

Appendix 10.2

Winter Bird Survey

M8/M73/M74 Network Improvements

APPENDIX 10.2

WINTER BIRD SURVEY 2005/2006

M74 Junction 5 to 6

REPORT

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1 Introduction

Background

The southbound carriageway of the M4 between Junctions 5 and 6 is to be widened as part of the proposed M8/M73/M74 Network Improvement scheme. This report details the results of a winter bird survey carried out over three survey visits conducted along this section of the scheme between December 2005 and February 2006. The need for the survey along this particular section of the scheme was identified due to the following:

- information from consultees which identified local bird interest; and,
- the proximity of Hamilton Low Parks SSSI and Strathclyde Country Park on the west side of the motorway, of which both features are important for birds.

Other sections of the scheme corridor (M8/M73/M74) were not subject to winter bird survey as it was considered that the mainly on-line nature of the scheme would have negligible impact on wintering birds in the vicinity of these sections.

2 Winter Bird Survey

Survey Area

The survey extent encompassed an approximate 500 m corridor either side of the M74 between Junctions 5 and 6. However, to accommodate natural boundaries, this corridor was flexible and extended beyond 500 m in places. The survey area is shown on Map 1.

The survey area comprised a variety of land and water habitats and public uses, including a water sport based loch, a section of the River Clyde, formal play areas, Hamilton Services, a hotel and grounds, as well as a woodland area around the Mausoleum (Area D on Map 1) and, finally, the SSSI and adjoining wetland comprising Areas A and B on Map 1. The SSSI was also surveyed as part of the Raith Junction improvement proposal (M74 Junction 5, Raith Environmental Statement March 2007 MFJV).

Significance of Bird Species

Birds of Conservation Concern 2002-7 [1] was used as a guide to the national significance of bird species as follows:

Red list species are those that are globally threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years and those that have declined historically and not shown substantial recent recovery.

Amber list species are those with an unfavourable conservation status in Europe; those species whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders and those with internationally important or localised populations.

Green list species are those which do not fulfil any of the above criteria.

The red listed species all have national Biodiversity Action Plans.

The individual reasons for decline are subject to continuous research and speculation, the up-to-date details of which can be found in the likes of the BTO quarterly newsletter. The only seriously threatened red-listed species, which could conceivably occur in this area, is willow tit.

Methodology

The survey area was visited on December 28th 2005, January 24-25th 2006 and February 17-18th 2006 by ornithologists with over twenty years experience in their field.

The pre-dusk period was spent observing any roosting movements, notably the flight-lines and heights of the very large number of gulls roosting on Strathclyde Loch.

Various recording methods were used:

- long range visual observation was used to survey for wildfowl on Strathclyde Loch and the loch to the west of Hamilton Services;
- tape luring was used for Water Rail and possible Willow Tits;
- specifically quartering suitable habitat for Snipe species;
- attention was also given to any regular roosting/feeding movements and the flight height of, notably, gulls roosting of Strathclyde Country Park;
- all other species were located by walking a route covering the whole of the terrain obviously paying more attention and therefore progressing more slowly in woodland and near hedges than, for example, the 'manicured' sites e.g. near the Mausoleum; and
- care was taken not to survey in winds exceeding Force 3 or periods of rainfall.

Survey conditions during the three visits

The visit on 28th December was undertaken in exceptionally cold, clear and still daytime with a maximum day temperature of just -3.5°C at the survey location. There was localised fog and low cloud over the survey area but this was not dense enough to impede visibility during the survey. The conditions on 24th January were not severe with a temperature of 5°C , 8/8 cloud, wind force 0-1 and good visibility. Similar conditions prevailed for the 17th February visit.

The December visit was significant in that it indicated an important relationship, especially for tufted duck, between the Hamilton Services loch (technically just outside the survey area) and the unfrozen River Clyde and some sections of Strathclyde Loch [see Table 4]. It is likely that some, if not the majority, of transference of the tufted duck as the water iced over would have occurred during hours of darkness.

Survey limitations

Traffic noise from the motorway made it more difficult to hear bird calls. This problem was partially combated by more data being available from the SSSI.

A problem with all winter bird surveys is the mobility of certain species, first with the risk of duplicating counts, especially for tit flocks and secondly, simply not being on site when other mobile species are using it (hence the caveat under Willow Tit mentioned previously).

As winter birds are not as territorial as breeding birds, they are more easily disturbed and displaced out of the survey area due to dogs and noisy people, than during the breeding season.

The dry, rather cold nature of the 2005-6 winter meant that there was no access problems near to the River Clyde (winter flooding can be a major constraint with winter riparian surveys), but the still conditions caused overnight frost. However, it could be argued that regular displacement of birds, either into or from an area due to frost and snow, is part of "normal winter conditions". Frozen conditions appeared to result in extremely local displacement by wildfowl to locations very close by e.g.



tufted duck and goldeneye from the lake next to Hamilton Services moved onto the River Clyde during the December survey.

The habitats immediately alongside the M74 were surveyed from adjoining land outwith the road boundary for health and safety reasons.

3 Results

Data from the three visits have been separately itemised and are shown in Tables 1 to 3 that follow. Table 4 provides a comparison of data. Birds of conservation concern are indicated and the key for the criteria is given below:

Key to criteria for determining conservation status

RED LISTING CRITERIA

IUCN	Globally Threatened
HD	Historical population decline in UK during 1800-1995
BDp	Rapid ($\geq 50\%$) decline in UK breeding population over last 25 years
BDr	Rapid ($\geq 50\%$) contraction of UK breeding range over last 25 years

AMBER LIST CRITERIA

HDrec	Historical population decline during 1800-1995, but recovering: population size has more than doubled over last 25 years
BDMp	Moderate (25-49%) decline in UK breeding population over last 25 years
BDMr	Moderate (25-49%) contraction of UK breeding range over last 25 years
WDMp	Moderate (25-49%) decline in UK non-breeding population over last 25 years
SPEC 2 or 3	Species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern)
BR	Five-year mean of 1-300 breeding pairs in UK
BL	$\geq 50\%$ of UK breeding population in 10 or fewer sites, but not BR
WL	$\geq 50\%$ of UK non-breeding population in 10 or fewer sites
BI	$\geq 20\%$ of European breeding population in UK
WI	$\geq 20\%$ of NW European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in UK

(1) = decline $> 50\%$ but trend provisional or possibly unrepresentative of the UK.

Table 1 Birds noted in December

Category	Criteria - see Chart 1	SPECIES	SW of M74					NE OF M74		
			SSSI	N of services	Services	Mausoleum	Hamilton Services Loch (frozen)	Strathclyde Loch	Either side of river	River
		minus3.5C 8/8 Calm								
		Blackbird				26			7	
A	BDMP. BL	Black-headed Gull						410		
		Blue Tit				1			4	
R	BDp	Bullfinch				1				
		Carrion Crow			2	1				
		Chaffinch				12			1	
		Coal Tit				2				
A	BDMP.SPEC2or3.BL	Common Gull						180		
		Coot						75		
		Cormorant						15		14
A	BDMP	Dunnock							1	
A	BDMP	Fieldfare				5				
A	BDMP	Goldcrest				1			7	
		Golden Plover						27		
A	BR. WL	Goldeneye	4							24
		Goldfinch			2					
		Goosander								20
		Great Black-backed Gull						1		
		Great Tit				7				
		Greenfinch				6				
		Grey Heron								1
	probably feral	Greylag Goose						9		
A	BDMP(1). BR	Herring Gull						75		
		Jackdaw						2		
A	BDMP. WI. Local BAP	Lapwing						12		
A	BR	Lesser BB Gull						1		
		Little Grebe								2
		Magpie			3	1				
		Mallard	1					10		10
		Moorhen						8		4
A	BI	Mute Swan						40		
		Pied Wagtail						1		
A	WI	Pochard						2		
A	BR	Redwing				14			8	
		Robin			1	4				
		Rook							1	
		Smew								1
R	BDp	Song Thrush				10			1	
A	WI	Teal								7
		Treecreeper				1				



		SPECIES	SW of M74						NE OF M74		
Category	Criteria - see Chart 1	minus3.5C 8/8 Calm	SSSI	N of services	Services	Mausoleum	Hamilton Services Loch (frozen)		Strathclyde Loch	Either side of river	River
		Tufted Duck									297
		Woodpigeon								1	
		Wren				1				3	

Table 2 Birds noted in January

Category	Species	SW of M74					NE OF M74		
		SSSI	N of services	Services	Mausoleum	Hamilton \services Loch	Strathclyde Loch	Either side of river	River
	Blackbird	7			1				
A	Black-headed Gull	21					75		2
	Blue Tit	5	4		4			2	
R	Bullfinch		2						
	Buzzard	1	2						
	Canada Goose					3			
	Carrion Crow	1			1			1	
	Chaffinch				4				
	Coal Tit	1							
A	Common Gull					6	1		
	Coot		1			7	1		
	Cormorant								1
A	Dunnock	2							
	Feral Pigeon			1					
A	Fieldfare				112				
A	Goldcrest	1	1		1				
A	Golden Plover						28		
A	Goldeneye	3				5			20
	Goldfinch	3							
	Goosander								11
	Great Tit	4			6				
	Grey Wagtail						1		
A	Greylag Goose								
A	Herring Gull			1			1		
A	Kestrel				1				
A	Lapwing						99		
A	Lesser BB Gull			1		1			
	Long-tailed Tit			1					
	Magpie	2						3	
	Mallard	5				22			11
A	Mistle Thrush				2				
	Moorhen						1		
A	Mute Swan					10	2		
A	Peregrine					1			
	Pochard					26			
A	Redwing				5				
	Robin	2		1	1			2	
	Rook	1			4				
	Siskin				10				
R	Song Thrush	1							
R	Starling				22				
A	Teal	2				1			
	Treecreeper							1	
	Tufted Duck					214			
	Whooper Swan								
A	Wigeon					24			
	Woodpigeon	1			2			11	
	Wren	4	5		2			3	

Table 3 Birds noted in February

Category		Species	SW of	N of services	Services	Mausoleum	Hamilton Services Loch	NE M74		
			M74					SSSI	Strathclyde Loch	Either side of river
	1187	Blackbird	8			1			2	
A	582	Black-headed Gull					6	162		
	1462	Blue Tit	4			4			3	
R	1710	Bullfinch					4			
	287	Buzzard							1	
	166	Canada Goose					3			
	1567	Carrion Crow			1	2		3	3	
	1636	Chaffinch	12						2	
	1461	Coal Tit	2			3			1	
A	590	Common Gull					5	5		
	429	Coot					5			
	72	Cormorant	2				1			
A	1084	Dunnock	4		1					
A	1198	Fieldfare				38				
A	1314	Goldcrest	1			1	1			
A	485	Golden Plover						46		
A	218	Goldeneye	12				26			96
	223	Goosander								5
	1464	Great Tit	6	1		1			3	
	122	Grey Heron					1			
A	493	Lapwing						88		
	7	Little Grebe					1			
	1437	Long-tailed Tit	6	4		2			6	
	1549	Magpie				1			1	
	186	Mallard	4							16
A	1202	Mistle Thrush	2			2				
	424	Moorhen					1			2
A	152	Mute Swan						2		
	198	Pochard					68			
A	1201	Redwing	11			4				
	1099	Robin	9		1	2			4	
	1563	Rook	1							
	1654	Siskin	1							
R	1200	Song Thrush	4			1			1	
R	1582	Starling				2				
A	184	Teal					5			
	203	Tufted Duck	16				108			
A	154	Whooper Swan	3				1			
A	179	Wigeon					7			
	670	Woodpigeon	9						2	
	1066	Wren	2			1			2	



Table 4 A comparison of birds using the main water areas

Comparison of species per month on the lochs and river in the survey area.		Dec 28 2005			Jan 24-25 2005			Feb 17-18 2005		
SPECIES		Hamilton Services Loch	Strathclyde Loch	River Clyde	Hamilton Services Loch	Strathclyde Loch	River Clyde	Hamilton Services Loch	Strathclyde Loch	River Clyde
A	Black-headed Gull		410			75	2	6	162	
	Canada Goose				3			3		
	Carrion Crow								3	
A	Common Gull		180		6	1		5	5	
	Coot		75		7	1		5		
	Cormorant		15	14			1	1		
A	Golden Plover		27			28			46	
A	Goldeneye			24	5		20	26		96
	Goosander			20			11			5
	Great Black-backed Gull		1							
	Grey Heron			1				1		
A	Grey Wagtail					1				
A	Greylag Goose		9							
A	Herring Gull		75			1				
	Jackdaw		2							
A	Lapwing		12			99			88	
A	Lesser BB Gull		1		1			1		
	Little Grebe			2						
	Mallard		10	10	22		11			16
	Moorhen		8	4		1				2
A	Mute Swan		40		10	2			2	
A	Peregrine				1					
	Pied Wagtail		1							
A	Pochard		2		26			68		
	Smew			1						
A	Teal			7	1			5		
	Tufted Duck			297	214			108		
A	Whooper Swan							1		
A	Wigeon				24			7		
4b Loch frozen										
A = Amber-listed										

4 Discussion

The area of land (part of the existing motorway boundary) which will be required for the road widening (ie the embankments and cutting slopes and road verges) contained no key bird species *in situ*. There was the usual transitory use of the area by thrush species and roaming flocks of tits including the usual 'attached' species such as goldcrest and treecreeper. This does not mean that the area will not support any red/amber-listed breeding birds, although the habitat directly impacted is far enough away from the River Clyde and should be out of range of the nest sites of riparian specialists such as grey wagtail. Also with respect to riparian breeding birds, there was no obvious visual evidence of any banks suitable for kingfisher and sand martin in the surveyed area.

The tree planting between the motorway and the river is not considered to be of any significance to winter birds and the riparian habitat post-construction.

The River Clyde (over which the M74 passes on a bridge) is an important sensitive receptor in relation to proposed construction works nearby on the east side of the motorway. The importance of the river is especially strong during frozen conditions, where it acts as a recipient for large numbers of diving ducks from Hamilton Services loch. None of the numbers of tufted duck, goldeneye etc are anywhere near the national or international thresholds for this species (Tufted Duck: National threshold = 901, International threshold 12 000, Goldeneye: National threshold = 249, International threshold = 4000) [3]. However, unnecessary disturbance of riverside habitat by plant can and should be avoided where practicable by operating exclusively from the motorway itself.

The key potential impact here relates to a movement of wildfowl species across the M74, especially during conditions where Hamilton Services Loch is in the process of freezing and therefore there is at least some movement during the hours of darkness. However, this will only be a problem if the scheme involves unlit aerial hazards. The change of location of any lights should not be a problem.

The flight heights of wildfowl between Hamilton Services loch and the river were above any HGV impact height and, similarly, were not affected by the height of the poplar and pine plantations currently between the river and the motorway. Therefore the proposed scheme is not likely to result in any increased risk of wildfowl collision impact with HGV's etc due to the removal of the trees and the theoretical lowering of flight height.

The widening of one side of the motorway between Junctions 5 and 6 will not significantly increase the proximity or intensity of lighting levels at the river.

The implementation of the scheme will not increase noise levels sufficiently to have any adverse impact on the status of wintering birds, as the corridor adjacent to the existing M74 is already dominated by traffic noise and birds are likely to have become habituated to it.

Many of the most valuable wintering bird species are also potential (resident) breeding species (breeding birds are discussed in Appendix 10.1). Based purely on winter distribution, which involves much greater bird mobility compared to during the

breeding season, it is considered that there will be negligible impacts on wintering bird species due to the construction and operation of the scheme.

Landscape planting associated with the proposed scheme should avoid alignment of plantations/hedgerow lines opposite one another which could encourage trans-carriageway movements by roaming tit flocks. Instead, alternating blocks of planting are suggested.

No specific mitigation measures are proposed with respect to wintering birds.

5 References

- [1] <http://www.rspb.org.uk/science/survey/bocc.asp>
- [2] <http://www.webtag.org.uk>
- [3] *The Wetland Bird Survey 2001-3: Wildfowl and Wader Counts*. Cranswick et al 2005
- [4] <http://www.bto.org>