Our ref:DefraGLCon021219

2 December 2019

BASC
Marford Mill
Rossett
Wrexham
LL12 0HL

The General Licence Review Team,
1st Floor, Temple Quay House,
2 The Square, Temple Quay,
Bristol,
BS1 6EB.

By email to GLTeam@defra.gov.uk

British Association for Shooting and Conservation (BASC) response to Defra's Wild Birds General Licence Survey.

Key points from BASC's response.

1. BASC urges Defra to extend the current general licences for another 12 months due to insufficient time to consult, hold workshops and process changes and insufficient time to then communicate outcomes before the expiry of the current general licences on 29 February 2020.

2. BASC provided a significant volume of evidence in May this year. We have included a copy of that evidence with this consultation response. We have focused this response where Defra have indicated there was a lack of evidence.

3. BASC believes that all the proffered species should be placed on the relevant general licences.

4. BASC has provided evidence for the inclusion of ruddy duck, raven, Indian house crow and ring-necked parakeet on the relevant general licences.

5. BASC does not support compulsory bag recording because it will be costly and incomplete.

6. BASC wishes to work with Defra to produce a habitat-specific general licence that can be generically applied to protected sites.

7. BASC strongly disagrees with the concept of buffers around protected sites because this is disproportionate.

8. BASC highlights the importance of lethal control as a magnifier of the impact of non-lethal options.

9. BASC highlights the need for year-round control to prevent damage at critical times of the year.

10. BASC urges Defra to sufficiently weigh the practitioner evidence gathered, especially where the peer reviewed evidence is weak.

11. BASC recommends a review and widening of the permitted methods of control to aid in the efficient and humane use of general licences.

Introduction

The British Association for Shooting and Conservation (BASC) is the UK's largest representative body for shooting, with over 155,000 members. Our members and other managers of wildlife rely upon appropriate, clear and workable general licences to enable necessary control of birds to prevent damage to livelihoods, wildlife and the environment and people's health and safety.

We have chosen to respond by letter to this consultation because it more clearly enables us to communicate our findings and recommendations. BASC has encouraged its members to provide responses directly to this survey to provide detailed practitioner evidence.

Therefore, this is BASC's organisational response alone. Where we have presented information from surveys of our members and other users from the call for evidence earlier this year or surveys of members in other home countries, we have made this clear.

The impact of purdah has introduced delays in the planned workshops to discuss EU designated sites. These have now been pushed back to January. BASC is extremely concerned that this delay and the possible impact of a new government could well see inadequate notice of changes in general licences but also inadequate consultation time, given that workshops have been postponed for at least two months. The current Defra licences expire on 29 February 2020. We cannot afford a gap in coverage of general licences in 2020, especially as March is a key month for pest and predator control before the breeding season for other wild birds.

As a result, we would like to see the existing Defra licences extended for 12 months, to allow the findings of the consultation to be adequately considered and enough notice of any changes. Much chaos was caused by an inadequate notice of changes earlier in 2019.

BASC is recommending two months' notice of changes to general licences to enable sufficient time for all users to become informed about the changes. It is lawful to extend the current general licences for 12 months as the maximum term is 2 years.

Below is our detailed response which is structured in line with the questionnaire provided.

We also encourage Defra to revisit our detailed response to the call for evidence in May this year and other published papers.

If we can be of assistance, please do not hesitate to contact us.

Yours sincerely,

Ian Danby,
Head of Biodiversity,
BASC.

Data Protection and GDPR

Would you like our response to be confidential?

No.

About you

1.1 What is your name?

Ian Danby

1.2 What is your email address?

ian.danby@basc.org.uk

1.3. Are you responding on behalf of a number of persons (group, organisation nor business), or responding as an individual? (Group, organisation or business/Individual)

If applicable, please give details of the group, organisation or business
If applicable, number of persons represented by response

I am responding on behalf of the British Association for Shooting and Conversation (BASC). We have 155,000 members in the UK and we are responding to represent them and the wider community of users using our expertise. Considering the need and value of practitioner evidence we have asked members to respond personally to this survey. We have not surveyed them for this particular consultation.

1.4. Do you use, or have you used, a general licence to kill or take wild birds on land you own or occupy? (Yes/No)

No. BASC has office premises in England and there has not been a need to control wild birds on these.

However, the vast majority of our members do control wild birds. Some of this will be on land either they own or they take a sporting licence for, hence being classed as an occupier.

There were 26,944 respondents to BASC's survey for the call to evidence earlier this year. The survey results included that:

- **97%** used GL04 to prevent serious damage or disease.
- **62%** used GL05 to preserve public health and safety.
- **90%** used GL06 to conserve wild birds, flora and fauna.

In fact, if we look at the data behind these figures in the table below, the bottom row indicates that substantial numbers of people undertake control themselves and authorise

others, and so they must be owners or occupiers to be able to do that. For GL04 it is 11%, GL05 7% and GL06 10%.

How respondents used each licence	GL04	GL05	GL06
Undertake myself	22,710	14,586	21,037
Authorise others to undertake on my behalf	764	846	771
Both undertake myself and 8uthorize others	2,757	1,200	2,334
Total number of respondents using each licence	**26,231**	**16,632**	**24,142**

1.5. Under a general licence, do you authorise, or have you authorised, other persons to kill or take wild birds on land you own or occupy? (Yes/No)

No. BASC has office premises in England and there has not been a need to control wild birds on these.

There were 26,944 respondents to BASC's survey for the call to evidence earlier this year. We asked respondents how they used each of the general licences. In order to estimate the owners or occupiers who authorise others, we need to combine the second and third rows of this table. The results are below and show a substantial cohort authorise others to control on their behalf. In terms of percentage it is 14% for GL04, 12% for GL05 and 13% for GL06.

How respondents used each licence	GL04	GL05	GL06
Undertake myself	22,710	14,586	21,037
Authorise others to undertake on my behalf	764	846	771
Both undertake myself and 8uthorize others	2,757	1,200	2,334
Total number of respondents using each licence	**26,231**	**16,632**	**24,142**

1.6. Are you, or have you been, authorised by other persons under a general licence to kill or take wild birds on land you do not own or occupy? (Yes/No)

BASC has not been authorised but again many of our members have informal permissions to shoot which means they would not be seen as owners or occupiers in law.

BASC's survey of 26,944 people did ask this question. However, in BASC's experience the vast majority of activity under general licences from people is exactly as described by this question. People are authorised in law on land they do not legally own or occupy.

1.7. Do you use or authorise use under a general or individual licence to kill or take wild birds on a protected site? (Yes/No)
If 'Yes' please specify the type(s) of site – please select any options that apply.
• Site of Special Scientific Interest (SSSI)
• Special Area of Conservation (SAC)
• Special Protected Area (SPA)
• Ramsar Site

No for BASC directly. However, shooting occurs over at least two thirds of the UK and our members often seek our advice on shooting within protected sites. We recommend them to always include the ability to control species on the current general licences as part of any wider notice for shooting and conservation activities. We believe that general licence use on protected sites is often overlooked by both the applicant and the competent authority but have no evidence of it ever being declined when applied for.

1.8. In what capacity have you used a general licence to control wild birds? You can select more than one box.

• conservation organisation
• farmer
• gamekeeper
• landowner or occupier (other than farmer or gamekeeper)
• local government pest controller
• private pest control company
• recreational shooter
• other (please specify)

BASC does not have data to see how users would describe themselves. However, from our survey earlier this year we can see the volume of use of each licence.

- The survey showed that, of 26,944 respondents:
    - **97%** used GL04 to prevent serious damage or disease.
    - **62%** used GL05 to preserve public health and safety.
    - **90%** used GL06 to conserve wild birds, flora and fauna.

These results strongly indicate the benefits farmers gain from general licences with 97% of people operating under GML4. Similarly, 90% of users worked under GL06 which might indicate them as gamekeepers, farmers (who are predominantly conservation minded) and conservation organisations.

1.9. Are you a member of, or affiliated to, any organisations associated with shooting, farming, pest control or conservation? (Yes/No)

BASC is not a member of these organisations, however we work closely with many in the rural and conservation sector, some of whom have been listed by this question.

BASC believes in the strength of partnership working and the value in collaboration and discussion to agree a sensible and fair way forward.

Theme A - Purpose ‘to conserve wild birds and to conserve flora and fauna’

Summary of species which should go onto the relevant general licence(s).

Current species	Conserving wild birds	Conserving flora (plants)	Conserving fauna (animals other than wild birds)
Canada Goose	Y	Y	
Carrion Crow	Y		
Egyptian Goose	Y	Y	
Indian House Crow	Y		
Jackdaw	Y		
Jay	Y		
Magpie	Y		
Monk Parakeet	Y		
Ring-necked Parakeet	Y		
Rook	Y		Y
Sacred Ibis	Y		Y
Additional species	Conserving wild birds	Conserving flora (plants)	Conserving fauna (animals other than wild birds)
Ruddy duck	Y		
Raven	Y		

A.1. Which bird species do you consider need to be controlled under general licence for conservation purposes and why?

Canada Goose - *Branta canadensis*

The Canada goose is a non-native species with the potential to be invasive. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from:
http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarised the impacts as follows:

"No national assessment of economic loss has been attempted in GB, but local damage can be severe. No national assessment on their negative impact on other waterbirds in GB has been investigated. The species is a potential vector for avian and human pathogens including the avian flu virus but there is no confirmed evidence of transmission to humans. There is clear evidence of agricultural damage, nuisance and defecation in parkland and risks to flight safety. It is possible that erosion, displacement of other bird species and disease transmission may also be a feature of this species and its expansion. No national quantification of the levels of any such impact has, however, been undertaken"

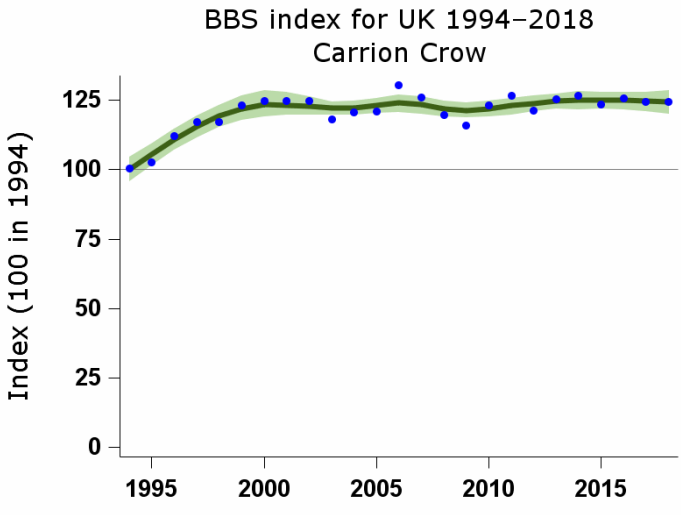
The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts where practical. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

Carrion crow - *Corvus corone*

There is sufficient evidence to warrant carrion crows on the general licence 'to conserve wild birds and to conserve flora and fauna', specifically to preserve wild birds. Carrion crows are known nest predators and a number of studies have shown the negative impacts they have on nest success and bird populations, with (Madden, Arroyo, & Amar, 2015) showing them to have a 60% probability of negative effects on prey species productivity. Red Foxes and Carrion Crows are considered to be amongst the most important predators of wader eggs in Britain (Seymour, Harris, Ralston, & White, 2003), particularly curlew (Brown et al., 2015) and corvids (including Carrion Crow) were the second most important nest predators of skylarks in the Netherlands (Praus, Hegemann, Tieleman, & Weidinger, 2014). Lethal control which limits predator abundance is shown to help the nest success and recovery of passerine and wader populations that are declining locally (Fletcher, Aebischer, Baines, Foster, & Hoodless, 2010; Sage & Aebischer, 2017). Predator control of Carrion Crows and Red Foxes has led to a greater than threefold increase in Curlew breeding success, and annual increases in breeding numbers and where no predator control occurred, only 15% of Curlew pairs produced young (Brown *et al*. 2015).

Our survey results showed that an average of 82% of respondents carry out control on carrion crows and spent an average annual total of 60,107 days carrying out such control, but populations continue to rise. When asked about the importance of controlling each species under the general licence, an average of 85% of respondent thought that the control

of carrion crows was ‘very important’. Without this vital control the carrion crow population could rise drastically and cause severe consequences for other bird populations. The averages (means) were taken from our survey results from Scotland and Wales.



Egyptian Goose - *Alopochen aegyptiacus*

The Egyptian Goose is an invasive non-native species. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from:
http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarised the impacts as follows:

“There has been little study of the impacts of this species in its introduced range. In its native range, areas with high densities of this species may experience crop damage and Egyptian Geese presence may reduce the breeding success of other hole-nesting species with which they compete. Competitive exclusion of other waterbirds, habitat damage and eutrophication are suspected in the introduced range but further research is required to understand these impacts.”

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts if possible. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

Indian House Crow - *Corvus splendens*

The Indian house crow is an invasive non-native species. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from:
http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarises the known impacts as follows:

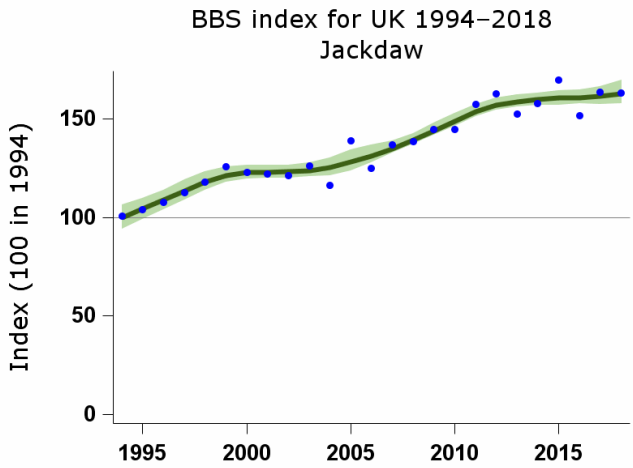
“The Indian House Crow, which occupies urban/semi-urban/peri-urban habitat, is regarded as a widespread major pest in Asia and Africa. It is a major predator of other birds, and is implicated in reductions in populations of a range of species. In addition to direct predation, it also displaces indigenous avian species through competition and aggression. Further problems are associated with public health issues arising from the House Crow’s communal roosting and scavenging behaviours.”

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts if possible. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

Jackdaw - *Corvis monedula*

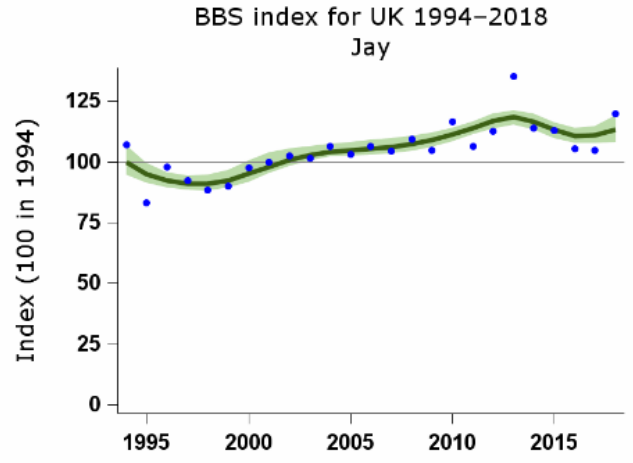
There is sufficient evidence to warrant jackdaws on the general licence ‘to conserve wild birds and to conserve flora and fauna’, specifically to preserve wild birds. Jackdaws are also known nest predators and have the potential to cause serious damage to birds and impact nest success. Jackdaws, magpies, and rooks are the main nest predators on yellowhammers, a rapidly declining red-listed species in the UK (Dunn, Hamer, & Benton, 2010). Jackdaws have featured in several other studies; they have been documented removing spotted flycatcher eggs from the nest one at a time and carrying them away (Stevens, Anderson, Grice, Norris, & Butcher, 2008), they also have the capacity to dominate nest boxes during spring months which can have an impact on nesting birds such as Great Tit (Shuttleworth, 2001). Jackdaw have been recorded depredating Tufted Duck nests in Scotland (Liordos & Lauder, 2015), Sky Lark nests in the Czech Republic (Praus & Weidinger, 2010) and were seen to predate on lapwing chicks in a study by (Teunissen, Schekkerman, Willems, & Majoor, 2008).

Our survey results showed that an average of 62.5% of respondents carry out control on jackdaws and spent an average annual total of 46,172.5 days carrying out such control. When asked about the importance of controlling each species under the general licence, an average of 71% of respondent thought that the control of jackdaws was ‘very important’. Without this vital control the jackdaw population could rise drastically and cause severe consequences for other bird populations. The averages (means) were taken from our survey results from Scotland and Wales.



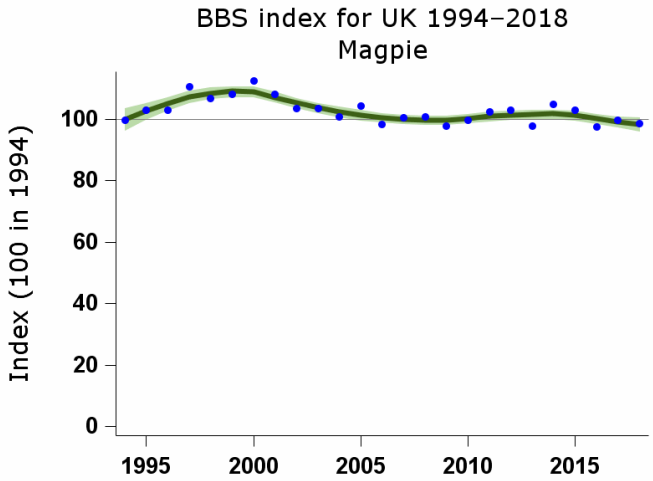
Jay - *Garrulus glandarius*

There is sufficient evidence to warrant jays on the general licence 'to conserve wild birds and to conserve flora and fauna', specifically to preserve wild birds. Jays are well known predators specialising in woodland and patchy woodland and farmland habitats. There are a number of studies highlighting jays as important nest predators of songbirds and jays are responsible for 29% of studied predation events on open songbird nests in Europe (Weidinger, 2009). In a study by (Schaefer, 2004)(Schaefer, 2004) jays were the most common nest predator of blackcaps and were responsible for 46% of nest losses. Jays were also found to be the most common nest predator of spotted flycatcher, a red listed and biodiversity action plan species and were responsible for 60% of all predation events in which they predated on both eggs and chicks (Bolton, Butcher, Sharpe, Stevens, & Fisher, 2007; Stevens et al., 2008). Jays and magpies were identified as the most important nest predators of blackbird and song thrush. Nest failure rate was higher where corvids were more abundant and this effect was strongly significant for blackbird (Paradis et al., 2000). Our survey results showed that an average of 44.5% of respondents carry out control on jays and spent an average annual total of 30,842.5 days carrying out such control. When asked about the importance of controlling each species under the general licence, an average of 65.5% of respondent thought that the control of jays was 'very important'. The averages (means) were taken from our survey results from Scotland and Wales.



Magpie - *Pica pica*

There is sufficient evidence to warrant magpies on the general licence 'to conserve wild birds and to conserve flora and fauna', specifically to preserve wild birds. Magpies are known nest predators and can cause serious damage to songbirds, waders and game birds. In a study by Dunn et al., (2010) magpies were found to cause behaviour changes in songbirds which have negative impact on chick growth, condition and subsequent survival rates. The majority of nest failures in this study were due to corvids, namely, magpies, jackdaws and rooks. (Groom, 1993) found that just 5% of blackbird nests produced fledged young in an urban environment with high densities of magpies. The majority of identifiable predation events were attributed to magpies in this study. Again, the control of this species has shown to increase the nest success of many species and subsequent population recovery of vulnerable species. See here and here for examples of magpies taking wild birds. Further research into the extent of damage by this species is required.
Our survey results showed that an average of 77.5% of respondents carry out control on magpies and spent an average annual total of 56,959.5 days carrying out such control. When asked about the importance of controlling each species under the general licence, an average of 83.5% of respondents thought that the control of magpies was 'very important'. The averages (means) were taken from our survey results from Scotland and Wales.



Monk Parakeet - *Myiopsitta monachus*

The monk parakeet is an invasive non-native species. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from:
http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarised the impacts as follows: ware

"The Monk parakeet is considered an agricultural pest in its native South American range, although recent reports indicate that damage is severe locally, but less significant regionally. It is also reported to be an agricultural pest is some areas of the United States and could damage fruit and grain crops in the risk assessment areas if very large populations are allowed to establish themselves. Damage to artificial structures as a result of colonial nest building is likely, as well as some noise nuisance. There is potential for disease transmission to wild native birds, poultry and theoretically to humans. Although there is unlikely to be

competition with native birds for nesting sites, competition for food may be an issue since Monk parakeets are known to dominate feeding areas and act aggressively to competitors."

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts if possible. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

Ring-necked Parakeet - *Psittacula krameria*

The ring-necked parakeet is an invasive non-native species. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from:
http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarised the impacts as follows:

"Ring-necked Parakeets are considered a serious agricultural pest in its native range and have shown signs of causing significant damage to crops in the risk assessment area. It has also been demonstrated that introduced populations can have a negative association with native secondary cavity nesters. They may additionally carry several disease which could be harmful to poultry, native fauna and humans. Since they are quite vocal, they could potentially cause noise nuisance in residential areas."

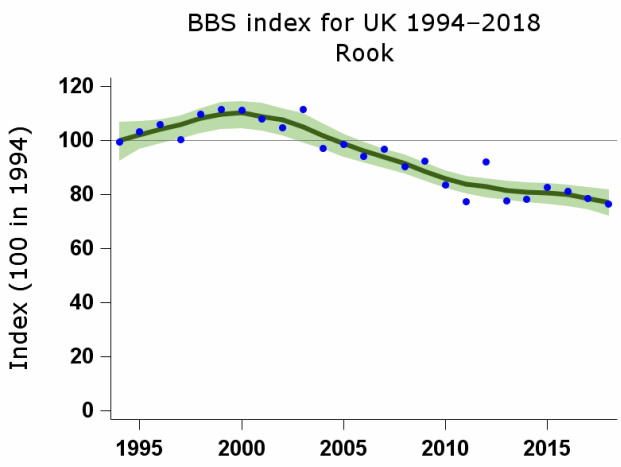
The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts if possible. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

Rook - *Corvus frugilegus*

There is evidence to warrant rooks on the general licence 'to conserve wild birds and to conserve flora and fauna'. Rooks are cited as being key nest predators in a number of papers (Dunn et al., 2010; Roos, Smart, Gibbons, & Wilson, 2018). They are also known predators of bats however the impact they have on bat populations is unknown (Speakman, 1991). Further research is needed in this area to investigate the scale of damage caused by this species before it is removed from the general licence to prevent any potential damage occurring. Although the current population trend shows a decline in this species it remains green listed due to the large population and therefore is likely to still be causing large amounts of damage.

Our survey results showed that an average of 49.5% of respondents carry out control on rooks and spent an average annual total of 37,026.5 days carrying out such control. When asked about the importance of controlling each species under the general licence, an

average of 83.5% of respondents thought that the control of rooks was ‘very important’. The averages (means) were taken from our survey results from Scotland and Wales.



Sacred Ibis - *Threskiornis aethiopicus*

The sacred ibis is an invasive non-native species. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from: http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarised the impacts as follows:

“Sacred Ibises can have serious impacts on other bird species due to predation of eggs and chicks. Colonial-nesting species such as terns and seabirds are particularly vulnerable. They could cause nuisance or environmental health concerns by scavenging from rubbish bins in areas of human habitation. It is possible that they may also carry disease which could be harmful to poultry, native fauna and humans.”

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts if possible. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

A.2. Do you consider that any other bird species need to be controlled under general licence for conservation purposes?

Ruddy duck – *Oxyura jamaicensis*

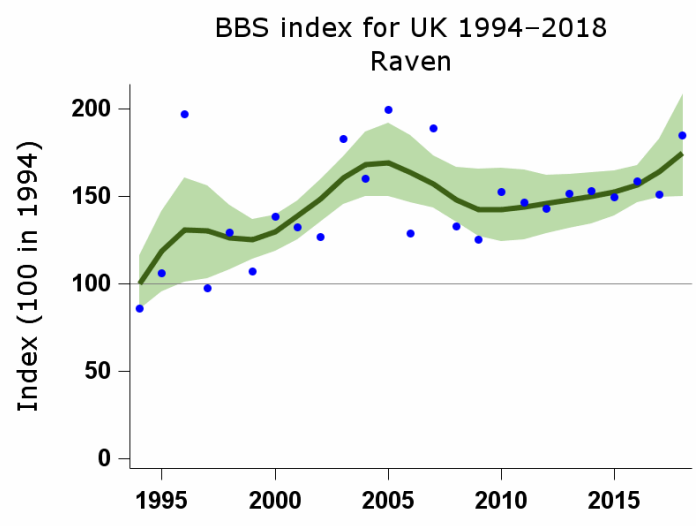
The ruddy duck is an invasive non-native species. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from: http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarised the impacts as follows:
'Threatens White-headed Duck with extinction if allowed to spread from its existing range in the UK, France, the Netherlands and Belgium, leading to Ruddy Ducks colonising large areas of western Europe followed by habitat in north Africa, eastern Europe and central Asia. If Ruddy Ducks were allowed to become widely established in other countries, their eradication would become impossible and it is likely that the White-headed Duck would become extinct through genetic introgression. Besides the risk of spread from existing populations, there is also a risk that the escape or release of captive birds will result in the establishment of another feral population even if the current one is eradicated'.

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts where practical. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

Raven – *Corvus corax*

With the gradual population increase in ravens they may begin to cause more of an impact that previously. It is well-known that ravens can cause a substantial amount of predation pressure and are even capable of predating on relatively large birds such as full-grown kittiwakes and feral pigeons (Hendriks & Schlang, 1998; Klicka & Winker, 1991). There were negative associations of rising raven populations and lapwing and curlew declines (Amar, Redpath, Sim, & Buchanan, 2010). In a study by (Burrell & Colwell, 2012) ravens were negatively associated with snowy plover productivity and they were the main factor found to be limiting plover productivity. Although the snowy plover is not found in the UK there is likely to be undocumented similar effects with ringed plover and other small shorebirds. A study into predator defence by lapwings showed that common ravens caused the highest mobbing response suggesting that it is perceived as the highest avian predation threat (Królikowska, Szymkowiak, Laidlaw, & Kuczyński, 2016). Another study by (Bodey, Mcdonald, Sheldon, & Bearhop, 2011) investigated the effects of legal predator control on lapwing nesting success. Hooded crows and feral ferrets were controlled during the study and nesting success remained low which is thought to be related to predation by ravens.



A.3. Are there any bird species listed below that you consider should NOT be controlled under general licence for the purposes listed?

No. All are appropriate.

Theme B – Purpose ‘to preserve public health or public safety’

Summary of species which should go onto the relevant general licence(s).

Current species	Prevention of trips slips and falls	Preventing spread of human disease	Dealing with issue in relation to birds nesting	Other
Canada Goose	Y	Y		
Carrion Crow	Y	Y		
Jackdaw		Y		
Jay		Y		
Magpie		Y		
Rook		Y		
Additional species	Conserving wild birds	Conserving flora (plants)	Conserving fauna (animals other than wild birds)	
Indian House Crow		Y		
Ring-necked Parakeet		Y		

B.1 Which species do you consider need to be controlled under general licence for preserving public health and public safety and why?

Canada Goose - *Branta canadensis*

The Canada goose is an invasive non-native species. The GB non-native species secretariat have conducted a risk assessment for this species which can be downloaded from:
http://www.nonnativespecies.org/index.cfm?pageid=143

This assessment summarised the impacts as follows:

"No national assessment of economic loss has been attempted in GB, but local damage can be severe. No national assessment on their negative impact on other waterbirds in GB has been investigated. The species is a potential vector for avian and human pathogens including the avian flu virus but there is no confirmed evidence of transmission to humans. There is clear evidence of agricultural damage, nuisance and defecation in parkland and risks to flight safety. It is possible that erosion, displacement of other bird species and disease transmission may also be a feature of this species and its expansion. No national quantification of the levels of any such impact has, however, been undertaken"

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts where practical. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country.

Therefore, we consider it is appropriate for them to be included on this general licence.

Carrion crow - *Corvus corone*. Jackdaw - *Corvis monedula*. Magpie – *Pica pica*. Rook - *Corvus frugilegus*

Corvids are known to be carriers of a range of diseases that have to potential to cause harm to humans, either directly or through the consumption of contaminated food products. Corvids may also exacerbate issues through their presence in livestock areas, scavenging infected prey, and travelling wide distances (Daniels et al., 2003). Avian influenza has been found in corvids and this poses a disease risk to livestock through direct and indirect contact (e.g. contamination of feed, water, bedding and equipment) which in turn could pose a risk to humans. Research shows crows can transmit paratuberculosis to ruminants such as cattle, sheep and goats, which could make it difficult to control nationally (Beard et al., 2001; Corn, Manning, Sreevatsan, & Fischer, 2005). Paratuberculosis also has possible zoonotic links with Crohn's disease (Beard et al., 2001). Other diseases include; West Nile virus (Jiménez de Oya et al., 2018; Lim et al., 2015; Monaco et al., 2015), Campylobacter (Hald et al., 2016; Hudson et al., 1991; Hughes et al., 2009; Pebody, Ryan, & Wall, 1997) and Salmonella (Tizard, 2004).

There is also anecdotal evidence for corvids causing damage to human food stores, other businesses and also causing issues when nesting in chimneys.

B.2 Do you consider that any other bird species need to be controlled under general licence for preserving public health or public safety purposes?

Indian House Crow - *Corvus splendens*

Indian house crow is an invasive non-native species. The GB non-native species secretariat describe the impact of this species on health and social impact as:

The house crow's habit of feeding on carrion and rubbish close to human habitation makes it a potential danger to public health. It is known to carry at least eight human enteric diseases, including Salmonella, Plesiomonas and Escherichia coli. It is a nuisance to people and is widely regarded as a pest.

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts if possible. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

Ring-necked Parakeet - *Psittacula krameria*

Ring-necked parakeet is an invasive non-native species. The GB non-native secretariat has completed a full risk assessment for this species (http://www.nonnativespecies.org/index.cfm?pageid=143) and concluded on the impacts the following:

Ring-necked Parakeets are considered a serious agricultural pest in its native range and have shown signs of causing significant damage to crops in the risk assessment area. It has also been demonstrated that introduced populations can have a negative association with native secondary cavity nesters. They may additionally carry several disease which could be harmful to poultry, native fauna and humans. Since they are quite vocal, they could potentially cause noise nuisance in residential areas.

There also concerns about their nesting habitats, especially on electrical structures and the subsequent short-circuits this causes.

The requirements of the Convention of Biological Diversity and successive supporting legislation emphasises the need for a precautionary approach towards non-native species, which means eradication is the preferred option should they arrive or if widely spread a management plan to mitigate their impacts if possible. This is even so when the science base indicates a level of risk but there is uncertainty of the significance of the impact in the home country. Therefore, we consider it is appropriate for them to be included on this general licence.

B.3 Are there any bird species listed below that you consider should NOT be controlled under general licence for purpose of preserving public health or public safety?

No.

Theme C – Purpose ‘to prevent serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber, fisheries or inland waters’

Species	Livestock	Crops	Vegetables	Fruit	Livestock feedstuffs	Growing Timber	Fisheries	Inland Waters
Carrion Crow	Y	Y	Y		Y			
Jackdaw		Y			Y			
Magpie	Y	Y	Y	Y	Y			
Rook		Y			Y			
Further research required for the following species								
Goosander							R	
Cormorant							R	
Red-breasted merganser							R	
Raven	R							
Stock Dove		R	R	R				

C.1 Which bird species do you consider need to be controlled under general licence to prevent serious damage and why?

Please refer to our call for evidence response to you in May. In this we present substantial evidence for species, especially the woodpigeon. This response focuses on the corvid species where Defra indicated they wished for more evidence.

Carrion Crow - *Corvus corone*

Much of the evidence surrounding the damage to livestock by carrion crows is anecdotal and this damage includes pecking eyes, tongue and navel of new-born lambs and attacking ewes when they are on their backs. Although scientific evidence is not available, the issue is a huge concern for livestock farmers, not only for the welfare of their animals but also financially as well.

There is evidence to suggest that carrion crows should be controlled under the general licence to prevent crop damage. Vegetable matter, especially cereals, is very important to the carrion crow, jackdaw and magpie (Soler *et al*.1993; Holyoak, 2009). Carrion crows have been observed feeding on both wheat and barley fields, alongside rooks and jackdaws, and causing significant damage to these crops (O'Leary, 1995). Damage to crops by crows can be quite substantial, where no control measures were carried out the sown crop of spring wheat in a study by (Kennedy & Connery, 2008) showed reductions of 59%, 69% and 89% in 2004, 2004, and 2006 respectively. Winter wheat showed more sever reductions of 96%, 88% and 96% in 2004, 2005 and 2006 respectively. In the early 1990s corvids such as crows were recorded as one of the species causing the most economic damage in Germany (Govorushko, 2014). The damage cited in these studies is quite substantial and therefore we recommend that carrion crows remain on the general licence to prevent damage to livestock, foodstuffs for livestock and crops.

An average of 79% of survey respondents stated that they would anticipate financial impacts to occur if they were no longer able to control carrion crows under the general licence. The averages (means) were taken from our survey results from Scotland and Wales.

Jackdaw - *Corvis monedula*

Jackdaws are known crop pests and therefore should remain on the general licence to prevent damage to crops. There are several papers which talks about the damage to crops caused by jackdaws and economic crop losses from birds can be quite large. In the early 1990s corvids such as jackdaws were listed as one of the species causing the most damage in Germany (Govorushko 2014). In Cyprus the main items in jackdaw diets were insects followed by cereals such as barley and wheat (Hadjisterkotis, 2003). In Poland crops such as oats, barley and wheat are the main springtime feeding grounds of jackdaws. Maize was reported to suffer most damage from rooks and jackdaws (Pinowski, 1973). Jackdaws in Finland often cause considerable damage to cereal fields by eating newly-sown seed and seedlings in Spring, and, in late summer, trampling ripening crop and eating grain (Vappula, 1965). Jackdaw have been observed feeding on both wheat and barley fields, alongside Rooks and Crows, and causing significant damage to these crops (O'Leary 1995). Damage can also be cause to food stored for livestock and in Ireland jackdaws were one of the main species that damaged plastic film on baled grass silage, these holes can result in serious forage losses (McNamara, O'Kiely, Whelan, Forristal, & Lenehan, 2002; McNamara et al., 2004).

Jackdaws have also been observed damaging fruit and vegetable crops. Peas, beans, apples and pears are taken by Rooks and Jackdaws and potatoes and root crops are also attacked during hard weather in winter (Holyoak, 1968; Seubert, 1964; Vappula, 1965). Jackdaws in Finland also often eat cultivated berries, such as strawberries and currants (Vappula, 1965). The damage cited in these studies is quite substantial and therefore we recommend that jackdaws remain on the general licence to prevent damage to livestock, foodstuffs for livestock and crops.

An average of 72.5% of survey respondents stated that they would anticipate financial impacts to occur if they were no longer able to control jackdaws under the general licence. The averages (means) were taken from our survey results from Scotland and Wales.

Magpie – *Pica pica*

Again, much of the evidence surrounding the damage to livestock by magpies is anecdotal and this damage includes pecking eyes, tongue and navel of newborn lambs and attacking ewes when they are on their backs. Magpies also caused serious damage to rams, pecking into their bodies causing pain and infection (Berry, 1922).

Magpies are also known to cause damage to crops. Grain is an important food source of crows, rooks, jackdaws and magpies (Holyoak, 1968). Jackdaw, magpie and jay are known to damage newly sown and ripening grains, seed, potatoes, peas, apples and pears in Holland (Seubert, 1964). Cereals make up an important component in the diets of magpies, making up 59.3% of the diet (Soler, Soler, & Martinez, 1993). Damage can also be cause to food stored for livestock; magpies, along with some other bird species are known to cause an issue with silage bales. Birds will peck holes in the plastic wrap which causes the anaerobic conditions to cease, allowing mould to form and the silage to become spoiled (Mickan, 2003). The damage cited in these studies is quite substantial and therefore we recommend that magpies remain on the general licence to prevent damage to livestock, foodstuffs for livestock and crops.

An average of 54.5% of survey respondents stated that they would anticipate financial impacts to occur if they were no longer able to control magpies under the general licence. The averages (means) were taken from our survey results from Scotland and Wales.

Rook - *Corvus frugilegus*

Rooks as well as other corvids have been identified as utilising outdoor poultry units. A Defra project by Baxter et al., 2007 cited in (Parrott, 2012) stated that rooks have been seen to predate on ducklings however the extent of this is unknown.

Rooks are known to cause damage to crops. A reduction of seedling density in cereal crops due to feeding by rooks can severely reduce grain yields (Feare, 1974), this study also showed that a range of scaring devices failed to prevent rooks feeding in cereal crops. They also cause extensive damage in New Zealand, especially in areas with high rainfall and light, free-draining soils (McLennan & MacMillan, 1983). Both juvenile rooks and jackdaws feeding in barley and wheat fields likely caused a significant loss in yield (O'Leary, 1995).

Damage to livestock feed is quite extensive by rooks. Changing agricultural practice has provided rooks with another source of food in the form of animal feed. The paddock system

of rearing pigs has provided a feeding opportunity of which they have taken advantage (Wright, 1982).

Baled grass silage is an important ruminant feedstuff in Ireland. Rooks and jackdaws were the primary users of grass silage stubbles and the main species that damaged baled plastic stretch film. The incidence of damage was sporadic, but when it occurred was often substantial (McNamara et al., 2001, 2004). If not repaired quickly, these holes can lead to large losses of silage dry matter and quality (Mickan, 2003).

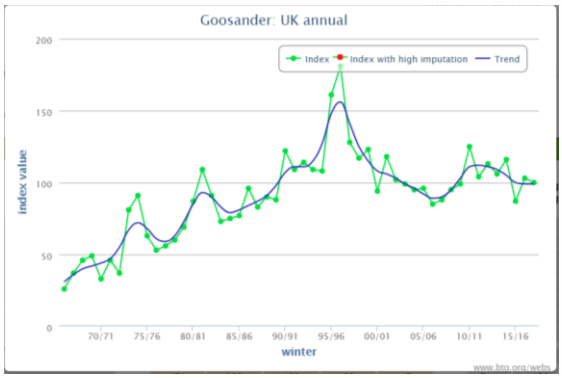
An average of 80% of survey respondents stated that they would anticipate financial impacts to occur if they were no longer able to control rooks under the general licence. The averages (means) were taken from our survey results from Scotland and Wales.

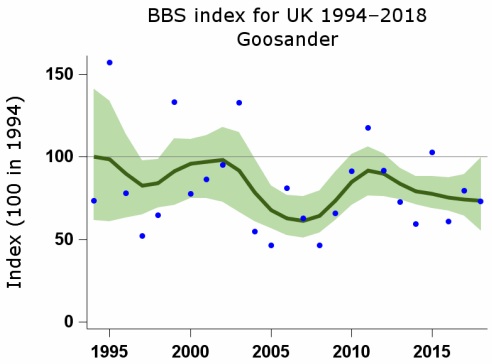
C.2 do you consider that other bird species need to be controlled under general licence to prevent serious damage?

BASC are calling for further research into the following species to consider if they should be added to the general licences.

Goosander - *Mergus merganser*

This is a piscivorous species that has been noted as causing localised issues with fish stocks in Scotland. Further research is needed into this area to investigate the potential for damage in England by this species.18% of our Scottish respondents felt that goosander should be added to GL01 and GL02 to reduce impacts on fish stocks.

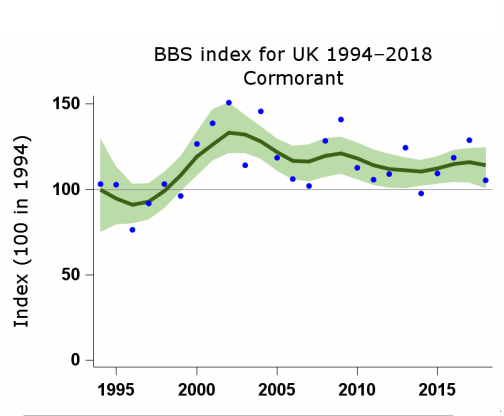


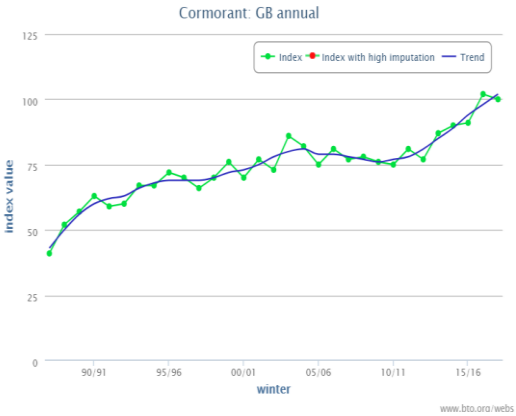


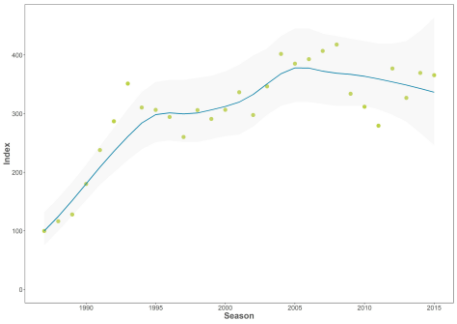
Cormorant - *Phalacrocorax carbo*

Cormorant numbers throughout Europe have increased substantially between 1987 and 2015 however more recently have shown rapid declines in central Europe and a stable population in north west Europe. These population increases, especially of the inland *sinensis* subspecies, have resulted in concerns for both farmed and wild fish stocks. According to (Humphreys et al., 2016), out of the piscivorous species considered (cormorant, red-breasted merganser and goosander), cormorants were seen to cause the most damage over a broad range of fishery types. Cormorants were also seen to have sub-lethal effects such as wounding, behavioural changes and negative effects on fish condition.

A study into the diet and prey selection of cormorants at Loch Leven estimated that over the 7-month period cormorants consumed 80,803 brown trout and 5,213 rainbow trout compared to the annual fishery catches of 5,828 brown trout and 12,815 rainbow trout. It was suggested that the stocking has led to an increase in cormorant numbers and a subsequent increase in predation which is limiting the trout population (Stewart, Middlemas, Gardiner, Mackay, & Armstrong, 2005). Cowx, (2007) discusses how shooting is however not an effective mitigation method as it did not seem to reduce the cormorant population, possibly because Loch Leven is just part of a larger cormorant population's range and therefore these cormorants were just replaced. Further research is needed into the extent of damage caused in England by cormorants and other piscivorous birds.

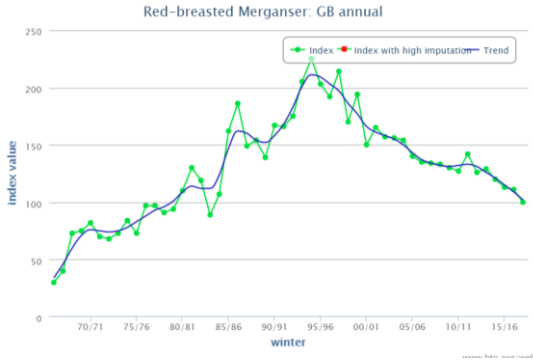


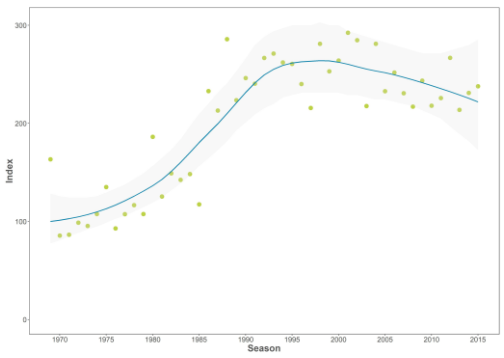




Red-breasted merganser - *Mergus serrator*

This is a piscivorous species that has been noted as causing localised issues with fish stocks in Scotland. Further research is needed into this area to investigate the potential for damage in England by this species.



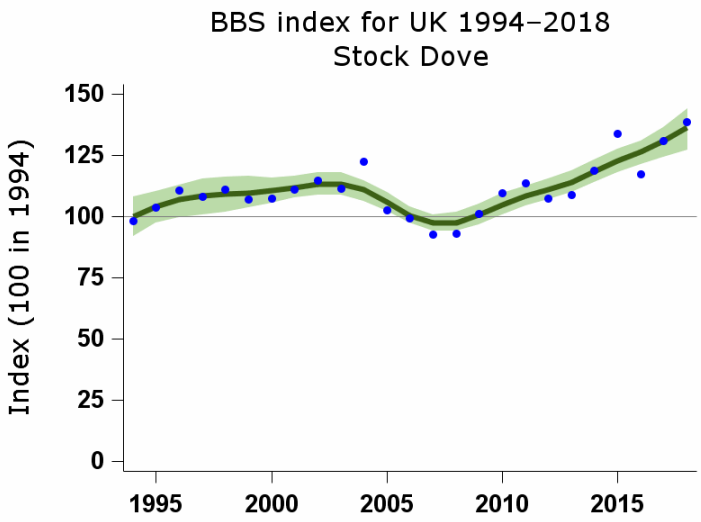


Raven - *Corvus corax*

The rising population of ravens could also have a detrimental impact on the welfare of livestock, particularly new-born lambs and pregnant ewes. Ravens have been seen to cause severe damage to lambs and ewes during lambing seasons and it is an issue that is recognised worldwide (De Grazio, 1978). 72 lambs were killed on a sheep farm in Oregon, USA (De Grazio, 1978; Larsen & Dietrich, 1970). Ravens were the cause of 36.2% of the mortality in a border Leicester flock with twin lambs being more prone to attack than single lambs (Smith, 1964). With the increasing raven population, the extent of damage caused to livestock it likely to also increase. In terms of protecting animal welfare it would be appropriate to add ravens onto the general licence so that their population is kept as a workable level for livestock farmers. Further research is needed to establish the extent of the issues causes by ravens.

Stock doves - *Columba oenas*

The stock dove population is increasing across the UK however there is no research into the extent of agricultural damage they could potentially cause. They have a similar ecological niche to pigeons and collared doves and so therefore have the potential to cause similar types of damage. Further research is needed into this area.



Dark bellied brent – *Branta bernicla bernicla*

Dark bellied brent are known to cause a substantial amount of crop damage and therefore should be considered for the general licence ‘to prevent serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber, fisheries or inland waters’.

There are several papers that investigate methods of mitigating the damage caused by these geese. Scaring methods have been trialled with some success. Red tape successfully kept geese out of certain fields however when all fields were taped the geese did eventually graze in the taped fields but at a lower intensity (Summers & Hillman, 1990). A full-time human bird scarer was also found to be a cost-effective method of reducing crop damage and was more effective than the coloured tape, however, it was not effective at keeping the geese of during a particularly harsh winter. Once scared off these geese moved to graze on pastures nearby and these alternative feeding areas are essential if scaring methods are to be effective (Vickery & Summers, 1992).

The composition of these alternative feeding areas has also been examined. Clover plots were preferred by brent geese over purely grass plots and the costs and benefits of growing clover are also discussed. It is also recommended that to increase the attractiveness of alternative feeding areas for geese, fertiliser should be applied 2 weeks before the birds are expected to start using the site (Hassall & Lane, 2001; McKay et al., 2001). These papers clearly show that the issue of crop damage by brent geese is quite substantial otherwise there would not be such research investigating ways of minimising the impacts. Further research is needed into this area.

C.3 Are there bird species that you consider should NOT be controlled under general licences for the purposes listed?

No

Section D Alternative Measures to Killing or Taking

Alternatives to killing or taking bird species for conserving flora and fauna, preserving public health or safety, and preventing serious damage or disease, do not reduce the overall level of damage at a landscape scale, but simply redistribute that damage. Therefore, the alternatives are neither effective nor practicable to killing or taking bird species.

It should also be pointed out that the general licences are intended to prevent issues and damage. EU guidance on the Birds Directive makes it clear that it is not a response to already proven damage, but of the strong likelihood that this will take place in the absence of action.

It is also vital that Defra understand that preventing issues often require the action to be taken either throughout the year and often at some critical periods. One example is the control of corvids to protect eggs and chicks is most effective if it starts in the winter before pairing up of breeders and actual nesting attempts. Outside of this period control can protect the adult birds or juveniles.

For control measures to be effective in the long term they need to represent an actual, rather than perceived threat. Without any actual threat to the birds they will quickly habituate and resume causing damage. Lethal control, through shooting, is an essential part of an overall control strategy and helps to reinforce the effectiveness of non-lethal methods by providing a degree of threat to the birds.

Table 1. Assessment of alternatives to killing or taking bird species for conserving flora and fauna, preserving public health or safety, and preventing serious damage or disease.

	Non-lethal method/deterrent				
	Visual	**Auditory**	**Chemical**	**Exclusion**	**Habitat modification**
Conserving flora and fauna	-	-	-	-	o
Preserving public health or safety	+/o	O	-	+	+
Preventing serious damage or disease	+/o	+/o	+	+	o

+ can be effective; o *limited effectiveness or difficult to implement; - ineffective or impossible to implement*

For a number of situations there is simply no effective alternative to lethal control. For example, visual, auditory and chemical deterrents could not be used to prevent corvid predation on threatened bird species as the deterrents are as likely to scare away the protected bird as they are to scare the corvids. Additionally, lethal control is often used to control pigeons to preserve public health and safety around ports by reducing the local population at times when, or in places where, members of the public aren't present. Exclusion techniques tend not to work as netting becomes fouled by the birds creating a larger hazard and is impractical over large areas, auditory deterrents can't be used due to the proximity of members of the public and birds quickly habituate to visual deterrents.

In the scientific literature on bird deterrents lethal shooting is often described as effective, but expensive. However, this cost is invariably borne by the individual shooter, not by the farmer, countryside manager or society. This cost is borne willingly on the understanding that the shooter often receives favourable access to other shooting opportunities on the land (for example game shooting or deer stalking), provides a community benefit and also that the shooter will not have to bear unnecessary or burdensome restrictions while working for the public good. By introducing additional requirements there is a risk that shooters will no longer willingly bear the costs and that the burden will be passed to others. In the case of conserving flora and fauna it could be the public that are required to bear this cost either through loss of biodiversity and ecosystem functions or through paying for professional bird scarers/controllers. Society could therefore face increased food costs to protect crops.

Ultimately, any non-lethal method does not reduce the overall level of damage at a landscape scale, but simply redistributes it. Lethal control can significantly reduce local damage through small scale population control, but without impacting on the overall population. For species in favourable conservation status, such as woodpigeon and corvids, lethal control (as has been practiced in the UK until recently), was a cost-effective method that did not compromise the conservation status of the species being controlled; and allowed farmers and countryside managers to target control where the issue was greatest. Additionally, it complied with the Birds Directive provisions including that there be “no other satisfactory solution” as shooting is required to supplement the effectiveness of non-lethal solutions and prevent birds’ habituation. Natural England has recognised that most visual scarers require the presence of lethal control alongside them to prolong their period of effectiveness.

Some literature also suggests that it is possible that once birds habituate to a scaring device, it could then work as a cue indicating the presence of available food (Conover & Perito 1981). Under these circumstances, it would attract birds to the crop as they have learned that food is available when the cue is present. Therefore, as well as being ineffective, scaring may actually escalate damage levels.

Deterrent techniques

Each of the main categories of non-lethal control are discussed in turn below. Each section begins with the relevant paragraph from the executive summary of an extensive 2003 Defra review on the effectiveness of these techniques (Bishop *et al*. (2003). This review covers many of the techniques in significant detail and so no attempt is made to replicate their review of the literature.

Visual deterrent techniques

“*Visual techniques range from extremely effective (human disturbance) to ineffective (most scarecrows). Effectiveness depends on how real a threat they are perceived to be (predators and their models) or how much they are perceived to interfere with movement (tapes and wires).*”

The most common visual deterrent is a scarecrow, but modern techniques include laser fences or grids, inflatable mannequins and raptor-like kites. Lasers have been trialled to reduce goose damage but are of limited use for preventing woodpigeon or crow damage, as these birds feed in daylight and laser deterrents are most effective at night. Additionally, there are human health concerns associated with these devices, which has prevented their widespread use.

Scarecrows are generally ineffective at deterring birds and at best provide only short-term protection, even if they are realistic and regularly moved. Real humans, however, can be very effective scarers, though obviously, the effect is short-lived and relies on a more or less continuous human presence.

Other predator mimicking techniques such as inflatable mannequins and raptor-like kites can have short-term deterrent effects but do not appear to be universally effective. These techniques also seem to only work over very restricted areas and so are not practical to implement at a farm scale.

Drones have been trialled in Scotland to deter geese from arable fields. Although these have proved effective in some circumstances they have not led to significant long-term reductions in damage, are costly to buy and run (as they require an operator) and birds still rapidly habituate to them.

Auditory deterrent techniques

"*Auditory techniques in general are thought to be relatively effective, although subject to habituation and hence of short-term benefit. Much of the information on noise is unpublished and not generally available. Artificial noises, ultrasonics and high intensity sound are either ineffective or unsafe*."

Auditory deterrents can include ultrasonic emitters, predator or distress calls and gas cannons. Clearly, almost all auditory deterrents are non-selective and have the potential to deter all birds from an area, regardless of their conservation status; this limits their use in conserving fauna. Furthermore, there are significant public nuisance issues associated with the use of gas cannons and an increase in their use is likely to generate significant public concern. This also restricts their use in protecting public health and safety as in many of the cases where action is needed there is often a significant public presence whose health and safety needs protecting – this would not be well served through the use of repeated loud noises in excess of the threshold for damage to human hearing.

For auditory deterrents to be effective they need to vary their timing and direction. However, even if used appropriately, birds can quickly habituate to auditory deterrents meaning that they become useless in a few days to weeks. A single gas cannon can protect approximately 7ha of crop – based on 4-10ha protected by blackbirds (Potvin & Bergeron 1981) and similar results summarised in a 2003 Defra review (Bishop *et al.* 2003). The UK has a total arable land area of 17.5 million ha (Defra 2018), meaning it would take 2.5 million gas cannons to fully protect all crops. At an average price of approximately £320 per gas cannon this would mean there would be a required investment of £800 million without accounting for batteries and propane.

There is a code of practice in place for the use of bird scarers (NFU no date) which recognises their potential to cause significant nuisance, as well as the fact that they are most effective when used alongside lethal control. An analysis of FOI requests related to gas cannons found that there were an average of 15.3 complaints per year in the District Councils that released information, but with a pronounced increase more recently. There are a total of 192 District Councils in England (LGIU no date) meaning there could be up to 2,880 noise complaints per year linked to gas cannons, and clearly these are likely to increase significantly if the newly-issued general licences are not simplified.

The effectiveness of auditory deterrents is greatly aided by lethal shooting which ensures that birds associate the noise with a real risk, rather than just a startle response.

Chemical deterrent techniques

"*Chemical techniques are generally found to be very effective in laboratory and cage trials, but less effective in the field. They are also relatively expensive and are time-consuming and difficult to apply. Only two chemicals are licensed for use as bird repellents in the UK*."

Chemical repellents can be taste, behavioural or tactile repellents. Given the cost (both of the repellent itself and the labour to apply it) these are not widely used in the UK. There is conflicting evidence around their effectiveness and given the cost it seems unlikely that many farmers would risk using a potentially ineffective product.

Clearly, chemical repellents cannot be used for conserving flora and fauna and are difficult to use to protect human health and safety. Tactile repellents can be used to keep birds off surfaces but these can be costly to maintain.

Exclusion deterrent techniques

"*Exclusion techniques are usually extremely effective. Efficacy depends on the degree to which birds are excluded, but the greater the exclusion the more expensive. They therefore tend to be restricted to high value crops or costly damage.*"

One of the most effective methods for protecting crops from birds is to entirely exclude birds using netting. Exclusion can also be useful for keeping birds out of warehouses, and off structures. However, exclusion is very expensive, and is not a satisfactory solution for the protection of arable landscapes. Additionally, exclusion can't be used to conserve fauna without risking excluding the fauna you are seeking to protect and may potentially result in significant, unintentional consequences such as depriving birds of prey of hunting ground.

Wires and coloured tape can also be used, but birds can habituate to this very quickly. For example, experience from Islay shows that within a week of fully covering a fresh grass field with a tight mesh of red and white tape the geese had habituated to the tape and found ways to access the field and graze underneath the tape.

Habitat modification deterrent techniques

"*Habitat modification techniques are generally considered to be effective and environmentally friendly but are rarely investigated scientifically. It seems likely, however, that that they will be shown to be cost-effective in a variety of situations.*"

Habitat modification, such as reducing fertilizer use on amenity grasslands, or growing unpalatable plants can be very effective methods. However, where specific crops are grown it is clearly not feasible to use many habitat modification methods.

Alternative feeding areas have been used successfully in a number of areas and are especially effective when they are subsidised by the government as part of nationwide, integrated damage control plans. Without subsidy these schemes tend to be prohibitively expensive to farmers due to a combination of loss of productive land, and expenditure on "more attractive" sacrificial crops.

There is a role for habitat modification in protecting flora and fauna. However, there may be limits to the type of modifications that can be conducted on protected sites and there are likely to be unintended consequences for other species. General licence GL28 (licence to kill or take Canada geese to preserve public health and safety) recommends a number of habitat modifications which, although potentially effective at reducing Canada goose breeding, are also likely to significantly impact the breeding success for native species. For example, GL28 recommends the removal of islands but these islands are common breeding habitat for many species including avocet, black-headed gull, redshank and the UK's declining native mallard population.

Section E Record Keeping

BASC strongly supports the position stated in the consultation document that there will be no reporting requirement for any action taken under the authority of a general licence.

Whilst individuals may wish to keep records of their actions which could be one way of showing that they are complying with the terms and conditions of the licence if asked by an enforcement officer or the Police, BASC does not support such record keeping being a condition of a general licence.

Section F Wider views sought on this.

The importance of the weighting Defra apply to practitioner evidence and enabling year round control.

BASC urges Defra to sufficiently weigh the practitioner evidence gathered, especially where the peer reviewed evidence is weak.

Many of the areas where science is sparse are accepted issues by conservation practitioners and represent an undocumented status quo. For example, corvid control where there is an interest in increasing the productivity of other wildlife has been carried out for over 100 years and is to a large extent likely to be responsible for preventing a number of green listed species from declining.

To prove this is difficult. However, studies like Fletcher (2010) strongly support the likelihood of this relationship in the process of clearly demonstrating the benefits of long term, effective control. This seven-year study experimentally demonstrated the benefits of reducing the abundance of red fox and carrion crow for key upland waders and passerines across four sites. Long-term predator control led to a threefold increase in breeding success of lapwing, golden plover, curlew, red grouse and meadow pipit.

General licences should not be temporally limited to certain times of the year but enable control by practitioners when they deem that the local requirements are compliant with the licence purposes.

Furthermore, considering the precautionary principle embedded across legislation, we urge Defra to consider the unintended and unknown consequences of restricting the effective scope and use of general licences at a time when so many wild bird indicators are in decline.

Avoiding the turmoil of 2019 in future years.

The gap in coverage of general licences in 2019 caused significant problems for people, farmers, nature conservation professionals and others in preventing issues from birds. From revocation of the general licences on 23 April 2019 to the end of the call for evidence on 13 May 2019 BASC handled over 10,000 calls seeking advice and guidance on general licences.

In order to avoid similar issues, Defra should:

- set clear timescales for when licences will be reviewed

- work closely, as you have, with key stakeholder groups like BASC to ensure that new licences are fit for purpose and workable for the general public to understand and therefore use correctly.
- publish successive licences at least two months before they come into effect. Many people who shoot or farm do not engage with social media, email, or updates on webpages and we know this is not effective in informing people across the board. Magazine articles and word of mouth are still important communication mechanisms.
- consider using two-year term licences, permissible in the Wildlife and Countryside Act, to provide stability

We are recommending Defra to extend the current licences for a year because the impact of purdah, the putting back of key workshops into January and sufficient time to then decide changes to general licences means the risk of a gap in coverage or insufficient notice of changes are likely.

Protected sites

We recognise the complexities associated with assessing the impact of the use of general licences within protected sites. However, we believe that this is solely due to Natural England and Defra acting in an overly precautionary manner and treating all shooting as an activity that is inherently likely to cause significant disturbance. This is disproportionate and out of touch with the way shooting is viewed across Europe and within official European guidance documents. We are not aware of any evidence that the use of General Licences has in any way led to deterioration of site condition and believe that relying on the precautionary principle as a reason for restricting their use is disproportionate, untargeted and unevidenced.

We wish to work with Defra to develop habitat specific general licences that can be applied generically to protected sites, for example, a coastal wetland protected sites general licence. This approach would allow habitat specific concerns to be addressed independently, rather than attempting to produce a general licence for all protected sites which would likely be so overly precautionary as to be unworkable in order to address all concerns across the variety of protected sites. We recommend Defra working with stakeholders to produce an upland protected sites general licence as a pilot to assess the suitability of the approach.

Buffers around certain sites.

We do not believe that 300m buffer zones around protected sites are appropriate or proportionate. Official guidance[1] for managing Natura 2000 sites states that:

> *"measures must be appropriate. This means that they should fulfil the main objective of the directive in contributing to the conservation status of the habitats or species concerned while taking account of 'economic, social and cultural requirements and regional and local characteristics'."*

By prohibiting the use of general licences within 300m of Natura 2000 sites Defra is contravening this guidance by preventing the legal control of birds causing serious crop damage (resulting in economic losses) and blocking efforts aimed at the protection of threatened flora and fauna (impacting on species' conservation status).

Where lethal control of corvids around Natura 2000 pre-dates site designation, the ongoing control represents a baseline condition. By restricting or removing this baseline Defra could be working contrary to Article 4(4) of the Birds Directive by reducing the quality of the living

[1] http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

conditions of the birds and increasing their risk of predation, thereby reducing their breeding success:

> "*Article 4(4) is, I think, referring in particular to an obligation on the part of the Member States to establish general rules for the protection in those areas of the quality of the living conditions of birds, so that they can live and reproduce in the most suitable circumstances…The establishment of such general rules for the protection of the most suitable conditions of living and reproduction need not necessarily prohibit all pollution, deterioration or disturbance in any circumstances*."[2]

Furthermore, the Birds Directive is clear that derogating from the terms of the Directive "*to prevent serious damage to crops*" is accepted. However, by prohibiting the use of general licences within 300m of Natura 2000 sites Defra has increased the administrative burden on farmers, effectively blocking their efforts to prevent serious damage and requiring them to endure damage for as long as it takes for a consent to be issued.

Within the European Directives, and UK law, it is recognised that regulators have a responsibility to manage activities outside of Natura 2000 sites if they can impact on the species within the protected site. However, this is contingent upon the disturbance being "significant", which is generally taken as meaning reducing survival or reproduction. There is no evidence that the use of the general licences outside of protected areas has ever had any impact on protected species within the sites.

Preventing the use of general licences within 300m of a Natura 2000 site is inconsistent with how Natural England and Defra manages these sites more generally. For example, farming operations involving the use of heavy machinery have no such restrictive buffer around protected sites despite providing ample opportunity for significant levels of disturbance.

Furthermore, in the vast majority of EU countries there are no restrictions on hunting or pest control within Natura 2000 sites, which brings into question the proportionality of such an approach in the UK. It should also be pointed out that nowhere in the Birds or Habitats Directives are there any specific requirements in relation to the management of shooting within Natura 2000 sites. In fact, based on the principle of conservation and sustainable use, protected areas should seek to ensure the lasting coexistence of human activities with the biodiversity values for which the sites were initially deemed ecologically and socio-economically significant.

While both Directives aim to protect the habitats and species for which the Natura 2000 sites were designated, the sites are not treated as strict nature reserves. In this regard, the Court of Justice of the European Union (CJEU) has recognised on several occasions[3,4,5] that the objective under Article 2 "*the protection of birds*" must be balanced against other requirements, such as those of an economic nature. Therefore, although Article 2 does not constitute an autonomous derogation from the general system of protection, it nonetheless shows that the Birds Directive takes into consideration both the necessity for effective protection of birds and the requirements of public health and safety, the economy, ecology, science, farming and recreation. This is summarised in the Leybucht case as "*projects in a protection area are not* ipso facto *prohibited but that the expected benefits must be carefully*

[2] Opinion of Advocate General Van Gerven in Case C-57/89 Commission v Germany [1991], paragraph 34
[3] Judgement in Case 247/85 Commission v Belgium [1987] ECR 3029
[4] Judgement in Case C-57/89 Commission v Germany [1991]
[5] Judgement in Case C-435/92 Association pour la protection des Animaux Sauvages and others [1994]

balanced against the resulting harm to the environment"[6]. In this instance there have been no efforts to take account of this balance.

Further evidence of the wider European approach to the issue of shooting over Natura 2000 sites can be found in the official guidance documents[7] which make no mention of a need to restrict shooting over protected sites, except for where there are "*significant changes to hunting plans for large game*" in Natura 2000 forests[8]. Even then, it is recognised that shooting is a legitimate use of protected sites:

> "*forests in Natura 2000 can indeed be managed with a view to achieving multiple functions, e.g. timber production, hunting, recreation etc*" – p. 58

We believe that by restricting the use of General Licences on and around protected sites Defra are actively responsible for a "significant change" in site management and an appropriate assessment should be conducted of the impacts resulting from the loss of lethal control.

Permitting otherwise prohibited methods to enable the most efficient and humane control. Sound recordings, illuminating devices artificial lighting.

Different users of general licences have different amounts of time available to achieve the aims under a licence. For example, several recreational shooters may often have more time available to control corvids to protect wild birds than a single gamekeeper across a similar area. A professional pest controller or a nature reserve staff member is also under time pressure to be as efficient as possible.

BASC would suggest that in order to achieve the most efficient and humane control of birds on general licences to achieve the relevant aims, the methods permitted which would otherwise be prohibited under Part 1, section 5, should be reviewed.

For example, the current GL34 permits the use of a semi-automatic weapon, a cage trap not satisfying certain dimensions, and the use of hand or propelled nets. However, it does not permit the use of sound recordings, which could be extremely useful in permitting the efficient control of problem birds. BASC can see no good reason to not add the use of sound recordings to the list of methods permitted under general licences.

The use of illuminating devices or sights for night shooting and artificial lighting should also be more widely permitted. Currently these methods are only permitted for feral pigeon on GL 36.

Therefore, consideration of other prohibited methods should be undertaken as part of this consultation.

---

[6] Opinion of Advocate General Van Gerven in Case C-57/89 Commission v Germany [1991], paragraph 39

[7] http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

[8] http://ec.europa.eu/environment/nature/natura2000/management/docs/Final%20Guide%20N2000%20%20Forests%20Part%20I-II-Annexes.pdf

References

Amar, A., Redpath, S., Sim, I., & Buchanan, G. (2010). Spatial and temporal associations between recovering populations of common raven *Corvus corax* and British upland wader populations. *Journal of Applied Ecology*, *47*(2), 253–262. https://doi.org/10.1111/j.1365-2664.2010.01772.x

Berry, S. S. (1922). Magpies versus Livestock: An Unfortunate New Chapter in Avian Depredations. *The Condor*, *24*(1), 13–17. https://doi.org/10.2307/1362775

Bodey, T., Mcdonald, R., & Bearhop, S. (2018). *Absence of effects of predator control on nesting success of Northern Lapwings Vanellus vanellus: Implications for conservation*. https://doi.org/10.1111/j.1474-919X.2011.01132.x

Bolton, M., Butcher, N., Sharpe, F., Stevens, D., & Fisher, G. (2007). Remote monitoring of nests using digital camera technology. *Journal of Field Ornithology*, *78*(2), 213–220. https://doi.org/10.1111/j.1557-9263.2007.00104.x

Burrell, N. S., & Colwell, M. A. (2012). Direct and indirect evidence that productivity of Snowy Plovers Charadrius nivosus varies with occurrence of a nest predator. *Wildfowl*, *62*, 204–223.

Cowx, I. G. (2007). Interactions Between Fish and Birds: Implications for Management. In *Interactions Between Fish and Birds: Implications for Management*. https://doi.org/10.1002/9780470995372

De Grazio, J. W. (1978). World bird damage problems. *Proceedings of the 8th Vertebrate Pest Conference*, 8–24. Retrieved from http://digitalcommons.unl.edu/vpc8http://digitalcommons.unl.edu/vpc8/13

Dunn, J. C., Hamer, K. C., & Benton, T. G. (2010). Fear for the family has negative consequences: Indirect effects of nest predators on chick growth in a farmland bird. *Journal of Applied Ecology*, *47*(5), 994–1002. https://doi.org/10.1111/j.1365-2664.2010.01856.x

Feare, C. J. (1974). Ecological Studies of the Rook (Corvus frugilegus L.) in North-East Scotland. Damage and Its Control. *The Journal of Applied Ecology*, *11*(3), 897. https://doi.org/10.2307/2401752

Fletcher, K., Aebischer, N. J., Baines, D., Foster, R., & Hoodless, A. N. (2010). Changes in breeding success and abundance of ground-nesting moorland birds in relation to the experimental deployment of legal predator control. *Journal of Applied Ecology*, *47*(2), 263–272. https://doi.org/10.1111/j.1365-2664.2010.01793.x

Hassall, M., & Lane, S. J. (2001). Effects of varying rates of autumn fertilizer applications to pastures in eastern England on feeding sites selection by brent geese Branta b. bernicla. *Agriculture, Ecosystems and Environment*, *86*(2), 203–209. https://doi.org/10.1016/S0167-8809(00)00282-6

Holyoak, D. (1968). A comparative study of the food of some British Corvidae. *Bird Study*, *15*(3), 147–153. https://doi.org/10.1080/00063656809476194

Humphreys, E. M., Gillings, S., Musgrove, A., Austin, G., Marchant, J., & Calladine, J. (2016). *An update of the review on the impacts of piscivorous birds on salmonid populations and game fisheries in Scotland*. Retrieved from https://www.nature.scot/sites/default/files/Publication 2016 - SNH Commissioned

Report 884 - An update of the review on the impacts of piscivorous birds on salmonid populations and game fisheries in Scotland.pdf

Królikowska, N., Szymkowiak, J., Laidlaw, R. A., & Kuczyński, L. (2016). Threat-sensitive anti-predator defence in precocial wader, the northern lapwing Vanellus vanellus. *Acta Ethologica*, *19*(3), 163–171. https://doi.org/10.1007/s10211-016-0236-1

Larsen, K. H., & Dietrich, J. H. (1970). Reduction of a Raven Population on Lambing Grounds with DRC-1339. *The Journal of Wildlife Management*, *34*(1), 200. https://doi.org/10.2307/3799509

McKay, H. V., Milsom, T. P., Feare, C. J., Ennis, D. C., O'Connell, D. P., & Haskell, D. J. (2001). Selection of forage species and the creation of alternative feeding areas for dark-bellied brent geese Branta bernicla bernicla in southern UK coastal areas. *Agriculture, Ecosystems and Environment*, *84*(2), 99–113. https://doi.org/10.1016/S0167-8809(00)00207-3

McLennan, J. A., & MacMillan, B. W. H. (1983). Predation by the rook, corvus frugilegus l., on larvae of the grass grub, costelytra zealandica (white), in hawke's bay, new zealand. *New Zealand Journal of Agricultural Research*, *26*(1), 139–145. https://doi.org/10.1080/00288233.1983.10420964

Mickan, F. (2003). *Can Irish ideas reduce bird damage to wrapped bale silage?*

O'Leary, E. (1995). *Habitat utilisation and distribution of several common farmland bird species* (Durham University). Retrieved from http://etheses.dur.ac.uk

Parrott, D. (2012). *Reviews of selected wildlife conflicts and their management*.

Sage, R. B., & Aebischer, N. J. (2017). Does best-practice crow Corvus corone and magpie Pica pica control on UK farmland improve nest success in hedgerow-nesting songbirds? A field experiment . *Wildlife Biology*, *2017*(1), wlb.00375. https://doi.org/10.2981/wlb.00375

Schaefer, T. (2004). Video monitoring of shrub-nests reveals nest predators. *Bird Study*, *51*(2), 170–177. https://doi.org/10.1080/00063650409461349

Seubert, J. L. (1964). *HIGHLIGHTS OF BIRD CONTROL RESEARCH IN ENGLAND, FRANCE, HOLLAND, AND GERMANY*. Retrieved from http://digitalcommons.unl.edu/vpc2http://digitalcommons.unl.edu/vpc2/24

Smith, I. D. (1964). Ovine neonatal mortality in Western Queensland. *Proceedings of the Australian Society of Animal Production*, *5*, 100–106.

Soler, J. J., Soler, M., & Martinez, J. G. (1993). Grit Ingestion and Cereal Consuption in Five Corvid Species. *Ardea*, *81*(2), 143–149. Retrieved from http://www.eeza.csic.es/Documentos/Publicaciones/soler_4752.pdf

Stevens, D. K., Anderson, G. Q. A., Grice, P. V, Norris, K., & Butcher, N. (2008). Predators of Spotted Flycatcher Muscicapa striata nests in southern England as determined by digital nest-cameras. *Bird Study*, *55*(2), 179–187. https://doi.org/10.1080/00063650809461520

Stewart, D. C., Middlemas, S. J., Gardiner, W. R., Mackay, S., & Armstrong, J. D. (2005). Diet and prey selection of cormorants (Phalacrocorax carbo) at Loch Leven, a major stocked trout fishery. *Journal of Zoology*, *267*(2), 191–201.

https://doi.org/10.1017/S0952836905007387

Summers, R. W., & Hillman, G. (1990). Scaring brent geese Branta bernicla from fields of winter wheat with tape. *Crop Protection*, *9*(6), 459–462. https://doi.org/10.1016/0261-2194(90)90137-V

Teunissen, W., Schekkerman, H., Willems, F., & Majoor, F. (2008). Identifying predators of eggs and chicks of Lapwing Vanellus vanellus and Black-tailed Godwit Limosa limosa in the Netherlands and the importance of predation on wader reproductive output. *Ibis*, *150*(SUPPL.1), 74–85. https://doi.org/10.1111/j.1474-919X.2008.00861.x

Vickery, J. A., & Summers, R. W. (1992). Cost-effectiveness of scaring brent geese Branta b. bernicla from fields of arable crops by a human bird scarer. *Crop Protection*, *11*(5), 480–484. https://doi.org/10.1016/0261-2194(92)90034-3