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INSTITUTE OF TERRESTRIAL ECOLOGY  
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ITE PROJECT 466

Final Report to Nature Conservancy Council

THE BIOLOGICAL SURVEY OF BRITISH RAIL PROPERTY

Appendix 2      Areas of biological interest on  
British Rail Southern Region

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## 1 INTRODUCTION

This appendix to the final contract report to the Nature Conservancy Council (NCC) by the Institute of Terrestrial Ecology (ITE) on the survey of British Rail (BR) land, iterates and condenses information about areas of biological interest supplied to the contractors (NCC). It is intended to be distributed within BR and to provide a basis for discussion between them and the NCC on preferred methods of vegetation management.

The appendix begins with a general statement about the conservation interest of railway land and suggests a strategy for verge and permanent way maintenance. This is followed by a list and brief description of sites of interest in the Region. The sites are located by line and mile post within BR areas and divisions, and are cross referenced to the more detailed information held by the NCC.

The list is by no means exhaustive. 18% of all randomly chosen sites visited during the survey proved to be of particular interest (either because habitats or species are locally or nationally scarce), the implication being that a considerable proportion of BR land is of importance to wildlife. An inspection of the regional map (following the list) will show that biological interest sites occur more frequently or are clustered along some lines. In discussion between BR and NCC it may be decided that an approach where particular attention is paid to a stretch of the line, rather than to individual sites would be more effective.

The appendix concludes with a list of NCC offices in the Region, who hold information about the sites in question.

## 2 - MANAGEMENT FOR CONSERVATION AND SAFETY ALONG RAILWAY LINES

"The question of grass cutting is one that a majority of permanent way staff do not like." (Dobson, 1956).

Management at present is concerned largely with the track bed and cess, although the vegetation along verges reflects a century of hand maintenance. Cutting and scything led to a rich grassland with many flowering plants, including primroses, cowslips and orchids, and associated animals. Burning and ballast tipping, however, produced coarse grassland, bramble and tall herb communities. The spread of scrub and secondary woodland was carefully controlled.

The railways were built before the widespread introduction of agricultural chemicals, and serve as a refuge for many plants becoming increasingly rare elsewhere in the countryside. Close to the cess, where disturbance keeps the vegetation open, plants like the Oxford ragwort, narrow-leaved willow herb and small toadflax have been able to spread whilst some seaside plants, such as Danish scurvy-grass and the sand sedge have moved inland along railway lines. On the cinder cess and in yards casual plants, brought in with goods or attached to rolling stock, have appeared and sometimes become established. The most famous of these are the 'shoddy aliens' studied by John Dony (1955) on the Bedfordshire railways.

In recent years the substitution of chemical spraying along the track and a narrow strip of adjacent verge, for hand maintenance, has led to considerable change. Without scything or burning, the character of grassland is altered, with a few coarse species replacing the rich diversity. Scrub develops and secondary woodland spreads. Where yards and tracks are intensively sprayed, the numbers of interesting casual plants diminishes, and plant movement becomes inhibited.

The BR land survey has shown that much of the grassland of conservation interest occurs on previously managed cuttings. The excavated slopes tend to have a nutrient poor mineral soil which supports locally and regionally characteristic plants, and inhibits competition from false oat, even where previously burnt. Embankments, which were often topsoiled after construction, and flat verges, generally support a more disturbed vegetation with many commonly occurring competitive species. Spent ballast is tipped on these formations and chemical and organic wastes from trains drain onto flats and negative slopes. Embankment footings are less well drained than other areas of verge, and ballast may act as a mulching agent, beneath which a damp, organic soil forms. Such areas support nettle, cleavers and rosebay willow herb, whilst false oat grass and bramble colonise the more freely draining upper slopes. In the Scottish uplands, ragwort, bracken and raspberry are more commonly found. Where scrub is not cut, bramble, thorn and sallow may become dense and in many areas give way to secondary ash woodland. Oak and beech woodland are more usually restricted to cuttings.

In general, where manpower is available, priority should be given to the maintenance of cuttings. This coincides with the permanent way engineers' requirement that trees or scrub likely to drop litter or branches onto the line be controlled. Scything and occasional burning of grassland will prevent the development of scrub, whilst encouraging diversity. Burning, however, should only be carried out over limited areas of verge and not at all during the bird nesting season (as per discussion between BR and NCC). Application of chemical scrub control agents is effective, but leaves standing dead material and does little to encourage the less competitive grassland plants. The use of a flail adapted to be carried by train has been found effective for clearing bramble and low scrub in some areas. A swathe about 3 metres wide can be cleared on either side of the line and, once any mature trees close to the cess have been felled, can be readily maintained by annual or, more usually, biennial flailing.

On embankments the spread of scrub and secondary woodland on lower slopes may lend stability. It will provide cover and nesting habitat. Casualty recordings have shown that over 70% of bird fatalities occur in cuttings where flight from oncoming trains is inhibited. This suggests that it is preferable to leave cover on embankment rather than cutting slopes, although where woodland on the latter is well developed and offers no hazard to rail traffic, this should clearly not be cut. In highland areas of Scottish Region woodland is often at a premium and should not be cleared.

The requirement that annual spraying of main lines by BR and contractor's trains should leave the ballasted width 98%, and the cess 95%, weed free is stringent. Probably the most serious weed along the track bed is the common horsetail. This is a perennating plant which could be controlled by

biennial spraying of the track. The majority of plants which are spray-killed are small annual species and bryophytes which are adapted to survive the very desiccating conditions found during high summer. Many of these are still found on tipped ballast and cinder, although when the vegetation closes over, they are no longer able to compete successfully. It is suggested that, on less important lines, and perhaps initially for a trial period only, tracks on either side be sprayed during alternate years. This will enable some annual plants to maintain their populations. Further, it should substantially reduce maintenance costs without introducing hazard, since all perennating plants will be controlled.

#### REFERENCES

- DOBSON, J. 1956. The work of a length ganger. *J. Proc. Perm.-Way Instn*, 74, 2.
- DONY, J. 1955. Notes on the Bedfordshire railway flora. *Beds. Nat.*, 9. 12-17.

SOUTHERN REGION

A SOUTH-EAST DIVISION

(1) Charing Cross - Dover (via Swanley & Canterbury)

N.P.	Our Reference	Formation	Vegetation	Preferred Management
71}	R90	Cutting	Calcareous turf, cinder, scrub rock faces	Mowing of flat grassland.
(11) Chislehurst - Hastings				
18 3/4	B241	Cutting (& Plat)	Chalk turf and scrub	Some scrub removal
(111) Ashford - Dover (via Minster)				
64}	CE87	Cutting	Calcareous grass and scrub	Thinning of scrub
D CENTRAL DIVISION				
(1) Victoria - Brighton				
43}	CE93 & B72	Embankment	Mixed deciduous scrub, tall damp grass and cinder	Zones of scrub clearance.
44}	CE83	Cutting	Calcareous grassland and scrub	Rabbit control and some scrub removal
46	R84	Cutting	Chalk faces and scrub/turf	Scrub clearance.
C SOUTH-WESTERN DIVISION				
(1) (Dank) - Waterloo - Weymouth				
93}	N78 & B69	Embankment/Plat/Cutting	Grass-heath, bramble, gorse and low scrub.	Bramble clearing
(11) Woking - Portsmouth				
59-59}	CE79	Cutting/Embankment	Chalk scrub and grassland	Partial scrub clearance.
44 - 63	-	Cutting/Embankment	Calcareous and calcifuge grassland and scrub	Partial scrub clearance.
(111) Basingstoke - Salisbury - Dinton				
73}-73}	CE76 & B67	Cutting/Embankment	Chalk cliffs, calcareous grassland cinder flats and mixed woodland	Mowing and scrub removal in chalk grassland.

SOUTHERN REGION

C SOUTH-WESTERN DIVISION

(iv) Eastleigh - Salisbury

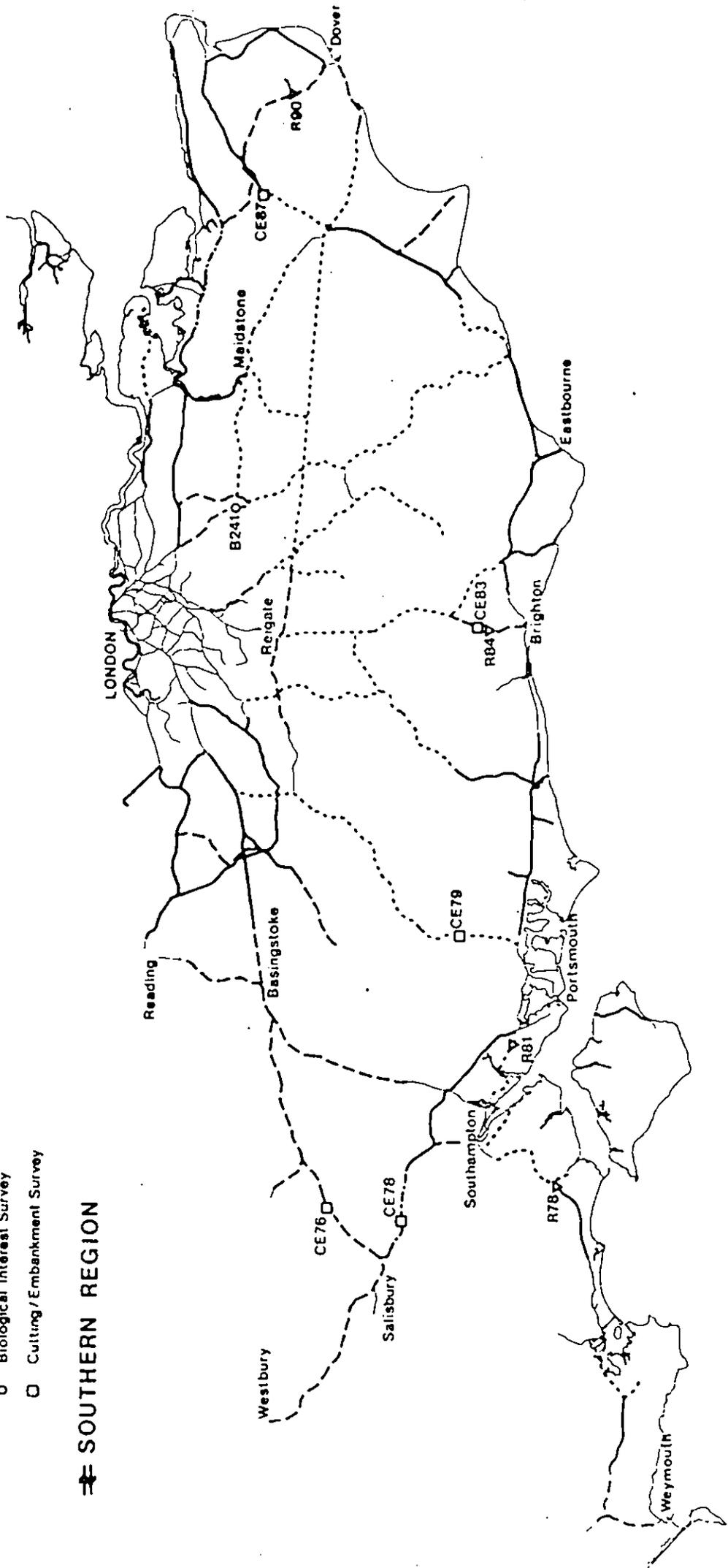
M.P.	Our Reference	Formation	Vegetation	Preferred Management
88 1/2-3/4	CE78 & B70	Cutting/Embankment	Calcicolous scrub and grassland	Selective scrub clearance.
(v) 12 1/2-3/4	Cosham - Southampton (St. Dony's) RB1 & CE80	Embankment & Cutting	Deciduous woodland, coarse grassland, scrub, cinder	Scything of coarse grassland.

SITES OF PARTICULAR BIOLOGICAL INTEREST

SITES FOUND DURING:

- ▼ Random Survey
- Biological Interest Survey
- Cutting/Embankment Survey

— SOUTHERN REGION



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