



BTO Research Report No. 228

**Site Action Plan for
Black Redstarts
Phoenicurus Ochruros
in the Deptford Creek Area**

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1. INTRODUCTION

The area around Deptford Power Station is in the process of being re-developed. In late June 1997 a local ornithologist observed Black Redstarts in the area. This species is a rare breeding bird in Britain and is fully protected by legislation through its listing in Schedule 1 of the Wildlife and Countryside Act (1981). The site manager was informed and demolition work was halted. Detailed ornithological survey work revealed the presence of two females and one male. Later it was established that the nest was not located in the buildings that were due for demolition. Development work recommenced and at least four young fledged successfully.

A wide range of further development work is planned for the site which could adversely affect the Black Redstarts through disturbance and habitat change. This Site Action Plan provides information on the status and biology of Black Redstarts, the impact of the site development as planned and suggests methods for ensuring that the site remains suitable for Black Redstarts.

2. EUROPEAN STATUS

The Black Redstart has an extensive breeding distribution which extends across Europe and into Asia as far as western China, breeding also occurs in north-west Africa (Hagemeijer & Blair 1997). Within Europe the species is fairly common and populations are generally stable (Tucker & Heath 1994). In the 1850s the species started to colonise north-west Europe (Hagemeijer & Blair 1997), this resulted in the first breeding in Britain in 1923 (Morgan & Glue 1981).

3. BRITISH STATUS

The breeding Black Redstart population is monitored annually by the Rare Breeding Birds Panel. Data are currently available up to 1993 and are presented in Table 1 (from Ogilvie 1996)

Table 1 Number of breeding Black Redstarts in Britain

	1986	1987	1988	1989	1990	1991	1992	1993
No. of localities	92	77	70	56	50	36	44	53
No. of confirmed pairs	81	46	54	36	28	23	14	32
No. of possible pairs	38	63	58	46	46	46	57	44
Maximum total number of pairs	119	109	118	82	74	69	71	76

The breeding population has fluctuated in the past with peaks in 1948, 1951 and 1964. The year 1973 appeared to herald the start of a population plateau at just over 100 territory holding males (Morgan & Glue 1981). However, the population has declined since this date, the most recent estimate is that between 27 and 74 pairs nest in Great Britain (Stone *et al.* 1997). This population is concentrated in south-east England, with smaller numbers elsewhere, especially the Midlands. The northern limit of regular breeding is Lancashire and South Yorkshire. As the breeding population is so small the Black Redstart was classified as a Red Data Book bird by

Batten *et al.* (1990) and was placed on the amber list, i.e. medium conservation concern, in Birds of Conservation Concern (RSPB 1996).

The winter distribution of British Black Redstarts is mainly coastal and concentrated in the south and west of England, but some remain in their breeding areas (Lack 1986). Other birds migrate to winter in the Mediterranean basin or along the Atlantic coast of Portugal, Spain and southern France (Hagemeijer & Blair 1997).

4. STATUS IN LONDON

The Black Redstart has been established as a regular breeding species in London since the Second World War. The nationwide distribution of breeding birds has been mapped by the two BTO Atlas projects (1968-1972 and 1988-1991). During this time period there has been an apparent thinning of the population in London and the south-east (Gibbons *et al.* 1993). Despite this London still holds a significant proportion of the UK's population of this species. Data from London Bird Reports are shown in Table 2.

Table 2 Number of breeding Black Redstarts in London

	1988	1989	1990	1991	1992	1993	1994	1995
No. of pairs that bred	10	6	9	5	2	n/a	6	11
No. of extra pairs present	8	2	3	2	2	n/a	1	1
No. of extra singing males	14	7	10	5	7	n/a	27	10

In London, as elsewhere in Britain, most breeding sites are only occupied by Black Redstarts for a short period of time, see Table 3 (from Oliver 1997). In many of these cases the habitat does not appear to have changed.

Table 3 Number of years for which all London Black Redstart sites were occupied, from 1966-1994

No. of years that the site was occupied	Number of sites
1	51
2	12
3-11	14
12 years or more	2

5. STATUS AT DEPTFORD CREEK

An examination of London Bird Reports shows that a pair bred at Deptford Power Station in

1991 and 1987. In addition a bird held a territory on the site in 1973, but breeding was not confirmed. In 1997 there was one male and two females near the power station and at least four young fledged, birds have remained on the site to winter. Another pair also bred in the immediate vicinity in 1997. It is not known if the lack of records from the site in other years is an artefact caused by the lack of visits or reflects a real absence of birds.

6. IMPORTANCE OF THE DEPTFORD POPULATION

Using the latest population estimate (Stone *et al.* 1997) the population at Deptford represents between 3% and 7% of the UK's breeding population. Using the same methods as Stone *et al.* (1997) the London population can be estimated at between 7 and 20 pairs. The Deptford birds thus represent between 10% and 29% of London's breeding population of Black Redstarts.

Conservationists often consider a site to be of national significance for a species if it holds more than 1% of the national population. Thus, Deptford Creek is of national significance for Black Redstarts. The site is of particular importance as Black Redstarts may have bred in the area for over twenty years, this is considerably longer than most sites in London or the UK.

7. BIOLOGY OF BLACK REDSTARTS

7.1 Food

Black Redstarts exhibit a wide variety of feeding mechanisms. These include feeding directly from the ground, dropping onto prey from perches and flying from perches to catch insects in mid flight. Invertebrates form the bulk of the diet, but plant material comprises at least 25% of the diet during the breeding season (Meadows 1969) and increases in importance during the Autumn (Cramp 1988).

A wide range of invertebrates are consumed including diptera (true flies), hymenoptera (ants, bees etc.), lepidoptera (butterflies and moths), homoptera (aphids) and earthworms. A range of fruits and seeds are consumed including those of docks (*Rumex*), Crucifera species, bramble (*Rubus*) and Hawthorn (*Crataegus*). These plant species are characteristic of the pioneer plant communities which develop on areas of frequently disturbed ground which retains some bare patches.

7.2 Breeding

Black Redstarts operate a socially monogamous breeding system from mid April until the end of July. Territories are rigorously defended and range from $\approx 7\frac{1}{2}$ ha in size. They are usually centred on the nest site and delimited by tall song posts. A typical nest site comprises a ledge on a building or holes and crevices in rocks and walls, most nests are located 1-4m above ground level, but can occur up to heights of 45 m. The species shows some adaptability and has been recorded nesting in underground pipes and nestboxes. If nest sites are limited then different pairs may build nests close together, down to 10 m, but this leads to frequent disputes. In the UK pairs usually have two broods, these are reared in the same nest in about a quarter of cases.

The female takes between 5 and 8 days to build the nest in which 4-6 eggs are usually laid (one

egg each day). The eggs hatch after 13-17 days and chicks fledge after 12-19 days. After fledging chicks seek safety amongst rocks, vegetation or other cover where they may remain for most of the day and night, they remain dependent on their parents for a further 11 days.

Analysis of BTO nest record cards shows that at least one in four nests fail, most frequently due to desertion or loss of eggs which is attributed to disturbance by children, builders or other workman (Glue 1994). Rats and cats have also been reported as problems (Glue 1994).

8. LIKELY IMPACT OF THE DEVELOPMENT

Current plans for the development are likely to reduce the habitat quality for Black Redstarts in a number of ways:

- Buildings which currently provide an abundance of suitable nest sites will be lost.
- Large areas of sparse pioneer vegetation will be developed, these areas currently provide excellent foraging opportunities for the Black Redstarts.
- Re-development of the creek walls could also reduce foraging opportunities.
- Works associated with the development could cause disturbance to breeding birds, increasing the risk of nest failure. (If such disturbance occurred it would be an offence under the Wildlife and Countryside Act as the Black Redstart is listed in Schedule 1 of the Act).
- Housing developments could lead to permanently increased disturbance levels due to an increased population of domestic cats and disturbance from children may also increase.

With careful design these potential problems could be significantly reduced and should enable Black Redstarts to continue breeding at the site.

9. SUGGESTED MITIGATION

9.1 Timing of building works

To prevent disturbance to breeding birds building activity should be avoided between April and June (inclusive) within 300 m of a suspected nest site.

9.2 Provision of nest-sites

Old buildings currently on the site provide Black Redstarts with many potential nest sites which will be destroyed when the buildings are demolished. The building which contained the nest in 1997 should be left on site for as long as possible. The provision of alternative nest sites in the new buildings would mitigate against the loss of existing sites. The simplest way of doing this would be to provide ledges high up on the walls tucked underneath the roof. A more effective, and longer term, measure would be to build nestboxes directly into the wall and several companies now produce ready-made building blocks and tiles with integral nest chambers (addresses are given below). ACO Ltd. make a polymerised concrete box which is exactly three brick courses high and half a brick wide. If these boxes are used the top part should be removed to create an open fronted nest-box, which is the only type used by Black Redstarts. More details are given in du Feu (1993).

When siting nest boxes the direction makes little difference although the sector from north to south-east is sometimes considered the most favourable. It is more important to ensure that the box is sheltered away from prevailing wind, rain and strong sunlight. Care should also be taken to avoid sites which channel water during periods of heavy rain.

Birds are very choosy when selecting nest sites, thus a large number of boxes should be provided. At the Greenwich Reach site it would be appropriate to provide around 20 boxes, as long as the density does not exceed 10 per hectare. As well as incorporating boxes into the walls of new buildings they could be built into the new flood defence walls, which may be less prone to disturbance. Boxes should be roughly evenly spaced and placed in a variety of locations and at different heights, directions etc. Plans must also be made to remove debris from boxes at the end of each breeding season, otherwise they will not be used in the subsequent year.

9.3 Maintenance of foraging areas

Food availability will determine the number of Black Redstarts that the site can support, their breeding success and possibly the number of years that the site is occupied (Meadows 1969). Under the current planning proposals, areas currently used for foraging will be lost to buildings and other areas will be planted with trees and shrubs, a vegetation type that is unsuitable for Black Redstarts. To ensure that the site can support Black Redstarts a pioneer vegetation community must be maintained on the site which occupies an area as large as that which currently exists. This will be difficult to achieve unless the total area occupied by buildings is reduced; however, it may be possible with a combination of:

- A reduction in the area occupied by ‘aesthetic planting’.
- Landscaping the ground into terraces to increase the soil surface area.
- Clearance of areas of dense scrub to create new areas in which a pioneer plant community can develop. These areas are currently dominated by Buddleia which is attractive to butterflies and other nectar feeding insects. However, national conservation priorities should take precedence over local priorities and therefore it is an appropriate management aim to clear some of the scrub - although some areas of dense Buddleia should be kept on site.
- Providing buildings with gravel roofs would allow a pioneer plant community to develop.

It is important to remember that pioneer plant communities depend on frequent physical disturbance of the substrate to prevent a denser vegetation developing which will be less suitable for Black Redstarts. Formerly, this was created by every-day industrial operations (e.g. by passing vehicles) following development this will need to be done deliberately. This is easily achieved, e.g. by passing a rake over the area, but needs to be incorporated into a site management plan.

The current dilapidated state of the current sea walls provides an ideal habitat for invertebrates and also allows some pioneer plants to flourish. The re-building of the sea-walls should be undertaken in a manner that will create a roughly textured surface which is deep enough to provide refuge to invertebrates and an opportunity for plants to grow. This will ensure that the sea-walls continue to provide Black Redstarts with foraging opportunities.

9.4 Reducing future disturbance levels

The development plans include the construction of a new pedestrian footbridge over the Creek mouth, together with a new footpath alongside the Creek. This area is currently relatively undisturbed and is currently used by Black Redstarts as a foraging area. Following development on the rest of the site this area may become more importance for Black Redstarts and it would be preferable to keep this area as free of disturbance as possible. Increased disturbance will also have a noticeable impact on the riparian birds which currently use the area.

It is important that nest boxes are sited in areas where they are least likely to be disturbed, for example at the back of houses and away from doors and windows.

9.5 Monitoring

Survey work will be required throughout the building phase of the project to enable nest sites to be detected and disturbance avoided. Survey work will also be required following completion of the project to enable the effectiveness of the mitigation measures to be tested.

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