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The introduction and naturalisation of birds

Proceedings of a conference organised jointly by the
British Ornithologists' Union and the UK Joint Nature Conservation Committee

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Recording and monitoring of escaped and introduced birds in Britain and Ireland

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Naturalised and other introduced birds require monitoring to chart the development of their populations and to inform conservation bodies of potential or actual conservation problems. The BOU Records Committee maintains an authoritative list of British and Irish birds. Introduced species with established naturalised populations are included but are categorised separately. The number of naturalised species fully admitted to the list has grown over the years: currently, 18 species are in category C and a further 11 in D4. The list is widely used by birdwatchers as the basis of bird recording but introduced species not already on the list have often been ignored in the field and omitted from surveys and bird reports. Species introduced to neighbouring parts of Europe are also poorly reported. Thus, lack of data makes it difficult to review the UK status of introduced populations not yet admitted to this list. Escapes from captivity cause problems of identification and categorisation of rarer species that occur or could occur as vagrants. More systematic recording of escaped captive birds, as well as of breeding populations of such species, whether naturalised or not, is needed to enable BOURC and other interested parties to make more objective decisions. The Committee is concerned that some of the avicultural activities that give rise to escapes and introductions in Britain are either illegal or against the spirit of the law. BOURC recommends a review of the current legislation and, especially, its enforcement.

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Introduction

Some introduced birds have a long history of naturalisation within Britain and Ireland (Long 1981; Lever 1987), while populations of others are more recently established. Despite the provisions of the Wildlife and Countryside Act 1981, the Wildlife (Northern Ireland) Order 1985, and in the Republic of Ireland the Wildlife Act 1976, yet more exotic species and introduced natives are appearing and may become naturalised in the future. Experience worldwide shows that introduced birds have frequently caused conservation problems. Aside from the intrinsic interest of charting the development of such populations it is necessary to keep track of which species are here and how their populations are changing, so that potential conservation problems can be identified and monitored from an early stage. Systems for monitoring escaped and introduced species are flawed at present, though improving.

This paper gives an overview of the work of the Records Committee of the British Ornithologists' Union (BOURC) as it relates to escaped and introduced birds. It sets out the current position of such birds on the British and Irish list, discusses the lack of data which hampers decision-making, and finally asks whether the laws governing the

avicultural activities that give rise to escapes and introductions are adequate and sufficiently enforced.

This paper uses the terminology recommended by Holmes & Stroud (1995). As a process by which alien species appear in the wild, escaping from captivity (as opposed to deliberate introduction) is particularly relevant to this paper and is often referred to separately. It should be noted that some naturalised populations described as introduced, inferring deliberate releases, are believed rather to have resulted from escapes from captivity.

The BOURC

The BOURC is the body responsible for maintaining the British and Irish list of birds, on behalf of the BOU and the wider ornithological community. In conjunction with the Irish Rare Birds Committee, it decides which species and subspecies of birds can be said to occur or to have occurred, in a natural or naturalised state, within the geographical unit of Britain and Ireland. The area of coverage includes the territorial waters of the two countries, extending to 200 nautical miles, and the separate political unit of the Isle of Man, but not the Channel Islands.

The Committee prepares regular reports on its work, highlighting changes to the list, which are published

in the BOU journal *Ibis*. It also publishes checklists to update the list periodically and make it more accessible to the birdwatching public. The practices and procedures of the BOURC were described most recently by Marr (1993). Press-releases covering Committee decisions are issued to the popular birding magazines and journals, and information sheets on its work are distributed to interested parties.

The most recent checklist compiled by the BOURC, the sixth (BOU 1992a), is the most authoritative current reference to the bird species and races of Britain and Ireland and their scientific names. Although only recently published, this checklist has already been modified by five BOURC reports in *Ibis* (BOU 1992b, 1993a, 1993b, 1994a, 1994b).

The sixth checklist and its modifications form a valuable resource for scientists needing a general reference to British and Irish birds that covers the species, their names, and their taxonomic order. Together, these publications update the previous (fifth) BOURC checklist (BOU 1971) and (for Britain and Ireland only) supersede the much-quoted Voous list of holarctic birds (Voous 1977), while adhering to Voous's taxonomic sequence. It is also widely used by birdwatchers as establishing the standard by which birds can and cannot be counted on lists; in this context, it is probably the single most important area of contact between BOU and birdwatchers at large.

BOURC deals with a number of topics that have a high profile in the world of amateur birdwatching. These include questions of extreme rarities, where it decides whether identification is satisfactorily established and whether a wild origin is likely, of lumping and splitting of species, and of how we should name the birds that occur here. While the public profile of the Committee's work of gathering information and making decisions on the status of introduced species is much lower, this is also an important task and one which has come more to the fore in the last two or three years. While most modifications to the list refer to recent records of extreme vagrancy, the nineteenth report (BOU 1993b) made a substantial number of changes in respect of introduced birds. The rationale for these changes was further explained by Vinicombe, Marchant & Knox (1993).

Treatment of introduced birds in the main list

Since 1971, BOURC has not only listed species but also put them into a series of non-exclusive categories (BOU 1971). Species are categorised according to two simple criteria: 'does it still occur?' and, if so, 'was it introduced?'. The three resulting categories that make up the main list are currently defined as follows (BOU 1992a):

- A species which have been recorded in an apparently wild state in Britain or Ireland at least once since 1 January 1958;
- B species which were recorded in an apparently wild state in Britain or Ireland at least once up to 31 December 1957, but have not been recorded subsequently; and
- C species which, although originally introduced by man, have now established a regular feral breeding stock which apparently maintains itself without necessary recourse to further introduction.

The date chosen for separating A and B marks the start of operation of the British Birds Rarities Committee, which vets the identification credentials of all records of rare birds reported in Britain and maintains an archive of supporting details.

Introductions are included on the main list, but are categorised separately in C. For an introduced species to be fully included on the British and Irish list, it must be apparently self-supporting and not dependent on restocking. The Committee would remove a species from category C if it were found no longer to fulfil this criterion, so that no equivalent to category B is needed for introduced species. The word 'feral' should be replaced by 'naturalised' to accord with definitions elsewhere in this paper.

Introduced species currently included in BOURC's category C are listed in Table 1. Only five introduced species were included in the fourth BOU checklist (BOU 1952). In 1971, these five were placed in the new category C (BOU 1971). At the same time, five further introduced species were added to the list and the existence of naturalised as well as native populations was recognised for mute swan *Cygnus olor* and for greylag goose *Anser anser*. Rose-ringed parakeet *Psittacula krameri* was admitted to category C in the BOURC's eleventh report (BOU 1984).

Table 1. Species in category C of BOURC's British and Irish list (April 1995).

<i>Date added to C</i>	<i>Species</i>	<i>Category(ies)</i>
(pre-1952)	Canada goose <i>Branta canadensis</i>	AC
	Western capercaillie <i>Tetrao urogallus</i>	BC
	Red-legged partridge <i>Alectoris rufa</i>	C
	Common pheasant <i>Phasianus colchicus</i>	C
	Little owl <i>Athene noctua</i>	C
1971	Mute swan <i>Cygnus olor</i>	AC
	Greylag goose <i>Anser anser</i>	AC
	Egyptian goose <i>Alopochen aegyptiacus</i>	C
	Mandarin duck <i>Aix galericulata</i>	C
	Ruddy duck <i>Oxyura jamaicensis</i>	C
	Golden pheasant <i>Chrysolophus pictus</i>	C
	Lady Amherst's pheasant <i>C. amherstiae</i>	C
1984	Rose-ringed parakeet <i>Psittacula krameri</i>	C
1993	Gadwall <i>Anas strepera</i>	AC
	Mallard <i>Anas platyrhynchos</i>	AC
	Northern goshawk <i>Accipiter gentilis</i>	AC
	Grey partridge <i>Perdix perdix</i>	AC
	Rock dove/feral pigeon <i>Columba livia</i>	AC

In 1993, BOURC added a further five species to category C, to take account of their naturalised breeding populations (BOU 1993b). Only for goshawk *Accipiter gentilis* was this naturalised population newly established: for the others admission to category C was the result not of recent change in status but of changing perceptions within the Committee (Vinicombe, Marchant & Knox 1993).

Exotic species occurring in Britain and Ireland but not included on the main list

In 1971, for the first time, BOURC formalised a grouping of species which were *not* admitted to the main list. Category D was designed to act as a holding category for species that may qualify for the main list in the future (BOU 1971). BOURC reviews the status of these species periodically to determine whether elevation to the main list would be appropriate.

The current definition of category D is as follows (BOU 1992a):

species that would otherwise appear in categories A or B except that

D1 there is a reasonable doubt that they have ever

occurred in a wild state, or

D2 they have certainly arrived with a combination of ship and human assistance, including provision of food and shelter, or

D3 they have only ever been found dead on the tideline; also

species that would otherwise appear in category C except that

D4 their feral populations may or may not be self-supporting.

Categories D1 and D2 include some exotic species that have been released or transported, although all are species that might potentially occur in Britain or Ireland as wild birds. Category D4 is for species that are breeding and that may, if their population becomes clearly self-supporting, be elevated to C in the future.

The species currently admitted to category D4 are listed in Table 2. Only three species were placed in this category in 1971, and two of these, Reeves's pheasant *Syrnaticus reevesii* and northern bobwhite *Colinus virginianus*, have since been removed because breeding in the wild in Britain is believed to

Table 2. Species placed in category D4 of BOURC's British and Irish list between 1971 and 1995.

<i>Date added to D4</i>	<i>Species</i>	<i>Current category(ies)</i>
1971	Wood duck <i>Aix sponsa</i>	D
	Reeves's pheasant <i>Syrnaticus reevesii</i> (removed 1984)	.
	Northern bobwhite <i>Colinus virginianus</i> (removed 1992)	.
1978	Rose-ringed parakeet <i>Psittacula krameri</i> (to C in 1984)	.
1993	Pink-footed goose <i>Anser brachyrhynchus</i>	AD
	Snow goose <i>Anser caerulescens</i>	AD
	Bar-headed goose <i>Anser indicus</i>	D
	Barnacle goose <i>Branta leucopsis</i>	AD
	Muscovy duck <i>Cairina moschata</i>	D
	Red-crested pochard <i>Netta rufina</i>	AD
	Red kite <i>Milvus milvus</i>	AD
	White-tailed eagle <i>Haliaeetus albicilla</i>	AD
	Chukar partridge <i>Alectoris chukar</i>	D
	Barn owl <i>Tyto alba</i>	AD

have ceased. Wood ducks *Aix sponsa* were first introduced in the 1870s but have still not yet become firmly established in Britain, probably because the species is not well adapted to the present British climate (Lever 1977, 1987, 1993; Kear 1990).

Rose-ringed parakeet was admitted first to category D, in the Records Committee's ninth report (BOU 1978), but was moved up to category C in the eleventh report (BOU 1984) as its population continued to expand. This case illustrates how rapidly upgrading in categorisation can become necessary, and that BOURC needs to be responsive if its categorisations are to remain valid.

In 1993, BOURC added ten species to category D4, in recognition of their introduced breeding populations in the United Kingdom (BOU 1993b; Vinicombe, Marchant & Knox 1993). These were all species where the onset of breeding by introduced birds appeared to be recent; seven of them were already in category A.

A further group of species comprises those that either have bred in Britain and Ireland but became extinct, or breed currently but with apparently no prospect of establishing a self-sustaining population. These breeding species may be in no BOURC category, but BOURC needs to be aware of their status in case population increase moves them towards category D4. Species as diverse as red-winged tinamou *Rhynchotus rufescens* (Long 1981; Lack & Ferguson 1993), black swan *Cygnus atratus* (Long 1981; Lever

1987), swan goose *Anser cygnoides* (Lever 1987), Eurasian eagle owl *Bubo bubo* (Cook 1992; Underwood 1995), budgerigar *Melopsittacus undulatus* (BOU 1978; Long 1981; Lever 1987), Pekin robin *Leiothrix lutea* (Long 1981; Lever 1987), spotted morning thrush *Cichladusa guttata* (England 1974) and canary *Serinus canaria* (Lever 1987) breed occasionally in Britain or have bred in the past, although such occurrences are mostly poorly reported in the general literature.

The problems of obtaining information

BOURC's classification of introduced breeding species into either C, D4 or 'uncategorised' suggests that data are available to indicate population sizes and trends, and whether the population is or is not self-supporting or dependent on further introduction. Regular review of such information would be necessary to ensure that the criteria were being evenly applied. In practice, despite the long-standing and relatively refined systems British birdwatchers use to collect and publish information on the status of our birds generally, such data on introduced birds are difficult to obtain. Most importantly, a 'catch 22' has been operating: birdwatchers tend to collect and bird reports to publish information only on species that are already listed by BOURC, and as a result it is very difficult to determine the status of species not yet so listed.

In effect, birdwatchers make a sharp distinction between birds that are and are not worthy of their

attention. Only a minority of birdwatchers show even a passing interest in birds that general opinion labels as escapes. Ignoring escaped and introduced birds means that breeding populations of such species can arise unnoticed and in some cases, as the example of the ruddy duck *Oxyura jamaicensis* shows, this can lead to thorny conservation problems (B. Hughes, this volume). Conservation bodies need to be able to identify future conservation problems at an early stage and to have population information on which to base sound responses.

Lack of information about species that appear as escapes can have significant repercussions on decisions of records committees, at local and national levels. It may lead recorders and reviewers to be too generous:

- i. in accepting rarity identifications based on incomplete descriptions - believing that the notes presented were adequate to eliminate every other possibility, but not including in the possibilities any similar exotics of which escapes could occur; and
- ii. in assessing the likelihood of a wild origin, in the absence of information that the same species had occurred previously as a known escape from captivity.

While some counties have long had the policy of including any escapes and introduced species in regional reports, the submission of records of Category D4 and other exotic species has undoubtedly suffered from a shortage of positive feedback. It is necessary for bodies such as BOURC, that need information on escapes and introductions, to increase the momentum by demonstrating the need for birdwatchers to record all such species and thus encourage observers to send in their observations.

The network of bird reports

Full details of records of scarcer species are published in local regional bird reports. Such listings are authoritative because they, unlike contemporary reports in various magazines, have the backing of a local recorder or records committee.

There are annual reports for all parts of Britain and Ireland. About 40 cover England and there are single national reports for Wales, Scotland and Ireland: Wales and Scotland have county or regional reports too, but not throughout. There is some overlap between the areas covered by these reports, while

many others cover smaller regions. Of these 43 'primary' bird reports, an increasing number during the past two decades has been presenting full details of exotic species (Figure 1). The trend shown in Figure 1 is a crude measure of the increasing usefulness of the reports as a source of information about new introduced populations. The *British Birds* Best Bird Report Competition, and the Association of County Recorders and Editors (ACRE), are to be thanked for improving the standard and cohesiveness of the county report network in recent years. However, because of the increasing trend in the proportion of county and regional reports that have included information on escaped and introduced birds, they cannot be used retrospectively to assess national population trends, except for species restricted to counties where reporting behaviour has not changed.

As an illustration of the problem, the Devon report began listing exotics in 1989. In 1993, a breeding population of monk parakeets *Myiopsitta monachus* was reported (Grant 1994). This population could easily have gone unreported if the Devon Birdwatching and Preservation Society had not changed its policy, yet the species is one that might have the potential to become widely established in Britain. Further enquiries might now be necessary to determine whether these birds were present but unreported in earlier years.

Monitoring of breeding species

Annual monitoring information for British breeding birds comes from the Rare Breeding Birds Panel (RBBP) for rare species, and from the census work of the British Trust for Ornithology (BTO) for common species. In Figure 2, the breeding avifauna of the United Kingdom is divided into seven categories based on the numerical order of population size, and those covered by different annual monitoring schemes are shaded. All the species included are BOURC-listed, in categories A, B, C or D4.

Most species are monitored annually either by RBBP (e.g. Ogilvie *et al.* 1995) or by the BTO's Common Birds Census or Waterways Bird Survey. A large number of species are missed, however, because they are too numerous for complete surveys to be attempted every year by RBBP contributors yet too scarce or too restricted in range to appear on sample CBC or WBS census plots in sufficient numbers. For some of these species there are monitoring data on a less-than-annual basis from single-species surveys, or other survey results that indicate the longer-term

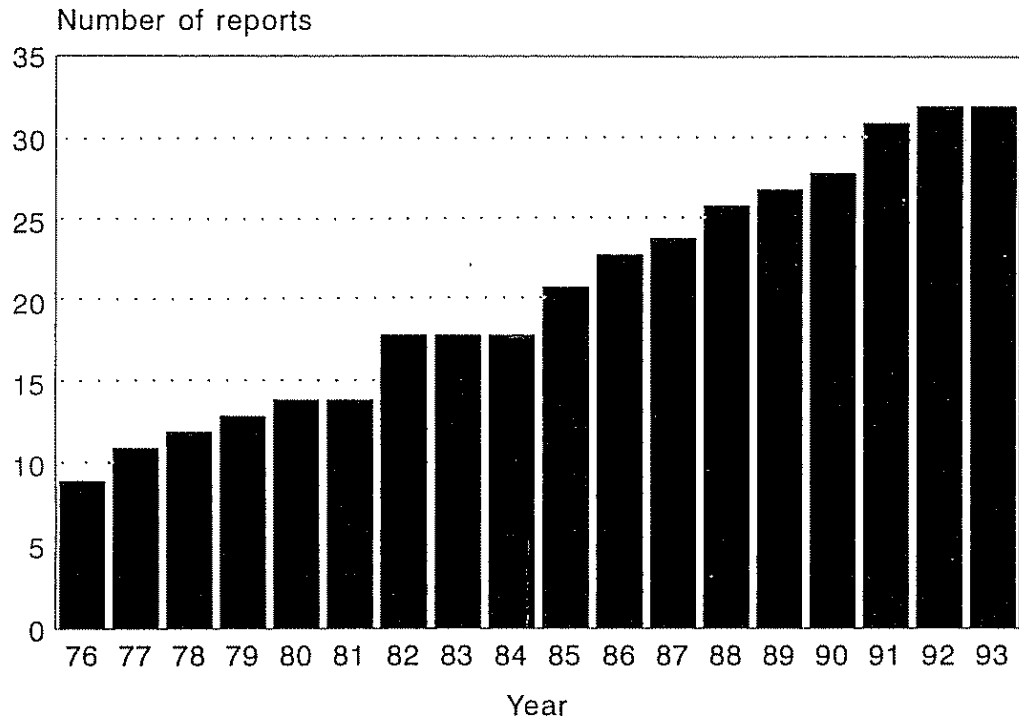


Figure 1. Reports listing records of exotic species. Of the 43 primary county/regional reports in Britain & Ireland, the number including records of exotic species has grown considerably in recent decades.

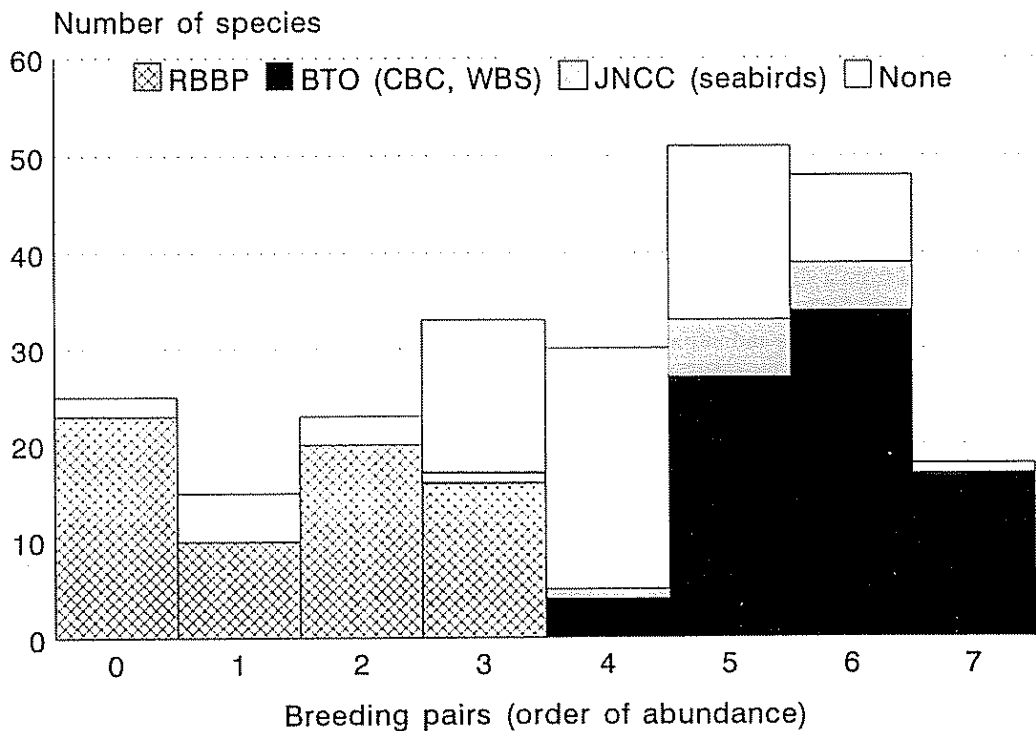


Figure 2. Annual monitoring of UK breeding birds. The breeding avifauna of the UK is divided into eight categories based on the numerical order of population size: 0 represents species that do not breed every year, and 7 those that have seven-figure numbers of breeding pairs annually (1-10 million pairs). Those monitored by different annual monitoring schemes are shaded. Data on population sizes are drawn mostly from Gates, Gibbons & Marchant (1993). RBBP = Rare Breeding Birds Panel; BTO = British Trust for Ornithology; CBC = Common Birds Census; WBS = Waterways Bird Survey; JNCC = Joint Nature Conservation Committee.

trends in numbers. The BTO's new Breeding Bird Survey (funded jointly by JNCC and the Royal Society for the Protection of Birds) is expected substantially to increase species coverage in orders 4, 5 and 6. Among introduced species, it is intended that feral pigeon *Columba livia*, whose very large population is not currently monitored, will be covered by the Breeding Bird Survey in future. Rarer introduced species are not expected to provide large enough samples for BBS to monitor them adequately.

Figure 2 reveals that there are a number of species with breeding populations of less than 100 pairs in the UK that, although indisputably rare, are not currently monitored by RBBP. The species concerned are listed in Table 3. Their very small UK breeding populations seem to put these species clearly within the remit of RBBP. Some are new breeding species since RBBP was founded in 1972. RBBP are not sent data on these species because they have not included them in their reports and have never specifically listed them as target species. Observers and recorders would no doubt collect and submit data to RBBP if they were encouraged to do so.

Further, it would be helpful if RBBP specifically requested information on *all* rare breeding occurrences, including those of species not in any BOURC category. This would be a catch-all for breeding species for which no details have been published and for future new colonists. BOURC

began contacts with RBBP on this subject in 1992: RBBP has subsequently considered some of the issues and plans to add those introduced breeding species with fewer than 300 pairs explicitly to its list (M.A. Ogilvie, in litt.; D.A. Stroud, pers. comm.).

Surveys of non-breeding species

Relatively few organised surveys operate outside the breeding season. Exceptions include the Garden BirdWatch and Garden Bird Feeding Survey, operated by BTO, and the Wetland Bird Survey (WeBS) which is run by BTO, the Wildfowl and Wetlands Trust (WWT), RSPB and JNCC. Both the garden and the wetland habitat are particularly prone to host escapes or introductions, and the surveys have recorded many such individuals. WeBS publishes all records of exotic species that are received, but it is not clear whether all observers would include such species in their returns. Would a more systematic approach, and closer links with the county bird recording system, yield more comprehensive and more reliable information on escapes and introduced birds?

Targeted surveys of escapes and introduced birds

The additions made to categories C and D4 in 1993 were the result of a major review undertaken by the BOURC of the categorisation of introduced species. The main spurs to this review were *The new atlas of breeding birds in Britain and Ireland: 1988-91*

Table 3. Some rare introduced species currently breeding in Britain & Ireland for which annual estimates of breeding numbers have not been published by the Rare Breeding Birds Panel. First tentative population estimates are given; these are the author's, based mostly on information available to Vinicombe, Marchant & Knox (1993).

Species	BOURC category(ies)	Approximate number of pairs breeding wild
Black-crowned night heron <i>Nycticorax nycticorax</i>	A	0-5?
Black swan <i>Cygnus atratus</i>	.	0-5?
Pink-footed goose <i>Anser brachyrhynchus</i>	A D4	2-10?
Greater white-fronted goose <i>Anser albifrons</i>	A	2-5?
Snow goose <i>Anser caerulescens</i>	A D4	10-20?
Bar-headed goose <i>Anser indicus</i>	D4	2-10?
Barnacle goose <i>Branta leucopsis</i>	A D4	20-50?
Muscovy duck <i>Cairina moschata</i>	D4	5-20?
Ruddy shelduck <i>Tadorna ferruginea</i>	B	0-5?
Wood duck <i>Aix sponsa</i>	D4	10-20?
Red-crested pochard <i>Netta rufina</i>	A D4	5-20?
Monk parakeet <i>Myiopsitta monachus</i>	.	0-10?
Eurasian eagle owl <i>Bubo bubo</i>	B	0-2?

(Gibbons, Reid & Chapman 1993) and the survey of introduced and escaped geese, carried out by the WWT in summer 1991 (Delany 1993). The latter was the first targeted survey of any group of escaped or introduced birds on a national scale. BOURC found it extremely valuable. It would further assist the Committee if this example could be followed in other European countries, and if it could be followed here as swiftly as possible by similar surveys of other species, particularly swans and ducks.

The international dimension

Escaped or introduced birds of migratory species, like other migrants, pay no regard to national boundaries. There are several known and many suspected examples of escapes or individuals of introduced species crossing to Britain from the continent. An especially interesting recent example is the record of a young barnacle goose *Brania leucopsis* ringed in Sweden in July 1989 and found again in Norfolk in June 1993 (Mead, Clark & Peach 1995). This bird was presumably part of the recently established breeding population in the Swedish Baltic.

Our understanding of the status of escaped and introduced birds in Britain and Ireland is hampered by a lack of knowledge of their status elsewhere in Europe. The presence or absence of introduced bird populations is often difficult to establish in the absence of either positive or negative reports in the literature; important populations can be overlooked, and false assumptions can easily be made. For example, a bar-headed goose *Anser indicus* seen on Shetland in 1990 was reported as possibly part of the breeding population in Sweden (Murray 1992), although the existence of such a population at that time has been denied (Price 1993).

Ruddy shelducks *Tadorna ferruginea* occur regularly each year in the wild in Britain, with a peak of records in late summer. In 1994, there was an unprecedented influx to Britain and elsewhere in northern Europe. This phenomenon is currently being investigated on behalf of BOURC (Vinicombe, in prep.). No-one knows where these birds come from: BOURC has treated all records since 1946 as non-categorised, as if all were recent escapes. One theory is that they are semi-captive birds that have bred or been raised in avicultural collections and leave or are ejected from the confines of the collection at the end of the breeding season, while another is that they are post-breeding arrivals, or over-shooting non-breeding migrants, from the southwest Asian section of the natural range.

Information on all aspects of their status throughout Europe is needed to elucidate this problem. Lesser white-fronted geese *Anser erythropus* from a new re-establishment programme in Sweden have quickly begun to winter in Britain (Rogers *et al.* 1993). If this species becomes established there, should birds be treated then as category C when they visit us for the winter? A broad perspective is appropriate on the issue of escaped and introduced birds where migratory species are involved.

Some problems of recording escaped and introduced birds

Identification of exotic species

Many hundreds of exotic species have been imported to western Europe and most of these could occur occasionally in Britain as escapes. A list being compiled for BOURC of species that have been recorded as escapes in Britain and Ireland already contains more than 250 species, of which over 200 would be most unlikely ever to occur naturally (Marchant, in prep.). There is, however, no comprehensive and reliable listing of the species that are held captive here and could escape (A. Jones, this volume).

Exotics pose considerable identification problems; identification is difficult to make, and to substantiate with field-notes, when the range of possibilities is virtually worldwide. An observer unaware of even the bird family involved may have little idea of the characters (e.g. eye-ring or primary projection) that would be most likely to secure a specific identification. The importance of photographs is clear in such situations. For trapped birds, any loose feathers should be retained for possible future DNA analysis. Some birds may be hybrids and thus unidentifiable at species level, and often impossible to assign with confidence to a particular parentage.

In contrast to those species occurring as rare vagrants, there has been little information or advice in the ornithological literature concerning the recording of escaped birds. Advice that should certainly be offered is that recording procedures for escaped birds should take account of these special difficulties of identification, and that observers should take comprehensive fieldnotes whenever possible.

Distinguishing naturally wild, semi-captive and escaped/introduced individuals

Almost any bird seen in the wild might be an escape. Even swifts *Apodidae* have recently been offered for sale in Germany (A.G. Knox, pers. comm.). For

most individuals, however, the escape likelihood is either negligible, because escapes are swamped by a large natural population, or overwhelming, because natural origin is either most improbable or impossible. Where the chances of natural origin and escape/introduction are about equal, as for example for winter barnacle geese over much of inland Britain, problems arise for monitoring numbers and movements of both natural and introduced populations. Except where the birds concerned carry distinguishing rings or colour-marks, and the views obtained allowed their observation, observers will find it impossible to be certain of the birds' status. Thus, as introduced populations grow, it becomes increasingly difficult to study natural populations of the same species.

Rock doves *Columba livia* are found in many forms in Britain and at several different points along a gradient from truly natural occurrence in the wild to permanently captive. In field conditions it is typically impossible to distinguish between native rock doves (where these can still be said to occur), feral pigeons once of domesticated stock but now nesting in the wild, dovecote pigeons nesting in semi-captivity, and racing pigeons only temporarily in the wild. For most recording purposes, the only practical solution would seem to be to lump all these categories together, yet monitoring should ideally exclude captive and semi-captive populations that are under direct human control.

Categorisation of visiting birds of escape or introduced origin

BOURC categorises species, not individuals, and does so on a national basis. Some native species are truly so only in some parts of their British breeding range, and introductions or escapes in others, without this being formalised in BOURC categories. Within the British breeding range of rose-ringed parakeet, it would be reasonable to assume that all birds of that species seen in the wild were part of the naturalised population. It would be unwise to make such an assumption outside the range, where a bird might be more likely a recent escape, not destined to join that population. Thus a category C species nationally might be worthy of a lower category in some counties or regions. These are problems perhaps for county or local recording organisations to resolve. Indeed, although rose-ringed parakeets are occasionally seen, the Scottish Birds Records Committee has not accepted the species onto the Scottish list (Forrester 1994).

On a broader scale, BOURC needs to decide how to treat birds such as lesser white-fronted geese and ruddy shelducks that are visiting us perhaps from introduced populations elsewhere in Europe.

The legal situation

Importations and escapes/releases of exotic species are jointly at the root of the problem. Both are governed by British, Irish and international laws, but the presence in Britain of so many escaped or introduced individuals of so many species can be taken as clear evidence that these laws are not always being observed.

International trade in wild birds is regulated by CITES (A.Jones, this volume), which took effect in Britain in 1976. In the Republic of Ireland, CITES operates only through European law. There is a system of import and export permits and special restrictions for species where control of trade is needed on conservation grounds. However, CITES control within the European Union is only as strong as the weakest application of regulations at any external border or entry point into the 15 Member States; once within the EU, species are not subject to further CITES checks. Aside from deliberate smuggling, birds often arrive here illegally because they were wrongly identified and therefore wrongly described on import documents. Welfare aspects of the wild bird trade have been widely criticised, as have its implications for wildlife conservation in exporting countries.

Under European Law (the Directive on the Conservation of Wild Birds: Article II), Member States are required to see that 'any introduction of species of bird which do not occur naturally in the wild state in the European territory of the Member State does not prejudice the local flora and fauna'. However, it is difficult to see how such a law could be enforced when such 'prejudice' is open to interpretation, and in any case unlikely to be evident until after an introduction has taken hold.

Further international conventions and agreements limiting or prohibiting introductions of non-native species, and to which the UK is a signatory, are listed by Holmes & Simons (this volume). The Berne Convention, the Convention on Biological Diversity and the Bonn Convention are also in force in the Republic of Ireland.

In Great Britain it is an offence to release or allow to escape into the wild any species not ordinarily

resident or a regular visitor or which is on Schedule 9 of the Wildlife and Countryside Act 1981. Offences under this law can be readily observed almost anywhere where birds are kept, but few prosecutions are ever brought (J. Holmes & J. Simons, this volume). In the case of wildfowl, free-flying exotics may leave one collection and join another, making it in practice almost impossible to prove that any particular keeper was in breach of the law.

Both snow goose *Anser caerulescens* and barnacle goose are Arctic species setting up unnatural breeding populations here, aided by deliberate releases or lack of pinioning at wildfowl collections. Since snow goose is decidedly rare as a wild visitor to Britain from its natural range in North America, it should be illegal to release this species. However, the interpretation of what constitutes an ordinarily resident or regularly visiting species has not yet been tested in a court of law, and releases continue. It could perhaps be argued that the long-established introduced population on Mull and Coll (Strathclyde) constitutes ordinary residency, or that visits from North America, though rare, are regular. Barnacle goose releases are not illegal because the species is a regular visitor, yet for this species too the combined activities of many aviculturalists amounts to an unplanned and unregulated introduction of a species that would otherwise never breed in Britain in the wild.

It is hoped that BOURC categorisation would be taken into account in any legal challenge to what constitutes a 'regular visitor'. The case of Eurasian eagle owl is particularly interesting in this respect. Arguably, the species is British, being listed by BOURC on category B (although rejection of the remaining records is currently under consideration). However, there are very few (if any) acceptable records of naturally occurring birds, none of them in the last hundred years, and none of breeding, all recent records being viewed as escapes or releases. Despite all this, it is not altogether clear whether a successful prosecution could be brought under present legislation against someone attempting to introduce this species into Britain. Underwood (1995) and others believe that such an attempt is presently under way in the south Pennines, and that native raptors are already suffering as a result.

While legislation offers some protection, both to endangered birds in their native ranges and to indigenous birds in Europe against competition from exotics, there are thus important loopholes, in the United Kingdom and presumably elsewhere too.

Apart from such loopholes that require to be plugged, laws within Europe may be broadly adequate to regulate the international bird trade, and avicultural practice generally, although this certainly requires critical review. However, the overwhelming need is for tighter enforcement, or indeed any enforcement, of the many national and international commitments and laws as they already apply. Without this, the lists of breeding exotics can only continue to grow, perhaps to the detriment of our native wildlife.

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