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**Setting Forth
Ornithological Assessment:
Analysis of the Common Birds
Census of St Margaret's Marsh**

Authors

D E Balmer & N A Clark

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EXECUTIVE SUMMARY

1. The Common Birds Census highlighted the importance of St Margaret's Marsh to the local area. The marsh can be considered as ornithologically rich with an abundance of reedbed and scrub species.
2. In a national context most birds are present in low numbers, although in a local context the number of breeding species breeding is important. The marsh offers an important breeding area for many bird species, particularly those which have specific habitat preferences.
3. St Margaret's Marsh lies adjacent to the Firth of Forth which hosts a range of estuarine and coastal species, particularly gulls and terns. These can be seen from the study area and are often recorded overflying the marsh.
4. The Firth of Forth is a complex estuarine site incorporating a wide range of coastal and intertidal habitats. The Firth of Forth is a wetland of international importance, regularly supporting 23,800 wildfowl and 37,600 waders. The Forth is nationally important for 11 species of wintering waterfowl and for breeding Common and Little Terns (Pritchard *et al.* 1992).
5. The importance of the Firth of Forth has been recognised and there are several SSSIs within the complex, additionally the whole area is a candidate Special Protection Area (SPA) and Ramsar site. The Forth Islands such as Craighleith and Bass Rock are designated SPAs (Pritchard *et al.* 1992).

1. RESULTS

The results of the Common Birds Census suggest that St Margaret's Marsh holds a good range of breeding and passage species (Table 1).

The census highlights a number of conservationally important species (Key Species), these being waterbirds, migrant passerines and birds of restricted habitats. The key species are Water Rail, Sedge Warbler, Whitethroat, Willow Warbler and Reed Bunting. The status of these key species are discussed and comments made on the remaining species recorded. The importance of St Margaret's Marsh in a national and regional context is evaluated.

1.1 Water Rail

The Water Rail requires a mosaic of fresh water, open mud and extensive areas of dense aquatic vegetation for breeding.

In Scotland, the Water Rail is described as a local resident and due to its habitat requirements is consequently absent from much of Scotland during the summer (Thom 1986). On a regional basis, the Water Rail is described as a scarce resident and winter visitor in Fife (Smout 1986). Taking its regional status into account, the observation of three calling males in the study site is an important record. All three territories were centred in reed (*Phragmites australis*).

1.2 Sedge Warbler

A summer migrant associated with reedbeds and other waterside vegetation and also dry scrub vegetation.

The Sedge Warbler is widely distributed throughout mainland Scotland but relatively scarce in the west and northwest Highlands (Thom 1986). In Fife, it is widely distributed as a breeding bird where there is suitable habitat (Smout 1986). The study area held 29 territories, the majority of these were in reed around the edge of the lakes, with some territories spreading into Greater Willowherb (*Epilobium hirsutum*).

The Sedge Warbler is a Red Data Bird Candidate Species (Batten *et al.* 1990).

1.3 Whitethroat

The Whitethroat is a summer migrant occupying a range of habitats including scrub, young woodland, hedgerows and wetland vegetation.

In Scotland, the Whitethroat is widely distributed throughout the mainland, Clyde Islands and Inner Hebrides. It is most abundant in the Central Lowlands and southern counties (Thom 1986). In Fife, the Whitethroat is described as a common summer visitor, nesting throughout the area (Smout 1986). The six territories were recorded from areas of willowherb with scattered Hawthorn (*Crataegus monogyna*) and from European Gorse (*Ulex europaeus*).

The Whitethroat is a Red Data Bird Candidate Species (Batten *et al.* 1990).

1.4 Willow Warbler

The Willow Warbler is a migratory breeder, being most numerous in young woods, scrub and rank vegetation.

The most abundant of the warblers, the Willow Warbler is widely distributed throughout the Scottish mainland and on the inner islands (Thom 1986). Its status as a widespread breeder in Fife is confirmed by Smout (1986). Two of the four territories identified during the census are centred in an area of willowberbs and scattered trees. One territory is in an area of mixed Hawthorn and Sycamore (*Acer pseudoplatanus*) and the fourth territory lies on the edge of the marsh in woodland.

1.5 Reed Bunting

Typically associated with the wetland environment and found increasingly in drier habitats such as farmland.

The Reed Bunting is resident and widespread on mainland Scotland and has expanded its range in the Hebrides and Northern Isles. Although widespread, it is an abundant breeding bird only locally, in areas of particularly suitable habitat (Thom 1986). The picture in Scotland is mirrored in Fife where the Reed Bunting breeds commonly in suitable habitat (Smout 1986). On St Margaret's Marsh all territories are in reeds with some spreading into Greater Willowherb.

1.6 Other territory holders

Passerines such as Wren, Dunnock, Blackbird and Blue Tit held territories in both the reed area and the willowherb beds scattered with trees and bushes. Woodpigeon territories were centred on areas with trees which provide suitable breeding habitat. The Green Woodpecker territory is in an area of Rosebay Willowherb (*Chamerion angustifolium*), scrub and scattered broad-leaved trees. Both Magpie and Carrion Crow occupied a similar habitat to Green Woodpecker. The territory of the Linnet was in an area of European Gorse.

2. IMPORTANCE OF ST MARGARET'S MARSH

2.1 The designation of SSSIs (Site of Special Scientific Interest) is based mainly on national importance. The biological guidelines for their notification include a breeding bird community index, based on the principle of indicator species for different habitats. The criteria for site evaluation for SSSI notification follow the Nature Conservation Review (Ratcliffe 1977). The primary criteria are size, diversity, naturalness, rarity, fragility and typicalness. The secondary criteria are recorded history, position in an ecological/geographical unit, potential value and intrinsic appeal (NCC 1989).

For birds, sites which hold at least 1% of the British breeding population of any native species, or, in the case of seabirds, 10,000 breeding pairs, qualify as SSSIs. This 1%

criterion also applies to populations of non-breeding birds, whether wintering, summering or migrant. SSSIs may also be notified on the basis of their assemblages of breeding birds in different habitats. This involves an index of abundance derived from categories of numbers of breeding pairs (Table 2).

For a given site, the index is applied to all the species occurring in the main habitat(s) and the total value compared with tabulated thresholds for each suite of habitats (NCC 1989). If the threshold is exceeded, the site qualifies for notification as a SSSI for its breeding avifauna.

St Margaret's Marsh does not qualify as a SSSI on the basis of the 1% criterion, or on the breeding bird index. The breeding bird threshold for the main habitat on the study area was calculated and compared with the SSSI criteria as follows.

- Lowland open water and their margins: SSSI threshold = 31/ Marsh score = 5

The three species that qualified for an index value were Water Rail, Sedge Warbler and Reed Bunting.

2.2An indication of species richness can be achieved by comparison with published information on community composition of different habitats. The source of reference is the Register of Ornithological Sites, which is fully described in Fuller (1982). It should be noted that the sites surveyed were considered to be of ornithological importance, and therefore, included some of the best examples of various habitats.

Of the species recorded on St Margaret's Marsh, three are represented in a list of species recorded in a comparable wetland habitat in the Sites Register. The Water Rail was recorded in only 14% of the sites surveyed for the register in East & South Scotland (sample size 51) and suggests that the species is scarce in this region of Scotland. Sedge Warbler and Reed Bunting were recorded from 78% and 84% of the surveyed sites respectively. Species occurring in more than 50% of the sites throughout East & South Scotland are regarded as being typical of that particular habitat. Many of the other species recorded by the CBC are generalists and occur commonly in a wide range of habitat types.

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Table 1 The number of territories of species encountered during a Common Birds Census of St Margaret's Marsh.

Territorial Species	Number	Territorial Species	Number
Water Rail	3	Sedge Warbler	29
Pheasant	1	Whitethroat	6
Woodpigeon	6	Willow Warbler	4
Green Woodpecker	1	Blue Tit	3
Wren	10	Magpie	1
Dunnock	7	Carrion Crow	1
Robin	1	Linnet	1
Blackbird	7	Reed Bunting	10
Song Thrush	2		
Non-territorial Species recorded			
Shelduck, Mallard, Kestrel, Snipe, Black-headed Gull, Swift, Sand Martin, Whinchat, Starling, Chaffinch.			

Table 2 Index of bird abundance for use in selection of SSSIs (NCC 1989)

Index of abundance	Number of breeding pairs in Britain
0	>1 million
1	100,000 - 1 million
2	10,000 - 100,000
3	1,000 - 10,000
4	100 - 1,000
5	10 - 100
6	1 - 10

