

466

INSTITUTE OF TERRESTRIAL ECOLOGY
(NATURAL ENVIRONMENT RESEARCH COUNCIL)

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ITE PROJECT 466

Final Report to Nature Conservancy Council

THE BIOLOGICAL SURVEY OF BRITISH RAIL PROPERTY

Appendix 3 Areas of biological interest on
 British Rail Western 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 dessicating 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.

A LONDON DIVISION

(1) Oxford - Kingham (-Worcester)

M.P.	Our Reference	Formation	Vegetation	Preferred Management
72}	B92	Cutting	Limestone grassland and scrub	Zones of scrub removal and mowing of coarser grassland.
B WEST OF ENGLAND DIVISION				
(1) (Challow) - Swindon - Pensance				
110j-j	CE114	Cutting/Embankment	Diverse grassland, scrub and rock faces	Scrub clearance and mowing in zones.
229	R71	Cutting	Rich grassland, rocks and heath	Control of gorse.
255	D102	Embankment/Cutting	Scree, rock face, woodland, salting	None.
201 3/4 - 282	B97	Cinder Flat & Cutting	Cinder flats, willow scrub, road and coarse grassland	Control of bramble.
(11) Wootton Bassett - Bath - Bristol				
98 3/4-99	D107	Cutting	Limestone rock, grassland, woodland and scrub	Scything of grassland.
85 3/4-86	CE117	Cutting/Embankment	Calcareous and rough grassland, plus scrub and some mature trees.	Burning plus local scrub removal.
(111) Westbury - Cogload Junction				
123-123j	CE61/B56	Cutting/Embankment	Calcareous grassland and scrub	Scrub cutting and scything.
(1v) Cranmore Branch				
1 3/4-2	R74 & D65	Cutting	Calcareous grasslands, sallow and sycamore scrub	Scrub control, grass mowing.
(v) Castle Cary - Dorchester				
154j-3/4	CE74	Cutting/Embankment	Calcareous grassland	Scrub removal and burning/grazing.
(vi) Exeter - Barnstaple - Meeth				
222j	CE64	Cutting	Damp and dry rock faces, scrub and rich grassland	Cutting of grassland.
(vii) Maldon Branch				
101j-102	CE65	Embankment/Cutting	Mixed deciduous scrub and woodland. Scree and grassland	Some scrub thinning.

WESTERN REGION

B WEST OF ENGLAND DIVISION

(viii) Gunnislake Branch

M.P.	Our Reference	Formation	Vegetation	Preferred Management
220 3/4-231½	CE99 & B82	Cutting/Embankment	Damp and dry base-poor, and richer grassland, mixed scrub and rock cutting	Scrub/bramble removal in gentler cutting.
(ix) Newquay Branch				
293½	B95	Flat/Ditch	Wet heath, cinder grassland	Scrub removal
294½	B94	Flat & Embankment	Ballast piles/cinder flats	Disturbance/dumping.
(x) Falmouth Branch				
305	B98	Cutting/Embankment	Evergreen scrub, herb-rich grass land on ballast etc	Removal of bramble.
312½-½	B99	Cutting/Flat	Cinder flat and ballast. Rough grass, rock cutting and scrub	Renewed disturbance.
(xi) Swindon - Stonehouse				
94½	B86	Cutting/Flat	Limestone grassland, cinder flats rock face and scrub	Scything of grassland.
97	B105	Cutting/Embankment	Mixed woodland, limestone rock and scrub and rough grassland	Scrub control.
(xii) (Diraleghan) - Bronsgrove - Westorloigb (- Bristol)				
71½	CE112	Cutting	Calcareous grassland	Cutting of grassland
102 3/4	B85	Cutting	Calcareous grassland, scrub and woodland edge	Mowing of grassland.
C CARDIFF DIVISION				
(i) (Gloucester) - Lydney - Fishguard				
236 3/4-237½	B79 (CE195)	Cutting & Flat	Coastal cliff, scrub, sand dune rough grassland	Removal of bramble.
280½	B76	Embankment	Cinder scree, gorse scrub and bracken	Renewed disturbance.

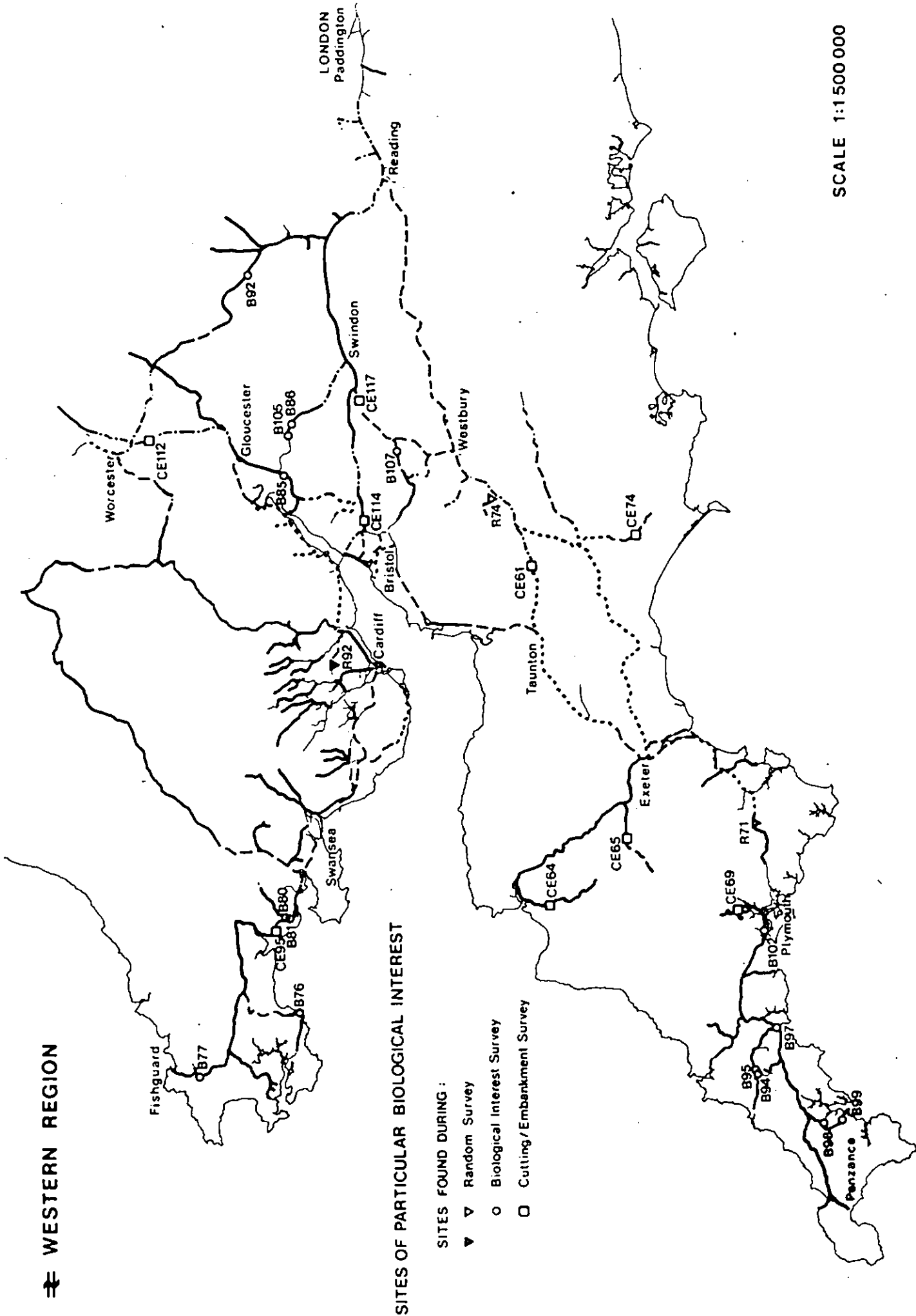
WESTERN REGION

C CARDIFF DIVISION

(11) Bodras Branch

N.P.	Our Reference	Formation	Vegetation	Preferred Management
5 3/4.	R92	Cutting/Embankment	Varied calcifugo grassland, scrub	Scrub removal from old line.
(111) Cem-saar Branch				
2‡	B81	Embankment/Ditches	Cinder grassland, reed and marsh veg.	Scrub clearance.
3‡	B80	Embankment/Ditches	Cinder grassland, sallow scrub, marsh	Relax spraying and dredge old canal.
(11v) Pembroke Branch				
275-278	B77	Cutting/Embankment/Flat	Calicolous dune grassland, damp flats, thorn scrub, reeds and disturbed sandy grassland	Scrub removal and grazing.

WESTERN REGION



SITES OF PARTICULAR BIOLOGICAL INTEREST

- SITES FOUND DURING :
- ▼ Random Survey
 - Biological Interest Survey
 - Cutting/Embankment Survey

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NCC Regional Offices, Western Region

South Wales Region
44 The Parade
Roath
Cardiff CF2 3AB
Tel: 0222 (Cardiff) 485111

South West Region
Roughmoor
Bishop's Hull
Taunton
Somerset TA1 5AA
Tel: 0823 (Taunton) 83211

South Region
Foxhold House
Thornford Road
Crookham Common
Newbury
Berkshire RG15 8EL
Tel: 063523 (Headley) 429/439/533