

Information about GB Non-native Species Risk Assessments

The Convention on Biological Diversity (CBD) emphasises the need for a precautionary approach towards non-native species where there is often a lack of firm scientific evidence. It also strongly promotes the use of good quality risk assessment to help underpin this approach. The GB risk analysis mechanism has been developed to help facilitate such an approach in Great Britain. It complies with the CBD and reflects standards used by other schemes such as the Intergovernmental Panel on Climate Change, European Plant Protection Organisation and European Food Safety Authority to ensure good practice.

Risk assessments, along with other information, are used to help support decision making in Great Britain. They do not in themselves determine government policy.

The Non-native Species Secretariat (NNSS) manages the risk analysis process on behalf of the GB Programme Board for Non-native Species. Risk assessments are carried out by independent experts from a range of organisations. As part of the risk analysis process risk assessments are:

- Completed using a consistent risk assessment template to ensure that the full range of issues recognised in international standards are addressed.
- Drafted by an independent expert on the species and peer reviewed by a different expert.
- Approved by an independent risk analysis panel (known as the Non-native Species Risk Analysis Panel or NNRAP) only when they are satisfied the assessment is fit-for-purpose.
- Approved for publication by the GB Programme Board for Non-native Species.
- Placed on the GB Non-native Species Secretariat (NNSS) website for a three month period of public comment.
- Finalised by the risk assessor to the satisfaction of the NNRAP.

To find out more about the risk analysis mechanism go to: www.nonnativespecies.org

Common misconceptions about risk assessments

To address a number of common misconceptions about non-native species risk assessments, the following points should be noted:

- Risk assessments consider only the risks posed by a species. They do not consider the practicalities, impacts or other issues relating to the management of the species. They therefore cannot on their own be used to determine what, if any, management response should be undertaken.
- Risk assessments are about negative impacts and are not meant to consider positive impacts that may also occur. The positive impacts would be considered as part of an overall policy decision.
- Risk assessments are advisory and therefore part of the suite of information on which policy decisions are based.
- Completed risk assessments are not final and absolute. Substantive new scientific evidence may prompt a re-evaluation of the risks and/or a change of policy.

Period for comment

Draft risk assessments are available for a period of three months from the date of posting on the NNSS website*. During this time stakeholders are invited to comment on the scientific evidence which underpins the assessments or provide information on other relevant evidence or research that may be available. Relevant comments are collated by the NNSS and sent to the risk assessor. The assessor reviews the comments and, if necessary, amends the risk assessment. The final risk assessment is then checked and approved by the NNRAP.

*risk assessments are posted online at:

<https://secure.fera.defra.gov.uk/nonnativespecies/index.cfm?sectionid=51>
comments should be emailed to nnss@fera.gsi.gov.uk

GB NON-NATIVE ORGANISM RISK ASSESSMENT SCHEME

For more information visit: www.nonnativespecies.org

Name of Organism	<i>Alopochen aegyptiacus</i> - Egyptian Goose
Objectives:	Assess the risks associated with this species in GB
Version:	Original draft 22/02/11
Author:	L. Wright (BTO)
Suggested citation:	Wright, L. (2011). GB Non-native Organism Risk Assessment for <i>Alopochen aegyptiacus</i> . www.nonnativespecies.org

N	QUESTION	RESPONSE	COMMENT
1	What is the reason for performing the Risk Assessment?		Request by the GB Programme Board for Non-native Species
2	What is the Risk Assessment area?	Great Britain	
3	Does a relevant earlier Risk Assessment exist?	NO OR UNKNOWN (Go to 5)	
4	If there is an earlier Risk Assessment is it still entirely valid, or only partly valid?		
A	Stage 2: Organism Risk Assessment SECTION A: Organism Screening		
5	Identify the Organism. Is the organism clearly a single taxonomic entity and can it be adequately distinguished from other entities of the same rank?	YES (Give the full name & Go to 7)	<i>Alopochen aegyptiacus</i> (Linnaeus 1766) Egyptian Goose - Anseriformes - Aves - Chordata.
6	If not a single taxonomic entity, can it be redefined?		
7	Is the organism in its present range known to be invasive, i.e. to threaten species, habitats or ecosystems?	NO or Uncertain (Go to 8)	In the Netherlands, there is some evidence that Egyptian Geese may cause a reduction in the numbers of other waterbirds, through its aggressive behaviour towards them (Sneep 1999). In other areas the species is not known to threaten native species or habitats, but suspected of doing so. For example in Belgium introduced Egyptian Geese exhibit dominant and aggressive behaviour towards other bird species and it is thought that they may prevent native species, particularly smaller species such as ducks and coots, from establishing territories and they may also cause habitat damage and in areas where large roosting groups are present eutrophication may be caused by faecal deposition (Anselin & Devos 2007).
8	Does the organism have intrinsic attributes that indicate that it could be invasive, i.e. threaten species, habitats or ecosystems?	YES or UNCERTAIN (Go to 9)	In their native range, Egyptian Geese have been shown to compete aggressively with other hole-nesting species for nest sites, and goose usurpation was more important than climate, habitat or nest site characteristics in determining the breeding success of certain hole-nesting species (Curtis et al. 2007). They can also cause cereal yields to be reduced by more than 60% in their native range (Mangnall & Crowe 2002).
9	Does the organism occur outside effective containment in the Risk Assessment area?	YES (Go to 10)	
10	Is the organism widely distributed in the Risk Assessment area?	YES & Future conditions/management procedures/policies are being considered (Go to 19)	Egyptian Geese are widespread in the UK with high numbers in East Anglia and the Thames Basin, but scattered records from many parts of England, with a few in Wales and Scotland (Latest Bird Atlas 2007-11 records shown in Wright 2008).
11	Does at least one species (for herbivores, predators and parasites) or suitable habitat vital for the survival, development and multiplication of the organism occur in the Risk Assessment area, in the open, in protected conditions or both?		
12	Does the organism require another species for critical stages in its life cycle such as growth (e.g. root symbionts), reproduction (e.g. pollinators; egg incubators), spread (e.g. seed dispersers) and transmission, (e.g. vectors)?		
13	Is the other critical species identified in question 12 (or a similar species that may provide a similar function) present in the Risk Assessment area or likely to be introduced? If in doubt, then a separate assessment of the probability of introduction of this species may be needed.		
14	Does the known geographical distribution of the organism include ecoclimatic zones comparable with those of the Risk Assessment area or sufficiently similar for the organism to survive and thrive?		
15	Could the organism establish under protected conditions (e.g. glasshouses, aquaculture facilities, terraria, zoological gardens) in the Risk Assessment area?		
16	Has the organism entered and established viable (reproducing) populations in new areas outside its original range, either as a direct or indirect result of man's activities?		

17	Can the organism spread rapidly by natural means or by human assistance?		
18	Could the organism as such, or acting as a vector, cause economic, environmental or social harm in the Risk Assessment area?		
19	This organism could present a risk to the Risk Assessment area and a detailed risk assessment is appropriate.	Detailed Risk Assessment Appropriate GO TO SECTION B	
20	This organism is not likely to be a harmful non-native organism in the Risk Assessment area and the assessment can stop.		

B SECTION B: Detailed assessment of an organism's probability of entry, establishment and spread and the magnitude of the economic, environmental and social consequences				
Probability of Entry		RESPONSE	UNCERTAINTY	COMMENT
1.1	List the pathways that the organism could be carried on. How many relevant pathways can the organism be carried on?	moderate number - 2	LOW - 0	Expansion of the existing population is the most likely pathway for colonisation of new areas. Escapes from zoos or other collections holding captive birds, and natural spread (flight) from established introduced populations in continental Europe (especially Netherlands and Belgium where there are rapidly expanding populations (Lensink 1998; Lensink 1999; SOVON 2002) are also possible. There is no evidence available at the present time to assess whether or not birds from introduced populations elsewhere in Europe are already moving into the UK and contributing to the population expansion here.
1.2	Choose one pathway from the list of pathways selected in 1.1 to begin the pathway assessments.	Expansion of the existing population		
1.3	How likely is the organism to be associated with the pathway at origin?	very likely - 4	LOW - 0	The species is already present and widespread in south-east England, and occurs in smaller numbers elsewhere.
1.4	Is the concentration of the organism on the pathway at origin likely to be high?	likely - 3	LOW - 0	In 2000 the introduced population was estimated at 1260 - 1580 individuals (Austin unpublished data, following methods in Austin <i>et al.</i> 2007), and trends from the Wetland Bird Survey (Austin <i>et al.</i> 2008) suggest that numbers have at least doubled since then, hence the population is now likely to be at least 2520 - 3160 individuals. The highest concentrations of this species occur in south-east England.
1.5	How likely is the organism to survive existing cultivation or commercial practices?	very likely - 4	LOW - 0	The population has expanded in the UK suggesting that the species is well able to cope with existing practices.
1.6	How likely is the organism to survive or remain undetected by existing measures?	unlikely - 1	LOW - 0	Large, easily recognisable and tends to be found in open habitats where it is likely to be seen and recorded by birdwatchers. Initiatives such as the Wetland Bird Survey, BTO Bird Atlas 2007-11 and Birdtrack provide good records of this species.
1.7	How likely is the organism to survive during transport /storage?	N/A	LOW - 0	
1.8	How likely is the organism to multiply/increase in prevalence during transport /storage?	N/A	LOW - 0	
1.9	What is the volume of movement along the pathway?	minor - 1	MEDIUM -1	Range expansion from the existing population is relatively slow, with most birds still confined to East Anglia and parts of south-east England. However the population is increasing rapidly - WeBS counts suggest that numbers have at least doubled since 2000 (Austin <i>et al.</i> 2008) so these increasing numbers may begin to spread into other areas.
1.10	How frequent is movement along the pathway?	often - 3	LOW - 0	WeBS counts suggest numbers have at least doubled since 2000 (Austin <i>et al.</i> 2008).
1.11	How widely could the organism be distributed throughout the Risk Assessment area?	very widely - 4	MEDIUM -1	Egyptian Geese were historically widespread in the UK but their range contracted to only Norfolk by the 1980s (Sutherland & Allport 1991). However their range now appears to be expanding again as recent records from the Bird Atlas 2007-11 show that the species is now found in many parts of England, Wales & Scotland (Wright 2008). The population could expand to colonise suitable habitat in parts of the UK where it is not currently present. Rapid population expansion in the Netherlands (Lensink 1998; Lensink 1999, SOVON 2002) suggests that the population is capable of expanding very quickly in similar conditions to those found in the UK.
1.12	How likely is the organism to arrive during the months of the year most appropriate for establishment ?	very likely - 4	LOW - 0	Egyptian Geese are present all year round in the UK. Population expansion is most likely driven by expansion from areas with high breeding concentrations.
1.13	How likely is the intended use of the commodity (e.g. processing, consumption, planting, disposal of waste, by-products) or other material with which the organism is associated to aid transfer to a suitable habitat?	N/A	LOW - 0	
1.14	How likely is the organism to be able to transfer from the pathway to a suitable habitat?	very likely - 4	LOW - 0	Egyptian Geese are able to thrive in habitats that are widespread in Great Britain including parks and other areas with open water, short grass and suitable nesting sites such as mature trees.

	Probability of Establishment	RESPONSE	UNCERTAINTY	COMMENT
1.15	How similar are the climatic conditions that would affect establishment in the Risk Assessment area and in the area of current distribution?	very similar - 4	LOW - 0	The species has been established in Great Britain for many years and therefore able to withstand climatic conditions here. Climatic conditions are similar to those in the Netherlands where the population has expanded much more rapidly than in the UK (SOVON 2002). Historic evidence suggests that they are sensitive to cold winters (Lensink 1999), however there is no evidence currently available to assess whether numbers have been affected by the recent cold winter.
1.16	How similar are other abiotic factors that would affect establishment in the Risk Assessment area and in the area of present distribution?	very similar - 4	LOW - 0	See above
1.17	How many species (for herbivores, predators and parasites) or suitable habitats vital for the survival, development and multiplication of the organism species are present in the Risk Assessment area? Specify the species or habitats and indicate the number.	very many - 4	LOW - 0	Egyptian Geese require breeding habitats with open water, short grass and suitable nesting sites such as holes in old trees or islands (Sutherland & Allport 1991). Such habitats are widespread in Great Britain. In the winter they use a wider range of habitats than during the breeding season, including short grass and cereal fields (Sutherland & Allport 1991).
1.18	How widespread are the species (for herbivores, predators and parasites) or suitable habitats vital for the survival, development and multiplication of the organism in the Risk Assessment area?	widespread - 4	LOW - 0	See above.
1.19	If the organism requires another species for critical stages in its life cycle then how likely is the organism to become associated with such species in the risk assessment area?	N/A	LOW - 0	
1.20	How likely is it that establishment will not be prevented by competition from existing species in the Risk Assessment area?	very likely - 4	LOW - 0	Establishment has not been prevented in parts of the UK where the species is already present; neither has establishment been prevented in parts of north-western Europe such as Netherlands, Belgium, Germany & north-west France. These areas all have similar suites of species to those present in parts of the UK where Egyptian Geese are not already established therefore it seems unlikely that competition would prevent establishment. In their native range, Egyptian Geese were shown to outcompete other hole nesting species (Black Sparrowhawks <i>Accipiter melanoleucus</i>) for nest sites.
1.21	How likely is it that establishment will not be prevented by natural enemies already present in the Risk Assessment area?	very likely - 4	LOW - 0	There are few natural predators in Great Britain that are likely to take adult Egyptian Geese very often. Eggs or chicks may be predated by mammals, birds, or possibly predatory fish such as pike and this could explain why productivity of fledged young is relatively low in this country (Sutherland & Allport 1991).
1.22	If there are differences in man's management of the environment/habitat in the Risk Assessment area from that in the area of present distribution, are they likely to aid establishment? (specify)	very unlikely - 0	LOW - 0	There are no major differences in habitat management in parts of Great Britain within or outside the present distribution of the Egyptian Goose.
1.23	How likely is it that existing control or husbandry measures will fail to prevent establishment of the organism?	very likely - 4	LOW - 0	No co-ordinated control exists.
1.24	How often has the organism been recorded in protected conditions, e.g. glasshouses, elsewhere?	occasional - 2	HIGH -2	No reports found. Egyptian Geese are probably present in a range of waterbird collections in parks/gardens in Great Britain.
1.25	How likely is the reproductive strategy of the organism and duration of its life cycle to aid establishment?	moderately likely - 2	MEDIUM -1	In Britain the reproductive success of Egyptian Geese is relatively low (Sutherland & Allport 1991), however in the Netherlands the species has a six-month breeding season with much higher productivity leading to more rapid population expansion (Lensink 1999). It is unclear why this difference between two populations in apparently similar habitats and similar climates exists.
1.26	How likely is it that the organism's capacity to spread will aid establishment?	likely - 3	MEDIUM -1	The breeding range of the Egyptian Goose in the UK spread between the 1968-72 breeding atlas (Sharrock 1976) and the 1988-91 breeding atlas (Gibbons <i>et al.</i> 1993), preliminary results from the 2007-11 atlas suggest that their range has spread further since then (Wright 2008). The species' range has also increased in continental Europe, with Denmark and Switzerland colonised in recent years and expansions of the breeding populations in the Netherlands, Belgium, Germany and France (Banks <i>et al.</i> 2008). It seems likely that the species has the capacity for further expansion into uncolonised areas of Great Britain.
1.27	How adaptable is the organism?	moderately adaptable - 2	MEDIUM -1	Suitable habitat for this species (areas with open water, short grass and suitable nesting sites) is widespread in Great Britain. The species is able to adapt well to man-made environments such as urban parks. It may be limited by a lack of suitable nesting sites in some areas. Suitable nesting sites are holes in old trees, epicormic shoots from old trees or islands (Sutherland & Allport 1991).
1.28	How likely is it that low genetic diversity in the founder population of the organism will not prevent establishment?	likely - 3	MEDIUM -1	It is not known whether genetic diversity in the present population is low, but if it is this has not prevented establishment.
1.29	How often has the organism entered and established in new areas outside its original range as a result of man's activities?	very many - 4	LOW - 0	There are established introduced populations of Egyptian Geese in Belgium (800-1100 pairs), Denmark (20 pairs), France (23 pairs), Germany (c. 2000 pairs), Israel (30-50 pairs), Mauritius (unknown numbers), Netherlands (more than 5000 pairs), Spain (occasional breeding), Switzerland (2 pairs), United Arab Emirates (100-200 pairs) and the UK (at least 2520-3160 individuals). There are also non-breeding records from several other European countries (Banks <i>et al.</i> 2008).

1.30	How likely is it that the organism could survive eradication campaigns in the Risk Assessment area?	moderately likely - 2	HIGH -2	This species tends to congregate in moulting flocks, for example at Holkham in Norfolk (Sutherland & Allport 1991), which would facilitate rounding up and culling if deemed necessary. However it is unlikely that all individuals in the population could be eradicated in this way. Culling could reduce the population significantly but once the population is reduced it will be difficult to target the small numbers of remaining individuals, which are likely to be well dispersed. Significant and ongoing effort is likely to be required to either maintain the population at a low level or to target the last few individuals in order to achieve eradication.
1.31	Even if permanent establishment of the organism is unlikely, how likely is it that transient populations will be maintained in the Risk Assessment area through natural migration or entry through man's activities (including intentional release into the outdoor environment)?	likely - 3	LOW - 0	Further escapes from collections in the UK are likely to occur, and vagrancy from established introduced populations in continental Europe could still occur unless these populations are eradicated.

	Spread	RESPONSE	UNCERTAINTY	COMMENT
2.1	How rapidly is the organism liable to spread in the Risk Assessment area by natural means?	intermediate - 2	LOW - 0	Historical spread of this species in the UK suggests range expansion occurs at an intermediate speed (Gibbons <i>et al.</i> 1993).
2.2	How rapidly is the organism liable to spread in the Risk Assessment area by human assistance?	slow - 1	LOW - 0	Escapes from collections could occur but are likely to be of a much lower magnitude than spread from the existing naturalized population.
2.3	How difficult would it be to contain the organism within the Risk Assessment area?	difficult - 3	MEDIUM -1	Egyptian Geese are mobile and could easily move to other areas.
2.4	Based on the answers to questions on the potential for establishment and spread define the area endangered by the organism.		MEDIUM -1	Suitable habitat (areas with open water and short grass or cereal fields, as well as suitable nest sites in old trees) throughout the risk assessment area could be at risk. The species is thought to be sensitive to cold winter temperatures (Lensink 1999), which could potentially limit its northerly distribution. However introduced populations of this species are widely distributed in north-western Europe, including countries such as Germany and Denmark which have winter temperatures that are equally cold to northern parts of the UK, suggesting that cold winters do not prevent the species from establishing in these countries.

	Impacts	RESPONSE	UNCERTAINTY	COMMENT
2.5	How important is economic loss caused by the organism within its existing geographic range?	moderate - 2	MEDIUM -1	In their native range Egyptian Geese have been shown to cause reductions in cereal yields of more than 60% (Mangnall & Crowe 2002). In the introduced range in continental Europe habitat damage such as eutrophication and overgrazing are suspected (Banks <i>et al.</i> 2008). They can cause an aircraft bird strike risk as some airports within their native range, but this species is not thought to be a problem at any UK airports at the present time and there has never been a birdstrike involving Egyptian Goose in the UK (J. Allan <i>pers. comm.</i>).
2.6	Considering the ecological conditions in the Risk Assessment area, how serious is the direct negative economic effect of the organism, e.g. on crop yield and/or quality, livestock health and production, likely to be? (describe)	minor - 1	MEDIUM -1	Currently few negative economic impacts have been recorded in Great Britain but it is possible that crop damage, other habitat damage (such as to amenity grassland) and eutrophication of waterbodies could occur. The economic impacts of these effects are unknown. Were the population to increase, and its range to expand such that large numbers of Egyptian Geese occurred near airports, it is possible that there could be a risk of aircraft bird strike, but this is not thought to be a problem at the present time (J. Allan <i>pers. comm.</i>).
2.7	How great a loss in producer profits is the organism likely to cause due to changes in production costs, yields, etc., in the Risk Assessment area?	minor - 1	MEDIUM -1	If the population increases it is possible that crop damage could occur, as has been recorded in South Africa, where cereal yields were reduced by more than 60% (Mangnall & Crowe 2002). However at the current population level no major losses have been recorded in Great Britain.
2.8	How great a reduction in consumer demand is the organism likely to cause in the Risk Assessment area?	minimal - 0	MEDIUM -1	No effect known.
2.9	How likely is the presence of the organism in the Risk Assessment area to cause losses in export markets?	unlikely - 1	MEDIUM -1	No known effects on export markets.
2.10	How important would other economic costs resulting from introduction be? (specify)	moderate - 2	MEDIUM -1	Costs of any control programme deemed necessary would be relatively high. Cost of population monitoring relatively low.
2.11	How important is environmental harm caused by the organism within its existing geographic range?	moderate - 2	MEDIUM -1	In their native range, Egyptian Geese have been shown to compete aggressively with other hole-nesting species for nest sites, and goose usurpation was more important than climate, habitat or nest site characteristics in determining the breeding success of Black Sparrowhawks <i>Accipiter melanoleucos</i> (Curtis <i>et al.</i> 2007). In their introduced range there has been little scientific study of their environmental impacts, but it is thought that Egyptian Geese aggressively defend their territories and may prevent native species, especially smaller species such as ducks and geese, from establishing territories in areas where Egyptian Geese are present. They are also thought to cause habitat damage and eutrophication of waterbodies (Banks <i>et al.</i> 2008).
2.12	How important is environmental harm likely to be in the Risk Assessment area?	moderate - 2	MEDIUM -1	It is likely that Egyptian Geese already compete with other hole-nesting species in Great Britain (as they do in their native range), but there is no evidence for this at the present time due to a lack of study of this species. The impact of this is unknown, but likely to increase if the population continues to expand. Species that could potentially be affected by competition for nest sites are those that nest in relatively large holes, such as owls, Kestrel, some duck species, and possibly other species including Stock Dove and Jackdaw. Although competitive exclusion of other waterbirds is suspected, the impact of this on native waterbird populations is unknown, but could be locally important. Many smaller waterbird species including ducks, grebes, Coots and Moorhens could potentially be affected by this. Habitat damage and eutrophication may be locally significant, but are likely to be much less important than similar damage caused by other introduced goose species that occur in much higher numbers (e.g. Canada Goose).
2.13	How important is social and other harm caused by the organism within its existing geographic range?	minor - 1	MEDIUM -1	Damage to parks and amenity grassland may be of minor importance locally. Like other waterbirds Egyptian Geese have the potential to carry pathogens such as salmonella and avian influenza.
2.14	How important is the social harm likely to be in the Risk Assessment area?	minor - 1	MEDIUM -1	See above. Egyptian Geese can cause an aircraft bird strike risk as some airports within their native range, but this species is not thought to be a problem at any UK airports at the present time and there has never been a birdstrike involving Egyptian Goose in the UK (J. Allan <i>pers. comm.</i>).
2.15	How likely is it that genetic traits can be carried to native species, modifying their genetic nature and making their economic, environmental or social effects more serious?	very unlikely - 0	LOW - 0	This species may occasionally hybridise with other introduced species such as Canada Goose <i>Branta canadensis</i> and Ruddy Shelduck <i>Tadorna ferruginea</i> , and hybrids with native species including Mallard <i>Anas platyrhynchos</i> and Shelduck <i>Tadorna tadorna</i> have been recorded rarely (Lever 2005; McCarthy 2006).
2.16	How probable is it that natural enemies, already present in the Risk Assessment area, will have no affect on populations of the organism if introduced?	likely - 3	LOW - 0	See question 1.21.
2.17	How easily can the organism be controlled?	with some difficulty - 2	MEDIUM -1	Most likely methods of control include rounding up moulting flocks, shooting or destruction of eggs. Although this is feasible given the will and the resources, such a campaign would be necessarily visible to the public and as such may prove controversial.
2.18	How likely are control measures to disrupt existing biological or integrated systems for control of other organisms?	unlikely - 1	LOW - 0	Several methods of extermination (e.g. round-ups of moulting flocks, shooting, egg destruction) are very specific and will cause minimal disruption to other organisms.
2.19	How likely is the organism to act as food, a host, a symbiont or a vector for other damaging organisms?	moderately likely - 2	MEDIUM -1	They could carry diseases that could be damaging to native birds and potentially to the poultry industry and even to humans.
2.20	Highlight those parts of the endangered area where economic, environmental and social impacts are most likely to occur			Environmental impacts are likely to be seen throughout the risk assessment area where colonisation occurs; at present these are likely to be highest in East Anglia and the Thames Basin. Social impacts are likely to occur in parks with open water close to areas of human habitation. Economic impacts will be to local authorities or landowners that are responsible for maintaining parks and to cereal farmers if any crop damage occurs.

Summarise Entry	very likely - 4	LOW - 0	Egyptian Geese have already established feral populations in many parts of Britain and it is likely that these populations will continue to expand into other areas.
Summarise Establishment	very likely - 4	LOW - 0	Egyptian Geese already have established populations in the East Anglia and the south-east and are expanding into other parts of Britain including Wales and Scotland (Wright 2008).
Summarise Spread	intermediate - 2	MEDIUM -1	The range of introduced Egyptian Geese has not expanded as rapidly as some other introduced bird species. It was largely confined to Norfolk for many years but now appears to be colonising other areas.
Summarise Impacts	minor - 1	MEDIUM -1	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.
Conclusion of the risk assessment	LOW - 0	MEDIUM -1	Egyptian Geese are already present in the UK, with established populations in the East and South-East of England and scattered records elsewhere in England, Wales and Scotland. It is possible that they may compete with native waterbirds or hole-nesting species and may cause damage to grassland habitats and cereal crops. However further research is required to investigate these impacts.
Conclusions on Uncertainty		MEDIUM -1	This risk assessment is based on scientific literature relating to existing populations of Egyptian Geese both in their native range and where they have been introduced. Good estimates of the current numbers in Britain already exist and their current range is being mapped by the BTO Bird Atlas 2007-11. Further research is required to investigate the impacts of Egyptian Geese on native biodiversity, as although many impacts are suspected there is little scientific evidence to substantiate these claims as there have been no detailed studies of the impact of this species in its introduced range.

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