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INSTITUTE OF TERRESTRIAL ECOLOGY
(NATURAL ENVIRONMENT RESEARCH COUNCIL)

NCC/NERC CONTRACT F3/03/80

ITE PROJECT 466

Fifth Interim Report to Nature Conservancy Council

BIOLOGICAL SURVEY OF BRITISH RAIL PROPERTY

CAROLINE SARGENT & J O MOUNTFORD

Monks Wood Experimental Station
Abbots Ripton
Huntingdon
Cambs

April 1981

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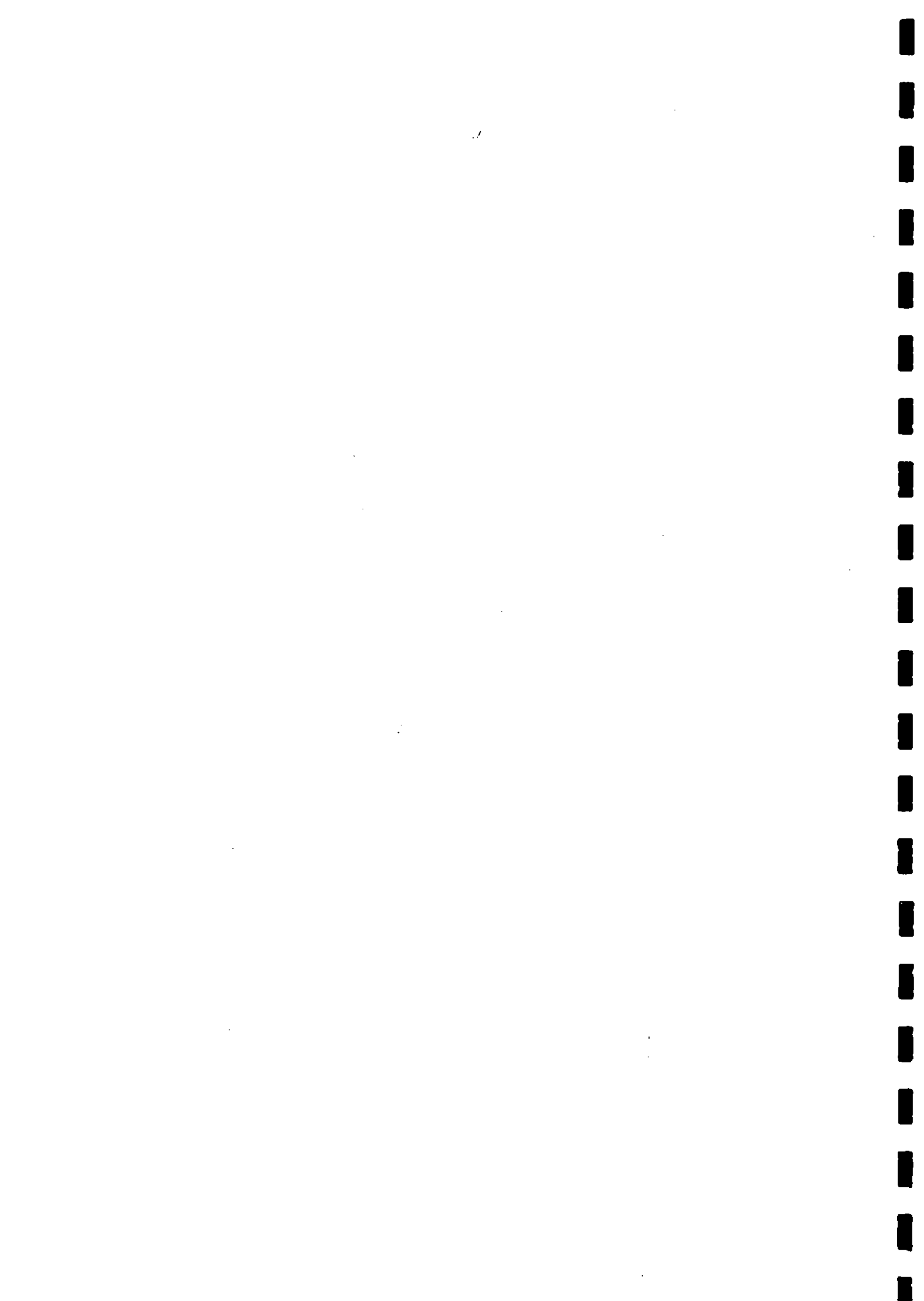
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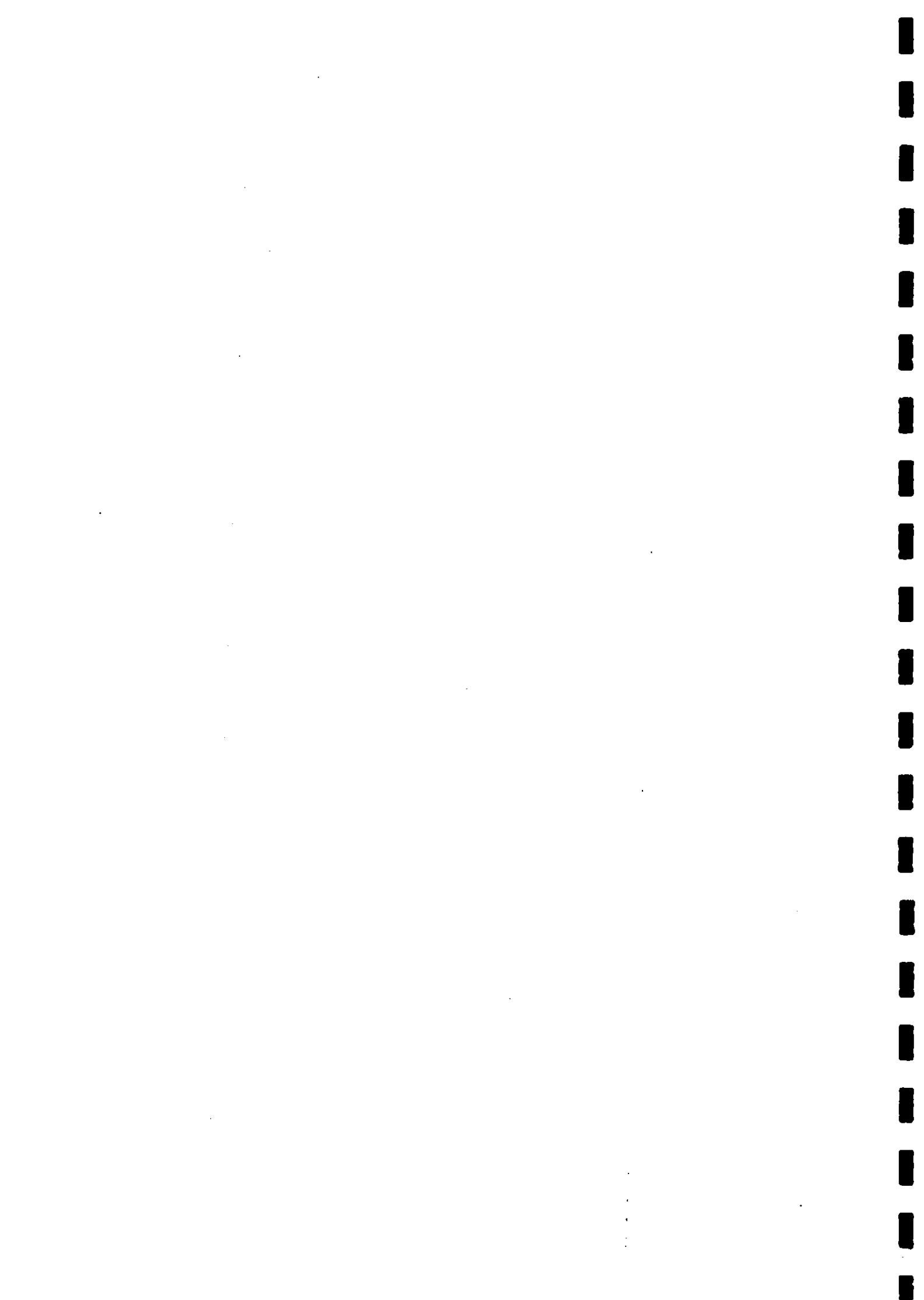
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SUMMARY

The current report is concerned with information collected in Scottish Region during 1980, and will be followed shortly by the final report, combining information from all regions of British Rail. A brief introduction (Section 1) is followed by a discussion of the sampling strategy used when surveying Scottish Region (Section 2). The distribution of sites within track classes is described and the classes are defined. Section 3 is about the distribution of vegetation types in Scottish Region. The vegetation is defined by dominant species, and the discussion illustrated by reference to particular stands and species. Most railway grasslands are dominated by *Arrhenatherum elatius*, although this plant becomes infrequent in highland areas (Classes 22, 23), where it occurs only on spent railway ballast. Fine-leaved swards are found on better-drained and nutrient-deficient soils, and where verges abutting onto pastureland are grazed. Despite heavy spraying and burning (especially in the south-west), scrub and woodland are widespread, and, along highland lines, the railway often supports the only trees visible for some considerable distance. Complete lists of observed vascular plants and bryophytes will also be found in Section 3, whilst Section 4 covers the survey of animals made by the student attached to the project during 1980. All sites visited are documented in Appendices 1 (random survey) and 2 (subjective survey), whilst files have been opened (Appendix 3, separately bound) for those to be of particular biological interest.



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1 INTRODUCTION

1.1 General

This fifth interim report to the Nature Conservancy Council on the Biological Survey of British Rail land is concerned with the investigation of Scottish Region during 1980. Comparable reports on Eastern (1978), Southern and Western (1979), and the London Midland (1980) Regions have been prepared, and full discussions of the background, objectives and development of methods, together with information of Regional interest, will be found in the earlier reports.

The current report is somewhat shorter than these, because iteration of the theory was felt unnecessary, and because most analysis in progress is concerned with the entire rural railway network. It is proposed to begin publishing such information shortly in the form of an illustrated report, including distribution maps prepared in conjunction with the Experimental Cartography Unit. Several papers dealing with selected areas of the analysis and phytosociological classification will also be prepared.

Field work in 1981, which has been designed to examine the effects of any discrepancies in sampling between Regions, will be described in the final report.

1.2 Liaison with British Rail

British Rail has again been extremely co-operative, and we are particularly grateful to Mr C Beagley of BR Headquarters, London, and to Mr G B Craig, Mr W D F Grant and Mr A McIntyre of Scottish Region.

Useful discussions were held with Mr Grant and Mr McIntyre, and an excellent set of maps of Scottish Region was made available. Site selection was discussed and Scottish Region Staff were kept informed of the whereabouts of the team on railway property.

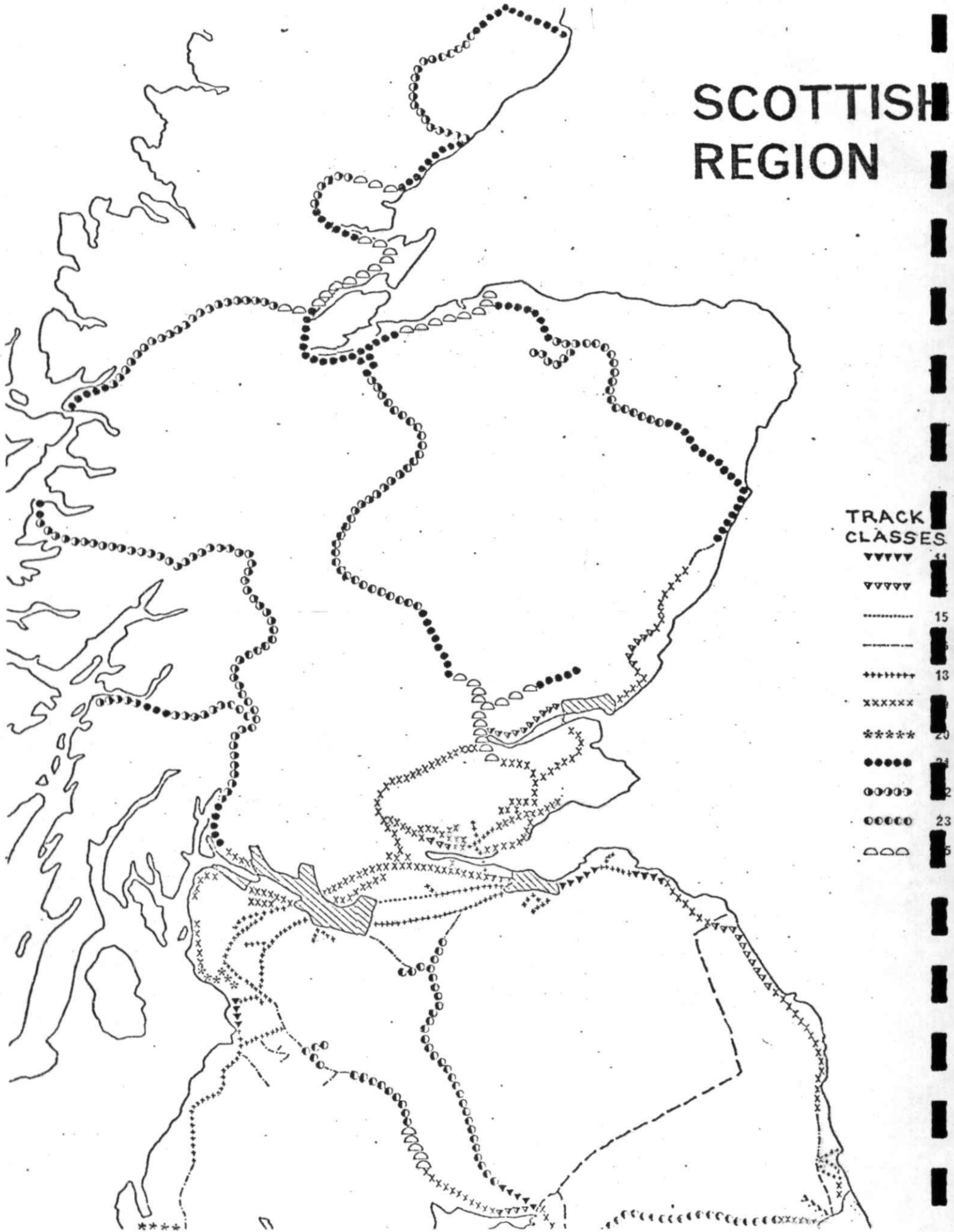
1.3 Staffing

Jonathan Harris, a third year sandwich student from UWIST, joined the project from April to September. His particular responsibility in the field was to record animals observed during the course of the vegetation survey (Section 5).

Dominic Sargent (July 21- August 4), John Killick (August 11-16, September 15-20) and Dr Michael Way (September 20-25) all kindly lent their support to the team for short periods.

FIGURE 1 DISTRIBUTION OF RAILWAY TRACK CLASSES IN SCOTTISH REGION (for details of classes see Sargent & Mountford, 1980)

SCOTTISH REGION



2 SAMPLING

2.1 Track classes and sample distribution

The sampling strategy in Scottish Region was strictly comparable to that used in the London Midland Region during 1979. It was based on the railway land classification, distinguishing 25 rural track classes distributed throughout Britain (Sargent & Mountford, 1979, 1980). Eleven of these classes occur in Scottish Region, although 5 have a restricted distribution in southern Scotland, being outliers of classes occurring predominantly in northern England and Wales. Of the other classes, 2 are exclusive to Scotland, occurring in the Highlands, whilst the remaining 4 have fairly local distributions in the Southern Uplands, and central and northern lowlands and coastal areas (Figure 1).

The attributes of Scottish Region track classes are shown in Table 2.1. The track classes formed the basis of a system of stratified sampling, within which information was collected from a total of 120 randomly chosen sites. Numbers of track class members (each member is a measured ten mile unit) are given in Table 2.2, together with the proportion of members sampled within each class. In some classes, the sampling intensity in Scotland was greater than elsewhere in Britain. This intensification is attributable to the comparatively short length of rural line (160 track members = 1,600 miles) in Scottish Region. However, the lines are widely dispersed, and, because considerable travelling between sites was involved, Scottish Region was maintained as a single sampling unit.

The stratification was introduced *post-hoc* to Southern, Western and Eastern Regions, and this has led to some anomalies of classes occurring in these Regions. Attempts have been made to ensure an equal overall intensity of sampling by including additional samples during the later stages of the survey. Where classes are more widespread, it has been possible to correct during later sampling for some of these anomalies.

2.2 Random Survey Sites

As in previous years, sites were tied to access points, or places identifiable on one inch Ordnance Survey maps, where approach to British Rail property seemed feasible. The sites were 100 m long, being measured from the mile post nearest to the access point. Transects were set out at right angles to the track at each boundary (corner) of the site, and a number (strictly proportional to the width of the verge) of 2m² quadrats were recorded along each of the 4 resulting transects. In tall scrub and woodland, nested 2 m² and 5 m² quadrats were used.

Records of vascular plants, bryophytes, and details of some habitat characteristics were systematically collected; notes were made of all observed and identified animals. Detailed sites descriptions were written..

2.3 Biological Interest Survey

In tandem with the stratified random survey, 60 other sites were visited, their choice depending on information available in the literature, on maps, or supplied by regional NCC officers. In Scotland, NCC staff from South-

TABLE 2.1 Preferential attributes of track classes occurring in Scottish Region. Classes marked with an asterisk have only limited representation in Scotland. See text for discussion and Sargent & Mountford details of classification.

11* Northern Coal Measures

<10 days snow
Boulder clay
Coal measures
Heath and rough pasture

This is a widespread group occurring in industrial Lancashire and Yorkshire, with outliers as distantly placed as Edinburgh and Hereford.

12* Northern Limestone & Sandstone

Well drained calcareous soils
<6.0 hours bright sunshine July
Boulder clay
Coal measures
Carboniferous and Magnesian

This class has a comparable distribution with 11, but is generally off the coal measures, rather more low lying, and with a tendency toward a more extreme climate.

15* Pennines

Boulder clay
Coal measures
Heath and rough pasture
Carboniferous and Magnesian
>400' asl
<30 days snow lie
Igneous intrusive

This is an upland group with the majority of members occurring in the area between Settle, Uttoxeter, Leeds and Wigan.

16* Oceanic Carboniferous

<7.0°C January
Boulder clay
Heath and rough pasture
Carboniferous and Magnesian
>400' asl
<30 days snow lie
Upland peaty gleys
<5 hours bright sunshine July

This group is widely dispersed and includes almost all the South Wales mining valleys, areas in the marches and Derbyshire and parts of the Southern Uplands of Scotland.

18 Hilly North Coastal Carboniferous

<7.0°C January
Boulder clay
Coal measures
Heath and rough pasture
Carboniferous and Magnesian
>400' asl
<30 days snow lie
<5 hours bright sunshine July

This is a dispersed group occurring in southern Scotland and northern England on coastal and hilly Carboniferous deposits.

19 Scottish Lowlands

Boulder clay
Coal measures
Heath and rough pasture
Carboniferous and Magnesian
<30 days snow lie
Igneous intrusive

This class holds much in common with the previous (18), but generally occurs on more low lying land, and hence occupies much of the central lowlands and coastal areas of Scotland.

TABLE 2.1 CONTINUED

20* North-Western Coastal

<10 days snow lie
 <6 hours bright sunshine July
 7.0°C January
 Boulder clay
 Coal measures
 Carboniferous and Magnesian
 >400' asl
 <30 days snow
 Igneous intrusive
 Upland peaty gleys
 <5 hours bright sunshine July

This is a class of coastal units in Scotland, Wales and the Lake District. The units have a mild gulfstream climate, with increasing snow lie and decreasing bright sunshine northwards.

21 Highland Coastal

Boulder clay
 Heath and rough pasture
 <30 days snow lie
 Igneous intrusive
 Upland peaty gleys
 <5 hours bright sunshine July

This class is confined to the north of Scotland where it occurs in coastal and lower lying areas.

22 West Highlands

Boulder clay
 Heath and rough pasture
 >400' asl
 <30 days snow lie
 Igneous intrusive
 Upland peaty gleys

This class is restricted to Scotland and includes most of the West Highland sites.

23 Central Highlands

Boulder clay
 Coal measures
 Heath and rough pasture
 Carboniferous and Magnesian
 >400' asl
 <30 days snow lie
 Igneous intrusive
 Upland peaty gleys
 <5 hours bright sunshine July

This class includes most Central Highland and Southern Upland units. It has outliers in the North Pennines.

25* Coastal Acidic

>=6.0 hours bright sunshine July
 <10 days snow lie
 Boulder clay
 Heath and rough pasture
 <30 days snow lie
 Igneous intrusive
 <5 hours bright sunshine July

This class is an uneasy marriage between coastal sites on north-eastern forths and south western estuaries.

Table 2.2 Track classes and samples in the Scottish Region, relative to those in Britain

Track Class	No of members (each 10 miles long) in each track class		No of random samples taken in each track class		Proportion of 'members' in each track class sampled in Britain
	in Britain	in Scotland	in Britain	in Scotland	
11	51	4	18	3	35
12	42	6	20	4	48
15	51	1	27	2	53
16	36	9	19	6	53
18	28	22	20	16	71
19	56	36	37	27	66
20	16	2	11	2	69
21 ⁺	22*	22	16	16	73
22 ⁺	24	24	18	18	75
23	38	23	26	17	68
25	15	12	11	9	73

⁺ Classes 21 and 22 occur in Scotland only.

* During 1979 4 members were lost from Class 21 following closure of the Aberdeen-St Helens line.

TABLE 2.3. Sites of particular biological interest (BI sites) found within each track class of the Scottish Region

Track Classes	Nos of selectively chosen sites surveyed	Nos of sites found to be of particular interest	Nos of sites in the objective stratified samples found to be of particular interest	Nos of sites per track class found to be of particular interest (BI sites)
11	2	1	-	1
12	3	2	1	3
15	-	-	-	-
16	2	-	-	-
18	8	2	2	4
19	9	3	5	8
20	-	-	-	-
21	14	3	2	5
22	7	3	6	9
23	10	3	2	5
25	5	1	-	1
	—	—	—	—
	60	18	18	36

Western Region were particularly helpful, and suggested a large number of possible sites. Qualitative information, including species lists of vascular plants and bryophytes were prepared; files have been opened for the 18 sites considered to be of particular Biological Interest. Files have also been opened for 18 sites in the stratified random survey judged to be of comparable merit. In the event, as many 'good' sites were found during the objective as the subjective surveys made in Scotland (Table 2.3). The files will be found separately bound in Appendix 3.

3 VEGETATION

3.1 Introduction

A formal classification and interpretation of vegetation from verges in all Regions of British Rail is being prepared for the final report. The classification will group and define all recorded relevés in a format which will be directly comparable with the National Vegetation Classification and with other European phytosociological work.

In the current report, a preliminary investigation of the distribution of vegetation in the Scottish Region defined by dominant species, is described. Vegetation is examined with respect to five edaphic types observed to accommodate a considerable proportion of the variation occurring within track classes.

3.2 Distribution diagrams

Sets of pie diagrams, showing the kinds and proportion of vegetation within each of the 6 large track classes in Scottish Region (18, 19, 21, 22, 24, 25: Figures 2-7) have been prepared, whilst information from the 5 southerly classes (11, 12, 15, 16, 20) with only minor representation in Scotland has been combined in a single figure (8). The diagrams show the prevalence of dominant species on ballast, cinder and on 3 organic soils with pH within the ranges: <5, 5-6.5, >6.5. Because the physical properties of ballast (mobility and partial surface sealing) and cinder (very free drainage) have a greater effect on the establishment and growth of plants than that attributable to local variation in pH, ballast and cinder environments have not been subdivided into pH classes.

The distribution of grasslands, which cover much of Scottish Region, is considered first, and is followed by short notes about cryptogamic and herbaceous communities occurring on cinder and ballast. The section concludes with a brief discussion about the spread and development of scrub and woodland. The flora of rock cuttings, which, within track classes, is largely determined by aspect, slope and parental material, will be described in the final report.

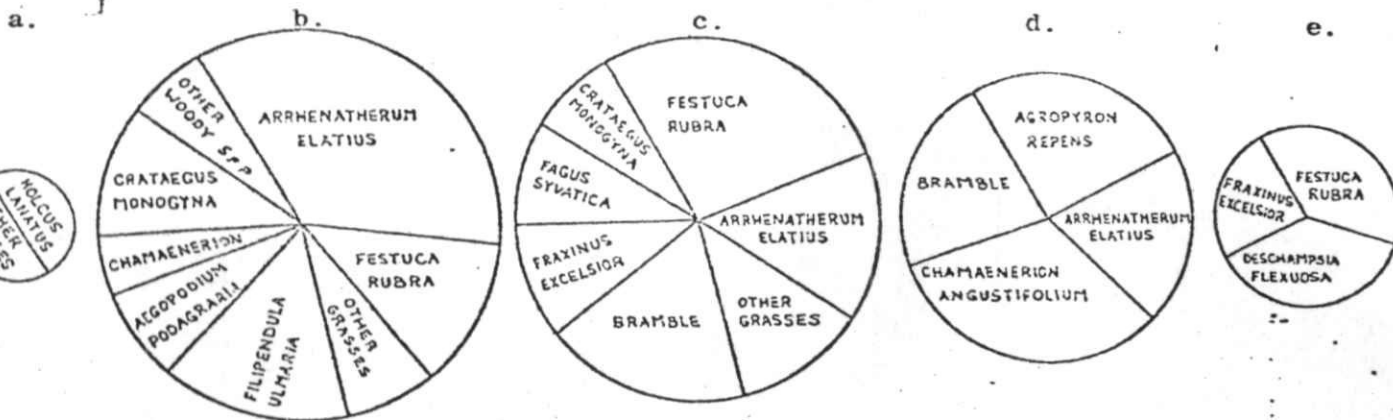
3.3 Grasslands

3.3.1 Vegetation Kinds

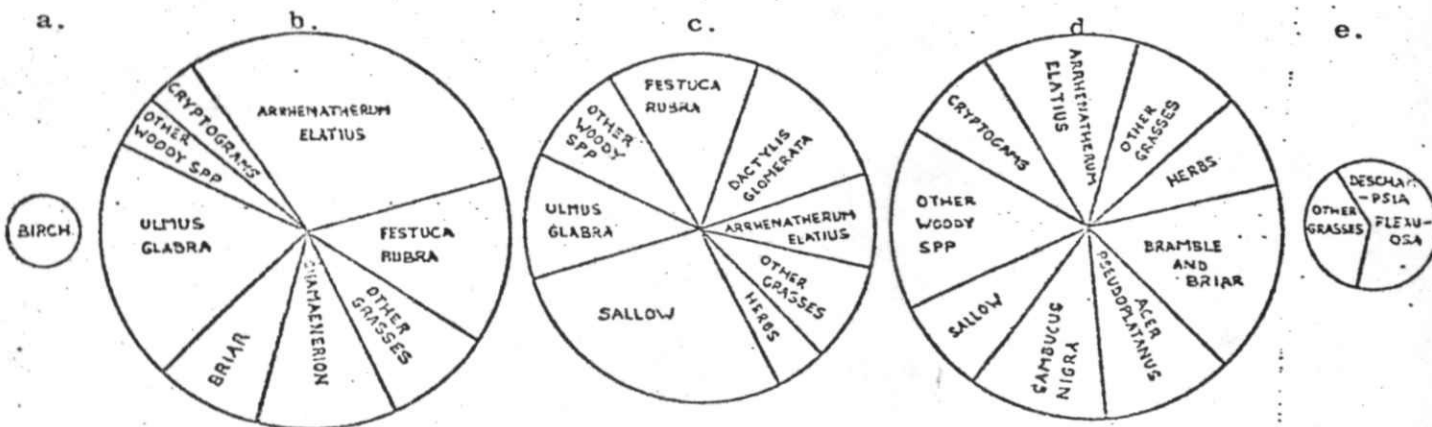
The greater proportion of grasslands occurring on Scottish Region verges are dominated by *Arrhenatherum elatius* (L.) J & C Presl., although the plant is virtually absent from sites visited in the Western Highlands (Class 22) and occurs only occasionally in the central Highlands (Class 23), where it is restricted to disturbed and heavily ballasted areas.

A. elatius is usually dominant on fairly deep soils of moderate pH (Pfitzenmeyer 1962), where, on railway land, it is almost constantly associated with *Festuca rubra* L. and *Dactylis glomerata* L. Between pH 5 and pH 6.5, where the majority of records occur, (Figures 2-4, 7),

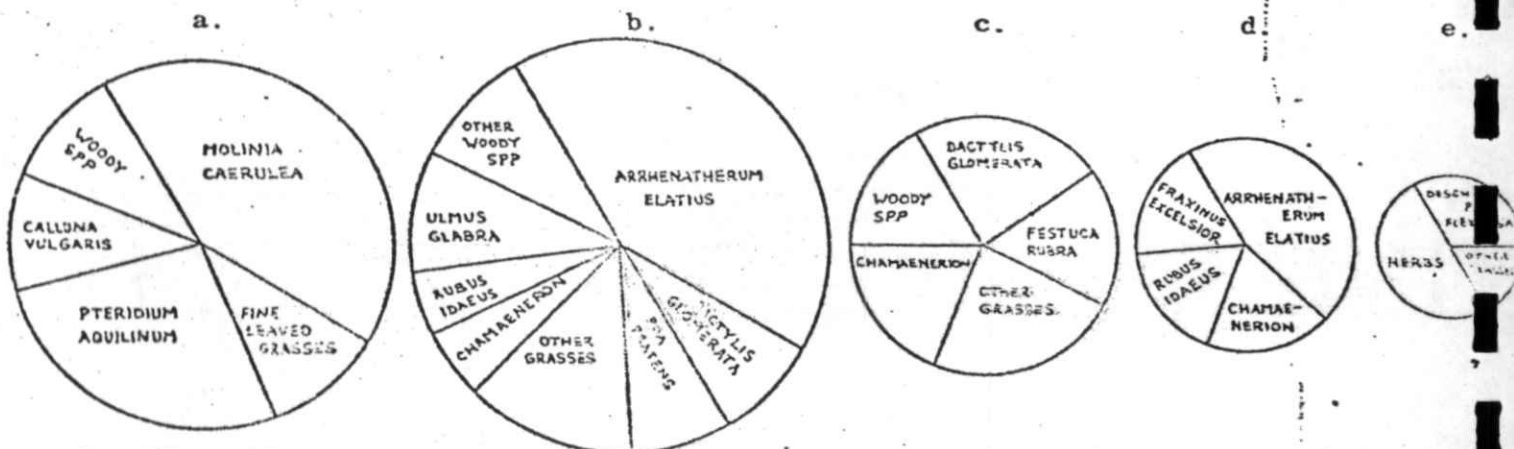
2. Class 18 Southern coastal and hilly carboniferous



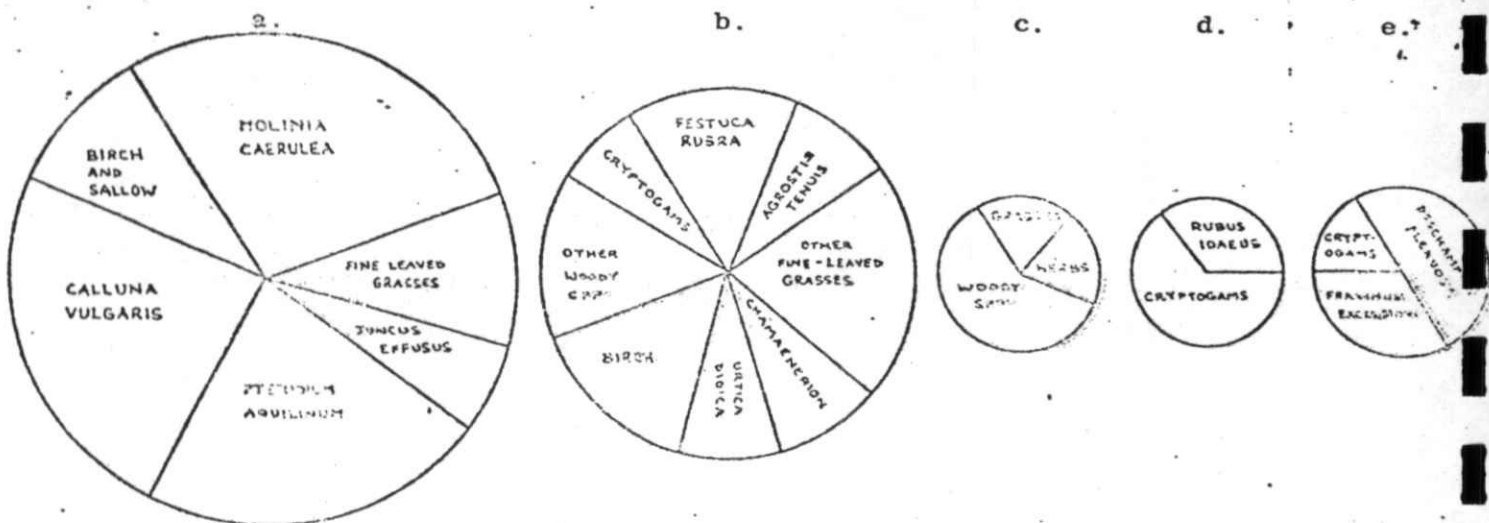
3. Class 19 Scottish lowlands



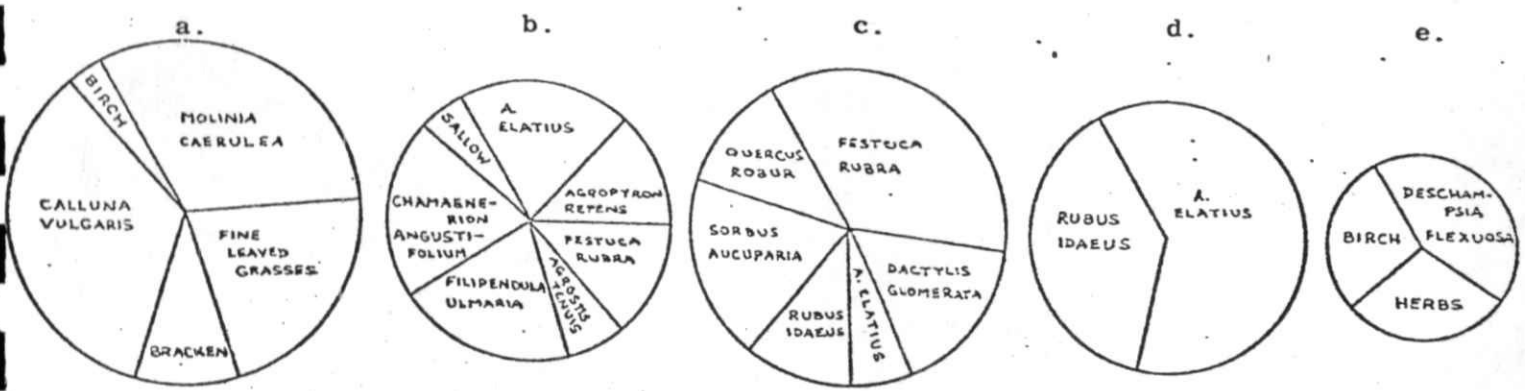
4. Class 21 Highland coastal



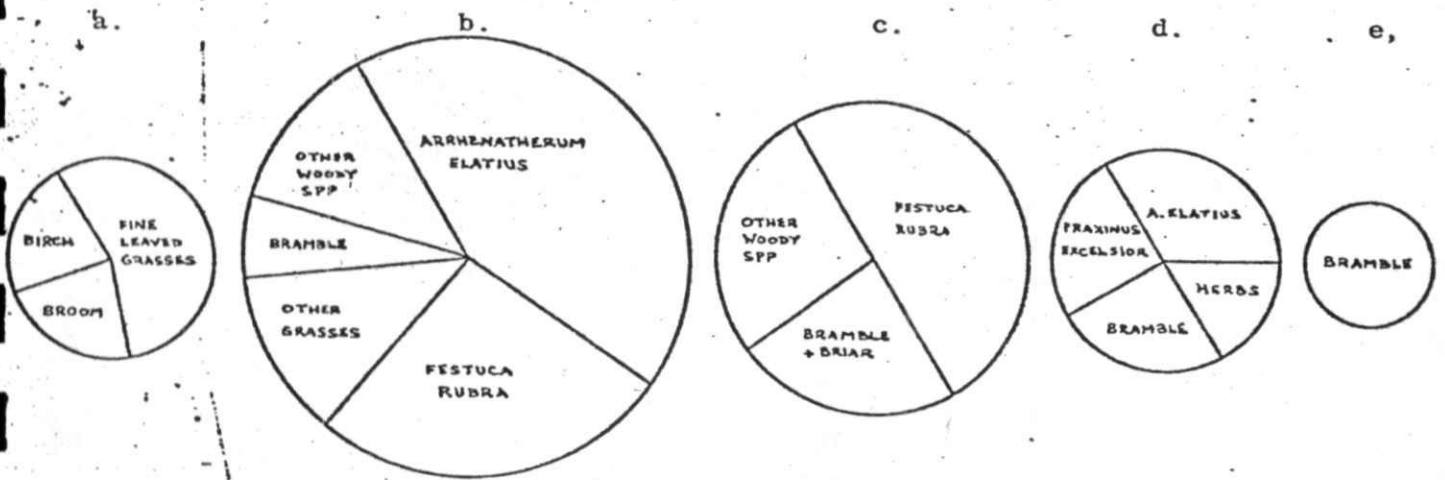
5. Class 22 West Highlands



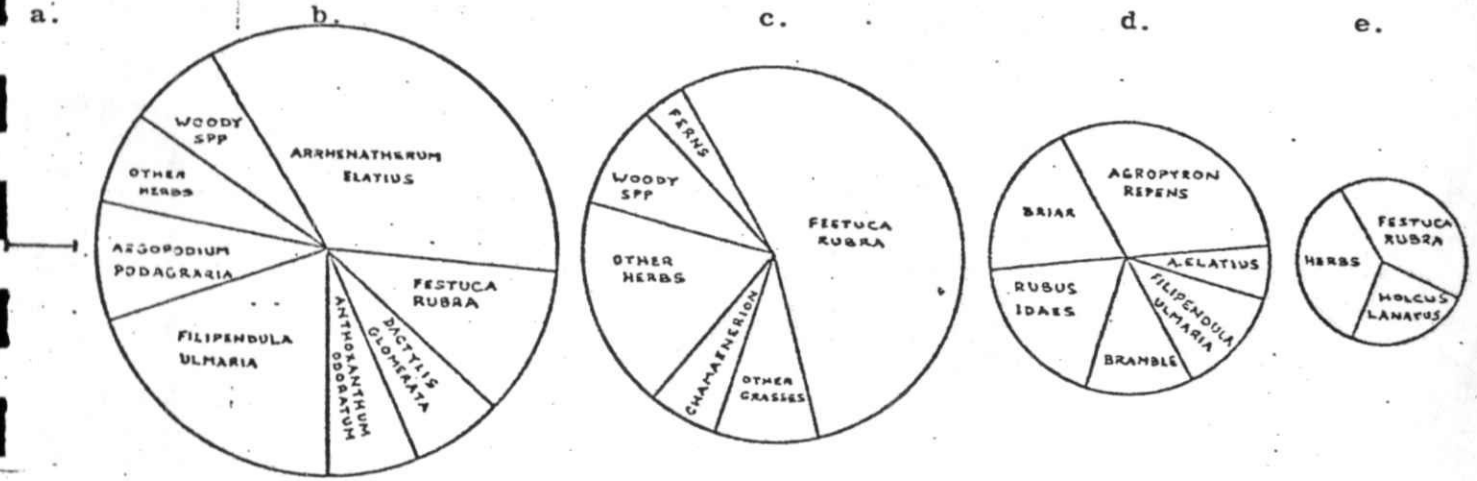
6. Class 23 Central Highlands



7. Class 24 North east coastal



8. Combined class with few Scottish representatives



The pie diagrams show the % age distribution of vegetation defined by dominant species within each of five edaphic types: a = pH < 5 , b = pH 5-6.5 c = pH > 6.5, d = ballast, e = cinder ; and within each of the track classes. The diagrams are shown to scale and 0.6 sq. cms \approx 1% occurrence.

Heracleum sphondylium L. and *Lathyrus pratensis* L. are common associates, whilst *Chrysanthemum leucanthemum* L. and *Knautia arvensis* (L.) Coult., which are almost ubiquitous in the less acid upper part of this range in southern Regions of British Rail, become infrequent in Scotland. Above pH 6.5 *A. elatius* is often found growing with *Trifolium repens* L. or, in more disturbed areas, with *Urtica dioica* L. and *Brachythecium rutabulum* (Hedw.) Br. Eur. suggesting that, in this range, it competes most successfully where nutrients are not limiting. Where there is sufficient moisture, *Lophocolea bidentata* (L.) Dum. and *Plagiommium undulatum* (Hedw.) Kop. are constant species of the Arrhenatheretum in Scottish Region.

A. elatius has occasionally been found on base poor soils (pH <5) where it usually forms tussocks, with litter accumulating densely between plants.

A. elatius is known to tolerate annual scything or cutting (Tansley 1939), but is susceptible to more frequent disturbance and grazing. Where railway lines run through pasture, there is very often a browse strip adjacent to the fence, from which *A. elatius* is excluded and replaced by a species rich association of fine leaved grasses and herbs, usually including *Agrostis tenuis* Sibth., *Poa pratensis* L., *F. rubra*, *Cerastium holosteoides* Fr. and *Luzula* spp. *Rhynchospora squarrosus* (Hedw.) Warnst. is a constant member of these communities in Scottish Region.

Used ballast is widely dumped on railway land and provides an important habitat for *A. elatius*. The plant is known to colonise and stabilise unshaded limestone scree in Derbyshire (Pfitzenmeyer 1962) and effectively fills a comparable niche on British Rail land, where it is usually associated with *Chamaenerion angustifolium* (L.) Scop. In Scottish Region, *Filipendula ulmaria* (L.) Maxim. and *Angelica sylvestris* are very frequently found with *A. elatius* in this habitat. This is particularly the case where ballasting is sufficiently light to allow root establishment in underlying soil, whilst affecting the moisture content of this substrate by partial sealing, and by run off from condensation on ballast surfaces. Where ballasting is somewhat heavier, *Aegopodium podagraria* L. is frequent, and *Agropyron repens* (L.) Beauv. establishes successfully where it has been sown with the intention of stabilising slopes. *B. rutabulum* is a consistent member of this community, occurring abundantly on ballast where there is a summer canopy of grass or tall herbs.

In south western parts of Scottish Region, verges which have been recently burnt, whether by accident or as deliberate management policy, are fairly widespread (eg random sites 244, 245, 247, 277). Over many of these sites the bulbous form of *A. elatius*, whilst comparatively infrequent elsewhere, is common. This bulbous form has not been separately identified for some time (Pfitzenmeyer 1962). It would be of interest to know if its observed distribution results from an induced morphological response or is attributable to genetic selection following frequent burning.

Grasslands dominated by *F. rubra* occur in all track classes in Scottish Region and are particularly prevalent on soils above pH 6.5, where they become more abundant than swards dominated by *A. elatius*. *F. rubra* grasslands are particularly characteristic of better drained, cindery and apparently nutrient poor (although this has not been strictly measured) railway soils, and are very seldom found on ballast. Where there is little humus, the sward may be very species-rich, with, for example, >28 species per 2 m² quadrat on light sandy soil at Kingussie (R354).

Poa pratensis L. also becomes more frequent on well drained soils but is seldom dominant. In Fife and Aberdeenshire, *P. pratensis* tends to be replaced by *Poa subcaerulea* Sn. *Poa chaixii* Vill. is abundant at Kilbagie (R294) and *Poa compressa* Sm. is quite often found growing on ledges in rock cuttings.

In the Scottish Region the cindery margins of the track provide a favourable habitat for *Deschampsia flexuosa* (L.) Trin. (Figures 2-5) which is quite often found growing in continuous strips along either side of the cess (eg Woodend, R359). In more southerly Regions, this niche is often occupied by *F. rubra*.

Where verges are sufficiently wide, or disturbance is limited to a narrow zone near the cess, railway land may support more locally, or regionally characteristic grasslands. For example, areas of species-rich limestone grassland occur, and, amongst these, verges along the Burnmouth coast (B194) are outstanding. They support, together with a large number of herbs, *Helictotrichon pratense* (L.) Pilger., *Briza media* L. and *Bromus erectus* Huds. (a file has been opened for this site). However, the majority of less disturbed grasslands in Scottish Region are on base-poor soils. In the Western and Central Highland Classes (21, 22), *Molinia caerulea* (L.) Moench grassland is very abundant, and, except that it is sometimes less well grazed and supports more heath, does not differ greatly from unfenced adjacent land. The West Highland line between Glenfinnan and Mallaig has a particularly wide 'take' and much of this is under a Moliniatum, which falls within, or is close to, the *Molinia-Myrica nodum* of the Molinieto-Callunetum described by McVean and Ratcliffe (1962).

3.3.2 Cinder Associations

There are three important kinds of cinder habitat on rural railway land in Scotland:

1. The continuous strip of drainage land adjacent to the ballasted track bed and within the annually sprayed cess. For brevity, this is called cess or cinder cess in the present report.
2. A transitional strip adjacent to the cess which is often of cindery material, but is not so intensively managed.
3. Cindery station yards and work areas.

Although comparatively well-drained, these cinder areas do not support the thermophilous ruderal communities characteristic of southern Regions. Species of genera such as *Sagina*, *Vulpia* and *Aira*, are not frequently found. Although the numbers and cover of bryophytes increase, and, in terms of the Grime triangle (Grime 1979), there is a tendency of succession towards more stable communities.

Common cess bryophytes in Scotland include *Funaria hygrometrica* Hedw., *Bryum argenteum* Hedw., *Ceratodon purpureus* (Hedw.) Brid, and *Polytrichum* spp. *B. argenteum* is usually ubiquitous, but was recorded rather infrequently on sites near the West Coast, where the cinder flora becomes more diverse and often includes *Barbula* and *Pohlia* spp. In very wet areas, and where underlying material may impede drainage, *Marchantia polymorpha* L. is often found, whilst *Polytrichum urnigerum* Hedw. and larger acrocarpous species such as *Campylopus paradoxus* Wils. and *Dicranum scoparium* Hedw. become common

in more upland areas (eg Classes 21, 22). At one site, Aviemore (R355), a dead sheep, lying in the cess was supporting a luxuriant growth of *Tetraplodon mmioides* (Hedw.) Br. Eur.

Few vascular plants root in the cess, although winter annuals such as *Arabidopsis thaliana* L., which completes its life cycle before weed killers are sprayed in early summer, may be found, and plants such as *Ajuga reptans* L. and *Fragaria vesca* L. are often recorded with runners spreading into the cess.

Adjacent cindery strips or ridges, where scrub control agents may be used, but which are seldom treated with unselective weed-killer, support characteristic communities. The prevalence of *Deschampsia flexuosa* L. on this kind of material in Scottish Region, where it may replace the more thermophilous communities common in southern Regions is of interest. *Vulpia bromoides* (L.) S & V Gray is, however, occasionally found on Scottish Region verges, where dispersal along railway lines has very probably occurred. Strong evidence exists for the spread of certain species in this habitat: at Glengall (R246) some ten miles from coastal dunes in Ayrshire, *Carex arenaria* L. and *Saxifraga granulata* L. have become established on cinder on the 'down' side of the line only (away from the coast). The spread of propagules from the dunes has almost certainly been helped by railway traffic. Other plants have established outside their expected range in this habitat, and of particular interest are records for the introduced *Bunias orientalis* L., *Thalictrum minus* L., *Cerastium arvense* L., *Geranium sanguineum* L. and *Barbarea intermedia* Boreau. Other common "railway" plants occupying and dispersing along cindery verges are *Linaria repens* (L.) Miller and *L. vulgare* Miller, *Chaenorhinum minus* (L.) Lange, *Valerianella locusta* (L.) Bectke, and, of the groundsel in Scotland, particularly, *Senecio viscosus* L.

In southern Regions, *Equisetum arvense* L., is characteristic of the cindery verge, and often also of the cess, where it seems to resist herbicides. In Scottish Region, whilst *E. arvense* is still found, *E. sylvaticum* L., *E. fluviatile* L. and *E. palustre* L. are also widespread in this habitat. At Carstairs Kames (B196), all 4 species of horsetail were found bordering the track.

Because the survey is aimed at describing vegetation along rural stretches of railway line, cinder station flats and works areas are comparatively seldom visited. However, the one or two examples recorded in Scotland proved interesting: at Kilkerran (B183), a damp cinder flat supports a species rich association including *Linum catharticum* L., *Rhinanthus minor* L., *Centaurium erythraea* Rafn. and many bryophytes, whilst, at Montrose Station, where the cinder is occasionally washed with sea water, a varied collection of alien, ephemeral and maritime species occur. Amongst the more notable of these are *Hirschfeldia incana* (L.) Lagreze-Fossat, *Melilotus indica* L., *Linaria repens* (L.) Miller, *Cotoneaster simonsii* Baker, *Cornus sericea* L. and *Atriplex glabriuscula* Edmonston.

There is a greater tendency for scrub, generally birch, to develop on damp cinder flats in Scotland than in drier equivalent areas further south.

3.3.3 Ballast

The prevalence of *A. elatius*, and some of its more common associates, on ballasted slopes has been described. However other facies occur, and, in lowland areas, particularly where ballasting is heavy or unstable, bramble (*Rubus fruticosus* agg.) is widespread. To some extent, bramble occupies

the same niche as the Arrhenatheretum and it is not always easy to see why one or other is successful in a particular area. There is possibly some correlation with depth of ballast or with nearby scrub/woodland which provides a source of propagules for brambles, but it is recognised that the relationship between bramble and grassland requires investigation. Neither type occurs in the upland track Class 22 (West Highland), where heavily ballasted slopes often support little vegetation. On more stable ballast, *Rubus idaeus* L. and suberecti forms of *R. fruticosus*, become common, and *R. idaeus* is recorded considerably more frequently than bramble in northern parts of Scottish Region.

Because *Sedum telephium* L. and *S. reflexum* occur quite frequently on ballast in areas where they are otherwise rare or absent, it is possible that they are spread by rail traffic.

3.3.4 Scrub and Woodland

An important contribution of railway verges in Scotland, particularly in upland areas, is the provision of comparatively less well-grazed, and sometimes better drained, land where scrub and woodland may develop. Juniper, for example, was found at 2 of 5 sites visited on the line between Kingussie and Inverness, where, in one instance (Sloch'd More, R353), the take was sufficiently wide for the plants to remain undisturbed, whilst, at Loch Alvie (B238), most bushes were suffering considerable spray damage.

Sallows often establish where lines cross mire or bogs, and excellent examples were found at Carstairs Kames (B196), where *Salix pentandra* L. and *Salix phylicifolia* L. were growing with the 3 more commonly occurring species, *S. aurita* L., *S. caprea* L. and *S. cinerea* ssp. *oleifolia*, above an ombrogenous Calluneto-Eriophoretum (M Veal & Ratcliffe 1962). Sallows also occur on stable ballast flats (eg R275, Boghall) and are widespread on the damp, lower slopes of many formations. Across heath and moorland, birch and rowan become quite frequent members of the verge community, whilst, in the bleak, open country near Rannoch Station, a single plum (*Prunus domestica* L.) was found near the track. (B239).

Most releves in which *Fraxinus excelsior* L. is dominant are described as heavily ballasted, and it is almost certain that ballast provides a suitable habitat for the germination and development of ash. Other woody species occur less consistently on ballast, and it is likely that, at least in some instances, ballast tipping has occurred after the trees have become established. Wych elm shows some correlation with cindery slopes (eg Melville, R269, Haugh, R279) in central and lowland Scotland, whilst oak woods and *Rhododendron ponticum* L. thickets, although only occasionally recorded (Bargany, R243, Auchnacloch, R316), show a predominantly western distribution. Beech was recorded at Haugh (R279), where a row of large (40-50 m) trees, had almost certainly been planted with the intention of stabilising the steep (32°) embankment.

As with other plants, some woody species have clearly dispersed along railway lines in Scotland, species lists record numbers of aliens, and other trees and shrubs growing beyond their more expected range, including *Crataegus laevigata* (Poiret) DC., *Cotoneaster simonsii* Baker, *Acer campestre* L. and *Cornus sericea* L.

Table 3.1 Vascular plant species found alongside the track of the Scottish Region of British Rail during 1980.

Abies grandis Lindl.
Acer platanoides L.
Aconitum bicolor Schultes
Aconitum napellus L.
Agropyron junceiforme A & D Love
Agrostis gigantea Roth
Ammophila arenaria (L.) Link
Anagallis tenella (L.) L.
Antirrhinum majus L.
Aphanes arvensis ss. L.
Aquilegia vulgaris L.
Arabidopsis thaliana (L.) Heynh.
Arctostaphylos uva-ursi (L.) Spreng.
Arenaria s. leptoclados (Reichenb.) Guss.
Arenaria s. serpyllifolia L.
Armeria m. maritima (Mill.) Willd.
Aster novi-belgii L.
Aster salignus Willd.
Aster schreberi Nees
Aster tripolium L.
Astragalus danicus Retz.
Athyrium filix-femina (L.) Roth.
Atriplex glabriuscula Edmondst.
Atriplex hastata L.
Atriplex littoralis L.
Barbarea intermedia Bor.
Brassica napus L.
Bunias orientalis L.
Callitriche hamulata Kutz ex Koch
Calystegia pulchra Brummitt & Heywood
Calystegia sepium (L.) R. Br. s.s.
Campanula lactiflora Bieb.
Campanula latifolia L.
Carex arenaria L.
Carex curta Gooden.
Carex echinata Murr.
Carex limosa L.
Carex ovalis Gooden.
Carex pallescens L.
Carex pauciflora Lightf.
Carex pulicaris L.
Carex rostrata Stokes
Carpinus betulus L.
Carum verticillatum (L.) Koch
Centaurea montana L.
Centranthus ruber (L.) D.C.
Cerastium tomentosum L.
Chrysosplenium alternifolium L.
Cochlearia danica L.
Cochlearia o. officinalis L.
Convallaria majalis L.
Corydalis claviculata (L.) D.C.

contd/...

Table 3.1

Cotoneaster microphyllus Wall.
Cotoneaster simonsii Baker
Crepis paludosa (L.) Moench
Crococsmia X crocosmiflora (Lemoine) N.E. Br.
Draba muralis L.
Drosera anglica Huds.
Drosera rotundifolia L.
Dryopteris carthusiana (Viller) H.P. Fuchs
Elymus arenarius L.
Endymion hispanicus (Mill.) Chouard.
Epilobium brunnescens (Cockayne) Raven & Engelham
Eriophorum angustifolium Honck.
Eriophorum vaginatum L.
Erophila verna (L.) Chevall.
Euphorbia cyparissias L.
Euphrasia arctica Lange ex Rostrup
 ssp. borealis (Townsend) Yeo
Euphrasia micrantha Reichb.
Euphrasia nemorosa (Pers.) Wallr.
Festuca vivipara (L.) Sm.
Filago minima (Sm.) Pers.
Fragaria X ananassa Duchesne
Fumaria muralis Sond. ex Koch
 ssp. boraei (Jord.) Pugsley.
Galanthus nivalis L.
Galeopsis t. bifida (Boenn.) Lej. & Court.
Galeopsis t. tetrahit L.
Galium boreale L.
Galium pomeranicum Retz.
Gaultheria shallon Pursh
Gentianella campestris (L.) Borner
Geranium sanguineum L.
Glaux maritima L.
Glyceria declinata Breb.
Gnaphalium sylvaticum L.
Goodyera repens (L.) R. Br.
Gymnocarpium dryopteris (L.) Newm.
Heracleum montegazzianum Somm & Lev.
Hesperis matronalis L.
Hieracium spp. L.
Hieracium perpropinquum (Zahn) Druce
Hieracium calticola
Hieracium exotericum s.l. Jord. ex Bor.
Hieracium latobrigorum (Zahn) Roffey
Hieracium severiceps Winst.
Hieracium umbellatum L.
Hieracium bulgatum Fries
Hirschfeldia incana (L.) Lagreze-Fossat
Honkenya peploides (L.) Ehrh.
Hordeum distichon L.
Hyperzia selago (L.) Bernh. ex Schrenk & Mart
Juncus bulbosus L.
Lamium hybridum Vill.
Larix decidua Mill.

contd/...

Table 3.1.

Lathyrus latifolius L.
Lathyrus odoratus L.
Ligustrum ovalifolium Hassk.
Lilium pyrenaicum Gouan.
Linaria purpurea (L.) Mill.
Lupinus arboreus Sims
Lupinus polyphyllus Lindl.
Lycopodium clavatum L.
Lysimachia vulgaris L.
Meconopsis combrica (L.) Vig.
Melampyrum pratense L.
Melilotus indica (L.) All.
Mentha rotundifolia (L.) Huds.
Mentha spicata L.
Menyanthes trifoliata L.
Montia sibirica (L.) Howell
Myosotis secunda A. Murr.
Myrica gale L.
Myriophyllum alterniflorum DC.
Narthecium ossifragum (L.) Huds.
Ophioglossum v. vulgatum L.
Osmunda regalis L.
Papaver orientale L.
Parnassia palustris L.
Phegopteris connectilis (Michx) Watt.
Phleum pratense s.s. L.
Picea abies (L.) Karst.
Picea sitchensis (Bong.) Carr.
Pilosella aurantiaca (L.) C.H. & F.W. Schultz
 ssp. *carpathicola* (Naegeli & Peter) Sojak
Pilosella caespitosa (Dumort.) Sell & West
 ssp. *colliniforme* (Naegeli & Peter) Sell & West
Pinguicula vulgaris L.
Plantago maritima L.
Platanthera chlorantha (Cust.) Reichb.
Poa chaixii Vill.
Polygonum aviculare s.s. L.
Populus alba L.
Populus X canadensis Moench var. *serotina* (Hertig) Rehd.
Populus X canescens (Ait.) Sm.
Potamogeton friesii Rupr.
Potentilla erecta (L.) Rauschel
 ssp. *strictissima* (Zimm.) Richards.
Potentilla palustris (L.) Scop.
Primula X tommasinii Gren. & Godron
Prunus laurocerasus L.
Pyrola minor L.
Pyrus communis L.
Ranunculus hederaceus L.
Rheum sp. L.
Rhododendron ponticum L.
Ribes sanguineum Pursh.
Rosa rugosa Thumb.
Rosa sherardii Davies

contd/...

Table 3.1.

Rosa villosa L. var. *mollis* Sm.
Rubus idaeus L.
Rubus saxatilis L.
Rubus spectabilis Pursh
Rumex acetosella L. s.s.
Rumex X *arnottii* Druce
Rumex tenuifolius (Wallr.) Love.
Salix cinerea L. ssp. *oleifolia* Macreight
Salix pentandra L.
Salix phylicifolia L.
Salix repens L.
Saxifraga aizoides L.
Saxifraga stellaris L.
Saxifraga X *urbiwm* D.A. Webb
Scirpus cespitosus L.
 ssp. *germanicus* (Palla) Broddeson.
Sedum reflexum L.
Selaginella selaginoides (L.) Link
Senecio vulgaris L. forma *ligulatus* D.E, Allen
Silene X *intermedia* Schur.
Silene vulgaris (Moench) Garcke
 maritima (With) A. & D. Love
Sisymbrium altissimum L.
Sisymbrium orientale L.
Solanum tuberosum L.
Solidago canadensis L.
Sorbus aria (L.) Crantz s.s
Sorbus intermedia (Ehrh.) Pers. s.s
Sorbus sp. 'latifolia' type'
Spergularia rubra (L.) J. & C. Presl
Swida sericea (L.) Holub.
Symphytum tuberosum L.
Teesdalia nudicaulis (L.) R. Br.
Thalictrum minus L.
 ssp. *arenarium* (Butcher) Clapham
Thalictrum m. minus L.
Tilia X *vulgaris* Hayne
Trientalis europaea L.
Triticum aestivum L.
Vaccinium oxycoccus L.
Valeriana pyrenaica L.
Valerianella locusta (L.) Betcke
Vicia sativa L. ssp. *nigra* (L.) Ehrh.
Vicia sylvatica L.
Viola c. canina L.
Viola lutea Hudson
Viola p. palustris L.

Table 3.2. Bryophytes found alongside the track of the Scottish Region of British Rail during 1990. The order coincides with that used on BRC cards.

Calliergon cordifolium (Hedw.) Kindb.
C. cuspidatum (Hedw.) Kindb.
Amblystegium riparium (Hedw.) Br. Eur.
A. serpens (Hedw.) Br. Eur.
A. tenax (Hedw.) C. Jens.
A. varium (Hedw.) Lindb.
Anoetangium compactum (Hedw.) Mitt.
Anomobryum filiforme (Dicks.) Solms.
Atrichum undulatum (Hedw.) P. Beauv.
Aulacomnium androgynum (Hedw.) Schwaegr.
A. palustre (Hedw.) Schwaegr.
Barbula convoluta Hedw.
B. fallax Hedw.
B. recurvirostra (Hedw.) Dix.
B. revoluta Brid.
B. unguiculata Hedw.
Brachythecium albicans (Hedw.) Br. Eur.
B. plumosum (Hedw.) Br. Eur.
B. populeum (Hedw.) Br. Eur.
B. rivulare Br. Eur.
B. rutabulum (Hedw.) Br. Eur.
B. velutinum (Hedw.) Br. Eur.
Breutelia chrysocoma (Hedw.) Lindb.
Bryum alpinum With.
B. argenteum Hedw.
B. bicolor Agg.
B. caespiticium Hedw.
B. capillare Hedw.
B. pallens SW.
Homalothecium lutescens (Hedw.) Robins
H. sericeum (Hedw.) Br. Eur.
Campylopus atrovirens De Not.
C. paradoxus Wils
C. pyriformis (Schultz) Brid.
C. subulatus Schimp.
Ceratodon purpureus (Hedw.) Brid.
Cirriphyllum piliferum (Hedw.) Grout
Climacium dendroides (Hedw.) Web. & Mohr.
Cratoneuron commutatum (Hedw.) Roth
C. filicinum (Hedw.) Spruce
Ctenidium molluscum (Hedw.) Mitt.
Dichodontium pellucidum (Hedw.) Schimp.
Dicranella heteromalla (Hedw.) Schimp.
D. palustris (Dicks.) Warb.
D. varia (Hedw.) Schimp.
Dicranum bonjeani De Not.
D. majus SM.
D. scoparium Hedw.
Diphyscium foliosum (Hedw.) Mohr.
Drepanocladus exannulatus (Br. Eur.) Warnst.
D. uncinatus (Hedw.) Warnst.
Encalypta streptocarpa Hedw.
E. vulgaris Hedw.

Table 3.2

Rhyncostegium confertum (Dicks) Br. Eur.
Eurhynchium praelongum (Hedw.) Br. Eur.
E. praelongum var *stokesii* (Turn.) Dix.
E. striatum (Hedw.) Schimp.
E. swartzii (Turn.) Curn.
Fissidens adianthoides Hedw.
F. bryoides Hedw.
F. taxifolius Hedw.
Fontinalis antipyretica Hedw.
Funaria hygrometrica Hedw.
Schistidium apocarpum (Hedw.) Br. Eur.
Grimmia pulvinata (Hedw.) Sm.
G. trichophylla Grev.
Gymnostomum aeruginosum Sm.
Homalia trichomanoides Br. Eur.
Hygrohypnum luridum (Hedw.) Jenn.
Hylocomium splendens (Hedw.) Br. Eur.
Hypnum cupressiforme Hedw.
H. cupressiforme var *lacunosum* Brid.
H. cupressiforme var *resupinatum* (Tayl.) Schimp.
H. jutlandicum Holmen & Warncke
Isopterygium elegans (Brid.) Lindb.
Isothecium myosuroides Brid.
I. myurum Brid.
Leptobryum pyriforme (Hedw.) Wils
Leptodontium flexifolium (With.) Hampe.
Leucobryum glaucum (Hedw.) Angstr.
Mnium hornum Hedw.
M. marginatum (With.) P. Beauv.
Plagiommium affine (Funck) Kop.
P. elatum (Br. Eur.) Kop.
P. undulatum (Hedw.) Kop.
P. rostratum (Schrader) Kop.
Rhizomnium punctatum (Hedw.) Kop.
Orthodontium lineare Schwaegr.
Orthotrichum affine Brid.
O. anomalum Hedw.
Philonotis fontana (Hedw.) Brid.
Plagiothecium denticulatum (Hedw.) Br. Eur.
P. undulatum (Hedw.) Br. Eur.
Pleurozium schreberi (Brid.) Mitt.
Ptychomitrium polyphyllum (Sw.) Br. Eur.
Racomitrium canescens (Hedw.) Brid.
R. fasciculare (Hedw.) Brid.
R. lanuginosum (Hedw.) Brid.
Rhytidiadelphus loreus (Hedw.) Warnst.
R. squarrosus (Hedw.) Warnst.
R. triquetrus (Hedw.) Warnst.
Sphagnum capillifolium (Ehrh.) Hedw.
S. cuspidatum Hoffm.
S. palustre L.
S. papillosum Lindb.
S. russonii Warnst.

Table 3.2

Thuidium tamariscinum (Hedw.) Br. Eur.
Tortella tortuosa (Hedw.) Limpr.
Tortula muralis Hedw.
T. ruralis (Hedw.) Gaertn.
T. ruralis ssp. *ruraliformis* (Besch.) Dix.
T. subulata Hedw.
Trichostomum brachydontium Hedw.
T. crispulum Bruch
Oxystegus tenuirostris (Hook & Taylor) A.J.E. Smith
Ulota crispa (Hedw.) Brig.
Weissia controversa Hedw.
W. longifolia Mitt.

Barbilophozia attenuata (Mart.) Loesre
B. floerkii (Web & Mohr) Loesre
Blasia pusilla L.
Calypogeia fissa (L.) Raddi
C. trichomanis (L.) Buch
Cephalozia bicuspidata (L.) Dum
Cephaloziella hampeana (Nees) Schiffn.
Chiloscyphus polyanthus (L.) Corda
Conocephalum conicum (L.) Underw.
Diplophyllum albicans (L.) Dum.
Fossombronia angulosa (Dicks.) Raddi.
F. pusilla (L.) Dum
Frullania dilatata (L.) Dum.
F. tamarisci (L.) Dum.
Gymnocola inflata (Huds.) Dum.
Gymnomitrium crenulatum Gottsche
G. obtusum (Lindb.) Pears
Lophocolea bidentata (L.) Dum
L. cuspidata (Nees) Limpr
Lophozia ventricosa (Dicks.) Dum.
Lunularia cruciata (L.) Dum.
Marchantia polymorpha L.
Marsupella emarginata (Ehrh.) Dum.
Metzgeria furcata (L.) Dum.
Mylia taylori (Hook.) Gray
Nardia scalaris (Schrud.) Gray
Ooontoschisma spagni (Dicks.) Dum.
Pellia epiphylla (L.) Corda
P. neesiana (Gottsche) Limpr.
Plagiochila asplenoides (L.) Dum.
P. spinulosa (Dicks.) Dum.
Preissia quadrata (Scop.) Nees
Ptilidium pulcherrimum (Wever) Hampe
Riccardia pinguis (L.) Gray
R. sinuata (Dicks.) Trev.
Scapania undulata (L.) Dum.
Solenostomum crenulatum (Sm.) Mitt.
S. triste (Nees) K. Mull
Tritomaria quinquedentata (Huds.) Buch

4 ANIMALS

4.1 Introduction

Records of observed and identified birds (5.1), other vertebrates (5.2), insects (5.3), and other invertebrates (5.4) were made by Jonathan Harris, an UWIST sandwich student attached to the project during the summer.

No attempt was made to analyse the information systematically, because observations were made at each site only once, and time of year and weather conditions varied. However, an independent investigation of invertebrates of the cinder cess was made, in which the sampling was replicated and designed to produce representative information. The species identified proved to be of kinds generally associated with grasslands, and may well have spread on to the cess from adjacent verges. It is likely that the complete weed control exercised annually on the cess inhibits the development of a cinder fauna.

Information in the following two sections is drawn from a report made by Jonathan Harris.

4.2 Birds

The contribution of railway land to bird feeding, perching and nesting habitat depends not only on the formation of the verge and the vegetation it supports, but also on the kind of land through which the railway line is passing. Thus, for example, in lowland Central and South-Western Scotland, where the railway runs mainly through farmland, the numerous cuttings with scattered scrub attract many yellowhammers, whitethroats and willow warblers, whilst embankments, often with good cover on lower slopes, provide a useful nesting habitat for sedge warblers. Some formations support secondary oak woodland in which characteristic woodland bird species are found nesting. Elsewhere, the more open sallow and birch associates of disturbed and heavily ballasted lowland areas make useful cover for willow warblers, blackcaps, reed buntings, skylarks and partridges. Near towns and stations, swallows (nesting in disused huts) and feral pigeons were frequent, whilst magpies, song thrushes and a feeding jay were recorded.

Where lines rise into moorland in southern Scotland, sallow scrub frequently colonises verges, and birds typically associated with the railway include tree pipits, whinchats and wheatears. In comparable Highland habitats, meadow pipits become ubiquitous, and flocks of small birds, including tits and siskin were frequently seen. Redshank (R276), crossbill (R316), redstart (B223), stonechat (B232) and spotted flycatchers (3 sightings) were all recorded on verges in upland areas.

The large number of seabirds included in the species list (Table 5.1) reflects the fact that many lines follow the coast, rather than that the railway provides a useful habitat for seabirds. However, in several places, the line provides a barrier, preventing ready access to salt marshes, dunes and cliffs.

Railway casualties were not frequently recorded, but included a tufted duck, pheasant, and a tawny owl.

Table 4.1 Bird species recorded alongside the track of the Scottish Region of British Rail during 1980. Species marked with an asterisk were recorded flying over, or on, land immediately adjacent to British Railway tracks.

**Cavia stellata*
 **Podiceps cristatus*
Tachybaptus ruficollis
 **Fulmarus glacialis*
 **Phalacrocorax carbo*
 **Ardea cinerea*
Anas platyrhynchos
 **Anas clypeata*
Aythya fuligula
 **Aythya ferina*
 **Melanitta nigra*
 **Somateria mollissima*
 **Mergus serrator*
 **Mergus merganser*
Tadorna tadorna
 **Cygnus olor*
Buteo buteo
 **Accipiter nisus*
 **Falco peregrinus*
Falco tinnunculus
 **Lagopus lagopus scoticus*
Perdix perdix
Phasianus cochicus
Chrysolophus pictus
Gallinula choropus
 **Fulica atra*
 **Haematopus ostragalus*
 **Vanellus vanellus*
 **Charadrius hiaticula*
 **Pluvialis squatarola*
 **Arenaria interpres*
 **Gallinago gallinago*
 **Numenius arquata*
Tringa hypoleucos
Tringa totanus
 **Calidris alpina*
 **Stercorarius parasiticus*
 **Larus marinus*
 **Larus fuscus*
Larus argentatus
Larus canus
Larus ridibundus
 **Rissa tridactyla*
 **Sterna hirundo*
Sterna paradisea
 **Columba oenas*
Columba livia
Columba palumbus
 **Streptopelia decaocto*
Cuculus canorus
Strix aluco
Apus apus

Table 4.1

Picus viridis
 **Dendrocopos major*
Alauda arvensis
Hirundo rustica
Delichon urbica
Riparia riparia
 **Corvus corax*
Corvus corone corone
Corvus corone cornix
Corvus frugilegus
Corvus monedula
Pica pica
Garrulus glandarius
Parus major
Parus caeruleus
Parus ater
Aegithalos caudatus
Certhia familiaris
Troglodytes troglodytes
 **Cinclus cinclus*
 **Turdus viscivorus*
Turdus philomelos
Turdus merula
Oenanthe oenanthe
Saxicola torquata
Saxicola rubetra
Phoenicurus phoenicurus
Erithacus rubecula
 **Locustella naevia*
Acrocephalus schoenobaenus
Sylvia atricapilla
Sylvia communis
Phylloscopus trochilus
Phylloscopus collybita
 **Phylloscopus sibilatrix*
Regulus regulus
Muscicapa striata
Prunella modularis
Anthus pratensis
Anthus trivialis
Motacilla alba yarrellii
 **Motacilla cinerea*
Sturnus vulgaris
Carduelis chloris
Carduelis carduelis
Carduelis spinus
Acanthis cannabina
Acanthis flammula
Pyrrhula pyrrhula
Loxia curvirostra
Fringilla coelebs
Emberiza citrinella
Emberiza schoeniclus
Passer domesticus
Passer montanus

Table 4.2 Other vertebrates

Salmo trutta
Bufo bufo
Rana temporaria
Anguis fragilis
Lacerta vivipara
Vipera berus
(B) *Talpa europaea*
Pipistrellus pipistrellus
Lepus capensis
Lepus timidus
* *Oryctolagus cuniculus*
Sciurus vulgaris
Clethrionomys glareolus
Microtus agrestis
Canis familiaris
* *Vulpes vulpes*
Mustela erminea
(B) *Meles meles*
(R) *Lutra lutra*
* *Felis catus*
* *Cervus elephas*
Capreolus capreolus
* *Ovis aries*

* noted as casualties and live animals

(R) Reported

(B) Burrows etc.

4.3 Ground arthropods of the cinder cess

During 1980, it was decided to make a limited survey of cess invertebrates. Collections of larger ground-dwelling arthropods were made at 18 of the biological survey sites visited between May 16 and August 21. The arthropods were collected by hand from rakings on, or just beneath, the surface of the cinder cess and its border with the ballast. At each site, 3 randomly chosen areas of cess, each 1 m long, on one side of the track were surveyed. Arthropods in the following groups were stored in 70% alcohol:

Chilopoda:

This was the commonest group, specimens being found at 11 of the 18 sites. Some of the records were new for the particular vice county (marked with an asterisk in Table 5.4), but the species are widespread and been under-recorded in Scotland.

Aranae:

9 taxa were found at 8 sites, 6 of these being identified to species level. Of these, 5 are common and widespread, whereas *Hahnia nava* (Blackwell) is local in its distribution. *H. nava* was recorded at only one site, Threapland, where the railway runs through conifer woodland.

Coleoptera:

Many species were collected, most being found at 1 site only. Most are ground-dwelling predators or scavengers, with the exception of *Prosternon holosericeus* Ol., a click beetle, and *Amara callica* Panzer, a climbing species, which was probably an accidental inclusion in the cess fauna.

Formicidae (Hymenoptera):

Species were collected at 9 sites, and the records suggest that cess provides a suitable nest building area for ants which require well-drained, warm soils. *Formica lemani* (Bondroit), found at 2 sites, is notably a northern species.

Other Groups:

The few specimens of the Isopoda, Diplopoda, Opiliones and Dermaptera were collected at 5, 2, 3 and 1 site respectively. With the exception of *Armadillidium vulgare*, *Schizophyllum sabulosum* and *Glomeris marginata*, all the species collected (Table 5.4) are widespread in their distribution.

Table 4.3. Insects recorded alongside the track of the Scottish Region of British Rail during 1980. Those marked with an asterisk were recorded during the survey of cress invertebrates

Order	Scientific Name
EPHEMEROPTERA	
ODONATA	Anisoptera Zygoptera <i>Pyrrhosoma nymphula</i>
ORTHOPTERA	Acrididae
DERMAPTERA	<i>Forficula auricularia</i> *
HEMIPTERA	Cercopidae Cicadellidae Aphidoidea Gerridae
MECOPTERA	<i>Panorpa</i> sp.
LEPIDOPTERA	<i>Aglais urticae</i> <i>Vanessa cardui</i> <i>Vanessa atalanta</i> <i>Inachis io</i> <i>Erynnis tages</i> <i>Lycaena phlaeas</i> <i>Polyommatus icarus</i> <i>Anthocharis cardamines</i> <i>Pieris brassicae</i> <i>Pieris rapae</i> <i>Pieris napi</i> <i>Aphantopus hyperantus</i> <i>Maniola jurtina</i> <i>Coenonympha pamphilus</i> <i>Callimorpha jacobaeae</i> Pyralidae
DIPTERA	Tipulidae Culicidae Caratopogonidae Cecidomyiidae <i>Dasyneura ulmariae</i> Tabanidae Syrphidae Calliphoridae Hippoboscidae <i>Melophagus ovinus</i>

contd/...

Table 4.3

HYMENOPTERA

Ichneumonidae
Ichneumon sarcitorius?
 Cynipidae
Diplolepis rosae
 Formicidae
*Formica lemni**
*Lasius flavus**
*Myrmica rubra**
 Vespidae
Vespula sp.
 Apidae
Apis mellifera
Bombus spp.
Psithyrus spp.

COLEOPTERA

Carabidae
*Pterostichus melanarius**
*Bembidion lampros**
*Bradycellus verbasci**
*Trechus obtusus**
*Cychrus caraboides**
*Amara aulica**
*Agonum dorsale**
*Nebria salina**
*Calathus fuscipes**
*Notiophilus biguttatus**
 Staphylinidae
 Elateridae
*Prosternon holosericeus**
 Cantharidae
Rhagonycha fulva
 Cryptophagidae
*Cryptophagus pilosus**
 Coccinellidae
Coccinella 7-punctata.

Table 1.4. Other Invertebrates recorded alongside the track of the Scottish Region of British Rail during 1990. Those marked with an asterisk were recorded during the survey of cress invertebrates

Class	Scientific Name
GASTROPODA	Stylommatophora
	<i>Arion</i> spp.
	<i>Limax</i> spp.
	<i>Cepea nemoralis</i>
	<i>Cepea hortensis</i>
	Zonitidae
	<i>Oxychilus draparnaudi</i>
POLYCHAETA	<i>Arenicola</i> sp.
OLIGOCHAETA	<i>Lumbricus</i> spp.
	<i>Allolobophora</i> spp.
DIPLOPODA	Pentazonia
	<i>Glomeris marginata</i> *
	Helminthomorpha
	Iulidae
	<i>Iulus scandinavicus</i> *
	<i>Schizophyllum sabulosum</i> *
	<i>Tachypodoiulus niger</i> *
<i>Cylindroiulus punctatus</i> *	
CHILOPODA	Geophilomorpha
	Geophilidae
	<i>Necrophlaeophagus longicornis</i> *
	Lithobiomorpha
	Lithobiidae
	<i>Lithobius forficatus</i> *
	<i>Lithobius variegatus</i> *
	<i>Lithobius calcaratus</i> *
<i>Lamyctes fulvicornis</i> *	
CRUSTACEA	Melacostraca
	Amphipoda
	<i>Gammarus</i> spp.
	Isopoda
	Trichoniscidae
	<i>Trichoniscus pusillus</i> *
	Oniscidae
	<i>Philoscia muscorum</i> *
	Armadillidiidae
	<i>Armadillidium vulgare</i> *

contd/...

Table 4.4.

ARACHNIDA

- (a) Opiliones
 - Phalangidae
 - Oligolophus meadii**
 - Platybunus triangularis**
 - Nemastomatidae
 - Nemastoma lugubre**
- (b) Araneae
 - Gnaphosidae
 - Drassodes cupreus**
 - Haplodrassus* sp.
 - Lycosidae
 - Pardosa* spp.*
 - Trochosa terricola**
 - Agelenidae
 - Tegenaria* sp.
 - Textrix denticulata**
 - Hahnia rava**
 - Linyphiidae
 - Meioneta rurestris**
 - Erigone dentipalpis**
- (c) Acari
 - Metastigmata
 - Ixodes ricinus*

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APPENDIX 1 Random sites 1980.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
<u>NCC SCOTTISH REGION</u>							
<u>GLASGOW DIVISION; SOUTH AREA</u>							
R241	7-8 May	NX 194876	Pinwherry	Stranraer-Ayr	SE Emb (& Flat)	7.1-11.5	Ash/alder scrub on slope of <u>Mercurialis</u> , <u>Urtica</u> & <u>Filipendula</u> . Good bryophyte cover. Flat is tall herb community of <u>Pteridium</u> , <u>Filipendula</u> , <u>Galium aparine</u> etc, except to the SW where hazel scrub is encroaching. <u>Adoxa</u> & <u>Chrysosplenium</u> present. Tall-herb vegetative largely dominated by <u>Filipendula</u> with nettle <u>Mercurialis</u> and patches of <u>Arrhenatherum</u> . Some relict woodland spp. survive and there is much evidence of past scrub cutting. <u>Brachythecium rutabulum</u> and <u>Cardamine hirsuta</u> common under herb canopy.
R242	8 May	NX 181585	Boreland	Stranraer-Ayr	E Emb	3.6-6.7	" Cut and partially regenerating sycamore scrub with nettles & <u>Digitalis</u> . Annuals colonising ballast scree. Much cut timber. <u>Dactylis/Arrhenatherum</u> grassland with invading gorse to S. <u>Lepidium heterophyllum</u> & <u>Sedum telephium</u> frequent. <u>Euphorbia cyparissias</u> present.
R243	9 May	NS 242013	Bargany	Stranraer-Ayr	N Cut (& Flat)	5.4-6.8	Ash, beech & sycamore with dense <u>Rhododendron</u> thickets to W. Little ground cover under the latter but elsewhere patchy ballast & good populations of <u>Ajuga</u> , <u>Fragaria</u> , <u>Carex Flacca</u> & coarse grasses. Retaining wall by line. Extensive moss patches.
R244	9 May	NS 409127	Smithston	Dalrymple Junction-Waterside	SE Emb (& Cut/Flat)	6.8-28	Slope by line almost entirely covered in heavy recent ballast dumping. Very sparse colonisation by <u>Ceranium robertianum</u> etc. Flat by fence has hazel scrub with willow & <u>Lonicera</u> over <u>Holcus mollis</u> , rosebay and a number of woodland spp. spread from adjacent estate.
					W Cut/Emb/Flat	4.5-7	Flat in south covered in coarse <u>Arrhenatherum</u> grassland with patches of bramble, briar & gorse. Gulley to N. had nettle & coarse grass patches on a mossy ballast slope by the line; then a rise up to the fence covered in rosebay, bramble and patches of thorn scrub.
					S Cut (& Flat)	4.2-6.5	Large emb. in stream valley with coarse herb-rich grassland of <u>Arrhenatherum</u> with abundant <u>Filipendula Angelica</u> , <u>Aegopodium</u> bramble & briar. Rich meadow grassland by fence with <u>Ophioglossum</u> etc. Cutting to E. has coarse grassland, but herb-poor & burnt recently.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R244	9 May	NS 409127	Smithston	Dalrymple Junct- Waterside	N	Emb/ 8.3-11.2 Cut (& Flat)	Emb. in valley much smaller and covered in sp-poor tall-herb community of <u>Filipendula</u> , <u>Aegopodium</u> and a band of <u>Arrhenatherum</u> by the fence. The cutting has similar grassland to S. side, with farmyard run-off affecting upper part. <u>Montia sibirica</u> by stream.
R245	10 May	NS 357172	Mount Oliphant	Stranraer-Ayr	E	Cut 3.8-11.7 (& Ditch)	Dry quite herb- & sp-rich grassland of <u>Festuca rubra</u> <u>Arrhenatherum</u> , <u>Brachypodium sylvaticum</u> & <u>Anthoxanthum</u> Some invading thorn & briar bushes. Burnt c. 1975. Ridge to north very narrow with <u>Crataegus</u> hedge over fescue sward.
					W	Cut 2.7-9.3 (& Flat)	Large areas of bramble; and hawthorn invading from hedge. Areas of quite herb-rich grassland remain with <u>Viola</u> & <u>Fragaria</u> , tomentil & <u>Centaurea</u> . Moss cover on both sides moderate & mainly <u>Eurhynchium confertum</u> . Flat to N. very narrow but similar.
R246	10 May	NS 353183	Glengall	Stranraer-Ayr	SW	Emb 19.5-27 (& Ditch)	Coarse grassland of <u>Agropyron/Arrhenatherum</u> with areas of <u>Festuca/Poa</u> , <u>Filipendula</u> , <u>Aegopodium</u> & <u>Trifolium medium</u> common. Frequent bramble & low bushes, with dense hawthorn thicket by ditch. Several garden escapes & much <u>Allium vineale</u> .
					NE	Emb 13.5-32 (& Ditch)	Tall-herb grassland of <u>Filipendula</u> , <u>Aegopodium</u> with <u>Arrhenatherum</u> , <u>Agropyron</u> and <u>Dactylis</u> . Large patch of <u>Symphytum tuberosum</u> . Cinder of cess has <u>Saxifraga granulata</u> & <u>Carex arenaria</u> . Ditch-side with scattered alder. Mosses poor.
R247	11 May	NS 412248	Roadend	Ayr-Mauchline	S	Cut/ 6-12.8 Flat	Old track bed being colonised by <u>Carex flacca</u> , <u>Lotus</u> <u>Viola</u> & <u>Festuca</u> . Grassland on slope burnt in 1980; <u>Arrhenatherum/Festuca</u> & <u>Centaurea</u> . <u>Dactylis</u> often abundant. Ditch near fence covered in <u>Urtica</u> & <u>Rubus</u> . Flat to E mainly bramble but some grassland persists. Grazed edge by fence.
					N	Cut/ 4-9.2 Emb	Cutting unburnt with similar grassland to S. side but little <u>Dactylis</u> and considerable <u>Crataegus</u> & <u>Lathyrus pratensis</u> . Flat above has an <u>Agropyron</u> sward. The low emb. to the E is narrow with lush but sp-poor <u>Arrhenatherum/Agropyron</u> grassland. <u>Listera</u> & <u>Sedum telephium</u> present.
R248	11 May	NS 425228	Knockshoggle	Annbank-Killoch Colliery	SW	Cut/ 4.2-9.1 Flat (& Ditch)	Cutting recently burnt tall-herb grassland of <u>Aegopodium</u> with <u>Arrhenatherum</u> , <u>Dactylis</u> & <u>Agropyron</u> . <u>Listera</u> surviving fire. The flat to the east is essentially the same but richer in spp. & with more <u>Festuca</u> . The fence edge is grazed. Cess has <u>Carex arenaria</u> & briar.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R248	11 May	NS 425228	Knockshoggle	Ambank-Killoch Colliery	NE Flat/ Cut	7-12.3	Low cutting to W. with calcifuge grassland of <u>Arrhenatherum</u> and <u>Arrhenatherum</u> with <u>Dactylis/Agropyron/Festuca</u> and abundant <u>Centaurea</u> and <u>Lathyrus montanus</u> . Broad flat above similar with much <u>Conopodium</u> and <u>Ophioglossum</u> . Flat to E like this with more <u>Holcus</u> and bryophytes. Cess again colonised by <u>Carex arenaria</u> but with <u>Arrhenatherum</u> and other spp. Boulder clay over Carboniferous (Westphalian); Upper Coal Measures.
R249	12 May	NS 420318	Rodinghead	Carlisle-Kilmarnock	E Emb. (Ditch/ Flat)	11.2-18.2	Unstable ballast slope patchily colonised by <u>Arrhenatherum</u> and <u>Agropyron</u> with invading <u>Rubus/Rosa</u> and considerable <u>Filipendula</u> especially near north end. Flowing ditch has hawthorn thicket adjacent, much <u>Filipendula</u> ; and better turf by fence. Cinder by line grassy.
R250	13 May	NS 409511	Burock	Kilmarnock-Glasgow	W Emb (Ditch/ Flat)	14.4-20.3	<u>Festuca</u> on cinder flat by line. <u>Agropyron/Filipendula</u> over much of slope with abundant scrub invasion of bramble, <u>Crataegus</u> , sallow and briar. Patches of moderately rich <u>Festuca</u> grassland occur. The fence edge is grazed and has a sp-rich turf. <u>Yaconopsis</u> on cinder.
R251	13 May	NS 285420	Dubbs	Kilwinning-Largs	N Emb (& Flat)	8.9-9.2	Old trackbed partially colonised by <u>Arrhenatherum</u> , <u>Funaria</u> etc. Damp coarse rather sp-poor grassland on slope of <u>Holcus lanatus</u> with <u>Arrhenatherum/Festuca</u> . <u>Arrhenatherum</u> dominant in somewhat richer grassland to S. Hawthorn hedge, couch and nettle at edge. <u>Ophioglossum</u> here.
					E Cut (& Flat)	12.7-13.7	Stepped cutting with damp <u>Arrhenatherum/Dactylis/Deschampsia cespitosa</u> to S. over broad pleurocarpous moss patches, reseeded and <u>Centaurea</u> . Hawthorn and <u>Salix pentandra</u> by fence. To the north drier and more disturbed locally with <u>Festuca</u> , <u>Arrhenatherum</u> , <u>Alopecurus</u> and <u>Hanunculus repens</u> . <u>Agropyron</u> and <u>Crataegus</u> on flat at top of slope.
					S Emb	2.8-3.6	In the east hawthorn scrub over nitrophilous herbs with <u>Agropyron</u> grassland nearer the line. Scrub and bramble patches more local to W. where <u>Arrhenatherum/Agropyron/Aegopodium</u> dominates. Open species-poor bramble thicket with scattered <u>Holcus lanatus</u> . <u>Carex arenaria</u> on cinder of cess; <u>Hypericum maculatum</u> common.

REF DATE GRID OF ACCESS SITE NAME RAILWAY LINE SIDE FORM WIDTH NOTES

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R252	14 May	NS 331311	Troon	Ayr-Glasgow	E Flat (& Cut)	6-10.4	Generally rather disturbed Fescue grassland with patches of <u>Poa</u> and considerable naturalised lupin. Some areas are dominated by <u>Aegopodium</u> over <u>Eurhynchium confertum</u> , <u>Nettle</u> , <u>Arrhenatherum Calystrgia</u> and <u>Symphoricarpos</u> locally common. <u>Rosa rugosa</u> present.
					W Flat (& Cut)	2.1-15.9	Low narrow band to S. covered in dry fine-leaved grassland with <u>Sorbus intermedia</u> and <u>Pilosella caespitosa</u> . Broad flat to N is herb-poor grassland of <u>Festuca rubra</u> , <u>Carex arenaria</u> , <u>Poa spp.</u> and a little <u>Agropyron</u> and <u>Agrostis</u> . <u>Elymus</u> patch just N of site.
R253	14 May	NS 322355	Gailes	Ayr-Glasgow	W Flat/ Cut	0.3-3.8	Herb-poor and sp-poor <u>Festuca rubra</u> grassland with ribwort on low raised flat and cinder by wall. <u>Asplenium</u> and <u>Grimmia</u> on wall
					E Cut/ Flat	3-4.1	Low bank and then flat, probably old platform, now with tarmac etc. broken. <u>Festuca rubra</u> grassland quite herb-rich with <u>Anthyllis</u> , <u>Equisetum</u> and ribwort. <u>Carex arenaria</u> , <u>Cochlearia danica</u> and <u>Valerianella locusta</u> occur.
R254	15 May	NS 556217	Auchinleck	Carlisle-Kilmarnock	SW Cut/ Emb/ Flat	4.2-5.6	Low cutting with flat in N. covered in herb-poor <u>Arrhenatherum/Festuca rubra</u> with line of short dense <u>Crataegus</u> at top. <u>Holcus lanatus</u> , <u>Urtica</u> and <u>Rosa</u> occur by fence. The ridge to the SE is essentially the same, except the scrub reaches the fence.
					NE Cut/ Emb/ Flat	2.9-5.4	The NW cutting and the SE embankment with their associated flats are <u>Festuca rubra</u> grassland, herb-poor, with some <u>Arrhenatherum</u> , <u>Dactylis</u> , <u>Rosa</u> and <u>Crataegus</u> . Moss cover poor except for <u>Lophocolea bidentata</u> at T1
R255	15 May	NX 896932	Closeburn	Carlisle-Kilmarnock	W Cut (& Flat)	9.8-12.1	To N: Quite herb- and sp-rich fescue grassland with invading <u>Rubus</u> , <u>Cytisus</u> and <u>Crataegus</u> . <u>Centaurea</u> and <u>Plantago</u> common. <u>Anthoxanthum</u> and <u>Arrhenatherum</u> frequent. In S., similar near line but with more <u>Arrhenatherum</u> , <u>Rubus idaeus</u> invading. Tussocky burnt poor <u>Arrhenatherum</u> above.
					E Cut (& Flats)	9.4-10	Stepped cutting with lines of recent ballast tipping below - these colonised by <u>Lepidium heterophyllum</u> , coarse grasses. <u>Barbarea intermedia</u> present. Rest <u>Festuca/Arrhenatherum</u> grassland with abundant <u>Rosa</u> and <u>Viola</u> . Bramble thicket to N. <u>Fragaria</u> and <u>Anthoxanthum</u> frequent.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R256	16 May	NT 041078	Ruttonside	Carlisle-Glasgow	E Cut/ Fiat	4.75	Heavily sprayed open Arrhenatherum grassland with <u>Dactylis</u> and <u>Festuca rubra</u> . Quite herb-rich with <u>Mercurialis</u> , <u>Filipendula</u> and <u>Leucanthemum</u> . Some bare ballast. Sallow and raspberry occasional. Stone wall down to field damp with rich Bryophytes.
					W Cut/ Flat	5.6-9.1	Heavily sprayed and much ballast dumping by line. North end has <u>Pteridium</u> , rosebay and sallow surviving on upper slope and fiat. South end less tipped upon and with patchy Arrhenatherum grassland with raspberry and <u>Ilex</u> . The walls have <u>Racomitrium canescens</u> and <u>Bartramia pomiformis</u> .
R257	16 May	NS 968162	Clydes Burn	Carlisle-Glasgow	S Emb (& Fiat)	5.2-5.6	Rather patchy disturbed Arrhenatherum grassland with ballast areas colonised by <u>Draba muralis</u> <u>Festuca rubra</u> , <u>Dactylis</u> in the grassland and <u>Lophocolea</u> on the ballast. Sprayed briar thicket occur and nettle grows in them. The flat by the fence is a rich grazed fescue/bent turf with <u>Rhytidadelphus squarrosus</u> , <u>Viola lutea</u> etc.
					N Emb/ Fiat	2.9-4.2	Flat to N has Arrhenatherum/Festuca rubra and rosebay whereas the emb. to S. has large mossy areas colonised by <u>Draba</u> among the otherwise similar vegetation. Patches of <u>Cirsium heterophyllum</u> grow by the wall.
R258	17 May	NY 124852	Breckenny	Carlisle-Glasgow	E Emb (& Ditch)	2.3-7.6	Very disturbed through ballast dumping. Patchy vegetation of <u>Urtica</u> , <u>Arrhenatherum</u> , rosebay and bramble. Near the ditch hawthorn scrub is dominant over bramble. A little better turf above ditch by fence.
					W Emb (& Ditch/ Fiat)	6.6-11.7	Cinder fiat by line colonised by <u>Tussilago</u> , <u>Hieracium</u> , <u>Equisetum</u> and patchy <u>Festuca</u> . Slope coarse sp-poor Arrhenatherum grassland with bramble/briar patches. <u>Agropodium</u> , <u>Cruciata</u> , <u>Leucanthemum</u> , <u>Urtica</u> and <u>Centaurea nigra</u> all locally common. Grazed turf by fence beyond dry ditch.
R259	17 May	NS 750115	Knockenjig	Carlisle-Kilmarnock	S Fiat/ Cut	2.2-5.6	Cutting and associated flat to W are herb-poor Arrhenatherum grassland with <u>Festuca rubra</u> / <u>Dactylis</u> This continues E. onto a fiat bank in the shade of adjacent sycamore. The fence edge all along is <u>Festuca/Poa</u> grazed turf with abundant <u>Rhytidadelphus squarrosus</u> . <u>Sedum telephium</u> occurs to the E.
					N Cut/ Fiat	4.3-6.3	The major part of this bank has vegetation like the South, but with more <u>Hieracium</u> and <u>Rubus</u> . However the grazed edge is very species-rich with <u>Rumex acetosa</u> , <u>Pilosella</u> , <u>Agrostis</u> , <u>Veronica chamaedrys</u> etc.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM WIDTH M	NOTES
R260	18 May	NY 205659	Annan	Carlisle-Kilmarnock	N Cut/ 12.8-13.9 Flat	Old track by line partially colonised by <u>Arrhenatherum</u> , <u>Hypericum</u> etc. Small concrete channel at foot of slope with <u>Ribes</u> , <u>Acer</u> etc. Broad grass slope of herb-rich calcifuge <u>Anthoxanthum</u> with <u>Festuca</u> and <u>Arrhenatherum</u> . Frequent bramble patches and occasional <u>Crataegus</u> .
R 261	18 May	NY 286669	Rigmoor	Carlisle-Kilmarnock	S Cut/ 8.5-8.6 Flat (& Emb)	Coarser grassland of <u>Agropyron</u> and <u>Arrhenatherum</u> in patches with <u>Dactylis</u> and <u>Festuca rubra</u> . Abundant bramble, frequent <u>Crataegus</u> and large <u>Ulex</u> patches to E. Rather more Bryophytes than on N. side <u>Holcus mollis</u> common on flat above. <u>Lysimachia vulgaris</u> here.
R 262	4 June	NT 742743	Innerwick	Newcastle-Edinburgh	NW Flat 6.6-6.7	Lower slope <u>Arrhenatherum</u> grassland with large areas of <u>Filipendula</u> , <u>Aegopodium</u> and <u>Agropyron</u> . Clumps of <u>Sedum telephium</u> common. Ridge of ballast along middle of slope with <u>Cerastium</u> , <u>Cardamine</u> and <u>Bryum</u> . Rest of bank briar, bramble and hawthorn scrub, with <u>Galium aparine</u> etc
R262	4 June	NT 742743	Innerwick	Newcastle-Edinburgh	N Cut/ 8.3-9.7 Flat (& Emb)	Old track bed by line colonised by rich open community of <u>Hypericum maculatum</u> , <u>Myosotis</u> , <u>Festuca rubra</u> and acrocarpous mosses. Many garden escapes to the W. Main cover on bank is bramble with <u>Ulex</u> , <u>Galium aparine</u> and hawthorn patches. <u>Arrhenatherum</u> grassland with <u>fescue</u> to W.
R262	4 June	NT 772720	Dunglass	Newcastle-Edinburgh	SW Flat 11.6-56.5 (& Cut)	Nearer line rather open <u>Festuca/Poa</u> grassland, herb-rich with abundant <u>Pastinaca</u> , <u>Plantago</u> , <u>yarrow</u> and <u>Tussilago</u> plus some <u>Ulex</u> . Near the fence poorer and coarser <u>Arrhenatherum</u> and <u>Agropyron</u> , with <u>Equisetum</u> .
R263	4 June	NT 772720	Dunglass	Newcastle-Edinburgh	SW Flat 11.6-56.5 (& Cut)	The SE end is an old station yard where extensive earth dumping has occurred to leave a very disturbed uneven bank colonised by arable weeds especially <u>Capsella</u> , <u>Papaver</u> and <u>Tripleurospermum</u> . To the NW, broken tarmac is covered in <u>Festuca/Poa</u> grassland with abundant ribwort. Further from the line <u>Dactylis/Arrhenatherum</u> occur.
R263	4 June	NT 772720	Dunglass	Newcastle-Edinburgh	NE Emb 17.2-18.3	Coarse <u>Arrhenatherum</u> grassland over herb-rich but generally sp.-poor with large areas of invading bramble/briar and belts of ash/elm scrub. Rosebay is dominant in large stands especially near the bottom in the SE over <u>Urtica</u> , <u>Listera</u> and primrose <u>Silena dioica</u> common.
R263	4 June	NT 772720	Dunglass	Newcastle-Edinburgh	SW Emb 12.3-14.5	Tall <u>Acer</u> and <u>Pinus</u> trees with some <u>Fraxinus</u> over scrub of elder with <u>Lonicera</u> , <u>Urtica</u> , <u>Galium aparine</u> , grassy patches, <u>buttercup</u> etc. To NW dense elder scrub near line, with fringe of <u>Symphoricarpos</u> by cess giving below to tall hawthorn and line if trees by the fence

SOUTH-EAST DIVISION; EDINBURGH AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES	
R264	5 June	NT 897610	Rostonhill	Newcastle-Edinburgh	NE Cut/ Flat	8-9.2	Mosaic of coarse grassland (<u>Arrhenatherum/Dactylis</u>) with bramble and locally species rich <u>Agrostis/Festuca</u> . <u>Cytisus</u> invasion to NW with <u>Anthoxanthum</u> Patches of <u>Ulex</u> elsewhere. Local ballast dumping by line and probably regularly burnt. <u>Centaurea montana</u> and <u>Valerionella</u> occur.	
					SW	Cut 10.6-11.7 (& Flat)	Unburnt grassy slope, coarser near the line with <u>Dactylis</u> and <u>Arrhenatherum</u> plus <u>Heracleum</u> , <u>Vicia cracca</u> etc. and much bramble. Quite sp-rich and less tall above dominated by <u>Festuca/Anthoxanthum</u> plus <u>Hypochaeris</u> ribwort and <u>Hieracium</u> . Old Sand-pit to NW by line on ER now completely colonised and with much sallow and ferns.	
R265	6 June	NT 003565	Woolfords	Carstairs Junct.- Midcaldor	NW Emb (& Ditch)	11.9-13.5	Large areas of unstable ballast tipping with patchy <u>Arrhenatherum/Festuca</u> surviving and considerable <u>Urtica</u> plus <u>Dactylis</u> . Lower edge has flowing ditch lined with <u>Filipendula</u> , with some <u>Beschampsia</u> and <u>Alopecurus</u> . <u>Ranunculus auricomus</u> and <u>Cirriphyllum</u> with some other shade spp. in damp turf between ditch and fence.	
R266	6 June	NS 986510	Ampherlaw	Carstairs Junct.- Midcaldor	SE Emb (& Flat)	11.9-15.3	SW end recently burnt to leave sparse cover of regenerating raspberry canes. NE has coarse herb-poor <u>Arrhenatherum</u> grassland with <u>Dactylis/Festuca</u> and vigorous <u>Lophocolea</u> growth under the turf and other bryophytes on ballast patches. Lower edge <u>Filipendula</u> and <u>Juncus</u> .	
					SE	Cut/ Flat	13.3-13.9	Recently burnt slope and broad flat by fence. Coarse sp-poor <u>Arrhenatherum</u> grassland by line giving way gradually to <u>Holcus mollis</u> sward with patches of <u>Trifolium medium</u> . Other coarse grasses occasional.
					NW	Cut/ Flat	11.1-11.8	Unburnt rather richer grassland largely dominated by <u>Festuca rubra</u> but with <u>Dactylis</u> , <u>Arrhenatherum</u> , <u>Poa pratensis</u> , <u>Anthoxanthum</u> all locally co-dominant in a rather diverse vegetation. Rather herb-poor but with <u>Cirsium</u> , <u>Rumex acetosa</u> and rosebay common. <u>Agropyron</u> on fiat. <u>Mentha rotundifolia</u> patch to NE
					S	Cut 5.8-9 (& Flat/ Emb)		By line quite herb-rich grassland of <u>Festuca/Poa</u> and <u>Dactylis</u> with leguminosae giving way above to rosebay stand with <u>Agropyron</u> . By fence grazed rich turf with ribwort, <u>Rumex acetosa</u> and <u>Alchemilla</u> .

GLASGOW DIVISION; SOUTH AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R267	7 June	NS 917453	Silvermuir	Carlisle-Glasgow	N Cut (& Flat/ Emb)	6.8-12.4	Generally herb- and sp-poor <u>Arrhenatherum</u> grassland on stepped or ridged bank. <u>Agropyron</u> / <u>Festuca</u> and <u>Dactylis</u> common. Large areas of rosebay in mid site. Some scrub along top of slope and better calcifuge turf, with <u>Calluna</u> .
R268	7 June	NS 897462	Cleghorn	Carlisle-Glasgow	SW Cut/ Flat	1.7-8.3	Narrow flat to NW has herb-rich <u>Festuca</u> grassland with <u>Dactylis</u> and <u>Arrhenatherum</u> Plus <u>Tragopogon</u> and <u>Bryum</u> spp. The cutting to SE is in shade of adjacent <u>Acer</u> and covered in <u>Urtica</u> , <u>Stachys</u> and <u>Galium aparine</u> with coarse fescue grassland in a strip by the line.
					NW Cut/ Flat	11.5-3.8	Narrow ridge has coarse mixed grassland similar to SW with more <u>Arrhenatherum</u> , <u>Urtica</u> and <u>Anthriscus</u> . The cutting to the SE is mainly a raspberry stand with abundant nettle over <u>Brachythacium rutabulum</u> and with sallow bushes. A little grassland by line and fence.
R269	8 June	NT 292673	Melville	Millerhill-Loanhead	SE Emb	8.1-8.6	Tall ash/elm over bramble and <u>Urtica</u> with large areas of ballast dumping. In W opens up to give dense bramble with rough grassy patches. Less than 20 vascular plants.
					NW Emb	6.3-6.7	Elm shelter belt shading much of bank. Cinder dumped on slope to leave patchy ground cover of bramble, <u>Arrhenatherum</u> , <u>Aegopidium</u> . Richest in far SW but still only 23 spp.
R270	9 June	NT 052647	Newport	Edinburgh-Glasgow (via Shotts)	N Emb/ Flat (& Stream)	10.6-22	Broad flat by stream covered in mixed deciduous woodland with <u>Acer</u> and <u>Ulmus</u> common, plus ash, poplar and willow. Ground cover of nettle, <u>Geum</u> etc with good list of shade bryophytes. Nearer line opens out to rosebay stand and the slope is similar with patches of nettle, raspberry and coarse grassland. <u>Crataegus laevigata</u> at T1.
					S Emb/ Flat	0.5-9	Bank to E covered in coarse <u>Arrhenatherum</u> grassland with <u>Urtica</u> , <u>Hieracium</u> , <u>Stachys</u> and <u>Agropyron</u> . <u>Mentha spicata</u> by culvert. Very narrow flat to W with herb-rich fescue turf plus <u>Urtica</u> and <u>Lathyrus pratensis</u> .
R271	9 June	NT 037611	Torpin	Carstairs Junct.- Midcaider	SE Cut/ Flat	4.7-6.3	Coarse herb-rich but species-poor <u>Arrhenatherum</u> grassland, <u>Festuca</u> common on En. flat and <u>Holcus mollis</u> on flat above slope. <u>Hieracium</u> abundant, <u>Urtica</u> and <u>Lathyrus pratensis</u> locally so.

SOUTH-EAST DIVISION; EDINBURGH AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
R271	9 June	NT 037611	Torphin	Carstairs Junct.- Midcaider	NW	Flat 4.5-5 (& Ditch)		Rather damp grassland with <u>Dactylis</u> dominant near the line and <u>Deschampsia caespitosa</u> elsewhere. Species-poor but herb-rich with <u>Heracleum</u> again very common. <u>Listera</u> present.
R272	9 June	NT 023681	Livington Stn.	Edinburgh-Glasgow (via Bathgate)	N	Cut/ 5.8-7.8 Flat		Cutting in E has herb- and sp-rich grassland of <u>Festuca rubra</u> with <u>Agropyron</u> on upper slope. <u>Ulex</u> and <u>Ononis</u> common. <u>Trifolium</u> medium in patches <u>Polygala vulgaris</u> present. To W cinder flat by M.O.D. branch with patchy fescue, <u>Agrostis tenuis</u> and abundant <u>Polytrichum</u> .
R273	10 June	NT 157675	Pilmuir	Edinburgh-Glasgow (via Shotts)	S	Cut/ 3.1-11.7 Flat		Cutting in E has mixed sp-poor grassland of <u>Festuca rubra</u> , <u>Poa</u> and <u>Dactylis</u> with patches of <u>Trifolium</u> medium and areas of low <u>Crataegus</u> scrub. The scrub forms a hedge in the W over a narrow flat of similar grassland. Damp rich grassland with <u>sallow</u> and <u>Dactylorhiza purpurella</u> at AP.
R274	10 June	NT 131674	Hags Farm	Edinburgh-Glasgow (via Shotts)	N	Cut 7-8.8 (& Flat)		Stepped cutting in E has coarse <u>Arrhenatherum</u> grassland with invading hawthorn and raspberry. <u>Geranium pratense</u> common with <u>Vicia cracca</u> . Ridge of recently dumped ballast all along. Grassland gradually becomes dominated by <u>Festuca rubra</u> . Rowan occasional.
					S	Cut 5-6.8 (& Flat)		In E in shade of adjacent ash is herb-rich <u>Arrhenatherum</u> with abundant <u>Urtica</u> , <u>Cruciata</u> and <u>Galium aparine</u> . Less disturbed to W where <u>Festuca</u> , <u>Heracleum</u> and <u>Centaurea</u> grow with the <u>Arrhenatherum</u> by the line and <u>Agropyron/Dactylis</u> on the upper slope.
R274	10 June	NT 131674	Hags Farm	Edinburgh-Glasgow (via Shotts)	N	Flat/ 4-4.1 Emb		In W a flat with coarse herb-rich <u>Arrhenatherum</u> grassland with <u>Festuca rubra</u> and <u>Urtica</u> . The low emb. to the E has a <u>Crataegus</u> and <u>Prunus</u> avium thicket with <u>Festuca rubra</u> in a bank by the line. Further E a low cutting occurs with <u>Bromus erectus</u> grassland and <u>Knautia</u> .
					S	Cut/ 4.6-5.4 Flat		Coarse <u>Arrhenatherum</u> grassland over entire site with locally subdominant <u>Dactylis</u> , <u>Festuca rubra</u> , <u>Poa</u> etc. and good populations of <u>Urtica</u> , <u>Taraxacum</u> , <u>Heracleum</u> and <u>Equisetum</u> . A little more <u>Bromus erectus</u> (and <u>Deschampsia flexuosa</u>) to E.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R275	10 June	NT 000679	Boghall	Edinburgh-Glasgow (via Bathgate)	N	Cut 8.1-8.4 (& Flat)	Mixed grazed sp-poor grassland of <u>Festuca rubra</u> with <u>Arrhenatherum</u> , abundant <u>Lathyrus pratensis</u> plus <u>Vicia cracca</u> , <u>Dactylis</u> , <u>Poa</u> and <u>Agropyron</u> . Patches of <u>Crataegus</u> in W. Occasional rosebay and <u>Knautia</u> .
					S	Cut 6.3-7.7 (& Flat)	Generally similar but with <u>Arrhenatherum</u> predominant in W with more rosebay and <u>Urtica</u> . The E end is fescue again, quite herb- and sp-rich with <u>Anthoxanthum</u> , <u>Centaurea</u> and yarrow as well as <u>Campanula rotundifolia</u> . There is a thick moss carpet of <u>Rhynchospora squarrosus</u> , <u>Mnium undulatum</u> and <u>Lophocolea</u> . <u>Weissia controversa</u> on soil.
R276	11 June	NS 896667	Westcraigs	Edinburgh-Glasgow (via Bathgate)	N	Cut/ Emb/ Flat 6.3-7.1	Cutting and Flat to E grazed by stray sheep to produce mixed quite herb-rich turf of <u>Dactylis/Festuca rubra</u> and <u>Poa</u> with much <u>Anthriscus</u> , <u>Tussilago</u> and <u>Lathyrus pratensis</u> . Low emb. to W covered in meadowsweet with <u>Urtica</u> and scattered tall Grass.
					S	Cut/ Emb/ Flat 5.1-5.8	Cutting and Flat at T4 similar to N, but with less <u>Poa</u> , and a great deal of <u>Veronica chamaedrys</u> and <u>Anthriscus</u> . A rich turf occurs on the flat with <u>Anthoxanthum</u> , yarrow and good bryophyte cover. The W emb. is <u>Filipendula/Juncus</u> and <u>Deschampsia</u> , with rough grass above.
R277	11 June	NS 984618	Nether Longford	Edinburgh-Glasgow (via Shotts)	N	Emb 9.3-10.5 (& Flat)	Slope with much open cinder colonised by <u>Bryum capillare</u> and <u>Deschampsia flexuosa</u> in the W, and patches of <u>Arrhenatherum</u> , <u>Festuca rubra</u> , <u>Dactylis</u> , <u>Heracleum</u> , <u>Myosotis</u> and rosebay elsewhere. Lower flat edge has very rich mossy turf with <u>Carex flacca</u> , <u>Lotus</u> and <u>Holcus lanatus</u> under birch. Over 20 Bryophyte spp in a 4 m ² Q.
					S	Emb 10.8-16.1 (& Ditch/ Flat)	Upper slopes have cinder colonised by <u>Hieracium</u> . <u>Rumex acetosa</u> and <u>Pilosella caespitosa</u> . Patches of <u>Arrhenatherum</u> and rosebay grow elsewhere and there is some sallow scrub. Some burning has occurred. In the W tall butterbur grows with <u>Urtica</u> and rosebay by the fence.
R278	12 June	NT 131722	Ratho	Edinburgh-Glasgow (via Falkirk)	N	Cut 3.7-5.2	Rock cutting in E with much elm and sycamore scrub, some of it cut back hedges have <u>Deschampsia flexuosa</u> , <u>Hypochaeris</u> and ribwort plus scrambling bramble. Scree below. To W slope Gentler and continuously vegetated with herb-rich fescue turf plus <u>Pilosella</u> in patches. <u>Ononis</u> and <u>Knautia</u> occur.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
					S	Cut	5.9-7.8	Rock face to E shrouded in <u>Hedera</u> with <u>Sambucus</u> , <u>Acer</u> and <u>Ulmus</u> bushes scattered. <u>Centier</u> but still rocky to W with <u>Arrhenatherum</u> near line and <u>Festuca rubra</u> on upper slopes. Ash bushes occur. Moss cover quite high with <u>Camptothecium sericeum</u> . <u>Barbarea intermedia</u> here.
R279	12 June	NT 109722	Haugh	Edinburgh-Glasgow (via Falkirk)	NE	Emb (& Flat)	29-29.2	Old track bed by line with sparse vegetation cover of <u>Urtica</u> , <u>Arrhenatherum</u> and annuals. The slope is tall elm woodland over an open scrub layer of elder and hawthorn. Ground nearby bare but patches of <u>Urtica</u> , <u>Ranunculus ficaria</u> and a little moss exists.
					SW	Emb	26-34	Mainly tall elm scrub over species-rich <u>Brachypodium sylvaticum</u> grassland with <u>Poa nemoralis</u> , <u>Arrhenatherum</u> bramble and hogweed all locally common. Patches of hawthorn scrub and <u>Privet</u> scrub exist. Tall beech trees are frequent especially in the E where <u>Festuca/Anthoxanthum</u> grassland with <u>Hieracium</u> spp. and <u>Ulex</u> is below. Boulder clay over Carboniferous: (Dinantion) Upper Oil-shale group.
<u>GLASGOW DIVISION; NORTH AREA</u>								
R280	13 June	NS 848672	Forrestfield	Edinburgh-Glasgow (via Bathgate)	S	Emb (& Flat)	4.2-7.8	Patchy stands on slope with areas of <u>Festuca/Poa</u> and <u>Arrhenatherum</u> grassland. Briar thickets are common and <u>Hieracium</u> is an abundant forb over <u>Galium aparine</u> and pleurocarpous mosses. The damp flat is <u>Deschampsia caespitosa</u> , sallow <u>Sphagnum</u> and marsh forbs.
					N	Emb (& Flat)	6.5-7.6	More disturbed and drier. <u>Molcus mollis/Festuca</u> Grassland - open and with tall-herbs co-dominant <u>Dryopteris</u> , <u>Filipendula</u> , <u>Urtica</u> , <u>Equisetum</u> etc. over <u>Brachythecium</u> . Barer patches have abundant <u>Cardamine</u> and <u>Myosotis</u> . Sallow and raspberry common. Good turf by fence at T3.
R281	13 June	NS 811785	Dalnair	Edinburgh-Glasgow (via Falkirk)	S	Flat (& cut)	0.3-4.7	In the W stone wall with narrow balled flat below colonised by <u>Festuca</u> and bryophytes. The low cutting bank to the E has rank <u>Arrhenatherum/Festuca rubra</u> grassland with <u>Equisetum</u> . Herb and species - poor.
					N	Flat (& cut)	8.3-8.4	In the W <u>Salix caprea</u> scrub over open, often burnt, grassland of <u>Arrhenatherum</u> and <u>Festuca rubra</u> . The east area has a partly colonised ballast flat by the line, species-rich and with <u>Poa</u> spp. and rosebay common. Behind it is a shallow slope covered in mixed coarse grassland with a patch of <u>Symphytum tuberosum</u> , <u>Chaenorhium</u> , <u>Polygonum bistorta</u> present

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R282	14 June	NS 643882	Bogside	Springburn-Coatbridge	N	Flat 75.6-78.3	Very wide cinder and ballast flats largely colonised by open sallow and birch scrub over <u>Deschampsia flexuosa</u> , <u>Agrostis tenuis</u> and <u>Polytrichum</u> spp.. To the W opens out with some rich fescue grassland, plus <u>Dactylis</u> , <u>Holcus</u> spp. <u>Equisetum</u> and <u>Aster</u> . Disturbed areas are common nearer the line and damp patches have <u>Carex</u> spp., <u>Juncus tenuis</u> and <u>Dactylorhiza purpurella</u> .
					S	Flat/ 1.5-5.5 Cut	Cutting once burnt coarse herb-rich grassland of <u>Dactylis</u> with <u>Equisetum</u> and <u>Agropyron</u> plus <u>Linaria</u> . A hawthorn hedge behind and much low bramble. Narrow disturbed fiat to W has rosebay, <u>Equisetum</u> and <u>Festuca</u>
R283	14 June	NS 691731	Drumbreck	Edinburgh-Glasgow (via Falkirk)	N	Emb 3.8-10 (& Flat)	Very heavily ballasted slope with some <u>Dactylis</u> / <u>Arrhenatherum</u> grassland surviving by the fence and <u>Salix caprea</u> scrub in the W with the ground cover obliterated.
					S	Emb 9.3-26.2 (& Flat)	Species-poor slope with ballast patches. Main cover coarse <u>Arrhenatherum</u> grassland with bramble and raspberry thickets scattered over. <u>Festuca rubra</u> common near the line. <u>Filipendula</u> often dominant on damp lower slopes. Rosebay and <u>Trifolium medium</u> locally abundant.
R284	15 June	NS 722750	Easter Board	Edinburgh-Glasgow (via Falkirk)	S	Emb 17.3-23.4 (& Flat)	Coarse often herb-rich grassland. The main cover is a mosaic of bramble, raspberry, <u>Arrhenatherum</u> / <u>Dactylis</u> / <u>Festuca</u> grassland with <u>Trifolium medium</u> and <u>Hieracium</u> . Burnt areas have pure <u>Arrhenatherum</u> ; damper with <u>Filipendula</u> and <u>Deschampsia</u> ; with <u>Equisetum</u> and <u>Urtica</u> ; stable turf with <u>Centaurea</u> , <u>Anthoxanthum</u> and <u>Agrostis tenuis</u> .
					N	Emb 22.7-25.8 (& Flat)	Coarse <u>Arrhenatherum</u> grassland near line with <u>Valeriana</u> , <u>Trifolium medium</u> and raspberry giving way below to <u>Dactylis</u> with <u>Deschampsia caespitosa</u> and scattered sallow. Zone of patchy <u>Festuca ovina</u> near fence on shale with <u>Tussilago</u> and <u>Hieracium</u> . <u>Juncus tenuis</u> , <u>Dactylorhiza purpurella</u> etc. present in damp turf on lower slope.
R285	15 June	NS 707742	Gartshore	Edinburgh-Glasgow (via Falkirk)	S	Cut/ 29.9 Flat	W cutting disturbed with patchy vegetation of <u>Deschampsia caespitosa</u> , <u>Anthoxanthum</u> , <u>Agrostis</u> and <u>Festuca</u> . In the E continuous cover of <u>Holcus mollis</u> <u>Deschampsia flexuosa</u> and <u>Dryopteris</u> spp. under birch scrub. Broad fiat above sown <u>Lolium</u> (with fescue/bent) in W; semi-natural fescue/bent in E.
					N	Cut 6.2-13.1 (& Flat)	Stepped cutting at T4 dominated by mixture of rosebay and bramble with scattered hawthorn, <u>Acer</u> and a little <u>Aegopodium</u> and <u>Galium aparine</u> below. Further E scrub cover becomes continuous with birch, oak, raspberry, sallow, bumble over patchy fescue, <u>Fragaria</u> and <u>Galium aparine</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
<u>SOUTH-EAST DIVISION; EDINBURGH AREA</u>							
R286	26 June	NO 334001	Little Lun	Methil-Thornton Junct.	S	Cut/ 2.4-3.5 Flat	Coarse <u>Arrhenatherum/Dactylis</u> grassland with some <u>Centaurea</u> , <u>Equisetum</u> and <u>Aegopodium</u> . More diverse on ridge to E with <u>Agropyron/Festuca</u> and <u>Poa</u> plus <u>Knaulia</u> and <u>Leucantherum</u> near fence <u>Mnium hornum</u> on cess.
R287	26 June	NT 306986	Waukmill	Methil-Thornton Junct.	S	Flat/ 6.2 Cut	Old track bed with grass becoming almost continuous nearer the fence and a number of typical herbs: <u>Chaenorhizum</u> , <u>Arabidopsis</u> , <u>Verbascum</u> etc. The verge is <u>Arrhenatherum</u> and <u>Dactylis</u> coarse grassland with some <u>bramble</u> <u>Festuca rubra</u> , <u>Holcus lanatus</u> , <u>Vicia cracca</u> and locally <u>Helictotrichon pubescens</u> .
R288	26 June	NT 223979	Strathruddie	Redford-Capletrae	N	Flat/ 5.4-6.2 Cut	Very disturbed in the W with patches of tipped coke etc. Rosebay is the main cover by the fence with elder; and bramble, <u>Galium aparine</u> and <u>Arrhenatherum</u> near line. The E has large areas of mixed scrub and on established grassland similar to the S. <u>Alchemilla</u> spp. and <u>Geranium sylvaticum</u>
					S	Flat 9.1-10.2 (Cut/ Ditch)	Low slope at T1 is <u>Festuca/Arrhenatherum</u> grassland with briar invading but sprayed. Flat above similar but richer with the addition of <u>Holcus mollis</u> and <u>Centaurea</u> . Broad flat to W is coarse <u>Arrhenatherum</u> with <u>Rumex acetosa</u> by fence, and a mixed sward with rosebay by line.
					S	Flat 9.1-10.2 (Cut/ Ditch)	Slope and Flat above at T4 is <u>Deschampsia flexuosa</u> with <u>Festuca rubra</u> . Briar on slope, open on flat with good herb-rich turf including harebell, <u>Viola</u> , <u>Centaurea</u> and ribwort. Flat to W recently burnt <u>Agropyron</u> by line, <u>Arrhenatherum</u> with <u>Rumex acetosa</u> and <u>Centaurea</u> further away: <u>Filipendula</u> and <u>Urtica</u> near fence and ditch. <u>Glyceria declinata</u> etc. in ditch.

REF DATE GRID OF ACCESS RAILWAY LINE SIDE FORM WIDTH NOTES

GLASGOW DIVISION; NORTH AREA

R289 27 June NS 964773 Myrehead Edinburgh-Glasgow (via Falkirk) S Flat/ 14.1-102.8 Ballast and cinder margin with patchy grassland giving way to tall scrub - mainly sallow over Geum, Heracleum - but with elm of the low emb. at T2, with more grass underneath. T1 is huge and behind the scrub is an open tall herb community (with Bunias orientalis present) and a wide ridge covered in beech/elm.

S Flat/ 12.2-21.3 The old Bo'ness branch divides the bank. Near the main line is an open cinder/ballast flat with Poa annua, Cerastium and Senecio viscosus narrowing by a wall to the E to a strip of Equisetum. The emb. beyond the old line is dominated by Festuca rubra, rosebay bramble etc. in a mosaic of scrub, tall herb and coarse grassland.

SOUTH-EAST DIVISION; EDINBURGH AREA

R290 27 June NT 124819 Jamestown Edinburgh-Inverkeithing W Cut/ 11-16 Rubble-strewn emb. to N with vegetation almost confined to narrow flat by line: Ulex, Arrhenatherum and good turf with Thalictrum minus and Astragalus glycyphyllos. To the S a steep bare rock cutting with heath grassland on hedges and forb-rich Festuca on flat by line. Some rarer aliens are established.

E Cut/ 9.8-17 The emb is continuously vegetated with Sambucus scrub by the fence and herb-rich coarse Arrhenatherum/Festuca nearer line with much Thalictrum. The rock cutting is gentler and with sparse Ulex, Festuca ovina etc. especially near the top.

R291 28 June NT 004890 Blairhall Dunfermline-Allon S Cut 15.2-22.4 Retaining wall with mixed deciduous scrub on uneven slope above: Salix caprea, sycamore, rowan, ash, elm over Lonicera, Dryopteris, Hedera, Mnium etc. Some rock exposure. At top a more open grass flat with Holcus mollis/Arrhenatherum, raspberry and Pteridium.

N Cut/ 18.5-24.7 High retaining wall by line. Slope is sycamore/ash/elm scrub over briar, hawthorn and bramble thickets. Ground mainly bare except near wall where ferns and coarse grasses grow. On the broad flat above herb-rich very mixed grassland with a dry ditch and scattered scrub.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
R292	28 June	NS 980896	Bluther Burn	Dunfermline-Alloa (via Oakley)	SW	Cut/ Flat	6.5-9.9	Arrhenatherum/Dactylis grassland, quite herb-rich with much Dryopteris and Centaurea nigra. To the E at T2 Filipendula is dominant with Festuca rubra invading the ballast, and with Lathyrus on slope.
					NE	Cut	6.3-7.5	Arrhenatherum/Festuca rubra grassland, herb- and species-poor but with some Urtica and Heracleum. Significant patches of Crataegus scrub over Callium sparine, Myosotis and bumble.
R292	29 June	NS 854968	Menstrie	Cambus-Menstrie	SW	Flat	1.8-6.3	Near the line Agrostis tenuis/Festuca rubra grassland giving way to Arrhenatherum/Festuca/Dactylis/Holcus lanatus with yarrow. At T2 very narrow and heterogeneous with elements of both types plus Ceratodon.
					NE	Flat (& Emb)	6.6-20.6	Broad at T3 with old line below low embankment, this having nettle and Agropyron in a coarse poor stand. The old line has Agrostis/Festuca plus Rhydiadelphus and the adjacent flats Dactylis/Arrhenatherum/Festuca with Holcus and Alopecurus. At T4 the verge is similar but narrower, with no bank and much Cynosurus.
R294	29 June	NS 930903	Kilbagie	Dunfermline-Alloa (via Culross)	W	Cut (& Flat)	8.3-16.9	Herb-poor Festuca rubra grassland with Hieracium and Carex pilulifera giving way above and to E and Poa chaixii under scrub at T2. Some Deschampsia flexuosa by line.
					E	Cut (& Flat)	9.6-16.8	By line in N mixed grassland with Festuca rubra as main sp. Above it Deschampsia flexuosa sward with Agrostis etc. At T3 narrower with rosebay/Arrhenatherum and Silene dioica on lower slope; Crataegus over ivy, bramble, Stachys on upper.
R295	30 June	NT 114884	Halbeath	Thornton Junct.- Dunfermline	N	Emb/ Flat	9.5-11.2	Coarse grassland of Festuca/Arrhenatherum with Equisetum and ribwort giving way to Dactylis and Agropyron further from line. Rumex acetosa locally abundant and patches on better drained W with much Anthoxanthum. Raspberry with Agropyron at T1.
					S	Emb/ Cut/ Flat	5.1-7.9	Emb. in E is generally covered in raspberry with coarse grassy patches near line and Urtica below. Silene vulgaris and Heracleum over Festuca/Arrhenatherum. Equisetum common by the line.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R296	30 June	NT 076846	Charlestown	Charlestown branch	N Emb (& Flat)	8.8-11.1	Ash/elder/elm/hawthorn scrub over sparse <u>Urtica</u> , <u>Galium aparine</u> , <u>Eurhynchium</u> spp. giving way in W to unstable cinder slope dominated by <u>Urtica</u> with bramble/briar, <u>Stachys</u> etc.
R297	1 July	NT 179940	Lochgelly	Thornton Junct.- Dunfermline	S Emb (& Flat)	5-9.6	Similar to Wh. portion of opposite bank but with some areas of coarse <u>Arrhenatherum</u> , <u>Urtica</u> less common, and more <u>Lamium</u> , <u>Stachys</u> , <u>Galium aparine</u> , thistles and a few tall elm trees. Large patch of <u>Bunias orientalis</u> near T3.
R298	2 July	NT 265864	Kinghorn	Thornton Junct.- Inverkeithing	NW Emb (& Flat)	6-7.7	Herb-rich but species-poor <u>Arrhenatherum</u> , <u>Festuca</u> and <u>Dactylis</u> grassland with much <u>Trifolium medium</u> , <u>Equisetum</u> , <u>Vicia cracca</u> and <u>Heracleum</u> plus scattered hawthorn and briar. <u>Urtica</u> becomes co-dominant near the fence in the W.
R299	3 July	NO 171167	Carey	Ladybank-Perth	N Cut/ Emb/ Flat	1.5-2.2	Very similar to SE bank, but with <u>Lathyrus pratensis</u> , <u>rosebay</u> and <u>Holcus mollis</u> also all locally common. <u>Knautia</u> frequent.
					S Emb Flat	4.6-6	Disturbed with coarse <u>Arrhenatherum</u> as main cover, and some low scrub. <u>Convolvulus</u> common, <u>Festuca rubra</u> frequent. Patch of <u>Polygonum bistorta</u> near T2. <u>Carex arenaria</u> along the cinder edge and <u>Sisymbrium altissimum</u> (with other weedy spp.) on the slope.
					N Emb (& Flat)	11.7-14	Narrow ridge to E with <u>Pteridium</u> over <u>Arrhenatherum</u> , with <u>Convolvulus</u> , <u>Oenothera</u> and <u>Galium verum</u> . Similar to W but coarser, poorer with briar/bramble above retaining wall at edge.
					S Emb (& Flat)	8.3-10.8	Flat of old track bed by line, herb and species-rich <u>Festuca rubra</u> turf plus <u>Lotus</u> , patches of <u>F. arundinacea</u> etc. Slope herb-rich coarse grassland of <u>Arrhenatherum</u> / <u>Dactylis</u> / <u>Festuca rubra</u> with much <u>Lathyrus pratensis</u> , <u>Geranium sylvaticum</u> , <u>Angelica</u> , <u>Filipendula</u> and scattered bushes.
							Similar grassland to N but with <u>Poa</u> spp also locally common, <u>Centaurea</u> frequent. <u>Alopecurus</u> near the fence and much bramble, <u>Urtica</u> and <u>Cirsium arvense</u> in the E.

REF DATE GRID OF ACCESS SITE NAME RAILWAY LINE SIDE FORM WIDTH NOTES

R300	3 July	NO 207172	Carpow	Ladybank-Perth	S	Cut	18.2-18.6	<p>Low stone retaining wall by line. Broad slope with frequent bushes of <u>Crataegus</u>, ash, rowan and willow. Ground cover is very marshy with <u>Pseudocleropodium</u> esp. common. Patches of <u>rosebay</u>, <u>Dryopteris</u> spp, and <u>Arrhenatherum</u> occur with <u>bramble</u> and <u>Urtica</u>. Rich turf near line at T1 with <u>Listera</u>, <u>Ceum rivale</u> and <u>Dactylophiza purpurella</u>.</p>
R301	4 July	NO 354122	Springfield	Ladybank-Dundee	N	Cut/ Flat	16-16.2	<p>Old track bed by line, colonised by birch, willow, <u>rosebay</u> and <u>Arrhenatherum</u>, sprayed heavily. <u>Cheamprinum</u> present. Stone wall covered in <u>Isoetium myosuroides</u> behind it and then a broad slope with drier <u>Arrhenatherum/Festuca</u> grassland and many brair thickets. <u>Silene vulgaris</u>, <u>rosebay</u>, <u>Anthriscus</u>, <u>Knautia</u> and <u>Centaurea</u> all locally common.</p>
R302	4 July	NO 428187	Seggiehill	Ladybank-Dundee	SE	Cut	3.3-8.3	<p>W end has stone wall by line with narrow flat between top and fence. Wall has <u>Grimmia</u> and <u>Tortula</u>. Flat has <u>Arrhenatherum/Dactylis/Poa</u> with <u>Urtica/Lolium</u>. Slope at T1 has quite rich grassland of <u>Arrhenatherum</u> by line giving way above to <u>Festuca</u>. <u>Knautia</u> and <u>Equisetum</u> common.</p>
R303	5 July	NO 110196	Craigend	Stirling-Perth	N	Emb/ Flat	4.5-6.6	<p>Narrow emb. at T3 with flat by line is rich <u>Festuca</u> grassland with <u>ribwort</u>, <u>Equisetum</u> and <u>birch</u> on cinder as well as willow. Ridge to E has heavy ballasting by line leaving patchy <u>Festuca</u> with <u>Fragaria/Equisetum</u>. <u>Arrhenatherum</u> and <u>Convolvulus</u> on top and rich <u>Poa</u>, <u>Trisetum</u> and <u>Festuca</u> toward fence.</p>
					NW	Cut	3.3-6.9	<p>Very heavily sprayed site. Much low scrub of ash, hawthorn and brair and a lot of low bramble. Patches of <u>Arrhenatherum</u> especially near the line.</p>
					SE	Cut	3.3-8.3	<p>Rather more <u>Arrhenatherum</u> particularly in NE. Main cover similar to SE, <u>Festuca</u>, <u>Dactylis</u>, <u>Hieracium</u> all commoner.</p>
					N	Emb	8.7-9.9	<p>Generally coarse <u>Arrhenatherum</u> grassland with <u>Agropyron</u> but with very large areas dominated by <u>Filipendula</u> especially below. <u>Rosebay</u>, <u>bramble</u>, <u>Urtica</u>, <u>brair</u>, <u>Hieracium</u> and <u>Galium aparine</u> all locally abundant.</p>
					S	Emb	8.4-8.6	<p><u>Equisetum</u> common by the line. Bank is coarse <u>Arrhenatherum/Festuca</u> with <u>Dactylis</u> locally important. Species-poor but with <u>Hieracium</u> and <u>Urtica</u> common and much <u>Vicia cracca</u>. <u>Bramble</u> invading. Ash scrub below with <u>Fibes uva-crispa</u> at T3.</p>

NORTH-EAST DIVISION; SOUTHERN AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RIALWAY LINE	SIDE	FORM	WIDTH M	NOTES
R304	5 July	NO 094294	Luncarty	Perth-Inverness	W	Flat/ Cut	3.2	<u>Arrhenatherum/Festuca rubra</u> grassland with abundant <u>Centaurea nigra</u> , <u>Knautia</u> and <u>Urtica</u> also locally common.
R305	6 July	NO 119343	Taymount	Stanley-Forfar	SE	Emb/ Flat	6.4-7.4	Old track bed by line is patchy grassland of <u>Arrhenatherum</u> with rosebay on ballast. The slope is a mixture of coarse <u>Arrhenatherum/Festuca</u> grassland, bramble/briar patches and areas of gravel. <u>Aegopodium</u> , <u>Heraclium</u> and <u>Centaurea</u> all common, <u>Alopecurus</u> frequent.
R306	6 July	NO 420510	Drumgley	Stanley-Forfar	NW	Emb (& Flat)	3.8-5.8	Similar grassland and spp. to SE slope, but with <u>Equisetum</u> common by line. <u>Anthriscus</u> generally abundant and a large <u>Prunus laurocerasus</u> bush at T4 <u>Sedum telephium</u> present.
R306	6 July	NO 420510	Drumgley	Stanley-Forfar	S	Cut/ Flat (& Ditch)	9.2-9.8	Old track bed has rosebay and patchy grass on ballast. Low ditch with algae, then slope covered in rich grassland of <u>Anthoxanthum/Dactylis/Holcus lanatus</u> with <u>Agrostis</u> and occasional <u>Arrhenatherum/Festuca</u> . Species-rich and locally herb-rich with <u>Galiumverum</u> , <u>Stellaria graminea</u> , <u>Lathyrus</u> . Much rabbit activity.
R307	23 July	NS 372669	Scart	Kilmacollm granch	N	Cut (& Flat)	7.5-8.6	Broadly similar grazed sandy grassland. <u>Galium verum</u> abundant. <u>Dactylis</u> locally dominant with <u>Poa</u> spp. <u>Knautia</u> , <u>Vicia cracca</u> also frequent and <u>Sedum telephium</u> .
R307	23 July	NS 372669	Scart	Kilmacollm granch	NE	Flat/ Cut (& Emb)	3.2-4.2	Herb-rich <u>Arrhenatherum/Festuca rubra</u> grassland with <u>Centaurea</u> and <u>Lathyrus</u> on low emb. at T1 going through small cutting with rock exposures and <u>Festuca/Agrostis</u> grassland plus <u>Cytisus</u> , <u>Jasione</u> , <u>harebell</u> etc. T2 on narrow flat of <u>Equisetum</u> and <u>Arrhenatherum</u> . Grazed by fence.
R307	23 July	NS 372669	Scart	Kilmacollm granch	SW	Flat/ Cut (& Emb)	6.2-7.3	Old track bed by line with patchy <u>Arrhenatherum</u> and rosebay, plus <u>Viola</u> , <u>Chaenorhium</u> and <u>Senecio viscosus</u> . Middle portion of cutting good calcifuge grassland with <u>Lepidium heterophyllum</u> like NE. Coarse grassland on upper slopes and at either end. <u>Arrhenatherum</u> etc as NE and couch.

GLASGOW DIVISION: SOUTH AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
R308	23 July	NS 390729	Langbank	Glasgow-Wemyss Bay	S	Emb	7.8-9.1	Generally covered in scrub, briar or tall hawthorn. At T1 bushy ivy cover much of ground with patches of <u>Dryopteris</u> whereas to E the dense <u>Crataegus</u> has a mainly bare ground layer with scrambling bramble and some <u>Urtica</u> . <u>Equisetum</u> by line.
					N	Emb	10-10.8	Bare ballast dumped and rather more open, above the retaining wall. The bulk of the slope is low dense scrub of <u>Fraxinus</u> , <u>Acer</u> and <u>Cretagus</u> . Patches of ivy below and some coarse grassland of <u>Arrhenatherum</u> . <u>Dryopteris</u> and rosebay occur commonly. T4Q3 is a rich cinder area with <u>Myosotis</u> , <u>Epilobium montanum</u> , <u>Teucrium</u> etc.
R309	24 July	NS 210718	Inverkip	Glasgow-Wemyss Bay	S	Emb/ Flat	5-7.3	Narrow bank in W on edge of <u>Larix/Acer</u> woodland. BR has bare ballast and litter with scattered <u>Dryopteris</u> and <u>Phalaris</u> . Bank widens to E and a large blackthorn thicket with <u>Festuca</u> by the line and a carpet of <u>Aegopodium</u> under the scrub. Some shade from adjacent <u>Corylus/Salix caprea</u> . Spray symptoms marked by line.
					N	Flat/ Emb	8-9.1	Broad flat to W has sallow scrub over <u>Arrhenatherum/Poa</u> grassland with <u>Urtica</u> and <u>Mercurialis</u> , plus <u>Silene dioica</u> . Near line thins out to rich fescue/bent grassland on cinder-bramble patches and some <u>Arrhenatherum</u> affected by garden waste to E. The gentle emb. at T3 is also <u>Salix caprea</u> scrub, but over bramble.
R310	24 July	NS 233729	Dunrod	Glasgow-Wemyss Bay	N	Flat (& Emb)	9.2-11.2	Flat to E had <u>Alnus</u> scrub with sallow and birch over ash. Ground cover of pleurocarpous mosses except near line <u>Dactylis/Festuca</u> occurs. T2 just W of a partially demolished viaduct over a deep valley. <u>Festuca/Holcus lanatus</u> by the line with a bank of low birch, some coarse grass, then sallow scrub on emb.
					S	Cut/ Emb (& Flat)	7.2-9.9	Stepped cutting at T4 has coarse herb- and species-poor <u>Arrhenatherum/Festuca rubra</u> grassland with clumps of <u>Dryopteris</u> and scattered <u>Equisetum sylvaticum</u> , <u>Urtica</u> by the fence and <u>Pteridium</u> raspberry to the W near bridge. Emb. at T3 has sallow/oak scrub over <u>Geum</u> spp. <u>Mercurialis</u> and <u>Stachys</u> .

REF DATE GRID OF ACCESS SITE NAME RAILWAY LINE SIDE FORM WIDTH M NOTES

GLASGOW DIVISION; NORTH AREA

R311	25 July	NS 326787	Ardmore	Glasgow-Mallaig	E	Flat/ 2.7-3.1 Emb/ Cut	Cinder flat in S with herb-rich grassland. <u>Leucanthernum/Hypericum</u> near line with <u>Equisetum</u> and <u>Festuca/Holcus lanatus/Arrhenatherum</u> by fence. This patchy vegetation includes a damp area with <u>Isolepis</u> , <u>Riccia</u> , <u>Sagina procumbens</u> . The ridge at T2 is <u>Equisetum</u> with coarse grasses and low thorn
R312	25 July	NS 236294	Portincaple	Glasgow-Mallaig	E	Cut/ 21.5-22.9 Flat	<u>Equisetum</u> and <u>Arrhenatherum/Dactylis</u> by the line. Low turf of <u>Agrostis/Festuca/Poa</u> and <u>Achillea</u> by fence, grazed. <u>Aegopodium</u> frequent.
R313	26 July	NN 315200	Glenfalloch	Glasgow-Mallaig	W	Cut/ 9.2-10 Flat	Rock cutting, dry in S with <u>Agrostis</u> , bramble, heathers etc on ledges. <u>Asplenium trichomanes</u> and bryophytes common. Damp and more shaded at T2 with <u>Pellia</u> , <u>Molinia</u> and <u>Dryopteris</u> under birch on face. Break in slope has patchy heathers, birch, <u>Ulex</u> and bent. Broad flat is tall <u>Pteridium</u> with much birch and sallow emergent and little ground cover. <u>Preissia quadrata</u> occurs.
					W	Cut/ 13.6-21.2 (& Flat)	Rock face similar but with more <u>Agrostis</u> and <u>Festuca ovina/F. vivipara</u> . Tall, damp retaining walls have much <u>Epilobium brunnescens</u> and <u>Linum</u> . Gentler slope and flat to fence have birch, rhododendron, sallow etc. in dense scrub. <u>Blechnum</u> , <u>Digitalis</u> are common and <u>Carum verticillatum</u> is present. <u>Marthecium</u> on wet ledge.
					E	Cut 6.4-14.2 (& Flat/ Emb)	Slope mostly covered in birch woodland over <u>Agrostis Dryopteris</u> spp, <u>Blechnum</u> and hypnoid mosses especially <u>Hylocomium</u> etc. Rock cutting by line at T1 has dripping rock faces with <u>Sphagnum</u> etc., <u>Narthecium</u> and <u>Huperzia</u> . An old platform at T2 has dry <u>Luzula/Agrostis</u> grassland and scrub behind of sallow cut back. A burn lined with <u>Crepis paludosa</u> and <u>Pteropteris</u> near T2
					E	Cut 6.4-14.2 (& Flat/ Emb)	Irregular bank with some rock exposures, bushy but without the woodland of W side. Mosaic of <u>Pteridium</u> , <u>Erica cinerea</u> , sallow and birch and patches of fescue/bent or <u>Molinia</u> grassland with <u>Hypericum androsaemum</u> . Bryophytes include <u>Tritomaria</u> and <u>Mnium marginatum</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RIALWAY LINE	SIDE	FORM	WIDTH M	NOTES
R314	26 July	NN 354280	Auchrioch	Crianlarich-Oban	NE	Cut/ Emb (& Flat)	7.6-7.8	Cutting in SE is calcifuge grassland of <u>Molinia</u> , <u>Agrostis</u> and <u>Festuca</u> spp. with areas of <u>Pteridium</u> , <u>Filipendula</u> and <u>Valeriana</u> . Sprayed at T1 where sallow scrub present and raspberry/ragwort colonising bare soil. Emb. to NW is cinder clope with herb-rich <u>Deschampsia flexuosa</u> , <u>Anthoxanthum/Festuca vivipara</u> and rosette forbs. Damper below with ferns.
R315	27 July	NN 335362	Beinn Dorain	Glasgow-Mallaig	W	Cut/ Emb/ Flat	12.1-13.1	Cutting similar but less sprayed. Some rich fescue turf, <u>Calluna</u> etc also present and patches of birch scrub. Flat above poorer with <u>Pteridium</u> over <u>Molinia</u> . Emb. slope at T3 similar to NE and grazed heavily. Marshy flat below with burn covered in <u>Juncus acutiflorus/Sphagnum</u> community with <u>Myrica</u> , <u>Valeriana</u> , <u>Rumex acetosa</u> and <u>Viola palustris</u> .
R316	28 July	NM 961339	Auchnacloch	Crianlarich-Oban	N	Emb (& Flat)	9.1-10.7	Mosaic of <u>Molinia/Calluna</u> with forb-rich <u>Agrostis/Festuca ovina</u> . The track-side has been burnt, grazing is high. <u>Succisa</u> and <u>Plantago</u> are common with <u>Galium saxatile</u> in the turf and frequent <u>Anthoxanthum</u> and <u>tormentil</u> .
					E	Cut/ Flat/ Ditch	12.5-12.7	Slope by line with similar herb-rich fescue/bent to W. The broad flat above has a snow-fence made of old-sleepers and a number of peat-cutting ditches. The cover is <u>Molinia</u> with <u>Myrica</u> patches, areas of <u>Calluna</u> and bits of <u>Deschampsia flexuosa/Festuca ovina</u> and <u>Anthoxanthum/Agrostis</u> . A little <u>Sphagnum</u> , <u>Ptilidium pulcherrimum</u> present.
					N	Emb (& Flat)	9.1-10.7	Nearer old station to E has scrub cover of <u>Alnus</u> over briar, with nettle on upper ballast slope and <u>Circaea</u> on flat. Bryophyte cover 80% with hypnoid spp. dominant. Opens out to W where ballast colonised by raspberry, <u>Galium aparine</u> , <u>Athyrium</u> , <u>Rhododendron</u> , <u>Thuidium</u> and <u>Eurhynchium striatum</u> .
					S	Emb/ Flat	8.9-16.7	Narrower to E with flat dominated by <u>Pteridium</u> with a little birch, and much <u>Dryopteris</u> spp. under low slope by line has <u>Urtica</u> and cinder slope. The high emb. at T3 is open cinder below colonised by <u>Teucrium</u> , <u>Epilobium montanum</u> , raspberry, briar and many clumps of <u>Asplenium</u> spp. Moss cover 20% with <u>Racomitrium</u> . Flat below has sallow scrub with birch over <u>Poa trivialis</u> and moss.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R317	28 July	NM 888316	Oban	Crianlarich-Oban	NW	Emb/ Flat	11.9-16.2 Slope to NE with birch, alder, sallow scrub over <u>Luzula sylvatica</u> . <u>Raspberry</u> , <u>Arrhenatherum</u> , <u>Urtica</u> , <u>Mercurialis</u> and <u>Pteridium</u> with <u>Dryopteris</u> all common below. Gentler slope has <u>Juncus/Molinia</u> with bilberry, <u>Myrica</u> and <u>Narthecium</u> . T2 in patch beyond this covered in very rich calcifuge grassland with abundant <u>Centaurea nigra</u> , and bracken.
R318	29 July	NN 356663	Corrour	Glasgow-Mallaig	NE	Emb/ Flat (& Ditch)	6.5-7.2 Slope by line is grazed species-rich fescue/bent grassland with locally common <u>Galium saxatile</u> , <u>Anthoxanthum plus Carex ovalis</u> , <u>Euphrasia micrantha</u> , <u>Stellaria holostea</u> and <u>Veronica officinalis</u> . Zone of <u>Juncus effusus</u> along foot of bank, then flat of <u>Eriophorum</u> , <u>Sphagnum</u> , <u>Trichophorum</u> , <u>Narthecium</u> , <u>Carex echinata</u> and patchy <u>Molinia</u> .
R319	30 July	NN 179264	Brackley	Crianlarich-Oban	S	Emb/ Flat (& Ditch)	5.8-6.3 Very similar to NE side. <u>Polytrichum</u> spp are commoner on the slope. <u>Calluna</u> more frequent on the bog, <u>Myrica</u> locally common and among the less common spp. <u>Carex pauciflora</u> , albino <u>Pedicularis</u> .
					S	Flat	5.7-6.9 <u>Deschampsia caespitosa</u> grassland with <u>Filipendula</u> near the fence and <u>Holcus mollis</u> where drier. Frequent scrub encroachment by birch and sallow. Wetter areas have <u>Juncus acutiflorus</u> with <u>Epilobium palustre</u> and <u>Viola palustris</u> . Large hypnoid moss patches with abundant <u>Cardamine colonising</u> . <u>Athyrium</u> common and good <u>Equisetum sylvaticum</u> population. Some <u>Festuca rubra</u> by the line.
					N	Flat (& Ditch)	2.6-3.1 Generally similar but considerably less scrub, and more <u>Festuca/Agrostis</u> by the cess. <u>Calceopsis speciosa</u> spreads from field.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R320	30 July	NN 050284	Allt Brander	Crianlarich-Oban	NE	Cut 9-10.4 (& Flat)	<p><u>Erica cinerea</u>/<u>Calluna</u> on rocky slope at T1 with <u>Pteridium</u> frequent and dominant on flat above where bilberry is abundant under it. Regenerating ash, sallow and rowan by line. Rock face at T2 has <u>Teucrium</u> and <u>Ajuga</u> also and a line of <u>Larix</u> trees by the fence above. <u>Corydalis claviculata</u> occurs and hypnoid mosses account for up to 80% ground cover.</p> <p>Considerable ballasting and some natural scree, the latter with <u>Asplenium</u>, harebell, <u>Thymus</u> and <u>Racomitrium</u> common on stabler edges. The broad SE end has rosebay by line giving way gradually to bracken by fence; a little bramble occurs in a very poor vegetation. T3 has ash scrub over <u>Dryopteris</u> and bramble with abundant <u>Hypnum</u> giving way near line to more open rough vegetation.</p>
R321	31 July	NN 269810	Keppoch	Glasgow-Mallaig	S	Flat/ 6.5-6.7 Emb	<p>Most of site has fescue/bent grassland by the line with invading rosebay. Ditch at foot of slope has much <u>Juncus effusus</u> and <u>Molinia/Holcus</u> grassland with raspberry and sallow grow on the fiat etc. The old platform of Roy Bridge Stn. has birch woodland over ash and rowan with <u>Agrostis</u> below and considerable fescue nearer line. <u>Aquilegia</u> is common.</p>
					N	Flat 0.9-3.9	<p>Wn. part of site is a narrow cinder flat with sparse <u>Festuca ovina</u>, <u>Aira</u> and <u>Hypericum humifusum</u> plus frequent <u>Polytrichum</u> spp. The platform at T3 is disused and largely colonised above by <u>Festuca rubra</u> grassland with <u>Dactylis</u>, low birch and abundant <u>Trifolium</u> spp. The stonework has a rich cryptogam flora including abundant <u>Orthotrichum affine</u> and some <u>Cystopteris</u>.</p>
R322	1 August	NN 021784	Fassfern	Glasgow-Mallaig	S	Flat/ 3.5-3.8 Emb	<p>Low slope W of bridge of <u>Holcus mollis</u> grassland with large moss patches down to ash and hawthorn scrub by the fence. Fiat to the E has similar herb- and sp-poor grassland but with invading <u>Pteridium</u>, bramble and cleavers.</p>
					N	Flat 2.4-4.7	<p>Mainly scrub-covered but markedly cut-back and sprayed. <u>Alnus</u> common with <u>Fraxinus</u>, <u>Corylus</u> and bramble. Grassy fringe by line of <u>Dactylis</u> to the E and fescue/bent to W. <u>Ranunculus repens</u> common with <u>Hypnum</u> etc. at T3. <u>Rubus spectabilis</u> at T4. <u>Luzula sylvatica</u> common where bank slopes down to river.</p>

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
R323	1 August	NM 879816	Glenfinnan	Glasgow-Mallaig	N	Cut	24.8-30.5	Mainly coarse herb- and sp-poor <u>Molinia</u> with frequent low <u>Myrica</u> and <u>Salix aurita</u> . Rock exposures by line and burnings c. 1978: leaving regenerating <u>Calluna</u> and <u>Rumex acetosella</u> . <u>Festuca vivipara</u> , <u>Campylopus</u> spp. etc. common on ledges. <u>Sphagnum</u> patches with <u>Drosera</u> , <u>Narthecium</u> , <u>Erica tetralix</u> . <u>Pteridium</u> along fence.
R324	1 August	NM 709850	Bearsdale	Glasgow-Mallaig	S	Flat/ Emb/ Cut	6.9-18.6	Low cutting to E has much <u>Salix aurita</u> but otherwise similar <u>Molinia</u> grassland to N. This latter with rather frequent <u>Pteridium</u> covers the broad flat above. A medium emb. to the W at T3 has <u>Pteridium</u> /raspberry with patches of <u>Molinia</u> , bent/fescue, rosebay etc. <u>Tormentil</u> ubiquitous.
R324	1 August	NM 709850	Bearsdale	Glasgow-Mallaig	S	Cut/ Flat	33	Tall birch woodland over <u>Calluna</u> or <u>Agrostis</u> / <u>Deschampsia flexuosa</u> with a thick hypnoid moss layer usually c. 70% cover. Opens out on upper slope and flat to <u>Pteridium</u> / <u>Calluna</u> . Stream produces dripping cliff with <u>Dicranella squarrosa</u> , <u>Parnassia</u> and <u>Mycelis</u> . <u>Gymnocarpium</u> abundant on cleared line edge.
R325	2 August	NM 676887	Sunisleather	Glasgow-Mallaig	E	Flat (Emb/ Cut)	17.5-18.7	Dry rocky slope with tall <u>Calluna</u> on ledges becoming continuous above and giving way to <u>Pteridium</u> on flat to W. Scree frequent. To W damp cliff with mixed scrub along top of sallow, birch and rhododendron, with <u>Osmunda</u> , <u>Hypericum androsaemum</u> , <u>Phyllitis</u> etc. Excellent variety of acrocarpous mosses on rock face.
R325	2 August	NM 676887	Sunisleather	Glasgow-Mallaig	E	Flat (Emb/ Cut)	17.5-18.7	Low emb with areas of bare cinder, <u>Agrostis</u> , <u>Holcus lanatus</u> , <u>Pteridium</u> and <u>Rumex acetosa</u> . Rest of veg. derived from broad flat of <u>Molinia</u> grassland - herb and sp-poor to N, but with abundant <u>Filipendula</u> and some <u>Juncus</u> to S. End of T1 rises to fence on a rich calcifuge grassland with <u>Succisa</u> , <u>Rumex acetosa</u> , <u>Potentilla erecta</u> and <u>Holcus mollis</u> all abundant.
R325	2 August	NM 676887	Sunisleather	Glasgow-Mallaig	W	Flat (& Emb)	15.7-16.2	Emb. very similar to E but with much <u>Athyrium</u> and a solitary tall rowan at T4. The broad flat below is again a <u>Molinia</u> bog, burnt especially to N where <u>Trichophorum</u> , <u>Erica tetralix</u> , <u>Myrica</u> , <u>Eriophorum</u> and <u>Narthecium</u> are locally co-dominant. Poorer and ranker to S.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
R326	2 August	NM 676939	Becraidbeg	Glasgow-Mallaig	E	Emb/ Flat etc	11.4-15.4	Low disturbed emb. by line: scrub patches and mixed coarse vegetation of <u>Arrhenatherum</u> , <u>Rumex acetosa</u> , abundant <u>Dryopteris</u> , patches of <u>Poa/Agrostis</u> , brambie, <u>Deschampsia caespitosa</u> . Uneven flat with ditches and positive slopes below covered in herb- and sp-poor <u>Molinia</u> with <u>Myrica</u> and <u>Erica tetralix</u> . <u>Potentilla erecta</u> ubiquitous but low cover. <u>Bryophytes</u> excluded by litter.
					W	Emb/ Flat etc	7.2-14.5	Emb. very similar to E, but with more bare cinder. <u>Ceratodon</u> and <u>Polytrichum</u> spp common. Broad flat below with ditches similar to other bank with <u>Pteridium</u> invading from fence edge. <u>Carex</u> spp well represented.
R327	12 August	NJ 169621	Whitefield Croft	Aberdeen-Inverness	S	Emb (& Flat)	4.1-5.8	Mainly herb- and sp-poor coarse <u>Arrhenatherum</u> grassland with <u>Dactylis</u> and <u>Festuca rubra</u> locally common and scattered briar. Ridge at T1 has ballast/cinder dumping with <u>Cirsium/Equisetum</u> . <u>Convolvulus</u> common at T2
					N	Emb/ Flat	3.8-4	Generally similar but steeper, less ballasted and with very mossy grazed turf by fence. Grassland around MP cut back. <u>Centaurea nigra</u> and <u>Anthriscus</u> frequent. <u>Chaerophyllum</u> present.
R328	12 August	NJ 243615	Barmuckity	Aberdeen-Inverness	N	Cut (& Flat)	5.3-6.3	Herb and sp-poor <u>Arrhenatherum</u> grassland with locally co-dominant <u>Festuca rubra/Agrostis tenuis</u> . <u>Dactylis</u> occasionally common and briar forms large thickets. <u>Poa pratensis</u> dominant at T2 and scattered elsewhere often with abundant ribwort. <u>Ononis</u> is present but little else of interest.
					S	Cut (& Flat)	10	As N side but a stepped cutting with a line of dumped ballast and raspberry common at top of T3. <u>Cytisus</u> is colonising to E and bramble spreading from fence. Richer mossy grassland occurs on upper flat. A little <u>Deschampsia flexuosa</u> and <u>Atrichum</u> grows here. <u>Descurainia</u> and <u>Geranium pyrenaicum</u> to E.

NORTH-EAST DIVISION; INVERNESS AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	WIDTH FORM M	NOTES
R329	13 August	NJ 084614	Newton of Struthers	Aberdeen-Inverness	N	Cut/ 2.6-2.9 Flat	Coarse herb- and sp-poor grassland mainly of <u>Arrhenatherum</u> , but locally with <u>Dactylis</u> dominant, and <u>Festuca rubra</u> common throughout <u>Agropyron</u> and <u>Agrostis</u> in patches. <u>Plantago lanceolata</u> abundant to E, yarrow common.
					S	Cut/ 6.3-6.7 Emb	Ridge all along. Vegetation very like N but coarser with <u>Heraclium</u> , <u>Urtica</u> and <u>Cirsium</u> arvense common and some area dominated by <u>Festuca rubra</u> . Some arable weeds of the sand soil spread from adjacent fields.
R330	13 August	NJ 000577	Newton of Dalvey	Aberdeen-Inverness	S	Cut 10.3-10.6 (& Flat/ Emb)	Uneven slope, rather bushy especially to E. Birch common with some oak and rowan, over bramble and rosebay, the latter common at top of T2. Grassland remaining is a locally very rich calcifuge turf of <u>Festuca/Agrostis</u> with <u>Anthoxanthum odoratum</u> and <u>Deschampsia flexuosa</u> . Turf cut back by MP and especially good there. <u>Viola</u> , <u>Lonicera</u> , <u>Lotus</u> , <u>Rumex acetosa</u> all common. <u>Holcus mollis</u> under rosebay and <u>Pteridium</u> scattered in scrub.
					N	Cut 5.9-7.5 (& Flat)	Parched and sprayed grassland, fescue/bent with healthy <u>Dactylis</u> tufts and low invading bramble. Line of oaks along fence shade upper slope and flat. <u>Sedum telephium</u> frequent. <u>Ulex</u> occasional
R331	14 August	NH 560463	Groom	Inverness-Wick	S	Cut/ 2.9-4 Flat	Coarse herb- and sp-poor <u>Arrhenatherum</u> with <u>Festuca rubra</u> subdominant. <u>Equisetum</u> locally common. <u>Poa sp</u> <u>Urtica</u> and <u>Anthriscus</u> frequent. V. little briar.
					N	Flat/ 5.4-6.5 Cut	Flat of old track bed has mosaic of bare ballast <u>Polytrichum</u> , grassland of <u>Holcus lanatus</u> , <u>Festuca/ Dactylis</u> , large <u>Brachythecium rutabulum</u> patches, <u>Trifolium repens</u> , rosebay, <u>Viola hirsuta</u> , <u>Heraclium</u> and damp birch/sallow scrubs with <u>Dactylorhiza</u> . Slope behind of T4 is bramble/briar with <u>Equisetum</u> . <u>Arrhenatherum/Festuca</u> and flat at T3 is grassland like S side, <u>Pilosella aurantiaca</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R332	14 August	NH 490597	Achterneed	Dingwall-Kyle	N	Cut 4.8-12.5 (& Ditch)	Low cutting E of bridge has patchy disturbed vegetation of <u>Ivy</u> , <u>Arrhenatherum</u> , <u>Holcus lanatus</u> and <u>Agrostis tenuis</u> . Some stumps of elm to the W much higher with large areas of rank grassland where <u>Angelica</u> briar and raspberry grow. Ditch above dominated by elm scrub over <u>Urtica</u> , raspberry, <u>Silene dioica</u> etc. Lower slopes have ash fringe.
					S	Cut 1.7-4.5 (& Flat)	Low bank by MP has coarse <u>Arrhenatherum/Dactylis</u> grassland and edges by fence are very rich <u>Festuca/Poa/Agrostis</u> turf. The wider slope W of the bridge has ash scrub with areas of <u>Deschampsia caespitosa</u> and <u>Holcus mollis</u> grassland. <u>Dryopteris</u> and <u>Rosa</u> common, <u>Crataegus laevigata</u> here.
R333	15 August	NH 014488	Achnashellach	Dingwall-Kyle	N	Cut 12.2-14.8	Tall mixed community of <u>Pteridium</u> , <u>Athyrium</u> . <u>Dryopteris</u> spp and raspberry with areas of <u>Calluna</u> and some herb-rich fescue/bent turf underneath. Rock exposures by line have <u>Carex</u> spp, <u>Calluna</u> and bilberry. A burn gully crossing the bank has <u>Filipendula</u> etc. Scrub significant esp. in E where alder, pine, Sitka spruce, rowan and an odd <u>Sorbus</u> sp. grow over <u>Molinia</u> etc. <u>Isolepis</u> on cess.
					S	Flat 2.3-2.7 (& Ditch)	Similar in spp. to N but disturbed and impoverished. Patches of cinder and ballast have a rich hypnoid moss cover. <u>Ranunculus repens</u> is frequent, and bramble well-established. A ditch in the cess channels off the burn from the N.
R334	15 August	NG 890357	Ardnarff	Dingwall-Kyle	S	Cut 1.1-1.4	Ballast verge by fence with patchy <u>Festuca rubra</u> , <u>Holcus lanatus</u> , <u>Deschampsia flexuosa</u> , <u>Calluna</u> , <u>Erica cinerea</u> , <u>Luzula sylvatica</u> , much <u>Hylacomium</u> etc and a number of Sitka spruce saplings.
					N	Flat 1.2-3.7	W end relatively broad; ballast colonised by <u>Deschampsia flexuosa</u> with <u>Calluna</u> , <u>Luzula sylvatica</u> and tall Sitka spruce and larch. Moss cover 40% with hypnoid spp and much <u>Polytrichum</u> . Narrow E end has raspberry plus <u>Deschampsia caespitosa</u> and <u>Holcus lanatus</u> over <u>Oxalis</u> and mosses. Culvert under line has <u>Chrysosplenium oppositifolium</u> and <u>Epilobium brunnescens</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R335	16 August	NH 278613	Achanalt	Dingwall-Kyle of Lochalsh	W	Cut/ 12-14 Emb (& Flat)	N end has very herb- and sp-rich <u>Festuca vivipara</u> / <u>Agrostis tenuis</u> on flat by line with <u>Salix aurita</u> . Cutting slope above has <u>Molinia</u> , <u>Agrostis</u> spp and <u>Calluna plus Trientalis</u> . Rock cutting to S with some boggy areas above. T2 ballast emb. with patchy grassland of fescue/bent and <u>Racomitrium</u> , then shallow pasture slope to fence of <u>Pteridium</u> over more fescue/bent turf.
R336	16 August	NH 394614	Garve	Dingwall-Kyle of Lochalsh	E	Cut/ 2.3-4.7 Emb (& Flat)	Flat at N end similar to T1 opposite but more sprayed, and with <u>Polytrichum</u> common, <u>Calluna</u> and raspberry significant. The rock cutting to the S has the same mixture of rich fescue/bent and boggy <u>Molinia</u> . T3 is a low ballast emb. with <u>Poa pretensis</u> , fescue and <u>Pteridium</u> .
R337	17 August	NH 691872	Ardvanie	Inverness-Wick	SW	Cut/ 3.5-4.5 Emb/ Flat	Belt of ash scrub with elm and <u>Populus canescens</u> over <u>Dryopteris filix-mas</u> . <u>Deschampsia flexuosa</u> and <u>Holcus mollis</u> on strip by line. Much unstable cinder.
					W	Cut 7-12.8 (& Emb)	Most of site is wide cutting with scattered boulder and vegetation cover of <u>Calluna</u> with some <u>Erica cinerea</u> , with an open canopy of birch and bracken. Ground cover 50% hypnoid mosses, some <u>Deschampsia flexuosa</u> and bilberry. <u>Trientalis</u> present. T4 atypical: low emb. of fescue/bent with <u>Digitalis</u> giving way to <u>Dryopteris/Pteridium</u> and <u>Holcus mollis</u> on the cutting to fence.
					NE	Cut/ 3.5-5 Emb/ Flat	Main cover <u>Arrhenatherum</u> grassland with invading bramble. Herb- and sp-rich with <u>Rumex acetosa</u> , <u>Lotus</u> , <u>Achillea</u> , <u>Hypochoeris</u> , <u>Rosa</u> spp. including <u>R. pimpinellifolia</u> . Ditch between cutting and track-side flat at T1 with <u>Dactylis</u> at T2.
							Slope of cutting at T4 and flat above burnt. Broom dead over fresh growth of <u>Arrhenatherum/Dactylis/Festuca</u> with abundant <u>Crepis capillaris</u> . Flat has hypnoid mosses and <u>Deschampsia flexuosa</u> . Ditch to E has some relict spp. unburnt. T3 is an emb with <u>Dactylis/Deschampsia cespitosa</u> by the line; bramble, <u>Dryopteris</u> and <u>Arrhenatherum</u> near fence.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R338	18 August	NH 576946	Culrain	Inverness-Wick	E	5.6-8.6 (& Cut)	Old platform in S has <u>Festuca rubra/Dactylis</u> with abundant <u>Lupinus polyphyllus</u> on ridge above it; and rosebay with similar grass on old track bed below it. A line of elm trees runs along by the fence. T2 is flat with dense rosebay over much of it, and very mossy grazed turf by fence of <u>Agrostis/Festuca</u> with <u>Viola</u> , <u>Hylacomium</u> and <u>Pilosella</u> .
R339	18 August	NC 718024	Pittentrail	Inverness-Wick	SW	3.2-6.7 Emb (& Cut)	Behind used platform is station yard with herb-rich fescue/bent plus <u>Anthoxanthum</u> , <u>Trifolium</u> spp., <u>Anthyllis</u> and <u>Euphrasia</u> . <u>Dactylis</u> by platform. <u>Birch</u> , <u>Acer</u> and <u>Fagus</u> by fence over <u>Holcus mollis</u> and <u>Aconitum</u> . <u>Swida sericea</u> scrub with privet to N and beyond old platform at T3 tall rosebay with <u>Festuca/Dactylis</u> by line.
R340	19 August	NC 957100	Loth	Inverness-Wick	N	1.7-9 Emb (& Flat)	Ridge at T1 has coarse <u>Dactylis/Arrhenatherum</u> over <u>Festuca rubra</u> becoming richer near fence. <u>Yarrow</u> , <u>Hieracium</u> , <u>Anthriscus</u> frequent and <u>Koeleria</u> present. Wider emb to SE is generally coarse grassland of same type. <u>Raspberry</u> , <u>Urtica</u> , <u>Galium aparine</u> and <u>Holcus lanatus</u> common.
					NE	2.2-2.5 Fiat/ Cut	Grassland very similar to N but with richer turf on steep cutting at T4 where harebell, <u>Lathyrus</u> are common. <u>Vicia cracca</u> , <u>Galium verum</u> , <u>Agrostis tenuis</u> and scattered briar are all common.
					S	9.3-23.2 Cut/ Emb	Very narrow grazed flat to E of bank with coarser patches of <u>Holcus lanatus</u> with <u>Arrhenatherum</u> , <u>Urtica</u> , <u>Senecio jacobea</u> and <u>Ranunculus repens</u> . Some elder.
					S	9.3-23.2 Cut/ Emb	Cutting at T4 with big rabbit population has open <u>Pteridium</u> over herb-rich calcifuge grassland of <u>Festuca rubra</u> and <u>Holcus lanatus</u> ; ribwort common. T3 has an emb. down to gully covered in tall <u>Pteridium</u> with nettle, cleavers, <u>Larix</u> and <u>Salix viminalis</u> near the bottom. Slope up from here has low <u>Pteridium</u> over patchy <u>Holcus</u> , fescue and bent and some bare sand etc.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R341	19 August	NH 818992	Drummuif	Inverness-Wick	S Flat (& Cut)	2.1-2.3	Coarse <u>Dactylis/Arrhenatherum</u> grassland over <u>Festuca rubra</u> with <u>Centaurea nigra</u> v. common, and considerable <u>Heracleum</u> . No woody plants.
					N Emb/ Ditch	9-10	Uneven verge with broad water-filled ditch all along. Grassland cover as S side but with less <u>Centaurea</u> , more <u>Anthriscus</u> , <u>Aegodopium</u> and <u>Cirsium arvense</u> . Ditch slopes have <u>Filipendula</u> and <u>Holcus mollis</u> , plus <u>Urtica</u> . <u>Phragmites</u> , <u>Phalaris</u> dominate the ditch bottom itself.
R342	20 August	NC 873345	Achentoul	Inverness-Wick	W Flat (& Emb/ Cut)	7.1-15.7	North emb has <u>Agrostis/Festuca</u> herb- and sp-rich turf with <u>Calluna</u> and <u>Pilosella</u> by line. Flat below similar by with coarser forbs. Cess flooded at T2 with <u>Ranunculus hedereceus</u> . Broad flat raised behind is grassland like the N end but herb-poor with <u>Juncus effusus</u> common.
					E Flat/ Emb	5.7-6	Emb. by line at T4 disturbed fine ballast with patchy fescue, buttercup and much <u>Rhytidadelphus squarrosus</u> . Boggy flat below dominated by <u>Carex curta</u> , <u>Potentilla palustris</u> and <u>Sphagnum</u> spp. Ditch under line has some aquatics. Flat at T3 has bent/fescue by line and <u>Molinia</u> by ditch.
R343	20 August	NC 895428	Forsinard	Inverness-Wick	S Cut/ Flat	11.6-19.6	Slope by line <u>Agrostis/Festuca</u> grassland with <u>Anthoxanthum</u> and <u>Rumex acetosa/Rnaunculus</u> spp. on heavily grazed E. Uneven flat behind has <u>Sphagnum</u> -filled ditches, rabbit-disturbed pent and in the W <u>Molinia</u> grassland. The main cover is <u>Calluna</u> moor with <u>Erica tetralix</u> , <u>Eriophorum</u> etc.
					N Cut/ Flat	10.6-23.4	Similar to S but less sallow. Gentle slope by line is patchy heather giving way to cropped <u>Agrostis</u> , <u>Festuca</u> etc. The W end is flat to the fence and is mainly <u>Molinia</u> , with bent toward line and <u>Calluna</u> away. The broad raised flat to the E is <u>Calluna</u> moor with frequent <u>Sphagnum</u> .
R344	21 August	ND 154592	Georgemas	Thurso branch	NE Emb/ Ditch	3.2-6.5	Emb. with coarse <u>Dactylis/Arrhenatherum</u> grassland, herb-rich with <u>Anthriscus</u> , <u>Heracleum</u> , <u>Stachys</u> and <u>Plantago</u> plus much <u>Calluna</u> sparino. Gave way at T2 to tall <u>Urtica</u> stand with little below bar <u>Brachythecium</u> . <u>Chrysosplenium</u> in ditch; <u>Tragopogon</u> above.
					SW Emb/ Ditch	4-7.1	Similar but with rosebay and <u>Festuca rubra</u> at T3 with the <u>Urtica</u> . The ditch is shallower and the fence-side grazed bent with <u>Viola</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
<u>NORTH-EAST DIVISION; ABERDEEN AREA</u>								
R345	17 Sept	NJ 964044	Doonies	Dundee-Aberdeen	N	Emb/ Cut/ Flat	5-9.6	Low cutting to E is herb-rich coarse grassland of <u>Festuca rubra</u> with <u>Hieracium celticola</u> (? P D Soll), <u>Dactylis</u> , <u>Poa</u> , <u>Arrhenatherum</u> and <u>Holcus lanatus</u> with a little harebell. Broader emb. at T2 is poorer with <u>Festuca/Dactylis</u> and hogweed near line and <u>Arrhenatherum/Dactylis</u> below.
					S	Cut/ Flat	2.2-2.8	Low cutting to W consists of stone wall, mostly grassed over; more exposed at E and Very mixed: <u>Festuca</u> , <u>Dactylis</u> , <u>Arrhenatherum</u> and <u>Holcus lanatus</u> with <u>Centaurea nigra</u> and <u>Tragopogon</u> .
<u>NORTH-EAST DIVISION; SOUTHERN AREA</u>								
R346	17 Sept	NJ 715562	Ferryden	Dundee-Aberdeen	SW	Cut	8.4-8.6	Steep rock cutting by line with <u>Hieracium</u> , <u>Festuca rubra</u> , some <u>Arrhenatherum/Dactylis</u> on ledges. <u>Godacrocarpous</u> moss cover with <u>Encalypta vulgaris</u> , <u>Tortula</u> etc. Gentler slope to fence is coarse herb- and sp-poor <u>Dactylis</u> or <u>Arrhenatherum</u> grassland with some <u>Agropyron</u> .
					NE	Cut/ Flat	10.7-11	Rock cutting similar to SW but with more <u>Poa nemoralis</u> , <u>Tussilago</u> and <u>Pilosella</u> plus <u>Grimmia</u> etc. Break in clope has <u>Dactylis/Festuca</u> with <u>Hieracium</u> , <u>Equisetum</u> and <u>Vicia cracca</u> . Flat to edge as SW, but <u>Leguminosae</u> common. Some ruderals on unstable soils of cliffs.
<u>NORTH-EAST DIVISION; ABERDEEN AREA</u>								
R347	17 Sept	NO 778794	Mondynes	Dundee-Aberdeen	SE	Flat/ Cut	1.8-4	Coarse <u>Arrhenatherum</u> grassland with some fescue and couch. Quite herb-rich but sp-poor with much <u>Herecleum</u> on slope to N with <u>Anthriscus</u> and <u>Urtica</u> . <u>Vicia cracca</u> and hawthorn to NE on flat.
					NW	Cut (& Flat)	2.5-5.5	Generally herb-rich coarse grassland of <u>Dactylis</u> , <u>Arrhenatherum</u> and <u>Festuca rubra</u> with <u>Tussilago</u> , <u>Ranunculus repens</u> , <u>Urtica</u> , <u>Anthriscus</u> , <u>Galium aparine</u> , <u>Heracleum</u> , <u>Plantago</u> all common and locally abundant. Much ballast dumping. Raspberry stand dominant at T3.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	WIDTH M	NOTES
R348	18 Sept	NJ 874146	Kirkton	Aberdeen-Inverness	SW Emb/ Flat	2.7-3.2	Flat by line is coarse sprayed <u>Arrhenatherum</u> and <u>Holcus mollis</u> with some <u>Dactylis</u> . Slope <u>Festuca rubra</u> grassland with subdominant <u>Dactylis herb-poor</u> with a little ribwort and <u>Rumex acetosa</u> . Mossy grazed edge by fence.
					NE Flat/ Emb	5.5-6.7	Flat by line probably old track bed with rosebay, rasperry and <u>Holcus</u> spp. colonising ballast, but latter still 60% bare. Slope has patches of rasperry, <u>Dryopteris</u> and rosebay, but much of it is covered in mixed coarse grassland of <u>Poa</u> , <u>Dactylis</u> , <u>Festuca rubra</u> , <u>Arrhenatherum</u> .
R349	18 Sept	NJ 779205	Inverurie	Aberdeen-Inverness	W Emb	13.5-14.1	Old track bed by line, locally completely colonised by <u>Arrhenatherum</u> with <u>Dactylis</u> in a herb- and sp-poor vegetation. Patchy rosebay and fescue. Slope is extremely poor coarse <u>Arrhenatherum</u> with areas of <u>Urtica</u> and <u>Filipendula</u> near the narrow bottom flat. <u>Fescue</u> , <u>Dactylis</u> etc. frequent.
					E Emb	6-6.6	Grassland very similar to W slope, but with <u>Festuca</u> locally dominant by the line and much rasperry and <u>Hieracium</u> . <u>Brachythecium</u> common. <u>Sedum telephium</u> .
R350	18 Sept	NJ 588291	The Shevock	Aberdeen-Inverness	NE Emb	2.6-2.9	Coarse locally damp vegetation of <u>Filipendula</u> / <u>Deschampsia caespitosa</u> in a rough <u>Arrhenatherum</u> / <u>Festuca rubra</u> grassland with <u>Urtica</u> , <u>Angelica</u> and much <u>Geranium sylvaticum</u> .
					SW Emb	2.8-3.2	Generally the same but with <u>Arrhenatherum</u> less important, partially replaced by <u>Holcus mollis</u> , <u>Agropyron</u> and <u>Dactylis</u> . <u>Pleurocarpous</u> mosses are commoner.
R351	19 Sept	NJ 362435	Loch Park	Koith-Dufftown	N Flat	0.7-2.5	Damp herb-rich <u>Deschampsia caespitosa</u> / <u>Holcus mollis</u> grassland with <u>Filipendula</u> over thick bryophyte layer (esp. <u>Mnium undulatum</u>). To W is very narrow and almost bare in shade of adjacent <u>Larix</u> and <u>Abies</u> .
					S Cut (& Flat)	7.6-17.6	Mainly 10 year old mixed deciduous coppice of birch, beech and <u>Acer</u> over hypnoid moss layer with scattered ferns, <u>Cicum</u> and other shade spp. To W opens out to a slope dominated by <u>Luzula sylvatica</u> with a little sallow. The upper dry slopes have <u>Erica</u> , <u>Vaccinium</u> with <u>Pyrola minor</u> , <u>Trientalis</u> and <u>Oreopteris</u> . By the line <u>Dryopteris</u> and damp grassland.

NORTH-EAST DIVISION; INVERNESS AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
R352	19 Sept	NJ 406473	Auchindachy	Keith-Dufftown	E	Flat (& Emb)	3-27.7	Low emb. to S has <u>Urtica</u> with patches of <u>Agropyron/Festuca</u> by line. Broad flat by old station has rosebay over <u>Holcus/Agrostis</u> and paths with <u>Poa annua/Bellis</u> giving way to <u>Myrrhis</u> over a lawn of <u>Chrysosplenium</u> spp. and/or <u>Lophocolea</u> . <u>Symphoricarpos</u> and <u>Larix</u> common near fence.
					W	Flat (& Emb)	5.5-12	Low bank toward T4 has rosebay with occasional <u>Larix</u> with some <u>Arrhenatherum</u> by line. Wider uneven bank to N is similar but with <u>Filipendula</u> in a ditch; <u>Deschampsia caespitosa</u> common under the rosebay, scattered regenerating mixed scrub (<u>esp. Betula</u>) and grazed turf by fence.
R353	20 Sept	NH 839250	Slochd Mor	Perth-Inverness	NE	Cut/ Emb	15.6-25.2	Siliceous rock cutting by line with <u>Festuca</u> spp. and <u>Deschampsia flexuosa</u> in crevices plus a good range of forbs (<u>Linum</u> , <u>Epilobium brunnescens</u>) and an excellent moss flora (<u>Oxystegus</u> , <u>Encalypta</u> , <u>Bryum</u> spp). Emb. slope down to A9 of <u>Calluna</u> moorland over cowberry, patches of fescue/bent grassland and a thick hypnoid moss layer.
					SW	Cut/ Flat	11.7-13.9	Rock cutting similar to NE but with more heather and <u>Barbilophozia</u> , <u>Fissidens</u> spp and <u>Racomitrium</u> all common on ledges and shale scree. The gentler slopes above and the flat at T4 have heather moor. <u>Gymnocorplum dryopteris</u> and <u>Juniperus</u> occur.
					N	Cut (& Flat)	1.8-15.3	Narrow flat to E has grazed fescue with much ribwort and <u>Cirsium heterophyllum</u> . To W <u>Dactylis</u> occurs on sprayed flat below slope. Broad slope has sandy grassland of <u>Festuca rubra</u> with <u>Poa</u> and <u>Agrostis</u> app. plus <u>Iuzula</u> , yarrow etc. V. heavily grazed and disturbed with dead <u>Cytisus</u> and much ragwort plus <u>Rumex acetosella</u> . <u>Silene</u> spp in large hybrid swarms.
					S	Cut (& Flat)	3.5-19.4	Low bank to E has coarse damp poor <u>Arrhenatherum</u> with <u>Poa</u> and <u>Deschampsia flexuosa</u> . Broad cutting slope at and near T3 is similar to N but more mixed with <u>Holcus lanatus</u> , <u>Poa subcaerulea</u> , <u>Anthoxanthum</u> as well as fescue. Herb-rich, with good hypnoid moss cover and many rabbits.

NORTH-EAST DIVISION; SOUTHERN AREA

REF DATE GRID OF ACCESS SITE NAME RAILWAY LINE SIDE FORM WIDTH M NOTES

NORTH-EAST DIVISION; BOUNDARY OF INVERNESS AND SOUTHERN AREAS

R355 21 Sept NH 881101 Lynwile Perth-Inverness NW Emb/ Flat 3.1-9.5
 Bank to E has calcifuge grassland of Festuca ovina, Agrostis tenuis and Holcus lanatus with patches of Calluna and cowberry. Deschampsia flexuosa by fence with Viola and tormentil. Birch scrub frequent but vigorously cut back. Flat to W similar but with Trientalis.
 SE Emb (& Flat) 3.3-17.6
 As NW but with more tall birch surviving and some aspen also. Holcus almost absent and Calluna more extensive. Hypnoid and Polytrichum cover extensive and similar to other side. More disturbed to SW with Trientalis. Tetraplodon occurs. Deschampsia commoner.

NORTH-EAST DIVISION; SOUTHERN AREA

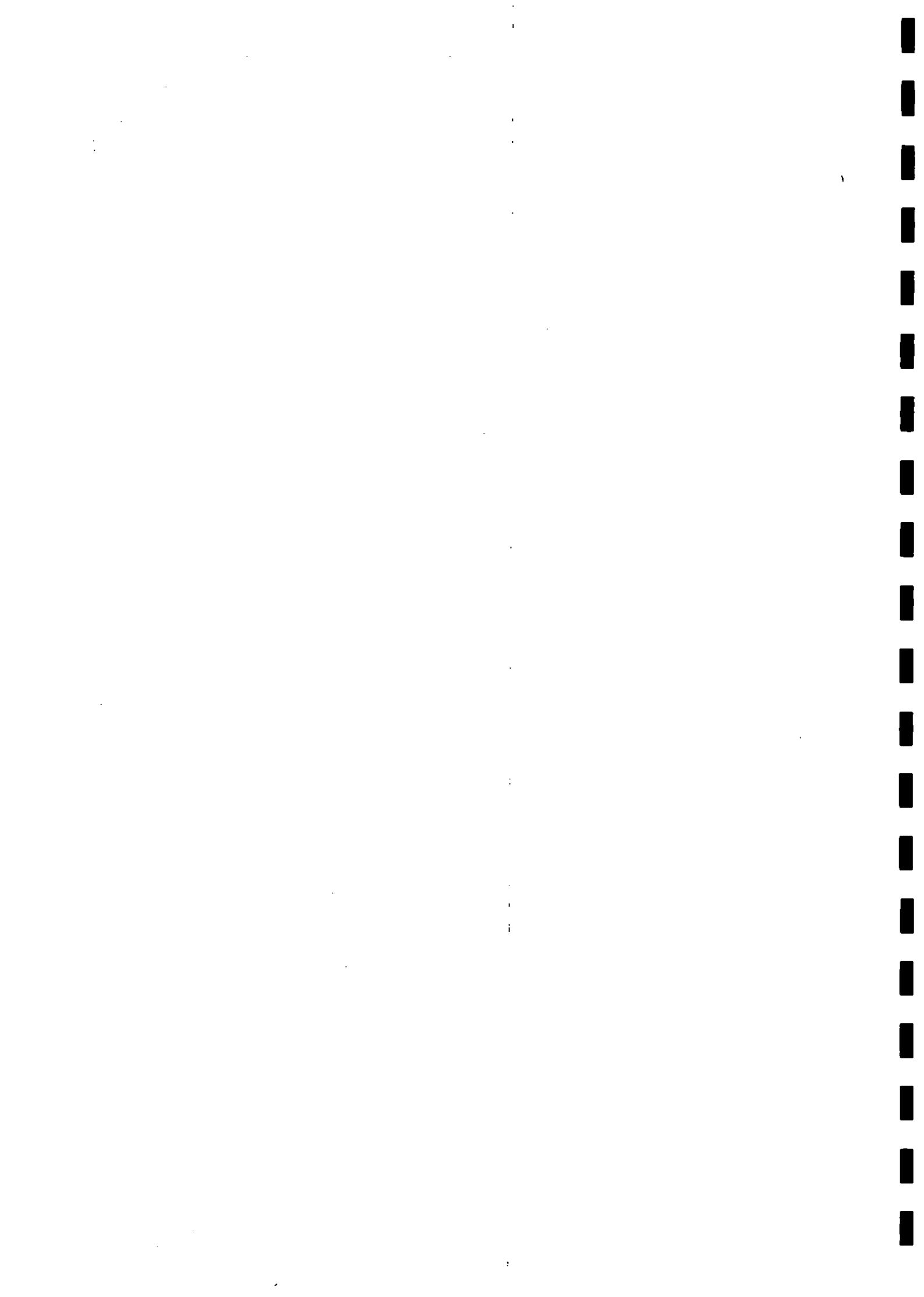
R356 22 Sept NN 730697 Dalnacardoch Perth-Inverness NE Emb (& Flat) 3.3-3.6
 Heavily ballasted and sprayed slope with coppiced scrub of rowan and Salix cinerea. Patches of Equisetum sylvaticum and fine grass.
 SW Flat/ Emb 2.5-2.8
 Mainly coarse mixed vegetation of rosebay and raspberry with scattered fescue/bent grassland Calluna along fence edge, also Erica tetralix. Flat by MP patch of herb- and sp-rich fescue/bent turf with Galium boreale and Calluna.
 R357 22 Sept NN 636742 Dalnaspidal Perth-Inverness SW Emb 4.4-7.7
 Heavily ballasted and eroded slope with raspberry at T2 over sparse Tussilago, Equisetum and some Festuca ovina/Agrostis tenuis by fence. Narrow N end is herb-rich and sp-rich F. rubra with abundant ribwort etc.

NE Cut/ Emb/ Flat 2.2-4.4
 Raised slope at T4 has a mosaic of sallow scrub. F. ovina and Holcus lanatus, invasive Calluna, scattered Tussilago and raspberry. The emb etc. to the SE is damp and coarse with F. rubra, Agrostis, Holcus mollis, Dactylis above and Juncus/Deschampsia caespitosa below.

GLASGOW DIVISION; NORTH AREA

R358 23 Sept NN 425571 Rannoch Stn. Glasgow-Mallaig W Emb/ Cut/ Flat 12.5-13.6
 T1: Emb by line has heavy cinder with Deschampsia flexuosa, Molinia and bilberry. Flat below rich Festuca ovina with Calluna clumps, much Racomitrium, Pyrola minor and Lycopodium clavatum. Slope up to fence in poor Molinia with frequent Calluna and Myrica. T2: higher emb, largely covered in Salix aurita scrub with Dryopteris. Broad flat is Molinia.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	WIDTH M	NOTES
R358	23 Sept	NN 425571	Rannoch Stn.	Glasgow-Mallaig	E	Flat/ Emb/ Cut	8.4-8.7	Broad flat by fence as W side is <u>Molinia</u> etc. <u>Carex pauciflora</u> present. Culley to N has <u>Calluna</u> with bilberry and cowberry near line plus cinder slopes. The higher slope at T3 also has heavy tipping but some more patchy sallow scrub, with rowan.
<u>NORTH-EAST DIVISION; SOUTHERN AREA</u>								
R359	24 Sept	NN 845658	Woodend	Porth-Inverness	S	Emb (& Flat)	14-14.2	Rather variable: much woody growth of <u>Cytisus</u> , raspberry and <u>Acer</u> with patchy grassland of <u>Arrhenatherum/Festuca rubra</u> , <u>Agrostis tenuis</u> with <u>Poa</u> and <u>F. ovina</u> and areas of dumped calcareous sludge and ballast.
					N	Emb (& Flat)	9.9-11.8	Large areas in E obliterated by sludge. The surviving vegetation similar to S but with considerable rosebay stands, birch and oak scrub but no <u>Picea</u> , plus <u>Teucrium</u> , <u>Aegopodium</u> , <u>Dryopteris</u> in disturbed and shaded vegetation. <u>Ranunculus repens</u> common.
R360	24 Sept	NO 005426	St Colme's Well	Perth-Inverness	SW	Emb/ Cut	4.8-7.5	Emb. to NW has dumped ballast and calcareous sludge. Some surviving <u>Acer</u> by line. <u>Arrhenatherum</u> <u>Dactylis</u> , rosebay, <u>Filipendula</u> and abundant <u>Fragaria</u> below. Cutting to SE has young oak and birch scrub over litter plus <u>Ajuga</u> , <u>Teucrium</u> , <u>Stellaria holostea</u> and mosses.
					NE	Emb/ Cut/ Flat	8.6-20	Big emb. at T4 is tall elm woodland with <u>Acer</u> . Rich field layer of ferns, <u>Mercurialis</u> , <u>Circaea</u> and <u>Poa trivialis</u> . The cutting to SE has dumped ballast along the top and birch/beechness scrub in shade of adjacent oaks. <u>Fescue/bent</u> by fence and cinder on lower slopes.



APPENDIX 2 BIOLOGICAL INTEREST SURVEY SITES 1980

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	NOTES
<u>GLASCOW SOUTH</u>						
B181	8 May	NX 181585	Pimminoch	Stranraer-Ayr	W Emb/ Cut	The embankment supports ash/sycamore scrub over mercury, bluebell, <u>Luzula sylvatica</u> , <u>Chrysosplenium</u> and large patches of <u>Symphytum tuberosum</u> . Some recent cut and tip, giving way southwards to a rock cutting with <u>Calluna/Ulex</u> , <u>Asplenium trochmanes</u> and <u>Polystichum aculeatum</u> .
					E Emb/ Cut	Similar to W.
B182	9 May	NS 255015	Killochan	Stranraer-Ayr	N Cut	A narrow low cutting, disturbed by recent track maintenance (ballasting) supporting a woodland edge community with ash/beech scrub over <u>Brachypodium sylvaticum</u> , violet, with rich, <u>Chrysosplenium</u> , <u>Epilobium hirsutum</u> meadow sweet and <u>Symphytum tuberosum</u> , giving way, towards the east, to sallow/hawthorn scrub, with rosebay bramble and some ruderals. The disused track bed is colonised with <u>Fragaria vesca</u> , <u>Poa trivialis</u> and <u>Arabidopsis thaliana</u> .
					S Cut	Similar to N verge but with many ruderals and acrocarpous bryophytes and much bramble towards the E where line runs adjacent to disused mine (not fenced in this area). There is some invading <u>Rhododendron ponticum</u> .
B183	10 May	NS 266042	Kilkerran	Stranraer-Ayr	SE Flat/ Cut/ Emb	The cinder flat near access supports a herb/bryophyte rich association with <u>Linum catharticum</u> , <u>Veronica avensis</u> , <u>Rhinanthus minor</u> and <u>Centaurium erythraea</u> . The low cutting adjacent has birch over grassland with <u>Adoxa moschatellina</u> , <u>Listera ovata</u> and <u>Viola riviniana</u> . Most of the SE verge lies on an embankment with mixed birch/elm/oak/beech/sallow, woodland, over generally bare ground with patches of mercury and <u>Anemone nemorosa</u> . Local cinder slopes support <u>Hieracium pilosella</u> , <u>Fragaria vesca</u> , <u>Anthoxanthum odoratum</u> and bramble.
					NW Flat/ Cut/ Emb	The disused siding (flat) supports <u>Equisetum arvense</u> and <u>Polytrichum juniperinum</u> , and gives way to a low cutting with forb rich (<u>Aegopodium podagraria</u> , <u>Centaurea nigra</u>) <u>Arrhenatherum</u> grassland, with invasive hawthorn and briar. Areas of bracken with briar/sallow scrub occur. Towards the SW a low cutting (adjacent to off. BR woodland) with hazel/sallow/hawthorn/elm scrub over bramble/bracken and bluebell occurs. Adder and red squirrel recorded.

REF.	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM	NOTES
B184	11 May	NX 20.90.	Pinmore	Stranraer-Ayr	W Cut	Tall scrub/woodland of sallow/birch/hazel/ash/elm, over <u>Holcus mollis</u> with <u>Anemone nemorosa</u> , <u>Dryopteris filix-mas</u> , mercury, and much <u>Rhytidinclplus triquetrus/Dicranum scoparium/Thuidium tamariscinum</u> . Clump of <u>Gaultheria shallon</u> , and <u>Calluna/Polypodium</u> /bryophytes on occasional rocky outcrops. Near a.p. a flatter bank supports fescue/bent grassland with <u>Luzula</u> spp., <u>Viola riviniana</u> and <u>Carex caryophyllea</u> (on cinder).
					E Emb	Ash/elm/birch woodland over herbaceous understorey with <u>Oxalis acetosella</u> , <u>Anemone nemorosa</u> , mercury and bluebell. Cut back and burnt near line. Much bryophyte and good population <u>Marchantia polymorpha</u> on cess.
B185	12 May	NS 47.31.	Rodinghead Cutting	Dumfries-Kilmarnock	W Cut	Coarse <u>Arrhenatherum/Festuca/Dactylis</u> grassland, locally forb rich with <u>Centaurea nigra</u> , <u>Potentilla erecta</u> , <u>Rumex acetosa</u> , <u>Aichemilla glabra</u> and <u>Agropodium podagraria</u> . The lower slopes have partially recolonised ballast with <u>Arrhenatherum</u> , <u>Tussilago farfara</u> and <u>Hieracium pilosella</u> . There are scattered bushes of sallow and hawthorn, especially towards a.p. bridge where there is also much bramble and rosebay. Grazed margin with much <u>Rhytidinclplus squarrosus</u> . Coarse, herb poor <u>Arrhenatherum/Festuca/Dactylis</u> grassland above a retaining wall which supports lichens. There are fairly extensive patches of sallow/birch/hawthorn scrub over bramble and more locally, <u>Geum rivale</u> , <u>G. urbanum</u> and <u>Dryopteris filix-mas</u> .
					E Cut	Extensive embankment above estuarine meadows. Herb and species poor <u>Agropyron/Festuca/Arrhenatherum/Dactylis</u> grassland; with occasional bushes of broom or hawthorn and bumble patches, becoming damper and more sheltered under wall at foot of slope with <u>Anthriscus</u> and meadow sweet, <u>Carex arenaria</u> with <u>vetches</u> on cindery verge adjacent to cess.
B186	12 May	NS 31.39.	Bogside Flats	Ayr-Paisley	E Emb	Similar to E slopes but rather more herb-rich, and with fescue tending to become dominant. <u>Salix repens</u> and <u>Elymus arenaria</u> on infrequent drainage gaps: <u>Myrrhis odorata</u> and <u>Petasites hybridus</u> with meadow sweet etc. at base of slope.
					W Emb	

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B187	13 May	NS 43.55.	Loch Libo	Kilmarnock-Glasgow	NW	Flat	A/SSSI	<p>A ridge of disused ballast lies adjacent to the line and is colonised by coarse forb-poor Arrhenatherum grassland, with patches of brinr/rosebay and Anthriscus and, more locally, Linaria repens and Equisetum sylvaticum. Between this and the lake, in the area of varying width, occur a mosaic of damp ground communities with meadowsweet/Alchemilla glabra and Arrhenatherum giving way to sallow/birch scrub, and intersected by ditch vegetation with Blechnum spicant Dryopteris filix-mas and much bryophyte. Part of the land has been devastated by fire and is not yet recolonised. Towards the N, where the site narrows, <u>Draba muralis</u> occurs on a ridge of cinder.</p> <p>The SE verge is comparatively narrow and supports birch/beech/sallow/hawthorn scrub, with areas of meadowsweet ferns and bramble. A ditch supports <u>Phalaris arundinacea</u> and <u>Caltha palustris</u></p>
B188	14 May	NS 33.29.	Troon Links	Troon-Ayr	N	Flat	A/SSSI	<p>Where lines diverge at N end of site, a damp triangular depression supports herb rich marshland dominated by <u>Juncus acutiflorus</u>. There is much <u>Valeriana dioica</u> and <u>Aster novi-belgii</u>. Areas of sallow scrub give way, where particularly wet to patches of <u>Sphagnum</u> with <u>Dicranum</u> and <u>Lophocolea bidentata</u>.</p> <p>Surveyed in two stretches. Sandy, light soil with herb-rich (<u>Valeriana locusta</u>, <u>Galium verum</u> <u>Myosotis arvensis</u>) fescue grassland, patches of Gorse, <u>Carex nigra</u>, <u>Ammophila arenaria</u> and <u>Rosa pimpinellifolia</u>. The more southerly stretch supported rather more bramble and scrub.</p> <p>Northerly stretch similar to W. The rest, lying adjacent to heathy woodland, with sallow, <u>Sorbus aria</u>, <u>S. intermedia</u>, raspberry and bramble fescue. <u>Montia sibirica</u> under <u>Ulmus glabra</u>, varied site with maritime influence.</p>
					SE	Flat		
					W	Cut		
					E	Cut		

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B189	14 May	NS 32.35.	Western Gailes	Troon-Irvine	E	Cut	A/SSSI	Low, sandy verge, with <u>Carex arenaria</u> and <u>Saxifraga granulata</u> very common adjacent to cess. Forb rich fescue grassland on slopes, with clover, plantain, buttercup and <u>Aegopodium podagraria</u> . Similar to E, but less wide and with fewer forbs. Abutting onto wooden slat fence.
B190	15 May	NS 604147	Loch O'Th' Lowes	Dumfries-Kilmarnock	SW	Emb/ Cut	INFO	A low cutting at a.p. with <u>Arrhenatherum/Alopecurus/Agropyron/Dactylis</u> grassland with much <u>Trifolium medium</u> gives way to an embankment above the loch, with an extensive and fairly recently tipped ridge of ballast. The ballast is partially colonised by <u>Chrysanthemum leucanthemum</u> , <u>Traxacum officinale</u> , <u>Cardamine hirsuta</u> , <u>Myosotis arvensis</u> and other annuals. Nearest boundary is a sward with <u>Phalaris arundinacea</u> , rosebay, <u>Larum album</u> and scattered sallow.
B191	16 May	NS 999143	Beattocksummit	Glasgow-Carlisle	SW	Cut/ Flat	DISC	Similar coarse grassland to SW, becoming damper, at foot of slope with <u>Filipendula ulmaria</u> and <u>Cardamine hirsuta</u> , and with areas of <u>Agrostis tenuis/Holcus mollis</u> with much <u>Potentilla erecta</u> . Patches of <u>Sedum telephium</u> on ballast ridge above, and some burn near a.p. Very little scrub. A deep cutting, locally rock-walled, with extensive flats above. More disturbed sloping areas support an <u>Arrhenatheretum</u> with rosebay, raspberry and scattered sallow. <u>Fescue/bent</u> grassland with <u>Deschampsia flexuosa</u> and much <u>Galium saxatile</u> occurs on ledges, some slopes and parts of the flat; which also supports <u>Molinia</u> and <u>Nardus</u> grasslands, with much rush where damp. Areas of rock and shale have <u>Racomitrium</u> heath and <u>Calluna</u> , whilst damp and slopes support a rich bryophyte flora, and, locally much <u>Stellaria alsine</u> and <u>Cardamine flexuosa</u> . Similar to the opposing face, but rather wetter and with extremely healthy populations of Bryophytes, including <u>Aulacomnium palustre</u> , <u>Drepanocladus uncinatus</u> and <u>Pohlia delicatula</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B192	17 May	NX 89.94./95.	Cample	Dumfries-Kilmarnock	E	Cut	DISC	<p>The verge runs adjacent to improved grassland, before entering a forestry plantation (N). Initially the bank has herb rich, recently burnt grassland, of patchy <u>Arrhenatherum</u>, <u>Festuca rubra</u> and <u>Anthoxanthum</u>. There is abundant <u>Chrysanthemum leucanthemum</u>, <u>Viola riviniana</u>, <u>Plantago lanceolata</u> and <u>Potentilla erecta</u>. The area through woodland is partially shaded by beech, birch and sycamore. It supports bracken over <u>Holcus mollis</u> and, more locally <u>Anthoxanthum odoratum</u>. Gorse, oak and white poplar scrub have recently been cleared, and in disturbed (ballasted) areas near the track there is raspberry, <u>Cardamine hirsuta</u>, <u>Arabis thaliana</u>, <u>Myosotis arvensis</u> etc.</p> <p>Through woodland the verge supports a similar flora to the E slope, although it is more heavily disturbed, with more ballast and earth tipping, and more ferns and bramble. Where the line emerges from partial woodland shade fescue/bent grassland with <u>Plantain</u> and <u>Luzula</u> spp. tends to replace the <u>Holcus mollis</u> / <u>Anthoxanthum</u> turf. A recent ridge of cindery ballast is partially colonised by <u>Cerastium arvense</u>, <u>Arenaria serpyllifolia</u>, <u>Lepidium heterophyllum</u> and <u>Bryum argenteum</u> (otherwise surprisingly uncommon in SW Scotland).</p>
B193	4 June	NT 79.67	Penmanshiel	Newcastle-Edinburgh	W	Cut	DISC	<p>This stretch of line skirts the old Penmanshiel tunnel (now closed) and much of it has been recently excavated and laid (1979-80). Although there are patches of surviving grassland (<u>Anthoxanthum/fescue/bent</u>) most of the slopes have been seeded with <u>Lolium perenne</u>, which with the exception of occasional adventitious dicots, forms a nearly continuous sward.</p> <p>The slopes, with much recently blasted bare rock, support a similar (to W) seeded <u>Lolium perenne</u> sward with some remnant scrub and grassland. It will be of interest to record the succession from, and relative competitiveness of, rye grass.</p>

SOUTH EAST AREA; EDINBURGH

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B194	5 June	NT 96.59.	Burnmouth Coast	Newcastle-Edinburgh	W	Cut	A/SSSI	A very wide slope with excellent herb and species rich fine-leaved grassland, <u>Fescues/Anthoxanthum/Briza/Helictotrichon</u> dominate the sward which has much <u>Bellis/Anthyllis/Hieracium pilosella/Brachypodium sylvaticum</u> and abundant bryophyte. <u>Cowslip, Origanum, Dactylorhiza purpurella</u> and <u>Orchis marcula</u> are common. There are several "maritime" species - <u>Silene, Plantago, Armeria</u> and <u>Thymus drucei</u> and <u>Cochlearia officinalis</u> occur on cinder. Towards the south the site becomes less base rich, and patches of <u>Calluna</u> occur.
B195	6 June	NT 008572	Cobbinshaw Reservoir	Edinburgh-Carstairs	E	Flat/ Cut	A/SSSI	Much of this side is a narrow, wall-bounded flat above slopes/cliffs dropping to sea. Cuttings support similar grassland to W slopes, and become base poor towards S.
B196	7 June	NS 94.47.	Carstairs Kames	Edinburgh-Carstairs	SE	Flat	A/SSSI	Area of marsh and moorland with occasional stands of rosebay. The marsh has much soft rush, with <u>Cirsium palustre</u> and invasive <u>sallow</u> . The moor has <u>Holcus mollis</u> , <u>Deschampsia flexuosa</u> , <u>fescues</u> , <u>Molinia</u> , <u>ling</u> and <u>Galium saxatile</u> . The marsh is wetter on this side and includes <u>Carex rostrata/C. nigra/Potentilla paustris Eriophorum</u> spp. and much <u>Sphagnum</u> . There are moorland patches near access. Peat over Carboniferous lower limestones.
B196	7 June	NS 94.47.	Carstairs Kames	Edinburgh-Carstairs	SE	Flat	A/SSSI	A/p near salt depot has cinder flats with herb and species rich calcifuge turf of bent/fescue/ <u>D. flexuosa</u> with heather locally dominant. <u>Pine</u> <u>lime</u> and <u>sycamore</u> are encroaching. This gives way northward to flat with ditch were line crosses ombrogenous mire. Near track is a calcifuge turf, with <u>Equisetum</u> spp. in cindery areas. Ditch, has <u>Sphagnum</u> and sedges, whilst <u>sallow scrub</u> , <u>Calluna</u> and <u>Eriophorum</u> spp. dominate land near fence. <u>Salix pentandra</u> and <u>S. phyllificifolia</u> present.
					NW	Flat/ Cut		A low cutting near a/p with calcifuge turf, gives way to flat with ditch similar to SE side. Some of adjacent mire included which has succeeded to <u>sallow/birch scrub</u> . Sedges and fine-leaved grasses occur near track. On cinder there is much <u>Equisetum palustre</u> and extensive mats of <u>Peltigera</u> spp.

GLASGOW SOUTH

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
<u>SOUTH EAST, EDINBURGH</u>								
B197	8 June	NT 32.70.	Millerhill	Millerhill Yard		Flat	DISC	The site is a large shunting yard with extensive cinder flats and ballasted areas bordered by embankments supporting a coarse Arrhenatheretum. Cinder associations vary from a low open turf of bryophytes (esp. <u>Bryum</u> and <u>Polytrichum</u> spp. and <u>Funaria</u> / <u>Aira/Sagina</u> to a closed herb rich grassland of fescue/Poa with clover and vetching. Where ballast occurs, tall herbs, including <u>Senecio squillidus</u> , thistle and <u>Reseda</u> , come in. There are clumps of sallow, and pine and a planted boundary of poplar.
B198	11 June	NS 98.61.	Skolte Burn	Edinburgh-Glasgow (via Shotts)	S	Emb	A/SSSI	A steep, very cindery (slag from nearby pits?) embankment kept open by burning, and colonised by an open community of hawkweeds, sorrel, and annual spp. Occasional clumps of sallow, with <u>D. caespitosa</u> and rushes at emb. foot. Acrocarpous bryophytes, esp. <u>Bryum capillare</u> , <u>Funaria hygrometrica</u> , <u>Polytrichum juniperum</u> and <u>Ceratodon</u> abundant.
B199	12 June	NT 14.77.	Dalmeny	Edinburgh-Perth Junction Linnithgow Branch...	N	Emb		Also an unstable cindery slope with much bryophyte and <u>D. flexuosa</u> locally abundant. Some beech/birch/alder scrub to E with <u>Equisetum sylvaticum</u> plentiful below. The site is a four way junction, with fairly steep cuttings flattening southwards. The disused line (NE of site) has a grassy (<u>Lolium/Poa annua</u>) flat with footpath, and cutting slopes with mixed deciduous woodland and some rock exposures. The main line cutting has areas of herb and species rich callifuge turf giving way to recently cut elm scrub. Southwards at the junction some weedy areas occur. The Linnithgow branch has a coarse Arrhenatheretum below, giving way to broom, bramble, briar and rosebay.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM STATUS	NOTES
<u>GLASGOW, NORTH</u>						
E200	14 June	NS 643682	Bogside	Springburn-Coatbridge	Flat	DISC The site lies between an old track bed, partly flooded, and the line. It is a gradually widening area of cinder and ballast, which, if cleared up would make a useful local reserve. The cinder/ballast is colonised by an open mixed sallow scrub with scattered birch, over <u>D. flexuosa</u> and much acrocarpous bryophyte. There are patches of <u>Juncus tenuis</u> . In damper areas, swards with <u>Dactylorhiza purpurella</u> and <u>Pohlia delicatula</u> occur. To the east of the a.p. is a large stand of <u>Salix purpurea</u> and disturbed adjacent areas support <u>Echium vulgare</u> , <u>Lepidium heterophyllum</u> and <u>Centaurea nemoralis</u> . See also R282.
<u>SOUTH-EAST EDINBURGH AREA</u>						
E201	27 June	NS 98.85.	Torry Bay	Dunfermline-Alloa	S	Flat A narrow verge with sea wall or iron railings. <20% cover of bramble/ <u>Sedum acre</u> /horsetail on cinder.
					N	Flat Mainly narrow with similar vegetation, but widening at MP81 to old yard with <u>Molcus</u> spp., fescue, <u>Hypochoeris</u> , sorrel and broom. Tall herb/raspberry stand where verge narrows again.
E202	2 July	NT 03.86.	Torryburn	Dunfermline-Alloa	N	Flat/ DISC Cut Wide flat at top of cutting with very herb rich coarse (<u>Fescue</u> / <u>Arrhenatherum</u> / <u>Anthoxanthum</u>) grassland and abundant ox-eye daisy. Cutting slope similar in patches with <u>Trisetum</u> elsewhere with <u>Moehringia</u> under a fairly closed hawthorn scrub. Beyond B road bridge slopes support good herb rich sward.
					S	Flat/ Cut Very wide flat with abundant <u>Galium cruciata</u> , meadowsweet, raspberry, rosebay and <u>Veronica chamaedrys</u> , bordered with tall oak/elm/hawthorn scrub. <u>Platanthera chlorantha</u> grows at break in slope. Beyond road bridge, cutting supports coarse grassland with fern and bramble, whilst at top of slope is an excellent short turf with <u>Linum catharticum</u> , <u>Dactylorhiza fuchsii</u> and <u>Rhytidadelphus squarrosus</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
E203	2 July	NT 27.87.	Kinghorn Coast	Inverkeithing-Thornton Junct.	NW	Cut/ Emb	A/SSSI	An unstable cutting with briar/bramble and ruderals, gives way, after a short disturbed flat, to a better turf of fescue/Trisetum with areas of <u>Brachypodium sylvaticum</u> and <u>Ceranium sanguineum</u> . There is a low, heavily ballasted emb with ruderals near a.p. Further E. a well drained species rich fescue/bent turf with <u>Koeleria cristata</u> , <u>Helictotrichon pratense</u> and <u>Anthyllis vulneraria</u> covers the fairly steep positive slope.
<u>NORTH EAST: SOUTH</u>								
B204	4 July	NO 62.39.	Elliot Links	Perth-Aberdeen	E	Flat	A/SSSI	This is a narrow sandy/cindery verge with a strong maritime influence. Fescue/D. flexuosa grassland with rich clover and vetch, and clumps of Marram. Better species include <u>Astragalus danicus</u> and <u>Thalictrum minus</u> . Mainly a narrow verge with comparable vegetation and much <u>Ononis</u> and <u>Anthyllis</u> . A wider area near a.p., however, supports a coarse Arrhenatherum with <u>Myrrhis</u> , <u>Heracleum</u> and <u>Centaurea nigra</u> .
B205	5 July	NN 97.54.	Shingle Islands		W	Flat/ Cut/ Emb		A long stretch of line was surveyed supporting varied vegetation not differing significantly on either side of the track, and not much influenced by nearby shingle. South of the level crossing, oak/ash woodland over <u>Holcus mollis</u> and fern occurs on various railway formations. North the line is generally raised on an emb. and supports more varied and disturbed vegetation. Bramble/briar covers much of the verge with occasional sallow thickets. On ballast areas ruderal including <u>Lepidium heterophyllum</u> and <u>Cerastium arvense</u> occur. <u>Valeriana officinalis</u> , <u>V. pyrenaica</u> and <u>Symphytum x uplandicum</u> form a tall herb association under oak/elm/alder near a.p.
<u>GLASGOW SOUTH</u>								
B206	23 July	NS 44.69.	Barrangary	Glasgow-Greenock		Cut/ Emb		A poor site with similar vegetation on either side of the track. A large cutting towards NW has coarse, herb poor <u>Arrhenatherum/cockfoot</u> /fescue grassland with much hawthorn above. The emb. to these has birch over elder and sallow with much bare ballast. <u>D. flexuosa</u> on cinder flat, and nitrophilous vegetation with <u>Stachys</u> and cleavers near farm.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B207	24 July	NS 36.58.	Castle Sempile Loch	Glasgow-Kilwinning	SE	Cut	A/SSSI	The cutting slope is varied and generally poor, with influence from neighbouring woodland. Areas of damp cinder with bryophytes and bitter cress occur, with patches of rosebay, fern, raspberry and sallow. <u>Valeriana pyrenaica</u> and <u>Cornus sericea</u> are common
					NW	Emb		The land falls away toward loch and is mainly wooded with elm, ash and sycamore over fern and shade grasses with patches of meadowsweet and bramble. <u>Aster schroberi</u> is growing in large clumps by station car park - its only known European locality.
<u>GLASGOW NORTH</u>								
B208	27 July	NN 32.33.	Beinn Odhar	Glasgow-Mallaig		Cut/ Emb	DISC	The line runs along a hillside and the main vegetation on upper and lower slopes is heather/bilberry moor with bracken and calcifuge grassland. A number of rills under line, and the banks support some interesting plants including <u>Saxifraga aizoides</u> , <u>S. stellaris</u> , <u>Carex pulicaris</u> , <u>C. paludosa</u> , <u>Crocus paludosa</u> and <u>Drosera</u> . There are areas of <u>Molinia</u> and <u>Thelypteris phlegopteris</u> grows on wet rocks. <u>Cystopteris</u> and <u>Epilobium brunnescens</u> are found on bridge stonework.
B209	28 July	NM 98.32.	Allt Nathais	Crianlarich-Oban	E	Cut/ Emb	DISC	There are three formations along this verge. A rock cutting gives way to an emb. and then to a sloping cut. The rock face supports ferns, particularly polypody, and much bryophyte. Hazel, raspberry and bracken cover much of the emb. where occasional plants of <u>Rubus saxatilis</u> are also found. The sloping cut has much <u>Luzula sylvatica</u> , bryophyte and male and lady ferns, under oak/ash and hazel. Some <u>Erica cinerea</u> .
					W	Emb		Some better oak woodland with characteristic associates at N end of site gives way to low hazel scrub with <u>L. sylvatica</u> and <u>R. saxatilis</u> . Local heavy spraying. <u>Saxifraga aizoides</u> on bridge.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B210	29 July	NN 35.66.	Corroun Moor	Glasgow-Mallaig	NE	Flat/ Emb	A/SSSI	The flat supports heather moor, with areas of <u>Molinia</u> grassland; occasional mires are dominated by <u>Eriophorum</u> . The emb. further N has better drained fescue/bent grassland with tomentil and bedstraw, and bog-bean beside culvert running under line. Much of the flat supports a <u>Molinia/Myrica</u> mire giving way to <u>Sphagnum</u> where very damp and to <u>Erica tetralix</u> in drier areas. Towards the N of the site on better drained grassland is found with <u>Rhinanthus minus</u> and white clover. Rushes occur in depressions.
B211	30 July	NN 080268	Coille Leitire	Crianlarich-Oban	SW	Flat/ Emb	A/SSSI	Not recorded in detail because of torrential rain, but probably worth further study. The site supports birch/oak open scrub with much exposed rock and many ferns. There is a gravelly scree with <u>Linum catharticum</u> and <u>Carex pallescens</u> , and <u>Juncus tenuis</u> occurs on level crossing.
B212	31 July	NN 35.78.	Fersit	Glasgow-Mallaig	E	Cut/ Emb	A/SSSI	A low bank near a.p. supports bent/fescue grassland with melancholy thistle and tormentil. This gives way in both directions to birch scrub over bracken or <u>Molinia</u> . A garden abuts onto the line further N. and there are a number of escapes. Beyond this the emb. drops to a damp flat with <u>Sphagnum</u> under sallow, <u>Sorbus</u> and cherry. A narrow verge, mainly flat and quite cindery. It is generally shaded by adjacent pine and deciduous woodland, and is heavily sprayed. <u>Trientalis europaea</u> is fairly common.
B213	2 August	NM 67.91	Kinsadel	Glasgow-Mallaig	W	Cut/ Emb/ Flat	INFO	The cut immediately S of access is rocky, with <u>Calluna</u> and <u>Dryopteris</u> under birch, hazel and oak scrub. This gives way on both sides of the track to an emb. with sallow and oak scrub over tall herbs. Further S is a damp flat with rushes, <u>Viola palustris</u> , sneezewort and invasive sallow. The cut and emb. near a.p. are comparable with the W verge. Beyond there is an emb. the lower slopes of which have been recently cleared of scrub and supports coarse calcifuge grasses and ferns. There is a semi-natural oak/birch/holly woodland above over <u>Dryopteris dilatata</u> and <u>D. flexuosa</u> . This gives way to bracken, although near the loch, <u>Carex rostrata</u> , <u>Myrica</u> and <u>Sphagnum</u> occur.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FROM	STATUS	NOTES
NORTH EAST: INVERNESS								
B214	12 August	NJ 28.60.	Threapland	Inverness-Aberdeen	SW	Cut/ Emb	DISC	The cutting supports a birch scrub: cut and piled below, leaving coarse grasses and ferns, standing above, over <u>D. flexuosa</u> /bent/fescue turf with <u>Trifolium europaeum</u> and <u>Pyrola minor</u> . The embankment near the lochan (SE) is comparable but impoverished, and has sallow scrub.
B215	12 August	NJ 32.51.	Boat O' Brig	Inverness-Aberdeen	NE	Cut/ Emb/ Emb/ Cut		The cut verge is adjacent to a pine plantation. An area of <u>Calluna</u> near line, gives way to broom on upper slopes and finally to a patchy vegetation with <u>Erica cinerea</u> under pines. <u>Goodyera repens</u> is present. The emb is similar to the opposite verge. A poor site with much tall herb including rosebay, <u>Myrrhis</u> and cleavers. There is a short cutting with rock exposures and abundant <u>Teucrium</u> , <u>Luzula sylvatica</u> and <u>Dryopteris</u> spp. This gives way to an emb. with a mixed deciduous scrub ash/elm and birch over coarse grass and ferns. There is a small patch of <u>Pyrola minor</u> .
B216	13 August	NH 962573	Hardmuir	Aberdeen-Inverness		Cut	DISC	Deep, grassy cutting dominated by <u>Arrhenatherum</u> with cocksfoot, fescue, ragweed and thistle. Some areas of bracken, and low thickets of gorse, broom, bramble and briar above. Some hawthorn and local patches of fescue/bent with harebell and tormentil. Both sides similar and not particularly interesting.
B217	13 August	NH 867553	Lochdhu	Aberdeen-Inverness	N	Cut	DISC	A previously burnt verge with mixed grassland and heath. Lower slopes are predominantly fescue/bent/socksfoot, with abundant plantain and couch. Higher, patches of gorse, briar and broom are intermixed with fescue/bent and Hypochaeris. This is much heather, <u>Rhinanthus</u> and <u>Cerastium arvense</u> near fence.
					S	Cut		The verge is similar but unburnt and less well drained and supports birch over <u>Holcus/Anthoxanthum</u> grassland with <u>Angelica</u> and abundant pleurocarpous mosses. Patches of briar and broom are frequent and there is <u>Calluna</u> and herb-rich mixed calcifuge grassland above.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B218	14 August	NJ 023588	Forres Station	Aberdeen-Inverness		Flat	FLORA	Cinder/waste area on both sides of the station were surveyed. The vegetation follows a very complex pattern, but distinctions can be drawn between more and less well trampled areas, and with respect to drainage. There are also low banks supporting a coarse, herb-rich grassland with rosebay, <u>Hypochoeris</u> , broom, and lupin. Where trampling pressure is heavy vegetation is very sparse and less than 10 cm high, elsewhere on well drained surfaces, bent with <u>Trifolium repens</u> , <u>T. arvense</u> , <u>Filago minima</u> and <u>Senecio viscosus</u> occurs. In damper areas, <u>Poa annua</u> is found with acrocarpous mosses, plantains and knotgrass. There is scattered sallow, birch and alder.
B219	14 August	NH 41.59.	Loch Garve	Dingwall-Kyle		Cut/ Emb	INFO	A narrow hillside verge with cutting above and emb. below supporting similar vegetation. There is much birch and alder scrub over heather and calcifuge grasses. Large patches of <u>Luzula sylvatica</u> occur, and there are areas of bracken and bramble with <u>Angelica</u> . Damp areas have <u>Sphagnum</u> and there is a population of <u>Trientalis europaea</u> on the N side.
B220	15 August	NG 760294	Erbusaig	Dingwall-Kyle		Cut/ Flat	DISC	A short area of rock cutting was surveyed. The dry rock faces support a variety of ferns: <u>Dryopteris</u> spp., polypody, and <u>Asplenium</u> spp. <u>D. flexuosa</u> is common on ledges, and <u>Luzula sylvatica</u> , heather, bracken and birch occur on flat above. Bryophytes are common, and especially where water drains over rock, <u>Campylopus atrovirens</u> becomes very frequent. <u>Callitriche</u> and <u>Dicranella squarrosa</u> are locally abundant on cess.
B221	15 August	NG 946426	Strathcarron	Kyle-Dingwall	NW	Cut/ Flat	DISC	Cutting slopes support heather and calcifuge fescue/bent/ <u>Anthoxanthum</u> grassland, with tormentil <u>Hypericum pulchrum</u> and <u>Galium saxatile</u> . Some invasive bracken. The <u>Molineta</u> on flats above is essentially continuous with adjacent moorland.
					SE	Cut/ Flat		The cutting is similar to the NW verge, but there are more extensive flats with herb rich calcifuge grassland including <u>Festuca vivipara</u> <u>Hieracium pilosella</u> and abundant <u>Succisa</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B222	15 August	NH 030490	Glencarron	Kyle-Dingwall		Cut/ Emb	INFO	Site on hillside, with cut above emb. below, between A890 and River Carro. The main cover is a low scrub of alder/birch/rowan with rasperry, bramble and bracken. Some areas of fescue/bent grassland with <u>Molinia</u> and clumps of heather. Surveyed briefly in failing light.
B223	16 August	NH 158574	Achnasheen Terraces	Kyle-Dingwall	NW	Flat/ Emb	A/SSSI	This verge is a narrow, low emb or flat with reasonably herb rich fescue/bent grassland, and damp, enriched areas with <u>Juncus effusus</u> , <u>Rumex obtusifolius</u> and <u>Oxalis acetosella</u> . Some heather.
					SE	Flat/ Cut		An extensive flat gives way to terraces with some derived rubble. Much of the flat supports a herb rich fescue/bent/Anthoxanthum grassland, although this is replaced by <u>Molinia</u> and <u>Myrica</u> where damp, and, at the S end of the site, by <u>Salix aurita</u> over <u>Holcus</u> and <u>Nyctiadelphus triquetrus</u> . The terrace slopes have an unstable fine scree with much <u>D. flexuosa</u> whilst the flat is essentially continuous with the adjacent heather moor. There is some <u>Nardus</u> and <u>Sieglingia</u> with <u>Lycopodium clavatum</u> and <u>Trientalis europaea</u> growing amongst heather. <u>Gnaphalium sylvaticum</u> is growing on a grassy ridge near platelayers hut.
B224	16 August	NH 58.45.	Lentran	Inverness-Wick		Flat/ Emb	A/SSSI	Adjacent to the Beaully Firth, this site was surveyed primarily for birds. A low emb. W from signal box supports a coarse <u>Arrhenatheratum</u> with hogweed, snowberry, alder and bramble. Near the signal box are some garden escapes and there are extensive patches of rosebay and butterbur. Trodden flats have plantain, <u>Poa annua</u> cover and <u>Matricaria</u> .
B225	17 August	NH 55.59.	Dingwall	Inverness-Wick		Emb	A/SSSI	The line runs above salt marsh on the Cromarty Firth. Near a.p. the cover is elm woodland, giving way to the SW to elm scrub with elder, cherry, nettle over coarse forbs with rich bare soil and <u>Brachythecium</u> and <u>Eurynchium</u> spp. At the edge of the track are some more discriminating shade forbs, including woodruff, <u>Mycelis muralis</u> and <u>Hypericum hirsutum</u> . There are extensive areas of rank tall herb vegetation with <u>Anthriscus cleavers</u> , nettle, thistle and <u>Sorbus arvensis</u> .

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
E226	17 August	NH 639873	Fearn	Inverness-Wick	NE	Emb	DISC	The site is the causeway carrying the line across Dornoch Firth. On the NE site, facing the open sea, the slope is open with small boulders and occasional clumps of <u>Plantago maritima</u> , <u>Aster tripolium</u> and broom. The cindery verge above has patchy cocksfoot, bent, raspberry and briar, with abundant <u>Polytrichum</u> spp. Beyond the BR fence is salt marsh with much furoid alga.
					SW	Emb		This faces a brackish mere supporting <u>Potamogeton pectinatus</u> and <u>Myriophyllum alternifolium</u> . The slopes above support gorse scrub, which is particularly abundant at SE of site. Elsewhere there is a prickly cover of briar, raspberry, broom and bramble with rosebay and cocksfoot. The cindery verge above is similar to the opposite side.
E227	18 August	NH 75.84.	Ardjachie	Inverness-Wick		Flat/ Emb	A/SSSI	This is a narrow coastal flat with low embankments and comparable vegetation on either side of the track. The vegetation is mainly a herb and species poor <u>Arrhenatheretum</u> with cocksfoot, briar and <u>Anthriscus</u> locally common. There is a narrow grazed strip with <u>Rhynchospora squarrosa</u> and a patch of <u>Carex arenaria</u> on the cinder cess.
E228	19 August	NC.00.12.	West Garty	Inverness-Wick		Flat/ Emb	DISC	The vegetation is comparable on either side of the line, and much of the site is a narrow flat with occasional low emb. The cover is a coarse herb-rich <u>Arrhenatheretum</u> with hardheads and hogweed. Local grazed areas have cleaver, bent plantain and <u>Galium verum</u> . Bracken is a frequent invader.
						Cut		There is a short length of cutting with exposed rock faces which supports a more interesting flora. Hawkweeds and <u>Hieracium pilosella</u> are common, with abundant <u>Carex flacca</u> , plus <u>Linum</u> , <u>Brachypodium sylvaticum</u> , <u>Koeleria</u> , <u>Sieglingia Anthyllis</u> , <u>Dactylorhiza</u> , <u>Thymus</u> and frequent rock rose. Where there is seepage from a rock face, <u>Carex pulicaris</u> , <u>Pinguicula</u> and <u>Euphrasia</u> are found. Primroses are common near the track and <u>Carex arenaria</u> is found on the cinder cess.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE FORM STATUS	NOTES
B229	19 August	NC 951098	Lothbeg	Inverness-Wick	N Cut DISC	The cutting supports dense thickets of gorse, with patches of <u>Calluna</u> , <u>Erica cinerea</u> and <u>D. flexuosa</u> . Locally the ground is heavily grazed and excavated by rabbits, with encroaching bracken.
					S Cut	A similar vegetation occurs on the opposing slopes, with a clearly marked area of <u>Arrhenatheretum</u> on some old ballast tipplings. Towards the W the slope is exposed to the sea, and supports an <u>Anthoxanthum/Holcus/fescue/bent</u> turf, with much rose and <u>Thalictrumminus</u> ssp. <u>Arenaria</u> . On the upper slopes are also <u>Rosa pimpinellifolia</u> , <u>Salix repens</u> and <u>Erica</u> , whilst below bracken is invading. There is an area near the fence of fine leaved turf with much moss and scattered <u>Anthragalus danicus</u> .
B230	20 August	NC 89.24.	Learable	Inverness-Wick	W Cut/ DISC Emb	<u>Molinia</u> is locally dominant on the damp, low emb. with areas of <u>fescue/bent/Anthoxanthum</u> , and of <u>D. caespitosa</u> . The ditches support a species rich association with rushes and <u>Sphagnum</u> spp., and <u>Senecio jacobaea</u> is colonising recent ballast tipplings. Towards the N of the site a large cutting has tall birch scrub, over heather, and <u>Trientalis</u> . <u>D. flexuosa</u> and bracken are scattered throughout, and cowberry is particularly abundant near the line.
					E Emb	This is a medium emb. with a similar flora to the opposing slopes. There are some very low cuts, with heather, and bracken is generally invasive.
B231	21 August	ND 21.57.	Loch Watten	Inverness-Wick	NE Cut/ A/SSSI Emb/ Fiat	Rough grass emb. to NW with marshy flat below of meadowsweet, with <u>Carex rostrata</u> , <u>Sparganium</u> and reeds. By MP1514 is a broad flat with dry herb-rich grassland on hummocks and a diverse mire vegetation elsewhere. Rough grass turning to grazed turf to the SE.
					SW Cut/ Emb/ Fiat	In NW similar to latter with more <u>Iris</u> and <u>Potentilla palustris</u> in the marshy flat, plus patchy sallow. Part of the Loch is enclosed to the SE; thence a long rough grass cutting with severely rabbit grazed turf on narrower bank further along. <u>Tragopogon</u> and <u>Linaria vulgaris</u> present.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
B232	21 August	ND 02.46.	Altnabreac	Inverness-Wick	N	Cut/ Emb/ Flat	DISC	Cutting in W has fescue/bent grassland by the line, and heather plus rock exposure above. The broader flats to the fence are Calluna with Empetrum, Arctostaphylos, Eriophorum, Moninia and Trichophorum. To the E is an emb has some ballasting and patchy Calluna with buttercups Gorse Agrostis, Anthoxanthum, Hypochaeris etc. The flat below is boggy with a recently cleared ditch through the peat. Moss cover extensive and diverse.
					S	Cut/ Emb/ Flat		Very similar to latter but with more disturbed emb. with little heather and more Senecio. Flat below drier, with Calluna ubiquitous obscuring ditch.
B233	16 Sept	NO 71.58.	Montrose Station	Dundee-Aberdeen	W	Flat	A/SSSI	Narrow flat of cinder generally colonised by herb-rich fescue grassland. Part by the sea-wall is occasionally inundated and has a somewhat maritime flora of Atriplex spp., Glaux, Elymus, Monkenya, Plantago maritima and Cochlearia.
					E	Flat		Broader disturbed flat of cinder and ballast areas with patches of scrub, some species-rich rough grassland and a good selection of ruderals. Important spp. are Arrhenatherum/Dactylis, Festuca/Poa/Agrostis, plantain swards, damp cinder with acrocarpous mosses, Polygonum spp. and Tripleurospermum. Rarer plants include Hirschfeldia, Linaria repens, Melilotus indica, Cornus sericea and Lamium hybridum.
B234	16 Sept	NO 66.58.	Bridge of Dun	Brechin Branch	N	Flat/ Cut	A/SSSI	Old station platform with Asplenium spp. and Polystichum aculeatum. Most of rest coarse rough grassland with some scrub cover to the east. The line poorly maintained and with considerable colonisation of ballast by Lupinus polyphyllus, Cotoneaster simonsii and Fragaria X ananassa.
					S	Flat/ Cut		Similar to latter and adjacent to Montrose Basin SSSI but no maritime influence noted. Sallow and hawthorn plus Phalaris provide bird shelter.

NORTH-EAST DIVISION: SOUTHERN AREA

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
<u>NORTH-EAST DIVISION: ABERDEEN AREA</u>								
E235	16 Sept	NJ 673258	Oyne	Aberdeen-Inverness	N	Flat/ Emb	DISC	Old station yard has <u>Campanula lactiflora</u> . Further west coarse grasses, rosebay, <u>Lupinus</u> and <u>Cotoneaster simonsii</u> . On W emb is tall beech scrub cut back by the line with ground cover of <u>Hedera</u> , and <u>Poa nemoralis</u> on slope. Generally similar to E but no yard. To the W of the rd. is open rough grassy embankment to a stream. By the line is damp cinder with <u>Poa</u> , <u>Hieracium</u> , <u>Leucanthemum</u> and good moss cover.
E236	20 Sept	NJ 535395	Huntly Stn.	Aberdeen-Inverness	SE	Flat		Large cinder flats with old sidings, platforms and buildings. Bryophyte cover rich and diverse including <u>Barbula</u> , <u>Orthotrichum</u> , <u>Grimmia</u> , <u>Tortula</u> and <u>Polytrichum</u> spp. Coarse grassland of <u>Arrhenatherum</u> etc. south to bridge.
					NW	Cut/ Emb/ Flat		<u>Holcus lanatus</u> and <u>Equisetum</u> association with <u>Agrostis/Festuca</u> locally and in well-drained heavily ballasted parts <u>Poa pratensis</u> and <u>Sagina</u> . The uncut and unsprayed part have rosebay, raspberry nettle and <u>Rumex acetosa</u> . <u>Coronilla glauca</u> reported but not found. <u>Rumex X arnottii</u> identified.
<u>NORTH-EAST DIVISION: SOUTHERN AREA</u>								
E237	22 Sept	NH 82.04.	Loch Insch Marsh	Perth-Inverness	N	Emb/ Cut/ Flat	A/SSSI	Embankment has bracken with areas of birch scrub, some cut back over <u>Mercurialis</u> . Good patch of <u>Cirsium heterophyllum</u> . The cutting to the east has some rock exposure, with fescue/bent grassland and patches of birch and sallow scrub. Much rabbit activity in sandy soil. Increasingly wooded to E. Broadly similar but with much ballast on Wn. embankment with bramble invasion, sallow and ballast ephemerals. The cutting is largely covered in birch woodland.

REF	DATE	GRID OF ACCESS	SITE NAME	RAILWAY LINE	SIDE	FORM	STATUS	NOTES
E238	22 Sept	NH 872093	Loch Alvie	Perth-Inverness	NW	Cut/ Emb	A/SSSI	Emb to NE of a.p. with birch and sallow scrub, cut back with <u>Fragaria</u> , <u>Verbascum</u> and <u>Senecio jacobea</u> . The cutting to the SW has <u>Deschampsia flexuosa</u> grassland with birch and aspen coppiced above. <u>Calluna</u> and <u>Vaccinium</u> are common, and there some spray symptoms.
					SE	Cut/ Emb		Generally similar but with more sallow on the cutting and considerable heather, cowberry and <u>Hylocomium</u> , <u>Juniperis</u> , <u>Trisetalis</u> and <u>Pyrola</u> minor occur and the whole lower bank has been severely sprayed. Some <u>Holcus/Festuca ovina</u> grassland. Coppicing evident.

GLASGOW DIVISION: NORTH AREA

E239	23 Sept	NN 42.57.	Rannoch Moor	Glasgow-Mallaig	E & W	Emb/ Cut/ Flat		Much of area is a cindery emb. supporting <u>Salix aurita</u> scrub and the station yard produced <u>Senecio viscosus</u> and a number of species atypical of the moor. The broader flats by the fence are boggy <u>Molinia</u> grassland with heather, <u>Eriophorum</u> spp., <u>Myrica</u> , <u>Yartheccium</u> , <u>Carex limosa</u> , <u>C. pauciflora</u> and <u>C. echinata</u> . The drier parts and the occasional positive slopes and rock exposures have <u>Calluna</u> , <u>Vaccinium</u> spp. and <u>Molinia</u> with <u>Lycopodium clavatum</u> , <u>Pyrola minor</u> and <u>Genista anglica</u> .
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NORTH-EAST DIVISION: SOUTHERN AREA

E240	24 Sept	NN 917620	Killiecrankie	Perth-Inverness	E & W	Cut/ Flat	A/SSSI	Mainly wooded with <u>Fagus</u> previously cut back and on the wider slopes extensive elm and sycamore over a good mixture of ferns and <u>Primula vulgaris</u> . There is a good bryophyte cover mainly of <u>Thuidium</u> . The east side has more extensive woodland and less beech. Retaining walls and rock cuttings occur and are fairly well colonised by coarser bryophytes notably <u>Conoccephalum conicum</u> . By the A9 and locally suffering from domestic rubbish tipping. Heavily sprayed.
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SCOTTISH REGION: GEOLOGY



SEDIMENTARY FORMATIONS

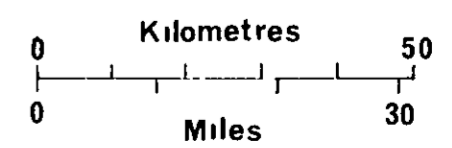
JURASSIC	41-55
PERMO-TRIAS	31-40
DEVONIAN-CARBONIFEROUS	18-30
LOWER PALAEOZOIC	2-18
PRE CAMBRIAN	1

METAMORPHIC ROCKS

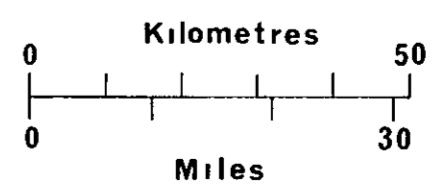
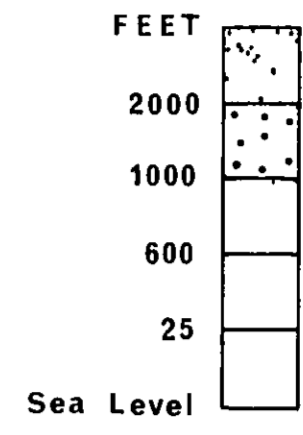
SLATES & SCHISTS	T-Z
OTHER METAMORPHIC	L-S

IGNEOUS ROCKS

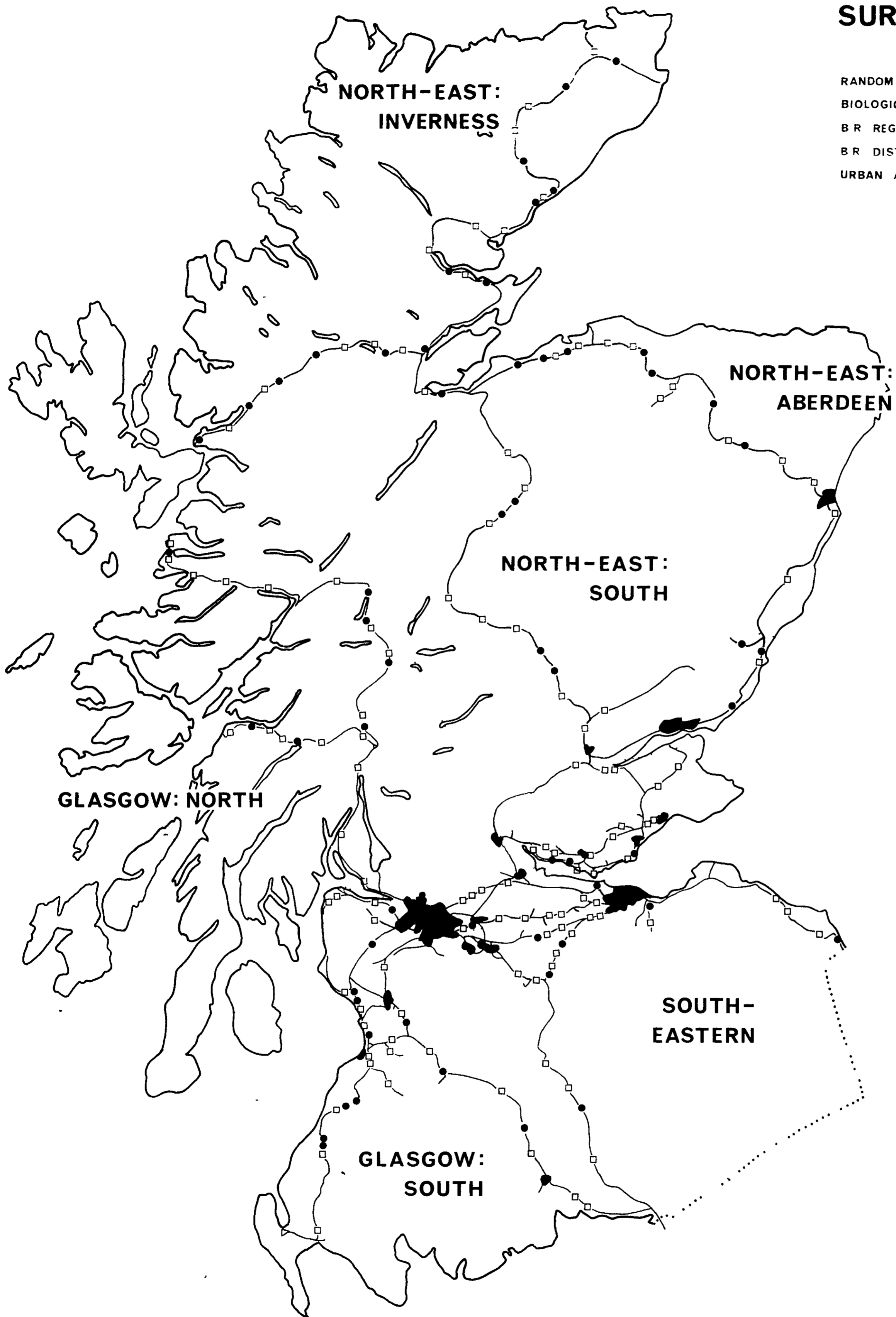
EXTRUSIVE	G-K
INTRUSIVE	A-F



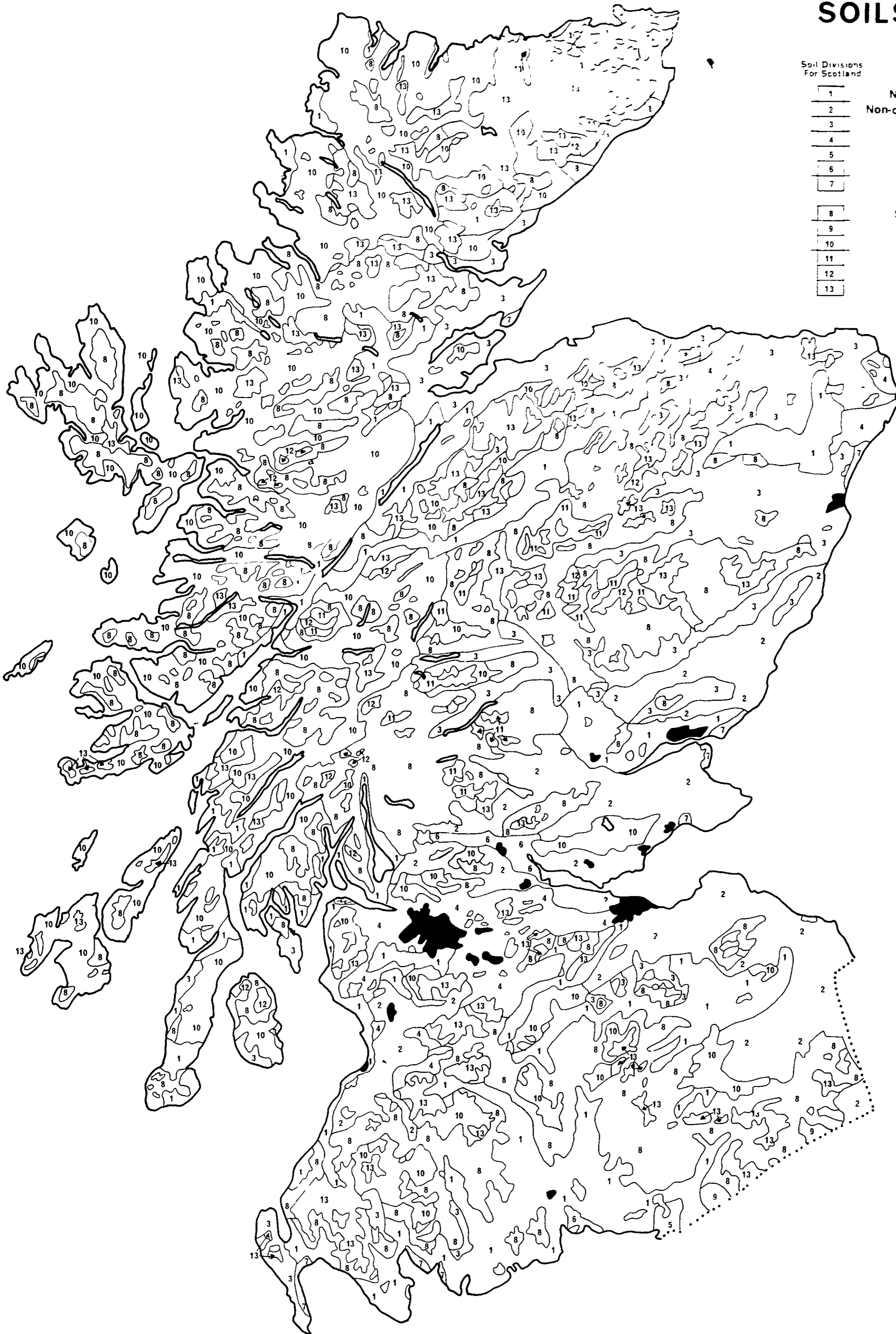
SCOTTISH REGION: TOPOGRAPHY



SCOTTISH REGION: SURVEY SITES 1980



SCOTTISH REGION: SOILS



Soil Divisions
For Scotland

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

LOWLAND
 Non-calcareous brown soils
 Non-calcareous, non-peaty gley soils
 Podzols
 Non-alluvial gley soils
 Alluvial, humic alluvial & alluvial brown soils
 Raw sands (Dune sands)

UPLAND
 Stagnopodzols, rankers etc
 Peaty gley soils
 Raw peat soils

Equivalent England
And Wales Soil
Survey Divisions

- 18-19 21-24 27-37 50-54
- 51-59 62-69
- 41-43 65
- 47-59
- 2-8
- 1
- 66-67
- 70
- 71

Urban Area

