

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 1 Areas of biological interest on
 British Rail Eastern 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.

EASTERN REGION

A. KINGS CROSS DIVISION

(1) Kings Cross - Grantham (East Coast Main Line)

M.P.	Our Reference	Formation	Vegetation	Preferred Management
23 3/4	CE3	Cutting & Embankment	Mixed scrub, coarse grassland and cinder flat	Burning of grass, some scrub clearance.
31	B8	Cutting & Flats	Chalk cliff with grass and scrub plus broad cinder flats	Removed cinder/ballast dumping.
44}	B2	Cutting & Flat	Sandy grassland and old track bed	Burning and scrub removal
50}-1	CE59	Cutting & Embankment	Basicolous grassland, open scrub and cinder slopes	Scrub clearance/mowing or cutting. Renewed burning on embankment.
52 3/4	CE58	Cutting & Embankment	Basicolous grassland and open scrub	Scrub clearance plus mowing/grazing
61}	R2	Cutting (& Embankment)	Coarse basicolous grassland	Occasional burning
63}	CE60	Cutting	Coarse basicolous grassland	Scrub removal and mowing.
99}	B18	Cutting	Coarse basicolous grassland	Scrub removal and mowing.
+60-71	-	Mainly Cutting	Coarse basicolous grassland	Scrub removal and mowing.

(ii) Uitchie - Cambridge

30} B0 Cutting

Scrub clearance.

(iii) Peterborough - March

91} B55 Flat (& Cutting)

Renewed disturbance of cinder and ballast areas.

B STRATFORD DIVISION

(1) Liverpool St - Ipswich

40} B20 Embankment

None.

58} CE12 Cutting/Embankment

Scrub-cutting and burning

B. STRATFORD DIVISION

(11) Sudbury Branch

M.P.	Our Reference	Formation	Vegetation	Preferred Management
51 3/4	CE7	Cutting	Varying types of rich grassland and scrub	Scrub removal from grassy areas.
(111) Welton and Clacton Branch				
00}	CE10	Cutting	Rich open sandy turf	Burning
(11) Harwich Branch				
65}	B23	Cutting	Coarse grassland	Mowing/burning.
66}	B21	Cutting	Sandy turf and open scrub	Burning.
66}	CE11	Cutting/Embankment	Mixed scrub and woodland edge	Rono.
67}	B22	Flat & Embankment	Damp grassland, scrub and sub-maritime vegetation	Mowing of rich turf.
C NORWICH DIVISION				
(1) (Liverpool St →) Eleeham - Kings Lynn				
40}	D14	Embankment/Flat	Coarse grassland, some gravelly and damp willow scrub	Some burning of embankment.
54 3/4	D17	Flat	Cinder flat	Renewed cinder dumping locally.
(11) Royston - Shoproth				
40	D47	Cutting	Open rich chalk turf	Scrub clearance where necessary.
(111) Cambridge - Haughley Junction (near Stowmarket)				
3}	D42	Cutting	Coarse calcicolous grass and scrub	Scrub clearance
10}	D10	Cutting & Flats	Varying sandy and chalk grasslands plus scrub - includes old pits	Mowing of grassland.
17 3/4	D45	Cutting	Coarse calcicolous grassland	Scrub clearance
23}-24	CEG	Cutting/Embankment	Calcicolous coarse grassland and patches of scrub	Mowing of grassland.
35}-36	D50	Cutting	Mixed scrub, damp and dry grassland	Rotation of scrub cutting.

C. NORWICH DIVISION

(v) Ely - Chippenham

H.P.	Our Reference	Formation	Vegetation	Preferred Management
0 3/4	B44	Cutting	Species-rich chalk grassland	Scrub clearance/Rabbit control.
3 3/4	B43	Cutting	Variety of calcicolous scrub and grassland.	Mowing/scrub removal in grass areas.
(vi) Ely - March (and Peterborough)				
74	B39	Flats & Cutting	Coarse grass, low scrub and damp flats.	Removal of scrub from damp areas.
(vi) Fakenham Branch				
5	R21	Cutting	Mixed scrub and halset grassland	Rotation of scrub cutting.
(vii) Bentley - Ipswich - Norwich				
83}	B51	Cutting/Embankment & Cinder Flats	Calcicolous grassland, tall scrub and station yard	Scrub cutting on grassland.
105	B54	Cutting & Flat	Calcicolous grassland and mixed scrub	Scrub cutting in grassland.
(viii) Ipswich - Lowestoft				
106}-}	CE14	Cutting/Embankment	Scrub and rich grassland	Some scrub cutting.
(ix) Norwich - Cronor and Sheringham				
20 3/4	CE16	Cutting	Very rich sandy grassland	Occasional burning.
D DONCASTER DIVISION				
(1) Grantham - Doncaster (East Coast Main Line)				
101 3/4	D53	Cutting	Calcicolous grassland, scrub, rock faces and cinder yard	Mowing of grassland
103}	B52	Cutting	Calcicolous grassland, rock faces, scrub and sedge	Scrub clearance and mowing.
118	R31	Flat/Borrow pit	Open water, marsh and carr. Dry sandy grassland and scrub	Mowing or burning.
150}	D38	Embankment/Borrow pit	Open water, marsh, carr, dry grassland	The pits are a Y.N.T. reserve. The banks need scrub clearance.

EASTERN REGION

D DONCASTER DIVISION

(11) Allington - Boston and Skegness

M.P.	Our Reference	Formation	Vegetation	Preferred Management
116 3/4	CE31	Cutting	Limestone Grassland, rock faces and ash scrub	Mowing of grasslands.
117 3/4-118 1/2	B30	Flat	Coarse grassland and heavily grazed turf	Scrub removal.
(111) Spalding - Doncaster				
75 1/2	CE23	Cutting	Limestone rock cutting, ash scrub and calcicolous grassland	Scrub removal from grassland.
111 1/2	B37	Flat	Heavily grazed sandy turf	Burning.
114 1/2	CE48	Cutting	Sandy grass heath	Burning.
(14) Lincoln - Barnetby				
39	CE27	Cutting	Calcicolous scrub, grassland and limestone rock faces.	Scrub cutting.
25 1/2	B28	Cutting	Dallast slope	Nonweeded dumping.
20 1/2	CE24	Cutting	Open sandy turf and coarse grassland	Burning.
(v) Sheffield - Cicethorpes				
67 1/2	B33 (4B29)	Cutting	Calcicolous grassland, a little scrub and exposed rock	Grazing/mowing and scrub cutting.
(vi) Louth Branch				
141 1/2	R25 (4B24)	Flat (& Cutting)	Cinder grassland, marsh and open scrub	Removed disturbance and some scrub cutting.
144 1/2	CE20 (4B25)	Cutting	Coarse calcicolous grassland	Mowing.

D DONCASTER DIVISION

(vii) (Mansfield Branch etc

H.P.	Our Reference	Formation	Vegetation	Preferred Management
0	B29	Flat & Embankment	Cinder flats, coarse grass and rush/reed marsh	Continued disturbance and scrub control in marsh.
(viii) Low Ellers - Draccliffe				
1½	B31	Cutting & Embankment	Limestone scrub, rock and grassland	Scrub removal from grassland.
E SHEFFIELD DIVISION				
(i)	Shirebrook - Whitwell			
146	B151	Cutting	Limestone rock, rubble wasteland calcareous grass and rough scrub	Scrub removal and mowing.
F WEST RIDING DISTRICT				
No sites of Biological Interest				
G YORK DISTRICT				
(i)	Doncaster - Northallerton (East Coast Main Line)			
21	CF51	Cutting	Herb-rich open sandy grassland	Burning and grazing.
(ii)	Knottingley - Thorpo Marsh			
163½	N242	Flat, Embankment, Ditches	Marshy grassland, cinder flats open winter and scrub	Scrub removal from grassland.
(iii)	Hull - Selby			
7 3/4	CF56	Cutting	Small patches of herb-rich chalk grassland	Scrub-cutting and mowing.
(iv)	Hull - Seamer			
33	CF55	Cutting	Open steep chalk slopes with some scrub	Scrub cutting and bramble removal.

EASTERN REGION

II NEWCASTLE-UPON-TYNE DIVISION

(1) Northallerton - Newcastle (East Coast Main Line)

M.P.	Our Reference	Formation	Vegetation	Preferred Management
55	B34	Cutting	Damp and dry calcicolous grassland	Mowing and scrub removal.
51½	R42 (&CE41)	Cutting	Varied: sallow and birch scrub, heath, rock cutting and tall herb grassland	Scrub removal and occasional mowing of grassy areas.
59 3/4	CE39	Cutting	Calluna and grass heath	Burning.
(11) Newcastle - Borwick-upon-Tweed (East Coast Main Line)				
62 3/4-63½	B36 & CE46	Cutting/Embankment	Calcicolous coarse grassland	Mowing and scrub removal.
(11½) Northallerton - Newcastle (via Tooside & Sunderland)				
5-1½	CE36	Cutting	Species-rich calcicolous grassland	Scrub removal and mowing
(1v) Redmire Branch				
9-8½	CE50 & R51	Cutting	Magnesian Limestone grassland and occasional scrub patches.	Scrub removal from better grassland
16	CE49	Cutting	Coarse calcicolous grassland and scattered scrub	Scrub removal.
(v) South Hetton Branch				
19½	CE40	Cutting	Calcicolous grassland	Scrub removal and mowing.
(vi) Newcastle - Carlisle				
17	CE44	Cutting	Calcicolous grassland and scrub	Selective scrub removal.
51½	R13	Cutting (&Embankment)	Calcifuge grassland, bracken and woodland	Bracken removal in zones.

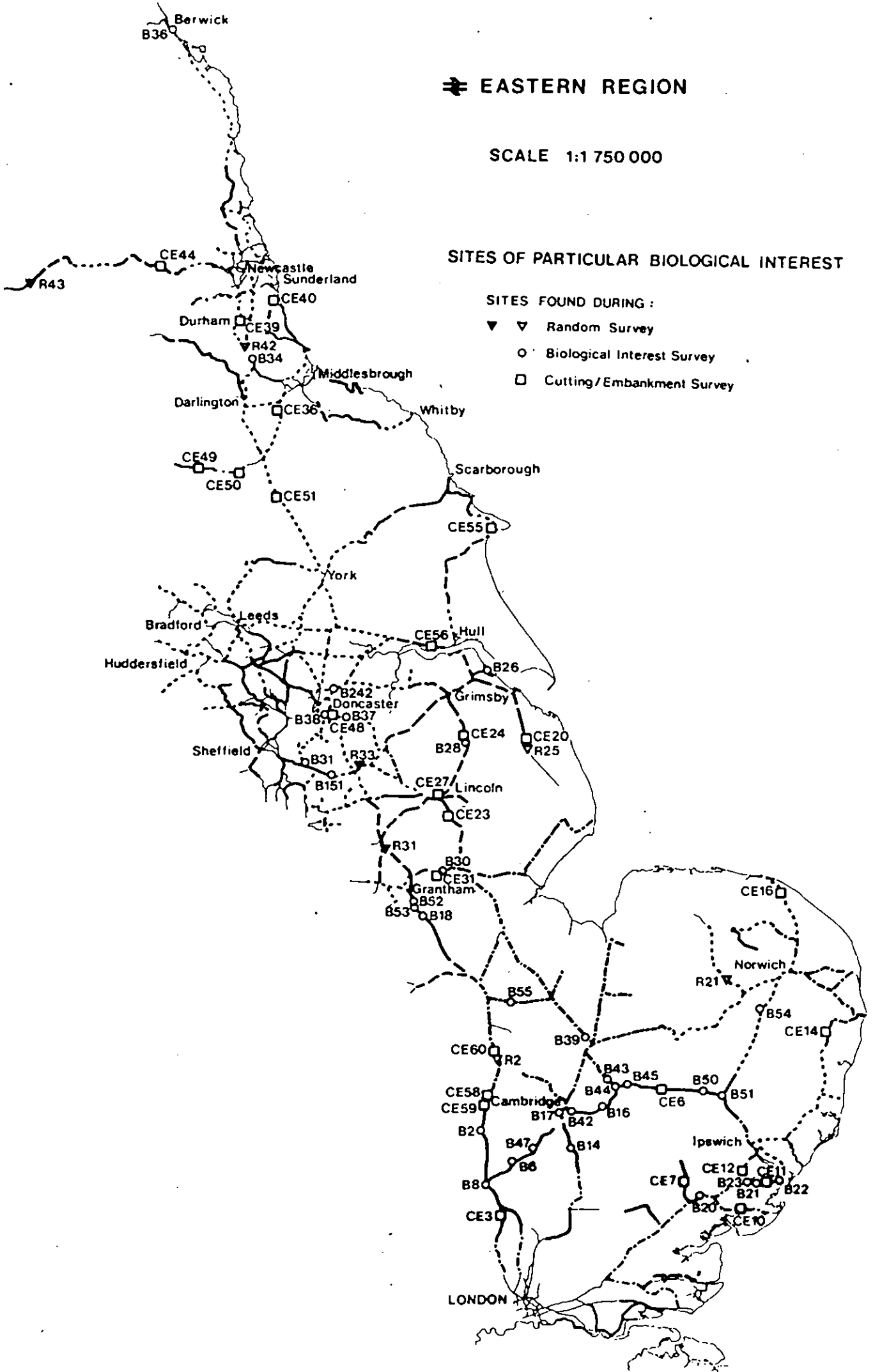
EASTERN REGION

SCALE 1:1 750 000

SITES OF PARTICULAR BIOLOGICAL INTEREST

SITES FOUND DURING :

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



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