance on the most appropriate means of conversion will be important.

5.7.12 **Forestry and woodland.** Woodland is an essential component of this landscape type, comprising a combination of semi-natural woodland, commercial forestry, farm woodland and field boundary trees, policy and estate woodland. The characteristic interplay of woodland, farmland and areas of designed landscape is particularly important.

5.7.13 Several areas of river corridor are identified by the Tayside Indicative Forestry Strategy as having potential for new planting. While there may be some scope for additional woodland in these areas, it is important to maintain the overall balance of unplanted and planted areas and to conserve key views into and along the river corridor. It is also important to conserve landscape features such as field systems where these contribute to the grain and texture of the landscape. As elsewhere, there is scope to enhance the appearance of existing plantations as they come forward for harvesting and replanting.

5.7.14 **Tall structures.** With the exception of the lines of pylons that cross Glen Almond at two points, this landscape type is relatively free from tall structures. There is unlikely to be significant pressure for wind turbine construction. However, the effect of any proposals on higher ground which are visible from within the river valleys (for example on the Lowland Hills) should be considered carefully. Development of small-scale hydro schemes at former mill sites could reduce pressure for wind turbine development in the wider area.

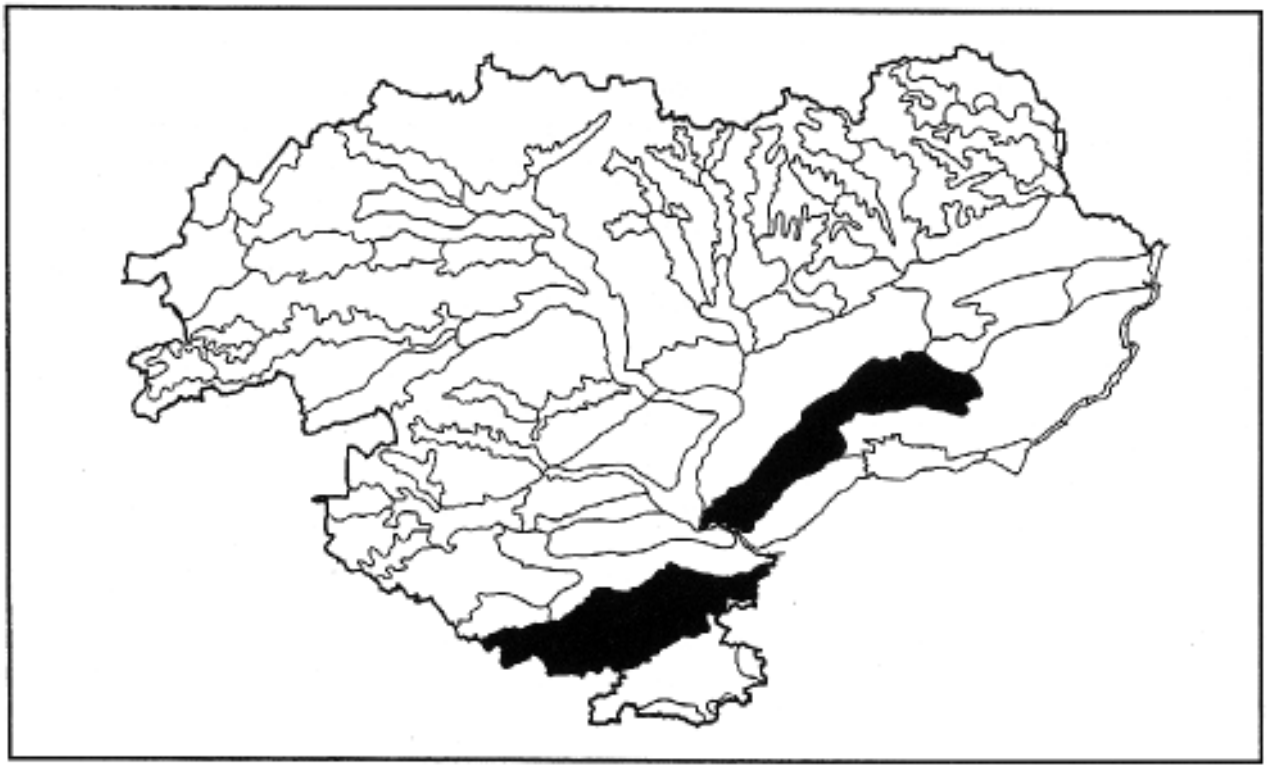
LANDSCAPE GUIDELINES

5.7.15 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the characteristically settled landscape of farmland, woodland and designed landscapes and to ensure that new development is designed to minimise adverse impacts on the landscape.

Agriculture	• Discourage improvements which result in further loss of field boundaries or field boundary trees. • Encourage farmers and landowners to replant trees along field boundaries, initially along roads, but also between fields. Species to include oak, maple, beech and ash. Use incentives to compensate for lower yields where mature trees are retained. • Explore development of market for hardwood from field boundary trees. • Use the agricultural development notification scheme to influence the design, colour, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to provide screening where appropriate.
Transport	• Minimise upgrading or improvement of roads particularly where this involves the creation of cuttings and embankments, or the introduction of additional signage, or features such as concrete kerbing.
Development	• Focus new development in existing towns and villages so as to reinforce the historic pattern of settlements and to protect the rural character of other parts of the lowland glens. • Discourage the simplistic grafting of housing estates onto the edge of settlements. Encourage more imaginative schemes which respond to the existing patterns of layout, structure, massing and scale. Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles. • Consider positive ways of addressing the interface between settlements and the surrounding countryside. These could include: - screening; - new buildings which address surrounding areas; - key vistas and views; - landmark features;

(Development contd)	- gateways and approaches. • Explore the development of Almond Valley Village as a means of addressing the ambiguous pattern of development to the north and north-west of Perth by firming up the distinction between urban and rural and providing clear gateways to the town.
Forestry and woodland	• With respect to the replanting of existing plantations on valley slopes: - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes. • Consider opportunities for new woodland planting in terms of: - the overall balance of woodland and open space; - the relative importance of different areas of existing woodland (e.g. commercial plantation versus policy woodland) and how this would be influenced by an increase in woodland cover; - the importance of key views and features within the landscape; - opportunities for provide screening; - opportunities to link isolated areas of woodland; - agricultural, ecological and historical sensitivities.
Tall structures	• Assess proposals for tall structures in terms of their visual and landscape impact on the local landscape of the river corridors. • Explore the scope for small-scale hydro schemes as an alternative to wind power projects. • Where new power or telephone lines are proposed or required, encourage operators to adopt underground cable solutions.

IGNEOUS HILLS (8)



KEY CHARACTERISTICS

- *the Sidlaw and Ochil hills, comprising hard volcanic rocks*
- *short burns and rivers flowing from short steep glens*
- *a few large glens through the hills*
- *often distinctive scarp and dipslopes*
- *generally open landscapes of almost conical summits dominated by grass moorland*
- *some areas of extensive forestry*
- *many modern influences*

OBJECTIVE DESCRIPTION		Igneous Hills
Physical scale		Ochils up to 600 metres AOD, about 10 km wide and 40 km long; Sidlaws up to 300 metres AOD, about 5 km wide and 30 km long
Woodland	broad-leaf	Very limited, confined to woodland on steep slopes (e.g. along the Braes of the Carse), in more sheltered sections of glen (e.g. Glen Eagles) and along lower level field boundaries
	coniferous	A few isolated pines; more common are extensive areas of coniferous plantation (e.g. in the Ochils south of Dunning and the eastern part of the Sidlaws)
Agriculture	arable	A few areas of arable cultivation on gentler slopes, particularly in the southern and western part of the Sidlaws
	pasture	Pastures common on steeper slopes and on rougher and more exposed areas of hilltop.
	fields	Generally large and regular shaped
	field boundaries	Combination of stone dykes and post-and-wire fences; occasionally marked by isolated Scots pine in upper areas and deciduous species in more sheltered parts
Settlement pattern		Largely unsettled; farms and hamlets concentrated in main glens such as Glen Devon
Building materials		Locally won hard rock and some sandstone
Historic features		Old field systems, burial sites, hill-forts and later castle sites
Natural heritage features		No notable features
Other landscape features		Masts and aerials are already prominent features
SUBJECTIVE DESCRIPTION		
Views		Intermittent
Scale		Medium
Enclosure		Semi-enclosed to open
Variety		Simple
Texture		Smooth
Colour		Muted
Movement		Peaceful
Unity		Interrupted
'Naturalness'		disturbed

LOCATION

5.8.1 To the south and east of the Old Red Sandstone lies a band of hard volcanic rocks. More resistant than the surrounding beds, these rocks survive as the Ochil Hills which run from the boundary with Fife as far as Perth, and the Sidlaw Hills which run from Perth north-east towards Forfar. The Ochils and Sidlaws represent two parts of the same geological structure. Once a broad arch of volcanic rocks would have extended over the area occupied by the lower part of Strathearn and the Firth of Tay. Weakened by compression, the crest of this arch was eroded away, revealing the softer rocks beneath. The resulting landforms comprise a pair of scarp slopes (in the Ochils facing north, in the Sidlaws, south) and a pair of dipslopes (in the Ochils facing south, in the Sidlaws, north).

The Ochils

5.8.2 **Physical characteristics.** The Ochils are the larger of the two hill ranges, rising to over 500 metres and extending up to 12 kilometres in width in places. The hills are drained by a large number of short burns and small rivers, flowing northwards into Strathearn and Strathallan and southwards into the Loch Leven Basin. Most glens are short and steep. The principal exception to this is the pass formed by Glen Eagles to the north and Glen Devon to the south. This corridor was enlarged during the Ice Age when ice sheets in Strathearn pushed into Glen Eagles, lowering the watershed between the two glens by over 200 metres. Ice sheets also had the effect of truncating the Ochils' northern spurs, thereby increasing the drama of the scarp along the southern side of Strathearn and Strathallan.

5.8.3 **Settlement and land use.** Though there are areas of improved pasture and even some cultivation within the more sheltered glens, the land is generally of low fertility (classified as Class 5 or 6) and the bulk of the agricultural land takes the form of unimproved rough grazing. The Ochils also have a considerable amount of coniferous forestry. Along the lower slopes in Strathallan, this generally takes the form of geometric plantations and shelterbelts which are prominent in this open, large-scale landscape. Further west, in Strathearn, the woodland is less formal. However, the most extensive woodlands are located in the heart of the eastern Ochils, particularly on Innerdouny Hill where a large expanse of Sitka spruce covers a series of upper catchments. The effect is to transform the sparse, open landscape of the Ochil summits, and to create a sense of enclosure which is absent elsewhere on the hills. New planting is more sensitive, incorporating broad-leaf fringes and better reflecting the natural flow of the landform. Nevertheless, it will result in a significant change in the upland landscape.

5.8.4 The natural defences provided by the steep slopes overlooking lowland routes are reflected in a large number of hill-forts. There is a particular concentration of such sites along the northern escarpment of the Ochils and along key routes through the hills. Later castles occupy positions lower down the slopes and in the glens themselves. Several of the glens show signs of past prosperity. In Glen Devon the structure of abandoned field boundaries is visible as a series of low grassy banks. More recent settlement is limited to a scatter of farmsteads, concentrated in the less-steep eastern part of the Ochils. Glen Devon now accommodates a range of tourism and recreation facilities while some of the more prominent hilltops are crowned with telecommunications masts.

The Sidlaws

5.8.5 **Physical Characteristics.** The Sidlaws are lower and less extensive than the Ochils. They are most distinct at their southern end where the south-east facing scarp (the Braes of the Carse) rises almost vertically to tower over the Carse of Gowrie, and where the shallower, north-facing dipslope meets the Strath Tay near Scone. Even here the hills are barely 5 kilometres wide. Further north the hills subside, particularly along their south-eastern side, gradually merging into the farmland plateau. From the north, however, the hills continue to present a distinctive profile of smooth rounded hills which contain the views within Strathmore. The lower elevation of the Sidlaws is reflected in more productive agricultural land. While grass and some heather moorland predominate on the upper parts of the hills, it is not uncommon to find arable and improved grassland fields, enclosed by stone dykes, in the more sheltered open basins that occur in the Sidlaws. Such a concentration is found around Milton of Ogilvie, to the south of Glamis. Broad-leaf woodland is limited to steep slopes (such as the southern scarp face) and river valleys.

5.8.6 **Settlement and land use.** Though elevated and often exposed, the landscape of the Sidlaws reflects many hundreds of years of settlement. Many Stone Age hill-forts can be found, exploiting the natural defences provided by the steep hills. Bronze Age burial mounds occupy other key locations on prominent ridges overlooking the lowland. There are few Roman or Pictish remains, but several medieval castles and mottes are located to defend routes through the hills. An example is Pitcur Castle, sited at the mouth of Glen Cott, south of Coupar Angus. Several follies are found through the hills. The most notable of these includes the series of towers built along the top of the south-facing cliffs overlooking the Carse of Gowrie and apparently designed to recreate the landscape of the Rhine Valley in Germany. Another example is the tower on Kinpurney Hill. More recent development has taken the form of coniferous plantations which are less extensive than in the Ochils, and the telecommunication masts which have been built at the summit of a number of hills. A number of existing and disused quarries are found in the Sidlaws, reflecting the value of the hard volcanic rocks that occur there.

FORCES FOR CHANGE

5.8.7 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.8.8 **Agriculture.** Much of the Ochils and Sidlaws are given over to pastoral uses, and in places the land is so poor it supports little more than rough grazing. This pattern of agricultural land use sits comfortably with the Igneous Hills' upland, exposed character and contrasts effectively with more fertile areas of lowland to the north and south. In a few areas better soils and a degree of shelter allow arable cultivation to take place, often at some altitude. It may be appropriate to consider the use of incentive payments to encourage reversion to grassland in some of these areas. As in other areas, the influence of estate ownership is evident in the maintenance of the farming landscape.

The area falling within the Gleneagles Estate can be determined from less well-maintained areas around.

5.8.9 **Transport.** The Ochils and Sidlaws are crossed by a number of minor roads, often bordered by dry-stone dykes. The alignment of many of these roads reflects the gradient of the landform and the presence of glens and passes through the hills. It is important that the small-scale and rural character of these roads is retained. Walls should be conserved and signage and 'improvements' such as widening or kerbing resisted. Similarly, main roads through the hills should be maintained so as to retain their rural character. The eastern part of the Tayside Ochils is cut by the M90 motorway. Despite its scale and nature, the road alignment is relatively sympathetic to the landscape, following a sinuous glen through the hills. However, the movement, noise and pollution associated with moving traffic, together with the presence of over-bridges, cuttings and other structures determine that the motorway has a considerable impact on the local landscape.

5.8.10 **Development.** The elevation and exposure of the Ochils and Sidlaws, and the presence of nearby lowland settlements means that the Igneous Hills are very sparsely settled. The principal exception to this is the gentler southern slopes of the Sidlaws near Dundee. Here there has been a limited amount of building in the open countryside, creating a few lines of south facing suburban houses extending from farmsteads or existing hamlets. This has a suburbanising influence on the Sidlaws' landscape.

5.8.11 **Minerals.** The hard volcanic rocks of the Ochils and Sidlaws are valued for road construction among other uses. However, there are very few operational quarries and only a handful of small-scale disused quarries. Existing quarries are generally well-concealed and do not have a significant impact on the wider landscape. Collace Quarry in the Sidlaws is comparatively well-hidden in the wider landscape, though it has a more local setting on the hill-fort of Dunsinane. Should the number, or scale of quarries increase in response to demand, mineral working could have quite a significant impact on this generally open landscape.

5.8.12 **Forestry and woodland.** Woodland makes an important contribution to the landscape of the Ochils and Sidlaws, clothing many of the steepest slopes and lining some of the more sheltered valleys and glens. However, a number of commercial woodlands, planted in the first half of the 20th century, have had a significant adverse effect on the landscape. Extensive ranks of sitka spruce and Douglas fir cover large areas of the Ochils in particular in an even aged monoculture of conifers. Such plantations have created a uniform, enclosing landscape where before there would have been an open and varied landscape of pastures, burns and small glens. The negative effect of these early plantations has tainted attitudes towards commercial forestry in these areas even though forestry practice has long since moved on. As the existing plantations reach maturity, there will be opportunities to implement a phased programme of felling and replanting which will allow a more varied and 'natural' woodland form to be created, with a much more varied species and age mix, and a higher proportion of open space.

5.8.13 The low fertility of the Igneous Hills, and the suitability of their climate to tree growing means that there is still some interest in establishing new woodlands within the Ochils and Sidlaws. The Tayside Indicative Forestry Strategy suggests that areas to the south

and east of Auchterarder fall into the 'preferred' category for new planting, together with smaller areas in the eastern Sidlaws.

5.8.14 The current policy is to promote multi-purpose woodlands which can, if appropriately located, consolidate and expand existing semi-natural and planted woodland along the glens, which include a proportion of broad-leaves (particularly on lower ground and in more sheltered locations) and native pine woodland (particularly on higher ground). New woodland should also provide the opportunity to create new habitats, and establish new areas for informal recreation.

5.8.15 **Recreation**. The proximity of the Ochils and Sidlaws to a number of centres of population means that there is an opportunity to facilitate countryside and informal recreation, thereby taking the pressure off other more sensitive areas to the north. While some areas of public access already exist, commercial woodlands, reservoirs and even archaeological sites offer potential for recreation and interpretation.

5.8.16 Formal recreation provision within the area is comparatively limited. However, within Glen Devon a number of commercial developments have been established, announcing their presence with large signs. This contrasts with other, less developed parts of the Ochils.

5.8.17 **Tall structures.** The elevation of the Ochils and Sidlaws and their proximity to centres of population makes them technically well-suited as locations for telecommunications masts and aerials. Several of the hilltops are crowned with one or more masts, introducing strong vertical and industrial structures into the upland landscape. The masts are frequently visible over a considerable distance. It is possible that the growth of the telecommunications industry will be reflected in pressure for additional masts and aerials. Operators should be encouraged to develop a strategy that takes into account the landscape implications of masts and which seeks to share masts where this is appropriate and where this can be achieved without increasing the overall level of landscape impact. Additional masts on undeveloped hilltops or ridges should be avoided.

5.8.18 The government's commitment to the stabilisation of carbon dioxide emissions, and the resulting emphasis on developing a market for renewable energy is likely to result in more proposals for wind turbines. At a regional level, suitable sites will be influenced by the presence of adequate wind speeds and proximity to the electricity grid. These operational requirements are likely to favour upland areas fairly close to centres of population. Potential areas therefore include the parts of the Highland Summits and Plateaux within reach of the principal glens, or close to existing hydro schemes, the Highland Foothills, the Ochils and Sidlaws, and other lowland hills. From an environmental perspective, such areas need to be evaluated in terms of the sensitivity of the landscape and its capacity to absorb development. There is a strong argument in favour of steering such schemes away from sensitive upland landscapes and towards areas where human influences are already much more marked. For this reason, it is likely that, wind characteristics permitting, the Sidlaws and Ochils may be the most suitable areas for wind turbine development in Tayside.

LANDSCAPE GUIDELINES

5.8.19 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to restore and enhance the landscape of the Ochils and Sidlaws, addressing the effects of past development and land use and ensuring that future changes do not lead to further deterioration in landscape quality.

Agriculture	• Maintain the distinction between lowland cereals and highland grazing areas. • Encourage farmers and landowners to maintain and replant hedgerow trees. Consolidate areas where native pines have been used in the past. • Encourage the conservation of dry-stone dykes in local stone with an emphasis on roadside walls and others in highly visible areas. • Use the agricultural development notification scheme to influence the design, colour, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to provide screening where appropriate.
Transport	• Where road improvement schemes take place, ensure that hedges and hedgerow trees, together with other features such as milestones, finger posts and gates are reinstated. • Avoid the use of suburban features such as concrete kerbing in a rural setting unless absolutely necessary. Explore more appropriate alternatives.
Development	• Encourage new development to reinforce the existing settlement pattern, focused on market towns and smaller villages outwith this landscape type. Discourage development in the open countryside. • Encourage the appropriate conversion of redundant farm buildings. Guidance should be provided on the way buildings should be converted (including the provision of drives, gardens etc.) to prevent the suburbanisation of the countryside.
Forestry and woodland	• Ensure the current Forestry Authority approach to the restructuring of existing plantations is followed. Replanting should conform to Forestry Authority design guidance and should result in a varied age and species structure, woodland forms which more closely reflect the underlying landform and a greater proportion of open space. • New planting should conform to the Forestry Authority's design guidelines. In particular, it should respond to the small to medium scale nature of the landscape, the importance of views within and out of the hills, and historic and ecological values.

(Forestry and woodland contd.)	• Use a new planting framework to absorb earlier development in the open countryside and other visually intrusive features. • Ideally link new woodlands to lowland shelterbelts, glen woods and farm woodlands, providing broad-leaf lower margins. • Use new woodland planting to enhance the landscape and nature conservation value of the hills. New woodland could link existing plantations and semi-natural woodlands. • New planting should respect historic features, routes and viewlines between them. • The scale and nature of planting should be varied to reflect local differences in topography. In areas of subdued relief (e.g. on the south-eastern side of the Sidlaws), new planting could be used to highlight more subtle variations.
Recreation	• Encourage greater provision of informal recreation within the Ochils and Sidlaws, focus on existing and new woodlands, reservoirs and historic sites. • Encourage providers of formal recreation and tourism facilities to respect the setting of their developments.
Tall structures	• Restrict the development of tall structures to those absolutely essential for operational reasons. • Encourage operators to share masts and sites. • Avoid new masts on undeveloped hilltops and ridges. • Where possible, encourage masts and other tall structures to achieve 'backclothing', particularly for associated infrastructure and buildings so that sky-line features are minimised. • Explore the potential to steer wind farm developments away from exposed and steep ridgelines and summits and from locations where their visual influence would extend both north and south. Consider potential areas with shallow bowls and valleys away from ridges. Maximise the amount of backclothing provided by the natural landform. Consider steering development to areas already affected by masts, roads or forestry. • Assess proposals for aerials, pylons or masts in terms of their visual and landscape impact on the local landscape of the hills and surrounding areas. • New infrastructure (e.g. access roads) should be minimised by locating any new facilities close to existing roads. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact.

(Tall structures contd.)	• Encourage telecommunication companies to develop a strategy for mast provision which reflects the sensitivity of the local landscape. • Encourage the development of a regional strategy for renewable energy, including wind power, in order that the most appropriate types of development and areas come forward.

IGNEOUS HILLS
Coniferous woodland and rounded, open moorland in the Ochils.

LOWLAND RIVER CORRIDOR
The River Tay flows through a narrow wooded valley to the south of Dunkeld.

BROAD VALLEY LOWLAND
The distinctive arable landscape of Strathmore. Remaining hedgerow trees make an important contribution to landscape character.

Photo: SNH

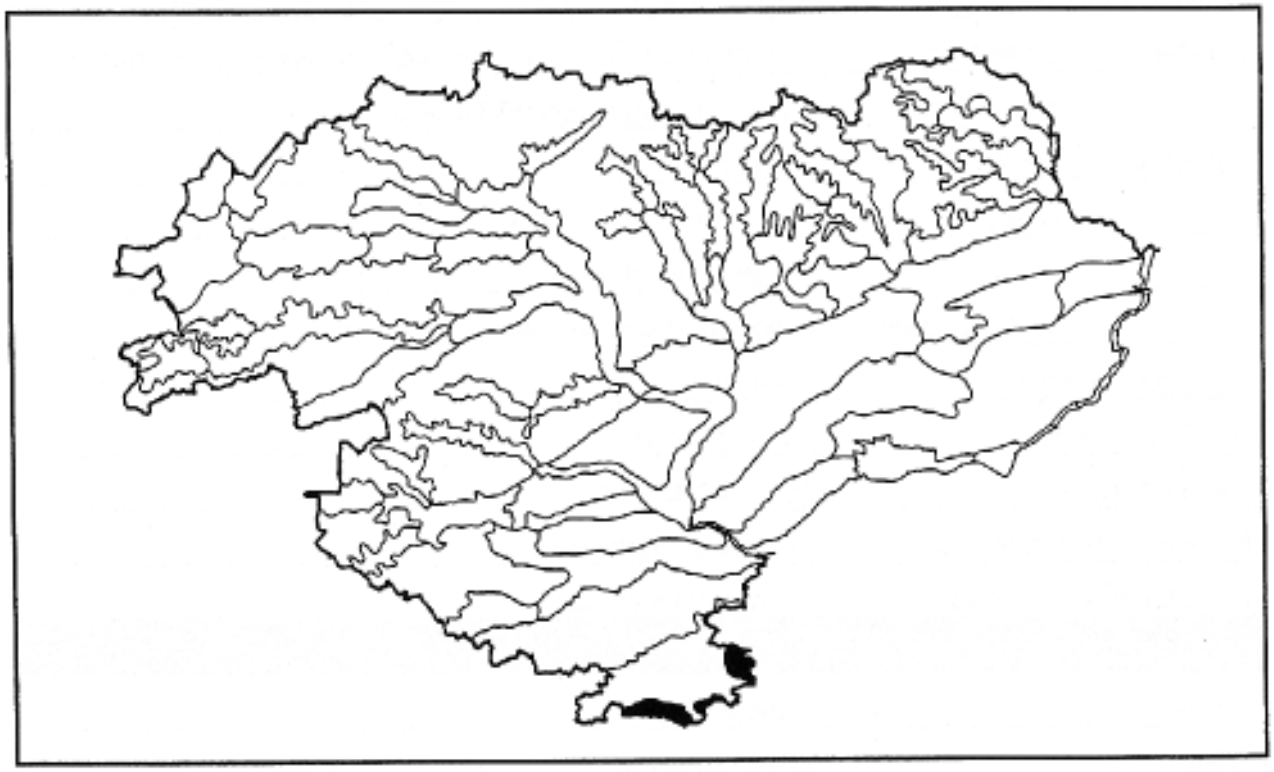
DOLERITE HILLS
The steep western slopes of the Lomond Hills.

FIRTH LOWLANDS
Rich farmlands along the estuarine reaches of the River Tay between Perth and Dundee.

FIGURE 15

LANDSCAPE CHARACTER TYPES

DOLERITE HILLS (9)



KEY CHARACTERISTICS

- *hard quartzite hills enclosing the Loch Leven Basin*
- *steep slopes*
- *predominance of rough grazing*
- *some areas of coniferous forestry*
- *fine views to the north and south*

OBJECTIVE DESCRIPTION		Dolerite Hills
Physical scale		Hills ranging in height from 300m AOD to 450 m AOD
Woodland	broad-leaf	Limited to a small area on the western slopes of Lomond Hills
	coniferous	Extensive plantations (c33% by area)
Agriculture	arable	Absent
	pasture	Rough grazing
	fields	Largely unenclosed
	field boundaries	Stone walls and post-and-wire fences
Settlement pattern		Unsettled
Building materials		Not applicable
Historic features		Forts and castles
Natural heritage features		No notable features
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Panoramic
Scale		Medium to large
Enclosure		Open to exposed
Variety		Simple
Texture		Rough to very rough
Colour		Muted
Movement		Remote
Unity		Unified
'Naturalness'		Restrained

LOCATION

5.9.1 A series of hills rise along the southern boundary of Tayside, enclosing the Loch Leven basin. These are fragments of landscape character areas which extend beyond the region in Fife. The hills divide into three groups, the Lomond Hills to the east, and Benarty Hill and the Cleish Hills to the south.

PHYSICAL CHARACTERISTICS

5.9.2 The Dolerite Hills share a common geology comprising a core of intrusive quartz dolerite overlying carboniferous limestone which, in turn overlies Old Red Sandstone. Bishop Hill (the one Lomond Hill in Tayside) has a steep, west facing scarp slope, rising to 460 metres, and a shallower east facing scarp slope. Only the northern and western slopes of Benarty Hill lie in Tayside. These slopes are also steep, climbing to 350 metres. The Cleish Hills are less steep, but more extensive, forming a rolling line of hills of up to 380 metres along the southern edge of the Loch Leven basin. The north facing slopes are heavily gullied. The hills are dominated by brown forest soils, supporting a combination of rough grazing and coniferous plantation. The latter are most extensive along the Cleish Hills and on the eastern slopes of Bishop Hill.

SETTLEMENT AND LAND USE

5.9.3 Like many other areas of upland in the region, a number of forts are sited among these hills. Later fortifications, such as Cleish Castle are found on the lower slopes. Other signs of human settlement and land use include several small quarries which were worked in the past to obtain hard rock. Relatively accessible to nearby urban populations, these hills provide fine views north and westwards over Loch Leven and southwards towards the Firth of Forth.

FORCES FOR CHANGE

5.9.4 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.9.5 **Agriculture.** The prevailing upland character of these hills means that agricultural activity is dominated by rough grazing with better pastures on the lower slopes. Provided that support mechanisms remain and no significant market changes occur, this activity appears to be relatively stable. Landscape change is therefore unlikely.

5.9.6 **Development.** The Loch Leven Basin is characterised by a series of small villages strung along the roads that encircle the loch. Several of these lie at the foot of the Lomond Hills and comprise little more than groups of stonebuilt houses. The principal exception to this is Kinnesswood which experienced substantial suburban expansion during the 1970s and 1980s. Much of the more recent development occurred on the slopes of the Lomond Hills, resulting in a significant landscape impact. While the local

plan envisages further housing development here, it will be concentrated on the less sensitive lower slopes.

5.9.7 **Minerals.** There is some evidence of small-scale quarrying having taken place in the past, for example in the eastern part of the Cleish Hills. There does not appear to be any prospect of mineral working in the future.

5.9.8 **Forestry and woodland.** Much of the coniferous plantation woodland present in the Dolerite Hills landscape type was established in the 1960s and 70s under very different circumstances and with more narrow objectives than would be considered appropriate today. Modern forestry practices would prevent the geometric, even aged monocultures that are found particularly within the Cleish Hills. Harvesting of this woodland provides an opportunity to review the best locations and designs for replanting. This is considered further within the management guidelines.

5.9.9 **Tall structures.** With the exception of the lower slopes of Benarty Hill, which are currently crossed by a line of electricity pylons, the hills are currently free from tall structures. Masts are found, however, further south in the Cleish Hills, beyond the regional boundary.

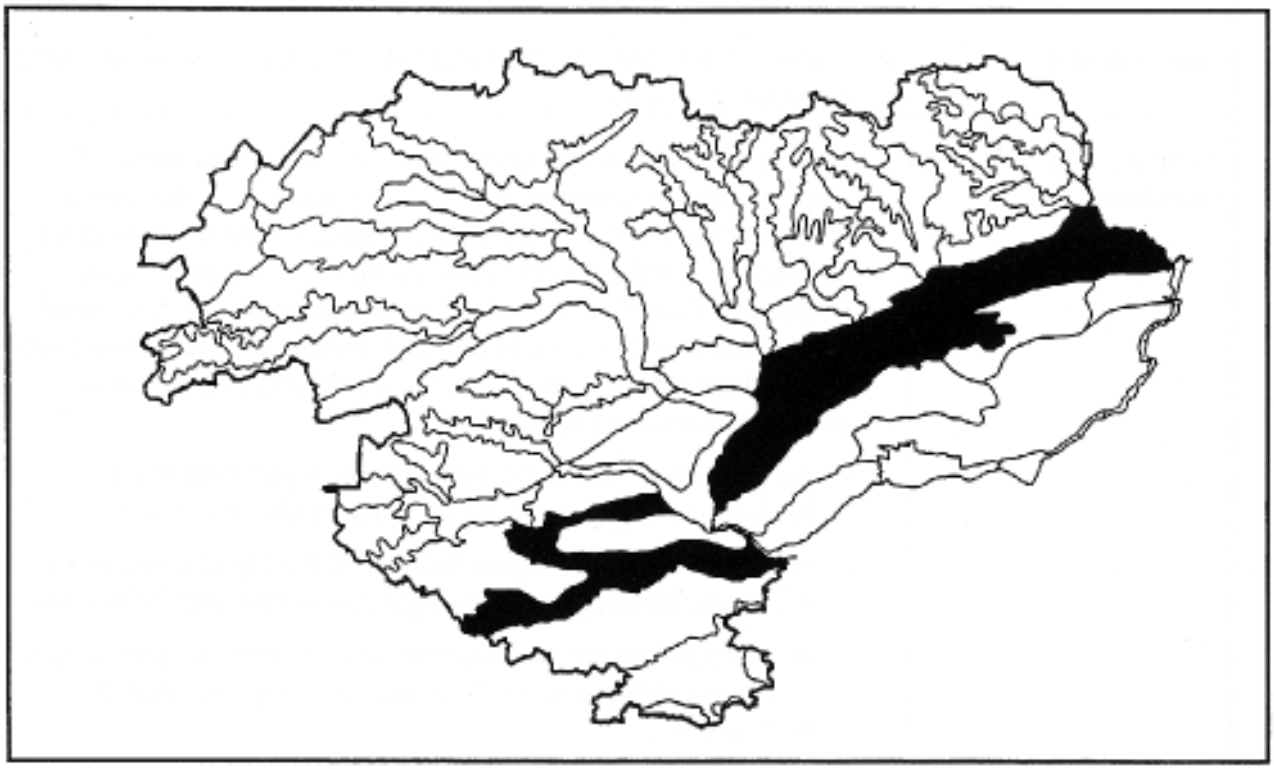
5.9.10 The summits of Benarty Hill and the Lomond Hills are particularly sensitive to structures such as masts, pylons or wind turbines. Not only do they provide the immediate setting to Loch Leven, but they are visible from a considerable distance to the north (e.g. from the Sidlaws) and south (into Fife and even Lothian). The lower, more fragmented Cleish Hills are less sensitive, though any development here would still need to pay regard to the impact on the wider landscape.

LANDSCAPE GUIDELINES

5.9.11 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve and restore the landscape of the bare uplands of the Dolerite Hills, addressing the effects of past development and land use and ensuring that future changes do not lead to further deterioration in landscape quality.

Agriculture	• Maintain the distinction between lowland cereals and highland grazing areas.
Development	• Prevent further uphill expansion of settlements on the lower slopes of the Lomond Hills.
Forestry and woodland	• Ensure the Forestry Authority's approach to the restrictions of single species even-aged blocks is implemented. Implement a phased programme of felling, redesign and replanting of existing plantations to reduce the adverse impact on the environment. Replanting should conform to Forestry Authority design guidance and should result in a varied age and species structure, woodland forms which more closely reflect the underlying landform and a greater proportion of open space: - adopt a more naturalistic appearance, responding to the landform and features such as burns, gullies and crags; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line; - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes.
Tall structures	• Prevent the development of tall structures on the sensitive Lomond and Benarty Hills. • Assess carefully any proposals for tall structures within the Cleish Hills to determine the visual and landscape impact on the local and wider landscape.

BROAD VALLEY LOWLANDS (10)



KEY CHARACTERISTICS

- *broad straths formed by glacial erosion*
- *undersized, misfit rivers*
- *complex local topography caused by glacial deposition*
- *distinctive red soils and red building stone*
- *influence of large estates, particularly in terms of woodland and policies*
- *dominance of arable and root crops*
- *tree loss weakening landscape character*

OBJECTIVE DESCRIPTION		Broad Valley Lowlands
Physical scale		In the case of Strathmore, up to 10 km wide and 30 km long; Strathallan and Strathearn up to 5 km wide
Woodland	broad-leaf	Extensive broad-leaf woodland limited to inner policy woodland and a few areas of unimproved land
	coniferous	Coniferous plantations on areas of poorer land, especially on valley sides; geometric plantation in Strathallan
Agriculture	arable	Dominant agricultural land uses - cereals, potatoes and oil seed rape
	pasture	Limited
	fields	Medium size, regular, some enlarged; most dating back to parliamentary enclosure
	field boundaries	Characteristically hedges with high density of mature hedgerow trees.; pattern weakened as trees felled. Strathallan fewer hedges and trees
Settlement pattern		Small, often planted, villages, small market/processing towns, and larger market towns
Building materials		Red sandstone
Historic features		Comparatively limited, reflecting intensity of agricultural use
Natural heritage features		Fluvial-glacial landforms. Ecological interest limited to a few unimproved areas
Other landscape features		Large, modern agricultural buildings; dominance of estates and historic houses
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium
Enclosure		Open
Variety		Varied to simple
Texture		Textured to smooth
Colour		Colourful
Movement		Active
Unity		Interrupted
'Naturalness'		Tamed

LOCATION

5.10.1 South of the Highland Boundary Fault lie 5 broad lowland valleys or straths. These share a range of common characteristics which set them apart from other valleys and glens. There are, however, significant variations in landscape character within this type, and these are described below. The five areas of Broad Valley Lowlands are:

- Strathmore;
- Strathearn;
- Strathallan;
- the lower South and North Esk river valleys;
- the Pow Water Valley between the Gask Ridge and Keillour Forest.

PHYSICAL CHARACTERISTICS

5.10.2 These areas share a common geological structure, based on the broad band of Old Red Sandstone that runs south-west to north-east through the heart of Tayside. Bounded by harder schists and grits to the north and lavas and tuffs to the south, and already lowered by downfaulting, this soft rock was easily eroded by the ice sheets which extended across the region during period of glaciation. These created much wider and deeper valleys than the scale of existing rivers might suggest. At the end of the last Ice Age, retreating ice sheets deposited a considerable amount of drift within these valleys, much of which was further modified by meltwater flows below or around the ice. This created the complex local topography of outwash terraces, eskers and dry valleys that occur in many places today. Much of the glacial material was locally derived and have given rise to the distinctive red soils that are visible when fields are ploughed. Brighter reds tend to be found further north and east.

SETTLEMENT AND LAND USE

5.10.3 While surviving standing stones and other monuments point to the prehistoric use of these areas, most of the present landscape has been substantially modified since medieval times. Valleys such as Strathmore had comprised extensive areas of rough grazing, scrub woodland and unproductive wetland. The process of draining and improving the land was begun in the 10th century when groups of monks came to the area. One of the principal centres was Coupar Angus where a major Cistercian Abbey was founded in 1164, and many of the moors and mires were brought into agricultural use over subsequent centuries. The process of improvement entered a new phase with the parliamentary enclosure of the 18th and 19th centuries, creating the structure of rectilinear fields that are evident today. A characteristic of this period of enclosure was the planting of many trees (oak, beech, chestnut and ash) along field boundaries. These would have given shelter and provided a source of building timber and firewood. Up to 200 years later, where they survive these mature (or even over-mature) trees make a critical contribution to the rich character of the Broad Valley Lowlands. The large estates, with their baronial mansions and castles, designed landscapes, pleasure grounds, ornamental woodlands, avenues and policies make an equally important contribution.

5.10.4 The 19th century also saw the rationalisation of estates, including the creation of new villages to accommodate farm workers, and the arrival of the railways. Market towns such as Kirriemuir, Coupar Angus and Forfar experienced growth during this period, reflected in their inner suburbs of Victorian terraces and villas. Agriculture has continued to develop. More and more land has been brought into production. Flood defences have been constructed along rivers, allowing arable cultivation to spread onto the floodplain. The fertility of the soil, allied to favourable climatic conditions have favoured the cultivation of cereals, oil seed rape, soft fruit and potatoes.

VARIATIONS IN LANDSCAPE CHARACTER

5.10.5 It is in Strathmore that the distinctive character of the landscape is most evident. From a distance, the area appears as a very broad, flat-bottomed valley enclosed by the Highland Foothills to the north and the rising sweep of the Sidlaws' north-facing dipslope to the south. Where estate planting survives, for example around Glamis, the strath landscape is rich and textured and particularly colourful during spring and autumn. Where the trees have been lost, it is an open and expansive landscape of rectangular fields punctuated with a scatter of large farmsteads. The landscape of the strath contrasts strongly with neighbouring areas of upland, particularly where the woodland structure has survived.

5.10.6 Strathearn, extending from Crieff eastwards to the Bridge of Earn has a similar structure to Strathmore. To the south it is enclosed by the steep slopes of the Ochils, while to the north the Gask Ridge separates it from the valley of the Pow Water. There are a number of significant differences, however. The first is scale. Strathearn is considerably narrower and less extensive. Furthermore, the River Earn is a more evident feature in the landscape, its broad meanders swinging back and forth across the floodplain. The strath also accommodates a railway and the main A9 dual carriageway. Where the woodland structure is thin, the road and its traffic are very visible. Overall, however, the strath retains a rich, well-wooded agricultural landscape, particularly towards the east.

5.10.7 Strathallan extends from Greenloaning towards Auchterarder. Although the scale is similar to that of Strathearn, the landscape is very much more open, forming a shallow valley between the lowland hills to the north and the smooth, largely unwooded slopes of the Ochils to the south. Arable cultivation predominates and woodland is generally limited to dense, geometric blocks of conifers. In this large-scale, open landscape, this woodland appears sculptural, almost comparable to fields of crops. Along the floor of the strath, the local topography is complex, resulting from extensive fluvio-glacial deposits. Drumlin fields create a landscape of hummocks and small basins. Areas of glacial sands and gravels have been quarried, leaving a network of small lochs.

5.10.8 The Pow Water valley, lies between the Gask Ridge and the lowland hills of the Keillour Forest. It is a shallow, small-scale agricultural valley, with field and woodland patterns similar to those of the larger lowland valleys. Much of the valley floor has been drained to provide pastures and arable land.

5.10.9 The valleys of the Rivers South Esk and North Esk form a broad area of lowland to the south of the Highland Boundary Fault and enclosed to the south by the high ground to the east of Forfar. Although sometimes included within the broad definition of Strathmore to the west, this area drains eastwards and is separated from Strathmore by a low

watershed around Kirriemuir. More significantly, perhaps, this area is distinguished by its smaller scale, higher proportion of woodland (both broad-leaf and coniferous) and by the well-defined river corridors of the two Esks. The rivers are identified by lines of riverside trees, and by inner terraces. They are separated by a low ridge. Like other straths, the valleys are in both pastoral and arable use.

FORCES FOR CHANGE

5.10.10 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.10.11 **Agriculture.** Reflecting the dominance of agriculture within this landscape type, it is changing farming practices which have brought the most significant changes to the areas of Broad Valley Lowlands. The principal agents of change have included:

- intensification of arable production;
- concentration on potato growing;
- introduction of 'new' crops and forms of production.

The landscape effects of these changes are described below.

5.10.12 Over recent decades the national policies, allied to the Common Agricultural Policy (CAP), encouraged the expansion of arable production. This was achieved by greater mechanisation, the more extensive use of inputs such herbicides and fertilisers, and a range of capital improvements designed to maximise the area under cultivation. These improvements included some hedgerow removal to create larger fields. Allied to this was a tendency not to replace the once-dense network of hedgerow trees where they resulted in uneven patterns of cereal growth or ripening as a result of shading or water demand. Field boundary trees are also regarded as a liability as they become over-mature and drop branches or suffer wind blow. New techniques also allowed the more intensive use of land throughout the year with the introduction of a wider range of winter crops.

5.10.13 Although the pattern of change has been uneven within the Broad Valley Lowlands, with some estates deliberately conserving the structure of fields, boundaries and boundary trees, and the emphasis of agricultural policies has shifted towards a stabilisation or reduction in cereal production, in some areas the landscape has been denuded of its tree-cover, creating a prairie-like appearance. This weakens the otherwise rich and textured character of many of these lowland areas and dilutes the contrast between the productive, well-treed lowlands and the harsher highlands. It also renders other landscape features such as roads, traffic and buildings much more visible.

5.10.14 Allied to cereal production has been the expansion of potato growing, particularly within Strathmore. Growth and harvesting of this crop sits easily within the farming landscape. There has, however, been a significant increase in the number and scale of agricultural

buildings as a result. After harvesting, potatoes are typically stored until market conditions favour selling some months later. Many farms in the straths now include a number of very large modern sheds which overtower the older farm buildings and which are often visible over a considerable distance. They are frequently painted white.

5.10.15 Recent decades have also seen a diversification of arable production with the introduction of new crops, principally oil seed rape. The vivid yellow of this crop during flowering creates a very visible and often extensive feature in the landscape. While opinions are mixed about the nature of this impact, it is comparatively short-lived. Other changes in agricultural practice include the move towards free-range stock keeping, particularly of pigs in areas of lighter soils. The animals are typically brought onto cereal fields after harvesting and are allowed to roam within areas delineated by electric fences. While many welcome the more humane treatment of such animals, the landscape impact of over-grazed fields and the scatter of metal pig arcs could be of concern if this practice expands significantly.

5.10.16 **Transport.** Several of the Tayside straths incorporate major roads which enjoy comparatively level routes through the Broad Valley Lowlands. The A9 primary route, which is dual carriageway for much of its length, runs along Strathallan and Strathearn, while the A94 runs through Strathmore. The large scale of the straths means that the impact of these major roads is less than it might otherwise have been. The broad curves and sinuous alignments seem to echo the generous proportions of the landscape. Having said that, the road structures (including embankments, cuttings and overbridges) are clearly impositions upon the lowland agricultural landscape. There appears to have been little attempt to use either roadside or off-site planting to integrate the roads into the broader structure of the landscape.

5.10.17 The noise and movement of traffic using these routes have a major influence on the character of the local landscape in areas adjoining the roads. Such roads also result in an increase in pressure for development, particularly around junctions and where pockets of land are trapped between settlements and the road corridor. The future impact of the roads is likely to increase as traffic grows and there is pressure to upgrade junctions to provide grade separated access.

5.10.18 More minor roads also raise concerns, including:

- the landscape impact of village bypasses (e.g. the A94 at Glamis) both in terms of the road itself and the view of the settlement from the road;
- the failure to re-establish hedges and hedgerow trees where widening schemes have been implemented;
- the increasingly common practice of including concrete kerbing along the edges of minor rural roads, introducing a suburbanising influence into the countryside.

5.10.19 **Development.** Most development within the lowland straths is concentrated within existing settlements. These include historic market towns such as Rattray, Forfar and Brechin, which have grown at the crossroads of important routes and which often provide gateways to upland areas, and a series of smaller agricultural villages, many of which were established in the 18th and 19th centuries following enclosure, agricultural improvement and the arrival of the railways. Many of these settlements are closely

associated with the surrounding landscape, both in terms of the materials that are used (typically red sandstones among older buildings) and their market function. Development outside these settlements is comparatively limited, confined to farmsteads and a scatter of agricultural dwellings.

5.10.20 As noted elsewhere in this report, older settlements make use of local building materials and reflect local building vernacular. More recent developments on the edge of settlements (for example that to the south of Glamis) tend to owe little to local tradition, often comprising low density estates of houses built in a style that can be found throughout the UK. Future decades are likely to see continued demand for residential development, potentially increasing the impact of new development on the landscape. There may be scope to focus new development within some of the 19th century 'planted' villages, many of which never reached their anticipated size. Alternatively, there may be potential to echo the Victorian movement and create a small number of new villages in key locations.

5.10.21 **Minerals.** The lowland straths include substantial deposits of fluvio-glacial material, some of which has been exploited to provide material for building. Sites currently being worked include those to the west of Auchterarder in Strathallan (where a series of lochans have been formed in worked-out areas) and near Kingsmuir, immediately to the east of Forfar. Although such workings inevitably have a local landscape impact, their broader effect is limited. This would change if it proved viable to expand mineral working more broadly.

5.10.22 **Forestry and woodland.** The fertile nature of these lowland areas, and the consequent dominance of agriculture, means that woodland is limited in extent. The exceptions include:

- the rich legacy of hedgerow trees, many of which are up to 200 years old;
- the less fertile Strathallan where geometric plantations of conifers are found;
- the policy woodlands associated with major estates;
- the native birch woodland found on the pockets of unimproved land within the straths.

5.10.23 The issue of hedgerow trees is closely allied to agricultural change and, as such, has been discussed above. However, it is worth noting that even where such trees survive, they are now reaching maturity or are even over-mature. Phased replanting and felling will be required if the stock of trees is not to dwindle further.

5.10.24 As noted above, the large-scale and rectilinear landscape of Strathallan means that it is one of the few parts of Tayside where rigidly geometric conifer plantations do not appear out of place. Policy woodland is an important aspect of a landscape where woodland cover is decreasing. Retention and management should be encouraged. The fragments of native birch woodland should be conserved for their natural heritage value and because of the insight they provide as to the landscape which would have prevailed prior to enclosure.

5.10.25 **Tall structures.** Tall structures such as masts or wind turbines are unlikely to present a significant threat to the landscape within the Broad Valley Lowlands. However, it is possible that further proposals may come forward for developments on higher ground adjoining the valleys. These could have an impact on the character of the straths. It is also possible that proposals for additional power lines may come forward over time, particularly since this would avoid more exposed upland areas and would achieve 'backclothing' of pylons against the hills.

LANDSCAPE GUIDELINES

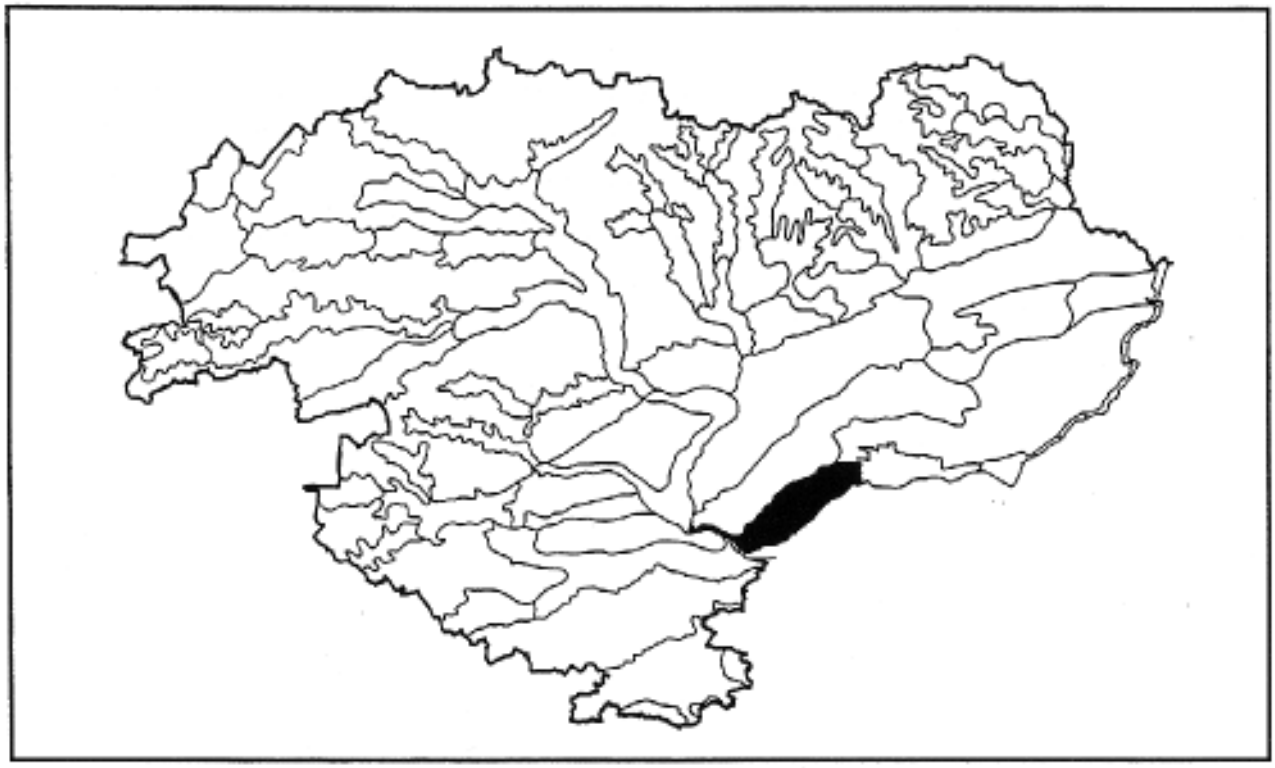
5.10.26 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve and restore the characteristic landscape of hedged fields, hedgerow trees, avenues and policy woodlands. It is important to maintain the contrast between the rich lowland landscapes and the neighbouring areas of harsh upland and enclosed glen.

Agriculture	• discourage improvements which result in further loss of field boundaries or field boundary trees; • encourage farmers and landowners to replant trees along field boundaries, initially along roads, but also between fields; species to include oak, sycamore, beech and ash; use incentives to compensate for lower yields where mature trees are retained; • explore the opportunities to increase woodland cover by creating new woodland belts, particularly where there is a need to screen development; • explore development of market for hardwood from field boundary trees; • discourage over-concentration of oil seed rape and similar crops; • monitor growth of open air pig keeping; • use the agricultural development notification scheme to influence the design, materials, screening and location of new farm buildings; explore the use of planning conditions attached to new buildings to re-establish hedgerow trees.

Transport	• Encourage on-site and off-site planting to better integrate major roads into the landscape and to provide screening of traffic. • Ensure that further proposals for improvements such as dualling or the provision of grade separated junctions are assessed in terms of their wider landscape impact. Where major, unmitigatable impacts exist, explore alternative solutions including traffic management and traffic calming. • Where new bypasses are proposed, consider the severing effect of the road on its setting. Consider also the view of settlements from the new road. • Where road improvement schemes take place, ensure that hedges and hedgerow trees, together with other features such as milestones, finger posts and gates are reinstated. • Avoid the use of suburban features such as concrete kerbing in a rural setting unless absolutely necessary. Explore more appropriate alternatives.
Development	• Encourage new development to reinforce the existing settlement pattern, focused on market towns and smaller villages. • New residential development should respond to the morphology of existing settlements (e.g. nucleated market settlements, grid-iron 19th century new villages). Explore the need and scope for a small number of new villages, echoing those established in the 19th century. • Encourage developers to use local building materials and to adopt local vernacular in respect of density, massing, design, colour and location. While red sandstones predominate, there are local variations which reflect subtle changes in the character of the local geology. Avoid standard designs and layouts. Consider the preparation of design guides as supplementary planning guidance.
Minerals	• Monitor future demand for mineral working. Ensure that any schemes that come forward are restoration-led and are located so as to minimise landscape impacts during operation.
Forestry and woodland	• As a matter of urgency, encourage a phased programme of replanting, managing and, where necessary, felling hedgerow trees, so as to maintain and restore the historic legacy of strath trees. • Maintain, where appropriate, the rectilinear woodland areas in Strathallan. Elsewhere, discourage significant and extensive new afforestation. • Retain and manage surviving pockets of native birch woodland. • Examine the potential to create an integrated pattern of new small woodlands and woodland belts in the most open areas.

Tall structures	• Assess proposals for aerials, masts or wind turbines in terms of their visual and landscape impact on the lowland straths. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact. • Encourage telecommunication companies to develop a strategy for mast provision which reflects the sensitivity of the local landscape. • Underground cable solutions should be considered in preference to pylon lines across the arable landscape.

FIRTH LOWLANDS (11)



KEY CHARACTERISTICS

- *predominantly flat, fertile area*
- *enclosed by the steep Sidlaws escarpment to the north and bounded by the Firth of Tay to the south*
- *estuarine reed-beds and mudflats*
- *large rectangular fields*
- *decaying structure of hedges and hedgerow trees*
- *well-settled with some urban influences*

OBJECTIVE DESCRIPTION		Firth Lowlands
Physical scale		Relatively flat area bordering Firth of Tay, lying at between about 10 and 50 metres AOD
Woodland	broad-leaf	Trees mainly limited to field boundaries, shelterbelts and policy woodlands; historically an orchard area
	coniferous	Limited to a few areas of policy woodland
Agriculture	arable	Extensive areas of arable land
	pasture	Relatively little pasture land
	fields	Large and rectilinear
	field boundaries	Gappy hedges, post-and-wire fences and wet ditches; decaying structure of hedgerow trees
Settlement pattern		Nucleated settlements on higher ground and a scatter of large farmsteads on tracks leading from principal roads
Building materials		Red sandstone and harder igneous rocks from Sidlaws
Historic features		Castles, historic houses and designed landscapes
Natural heritage features		Reed-beds and mudflats
Other landscape features		Communication corridors, disused airfield etc.
SUBJECTIVE DESCRIPTION		
Views		Corridor
Scale		Medium
Enclosure		Open
Variety		Simple to varied
Texture		Smooth
Colour		Colourful
Movement		Active
Unity		Fragmented to interrupted
'Naturalness'		Tamed

LOCATION

5.11.1 Along the northern side of the Firth of Tay, between Perth and Dundee lies an area of estuarine lowland known as the Carse of Gowrie. Bounded to the north by the steep escarpment of the Sidlaw Hills, the area forms one of the most fertile parts of Scotland.

PHYSICAL CHARACTERISTICS

5.11.2 The Carse of Gowrie is underlain by Upper Old Red Sandstone and a smaller area of Carboniferous limestone which occurs in the vicinity of Errol. The bedrock, however, is buried beneath a thick capping of superficial deposits, laid down by retreating ice sheets, and by the estuarine and marine deposition. Though the area would once have been subject to frequent tidal flooding, the upward movement of the land mass following the melting of ice sheets means that this no longer occurs. The area averages about 10 metres AOD, rising to a maximum of 50 metres AOD at Errol. The edge of the estuary is often marked by a distinct bank before extensive reed-beds and mudflats are reached. In this flat landscape the sky forms an important part of the landscape and the character can change with the pattern of cloud cover the nature of the light.

SETTLEMENT AND LAND USE

5.11.3 This is a well-settled area, with a number of villages and a scatter of farmsteads and hamlets. Some of the more historic settlements are sited on low hills or slight rises in the otherwise level landscape. A number of castles (e.g. Castle Huntly and Megginch Castle) point to the need to defend the area in the past. The designed landscapes and policies of Castle Huntly and Errol Park also contribute to the landscape. The subdued topography of the area presents no obstacle to communications and roads and railways generally follow straight or geometric lines. Minor roads feed off the main routes at ninety degrees. The area has a history of apple growing with blossoms from surviving orchards characterising the area during the spring. Other past activities include the manufacture of bricks and pipes from local clay at Errol.

5.11.4 The Carse of Gowrie is principally an agricultural area and the landscape is dominated by large, geometric fields. Field boundaries within parcels of land are often absent, the distinction between different fields being marked by drainage ditches or simply by changes in crop. Hedges and hedgerow trees are more common along roads and tracks, though even here many hedges, though trimmed, have become gappy, and lost trees have not been replaced. Historically, the area was an important orchard area but much of this has disappeared though locally important remnants remain. The reed-beds near Errol are one of the largest commercial sources of thatching reeds in the UK.

FORCES FOR CHANGE

5.11.5 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.11.6 **Agriculture.** Farming on the Carse of Gowrie has long been dominated by arable cultivation. Over the years, much of the land has been drained and many fields enlarged to allow the use of modern machinery. Those hedges that remain are often sparse and gappy, with only a few remnants of what would once have been an extensive population of hedgerow trees. The remnant orchard areas, particularly around Errol, contribute a splash of blossom in springtime.

5.11.7 **Transport.** Comprising the only area of flat land linking Perth and Dundee, the area has developed as a transport corridor accommodating the A90(T) - which has been upgraded to dual carriageway standard - and a railway line. The A90, in particular, has a significant impact on this landscape, partly because of the large-scale and unscreened nature of the road itself, and partly because of the large volume of fast-moving traffic moving along it. The further upgrading of the road to include a number of grade separated junctions (Glendoick, Inchmichael and Inchture), while improving safety, is likely to result in increased landscape impacts and may lead to the development of roadside service facilities.

5.11.8 A further detracting feature is the disused airfield to the east of Errol. Options considered for this site include mixed industrial, business and aviation uses and a new settlement expansion for Errol. Out of necessity, these potential uses are being proposed in response to the presence of a derelict site rather than the character of the surrounding landscape. It appears inevitable that the redevelopment of this site will contribute to the increase in urban influences within this landscape type. Even if development is screened from view it is likely to result in traffic generation, altering the character of country roads in the area.

5.11.9 **Development.** The location of this landscape type between Perth and Dundee means that there has been considerable pressure for housing development. While some of this pressure has been accommodated within settlements such as Inchture, Errol and St Madoes, elsewhere it has resulted in a dispersed pattern of development (e.g. around Grange) and the growth of some ribbon developments (e.g. Walnut Grove). As noted above, the disused airfield near Errol is being considered as a potential new settlement location. While this could allow dereliction on the site to be addressed, it would comprise a significant increase in the level of development in this traditionally rural area.

5.11.10 **Forestry and woodland.** Commercial forestry is absent in this productive agricultural area and woodland cover is confined to a declining population of hedgerow trees and shelterbelts and policy woodlands associated with the Errol estate. As noted above, the survival of hedgerow trees and remnant orchards is a particular concern.

5.11.12 **Tall structures.** The area is crossed by two lines of electricity pylons, adding further to the urban influences along the Firth Lowlands.

5.11.13 **Climate change.** Changing sea levels could have an impact on the Firth Lowlands landscape in the medium term. The extent of mudflats and reed-beds could be squeezed as low water levels rise, but productive farmland is protected by tidal defences. In the longer term, there may need to be a choice between expensive flood defences and 'managed retreat'. The latter accepts that the frequency and extent of tidal inundation is likely to increase and modifies land uses accordingly. Within the Firth Lowlands the density of settlement, even on land below 10 metres AOD, and the productivity of the land, are likely to preclude this approach.

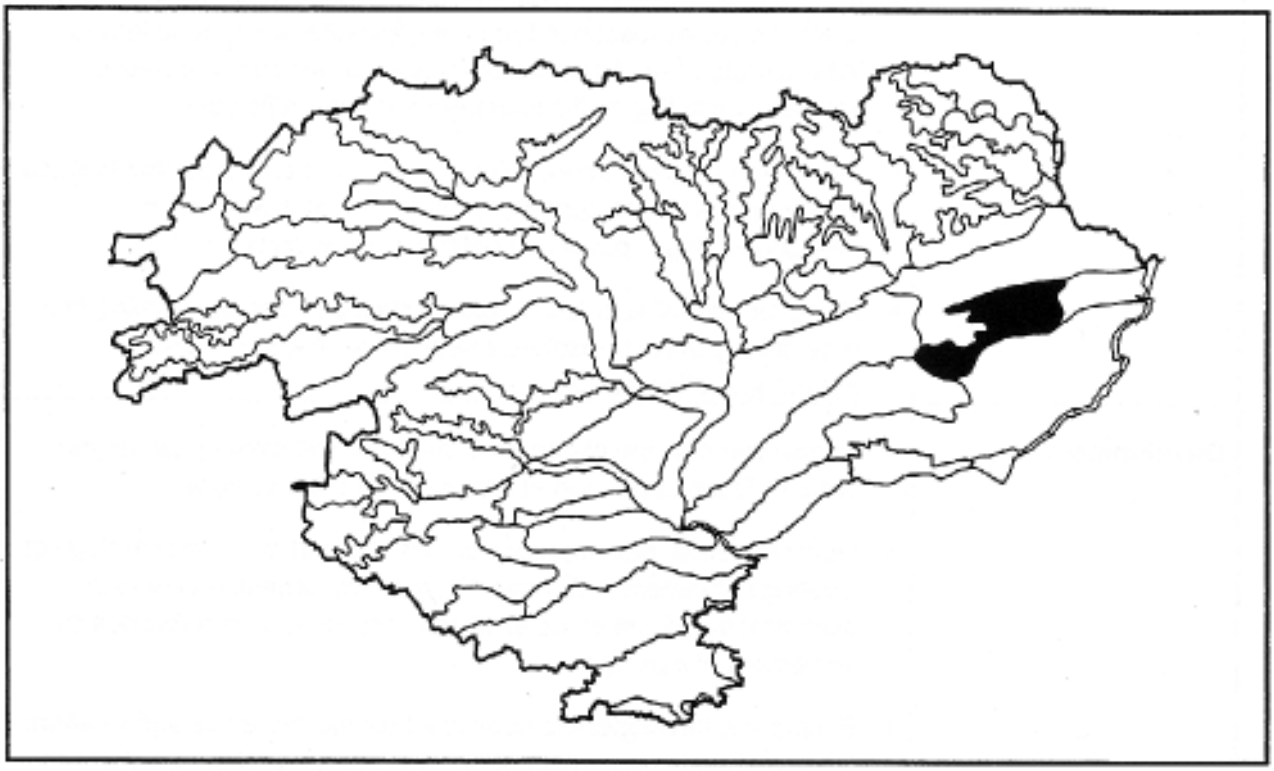
LANDSCAPE GUIDELINES

5.11.14 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve and restore the characteristic landscape of hedged fields, hedgerow trees, avenues and policy woodlands. The rural character of the Firth Lowlands should be restored by addressing inappropriate developments and land uses that have taken place in the past.

Agriculture	• Discourage improvements which result in further loss of field boundaries or field boundary trees. • Encourage farmers and landowners to replant trees along field boundaries, initially along roads, but also between fields. Species to include oak, sycamore, beech and ash. Use incentives to compensate for lower yields where mature trees are retained. • Explore the opportunities to increase woodland cover by creating new woodland belts, particularly where there is a need to screen development. • Encourage the maintenance of the remnant orchards in the Carse for their historic importance and local landscape significance. • Use the agricultural development notification scheme to influence the design, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to re-establish hedgerow trees.

Transport	• Encourage on-site and off-site planting to better integrate major roads into the landscape and to provide screening of traffic. • Ensure that further proposals for the provision of grade separated junctions are assessed in terms of their wider landscape impact. Where major, unmitigatable impacts exist, explore alternative solutions including traffic management and traffic calming. • Where road improvement schemes take place, ensure that hedges and hedgerow trees, together with other features such as milestones, finger posts and gates are reinstated. • Avoid the use of suburban features such as concrete kerbing in a rural setting unless absolutely necessary. Explore more appropriate alternatives.
Development	• Encourage new development to reinforce the existing settlement pattern, focused on market towns and smaller villages. • New residential development should respond to the morphology of existing settlements. Examine how a new settlement could be accommodated within the existing landscape, road network and settlement hierarchy. • Encourage developers to use local building materials and to adopt local vernacular in respect of density, massing, design, colour and location. Avoid standard designs and layouts. Consider the preparation of design guides as supplementary planning guidance.
Forestry and woodland	• Introduce incentives to retain and regenerate the existing orchard remnants. • As a matter of urgency, encourage a phased programme of replanting, managing and, where necessary, felling hedgerow trees, so as to maintain and restore the historic legacy of trees.
Tall structures	• Assess proposals for aerials, masts or wind turbines within and around the Firth Lowlands, in terms of their visual and landscape impact. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact. • Encourage telecommunication companies to develop a strategy for mast provision which reflects the sensitivity of the local landscape.
Climate change	• Monitor long-term changes in climate so as to anticipate and plan for any implications for the landscape.

LOW MOORLAND HILLS (12)



KEY CHARACTERISTICS

- *eastern outliers of the Sidlaws*
- *combination of low, rounded hills and craggy, ridged upland*
- *moorland character evident in areas of heather and gorse*
- *some areas of extensive woodland*
- *rich historic heritage*
- *scattered modern settlement*

OBJECTIVE DESCRIPTION		Low Moorland Hills
Physical scale		Series of east-west ridge-like hills with sharply defined northern edge and gentler eastern slopes; hills rise to 200 to 250 metres AOD
Woodland	broad-leaf	Very limited
	coniferous	Extensive plantation at Montreathmont Forest
Agriculture	arable	Some arable on gentler and lower eastern slopes
	pasture	Extensive pastures, much of it rough and heathy in character on the upper slopes
	fields	Medium-sized, rectilinear where topography allows
	field boundaries	Hedges with some stone walls and post-and-wire fences
Settlement pattern		Scatter of isolated farmsteads, no villages
Building materials		Red sandstone
Historic features		Hill-forts, Pictish stones
Natural heritage features		No notable features
Other landscape features		Masts and pylons
SUBJECTIVE DESCRIPTION		
Views		Panoramic
Scale		Medium
Enclosure		Open
Variety		Simple
Texture		Rough to very rough
Colour		Muted
Movement		Remote
Unity		Interrupted
'Naturalness'		Restrained

LOCATION

5.12.1 To the east and south of Forfar lie a series of hills, forming low, eastern outliers of the Sidlaws. We refer to these as the Forfar Hills. The hills can be divided into two sub-groups. Firstly there is a series of isolated, rounded hills. These include Dunnichen Hill and Fothringham Hill. Secondly there is the more continuous area of upland centred on Montreathmont Moor, which culminates in sharp ridges overlooking Forfar.

PHYSICAL CHARACTERISTICS

5.12.2 These hills comprise a combination of the more resistant components of the Old Red Sandstone series and areas of volcanic rocks. The resistant sandstone is clearly visible where crags form outcrops on the Hill of Finavon and Turin Hill. Elsewhere, however, the landform is rounded and smooth. Along the southern side of the River South Esk the northern boundary of the resistant lavas is visible as a steep, straight escarpment running west from the coastal cliffs south of Montrose towards Farnell. Rescobie Loch and Balgavies Loch, both of which are of importance for nature conservation, lie in a narrow valley between Turin Hill and Dunnichen Hill. These lochs feed the Lunan Water which flows eastwards to the coast.

SETTLEMENT AND LAND USE

5.12.3 Although lying just 100-150 metres above the surrounding lowland farmland, these hilltops have a very different character, in part reflecting their more recent reclamation and improvement. In agricultural terms, the ridges of the Dunnichen Hill, Hill of Finavon and Turin Hill are categorised as Class 6(2) compared with the surrounding farmland which falls into Classes 3 or even 2. The poorer nature of the eastern part of these hills is reflected in their heathy character (including the survival of gorse and bracken along field boundaries), the existence of large areas of coniferous woodland (other lowland is regarded as being too productive to put into woodland) and the presence of wetland areas. Place names such as Muirton, Muirside, Mostonmuir and Rossie Moor all point to the past or current heathland character.

5.12.4 Settlement on the Low Moorland Hills is limited to a dispersed pattern of farmsteads on the unforested part of Montreathmont Moor. However, there is extensive landscape evidence of earlier phases of human activity. This includes the dramatic Iron Age hill-forts sited on the craggy summits of the Hill of Finavon and Turin Hill. Nearby, at Aberlemno, are some of the finest examples of Pictish sculptured stones and crosses in southern Scotland. Also near Aberlemno stands Melgund Castle, a 16th century, four storey stronghold. The concentration of these sites, spanning two millennia, points to the significance of these hills, marking the divide between the lowland route of Strathmore and the coastal lowlands to the south. Modern encroachments onto these hills are limited to a handful of telecommunications masts. Extensive sand and gravel working takes place at the western foot of Turin Hill, and there were recent proposals to extract igneous rock from Dunnichen Hill. The hilltops provide fine viewpoints looking northwards across the valley lowland to the Highland Foothills and the Highlands themselves.

FORCES FOR CHANGE

5.12.5 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.12.6 **Agriculture.** The poorer nature of the soils of the Low Moorland Hills is reflected in the pattern of agriculture with arable on some of the lower slopes giving way to enclosed pastures and eventually, in the case of the more poorly drained areas, to rough moorland grazing. Historically, it is likely that improvements brought by drainage, reseeding and the application of fertilisers has resulted in a reduction in the extent of rough moorland and an increase in the area of enclosed pasture and arable land. This, allied to the effects of afforestation, means that only fragments of the former landscape survive.

5.12.7 On lower slopes, this landscape type shares the structure of hedgerows and hedgerow trees that is found in the Broad Valley Lowlands and elsewhere. As in these areas, the population of trees is declining as replanting is not undertaken.

5.12.8 Many farms in the foothills have constructed modern agricultural buildings such as sheds and barns. These are generally of a smaller scale than those found in the lowland straths but can have a visual and landscape impact where the screening effect of woodland is absent.

5.12.9 **Transport.** The moorland hills have a network of main and minor roads. Although often very straight, these generally fit with the grain of the landscape. Existing coniferous plantations provide a degree of screening.

5.12.10 **Development.** Development within the Low Moorland Hills is very limited. It has been concentrated instead in lowland settlements such as Forfar, Letham and Friockheim.

5.12.11 **Minerals.** There have been proposals in the past to establish quarries at Dunnichen Hill. The proposals were withdrawn in response to local opposition, but it is possible that modified plans may come forward in the future. If mineral working is permitted it should be subject to the following terms:

- full environmental assessment to address, in particular, issues to do with landscape impact and the cultural environment;
- advance on and off-site planting to provide adequate screening around the site;
- full restoration proposals, re-creating the existing landform, and landscape features such as hedges and woodland.

5.12.12 **Forestry and woodland.** The elevation, soils and prevailing climate of the Low Moorland Hills makes them well-suited to commercial forestry. This is reflected in the Tayside Indicative Forestry Strategy which categorises parts of this landscape type as being 'preferred' or 'potential' areas for new planting. The area already includes an extensive area of plantation woodland at Montreathmont Forest and Moor. Taking a regional

perspective it is evident that these hills are relatively free from the constraints associated with the most productive agricultural land and the sensitive highland areas. Furthermore, the plateau-like summit of the hills means that often it is only the edge of the existing plantation woodland that is seen, concealing its true extent. While there is scope for new planting, this needs to take into account:

- the scale of new planting relative to the landform and the proportion of unplanted land;
- species composition;
- relationship with existing semi-natural or planted woodland;
- retention of key views within and outwith the hills;
- opportunities to conserve or recreate areas of low moorland within the woodland;
- size of felling coupes;
- factors such as agricultural viability, nature conservation and historic sensitivities.

5.12.13 These issues, together with concerns regarding the restocking of existing woods, are addressed by Forestry Authority woodland design guidance, and are summarised in the landscape guidelines presented at the end of this section.

5.12.14 **Tall structures.** The Low Moorland Hills have a number of tall structures, principally a series of masts on Fothringham Hill, Dunnichen Hill, Hill of Finavon and Montreathmont Moor, and the line of electricity pylons running from north of Forfar towards Brechin. There is also pressure for additional masts to serve the cellular telephone industry, particularly along the A90.

5.12.15 With the development of modern wind turbines to generate power, it is possible that this area may come under pressure for wind farm development. Though wind speeds are likely to be significantly lower than in more elevated parts of the Highlands or the Sidlaws/Ochils, it is possible that the lower level of perceived constraint, together with the proximity to the existing electricity distribution network, could favour this area. This would be even more likely if the efficiency of wind turbines continues to improve, thereby making areas with lower wind speeds viable. It would be worth examining the scope for accommodating wind turbines within forested (and serviced) areas such as Montreathmont Forest.

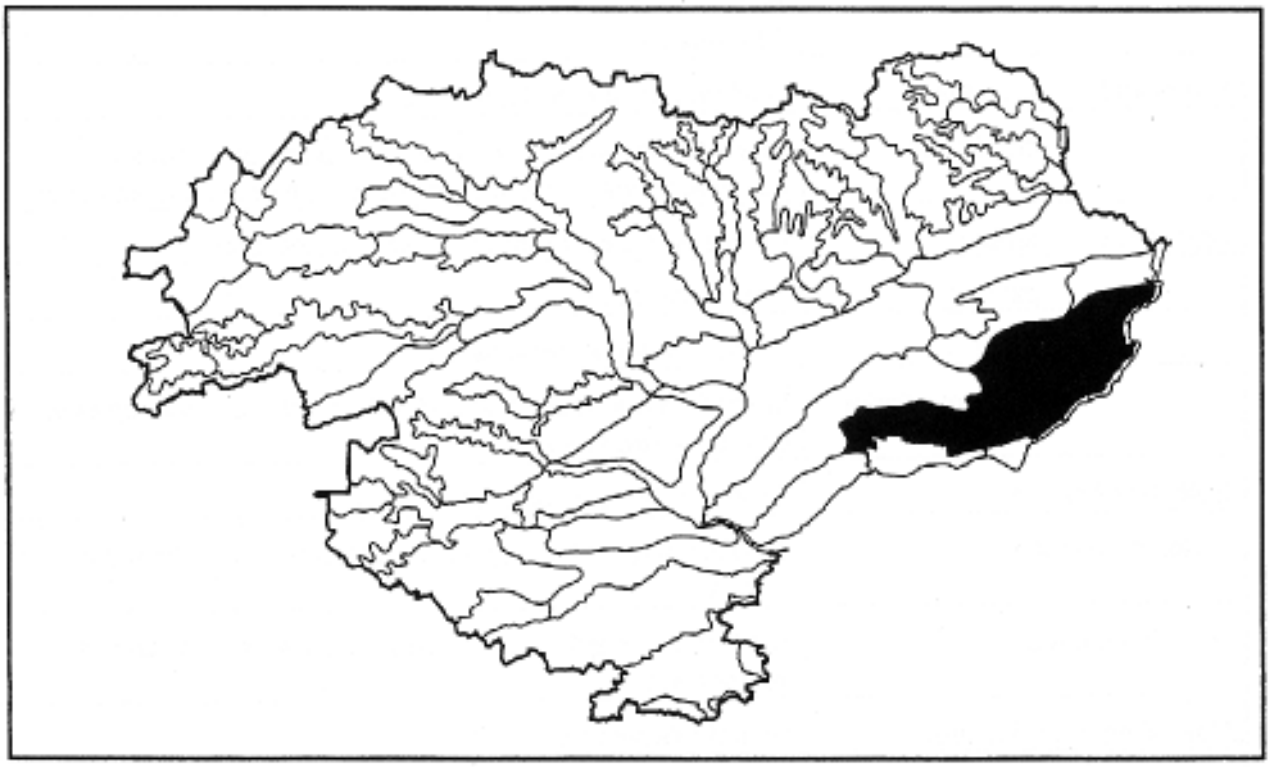
LANDSCAPE GUIDELINES

5.12.16 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the semi-moorland character of these hills, maintaining the contrast with more fertile lower lying areas.

Agriculture	• Encourage farmers and landowners to maintain and replant trees and farm woodlands. Species to include oak, maple, beech and ash. • Use the agricultural development notification scheme to influence the design, colour, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to provide screening where appropriate.
Transport	• Where more minor road improvement schemes take place, ensure that hedges, hedgerow trees, gates and other features are re-instated. • Avoid the use of suburban features such as concrete kerbing in a rural setting unless absolutely necessary. Explore more appropriate alternatives. • Develop a road use hierarchy as a basis for management.
Development	• Focus new development in existing towns and villages so as to reinforce the historic pattern of settlements and to protect the rural character of other parts of the lowland glens. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles. • Encourage the appropriate conversion of redundant farm buildings. Guidance should be provided on the way buildings should be converted (including the provision of drives, gardens etc.) to prevent the suburbanisation of the countryside.
Minerals	• Ensure that proposals for mineral working are subject to thorough environmental assessment and that they are accompanied by full restoration proposals. • Ensure adequate on and off-site screening during the operation of any sites that are granted consent.

Forestry and woodland	• New planting should conform to the Forestry Authority's design guidelines. In particular, it should respond to the small-scale nature of the landscape, complex topography, the importance of views within and out of the hills, and historic and ecological values. • With respect to the replanting of existing plantations: - adopt a more naturalistic appearance, responding to the landform and features such as burns and small valleys; - create graded and irregular margins at the top and bottom of the slope, allowing views of upper slopes from within the glen; - discourage straight lateral edges - do not plant up to the edge of a land holding where this creates a strong and geometric vertical line;. - employ more varied species mixes; - vary the size of felling coupes, with smaller areas on lower slopes; - retain open heathy glades within the woodland.
Tall structures	• Assess proposals for aerials, pylons or masts in terms of their visual and landscape impact on the local landscape, including historic sites, and the broader landscape. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact. • Encourage telecommunication companies to develop a strategy for mast provision which reflects the sensitivity of the local landscape. • Encourage the development of a regional strategy for renewable energy, including wind power, in order that the most appropriate types of development and areas come forward.

DIPSLOPE FARMLAND (13)



KEY CHARACTERISTICS

- *extensive area of land, generally sloping from the north-west to the south-east*
- *dominated by productive agricultural land*
- *low woodland cover, except on large estates and along river corridors*
- *variety of historic sites*
- *dispersed settlement pattern, including some suburban development*
- *limited visual impact of Dundee and Arbroath*

OBJECTIVE DESCRIPTION		Dipslope Farmland
Physical scale		Extensive area of land sloping towards the coast from north-west to south-east; range in height from about 150 metres to 50 metres AOD
Woodland	broad-leaf	Shelterbelts and hedgerow trees
	coniferous	Shelterbelts, policy woodlands and areas of woodland associated with designed landscapes; highly variable cover
Agriculture	arable	Extensive arable production - very fertile land
	pasture	Limited pastureland
	fields	Medium to large, rectilinear
	field boundaries	Many field boundaries absent, others marked by hedges or post-and-wire fences
Settlement pattern		Scatter of hamlets and farmsteads
Building materials		Traditional use of sandstones and harder stone from the Sidlaws
Historic features		Souterrains, castles, mills, historic houses and designed landscapes
Natural heritage features		No notable features
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Intermittent
Scale		Medium
Enclosure		Semi-enclosed to open
Variety		Simple
Texture		Textured to smooth
Colour		Colourful
Movement		Peaceful
Unity		Interrupted
'Naturalness'		Tamed

LOCATION

5.13.1 To the south-east of the Sidlaws and the Forfar Hills lies an extensive area of farmland sloping gently towards the Angus coast.

PHYSICAL CHARACTERISTICS

5.13.2 The area is dominated by Lower Old Red Sandstone, though there are patches of igneous rocks, forming low outliers of the Sidlaws. The area falls from up to 180 metres in the north-west to about 50 metres along the coastal strip. The dipslope blends almost imperceptibly into the southern slopes of the Sidlaws and Montreathmont Hills.

SETTLEMENT AND LAND USE

5.13.3 This is one of the most fertile and productive agricultural areas in Scotland, with much of the land being categorised as Classes 1 or 2. It is not surprising, therefore, that intensive agriculture, based on cereals, is the dominant land use. Fields tend to be large and rectilinear. Woodland cover is low or even absent in some areas, particularly closest to the coast, creating an open, exposed landscape in places. Elsewhere, particularly on some of the larger estates more extensive woodland survives, comprising a mixture of shelterbelts (for example stands of Scots pine or beech) and hedgerow trees. Where these survive, the landscape is enclosed and structured. Often the trees are wind-trimmed and bent slightly away from the coast. Semi-natural woodland is limited to steeper valley sides, for example along the Lunan Water.

5.13.4 Despite the intensive pattern of agriculture, the area has a range of archaeological and historic sites. These include Bronze Age burial sites such as that at Dickmountlaw just to the north of Arbroath, a number of souterrains (for example at Grange of Conon near Redford and in Arbroath), Roman sites such as the camp at Kirkbuddo near Whigstreet, and medieval castles including Braikie Castle and Gardyne castle near Friockheim and Colliston Castle to the south. Designed landscapes are also important in this area. A dense scatter of more recent farmsteads is supplemented by a number of isolated houses, reflecting the proximity to Dundee and Arbroath. Both settlements are, however, relatively well-hidden in this otherwise open landscape. Dundee is screened from the north by a ridgeline running parallel to the Firth of Tay, while Arbroath occupies lowland at the mouth of a shallow valley.

FORCES FOR CHANGE

5.13.5 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.13.6 **Agriculture.** The fertile and productive nature of this area is reflected in the dominance of agriculture, particularly cereal production and the low level of woodland cover. Many fields have been enlarged and the structure of hedges and hedgerow trees, as

elsewhere, is declining. Many farms in the foothills have constructed modern agricultural buildings such as sheds and barns and, while these are generally of a smaller scale than those found in the lowland straths, the reduction in woodland cover means that they are often visible over a considerable distance.

5.13.7 **Transport.** The Dipslope Farmland has a network of main and minor roads. These are generally small-scale and fit with the grain of the landscape. The exception is the A90(T) corridor which runs north from Dundee. The road and its traffic has a considerable landscape and aural impact.

5.13.8 **Development.** The Dipslope Farmland landscape type has few settlements of any size, since most tend to be located along the coast. However, as noted above, the proximity to Dundee and Arbroath is reflected in the number of isolated modern dwellings or groups of dwellings that are found throughout the area. Many of these are associated with existing farm buildings or hamlets. However, designs are usually suburban in character, and their sites chosen to maximise the view rather than minimise landscape impact. Planning policies in Angus have allowed a certain amount of development in the open countryside as a means of stabilising and reversing economic and social decline. A similar policy applied in part of Dundee prior to local government reorganisation in 1996. By way of contrast, the urban edges of Dundee and Arbroath, while abrupt, are comparatively well-screened by the landform and have little impact on the wider landscape.

5.13.9 **Forestry and woodland.** As noted above, woodland cover within this landscape type is limited, comprising small copses (often located on pockets of less productive land), surviving hedgerow trees, and the shelterbelts and policies of estates and designed landscapes. The area is similar to the lowland straths in that the influence of individual estates on woodland management is evident. Some areas retain structural woodland, creating landscape rooms, and providing screening for development in the countryside while others are almost completely open. The importance of restoring tree cover in the latter areas was recognised by the Dundee Rural Areas Local Plan (City of Dundee District Council, 1994) which encouraged woodland planting particularly in the Tealing Area. The Rural Angus Local Plan (Angus District Council, 1991) contained similar policies. Agricultural factors suggest that large-scale afforestation is unlikely to happen in this area.

5.13.10 **Tall structures.** This low-lying area is comparatively free from tall structures with the exception of the electricity transmission lines which serve Dundee and Arbroath. It is possible that there may be pressure for additional masts, particularly in the vicinity of major roads, as telecommunications traffic grows.

LANDSCAPE GUIDELINES

5.13.11 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve and restore the rural character of the Dipslope Farmland landscape type, and to reduce the range of urban influences upon it.

Agriculture	• Discourage improvements which result in further loss of field boundaries or field boundary trees. • Encourage farmers and landowners to replant trees along field boundaries, initially along roads, but also between fields. Species to include oak, sycamore, beech and ash. Use incentives to compensate for lower yields where mature trees are retained. • Explore the opportunities to increase woodland cover by creating new woodland belts, particularly where there is a need to screen development. • Explore development of market for hardwood from field boundary trees. • Discourage over-concentration of oil seed rape and similar crops. • Use the agricultural development notification scheme to influence the design, materials, screening and location of new farm buildings. Explore the use of planning conditions attached to new buildings to re-establish hedgerow trees.
Transport	• Where necessary, explore opportunities to provide additional on- and off-site screening of major roads. • Where more minor road improvement schemes take place, ensure that hedges, hedgerow trees, gates and other features are re-instated. • Avoid the use of suburban features such as concrete kerbing in a rural setting unless absolutely necessary. Explore more appropriate alternatives. • Develop a road use hierarchy as a basis for management.

Development	• Focus new development in existing towns and villages so as to reinforce the historic pattern of settlements and to protect the rural character of other parts of the lowland glens. • Discourage the simplistic grafting of housing estates onto the edge of settlements. Encourage more imaginative schemes which respond to the existing patterns of layout, structure, massing and scale. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles. • Where small-scale development is permitted, encourage developers to use local building materials and to adopt local vernacular in respect of density, massing, design, colour and location. Avoid standard or suburban designs and layouts. Assess and adopt existing traditional layouts. Consider the preparation of design guides as supplementary planning guidance. • Encourage the appropriate conversion of redundant farm buildings. Guidance should be provided on the way buildings should be converted (including the provision of drives, gardens, etc.) to prevent the suburbanisation of the countryside.
Forestry and woodland	• New planting should help restore field boundary trees and establish woodland belts (see above). • Encourage new woodland where this would help enhance relatively low quality agricultural landscape.
Tall structures	• Assess any proposals for aerials or masts in terms of their visual and landscape impact. • Encourage telecommunications companies to share facilities where it is evident that this would reduce the overall landscape impact. • Encourage telecommunication companies to develop a strategy for mast provision which reflects the sensitivity of the local landscape.

LOW MOORLAND HILLS
Craggy hill tops and ridges near Hill of Finavon above Forfar.

DIPSLOPE FARMLAND
A settled landscape of farmland and small woods.

COAST WITH SAND
The broad sandy beach at Lunan Bay, backed by a complex of sand dunes.

COAST WITH CLIFFS
The former fishing village of Auchmithie perches above the soft red sandstone cliffs.

Photo: SNH

LOWLAND BASIN
An open, simple landscape dominated by the expanse of water and surrounding gently sloping farmland.

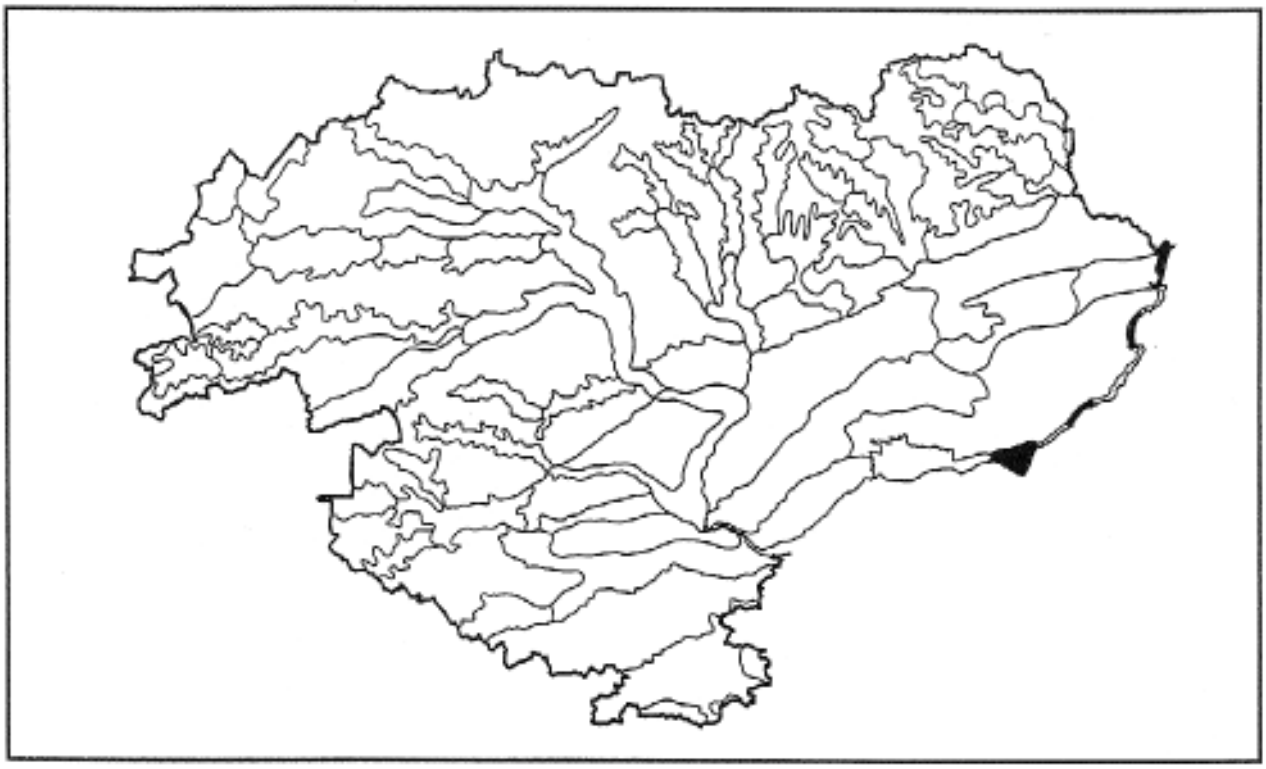
FIGURE 16

LANDSCAPE CHARACTER TYPES

COAST (14)

5.14.1 The combination of distinct physical characteristics and a strong coastal influence on the landscape distinguishes a comparatively narrow band of land along the Angus coast. Here, the sense of exposure, the presence of the sea, the influence of the tides and the expanse of sky create a very different landscape character than that of inland areas. A distinction has been made between the sandy and cliff sections of the coast.

COAST WITH SAND (14A)



KEY CHARACTERISTICS

- *areas of marine alluvium and windblown sand along lower sections of coast*
- *sand dunes inland*
- *ever-changing landscape of shifting sands, erosion and deposition and tidal fluctuation*
- *golf courses*
- *limited settlement*

OBJECTIVE DESCRIPTION		Coast
Physical scale		Low-lying sections of coast ranging from 0 to 5 metres AOD
Woodland	broad-leaf	Confined to hedgerow trees on farmland adjoining the coast
	coniferous	Confined to shelterbelts on farmland adjoining the coast
Agriculture	arable	Along coastal strip
	pasture	On dune slack and along lower sections of river valleys
	fields	Medium and rectilinear where topography allows
	field boundaries	Hedges and walls, supplemented by fences
Settlement pattern		Limited settlement
Building materials		Red sandstone
Historic features		Castles, fishing station
Natural heritage features		Dune systems are of ecological and geological interest
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Distant
Scale		Medium
Enclosure		Exposed
Variety		Simple
Texture		Smooth to rough
Colour		Colourful
Movement		Active
Unity		Unified
'Naturalness'		Undisturbed to tamed

LOCATION

5.14.2 Sections of coast with sand occur between Broughty Ferry and Carnoustie, south of Arbroath, at Lunan Bay and at Montrose.

PHYSICAL CHARACTERISTICS

5.14.3 The origins of these areas differ, falling into two main groups. Firstly, there are sections of coast where blown sand and marine alluvium have created substantial deposits. Particular examples include Barry Links, where a rounded peninsula of sand dunes extends southwards into the Firth of Tay, and the spit of land occupied by Montrose at the mouth of the River South Esk. Secondly, there are sections of coast where rivers such as the Lunan have lowered the level of the land and broad bays are now filled with sand. In both cases, the sandy beach is often backed by sand dunes, some of which are relatively level and are used for grazing.

5.14.4 Several of the links are of ecological and geological importance. Barry Links for example is a designated SSSI, notified because of its range of characteristic plant communities, including some rare species, as well as important mosses, invertebrates and breeding birds. It is regarded as an excellent example of coastal deposition, including the well-developed complex of parabolic dunes. Although there is a golf course on the northern part of the links, much of the area is reserved for military live firing.

SETTLEMENT AND LAND USE

5.14.5 Comparatively little has survived from earlier periods in this ever-changing coastal landscape. Exceptions include Broughty Castle, originally built in the 15th century but refortified in the 19th century, and Red Castle which stands, ruined, above Lunan Bay. Also at Lunan Bay are the remains of an earlier commercial fishing station, including the ruin of an icehouse constructed to store the catch. Today, many of the beaches are popular destinations when the weather is good. A number of golf courses are found among the dunes.

FORCES FOR CHANGE

5.14.6 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.14.7 **Agriculture.** Low intensity grazing can be quite important in maintaining the stability of vegetated parts of the dune systems. Overgrazing could result in the loss of vegetation and an increase in erosion.

5.14.8 **Transport.** Vehicular access to much of this coastal area is limited. Even at Lunan Bay it is limited to a minor farm road which leads to a small and informal car park which has

been created in the lee of the sand dunes. This low level of access is an asset, underlining the low level of development along the coast.

5.14.9 **Development.** There is also very little development on the sections of sandy coast. The principal exceptions are found at Barry Links (which is used for military training and also has a golf course) and the Links of Montrose (also used as a golf course). While these land uses hinder more general access to the coast, they are low-key in nature and do assist in the conservation of the natural heritage.

5.14.10 **Forestry and woodland.** Commercial woodland is absent from this landscape type. However, semi-natural woodland is found along the river valleys that emerge in places such as Lunan Bay and on some of the more stable areas of sand dune.

5.14.11 **Recreation.** While, for most of the year, these beaches and dune systems are deserted, during period of fine weather, particularly at weekends and holiday times, they can attract considerable numbers of people. This can result in erosion around key access points, reducing the overall stability of the dunes. At Lunan Bay, where these pressures are high, boardwalks and other management measures have been implemented to minimise damage.

5.14.12 **Tall structures.** Many of these sections of coast are free from signs of modern development and retain an almost timeless character. The erection of masts in areas visible from these areas (for instance in cliff-top locations) or the development of shore-line or off-shore wind power schemes could have an adverse effect on this character. Any proposals should be assessed carefully in these terms.

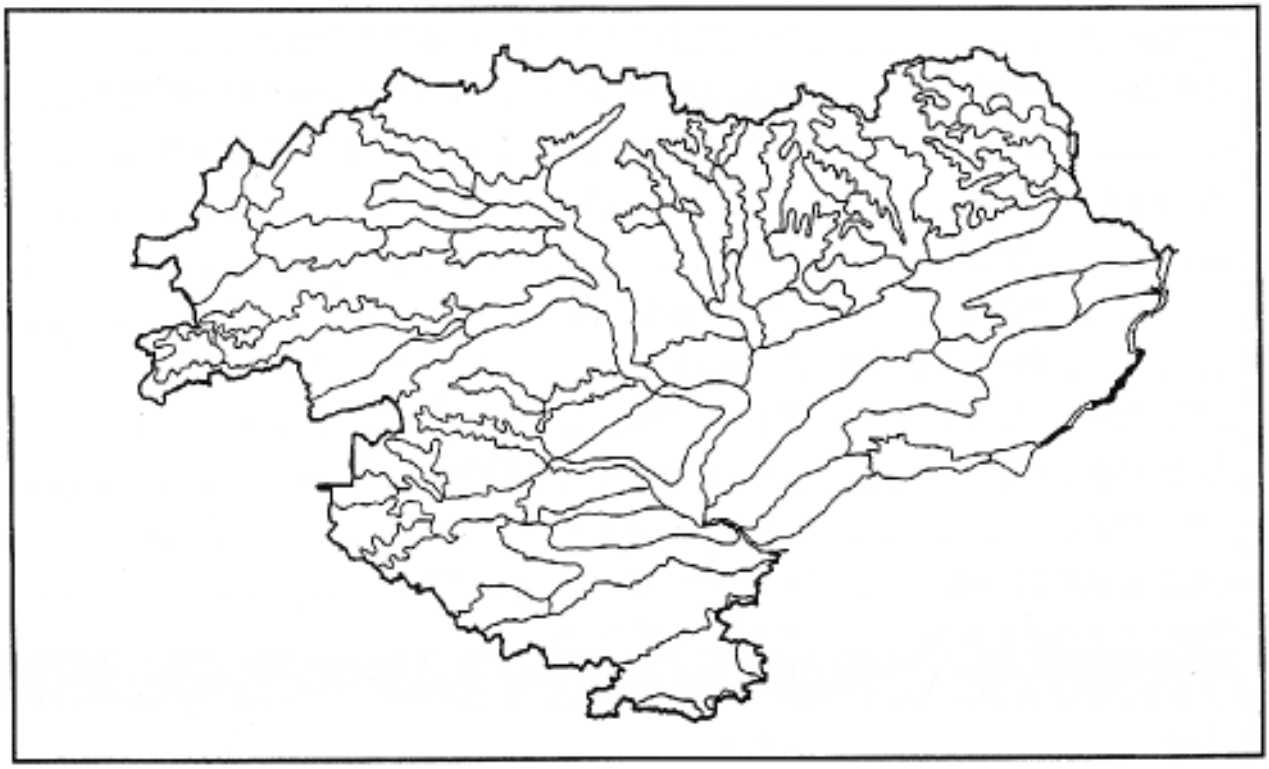
5.14.13 **Climate change.** It is possible that climate change brought about by global warming could result in an increase in storminess and changes in sea levels. Both could have serious implications for the stability and survival of these sections of dune coast. Further monitoring of any changes should be undertaken. If the stability of the coast is threatened, a comprehensive assessment options (including the do-nothing scenario) for managing this change should be undertaken.

LANDSCAPE GUIDELINES

5.14.14 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the natural and, at times, remote character of these sections of coast.

Agriculture	• Encourage the continuation of appropriate levels of grazing on the vegetated dunes and dune slack areas.
Transport	• Maintain the low level and informal character of vehicular access.
Development	• Restrict development in these areas. • Should the military training area at Barry Links become redundant, encourage the restoration of the natural dune landscape rather than disposal for development.
Forestry and woodland	• Discourage planting except within sheltered river valleys. • Facilitate natural colonisation on established dune areas (where this does not conflict with natural heritage interests).
Recreation	• Maintain low level of formal recreational provision. • Monitor erosion and other effects in areas subject to highest pressure, implementing management measures as necessary.
Tall structures	• Assess any proposals for tall structures in terms of their visual and landscape impacts.
Climate change	• Monitor the effects of climate change on the stability of the sandy coast. • Assess any options for coastal management in a comprehensive way (e.g. through a Shoreline Management Plan) reflecting the dynamic and interdependent nature of the processes of erosion and deposition along the coast.

COAST WITH CLIFFS (14B)



KEY CHARACTERISTICS

- *more resistant sandstones and intrusive rocks*
- *cliffs, arches, inlets, bays and rocky reefs*
- *defensive coast with castles*
- *fishing settlements*
- *windswept and exposed*
- *minimal tree cover*
- *productive farming up to cliff edge*

OBJECTIVE DESCRIPTION		Coast with Cliffs
Physical scale		Red sandstone cliffs rising up to 30 metres
Woodland	broad-leaf	Absent except on field boundaries along the coastal strip
	coniferous	Absent except for shelterbelts along the coastal strip
Agriculture	arable	Along coastal strip
	pasture	Absent
	fields	Medium and rectilinear where topography allows
	field boundaries	Hedges and walls, supplemented by fences
Settlement pattern		Fishing villages
Building materials		Red sandstone, often highly weathered
Historic features		Castles, fishing stations
Natural heritage features		Cliffs of ecological and geological interest
Other landscape features		No notable features
SUBJECTIVE DESCRIPTION		
Views		Distant
Scale		Medium
Enclosure		Exposed
Variety		Simple
Texture		Rough to very rough
Colour		Colourful
Movement		Active
Unity		Unified
'Naturalness'		Undisturbed to restrained

LOCATION

5.14.15 Sections of rocky coast with cliffs occur north of Carnoustie, between Arbroath and the southern end of Lunan Bay, and between Lunan Bay and Montrose.

PHYSICAL CHARACTERISTICS

5.14.16 The cliffs fall into two groups, reflecting variations in their geology. To the south, Old Red Sandstones are predominant, forming an indented coastline of dark red cliffs up to 30 metres high. Here the relatively soft rock is eroded into a series of small bays and inlets. Arches and caves reflect the erosive power of the sea. Further north, enclosing Lunan Bay and extending northwards to the southern edge of the Montrose Basin is an area of volcanic lavas and tuffs, of the same origin as the Sidlaws and Ochils. This has created a more resistant coastline of promontories, low cliffs and a rocky shore line.

5.14.17 The rocky coast is also of ecological and geological interest, much of it being designated as SSSIs. The cliffs support a range of important nesting seabirds and overwintering waders including kittiwake, puffin, razorbill, turnstone and purple sandpiper, along with rare grassland and rock-ledge communities. Perched saltmarsh and species-rich grassland also occur along the northern, igneous coastline. Most of this section of coastline provides good exposures of sandstones and lavas, providing considerable potential for the study of the geological structure and origins of the Midland Valley.

SETTLEMENT AND LAND USE

5.14.18 In addition to a number of castles sited about one kilometre inland (e.g. Ethie Castle), several clifftop forts are found along this section of coast. At least six (including Maiden Castle, Castle Rock and Prail Castle) are known to have existed between Arbroath and Lunan Bay. The indented coastline also provided natural harbours for fishing villages. Auchmithie, perched at the top of the sandstone cliffs comprises a cluster of low cottages in the shelter of a shallow bay. Many of the buildings and walls show signs of weathering with the red sandstone sculpted into curious shapes. Stimulated by the arrival of the railways which provided access to markets as far away as Billingsgate in London, many commercial fishing stations developed along the coast. This is exemplified at Usan where, in the 18th and 19th century, the landowner rebuilt the existing villages around salmon fisheries, with the result that one of them is known as 'Fishtown of Usan'. The remains of ice houses and saltpans can still be seen. While these villages are closely related to the surrounding landscape, other more recent settlements such as Carnoustie are not, simply comprising expanded residential suburbs of Dundee.

5.14.19 Despite the exposed, sometimes windswept character of the this coastal landscape, the natural fertility of the soils (much of the area falling into Class 2) means that agriculture dominates inland, with arable fields often running up to the edge of the cliffs. Tree cover is minimal.

FORCES FOR CHANGE

5.14.20 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this

section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.14.21 **Agriculture.** The fertile nature of the soils in this area means that in many places farmland extends right up to the cliff edge. In some places networks of shelterbelts, together with field boundary trees emphasise the exposed coastal location, the trees' branches and canopies are windbent and trimmed. In other areas woodland cover is absent, having declined over decades or having been cleared to allow field enlargement. In the latter case, modern farm buildings can be particularly prominent.

5.14.22 **Transport.** The network of roads, which is often geometric in structure, reflecting the presence of rectangular fields, is complemented by a network of unpaved roads, often contained between high dry-stone dykes, constructed from the local red sandstone. The rough character of these tracks should be retained.

5.14.23 **Development.** Settlement along the sections of cliff coast is concentrated in a number of fishing villages and a scatter of farmsteads. As the fishing industry has declined, some of the villages have declined, or have become remote 'suburban' outposts of Arbroath or Montrose. There is little other development along these sections of coast.

5.14.24 **Forestry and woodland.** Commercial woodland is absent from this landscape type. Woodland is confined to the shelterbelts and field boundaries described above.

5.14.25 **Recreation.** Access to the coast and areas of beach is often difficult and there are comparatively few recreational pressures.

5.14.26 **Tall structures.** Many of these sections of coast are free from signs of modern development and retain an almost timeless character. The erection of masts in cliff-top locations or the development of shore-line or off-shore wind power schemes could have an adverse effect on this character. Any proposals should be assessed carefully in these terms.

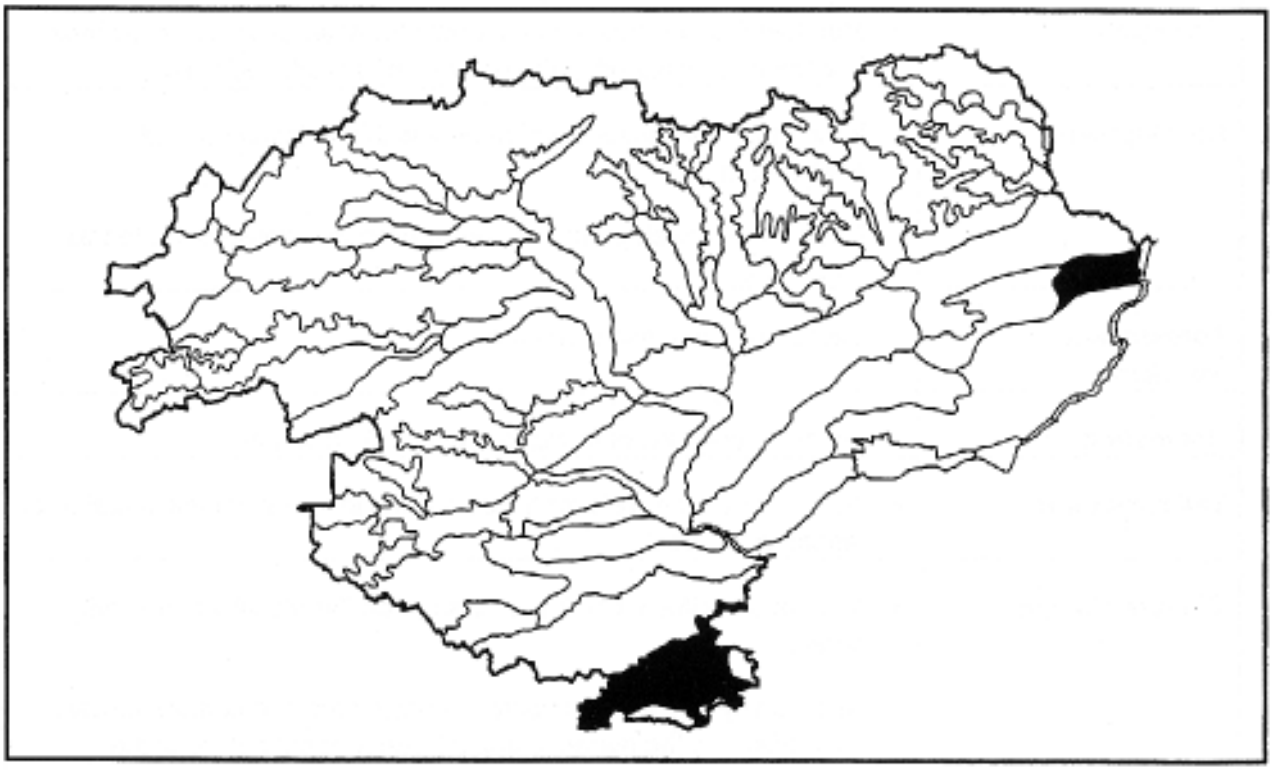
5.14.27 **Climate change.** It is possible that climate change brought about by global warming could result in an increase in storminess and changes in sea levels. Both could have implications for the pattern of erosion and deposition along the cliff coast. The red sandstone is comparatively soft, and increases in erosion could affect natural coastal features and the security of coastal settlements. Monitoring of any changes should be undertaken and if the stability of the coast is threatened, a comprehensive assessment of options (including the do-nothing scenario) for managing this change should be carried out.

LANDSCAPE GUIDELINES

5.14.28 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the natural and, at times, remote character of these sections of coast.

Agriculture	• Encourage the maintenance of shelterbelts and field boundary trees and their restoration where appropriate. • Encourage the maintenance of the network of dry-stone dykes.
Transport	• Maintain the low level and informal character of vehicular access, in particular, conserving the network of unsurfaced roads.
Development	• Focus any residential development within existing coastal settlements. • Ensure that development adopts appropriate designs, materials and scale.
Forestry and woodland	• Discourage extensive planting.
Recreation	• Maintain low level of formal recreational provision.
Tall structures	• Assess any proposals for tall structures in terms of their visual and landscape impact.
Climate change	• Monitor the effects of climate change on the stability of the cliff coast. • Assess any options for coastal management in a comprehensive way reflecting the dynamic and interdependent nature of the processes of erosion and deposition along the coast.

LOWLAND BASINS (15)



KEY CHARACTERISTICS

- *broad basins formed where sandstones have been eroded away leaving harder enclosing rocks*
- *extensive mudflats*
- *rich natural heritage, particularly migratory and wading birds*
- *historic associations*
- *dominance of water, sky and distant shores*

OBJECTIVE DESCRIPTION		Lowland Basins
Physical scale		Loch Leven Basin lies at about 110 metres AOD, rising to about 150 metres in places; the Montrose Basin lies close to sea level, rising to 10 or 20 metres
Woodland	broad-leaf	Semi-natural and plantation woodland around the fringes of the basins, particularly on steeper land
	coniferous	Little coniferous woodland - limited to a small number of shelterbelts
Agriculture	arable	Extensive arable land within Loch Leven basin
	pasture	Some pastures on lower lying and poor land
	fields	Generally large and regular shaped
	field boundaries	Combination of stone walls extending down from surrounding higher ground, and hedges
Settlement pattern		Settlement along roads encircling Loch Leven, concentrated to the west at Kinross and Milnathort; settlement around the Montrose Basin concentrated in Montrose
Building materials		Mixture of sandstone, harder volcanics and, at Kinross, pantiles
Historic features		Kinross House, Loch Leven Castle, millsites and drainage/water management infrastructure
Natural heritage features		Both basins are very rich in nature conservation interest
Other landscape features		Kinross telecommunications installation
SUBJECTIVE DESCRIPTION		
Views		Framed
Scale		Medium
Enclosure		Enclosed
Variety		Simple
Texture		Smooth
Colour		Muted
Movement		Peaceful
Unity		Unified
'Naturalness'		Restrained to natural

LOCATION

5.15.1 Two flooded basins have formed where softer, Upper Old Red Sandstone deposits, enclosed by hard volcanic or carboniferous rocks, have been eroded away. The first of these is occupied by Loch Leven, in the extreme south of Tayside, enclosed by the Lomond and Cleish Hills to the east and south, and by the Ochils to the north. The second of these is the Montrose Basin, a broad tidal estuary cut off from the sea by the spit of land occupied by the town of Montrose, and enclosed by harder volcanic rocks to the north and south.

Loch Leven Basin

5.15.2 **Physical characteristics.** Loch Leven was formed at the end of the last Ice Age as retreating icesheets, which had scoured a hollow between the Lomonds, Cleish Hills and the Ochils, deposited a mass of sand and gravel, impounding a shallow loch surrounded by extensive areas of marsh and wetland. In the first half of the 19th century, the level of the loch was lowered by 1.5 metres in order to ensure a steady supply of water to mills along the River Leven and to increase the amount of rentable farmland. Surrounding areas of marsh were drained and improved to provide the basis of the landscape that we see today. Inland, a shallow basin extends towards the Crook of Devon, drained by a network of minor burns. Downstream, the River Leven has been canalised in a straight channel and the surrounding floodplain drained by a network of ditches. Water levels in the loch fluctuate, revealing extensive mudflats during the late summer and early autumn. The overall impression is of a very broad, shallow basin within which, particularly at the eastern end, water and sky, together with the enclosing hills are the dominant landscape elements.

5.15.3 Despite the changes brought by the lowering of water levels and the drainage of the marshes, Loch Leven retains a rich ecology. It is particularly important for birds, accommodating thousands of ducks, migratory geese, swans and waders. The loch's fish stocks have been exploited for over 650 years, the brown trout being particularly well-known. Mammals around the loch include otters, roe deer and foxes. The area has a range of natural and planted woodland with Scots pine growing in the drier areas and birch, willow and alder in wetter areas. The loch is designated as an SSSI and an NNR.

5.15.4 **Settlement and land use.** Historically Loch Leven has been a focus for human settlement and land use. The earliest signs of settlement included a crannog which was destroyed during the 19th century. Loch Leven has a number of other historic sites including Kinross House, Loch Leven Castle on Castle Island and the Priory on St Serf's Island. Several villages and hamlets grew around the fringes of the loch, their industries of weaving, paper making and fishing reliant on the supply of water. The largest of these settlements, particularly Kinross, Milnathort and Kinnesswood have expanded over the last century, the latter pushing up the slopes of the Lomond Hills.

Montrose Basin

5.15.5 Physical characteristics: The Montrose Basin is a large, rounded estuarine basin formed near the mouth of the River South Esk. Unlike Loch Leven, the basin is tidal, revealing extensive mudflats at low tide. An area of low-lying, drained farmland extends inland,

while the basin is separated from the sea by the town of Montrose, located on a low peninsula spit of land less than two kilometres wide. There have been attempts to drain the basin to provide farmland in the past, the most notable effort leaving Dronner's Dyke which is revealed at low tide. Like the Loch Leven Basin, this area is shallow and open. The expanse of mudflats, water, distant shores and sky all shape the character of the surrounding landscape.

5.15.6 The Montrose Basin also has a rich natural heritage. Its mudflats provide important feeding grounds for birds, supporting internationally important numbers of geese, wigeon and redshank and nationally important numbers of eider, oystercatcher, knot and mute swan. A number of salt-loving plants, including rare grasses, occur on the mudflats. The variety of saline, brackish and freshwater marshes have a great variety of plant communities. The area is also of geological importance.

5.15.7 **Settlement and land use.** Outwith the physically constrained town of Montrose, settlement is limited to a scatter of farmsteads, generally located on slightly higher ground along the A934 and A935 to the south and north of the basin. The western end of this landscape unit is occupied by Kinnaird Park with its deer park and extensive estate woodlands. A number of historic mills are sites along the non-tidal section of the River South Esk, above the Bridge of Dun. Some land has been reclaimed at the inland edge of the basin. There is also a series of raised beaches which demonstrate the series of sea level changes that occurred during the later stages of the last Ice Age and in the post-glacial period.

FORCES FOR CHANGE

5.15.8 This section contains a description of the principal types of change that have affected this landscape type in the recent past or which are likely to affect it in the future. Changes may be positive or negative in terms of their effect on the landscape. The aim of this section is to gain a clear understanding of the nature and direction of change and its likely impact on the essential character and quality of the landscape. This analysis provides the basis for management guidelines to assist other organisations develop more detailed policies for agriculture, forestry and development.

5.15.9 **Agriculture.** Both basins include considerable areas of arable and grazing land around the fringes of the waterbodies. This is generally of a semi-open character, enclosed by hedges. There appear to be few pressures acting upon agriculture in these areas.

5.15.10 **Transport.** Both basins are encircled by roads, several of them of A road status. In addition, the M90 passes close to the western side of Loch Leven and, at Montrose, a new inner relief road has been constructed along the north-eastern side of the basin. These roads means that there is often a considerable amount of traffic movement and noise in these otherwise tranquil locations.

5.15.11 **Development.** Historically, both the Loch Leven and Montrose Basins have been a focus for settlement. In the case of Loch Leven, a number of suburban settlements have developed around the loch principally at Kinross, Milnathort and Kinnesswood (the latter is discussed in relation to the Dolerite Hills landscape type, above). Some of the more recent development at Kinross is particularly prominent in the landscape as a result of the building materials that have been employed (white walls and orange pantiles - reflecting

the styles more commonly found in Fife to the south) and the lack of screening around the urban edge. Development at Montrose has been concentrated on the constrained spit of land occupied by the town itself. Expansion has occurred northwards, away from the basin.

5.15.12 **Forestry and woodland.** Commercial woodland is absent from this landscape type. However, semi-natural woodland is found around the edges of the waterbodies.

5.15.13 **Recreation.** The natural heritage importance of the Lowland Basins is reflected in the presence of interpretation facilities. Otherwise, access and recreation is limited.

5.15.14 **Tall structures.** The Loch Leven Basin includes a ball-like radio installation west of the Kinross junction on the M90. Although visible from a number of areas it is not an unduly prominent feature. More serious would be the development of tall structures on the hills that enclose the basins. This is discussed elsewhere, but could have a significant impact on the landscape character and quality of the basins.

5.15.15 **Climate change.** It is possible that climate change brought by global warming could result in an increase in storminess and changes in sea levels. Both could have serious implications for the future of the Montrose Basin in particular. Rising sea levels could result in the inundation of areas of surrounding farmland, or the erection of tidal defences which would result in a decrease in the extent of exposed mudflats and inevitable implications for birds. Monitoring, and an integrated strategy to manage any changes are therefore essential.

LANDSCAPE GUIDELINES

5.15.16 The following guidelines reflect the sensitivities of the landscape and the pressures for change acting upon it. They are intended to provide a broad basis for the development of more detailed management strategies. The overall aim of such strategies should be to conserve the natural and at times remote character of these sections of coast.

Transport	• Explore opportunities to provide more on- and off-site screening to reduce the visual and aural impacts of principal roads.
Development	• Focus new development in existing towns and villages so as to reinforce the historic pattern of settlements and to protect the area's tranquil character. • Discourage the simplistic grafting of housing estates onto the edge of settlements. Encourage more imaginative schemes which respond to the existing patterns of layout, structure, massing and scale. • Encourage the wider use of vernacular designs, materials and colours, while allowing for modern interpretations of traditional styles.

(Development contd.)	• Consider positive ways of addressing the interface between settlements and the surrounding countryside. These could include: - screening; - new buildings which address surrounding areas; - key vistas and views; - landmark features; - gateways and approaches.
Forestry and woodland	• Encourage appropriate woodland planting where this can contribute to positive land management to reduce eutrophication at Loch Leven. • Encourage management of hedges and semi-natural woodland.
Recreation	• Maintain low level of formal recreational provision.
Tall structures	• Assess any proposals for tall structures in terms of their visual and landscape impact.
Climate change	• Monitor the effects of climate change and assess any options for flood defence in a comprehensive and balanced way.

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Appendices

APPENDIX A

HISTORICAL ASSESSMENT

The Study Brief required the study to incorporate historic aspects of the landscape into the assessment and for a short statement to be prepared describing how this had been achieved. A comprehensive historic landscape assessment would require a substantial input to the study from archaeologists and historians in order to translate the mass of detailed historic information (for instance that contained in Sites and Monuments Records) into broader historic landscape types. Having undertaken similar studies elsewhere in the country, it was recognised that such an analysis lay outwith the scope of the present study. However, it was agreed with the Study Steering Group to draw upon existing information sources to provide as full a picture of historical influences on the modern landscape as possible.

This report has, therefore, sought to integrate consideration of the historic landscape throughout the report. Rather than limiting discussion to a self-contained chapter at the beginning of the report, the report has deliberately described those historical features which are characteristic of the region, or parts of it, and which make an important contribution to the landscape. At the same time, there is an analysis of the pattern of historic sites and landscapes found within each of the landscape character types, including a brief description with examples in the written descriptions in Chapter 5. This complements similar information on geology, natural heritage and modern development. It is believed that this approach has worked well in Tayside where the sharp topographical contrasts have had a profound influence on historic patterns of settlement, land use, farming, communication and even clan warfare.

APPENDIX B

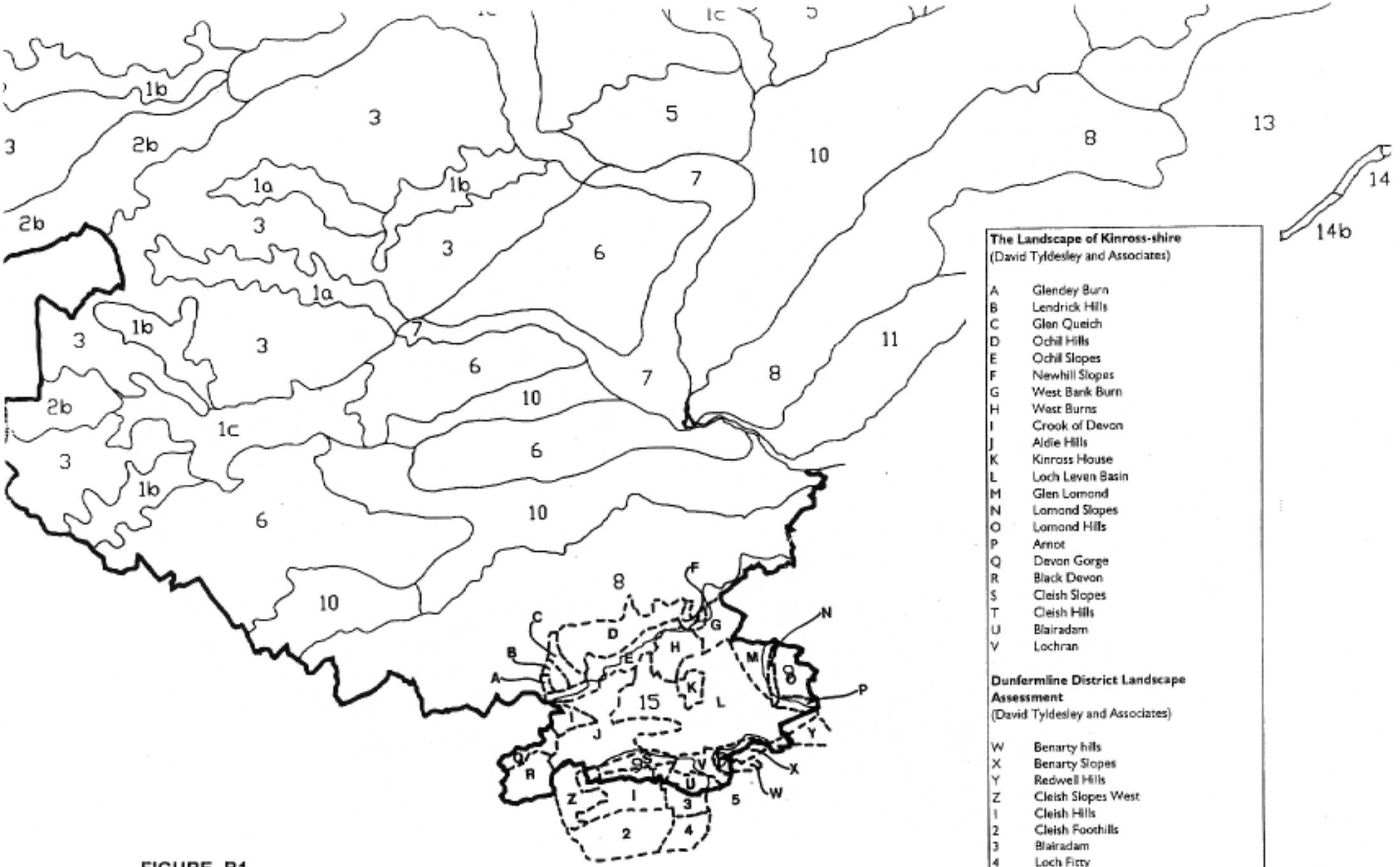
OTHER LANDSCAPE ASSESSMENTS

The Study Brief for the Tayside Landscape Assessment Project required the project team to review a range of other landscape assessments covering parts of the study area, or surrounding areas. It stated that 'the consultants will need to ... ensure consistency in their classification of landscape character areas and types'. Accordingly, the principal landscape assessments were reviewed and the following conclusions drawn.

Figure B1 shows the landscape classifications of **Kinross-shire** and **Dunfermline** prepared by David Tyldesley and Associates (1995) overlaid on the landscape classification produced during the Tayside Landscape Assessment. It is evident that the Kinross-shire and Dunfermline assessments were undertaken at a much finer scale, representing district or local level landscape assessments as opposed to a regional scale assessment. There is broad correspondence between the different levels of assessment.

Figure B2 shows the classification produced by the Turnbull Jeffrey Partnership as part of the **Cairngorms Landscape Assessment** (1996). In contrast to the Kinross-shire and Dunfermline assessments, it is evident that this study adopted a larger scale approach than the Tayside Landscape Assessment, incorporating highland glens and intervening hill ranges in single landscape types for example. There is less correspondence between Cairngorm and Tayside landscape assessments.

Figure B3 shows the landscape classifications of the **Central Region Landscape Assessment** (ASH, 1999) and the **Loch Lomond and the Trossachs Landscape Assessment** (TJP, unpublished report to SNH). It is evident that these studies adopted a scale of assessment similar to that of the Tayside Landscape Assessment. Furthermore, many of the landscape character areas identified during the Tayside study, are continued across the regional boundary into Central Region and the Trossachs area.



The Landscape of Kinross-shire
(David Tyldesley and Associates)

A	Glendey Burn
B	Lendrick Hills
C	Glen Queich
D	Ochil Hills
E	Ochil Slopes
F	Newhill Slopes
G	West Bank Burn
H	West Burns
I	Crook of Devon
J	Aldie Hills
K	Kinross House
L	Loch Leven Basin
M	Glen Lomond
N	Lomond Slopes
O	Lomond Hills
P	Arnot
Q	Devon Gorge
R	Black Devon
S	Cleish Slopes
T	Cleish Hills
U	Blairadam
V	Lochran

Dunfermline District Landscape Assessment
(David Tyldesley and Associates)

W	Benarty hills
X	Benarty Slopes
Y	Redwell Hills
Z	Cleish Slopes West
1	Cleish Hills
2	Cleish Foothills
3	Blairadam
4	Loch Fitty
5	Lowland Hills and Valleys

FIGURE B1

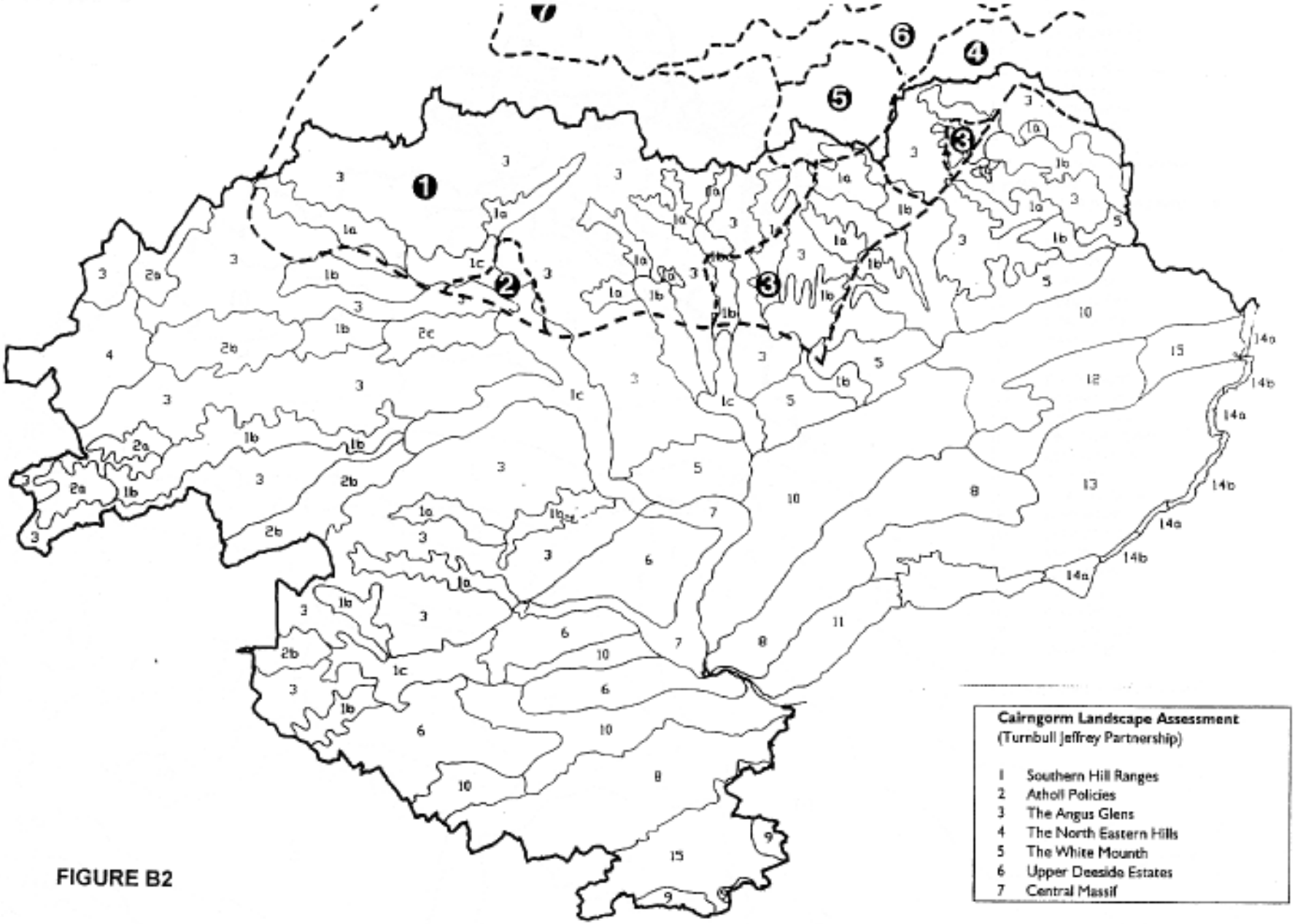

Cairngorm Landscape Assessment
(Turnbull Jeffrey Partnership)
1 Southern Hill Ranges
2 Atholl Policies
3 The Angus Glens
4 The North Eastern Hills
5 The White Mounth
6 Upper Deeside Estates
7 Central Massif

FIGURE B2

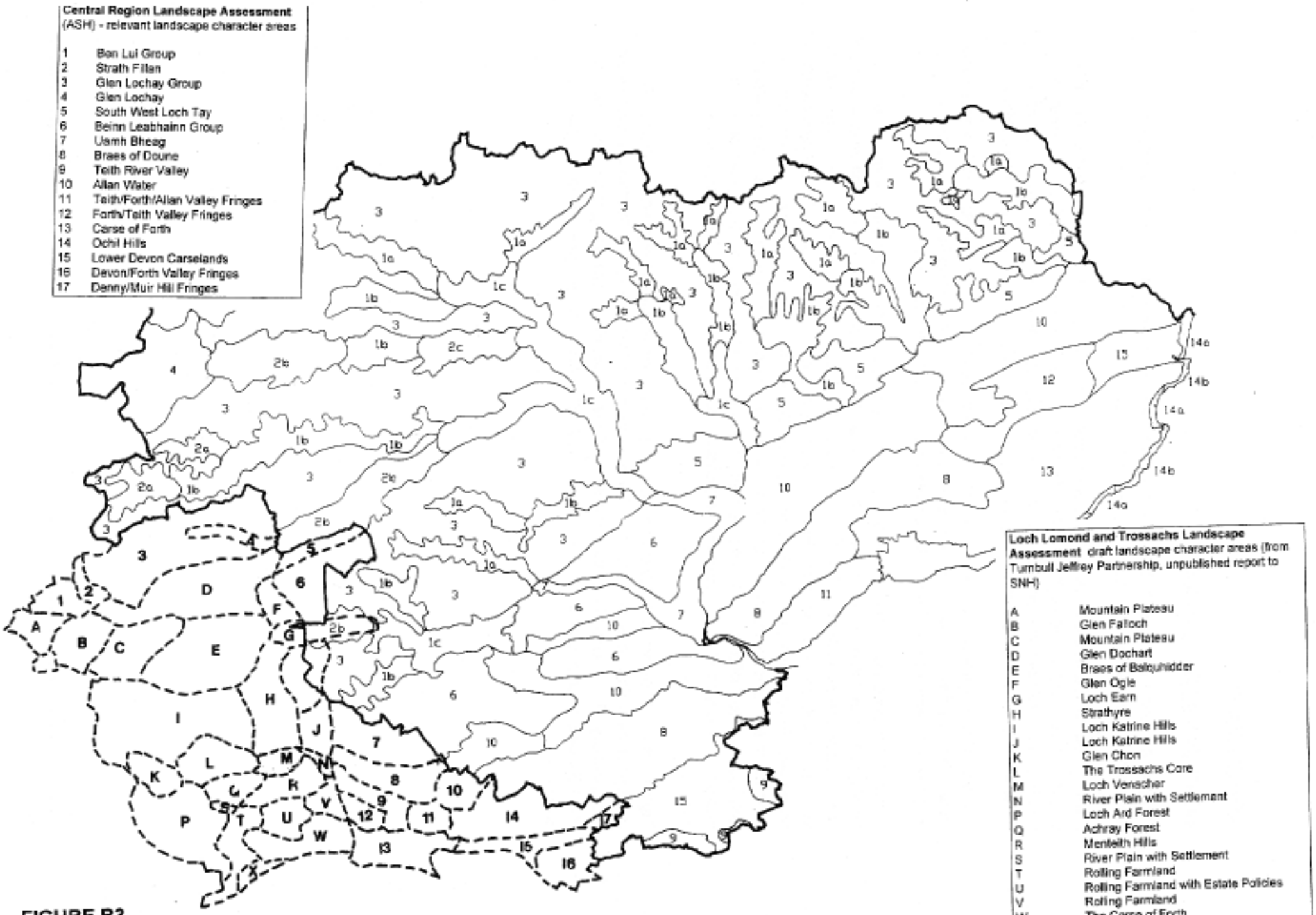

Central Region Landscape Assessment (ASH) - relevant landscape character areas
1 Ben Lui Group
2 Strath Fillan
3 Glen Lochay Group
4 Glen Lochay
5 South West Loch Tay
6 Beinn Leabhainn Group
7 Uamh Bheag
8 Braes of Doune
9 Teith River Valley
10 Allan Water
11 Teith/Forth/Allan Valley Fringes
12 Forth/Teith Valley Fringes
13 Carse of Forth
14 Ochil Hills
15 Lower Devon Carselands
16 Devon/Forth Valley Fringes
17 Denny/Muir Hill Fringes
Loch Lomond and Trossachs Landscape Assessment draft landscape character areas (from Turnbull Jeffrey Partnership, unpublished report to SNH)
A Mountain Plateau
B Glen Falloch
C Mountain Plateau
D Glen Dochart
E Braes of Balquhidder
F Glen Ogle
G Loch Earn
H Strathyre
I Loch Katrine Hills
J Loch Katrine Hills
K Glen Chon
L The Trossachs Core
M Loch Venachar
N River Plain with Settlement
P Loch Ard Forest
Q Achray Forest
R Menteith Hills
S River Plain with Settlement
T Rolling Farmland
U Rolling Farmland with Estate Policies
V Rolling Farmland
W The Carse of Forth

FIGURE B3

APPENDIX C

WIND POWER GUIDANCE

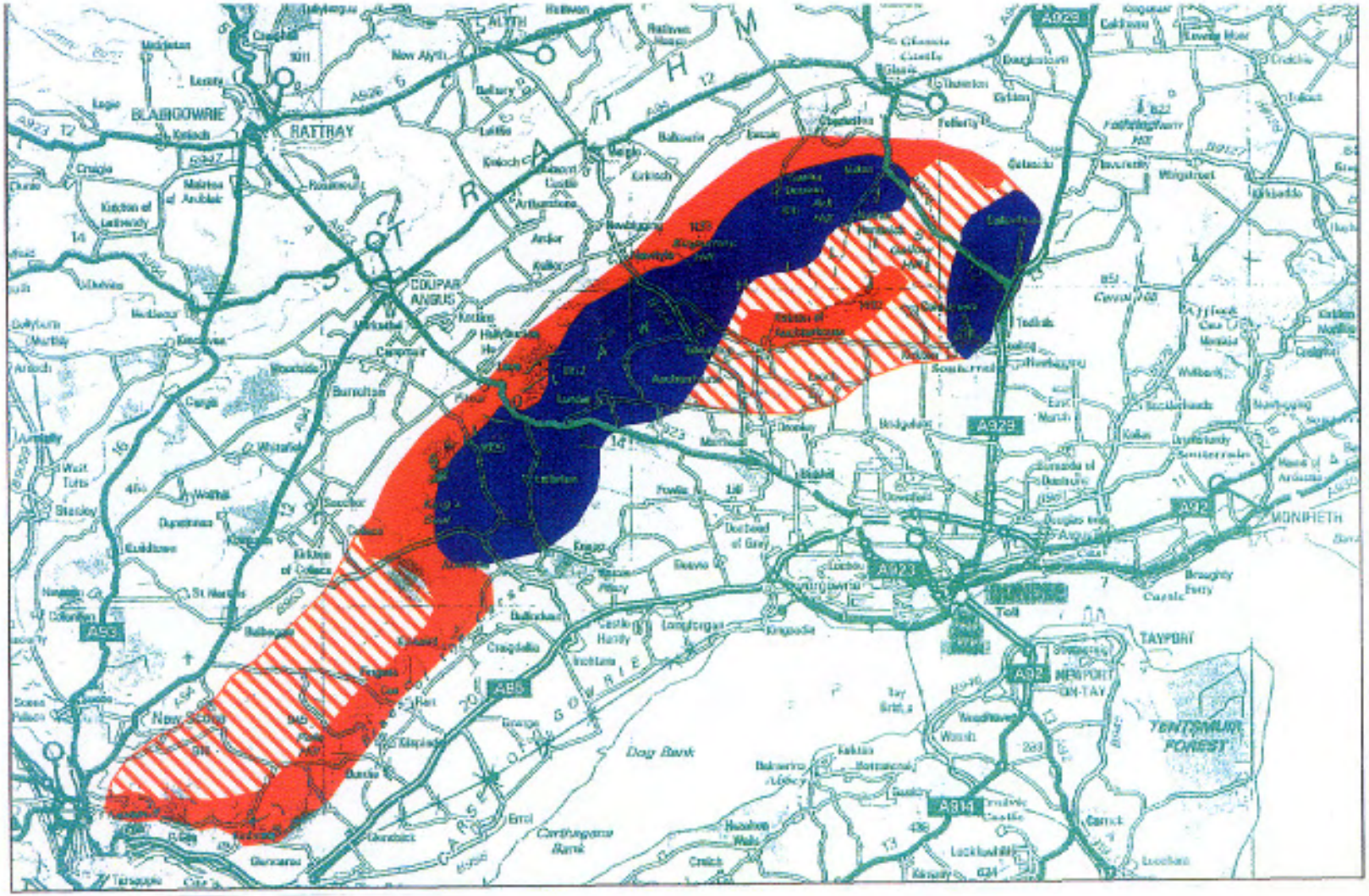
Chapter 4 of this report deals in some detail with the issue of wind power and the possible landscape effects associated with the development of wind farms.

It was recognised that pressure for wind farm development may occur in the Highland Summits and Plateaux areas, in the Highland Foothills and within the Ochils and Sidlaws. The relative merits and constraints associated with each of these landscape types are discussed in some detail in Chapter 4. The approach to planning and assessing such proposals is also outlined.

It was agreed that it would be helpful to provide indicative guidance for one area to illustrate more clearly the broad sensitivities and principals which should be respected in bringing forward proposals for wind farms. The Sidlaws were selected as a suitable area.

Figure C1 provides guidance on the siting of wind turbines within the Sidlaws. It should be emphasised that this guidance is indicative only, and has been prepared on the basis of a regional scale landscape assessment. Much more detailed landscape assessment and landscape impact appraisal would be required to confirm the suitability of these areas in relation to specific planning proposals. Furthermore, it should be emphasised that no areas are entirely free from landscape constraints and that decisions should be made in the light of a regional renewable energy strategy, and in the context of a range of other factors (including technical and operational factors). The indicative wind farm strategy does not necessarily represent the views of Scottish Natural Heritage.

Figure C1 identifies areas of lowest constraint, medium constraint and highest constraint. The most prominent ridgelines and areas visible from both the Firth of Tay and Strathmore fall into the first category. The areas of lowest constraint include the shallow bowls lying to the south of the main Sidlaws ridge and are, in places, associated with existing development such as road corridors.



TAYSIDE REGION

LANDSCAPE CHARACTER ASSESSMENT

FIGURE C1

WIND FARM LOCATION ANALYSIS

= Areas of lowest constraint for windfarm development

= Areas of medium constraint for windfarm development

= Areas of highest constraint for windfarm development

Scale:

0km 10 km

APPENDIX D

LANDSCAPE PLANNING AND MANAGEMENT SUMMARY MATRIX

Issue	Management Approach	Upper Highland Glens	Middle Highland Glens	Lower Highland Glens	Upper Highland Glens with Lochs	Middle Highland Glens with Lochs	Lower Highland Glens with Lochs	Highland Summits and Plateaux	Plateau Moor	Highland Foothills	Lowland Hills
Agriculture	Conserve field boundaries	★	★	★	★	★	★			★	★
	Replant boundary trees			★		★	★			★	★
	New woodland belts			★						★	★
	Discourage agricultural improvement	★	★		★	★		★	★		
	Discourage over concentration of oil seed rape			★							
	Design of new buildings		★	★		★	★			★	★
	Retain agriculture						★	★			
	Maintain upland/lowland distinction		★			★				★	★
	Conserve traditional buildings		★	★		★	★			★	★
Transport	Minimise upgrading of roads	★	★	★	★	★	★	★	★	★	★
	Mitigate impact of new roads	★	★	★	★	★	★			★	★
	Restore roadside features									★	★
	Mitigate impact of existing roads			★							★
Development	Discourage development	★			★			★	★		
	Steer development to existing centres		★	★		★	★			★	★
	Encourage use of vernacular		★	★		★	★			★	★
	Improve urban edge			★			★				★
Forestry	Discourage new plantations	★			★			★	★		
	Explore potential for new plantations			★			★			★	★
	Improve existing conifers	★	★	★	★	★	★	★	★	★	★
	Favour native woodlands	★	★	★	★	★	★	★	★		

Recreation	Focus activity at existing centres	★			★	★	★				
	Low-key provision	★	★		★	★		★	★		
	Restrict additional caravan parks					★	★				
	Mitigate existing caravan parks					★	★				
	Influence design of facilities			★			★				
	Monitor visitor pressures	★				★	★	★			
Tall structures	Discourage	★	★		★	★		★	★		
	Encourage sharing of facilities		★	★		★	★			★	★
	Potential for sensitive wind farms									★	★
Climate change	Monitor and plan										
Minerals	Restoration issues										
	Ensure screening										

Issue	Management Approach	Lowland River Corridor	Igneous Hills	Dolerite Hills	Broad Valley Lowlands	Firth Lowlands	Low Moorland Hills	Dipslope Farmland	Coast with Sand	Coast with Cliffs	Lowland Basins
Agriculture	Conserve field boundaries	★	★		★	★	★	★		★	★
	Replant boundary trees	★	★		★	★	★	★		★	★
	New woodland belts				★	★		★		★	
	Discourage agricultural improvement										
	Discourage over concentration of oil seed rape				★			★			
	Design of new buildings	★	★		★	★	★	★			
	Retain agriculture										
	Maintain upland/lowland distinction		★	★							
	Conserve traditional buildings	★	★		★	★		★		★	
Transport	Minimise upgrading of roads	★	★	★	★	★	★	★	★	★	★
	Mitigate impact of new roads				★	★					
	Restore roadside features		★		★	★	★	★			
	Mitigate impact of existing roads				★	★		★			
Development	Discourage development								★		
	Steer development to existing centres	★	★	★	★	★	★	★		★	★
	Encourage use of vernacular	★	★	★	★	★	★	★		★	★
	Improve urban edge	★		★	★	★		★			★
Forestry	Discourage new plantations			★					★	★	★
	Explore potential for new plantations	★	★		★		★				
	Improve existing conifers	★	★	★			★				
	Favour native woodlands	★	★	★	★						★

Recreation	Focus activity at existing centres										
	Low-key provision		★						★	★	★
	Restrict additional caravan parks										
	Mitigate existing caravan parks										
	Influence design of facilities										
	Monitor visitor pressures								★		
Tall structures	Discourage			★					★	★	
	Encourage sharing of facilities	★	★		★	★	★	★			★
	Potential for sensitive wind farms		★				★				
Climate change	Monitor and plan					★			★	★	★
Minerals	Restoration issues				★		★				
	Ensure screening				★		★				

FIGURE 17

1a Upper Highland Glens
1b Mid Highland Glens
1c Lower Highland Glens
2a Upper Highland Glens with Lochs
2b Mid Highland Glens with Lochs
2c Lower Highland Glens with Lochs
3 Highland Summits and Plateaux
4 Plateau Moor
5 Highland Foothills
6 Lowland Hills
7 Lowland River Corridors
8 Igneous Hills
9 Dolerite Hills
10 Broad Valley Lowlands
11 Firth Lowlands
12 Low Moorland Hills
13 Dipslope Farmland
14a Coast with Sand
14b Coast with Cliffs
15 Lowland Basins

TAYSIDE REGION

LANDSCAPE CHARACTER ASSESSMENT

LANDSCAPE CLASSIFICATION

KEY:
- Tayside Region
- Regional Character Area Boundaries
- Landscape Type Boundaries

Scale: 0 kms 5 10 15

N

SCOTTISH NATURAL HERITAGE

Scottish Natural Heritage is a government body established by Parliament in 1992, responsible to the Secretary of State for Scotland.

Our task is to secure the conservation and enhancement of Scotland's unique and precious natural heritage - the wildlife, the habitats, the landscapes and the seascapes - which has evolved through the long partnership between people and nature.

We advise on policies and promote projects that aim to improve the natural heritage and support its sustainable use.

Our aim is to help people to enjoy Scotland's natural heritage responsibly, understand it more fully and use it wisely so that it can be sustained for future generations.