Guidance for Scottish public bodies

Duties in relation to wild bird habitat – the "Bird Habitat Duty"

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Contents

Introduction

The purpose of this document is to raise the awareness of Scottish public bodies to The Conservation (Natural Habitats, &c) Amendment (Scotland) Regulations 2012 and to provide high-level guidance on how the Regulations should be interpreted and implemented. This legislation came into force on 16 August 2012. It was introduced in order to transpose those elements of the Birds Directive that relate to the preservation, maintenance or re-establishment of a sufficient diversity and area of habitats for all wild birds that naturally occur in Scotland (Article 3), and for the avoidance of pollution or deterioration of these habitats (Article 4.4).

Provisions in the legislation

The key objective in the legislation (Regulation 3A(3)) is "the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in Scotland in implementation of Article 3 of the Wild Birds Directive (including by means of the upkeep, management and creation of such habitat, as appropriate), having regard to the requirements of Article 2 of that Directive."

Regulation 3A(1) requires Scottish Ministers, Scottish Natural Heritage (SNH) and, in relation to the Scottish marine area, a competent authority to take such steps in the exercise of their functions as they consider appropriate to secure the above objective.

Regulation 3A(2) requires, except in relation to the Scottish marine area, that the Scottish Environment Protection Agency (SEPA), the Forestry Commissioners[1], local authorities and National Park authorities must take such steps in the exercise of their functions as they consider appropriate to contribute to the achievement of the above objective.

Regulation 3A(5) clarifies that in the Scottish marine area the above objective is included in Section 79(3)(a) of the Marine (Scotland) Act 2010.

Regulation 3A(6) states that in considering which measures may be appropriate for the purpose of securing or contributing to the objective, regard may be had to economic and recreational requirements.

SNH is required by Regulation 3B(1) from time to time to review the extent to which the objective has been met (other than in the Scottish marine area) and report on this to the Scottish Ministers.

Regulation 3B(3) states that the Scottish Ministers, after consultation with SNH, must give guidance to SEPA, Forestry Commission Scotland (FCS)[1], local authorities and National Park authorities to facilitate the determination by those bodies of the extent to which any diversity and area of wild bird habitat is sufficient and on the steps that it may be appropriate to take.

[1] As of 1 April 2019, the functions of the Forestry Commissioners in Scotland transferred to the Scottish Ministers. http://www.legislation.gov.uk/uksi/2019/183/contents/made. The Scottish Ministers established two executive agencies, Scottish Forestry (SF) to replace the Forestry Commission Scotland (FCS) and Forestry and Land Scotland (FLS) to replace Forestry Enterprise Scotland (FES).

Interpretation of the Bird Habitat Duty

In order to effectively interpret the meaning of the duty it is necessary first of all to establish a definition of what "sufficient diversity and area of habitat" means. The Birds Directive in Article 2 requires Member States to take the requisite measures to maintain the populations of naturally-occurring wild bird species at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements, or to adapt the population of these species to that level. Article 3 requires Member States to take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitat for these naturally-occurring wild bird species. Taking this alongside principles enshrined in the Habitats Directive leads to the following definition:

> The objective relating to sufficient diversity and area of habitat for birds is taken to mean that wild bird populations in Scotland should be maintaining themselves on a long-term basis as a viable component of their natural habitats across their natural range.

The focus for action under the Duty in Scotland should be on the habitat requirements of species/populations that do not meet this definition.

The most useful compilation of assessments of bird species/population statuses is in "Birds of Conservation Concern" (BoCC), produced periodically by the Royal Society for the Protection of Birds, the British Trust for Ornithology and Wildfowl and Wetlands Trust in collaboration with the statutory nature conservation bodies.

> Species on the red and amber lists of BoCC can be assumed not to meet the definition and should form a starting point for assessments of agendas to support the Duty.

BoCC is compiled at a UK level and some tweaking of the red, amber and green lists has been needed to allow for variations in status in Scotland compared with the other UK countries. However, this gives us a starting point for looking at habitat maintenance/restoration priorities. Annex 1 provides a synopsis of these species assessments at a broad ecosystem scale.

Conservation status assessments link to individual bird species but in most cases it is expected that assessment and implementation measures will be based on broad ecosystem-scale habitat evaluations, informed by trends in established bird indices (see the latest version of The State of the UK's Birds, linked at Annex 1). Existing indices cover breeding farmland birds, breeding woodland birds, breeding water & wetland birds, breeding seabirds, wintering wildfowl and wintering waders.

Implementation of the Bird Habitat Duty

In the majority of cases it should be possible to address habitat management requirements through existing Scotland-wide initiatives. Existing and developing initiatives that can play a role in this are listed below.

The Scottish Biodiversity Strategy
In Scotland the SBS 2020 Challenge for Scotland's Biodiversity is a key plank for delivery of the EC Habitats and Birds Directive. The SBS makes links to the EU Biodiversity Strategy in which Theme 1 implementation of the Birds and Habitats Directives sets the relevant context. The SBS chapter on "Wildlife, habitats and protected places" will address the needs of the Habitats and Birds Directive in Scotland.

Local Biodiversity Action Plans
Local Biodiversity Action Plan Partnerships are established across Scotland and are cited in the SBS as a key mechanism for delivering national priorities at a local level. These partnerships bring together many of the key organisations required to develop collaborative action for delivery of aspects of the Habitats and Birds Directive, particularly European Protected Species.

Scotland's National Parks
Scotland has two National Parks, Loch Lomond & The Trossachs National Park (LLTNP) and Cairngorms National Parks (CNP), both of which have important roles to play in habitat and species protection. Both National Parks work to overarching visions set out in their Partnership Plans. LLTNP Partnership Plan includes an outcome that 'The Park's natural resources are enhanced for future generations: important habitats are protected, restored and better connected on a landscape scale'. CNP Partnership Plan prioritises enhancing habitats on a landscape scale and protecting and enhancing species (including capercaillie and freshwater pearl mussel).

Central Scotland Green Network
The Central Scotland Green Network (CSGN) is a national development covering 19 local authority areas across the central belt of Scotland. It has a vision that 'By 2050, Central Scotland has been transformed into a place where the environment adds value to the economy and where people's lives are enriched by its quality'. This includes elements of habitat restoration that are led by Scottish Forestry and SNH, and delivered by Forestry and Land Scotland.

The Land Use Strategy
Elements of this that focus on operating via an ecosystem approach, with the use of demonstration projects, could lead to habitat restoration for multiple benefits. Proposals to align land use regulations and incentives may assist negotiations to move CAP reform in a direction that assists the management of wildlife habitats.

Scottish Climate Change Adaptation Programme
This includes the aim for "A Scotland with a productive, healthy and diverse natural environment which is able to adapt to change" and an Objective to "Support a healthy and diverse natural environment with the capacity to adapt". Many of the

policies to deliver this objective could support the Duty including those covering deer management, green networks, and improving the condition and connectivity of native woodland. The Programme is being reviewed during 2018 and a new Programme will be published in 2019; the overall aim and objectives are unlikely to change significantly.

Scottish Forestry Strategy (SFS)

The 2019–2021 SFS calls for a focus on Sustainable Forest Management which will increase the environmental benefits derived from Scotland's forest and woodland resource, in particular focusing on protecting and enhancing associated biodiversity. To achieve this, design and management practices which further these ambitions will be promoted, to help deliver greater environmental benefits.

The strategy encourages sustainable management of wild deer populations through collaborative deer management; safeguarding priority habitats and species; and supporting activity to improve the ecological condition and habitat quality of native forests and woodlands, including Plantations on Ancient Woodland Sites (PAWS).

SRDP and CAP Reform

The SRDP and CAP play a key role in delivering the Bird Habitat Duty. In particular the **Scotland Rural Development Programme 2014-20 (SRDP)** provides funding support across Scotland for the management of birds in the wider countryside targeting species of conservation concern. Lowland farmland birds are a core objective of the **Agri-Environment Climate Scheme (AECS)** (*as well as supporting the preservation and enhancement of biodiversity including Natura 2000 areas and designated sites*). Support is targeted to vulnerable species in greatest need of management through target maps and scoring. Where required management options can be complemented with funding for capital work.

A range of Arable Options are available to support habitat provision and food for arable and seed-eating birds, including Wild Bird Seed for Farmland birds, Unharvested Conservation Headlands, Retention of Winter Stubbles, Forage Brassica Crops and Stubbles Followed by Green Manure. Support to maintain traditional crop rotations is available for Cropped Machair mainly in the Western Islands.

Grassland Options provide for the habitat and management of key species in the red and amber lists including Corn Buntings (Corn Buntings Mown Grassland), Corncrake (Corncrake Mown Grassland, Grazing Management, and Management of Cover), Chough (Chough Mown Grassland and Grazing Management) and Wader species, such as Oystercatcher, Lapwing, Redshank, Curlew and Snipe (Wader and Wildlife Mown Grassland, and Wader Grazed Grassland).

Moorland Management is supported across upland areas for designated sites and the wider countryside encouraging good habitat management that will benefit upland and montane birds.

Funding is also targeted to Black Grouse and Capercaillie primarily through the Forestry Grant Scheme to provide habitat management and predator control.

Cross Compliance is a mandatory set of requirements and standards that land managers have to meet in order to receive support scheme payments under the Common Agricultural Policy (CAP). This includes Statutory Management Requirements (SMR) related to existing EU legislative requirements, and Good Agricultural and Environmental Conditions (GAEC) that are standards for appropriate management.

Under SMR2 recipients must not carry out any activities which are likely to result in the disturbance of birds or the deterioration of habitats affecting birds. This applies to all land, and has been made to comply with the requirements of the Birds Directive.

The related GAEC rules are more specific about certain aspects of land management. These include prohibitions on hedge trimming during the bird nesting and rearing season starting on 1 March and ending on 31 August (except for road safety reasons). The rules also require protecting the base of hedges from cultivation and spray, which will benefit ground nesting birds. Ploughing/reseeding rough grazing or other semi-natural areas is also prohibited unless approved as part of an environmental impact assessment (EIA).

In addition the new Greening practices part of the Basic Payment Scheme require business with larger areas of arable land to set a 5% of **Ecological Focus Area** and protect environmentally sensitive grasslands.

Additional clarification:
Note that this is the list of vulnerable species used for additional scoring in the AECS scheme:

Farmland waders – the application must directly benefit at least two of the following wader species.
The species selected must include curlew and / or lapwing.
• curlew
• lapwing
• oystercatcher
• redshank
• snipe

Other species with significant Scottish population declines which depend on appropriate management.
• corncrake
• corn bunting
• chough
• twite (on in-bye only)
• black grouse
• hen harrier
• marsh fritillary
• great yellow bumblebee
• great crested newt
• freshwater pearl mussel

Scottish Planning Policy (SPP)

SPP sets out national planning policies which reflect Scottish Ministers' priorities for operation of the planning system and for the development and use of land. Planning plays an important role in protecting, enhancing and promoting access to key environmental resources, whilst supporting their sustainable use. One of the principles of the planning system is to seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats.

Planning authorities, and all public bodies, have a duty under the Nature Conservation (Scotland) Act 2004 to further the conservation of biodiversity. This duty must be reflected in development plans and development management decisions.

International, national and locally designated areas and sites should be identified and afforded the appropriate level of protection in development plans. Identification and protection of these areas could make a substantive contribution to the duty, especially where national advice on priorities is tailored to local situations.

Where a development plan or proposal is likely to have a significant effect on sites designated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which is not directly connected with or necessary to their conservation management it must be subject to an "appropriate assessment" of the implications for the conservation objectives.

Non-SPA SSSIs and other protected areas such as National Scenic Areas
Protected areas that are not SPAs can make a substantial contribution to the maintenance of habitat for birds. Of particular relevance here in terms of their geographical extent are SSSIs, SACs, NNRs and NSAs.

Water Framework Directive implementation
The EU Water Framework Directive requires Member States to take necessary measures to achieve Good Ecological Status in the water environment through a series of 6-year planning cycles, the current one of which finishes in 2021. The Directive covers freshwaters (rivers, lakes, groundwaters), transitional waters (estuaries) and coastal waters. As well as improvement objectives, there is also a requirement to prevent any further deterioration in ecological status for water bodies. The requirement to achieve good ecological status for predominant aquatic habitat types means that important bird habitat is being managed in beneficial ways to maintain or improve its overall status.

Marine Strategy Framework Directive
The EU Marine Strategy Framework Directive requires Member States to take necessary measures to achieve or maintain good environmental status (GES). The requirement to achieve GES for predominant habitat types means that important bird habitat will be managed in beneficial way to maintain or improve its overall status.

Marine – non-SPA MPAs and any wider initiatives
The MPA network which now covers around 20% of Scotland's seas protects habitats in many locations which are known to be of foraging importance to seabird species.

Seabird Conservation Strategy
The Scottish Seabird Conservation Strategy is under development and is aiming to optimise the conservation prospects of seabirds in Scotland through effective management of existing and emerging threats. It prioritises a number of high level actions to deliver this outcome.

Prioritized Action Framework (PAF)
Consider the role of EU co-financing priorities in assisting habitat management priorities.

Wildlife Estates Scotland

Wildlife Estates Scotland (WES) is an accreditation Scheme set up by Scottish Land & Estate & Scottish Natural Heritage (SNH) to help encourage rural estates and farms to introduce and maintain best practice in how game and wildlife management is undertaken in Scotland. The key aims of WES, in line with principles of the EU Wildlife Estates (WE) label, are to:

i) Promote best practice in game and wildlife management to maintain high standards across all those involved;

ii) Build robust information on various species and their habitats, wildlife management, conservation projects and integration with other land uses to monitor activity and ensure continuous improvement; and

iii) Use the information derived from WES to engage public and private stakeholders in encouraging best practice management for further maintenance of Scotland's natural biodiversity.

It does so through the establishment of an objective accreditation system, this involves the close assessment of an estate and its management against a set of criteria.There are currently over 1.25 million acres accredited with WES Level 2 (the highest level accreditation) and the goal is to double the amount of land accredited by encouraging many new entrants into the Scheme and through this help promote the principles of biodiversity, conservation, and wildlife management throughout Scotland that in turn will deliver multiple benefits for society and rural communities.

ANNEX 1: Bird Species Assessment by Broad Habitat Type

Approach

1. The latest (fourth) Birds of Conservation Concern (2015) list has been used for this assessment to reflect status and trends of the **Red (R)**, **Amber (A)** and some **Green (G)** list species that regularly occur in Scotland. The revised BoCC list can be accessed at: https://www.britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf. This assessment focuses on regularly occurring breeding and wintering species and omits species that are:
    a. vagrants;
    b. occasional passage migrants;
    c. species that do not regularly breed; or
    d. rare species that have fewer than 10 breeding pairs.
2. For each species, a broad indication of habitat (coarse level of separation) is given e.g. lowland woodland or upland (managed) habitats. This allows species to be aggregated where possible, though for some species that range over a variety of habitats, or whose habitat requirements are complex, the classification fit may be poor. However, given that action to enhance the conservation status of these species is most likely to operate at the habitat level, this is a necessary simplification. Note though that some species already have targeted action (such as **corncrake (R)**, **black grouse (R)** and **capercaillie (R)**).

3. The remainder of this paper is taken up with discussion of these broad habitat groupings and a discussion of the species experiencing a declining population or poor conservation status, and some of the associated factors that may be driving the decline (or poor conservation status). The most recent BoCC (4th) assessment has seen an increase in the number of species on the **Red** list, mainly as a result of some species moving from **Amber** to **Red**.

4. There are **67 species** on the UK **Red list** of which **9** can be discounted because they do not meet the criteria given above.

5. There are **96 species** on the UK **Amber list** of which **14** can be discounted because they do not meet the criteria given above.

Marine waterfowl and pelagic seabirds

6. There is a significant group of species that forage in the marine environment that are experiencing significant population declines at present. These include three auk species – **guillemot (A)**, **razorbill (A)** and **puffin (R)** - as well as **kittiwake (R)**, **fulmar (A)**, **Arctic tern (A)**, **great black-backed gull (A)** and **Arctic skua (R)**. It includes the passage species, **Balearic shearwater (R)**, which is rare in Scottish waters. There are a number of reasons for the declines seen in species that depend on the marine environment, but broad scale environmental changes in the marine environment are likely to be playing a key role along with specific issues at

some locations (predation - especially by invasive non-native species, recreational disturbance, pressure from some fisheries and pollution – especially litter).

7. The UK marine Strategy implements the Marine Strategy Framework Directive. In 2019 the UK assessment of progress towards Good Environmental Status was published which included assessments of marine bird and habitats status. Update of the monitoring programme under the UK Marine Strategy is expected by July 2020, and the programme of measures by December 2021.

Coastal and estuarine species

8. There is a significant group of species, mostly present in the non-breeding season, and foraging in the coastal environment, which are experiencing significant population declines at present. These include **dunlin (A)**, **ringed plover (R)**, **redshank (A)**, **turnstone (A)**, **purple sandpiper (A)**, and a number of seaduck such as **long-tailed duck (R)**, **eider (A)** and **velvet scoter (R)**. There are a number of disparate reasons for species declines in the coastal environment including specific issues at some locations (recreational disturbance, habitat loss and pollution) along with climate change effects such as sea level rise that may also be playing a role. Habitat loss to development pressures and increasing recreational disturbance are likely to be key adverse effects in Scottish firths and estuaries. In some situations 'coastal squeeze' intensifies pressures on habitat as rising sea levels trap habitats against a fixed landward boundary.
9. Breeding species such as **herring gull (R)** and **ringed plover (R)** in coastal habitats are also declining. Reasons for herring gull are unknown but it may be due to changes in their food supply in the inshore marine environment (e.g. reduction in fishery discards), although herring gull populations in urban environments are believed to be increasing. However, the sustained increase in urban breeding populations adds another layer of complexity to the issue. **Ringed plover (R)** and breeding tern (e.g. **little tern (A)**) declines are likely to be at least partly driven by recreational pressures on traditional coastal breeding habitats. Though listed as 'green' in the UK list, **chough (G)** populations are declining in Scotland (breeding is now restricted to Islay). The species is included here because much of its foraging is done around the coast on cattle grazed pasture.

10. There appears to be little or no commonality in the causes of change and therefore a suite of measures to address species declines will need to be developed to address specific issues.

Lowland farmland

- Farmland birds include characteristic songbird species of cultivated agricultural land as well as breeding wading birds found on wet meadows and other grassland habitats. It also includes wintering goose populations, many of which have seen significant population increases in recent years.

- The decline in lowland farmland bird populations is well known, and population changes for many species in Scotland have mirrored UK-wide trends. However, this is not always the case, and where trends are available separately for Scotland these have been used[2].
- Many of the declines have been caused by land management changes and the intensification of farming that took place since the 1950s and 60s, such as the loss of mixed farming, a move from spring to autumn sowing of arable crops, change in grassland management (e.g. a switch from hay to silage production), increased pesticide and fertiliser use, and the removal of non-cropped features such as hedgerows.
- Four of the five wader species recently assessed in Scotland (**curlew (R)**, **lapwing (R)**, **oystercatcher (G)** and **redshank (A)**) show significant declines, with only **snipe (A)** showing an increase. The farmland seed-eaters all show stable (**skylark (R)**, **yellowhammer (R)**) or increasing (**linnet (R)** and **tree sparrow (R)**) long-term trends. In the short term, only **skylark (R)** has a decreasing trend. Targeted management at an appropriate scale can benefit farmland birds. Past declines in **corn bunting (R)** have been reversed, reflecting the success of targeted management for this species[3].

11. Other characteristic farmland species that are declining here are **grey partridge (R)**, **starling (R)**, **twite (R)**, **corn bunting (R)**, **kestrel (A)** and breeding **curlew (R)** of wet meadows.
12. The reasons for decline in these species are well known and understood for most species. A good recent summary can be found in the following article by Jerry Wilson (Bird Conservation & Lowland Agriculture) in *The Changing Nature of Scotland*. Reasons for differences between Scotland and the rest of the UK may be related to the greater proportion of spring sown cereals and mixed arable and grassland farms in Scotland, both of which can benefit farmland birds by increasing the availability of winter food and improving the diversity of habitats in the farmed landscape.
13. Measures to address declines may be general (e.g. through agri-environment schemes) or targeted at particular species (e.g. **corncrake (R)**, **corn bunting (R)**). In particular the Scottish Rural Development Programme will be one of the principal mechanisms to maintain or restore farmland bird populations. For example the Seed Eating Birds Package within SRDP will benefit the suite of species dependent on seed availability over winter.

Lowland woodland species

14. Woodland bird species include those of deciduous, semi-natural woods, commercial (mainly conifer) plantations as well as Caledonian pinewoods and partially wooded heaths. Species characteristic of more upland areas are discussed separately.

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[2] Harris, S.J., Massimino, D., Newson, S.E., Eaton, M.A., Marchant, J.H., Balmer, D.E., Noble, D.G., Gillings, S., Procter, D. & Pearce-Higgins, J.W. 2016. The Breeding Bird Survey 2015.BTO Research Report 687. British Trust for Ornithology, Thetford.

[3] https://www.nature.scot/trend-notes-birds

15. Woodland bird trends are very mixed. Some species have shown marked increases while others have shown considerable declines. The SNH woodland bird indicator has seen a substantial increase in recent years[4].

16. Woodland bird populations that have increased hugely, include **great spotted woodpeckers (G)**, which have increased by 530 percent, and **chiffchaffs (G)**, which have increased by 752 percent. The reasons for changes aren't certain, but changes in how woodland is managed may be starting to help woodland birds. As well, the effect of climate change is making a big difference for some woodland birds in Scotland – improved conditions in their wintering areas have helped chiffchaffs, for example. **Willow warblers (A)** and **tree pipits (R)** are also good examples, showing more positive trends in Scotland than further south. **Willow warblers (A)** have increased by 46 percent, with **tree pipits (R)** up 86 percent.

17. Conversely declines in some birds in lowland woodlands have only been recently detected, and there is good evidence to suggest that the rate of such declines and indeed when they started has been slower and later than that for **lowland farmland**. Species that have shown particular declines include **cuckoo (R)**, **linnet (R)**, **marsh & willow tits (R)**, **spotted flycatcher (R)**, **wood warbler (R)**, **mistle thrush (R)** and probably **pied flycatcher (R)**. For Caledonian pinewoods, most species appear to be doing well apart from **capercaillie (R)** with **Scottish crossbill (A)** moving from the red list to amber.

18. Woodland bird declines are less well understood than those that operate over lowland farmland habitats and may be more diverse and complex[5]. However, three broad drivers of change have been noted: climate change (e.g. phase shifts in predator and prey phenology); management changes (deer browsing, predators such as squirrels, and changes in woodland harvesting regimes); and factors operating on wintering grounds for long-distance migrants (there is a strong bias in UK data towards long distance migrants in terms of species that are fast decliners). This might imply that for some species at least, management changes at breeding sites may do little to reverse declines.

Lowland marsh & fresh water species

19. Lowland fresh water and marsh habitats include standing and running waters as well as mars (fen) habitats. Upland waters have been included within that habitat grouping. A number of lowland fresh water bodies host large concentrations of wintering waterfowl.

20. Most waterbirds are well monitored by the Wetland Bird Survey (WeBS). Duck and swan numbers have decreased after a relatively stable period and stood at 105% in 2011/12, indicating an upturn since dipping to 98% in 2009/10[6].

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[4] https://www.nature.scot/information-hub/official-statistics/official-statistics-terrestrial-breeding-birds
[5] **Fuller, R.J. & Ausden, M.** 2008. Birds and habitat change in Britain (Part 1): a review of losses and gains in the twentieth century. *British Birds* **101**: 644-675
[6] https://www.nature.scot/scotlands-indicators-birds

21. There are a number of birds of fresh water and marsh (fen) habitats that are declining, including species such as breeding population of **Slavonian grebe (R)**, as well as commoner breeding and wintering species such as **dipper (A)**, **grey wagtail (R)**, **mallard (A)** (wintering), **pochard (R)** (wintering), **goldeneye (R)** (wintering) and **pintail (A)**. There is some evidence that non-breeding trends may be due to a reduction in the number of continental immigrants into Britain in winter (especially in England which tends to hold the bulk of the UK wintering population). Hence there is a need to distinguish trends in wintering populations from breeding populations and where possible, to disaggregate trend data for England and Scotland.

22. Though red-listed, breeding **red-necked phalarope (R)** population (mainly confined to Shetland) has seen a recent recovery.

23. Along rivers and streams, numbers of **dippers (A)** and **grey wagtail (R)** have also declined, with no clear reason for these changes. In contrast numbers of **goosander (G)** have probably increased.

24. The causes of species declines are generally poorly understood. While pollution (such as eutrophication) may be involved, many rivers and running waters have seen significant improvement in water quality. Declines in wintering **mallard (A)** populations are particularly perplexing, especially as breeding populations have increased in recent years. Disturbance from recreational pressure may act at some sites though declines in many wintering species may also reflect adverse changes on breeding grounds.

25. A possible reason for reduced numbers of birds migrating from the continent is thought to be due in part to amelioration of climate and weather on the continent, which favours birds dispersing shorted distance from eastern breeding grounds. In essence this implies that declines are a climate effect and one that there is little overt action needed. However, it should also be noted that UK still acts as an important cold-weather refuge for many continental migrants, and large influxes of wildfowl can and do occur when weather conditions of the continent become largely frozen.

26. Drivers of changes for rarer species (e.g. **Slavonian grebe (R)**) may be linked to population changes in core breeding populations and climate change (northern species retreating in the face of warmer conditions).

Upland and montane species

27. Upland habitats include a range of environments from the largely unmanaged montane zone to managed game-bird moors, upland wetland ecosystems (the Flows of Caithness & Sutherland) and marginal upland habitats, largely managed as low-intensity agricultural land.

28. There are a number of species found in these environments that have shown significant population declines. In particular a suite of species on moors (breeding **ring ouzel (R)**, **curlew (R)**, **whimbrel (R)** – notably the previously large Shetland population, **meadow pipit (A)**, **whinchat (R)**, **wheatear (A)**, **red grouse (A)** and in the montane zone, **Eurasian dotterel (R)**. Species of marginal habitats such as **black grouse (R)** and **grasshopper warbler (R)** may also be declining, though there is some uncertainty about both due to sampling and survey difficulties. In the upland fresh water environment,

breeding **common scoter (R)** are declining fast and the residual population is now restricted to two main breeding areas in Western Scotland and the Flow Country.

29. **Dotterel (R)** populations in the mountains have declined across Scotland. Declines have been particularly significant throughout the margins of its Scottish range and from sites at lower altitudes.

30. There is little consensus and consistency in understanding of the drivers of change. For some species, climate change may be having an impact on habitat suitability and/or prey availability through phase changes in phenology, but extrinsic factors may be responsible for changes in other species e.g. **ring ouzel (R)**, or changes in land management (**meadow pipit (A)** and **red grouse (A)**). Loss and degradation of habitat condition and predation (from foxes and crows in particular) have also been linked to declines in some species. The *Understanding Predation* Report issued by The Moorland Forum highlighted the role that predation may play in population changes of some species. Upland habitats are under pressure from management changes (and lack of management in some areas), changes in grazing pressure, pollution (e.g. orographic nitrogen deposition) and loss of marginal habitats through land improvement and conversion to commercial forestry. Increases in woodland and scrub may also have an adverse impact on open ground species, partly through habitat loss but also through changes in predator management, as this may affect the susceptibility of ground nesting species to mammalian predators.

31. However other species such as **tree pipit (R)** and **willow warbler (A)** have shown significant increases in Scotland, contrasting with declines further south. Such changes may be associated with increases in young non-commercial woodland cover.

32. The diversity of drivers of change that operate in upland habitats means that management prescriptions to reverse such changes may need to be site and species specific.

Urban and peri-urban species

- Species such as **house sparrow (R), swift (A)** and **house martin (A)** (urban and peri-urban populations are faring badly in many areas). The causes of declines of house sparrow are not well understood and management measures to reverse changes have yet to be developed. Swifts may be vulnerable to loss of potential breeding habitat as buildings are renovated and new houses built, but declines are unlikely to be solely due to urban pressures and may in part, be due to extraneous factors on wintering grounds or on passage.

Issues to bear in mind

33. It should be noted that some species in Scotland have notably different trends to those across UK (so while they may be red-listed they show significant population increases in Scotland – **tree pipit (R)**, **cuckoo (R)**, **willow warbler (A)**).

34. Species on the red and amber lists have been assigned to broad habitat categories, separated by season as it is likely that most policy and

management action required to address changes in populations is likely to be targeted at habitats rather than through single species action plans.

35. There will be exceptions to the above, where action is already being undertaken e.g. **capercaillie (R)**, **black grouse (R)** and **common scoter (A)** or where specific management action targeted at that species may be the only reliable means of addressing species' unfavourable conservation status.

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