Department for Environment Food & Rural Affairs

Defra's draft 2025 Habitats Regulations Assessment (HRA)

Licence to release common pheasants or red-legged partridges on specified special protection areas or within 500m of their boundary

January 2025

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This draft HRA and decision was considered by ministers and was rejected in March 2025.

Ministers considered that on the basis of all the available evidence and advice regarding the potential spread of HPAI to the qualifying features, gamebird releases on those sites should be subject to individual licensing.

Executive summary

This Habitats Regulations Assessment (HRA) provides an assessment of the potential risk and impacts of issuing General Licence 45 (GL45) for the release of gamebirds (common pheasants and red-legged partridge) onto or within the 500m buffer zones of specified special protection areas (SPAs) in England. This document provides an assessment of the suitability of SPAs, where gamebird release has been reported since 2021, to be included in GL45 for the release of gamebirds in 2025.

This assessment considers the impact and transmission risk of HPAIV to wild birds from released gamebirds. Assessments of broader impacts of gamebird releases on SPAs have been made to Defra's 2024 HRA to determine the effect of gamebird release under GL43. The national HPAIV risk in wild birds is currently assessed as very high. However, when compared to previous HRAs, this assessment relies on a localised risk level in determining the approach on individual sites. This provides Defra with the flexibility to create one HRA for multiple localised risk scenarios.

This HRA focuses on 40 SPAs in England, which are designated for the protection of site-specific bird species. These sites have been selected as they have had gamebird release reports associated with them since gamebirds were added to Schedule 9 of 'The Wildlife and Countryside Act 1981 (Variation of Schedule 9) (England) (No. 2) Order 2021' or had applications for release of gamebirds on or around the sites in the 2023. Where release of gamebirds is proposed on any site not included in this HRA, an application for an individual licence will need to be submitted.

This strategic assessment reviews all 40 sites from a localised risk perspective. It sets out the actions that should be taken under each localised risk scenario (very low, low, medium, high or very high). For gamebird release to be permitted, Defra must conclude beyond reasonable scientific doubt, that gamebird releases would not have an adverse effect on site integrity. Particular attention is paid to the potential risk of adverse effects on site integrity as a result of HPAIV transmission following gamebird release. It is worth noting that gamebird release on SACs is currently covered under GL43 and licence conditions in GL43 are also included in GL45. However, GL45 includes additional conditions related to prevention of HPAIV transmission between released gamebirds and protected features of SPAs.

GL45 Introduction

This document comprises the Defra 2025 HRA and conclusion, informed by the appropriate assessment (Part D) and statutory nature conservation advice, under Regulation 63 of the Conservation of Habitats and Species Regulations (2017), also known as the 2025 HRA. Defra is the competent authority in issuing a new interim general licence for the release of common pheasant (CP) and red-legged (RLP) (collectively referred to as 'gamebirds' for the purposes of this HRA) onto certain SPA sites in England or within 500m of their boundaries. The new general licence is referred to as GL45.

This 2025 HRA is informed by:

1. The addendum to Defra's 2024 HRA – reviewing SPAs for gamebird release in a 'low' national risk level of HPAIV spread to wild birds.
2. Defra's 2024 HRA – reviewing SPAs for gamebird release in a 'medium' national risk level of HPAIV spread to wild birds.
3. Defra's 2023 HRA (Defra 2023) detailing the Secretary of State's decision re the issuing of the 2023 interim general licence (GL43) to release gamebirds on certain European sites (SACs) or within 500m of their boundaries.

Decision in relation to the protection of the designated avian species of special protection areas (SPAs) in England

This assessment considers new information relating to the risk of adverse impacts of HPAIV being transmitted to SPA populations of protected wild birds by released gamebirds and advice on this risk from Natural England (NE).

Giving significant weight to the advice of the statutory nature conservation body in 2023, Defra made the decision not to include releases of gamebirds on sites designated as SPAs, or within 500m of their boundaries, within the scope of GL43 for the 2023 and 2024 gamebird release seasons. As such, GL43 only authorised the release of a specified density of gamebirds on SACs, or within 500m of their boundaries. Those wishing to release gamebirds on SPAs or within 500m of their boundaries in 2023 were required to apply for an individual licence. In 2024 practitioners wishing to release on SPAs, or within 500m of their boundary, were required to operate under GL45 or apply for an individual licence from Defra. It is Defra's intention in 2025 to issue an updated GL45 for practitioners to operate under if they wish to release on SPAs or within 500m of their boundary. If practitioners wish to release on a site not included in GL45 they will need to apply for an individual licence.

Defra has assessed whether releases of gamebirds on some SPAs and/or within 500m of their boundaries can be considered in different localised risk scenarios. Defra has incorporated new information in its assessment regarding the benefit of potential actions that can be taken at a shoot level to mitigate risk. Where appropriate and according to localised risk level from Defra's GWRAT, GL45 will authorise the release of a specified

density of gamebirds on certain named SPAs and/or within 500m of their boundaries. Defra will monitor localised risk levels and modify the licence accordingly using powers in section 16(5)(d) of the Wildlife and Countryside Act 1981. Those wishing to release gamebirds on SPAs and/or within 500m of the boundaries of SPAs not named in GL45 or those unable to comply with the conditions specified in GL45, are able to apply for an individual licence. Regarding sites designated as both SPAs and SACs, releases on SACs that are also designated as SPAs will be required to operate under GL45, if the SPA is included in GL45. Individual licences will be required for releases on SACs that are also designated as SPAs if they are not included in GL45.

The new GL45 will be valid from 2 Feb 2025 to 1 Feb 2027. Given the potential for fluctuation in the status of the localised risk level in wild birds, Defra will keep this risk under review, alongside all available evidence, throughout the lifetime of this licence. SoS may revoke or modify GL45 accordingly. The localised risk level is reviewed for each site on a regular basis to ensure Defra can act swiftly in light of risk changes and incidents of HPAI in wild birds.

Methodology and use of evidence

To assess the impact on SPAs in 2024, Defra considered the following:

- NE's 2021 sHRA (Natural England 2021),
- 2022 QRA (Defra 2022a),
- NE's January 2023 sHRA addendum (Natural England 2023),
- Defra's 2022 HRA (Defra 2022b),
- 2023 HRAs (Defra 2023),
- Gamebird-Wild Bird Risk Assessment Tool (GWRAT) (Defra 2024)
- SPA-specific expert advice provided during the 2023 individual licensing assessment process by NE, Defra's Expert Panel, and the Game and Wildlife Conservation Trust (GWCT). NE's expert advice was provided in the form of a written 'technical assessment' (aka 'licence advice record') for each individual licence application in 2023 and provided a detail assessment of potential impacts of gamebird releases on SPA features. Defra's Expert Panel was composed of Defra staff with ornithological and exotic disease expertise who met regularly and provided comments on each individual licence application in 2023 (recorded as a meeting note). GWCT advice was provided (both written and verbal) on 2023 individual licence applications that NE had recommended either for refusal or approval under complex conditions. Additional information on SPA protected species obtained from the British Trust for Ornithology (BTO 2024), RSPB, and NE has also been considered.

This evidence used in 2024 has also been utilised for the 2025 release season along with Defra's 2024 HRA including the addendum. The evidence informing the consideration of each SPA is set out in Part D. Defra has reviewed these assessments, the available evidence, and new information to assess the following risks in all localised HPAIV risk scenarios to wild birds:

- the HPAIV transmission risks from gamebirds to protected wild birds associated with pheasant releases
- the HPAIV transmission risks from gamebirds to protected wild birds associated with RLP releases
- the risk of ‘bridging species’ to transmit HPAIV from gamebirds to protected wild birds more widely
- the effectiveness and feasibility of mitigating conditions to reduce these transmission risks

The HPAIV transmission risk pathway is detailed in Part D sections on mandatory biosecurity measures and veterinary checks/testing requirements. Broadly, transmission between gamebirds and protected wild birds can occur directly via beak-to-beak contact between live birds or via predation of live birds/scavenging of carcases and indirectly via environmental contamination and range overlap between gamebirds and protected wild birds, or via bridging species that may come into direct and/or indirect contact with both gamebirds and protected wild birds.

Variables along the transmission pathways have been assessed and suitable management conditions identified based on existing biosecurity advice (Defra 2022c) and expert input, that will feasibly and effectively interrupt these pathways. For example, pre-release testing and gamebird health checks will identify potential HPAIV infection, thereby reducing the risk of introducing an infectious gamebird onto the site andreducing the likelihood of both direct and indirect transmission to protected wild birds.

Cleaning of feed and water receptacles will reduce the risk of indirect transmission via environmental contamination through removal of potentially HPAIV-contaminated faecal matter. Delayed releases will prevent gamebirds and protected wild birds occupying the SPA/buffer at the same time, thereby reducing the risk of both direct and indirect transmission.

In providing appropriate mitigation against direct and indirect HPAIV transmission risks we can reduce the risk of HPAIV transmission between gamebirds and protected wild birds and reduce the likelihood of adverse effects on the conservation objectives and integrity of the SPAs concerned.

The Gamebird-Wild Bird Risk Assessment Tool

The GWRAT has been adapted from the International Disease Monitoring tool for risk of incursion and considers the likely presence of HPAIV across England at county level, the potential for spread into released gamebirds and the exposure to SPA qualifying feature species. It provides a comparative score between different sites for the likely exposure of the SPA feature species (Defra 2024). The tool creates SPA-specific HPAIV risk determinations that Defra will then use to make decisions regarding effects on site integrity, recognising a degree of uncertainty relating to the transmission of HPAIV between gamebirds and wild birds.

The GWRAT has been developed to address this knowledge gap using accepted published methodology and a precautionary approach has been taken regarding its

application to the appropriate assessment (Part D, section 8.2.6). Considering that the GWRAT has now been implemented for a full release season, Defra is confident in placing a stronger reliance on the tool in comparison to 2024 release season when it was a new and untested approach.

The GWRAT uses records of recent occurrences of HPAIV in the counties of England to estimate the current background risk in each SPA (inclusive of the buffer zone). The tool uses this background risk and the broad groupings of species features (i.e., reservoir species, spill-over species, and bird of prey species) to estimate the risk gamebird releases pose to the SPA conservation objectives via impacts on qualifying species. The tool also assumes that at least 2,501 gamebirds will be released onto, or within 500m, of each site. This figure is important as any number of gamebirds that are released after this amount cannot increase the GWRAT score; at 2501 birds, likelihood of disease transmission is at its maximum. For some sites reviewed in this HRA this is another level of precaution as some in recent years have had little to no gamebird release reporting associated with the sites. If, however, gamebirds were to be released in 2025, the GWRAT has already accounted for this action in its scoring. It should be noted that the risk to sites/features is based on current HPAIV risk levels, which are based on county-specific detections of disease in wild birds of target species, mass mortality events, and poultry outbreaks in the past four months (see the GWRAT methodology, Defra 2024, for further detail). As such, the output reflects risk at the time the output is generated, and the risk will therefore need to be continuously reviewed over the course of the project. See figure 2 below for an overview of the model.

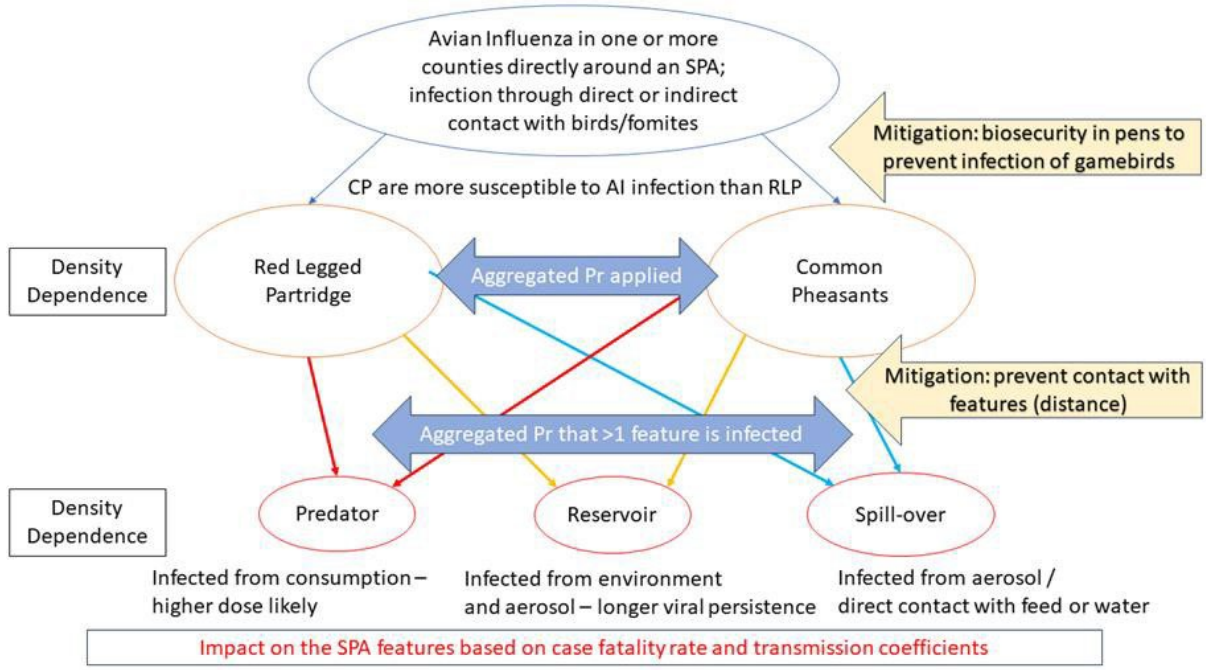

Figure 2: A schematic overview of the different steps in the GWRAT. The figure shows that:

- **Background HPAI risk is considered.**
- **This risk is used to calculate an aggregated probability that common pheasants and red-legged partridges are infected. Density of gamebirds and common pheasants' higher susceptibility to HPAI are taken into account. Points at which mitigation measures such as biosecurity in pens can be included are shown.**
- **This probability is then used to calculate an aggregated probability that more than one feature could be infected. Density of protected features and transmission routes to different groups of features are taken into account.**

The GWRAT provides a semi-quantitative assessment of the likelihood of HPAIV transmission from gamebirds to three categories of species features. The resulting semi-quantitative risk levels can be grouped into tiered categories as follows: SPAs at negligible risk (background), very low risk; low risk; medium risk; high risk, according to the European Food Safety Authority (EFSA) definitions (see Table 1). These qualitative risk levels are applied based on the logarithm of scores generated by the GWRAT.

Table 1: Table showing risk levels, definitions, management responses, and risk level value ranges.

Risk level	Definition	Risk management measures	Value range
Negligible [1]	Event is so rare, does not merit consideration	Management measures not required.	0.000
Very low	Event is very rare, but cannot be excluded	Constant background level of risk. Management measures should be considered. Increase continued/vigilance should risk level increase.	>0.000 - <0.001
Low	Event is rare, but does occur	Management measures should be considered. Increase continued/vigilance should risk level increase.	>0.001 - <0.01
Medium	Event occurs regularly	Management measures required to reduce risk.	>0.01 - <0.1
High	Event occurs very often	Management measures are unlikely to sufficiently reduce risk.	>0.1 - <1
Very high	Event occurs almost certainly	Management measures are unlikely to sufficiently reduce risk.	1

The scores generated by the GWRAT provide species feature category risk levels, based on current HPAIV risk levels prior to the addition of management conditions. The threshold value for an acceptable level of risk has been established as ‘very low’ risk (represented by a value <0.001) of HPAIV transmission. Below this value, Defra considers that additional management conditions should be considered but are not deemed necessary as

[1] For avian influenza risk levels, due to the endemic presence of low pathogenicity avian influenza viruses in the wild bird population throughout the year, a negligible risk level would only be applied to specific high biosecurity compartments in the poultry sector.

this this would mean applying mitigations for a possible risk for HPAIV transmission in all circumstances (i.e., including when HPAIV transmission is a background/negligible risk), even in the absence of any known outbreak. Above this value, management conditions will be considered, and the level of risk reduction estimated, with the aim of bringing the risk to an acceptable level (i.e., <0.001) consistent with the requirements of the Habitats Regulations. While a 'very low' risk or GWRAT output <0.001 is considered a level at which mitigation should be considered but is not is required, it is important to note that mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. Assessing the level of risk reduction to SPA qualifying features via the application of management conditions is important to ensure, beyond reasonable scientific doubt, that there will be no adverse effect on the integrity of the SPAs resulting from gamebird releases.

Regarding the species feature categories (i.e. reservoir, spill-over, and bird of prey) and the risk levels associated with them, the most important 'reservoir' species for HPAIV are widely accepted to be wild birds from the orders of Anseriformes (ducks, geese, and swans) and Charadriiformes, particularly gull species. These species typically aggregate in dense populations to roost and/or forage, and spend extensive periods of time in cold water, which is a highly transmissible environment for HPAIV. Consequently, reservoir species are exposed to multiple and substantial direct and indirect transmission pathways.

In this context 'birds of prey' refers to raptor species (e.g., hen harrier, merlin, short-eared owl and others). For raptors, direct transmission via predation on infected gamebirds/bridging species (e.g. passerines or gulls) or scavenging on infected carcases is the most likely pathway, particularly in lean winter periods when birds of prey are more likely to scavenge.

'Spill-over' species encompass all other species that must be considered but for which susceptibility is harder to gauge owing to the lack of evidence of their susceptibility to HPAIV, their habitat use, ecology, and behaviour, which may or may not bring them into contact with gamebirds or make them vulnerable to transmission, but which could also act as a bridging species. This feature group includes birds such as cliff nesting seabirds (e.g., common puffins, common guillemot) and breeding passerines (e.g., woodlark, wood warbler). See the GWRAT methodology for further detail on the categorisation of species between these three groups.

The GWRAT feature groupings reflect the comparative consequences of infection by gamebirds and potential impact of transmission to protected SPA features, which is considered accordingly in Part D. For instance, birds of prey are often rare and the loss of even a few protected SPA birds to HPAIV on an individual site could produce a UK population level effect and adversely impact the species conservation status. Conversely, and as detailed in the GWRAT methodology, reservoir species are often represented by substantial populations on SPAs and can occur in mixed species aggregations in areas close to gamebirds. Consequently, there is potential for one or more reservoir species to express a disease induced mass mortality; however, while there is potential for significant impacts on the SPA population, the death of a small number of birds from HPAIV infection is less likely to produce a population level effect at the UK level. It should be noted that

while the species groupings in the GWRAT are made considering impacts on populations at the national level, the appropriate assessment (Part D) assesses the likelihood of impacts at the site-population level, informed by the outputs of the GWRAT and SPA-specific evidence provided by NE.

In addition to spatial and temporal consideration of the SPA features and consequent transmission pathways, bridging species that may provide a transmission pathway between gamebirds and SPA features must be considered. Because of the complexity of bridging species interactions with susceptible species, it is not possible for the GWRAT to consider each possible combination of transmission pathways and therefore the presence of bridging species is considered in the GWRAT on a country wide basis and included in the indirect transmission pathway.

The GWRAT considers the risk of HPAI transmission pathways, where gamebirds might contribute to that risk, in real time. Critical to managing the risk to SPA protected birds from gamebird release is the ability to respond to the possibility of localised risk levels rising above the current level of risk later in the year, including the pre- and post-release period.

In 2024 Natural England advised Defra to consider how an escalation of the background risk of HPAIV would be managed through the proposed GL45 mechanism. Defra has investigated this further. Regarding pre-release risk changes, this strategic assessment outlines how Defra can modify the licence dependent on how the localised risk levels change, creating one HRA for all risk scenarios means Defra can be agile in responding to risk changes quickly through modifying the licence in the pre-release season. Post-release, Defra is currently consulting industry on a risk management plan to bolster any other concerns.

Part A: Introduction and information about the plan or project and an initial assessment of credible risk to special protection areas

A1. Background to the plan or project

Defra is using the HRA assessments carried out in 2022, 2023 and 2024 to inform the 2025 HRA assessment for the following reasons:

- We are not aware of any new methods or techniques of undertaking generally licensed activity that have not been covered in previous assessments and which would pose potentially new risks.
- The evidence provided in these HRAs continues to be valid and is consistent with additional statutory advice provided by NE in 2023 for individual licences.
- There have been no new or amended SPAs designated or classified by Government during the period since the previous HRA was made.

- The project being assessed, and the activities that would be authorised, remain the same as in previous years.

This document is the note of that final assessment and decision in the undertaking of Defra duties as competent authority. It follows the structure of Defra's 2024 HRA, explaining how Defra has considered the evidence and arrived at its decisions. Defra's HRA comprises a set of documents:

- This decision-document
- GL45 licence
- Defra's 2024 HRA and addendum
- GWRAT methodology

A2. Details of the plan or project

Defra is proposing to issue GL45 to permit the release of gamebirds on SPAs and within their buffer zones from 2 Feb 2025 to 1 Feb 2027. The current general licence, GL45 (modified), and one individual licence, for release of gamebirds on or in the buffer zone of SPAs is valid until 1st February 2025. The shooting season for gamebirds ends on 1 February 2025 (inclusive).

Subject to this HRA, Defra is proposing to issue a GL for 2025 with the same conditions that form an integral part of GL43, with the addition of conditions that will further mitigate the risk of HPAIV transmission between gamebirds and protected wild birds. In doing so, release of gamebirds on land designated as both a SAC and SPA can be licensed under GL45, provided that the relevant SPA is covered by GL45. GL43 will continue to apply to gamebird releases on land designated as a SAC only. Any release of gamebirds that cannot be permitted under either GL43 or GL45 will require an individual licence.

GL45 Part B: Information about SPAs and Ramsar sites which could be affected

B1. Brief description of the SPAs and their qualifying features and B2. European site conservation objectives

Defra notes the information set out in NE's 2023 sHRA addendum, as per NE's original sHRA dated January 2021, as an accurate account of SPAs, qualifying features, and conservation objectives.

Of the 87 SPAs in England, 40 SPAs have been reported to have had gamebird releases on them since 2021 when gamebirds were first added to schedule 9 or had applications for release of gamebirds on or around the site in the 2023 individual licensing process. This

assessment is therefore limited to the aforementioned 40 SPAs. Any release of gamebirds that may be proposed on or within 500m of the remaining SPAs not included in GL45 during 2025 would not be covered by GL45 and would require an individual licence for any gamebird release. Parts C and D provide the full assessment of suitability of these sites for inclusion in a GL. The following list shows the sites in scope of assessment:

1. Alde-Ore Estuary
2. Ashdown Forest
3. Avon Valley
4. Benacre to Easton Bavents
5. Bowland Fells
6. Breckland
7. Broadland
8. Chesil Beach & the Fleet SPA
9. Chichester and Langstone Harbours
10. Colne Estuary (Mid-Essex Coast Phase 2)
11. Crouch & Roach Estuaries
12. Deben Estuary
13. Dorset Heathlands
14. Flamborough and Filey Coast
15. Foulness (Mid-Essex Coast Phase 5)
16. Hamford Water
17. Humber Estuary
18. Leighton Moss
19. Lower Derwent Valley
20. Mersey Estuary
21. Minsmere-Walberswick
22. Morecambe Bay and Duddon Estuary
23. New Forest
24. North Norfolk
25. North Pennine Moors
26. North York Moors
27. Outer Thames SPA
28. Peak District Moors
29. Porton Down
30. Salisbury Plain
31. Sandlings
32. Solent and Southampton Water
33. South Pennine Moors
34. Stour & Orwell Estuaries
35. Tamar Estuaries Complex
36. Thames Basin Heaths
37. Thames Estuary & Marshes
38. The Wash
39. Thursley, Hankley and Frensham Commons (Wealden Heaths Phase 1)
40. Wealden Heaths Phase 2

Part C: Screening of the plan or project for appropriate assessment

C1. Is the plan or project directly connected with or necessary to the (conservation) management (of the European Site's qualifying features)?

NE's 2021 sHRA and 2023 sHRA addendum were produced for Defra as the competent authority to formally adopt as their own assessment/conclusion. Defra adopts NE's 2021 sHRA conclusion that the project (the release of gamebirds on SPAs under a GL) is not wholly directly connected with or necessary to the management of SPAs qualifying features, and therefore a further appropriate assessment is required.

C2. Is there a likelihood (or a risk) of significant adverse effects ('LSE')?

In all localised risk scenarios, there is a likely significant effect from the release of pheasant and/or RLP on or in the buffer zones of SPAs.

In previous HRAs/sHRAs NE has determined that CP and RLP releases were likely to be associated with an increased risk of exposure and infection of protected wild birds with HPAIV, Defra agrees with this conclusion. The GWRAT also establishes that, while there is little evidence for RLP beyond showing that they are susceptible to HPAIV and that a high dose is needed for infection to occur, virus can be recovered from infected RLP so there remains the potential for infected RLP to transmit the virus to protected wild birds.

Interaction between released gamebirds and qualifying SPA bird species could generally occur in a variety of ways, exposing both sets of birds to disease risk. The risk from gamebird release to those SPA feature species which are unlikely to leave their SPAs during their relevant season will be largely dictated by the location of release sites, the dispersal of released gamebirds, and their movement into their SPAs. Some more mobile SPA feature species which do not directly interact with gamebirds may utilise 'functionally linked land' (e.g., wetland, farmland, grassland, etc.) around their SPAs, which may also be utilised by foraging or roosting gamebirds. Other SPA feature species likely to utilise functionally linked land around the SPA may also directly interact with gamebirds (most significantly though predation of sick birds and scavenging of carcases). SPA species may be at risk from both bridging species and the more direct exposure pathways outlined above.

Where there may be no direct overlap between a breeding bird season and a gamebird release in late summer, there may be residual impacts left behind by kept gamebirds in terms of ground surface contamination that could still present a contact-pathway of transmission to local protected wild birds. There is also a risk that gamebirds released in late summer may survive overwinter and provide a transmission pathway (directly via

contact or indirectly via environmental contamination/contact with bridging species) with migratory breeding features when they return to SPAs in the spring, if HPAI is still circulating in the country. Literature suggests that around 16% of released CP and 15% of RLP can survive to the end of the shooting season, though this is based on a limited number of studies (Madden et al 2018). The majority of released CP are typically shot during the shooting season or die from predation (mainly by foxes) (Madden et al 2018). Measures intended to reduce transmission risk between gamebirds and wild birds do not address the survival of a small percentage of gamebirds into the following spring. Advice is included in the GL regarding not releasing an excessive number of gamebirds compared to the number of birds expected to be shot throughout the shooting season and regarding 'catching up' gamebirds that remain on site after the shooting season (see Annex C). The catching up of gamebirds is not a mandatory measure owing to constraints on the feasibility of catching up every remaining gamebird, but this advice is aimed to help ensure that as few gamebirds as possible remain in the wild at the end of the shooting season and into the following spring.

GL45 Part D: Appropriate assessment and conclusions on site integrity

For the 2025 release season, Defra has chosen to create an agile licence that can be updated as localised risk levels change on the GWRAT, taking into account the degree to which GL conditions mitigate the risk of HPAIV transmission from gamebirds to SPA features and considering the possibility of adverse effects on their conservation objectives and site integrity. Defra has considered a GL approach for all 40 sites, however as and when localised risk levels change, sites and delayed releases dates can be removed or added. The localised assessments set out in detail under what circumstances different conditions could be applied to sites as the disease changes in their localised areas. Gamebird releases on and/or in the buffer zone of all other SPAs not included in GL45 at the time of release would require an individual licence. Conditions in GL45 go beyond those contained in GL43 (i.e., inclusion of biosecurity measures) and include release densities consistent with GL43 for both SACs and SPAs, allowing for the application of GL45 to SACs that are co-designated as SPAs.

Mitigating measures and transmission risk

Here we clearly set out how the likely significant effects that could arise from HPAIV transmission identified in Part C can be mitigated by the inclusion of mandatory conditions in the GL and enable conclusions regarding the likelihood of adverse effects on site integrity. The mandatory measures included in GL45 aimed at reducing HPAIV transmission risk are site-specific delayed release dates, biosecurity measures, and pre-release veterinary checks and testing. These measures will interrupt HPAIV transmission pathways by reducing the risk of sick gamebirds being released onto or in the buffer zone of an SPA, by reducing the risk of potentially infected gamebirds encountering other birds

following release (i.e., enabling direct transmission), and by reducing the risk of potentially infectious gamebirds contaminating habitat that is occupied by other birds following release (i.e., enabling indirect transmission). Further detail on these conditions is provided in the sections below.

Other conditions are included in GL45 that are not specifically targeted at the reduction of HPAIV transmission risk but serve to mitigate against wider risk/negative effects on the site itself, (e.g., nutrient enrichment of water and soil, Madden and Sage 2020) some of which have been adapted from the previous gamebird general licence (i.e., GL43), which included conditions to mitigate against risks of gamebird releases on both SPAs and SACs. These include conditions regarding gamebird release densities (conditions 1 and 2), the reporting of release activity (condition 3), and compliance and monitoring (condition 6) (see GL45 for full details). Section 8.2.7 on the process for managing escalating risk levels considers how additional mitigating conditions could be applied if an increasing risk level and corresponding risk assessment considers them appropriate.

Delayed release dates

Inclusion of site-specific conditions specifying delayed release dates (included in condition 7 where relevant) in the GL can reduce risk to features on sites that are notified for breeding features only (see site specific assessments) and which are known to depart (or for the majority of the population to have departed) the SPA by specific dates. By applying a delayed release date gamebird release will only be permitted once the qualifying breeding features are known to have departed the SPA to their overwintering grounds. Application of this measure will interrupt HPAIV transmission pathways between gamebirds and protected wild birds via both direct (e.g., beak to beak) and indirect (e.g., bridging species, environmental contamination) contact as gamebirds and protected wild birds will not be capable of occupying the same habitats within the SPA at the same time. For example, if a breeding population is known to depart an SPA at the end of July, then permitting gamebird release in August would prevent gamebirds and the qualifying feature being on site at the same time, thereby preventing transmission. Where the risk of gamebird release is sufficiently high (for instance where the application of mandatory biosecurity measures will not provide sufficient mitigation) that a delayed release date is considered necessary, appropriate delayed release dates have been established by Defra using evidence gathered from NE 2023 Local Advice Records (LARs) and published conservation advice.

Biosecurity measures

As set out in their previous statutory advice to Defra, NE consider the application of biosecurity measures to all SPA licences (general and individual) should be a standard means of mitigating transmission risk, particularly where the wider background risk of HPAIV circulation remains either medium or high. This aligns with Defra's published advice around biosecurity and HPAIV (Defra 2022d) and best practice guidance (Defra 2022c). Defra considers the mandatory biosecurity measures specified in GL45 to be precautionary, reasonable, and proportionate given the current national HPAIV risk in wild birds.

There are multiple pathways by which HPAIV can be transmitted from released gamebirds into wild bird populations. This can include direct transmission via e.g., beak-to-beak contact, as well as indirect transmission via e.g., contact with contaminated environments/surfaces, ingestion of contaminated material, or via bridging species (e.g., corvids, gulls, passerines). The full biosecurity conditions, their purposes, and the HPAIV transmission pathways that they mitigate are detailed in Annex C. The HPAIV virus can persist and retain infectivity at low temperatures (i.e., for up to 55 days at 4˚C in reduced sunlight and high humidity), indicating that winter conditions will not prevent survival of the virus outside of a host and that environmental contamination could persist for several weeks. This means that there is a risk of transmission for an extended period following initial contamination and implications for transmission via humans through contaminated clothing and equipment.

Mandatory biosecurity measures will reduce the risk of infected gamebirds being released onto SPAs (via e.g., ongoing checks for signs of HPAIV infection pre-release), or released gamebirds becoming infected post-release (via e.g., hygienic maintenance of feeding and watering stations to prevent and remove contamination) and transmission from gamebirds to qualifying SPA features or bridging species (via e.g., cleaning of equipment and disposal of carcases to prevent environmental contamination and scavenging). See Annex C for full details. The inclusion of best-practice biosecurity measures was recommended in NEs 2023 sHRA addendum, stating that, ‘biosecurity measures might play an important role in reducing the risk of introducing infected gamebirds into a release area and of them becoming infected shortly afterwards whilst being kept and then going on to infect local wild birds including SPA birds.’ It was also noted in the addendum that mandatory biosecurity measures are implemented to prevent the spread of HPAIV in disease control and prevention zones. As NE notes in the 2023 sHRA, the implementation of best-practice measures is broadly endorsed by the gamebird release sector to protect the health of gamebirds (see this blog as an example).

The proposed biosecurity measures are based on existing Defra biosecurity advice (Defra 2022c) aimed at keepers of captive birds and poultry (including gamebirds) and have been informed by expert advice from Defra’s Exotic Disease Control team. The conditions to be included have been identified as both effective and feasible through an expert elicitation process led by the APHA in development of the GWRAT. The GWRAT methodology considers gamebird pens/areas to be equivalent to a backyard poultry premises with no biosecurity measures (i.e., where it is not possible to prevent wild bird contact). The application of routine biosecurity to this scenario is considered to be capable of achieving a fourfold reduction in the risk of disease incursion (EFSA Panel on Animal Health and Welfare, 2017). Defra acknowledges that gamekeepers have limited control over the environments in which gamebirds will be housed and released, which the GWRAT acknowledges as having biosecurity equivalent to a backyard premises. As such, taking a precautionary approach to the application of routine biosecurity measures proposed for GL45, these measures are considered capable of achieving a twofold reduction in the risk of disease incursion (i.e., entry into the SPA). These measures will be implemented alongside a ‘mandatory veterinary check and testing’ condition.

The inclusion of mandatory biosecurity measures as standard in GL45 is considered to have a number of benefits: consistently applying a single set of measures will provide clarity for shoot managers and will reduce the risk of gamebird infection and of transmission to wild birds, which is of particular importance should autumn migrations result in an increase in prevalence of HPAIV in England, these measures mitigate the risk given the GWRAT assessment is based on current risk (i.e., based on the past four months of data). Further analysis of risk of gamebirds acting as a vector in HPAIV transmission over the autumn migration period suggests additional mitigation is required. By imposing effective and feasible mandatory biosecurity measures in advance of the autumn migrations and continually monitoring the localised risk level, we can proactively mitigate against a potentially increased HPAIV transmission risk that might be observed after gamebirds have been released. The risk level will be monitored, and further licence conditions will allow the competent authority to respond to elevated risk by modifying or revoking the general licence or utilising appropriate animal health legislation. Defra is also currently consulting industry on a risk management plan to bolster any other risks that provides guidance to practitioners pre and post release to help them reduce transmission risks further.

Pre-release veterinary checks and testing

The inspection of gamebirds (and other kept birds such as poultry that are held in the same release pen/area) by a vet within the 24-hour period prior to release is a condition of the GL (condition 4). This requirement will enable the detection of infected gamebirds within a short window prior to release. Gamebirds can only be released if the vet confirms in writing that there is no evidence of a notifiable disease (e.g., HPAIV) in any of the gamebirds to be released or the other kept birds, which must be reported to Defra. This will prevent the release of infected gamebirds onto the site/buffer, where they could then directly or indirectly transmit the virus to qualifying SPA features or bridging species.

Alongside veterinary inspection, the condition also specifies that RLP must be tested (i.e., samples must be taken within the 48-hour period prior to release and sent to the APHA National Reference Lab for analysis) if they have not mixed with CP or other ‘indicator species’ (e.g., chickens, turkeys). An indicator species is an animal that is more likely to be affected by and display symptoms of the virus if it is present. RLP are not an indicator species, so while RLP may be infected with HPAIV this may not be detectable via vet inspection but would be detectable in one of the indicator species that the RLP have been associating with. Detection of HPAIV symptoms in an indicator species means that it can be inferred that the RLP are also likely infected, and the release would not be permitted. Where RLP have not mixed with indicator species testing is required to be sufficiently certain whether HPAIV is present. In this case, RLP can only be released when the vet has received confirmation of negative results for HPAI, which must be reported to Defra.

Inspection and testing of gamebirds are key components of the mitigating conditions, alongside biosecurity measures, which will reduce the risk of infected gamebirds being released onto the SPA/into the buffer and reduce the risk of onward transmission of

HPAIV to other bird species or contamination of the environment. See Annex C for full details of the check and testing requirements and the HPAIV transmission pathways this condition will mitigate.

Application of a precautionary approach

Compared to 2024, this assessment focuses on localised risk scenarios (outputted from the GWRAT) as well as national, this means that mitigation conditions can be more targeted compared to the 2024 approach. To reflect the constant changeable localised risk of the likely significant effect of gamebird releases on SPAs this assessment covers Defra's plans in all risk scenarios to enable the creation of an agile licence that can be modified depending on the localised risk level. There never can be an absolute guarantee about what will happen in the future and a degree of uncertainty has to be accepted and managed. To address this unavoidable uncertainty, a precautionary approach has been applied in several areas of this HRA. In applying a precautionary approach, we have identified and anticipated potential risks, as far as reasonably possible, and put in place measures to reduce the likelihood of these risks materialising or of having an adverse effect on site integrity if they do.

A precautionary approach has been applied to address uncertainty in the following ways in this HRA:

- use of the GWRAT to estimate risk;
- application of the GWRAT outputs;
- the introduction of mandatory biosecurity measures;
- the level of risk reduction afforded to the biosecurity measures;
- the assumption that each of the 40 sites will have at least 2,501 birds released on or in its buffer;
- and the ability to amend or revoke licences in response to changing risk levels (which is discussed in detail in the section 'Process for managing escalating risk levels').

The GWRAT tool was developed to address a lack of data and consequent scientific uncertainty regarding the risk of HPAIV transmission to wild birds from gamebirds released onto SPAs. This tool utilises recent data on HPAIV prevalence to produce estimates of the likely presence of HPAIV, the potential for spread into released gamebirds, and the potential that SPA qualifying features will be exposed. Values are attributed to each of these likelihoods and estimates of the risk gamebirds pose to SPA species features is generated. In the absence of scientific certainty this enables an estimate of the overall risk gamebird releases pose to the SPA conservation objectives, which informs the appropriate assessment for that SPA. Further detail on the GWRAT methodology and precautionary elements are captured in section 4.4.

The application of risk management measures according to the risk levels determined by the GWRAT is also precautionary. Risk levels are categorised in accordance with EFSA definitions (see Table 1), and risk management measures proposed according to these risk levels. For instance, at negligible risk level management measures are not required, at

very low and low they should be considered, at medium they are required, and at high and very high risk they are considered unlikely to be sufficient. In considering the outputs of the GWRAT when applying management measures to gamebird releases, we took a precautionary approach and have applied management measures under risk levels (i.e., very low) for which Defra has determined they should be considered (whereas the EFSA definitions suggest that management could be considered at these risk levels) but are not strictly required. This addresses the risk that the GWRAT might underestimate the risk posed by gamebird releases on SPAs.

The introduction of mandatory biosecurity measures and application to all SPAs in GL45, is another precautionary approach to address scientific uncertainty around the potential for the national HPAIV risk level to increase later in the year following autumn migrations. In mandating that gamekeepers implement biosecurity measures from the beginning of the release season, we can reduce the risk of infected gamebirds being released onto site and reduce the likelihood of HPAIV transmission between gamebirds and wild birds post-release, which will provide a buffer against HPAIV transmission should prevalence start to increase.

In estimating the impact of mandatory biosecurity measures on transmission risk in the appropriate assessment we also took a precautionary approach. The GWRAT methodology considers gamebird pens/areas to be equivalent to a backyard poultry premises with no biosecurity measures. The application of routine biosecurity to backyard poultry premises is considered to deliver a fourfold reduction to the risk level (EFSA Panel on Animal Health and Welfare, 2017). As a precaution, a conservative estimate of a twofold reduction has been attributed to the application of routine biosecurity measures to outdoor gamebird release pens/areas, which accounts for any uncertainty in the estimate of the reduction afforded by biosecurity measures.

Process for managing escalating risk levels

To trigger a response to a rising HPAIV risk level that introduces measures beyond the mitigation measures already included in GL45 the competent authority will monitor, on a regular basis, the level of site risk as indicated by the GWRAT. In addition to real time GWRAT outputs, evidence like anticipated movements of birds, weather forecasts, and SPA-specific evidence will also be considered. The general licence contains a provision that permits SoS as the competent authority to amend or revoke GL45. This provision enables Defra to respond effectively to rising risk levels prior to gamebird release and during the shooting season. Prior to gamebird release it is possible to consider additional biosecurity, separation measures, delayed release dates and mandatory veterinary advice on shoot specific disease control measures. In a scenario where mandatory biosecurity measures are applied and the localised risk level is ‘low’ or above as well as the site having over wintering features or breeding features that are known to stay on the site in significant numbers Defra can remove the sites from GL45. Once the shooting season has started powers to amend GL45 would allow for additional mitigation measures like the catching up of live birds, more stringent conditions on the collection of dead birds, conditions on release locations (e.g., only permitting releases in the buffer), conditions on reduced release densities, and increased surveillance measures. Some of these

measures (e.g., catching up) are currently included in GL45 as advice, but could be strengthened by making them mandatory conditions, should the risk level increase and the risk assessment deem them appropriate. It is not possible to include spatial conditions specific to each release pen or shoot in a general licence. However, if the threshold is reached at which the HPAIV risk is deemed sufficiently high, an assessment will be required of the effectiveness of existing measures within GL45 or whether it is necessary to revert to individual licensing to provide the appropriate mitigation e.g., to enable inclusion of specific spatial conditions where necessary.

It should be noted that, if the localised risk level was to reduce Defra also has the power to modify the licence to remove any additional conditions such as the delayed release dates.

GL45 has limited capability to introduce mitigation measures after gamebird release and prior to the start of the shooting season. This is partly owing to the provisions in the Game Act 1831, which prohibits the catching up and control of gamebirds already released into the wild. However, once the shooting season starts catching up would be permissible. As a general rule, gamebird HPAIV outbreaks can be managed by the SoS through the powers and duties the SoS has pursuant to the Animal Health Act 1981. The 1981 Act contains broad powers for Ministers to enact Orders 'as they think fit' for the prevention of the spread of disease. The Avian Influenza (H5N1 in Wild Birds) Order 2006 applies to wild birds and wild game birds, as opposed to 'poultry and other captive birds', which are covered by the Avian Influenza and Influenza of Avian Origin Order 2006. Under Article 5 of the H5N1 in Wild Birds Order, the SoS must declare a wild bird control area and a wild bird monitoring area in England if the Chief Veterinary Officer advises the SoS that:

- Avian influenza virus of the H5 subtype is present in a wild bird or the carcase of a wild bird in Great Britain, and the neuraminidase is suspected or confirmed to be N1.

As these powers are very broad, it would require an assessment of the nature of risk at the time of escalating risk levels to determine the measures that could demonstrably reduce that risk to acceptable levels (as detailed in paragraph 4 of the Executive Summary). Such an assessment will consider the outputs of the GWRAT at the time (which offers finer county-level data than the national risk level), advice from epidemiologists, SPA-specific ornithological data, and other factors like weather forecasts and anticipated wild bird movements.

Decisions in relation to specific sites

Alde-Ore Estuary (copied from M-risk HRA)

This SPA is designated for non-breeding avocet (*R. avosetta*); redshank (*T. totanus*); and ruff (*Calidris pugnax*) and breeding marsh harrier (*C. aeruginosus*); avocet (*R. avosetta*); sandwich tern (*Thalasseus sandvicensis*); little tern (*S. albifrons*); and lesser black-backed gull (*L. fuscus*). The SPA encompasses a variety of habitats including vegetated shingle, intertidal mudflats, grazing marsh, saltmarsh, and saline lagoons. Supplementary

conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk).

Regarding spatial considerations, the extensive intertidal mudflats located in the Upper Alde Estuary and along the estuary from Snape to North Weir Point are important for avocet, redshank, and ruff. The estuary also provides important feeding habitat for little tern and sandwich tern. The saline lagoons located within the site provide additional feeding grounds for avocet and little tern and, as the tide advances, the saltmarsh becomes an important foraging area for little tern and mudflat feeding species like redshank. As there is potential for these wading birds to move onto the floodplain during high tide, it is likely that qualifying features could encounter released gamebirds or experience spatial overlap of habitats contaminated by gamebirds, which poses a risk of both direct and indirect HPAIV transmission. Lesser black-backed gulls show highly varied habitat use throughout the SPA, utilising the floodplain and intertidal habitats, which poses a risk of transmission via direct contact with gamebirds, as well as indirect transmission via environmental contamination. Marsh harrier can have home ranges several kilometers from nesting territories, often hunting over arable farmland (in proximity to the SPA), saltmarshes, reedbeds, and grasslands. This species is known to predate on waterbird chicks, and female marsh harrier can take larger prey like water rails, wading birds, and potentially pheasant, which NE advice suggests could pose a direct HPAIV transmission risk. As such, there is a risk of direct and indirect HPAIV transmission to all qualifying features of this SPA from release of gamebirds.

Regarding temporal considerations, little tern and sandwich tern are only present on the SPA during the breeding season from April to mid-October. Marsh harrier breed on site and often remain on site following the breeding season at other SPAs, though NE have advised it is unclear whether they remain overwinter on Alde-Ore Estuary SPA. Lesser black-backed gull breed on the SPA but are also recorded overwintering at coastal sites in Britain, so some may remain on site year-round. Avocet are both a breeding and overwintering feature of the SPA and are present on site year-round. Meanwhile redshank and ruff overwinter on site between October and March. As some qualifying features are present on site year-round it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for the SPA (Alde Estuary) suggests that several other species of gull are present, including herring gulls, black-headed gulls, and great black-backed gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species. Lesser black-backed gulls, while a qualifying feature, also pose a risk of indirect transmission between gamebirds and other qualifying species as they can occupy floodplain habitats, where they could encounter gamebirds, as well as intertidal habitats,

which could facilitate transmission to wading species via direct contact or environmental contamination. It is also likely that other waterbirds (e.g., wigeon, teal) present on site could act as bridging species, particularly between gamebirds and marsh harrier, as they could occupy the same habitats as gamebirds and pose a direct transmission risk to marsh harrier via predation.

If the localised risk assessment for Alde-Ore Estuary SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Ashdown Forest

This SPA is designated for breeding European nightjar (*Caprimulgus europaeus*) and Dartford warbler (*Sylvia undata*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9012181_Ashdown Forest SPA Published 10 February 2019 (naturalengland.org.uk).

Regarding spatial considerations Nightjars are ground nesting birds and require supporting habitat which includes a mosaic of heathland, open woodland, and recently felled conifer plantations. They show a preference for bare patches in heathland habitat or areas of short vegetation with widely scattered trees for nesting and typically forage in open forest and heathland where they feed on insects (mainly moths and beetles). Nightjar will also utilise open space to move between SPA habitats and off-site supporting habitat. They are known to use temporary clear-fell within rotationally managed plantation woodland and sparsely vegetated areas such as disused quarries. Taller trees are used for the male nightjar mating displays. Dartford warbler require supporting habitat of heathland with areas of gorse. They are known to breed close to the ground in areas of dry heathland and gorse where there is an abundance of preferred prey items such as spiders. They are also known to nest in mature heather, clearings in forestry plantations, and patches of bracken. During the winter months Dartford warbler are dependent on dense gorse that provides protection in bad weather. Based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated heathland and woodland environments.

Regarding temporal considerations, European nightjar are known to finish breeding and depart the site for their overwintering grounds by September as such, there is the potential for overlap if gamebirds are released prior to September. Dartford warbler are known to finish breeding by August; however, they are present all year on specific habitat such as lowland dwarf shrub and dry heathland. As such they will occupy the site at the same time as gamebirds pre-and/or post release. Any impact on the over wintering population is expected to impact the breeding Dartford Warbler the following year.

Regarding bridging species, there have been no bridging species of note identified to be present at this site.

If the localised risk assessment for Ashdown Forest SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or

‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as Dartford warbler are known to overwinter on site a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering Dartford warbler occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Avon Valley (copied from M-risk HRA)

This SPA is designated for non-breeding Bewick's swan (*Cygnus columbianus bewickii*) and non-breeding gadwall (*Anas strepera*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9011091_Avon Valley_SPA_Published 14 Sep 2023 (naturalengland.org.uk). Regarding spatial considerations, the Avon Valley SPA encompasses one of the largest expanses of unimproved floodplain grassland in Britain as well as a series of gravel pits known as Blashford Lakes. Bewick's swan use short open wet grassland areas for feeding and, usually, open water like lakes, reservoirs, or flooded grassland for roosting. Much of the Avon Valley comprises short, open wet grassland, but the only areas of open water lakes are at Blashford Lakes. However, between 2014/15 and 2017/18, there was a maximum of one individual seen using the SPA and in two of those winters there were no Bewick's Swans sighted in the SPA. NE expert ornithologist advice and available WeBS data from BTO indicates that Bewick's swan have disappeared from the site but remain a qualifying feature. Gadwall inhabit freshwater bodies year-round, requiring nutrient rich waters with a high abundance of water weed. They mostly use the lakes in winter, and breed along the river and ditches in the valley. Based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environments.

Regarding temporal considerations, both qualifying features overwinter on the site from November to March. However, gadwall are known to be present during the breeding season. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, on the Avon Valley SPA gulls are of particular concern. Blashford Lakes is a nationally important area for roosting lesser black-backed gulls and black-headed gulls are also present. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Both black-headed gulls and lesser black-backed gulls will forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and make use of wetland (including lakes) within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Avon Valley SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a 'very low' or 'negligible' risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a 'low' or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of 'very low'.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at 'low' or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Benacre to Easton Bavents (copied from M-risk HRA)

This SPA is designated for breeding bittern (*Botaurus stellaris*), breeding little tern (*Sterna albifrons*), and breeding marsh harrier (*Circus aeruginosus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9009291_Benacre to Easton Bavents_SPA_Published 14 Sep 2023 (naturalengland.org.uk). Regarding spatial considerations, little tern breed on the sand and shingle beaches at Benacre, Kessingland and Covehithe Broads and forage around lagoons. Owing to the distinctly different habitat preferences of little tern and gamebirds, there is low risk of direct transmission from contact with gamebirds or indirect transmission via spatial overlap of contaminated environments. Similarly, bittern show a highly localised preference for dense reedbeds and wetland habitat, rarely venturing into open habitats, so are not at risk of direct transmission via contact with gamebirds, nor indirect transmission

via spatial overlap of contaminated environments. Marsh harrier, however, can have home ranges several kilometers from nesting territories, often hunting over arable farmland (in proximity to the SPA), saltmarshes, reedbeds, and grasslands. This species is known to predate on waterbird chicks, and female marsh harrier can take larger prey like water rails, wading birds, and potentially pheasant, which NE advice suggests could pose a direct HPAIV transmission risk.

Regarding temporal considerations, little tern are present from April are known to depart the site after they finish breeding in September whereas bittern and marsh harrier are known to remain on site following the breeding season and are present in significant numbers year-round. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for HPAIV transmission.

Regarding bridging species, at Benacre to Eastern Bavents they primarily include gulls and wildfowl (e.g. greylag geese). Gulls are known to feed on contaminated agricultural land and bathe/roost on the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit. Wildfowl can also feed in various habitats across the SPA and visit agricultural land to feed, which could bring them into direct contact with released gamebirds or subject them to indirect transmission via spatial overlap of contaminated environments. Wildfowl could then facilitate transmission via environmental contamination of wetlands and reedbeds (where they bathe/roost) occupied by marsh harrier and bittern. Marsh harrier could also be exposed to HPAIV indirectly via predation on bridging species (e.g., waterbirds).

If the localised risk assessment for Benacre to Eastern Bavents SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as Bittern and Marsh Harrier are present in significant numbers year-round a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering Bittern and Marsh Harrier occupying the SPA at the

time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Bowland Fells (copied from M-risk HRA)

This SPA is designated for breeding lesser black-backed gull (*Larus fuscus*), breeding hen harrier (*Circus cyaneus*), and breeding merlin (*Falco columbarius*). This SPA supports the largest expanse of blanket bog and heather moorland in Lancashire and provides suitable habitat for a diverse upland breeding bird community. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9005151_Bowland Fells_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, hen harrier are known to breed on site, where they nest on the ground in upland moorland. Based on a study of hen harrier in SPAs in Scotland, hen harrier tend to stay within 3-4km of nesting areas, but males have been recorded up to 8.5km from the nest (Arroyo et al. 2014). Feeding sources typically comprise small mammals and birds but can include prey as large as grouse, waders, and young rabbits and they could feasibly hunt both RLP and CP (Nota et al. 2019). They are also likely to scavenge dead gamebirds. As such, it is likely that gamebirds would be released into areas where they could encounter hen harrier foraging in proximity to their moorland breeding sites. Hen harrier are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging. Merlin also nest on the ground in areas of upland moorland, relying on mature heather, and show high nest site fidelity. Unlike hen harrier, merlin hunt small mammals, birds and insects, but not usually gamebirds, though the risk of direct transmission via predation on smaller gamebirds

cannot be ruled out and they could be at risk from scavenging on infected gamebirds where habitats overlap. Lesser black-backed gulls typically nest in colonies, in Bowland this occurs on the open moorland. The species is a dietary generalist and can be an opportunistic scavenger, so it is feasible that a lesser black-backed gull might be exposed directly to HPAIV via scavenging on an infected gamebird carcase where habitats overlap. It is considered likely that RLP, owing to their affinity for more open habitat, would be drawn to the scrubby and semi-open habitats upon which the qualifying features rely, whereas CP are more likely to occupy woodland and grassland areas.

Regarding temporal considerations, hen harrier breed on site between March and August and females are known to remain on site overwinter so are present year-round. The breeding populations of lesser black-backed gull and merlin are known to depart the SPA by mid-July and the end of September respectively. As such, it is feasible that all three qualifying features could occupy the site at the same time as gamebirds pre-and/or post release (i.e., during acclimation prior to release in July/August and/or during the October-February shooting season), providing the potential for HPAIV transmission.

Regarding bridging species, NE advice has not raised the presence of any bridging species of note at this site, but alongside the lesser black backed gull colony there are smaller numbers of herring gull and greater black backed gull on site. Gulls will forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and make use of wetland within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Bowland Fells SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as Hen Harrier females are known to remain on site overwinter a delayed release date alone would not mitigate against the impact of gamebird

release to the over wintering female Hen Harrier occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Breckland (copied from M-risk HRA)

This SPA is designated for breeding nightjar (*Caprimulgus europaeus*), breeding stone-curlew (*Burhinus oedicnemus*), and breeding woodlark (*Lullula arborea*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9009201_Breckland_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, breeding stone curlew nest on open, bare ground within short, semi-natural grassland, heathland, or on arable fields and occasionally within conifer plantations. Nightjar visit the SPA to breed in lowland heathland and young conifer plantations, but will use open heaths, grasslands and some arable land for feeding. Woodlark are known to nest by digging a shallow scrape, often preferring grassland, heathland and moorland, and will use grassland and arable land for feeding. In winter, woodlark will also gather in small flocks close to their breeding areas, though they can move to farmland stubbles for the autumn and early winter. As RLP often prefer open habitat and CP are more likely to occupy woodland and grassland areas, it is feasible that the qualifying features could be vulnerable to indirect HPAIV transmission from released

gamebirds through spatial overlap of contaminated environments, namely feeding grounds.

Regarding temporal considerations, breeding stone curlew are present on the SPA from March and are known to depart the SPA in October. Nightjar are summer visitors present from May onwards and depart the SPA by September to overwinter in Eastern, Sub-Sahara West, and Central Africa. Breeding woodlark are resident between February and July and, while most of the population departs the site by August, some animals are known to remain overwinter. As such, it is feasible that all three qualifying features could occupy the site at the same time as gamebirds pre-and/or post release (i.e., during acclimation prior to release in July/August and/or during the October-February shooting season), providing the potential for HPAIV transmission.

Regarding bridging species, NE advice has not raised the presence of any bridging species of note at this site.

If the localised risk assessment for Breckland SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as some of the woodlark are known to remain overwinter on the site a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering woodlark occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Broadland (copied from M-risk HRA)

This SPA is designated for breeding bittern (*B. stellaris*) and marsh harrier (C. *aeruginosus*), and non-breeding Bewick's swan (*C. columbianus bewickii)*, gadwall (*M. strepera*), hen harrier (*C. cyaneus*), ruff (*C. pugnax*), shoveler (*S. clypeata*), whooper swan (*Cygnus cygnus*), and wigeon (*Mareca penelope*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9009253_Broadland_SPA_Published 14 Sep 2023 (naturalengland.org.uk). Regarding spatial considerations, bittern show a highly localised preference for dense reedbeds and wetland habitat, rarely venturing into open habitats, so are not at risk of direct transmission via contact with gamebirds nor indirect transmission via spatial overlap of contaminated environments. On this SPA marsh harriers are mainly found in areas of reed bed, nesting on the ground within this habitat, and can have home ranges several kilometres from nesting territories, often hunting over nearby arable farmland, saltmarshes, reedbeds, and grasslands, which could bring them into direct contact with gamebirds via predation on CP or indirectly via predation on bridging species. In and around the Broadland SPA, Bewick's swans are known to feed on farmland, which could bring them into contact with gamebirds directly or via spatial overlap of contaminated environments. Similarly, whooper swan roost on open water but feed on open arable fields, where they could be vulnerable to both direct and indirect transmission from gamebirds. While the Eurasian wigeon occupies open wetlands within the Broadland SPA, they also feed on grassland within and adjacent to the site which could bring them into direct contact with gamebirds or facilitate indirect HPAIV transmission via spatial overlap of environments. Hen harrier visit the SPA in winter where they feed on small mammals and birds within the reedbed and grassland habitats and roost in the woodland, marshes and reedbeds. As such, they are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging in shared habitats. Non-breeding gadwall require generally undisturbed, still, eutrophic waters that have open

water and emergent vegetation for feeding. Similarly, ruff visit the SPA in winter and feed within the reedbed and wetland fringe habitats and shoveler are surface feeding ducks, preferring poorly drained treeless meadows interspersed with eutrophic shallow, stagnant freshwater pools and lakes, and rivers with undisturbed creeks. Although wintering diving duck species spend much of their time in deep water, away from typical gamebird habitats, resident dabbling ducks (wigeon, gadwall, shoveler), are known to spend time foraging on the banks, where there is a risk of mingling with gamebirds coming to drink or spatial overlap of contaminated environments, providing routes for both direct and indirect HPAIV transmission. The range of habitats associated with the SPA (canals but also a mosaic of other habitats including grassland) and its qualifying features means that there is a high probability of released gamebirds directly or indirectly interacting with SPA features, and therefore a risk of direct and indirect HPAIV transmission.

Regarding temporal considerations, the breeding season for bittern and marsh harrier is April to August with some birds remaining on site throughout the winter. All the overwintering features are present from October to March. As some qualifying features are present on site year-round, sometimes in significant numbers, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, hen harrier and marsh harrier are present year-round and may directly interact with gamebirds, most significantly through predation of sick individuals or young gamebirds. Owing to the overlapping habitats that these species share with other qualifying features on the site (e.g. marsh harrier and bittern both occupy reedbeds and both species can hunt over a range of habitats) they provide an indirect transmission route between gamebirds and other species on site. It is also likely that other waterbirds present on site could act as bridging species, particularly between gamebirds and marsh harrier, as they could occupy the same habitats as gamebirds and pose a direct transmission risk to hen harrier and marsh harrier via predation.

If the localised risk assessment for Broadland SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity

measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Chesil Beach & the Fleet SPA (copied from M-risk HRA)

This SPA is designated for breeding little tern (S. albifrons) and non-breeding wigeon (M. penelope). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk). Regarding spatial considerations, supporting habitats for little tern and wigeon include coastal lagoon, the water column, intertidal sand and muddy sand, intertidal mixed sediments, and intertidal coarse sediments. Wigeon are found throughout most of the site and feed on short vegetation on marshland or grassland, as well as seagrass. Little tern favour sand or shingle for nesting, making use of the shingle beaches within the SPA, and can forage up to 5km from nests. As such, both SPA features could encounter gamebirds directly in shared habitats or indirectly via spatial overlap of contaminated environments, so would be vulnerable to both direct and indirect HPAIV transmission.

Regarding temporal considerations, breeding little tern are typically present from April to September, departing the site in August/September to overwinter on the coast of e.g.,

West Africa. Wigeon are an overwintering feature, present on site from October to March. As qualifying features are present on site year-round it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data suggests the 'Fleet and Wey' area is an important site for gulls in winter, including black-headed gulls and a smaller number of lesser black-backed gulls. Black-headed gulls have been seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Gulls are known to forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. Gulls also use habitats within the SPA, which could facilitate direct transmission to qualifying features or enable contamination of the habitats they occupy.

If the localised risk assessment for Chesil Beach & The Fleet SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a 'very low' or 'negligible' risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a 'low' or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of 'very low'.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at 'low' or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Chichester and Langstone Harbours (copied from M-risk HRA)

This SPA is designated for breeding common tern (*Sterna hirundo),* little tern (*S. abifrons),* and sandwich tern (*T. Sandvicensis).* It is also designated for non-breeding bar-tailed godwit (*L. lapponica),* curlew (*Numenius arquata),* dark-bellied Brent goose (*B. bernicla bernicla),* dunlin (*C. alpina alpina),* grey plover (*P. squatarola),* pintail (*A. acuta),* red-breasted merganser (*Mergus serrator),* redshank (*T. totanus),* ringed plover (*C. hiaticula),* sanderling (*Calidris alba),* shelduck (*T. tadorna),* shoveler (*S. clypeata),* Eurasian teal (*A. crecca),* turnstone (*Arenaria interpres),* wigeon (*M. penelope)* and a non-breeding waterbird assemblage. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk). Regarding spatial considerations, all three species of tern favour sand or shingle for nesting, making use of the shingle beaches within the SPA. The overwintering waterfowl and wading species are likely to be found on areas of intertidal mud, coastal grazing marsh, and salt meadows within the SPA, and waterbirds (particularly dark-bellied brent geese) are likely to visit grassland and farmland habitats in proximity to the SPA. Based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environments.

Regarding temporal considerations, breeding common, little, and sandwich tern are typically present from April and depart in August/September to overwinter on the coast of e.g., West Africa. All the overwintering features are present on site from October to March. As qualifying features are present on site year-round it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, at Chichester and Langstone Harbours species of concern include gulls and farmland bird species (e.g., passerines). In particular, WeBS data for the SPA (Chichester Harbour) suggests that several species of gull are present in significant numbers, including black-headed gulls, mediterranean gulls, and herring gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and

must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species. Farmland birds are also known to visit grassland and lowland farmland where gamebirds are likely to be released as well as habitats throughout the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit. It is also likely that hen harrier would predate upon some of these bridging species.

If the localised risk assessment for Chichester and Langstone Harbours SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Colne Estuary (Mid-Essex Coast Phase 2)

This SPA is designated for non-breeding dark-bellied brent goose (*Branta bernicla bernicla),* hen harrier *(Circus cyaneus),* redshank *(Tringa tetanus),* and a waterbird assemblage. Also breeding little tern (*Sternula albifrons*), pochard (*Aythya ferina*) and ringed plover (*Charadrius hiaticula*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9009243_Colne Estuary (Mid-Essex Coast Phase 2)_SPA (naturalengland.org.uk).

Regarding spatial considerations Colne Estuary SPA hosts a wide diversity of habitats with large stretches of mudflats, saltmarshes and intertidal areas, which are important habitats for dark-bellied brent geese, redshank and ringed plover, with the latter also using shingle, pebble and cockle shell beaches for breeding. Many of the waterbird assemblage species, feed on exposed intertidal sediments and saltmarsh at low tide and congregate to roost at high tide on higher areas of saltmarsh or shingle, however they also use open arable fields, lakes and ponds in the local area beyond the SPA boundary to feed and rest. Arable crops outside the SPA are also feeding areas for dark-bellied brent geese and overwintering hen harriers who hunt over large areas, with their main foraging habitats on the SPA being coastal grazing marsh and saltmarsh. Breeding little terns generally favour sand and gravel for nesting and feed in shallow coastal waters and marine waters outside the SPA, with pochard feeding in open water and nesting in bankside vegetation. Whilst many of the SPA features favour marine, intertidal and marshland habitats, several also utilise arable fields and grassland outside the SPA, providing potential for direct transmission via contact in shared habitat, or through spatial overlap of contaminated arable or grassland.

Regarding temporal considerations, hen harriers normally occur on the SPA from September to April, though passage birds have sometimes been recorded as early as August and as late as early May. There are significant numbers of overwintering brent geese present from early October to late March and significant numbers of redshank from early August to late April, with a much smaller breeding population remining through the summer. Pochard normally breed on the SPA from April to August and small numbers are often present outside the breeding season on suitable waterbodies within and immediately adjacent to the site. Ringed plover breed between April and June and also overwinter on

the SPA. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for Colne Estuary SPA, suggests there are many gull species present (including black-headed, herring, mediterranean, great black-backed, common, lesser black-backed). These gull species forage in arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit. Little tern are also known to have suffered from predation by black-headed gulls on this SPA.

If the localised risk assessment for Colne Estuary (Mid-Essex Coast Phase 2) SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Crouch & Roach Estuaries (copied from M-risk HRA)

This SPA is designated for non-breeding dark-bellied brent goose (*Branta bernicla bernicla*) and a non-breeding waterbird assemblage of over 20,000 waterbirds that use the site over winter. This assemblage includes bar-tailed godwit (*Limosa lapponica*), black-tailed godwit (*Limosa limosa islandica*), dunlin (*A. alpina schinzii*), golden plover (*P. apricaria*), lapwing (*V. vanellus*), redshank (*T. totanus)*, shelduck (*Tadorna tadorna*), and shoveler (*Spatula clypeata*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk). Regarding spatial considerations, dark-bellied brent geese occupy areas of intertidal mud, saltmarsh and grazing marsh within the SPA, while the non-breeding assemblage makes use of coastal grazing marsh, salt meadows, and areas of intertidal mud on site. Waterbirds are known to use grassland and farmland habitats (for moulting, roosting, loafing, and feeding), which are present in proximity to the SPA. Based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environments.

Regarding temporal considerations, dark-bellied brent geese arrive through September, with most birds departing in April but some remaining into May. The typical overwintering period runs from October to February. NE advice notes that some species (e.g., black-tailed godwit, lapwing) are resident year-round. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for the SPA suggests that several species of gull are present, including black-headed gulls, common gulls, and herring gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Crouch & Roach Estuaries SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without

mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Deben Estuary (copied from M-risk HRA)

This SPA is designated for non-breeding dark-bellied brent goose (*B. bernicla bernicla*) and non-breeding avocet (*Recurvirostra avosetta*). The SPA is primarily saltmarsh and

intertidal mud flats, but there are also areas of reedswamp, unimproved neutral grassland, and scrub. The estuary is largely surrounded by agricultural land. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk) Regarding spatial considerations, dark-bellied brent geese occupy areas of intertidal mudflats, saltmarsh, and grazing marsh within the SPA. Avocet occupy intertidal areas, wetland, and grassland habitats. Both species may also utilise grassland and lowland farmland habitats surrounding the SPA. Based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission via contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environments.

Regarding temporal considerations, dark-bellied brent geese arrive through September, with most birds departing in April but some remaining into May. The typical overwintering period runs from October to February. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for the SPA suggests that several species of gull are present, including black-headed gulls, herring gulls, and great black-backed gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Deben Estuary SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has non-breeding qualifying features, if the

risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Dorset Heathlands (copied from M-risk HRA)

This SPA is designated for breeding Dartford warbler (*S. undata),* nightjar (*C. europaeus)* and woodlark (*L. arborea)* and non-breeding hen harrier (*C. cyaneus)* and merlin (*F. columbarius).* The SPA comprises heathland habitats, including extensive tracts of dry heath, wet heath, and valley mire. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9010101_Dorset Heathlands_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, breeding nightjar are ground nesting birds typically found on heathlands, moorlands, open woodland, and recently felled conifer plantations. NE has advised that the foraging range of nightjar is known to extend to several kilometres from nest sites (up to 7km) and birds typically forage in non-heathland habitat with a preference for woodland and woodland edges. Breeding woodlark are known to nest by digging a shallow scrape, often preferring grassland, heathland and moorland, and will use grassland and arable land for feeding, favouring large areas of open terrain in and around their nesting, roosting and feeding areas. Woodlark are known to disperse from breeding sites on this SPA in winter and use of the fields around the SPA is considered likely. Dartford warbler favour areas of dense gorse and tall mature heather in which they nest close to the ground. Owing to the potential for gamebirds to be present in habitats in which woodlark and nightjar forage (e.g., woodland, arable land), and the potential for habitat

overlap between Dartford warbler and CP, there is a risk of indirect HPAIV transmission via spatial overlap of contaminated environments. Overwintering hen harrier have a strong association with heather-dominated habitat for cover and protection. Preferred breeding habitat is therefore upland moorland with a high percentage of heather cover and birds may colonise young plantations if there is suitable ground in the wider area, but avoid acid grasslands, extensive mires and continuous high ground. NE has advised that hen harriers regularly forage around Poole harbour and during winter will form communal roosts at night. The location and size of roosts is changeable so it is difficult to predict distribution, but based on a study of hen harrier in SPAs in Scotland, birds tend to stay within 3-4km of nesting areas, and male hen harrier have been recorded up to 8.5km from the nest (Arroyo et al. 2014) during the breeding season and can range widely in winter. Feeding sources typically comprise small mammals and birds but can include prey as large as grouse, waders, and young rabbits and they could feasibly hunt both RLP and CP (Nota et al. 2019). They are also likely to scavenge dead gamebirds. As such, given their wide- ranging behaviour it is likely that gamebirds would be released into areas where they could encounter hen harrier foraging in proximity to their moorland breeding sites. Hen harrier are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging. Merlin roost on the SPA over winter and typically nest in shallow scrapes in the ground on mature or degenerate heather moorland. They are generally faithful to their traditional territories, with nest sites used repeatedly from year to year by successive generations. Merlin hunt small mammals, birds and insects, but not usually gamebirds, though the risk of direct transmission via predation on smaller gamebirds cannot be ruled out and they could be at risk from scavenging on infected gamebirds where habitats overlap. As SPA features use habitats into which gamebirds could be released this could pose a risk of direct HPAIV transmission via contact with gamebirds and/or indirect transmission via spatial overlap of contaminated environments.

Regarding temporal considerations, nightjar are summer residents of the SPA, visiting from March to breed in lowland heathland before departing the SPA during August. They are off site by September and migrate to overwintering grounds in Eastern, Sub-Sahara West, and Central Africa. Woodlark and Dartford warbler breed on site from February to June and March to June respectively but are known to overwinter on site and are present year-round. Overwintering hen harrier are present from July to February and merlin are present from September to March. Given that gamebirds would be present on site at the same time as most, if not all, of the qualifying features and are likely to occupy the same habitats, it is feasible that these features could be exposed to HPAIV transmission from gamebirds through direct contact and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, NE advice has not raised the presence of any bridging species of note at this site. However, as with other heathland and woodland SPAs, it is feasible that farmland birds and other passerines that inhabit the SPA and/or adjacent lowland farmland could interact with gamebirds where they are released as well as habitats throughout the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit.

If the localised risk assessment for Dorset Heathlands SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Flamborough and Filey Coast (copied from M-risk HRA)

This SPA is designated for breeding gannet (*Morus bassanus*), guillemot (*Uria aalge*), kittiwake (*Rissa tridactyla*), razorbill (*Alca torda*), and a general breeding seabird assemblage. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk).

Regarding spatial considerations nesting gannet are currently restricted to a 5km stretch at Bempton Cliffs, where they lay their eggs on a cliff edge or the flat cliff top. Nesting guillemot are distributed throughout the SPA and lay a single egg directly on to a small ledge on the steep cliffs. Most feeding occurs offshore, with birds likely to avoid inshore areas due to higher rates of disturbance. Kittiwake use the sheerest cliff faces for nesting and feed on small fish and invertebrates near the sea surface, with the highest densities found within 1km of the colony during breeding season. Razorbill lay a single egg directly onto small ledges or cracks on the steep cliffs and are commonly found foraging within 1km of the breeding colony, avoiding inshore areas due to higher rates of disturbance. Several habitats within the SPA support the seabird assemblage, with cliff ledges, cracks, crevices, and the flat cliff top widely utilized as nesting sites. Some species also nest under/amongst boulders and on landslides. As all qualifying features inhabit the sea cliffs, transmission of HPAIV via direct contact or spatial overlap of habitats between seabirds and gamebirds is considered highly unlikely owing to distinctly different habitat preferences.

Regarding temporal considerations, Flamborough and Filey Coast supports the only mainland breeding colony of gannet in the UK. The population begins to return to Bempton Cliffs in mid-January and most birds are on-site in March. The breeding season typically runs from March to September with most adults departing in late September and all adults having left the SPA by early October. Guillemot typically breed from April to August, with the peak breeding season occurring in June and July and most chicks fledging by mid-August. The SPA supports the largest kittiwake colony in the UK, with breeding season running from March to the end of August. Breeding season for razorbill is typically from April to early August, with numbers peaking in June and very few birds recorded after the end of July. Regarding the general sea bird assemblage, species are distributed throughout the SPA and components of the assemblage are present year-round. In general, seabird numbers are at their highest during the breeding season, typically from March to September, with the highest breeding density present from May to July. Although features are likely to be present on the SPA at the same time as gamebirds (i.e. during acclimation prior to release in July/August and/or during the October-February shooting season) direct contact between gamebird and qualifying features or transmission via the sharing of habitat is unlikely; however, indirect transmission via bridging species poses a risk.

Regarding bridging species, farmland habitats in the SPA buffer zone are known to support gulls. Seabirds are highly susceptible to HPAIV, as demonstrated by the 2022 and

2023 breeding season outbreaks. Gulls will forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and make use of wetland within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Flamborough and Filey Coast SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as components of the breeding seabird assemblage are present year-round a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering breeding seabird assemblage occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra

can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Foulness (Mid-Essex Coast Phase 5) (copied from M-risk HRA)

This SPA is designated for breeding avocet (*R. avosetta*), ringed plover (*C. hiaticula*), sandwich tern (*S. sandvicensis*), common tern (*S. hirundo*) and little tern (*S. albifrons*). It is also designated for non-breeding dark-bellied brent goose (*B. bernicla bernicla*), hen harrier (*C. cyaneus*), Eurasian oystercatcher (*Haematopus ostralegus*), grey plover (*P. squatarola),* red knot (*C. canutus*), bar-tailed godwit (*L. lapponica*), redshank (*T. totanus*), and an overwintering waterbird assemblage of over 20,000 waterfowl. This assemblage, in addition to the above species, includes shelduck (*T. tadorna*), dunlin (*C. alpina*), and curlew (*T. totanus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk).

Regarding spatial considerations, during the breeding season avocet are known to occupy marshland, while intertidal mudflats and saline lagoons provide feeding habitat. Breeding ringed plover favour open ground like gravel, shingle and sand beaches for nesting. Meanwhile sandwich, common and little tern all favour sand or shingle for nesting and will feed on estuarine habitats. The overwintering waterfowl and wading species are likely to be found throughout the estuary on areas of intertidal mud, coastal grazing marsh, and salt meadows within the SPA, and waterbirds (particularly dark-bellied brent geese) are likely to visit grassland and farmland habitats in proximity to the SPA. Over winter hen harrier likely occupy the wetland/marshland habitats on the SPA, showing preference for lowland coastal areas, heathland, and farmland where they gather in communal roosts. Based on a study of hen harrier in SPAs in Scotland, hen harrier tend to stay within 3-4km of nesting areas, but males have been recorded up to 8.5km from the nest (Arroyo et al. 2014) and can also range widely to hunt in winter. Feeding sources typically comprise small mammals and birds but can include prey as large as grouse, waders, and young rabbits and they could feasibly hunt both RLP and CP (Nota et al. 2019). They are also likely to scavenge dead gamebirds. As such, it is likely that gamebirds would be released into areas where they could encounter hen harrier foraging in proximity to roosting sites. Hen harrier are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging. Based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environments.

Regarding temporal considerations, breeding features are typically on site until as late as August, and breeding common, little, and sandwich tern are typically present from April and depart in August/September to overwinter on the coast of e.g., West Africa. All the overwintering features are present on site from October to March. As qualifying features are present on site year-round it is unavoidable that breeding and overwintering features

are likely to be present on site at the same time as gamebirds would be pre and/or post-release (i.e., during acclimation prior to release in July/August and then during the October-February shooting season). As such, it is feasible that both breeding and overwintering features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, WeBS data suggests Foulness SPA is part of an important wider site for gulls in winter, including black-headed gulls, common gulls, herring gulls, and a smaller number of lesser black-backed gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. As they will forage in farmland and use habitats within the SPA, there is an elevated risk of indirect infection of SPA features from these bridging species. It is also likely that hen harrier would predate upon some of these bridging species.

If the localised risk assessment for Foulness (Mid-Essex Coast Phase 5) SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a 'very low' or 'negligible' risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a 'low' or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of 'very low'.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at 'low' or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Hamford Water

This SPA is designated for non-breeding avocet (*Recurvirostra avosetta*), black-tailed godwit (*Limosa limosa islandica*), dark-bellied brent goose (*Branta bernicla bernicla*), grey plover (*Pluvialis squatarola*), redshank (*Tringa totanus*), ringed plover (*Charadrius hiaticula*), shelduck (*Tadorna tadorna*), teal (*Anas crecca*), and breeding little tern (*Sternula albifrons*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9009131 Hamford Water_SPA (naturalengland.org.uk).

Regarding spatial considerations, the extensive mudflats within the SPA provide feeding habitat for most of the SPA protected species including avocet, black-tailed godwit, grey plover, redshank, ringed plover, shelduck, teal and brent geese. However, the nearby agricultural land and grasslands provide the most crucial component of the diet for brent geese, which are winter-sown cereals, especially wheat. In some areas, brent geese may feed exclusively on agricultural land during the second half of the winter. Little tern nest in loose colonies, excavating scrapes on the sandy-shingle bank and can be found foraging within the marine waters of the SPA. Many of the SPA features roost on areas of saltmarsh, mudflats and sandflats with brent geese also roosting on nearby agricultural land. Whilst many of the SPA features marine habitats, brent geese can be found mainly on agricultural land and grassland and avocet may also roost on surrounding grassland. Gamebirds may also inhabit these areas providing potential for direct transmission via contact in shared habitat, or through spatial overlap of contaminated agricultural land or grassland.

Regarding temporal considerations, all SPA features other than little tern are non-breeding and present on the SPA over winter, likely during August - April. Little tern are summer breeding and present on the SPA April – September. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for Hamford Water SPA, suggests there are many gull species present (including black-headed, great black-backed, herring, lesser black-backed, common, mediterranean, little, Iceland and yellow-legged). These gull species forage in arable land and grassland, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds,

enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit. Little tern are also vulnerable to predation by large gulls on this SPA.

If the localised risk assessment for Hamford Water SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.
B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Humber Estuary

This SPA is designated for non-breeding avocet (*R. avosetta*); bar-tailed godwit (Limosa lapponica); bittern (Botaurus stellaris); black-tailed godwit (Limosa limosa islandica); dunlin (Calidris alpina alpina); golden plover (Pluvialis apricaria); hen harrier (Circus cyaneus); knot (Calidris canutus); redshank (*T. totanus*); ruff (*Calidris pugnax*); shelduck (Tadorna tadorna) and waterbird assemblage, and breeding avocet (R. avosetta); bittern (Botaurus stellaris); little tern (Sternula albifrons) and marsh harrier (*C. aeruginosus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9006111 Humber Estuary SPA (naturalengland.org.uk).

Regarding spatial considerations, The Humber Estuary is a large macro-tidal coastal plain estuary with intertidal and subtidal mudflats, sandflats, saltmarsh, reedbeds and coastal lagoons. The range of habitats supports a variety of wintering, passage and breeding birds, which are widely distributed throughout the site. Many SPA species, including avocet, bar-tailed and black-tailed godwit, dunlin, knot, redshank and ruff can be found foraging and roosting on mudflats and saltmarsh areas. Unvegetated sandy areas and the areas of shingle beach, sand dunes and saline lagoons form an ideal breeding ground for little tern. Waterbird assemblage species are highly mobile, feeding and roosting in different areas depending on food availability and tides. As a result, all areas of the Humber SPA are important for the assemblage and all supporting habitats are utilised by the various species. Wildfowl and waders also feed and roost outside the boundary of the SPA on agricultural land (both arable land and permanent pasture) and wet grassland. These areas are also used by dunlin, black-tailed godwit, golden plover, hen harrier, marsh harrier, redshank and ruff for roosting and feeding. Whilst many of the SPA features favour intertidal, saltmarsh and coastal lagoon habitats, several also utilise agricultural land (both arable land and permanent pasture) and grassland, with golden plover and marsh harrier in particular hunting over a large area, therefore providing potential for direct transmission via contact in shared habitat, or through spatial overlap of contaminated arable land or grassland.

Regarding temporal considerations, there are both breeding and overwintering features on this SPA, meaning protected birds will be present year-round. Resident bittern are joined in autumn or winter by wintering birds from north and east European populations, with bar-tailed godwit arriving at the beginning of September from breeding in Scandinavia and Russia. The SPA supports overwintering flocks of dunlin, knot, golden plover, hen harrier; whilst ruff and redshank are most commonly found during passage periods in both spring and autumn. The breeding season for avocet is May – June, bittern is April – August, little tern April – July, and marsh harrier April – August. Black-tailed godwit, shelduck and waterbird assemblage species can be found on the SPA in significant numbers all year round. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for Humber Estuary SPA, suggests there are many gull species present (including black-headed, common, herring, great black-backed, lesser black-backed, mediterranean, yellow-legged, glaucous and iceland). These gull

species forage in arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit.

If the localised risk assessment for Humber Estuary SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be

reduced sufficiently to conclude no adverse effect on site integrity.

Leighton Moss (copied from M-risk HRA)

This SPA is designated for breeding bittern (*B. stellaris*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9005091_Leighton Moss_SPA_Published 14 Sep 2023 (naturalengland.org.uk). NE has advised that this SPA is an important breeding habitat for bittern and supported four breeding pairs at the time of its classification, which represented approximately 20% of the British breeding population. Between 2009 and 2017 no breeding occurred at the site; and only one pair was confirmed breeding in 2018. Breeding appears to have been adversely affected by factors other than gamebird release (i.e., changes to food supply, lowering of the water table due to abstraction, and local pollution), though this does not preclude the potential for additional pressure on the species from gamebird release. The WeBS five-year peak mean of this species at Leighton Moss SPA is 198 (2017/18 – 2021/22) and the population is not currently considered to be in favourable condition. Regarding spatial considerations, bittern show a highly localised preference for dense reedbeds and wetland habitat, rarely venturing into open habitats. As such, they are not at risk of direct HPAIV transmission via contact with gamebirds nor indirect transmission via spatial overlap of contaminated environments owing to distinctly different habitat preferences.

Regarding temporal considerations, bittern breed on site until the end of September, but NE has advised that individuals remain on site over winter so there is certainty that bittern and released gamebirds would be present on the SPA at the same time.

Regarding bridging species, at Leighton Moss they include gulls (namely black-headed gulls), marsh harrier, and starlings. Black-headed gulls have been seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and utilise wetlands within the SPA, there is a risk of indirect transmission to bittern from these bridging species. Starlings roost in the reedbeds but feed in various habitats across the SPA, where they could encounter contaminated environments and facilitate transmission via environmental contamination of reedbeds occupied by bittern. Marsh harrier could facilitate transmission between gamebirds and bittern via environmental contamination as they are present on the reedbeds and range more widely. Given that a significant proportion of marsh harrier remain on site over winter this species could be exposed to HPAIV directly via predation on infected CP (and potentially scavenging of dead CP, though this is less likely) or indirectly via predation on another bridging species (e.g., waterbirds). Other potential bridging species include greylag geese, which are known to feed on agricultural land and visit wetlands for e.g. bathing and roosting.

If the localised risk assessment for Leighton Moss SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA

can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as bittern individuals remain on site over winter a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering bittern occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Lower Derwent Valley (copied from M-risk HRA)

This SPA is designated for breeding northern shoveler (*Anas clypeata*) and non-breeding Bewick’s swan (*C. columbianus bewickii),* Eurasian wigeon (*A. penelope*), Eurasian teal (*A. crecca*), golden plover (*P. apricaria*), ruff (*Philomachus pugnax*) and an overwintering waterbird assemblage of over 20,000 waterfowl. In addition to the overwintering species

listed above, this winter assemblage includes shoveler (*A. clypeata*), pochard (*Aythya ferina*), and whimbrel (*Numenius phaeopus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9006092_Lower Derwent Valley_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, NE advice states that breeding shoveler tend to concentrate around North Duffield Carrs, Bank Island and Wheldrake where winter flood water usually remains into early spring. The mosaic of wet grassland and fen vegetation, in close proximity to a network of dykes ditches and pools, provides ideal habitat. Given that this species favours wet grasslands, to which CP are also attracted, poses a risk of HPAIV transmission via direct contact or spatial overlap of contaminated environments. Overwintering Bewick's swan have historically been associated with Bubwith Ings, Aughton Ings and North Duffield Carrs where they feed on soft meadow grasses and adjacent farmland around Aughton and North Duffield. Wigeon are widely distributed across the site where they feed on the seasonally flooded grasslands and make consistent use of some areas (e.g., Wheldrake Ings) each year. Similarly, teal are also widely distributed across the site and feed amongst vegetation such as reed canary grass. NE has advised that Melbourne and Thornton Ings, Ellerton Ings, and Bubwith Ings may be particularly important. Golden plover are found throughout the site and surrounding farmland and are known to leave the site for the Humber Estuary and other coastal sites in periods of severely cold winter weather. Ruff are also widely distributed across the site, occupying areas wherever flooding conditions are suitable. Similarly, additional species (e.g., shoveler, pochard, and whimbrel) which contribute to the overwintering assemblage are supported by the rich food resources of the floodplain meadows and are widely distributed across the SPA. As CP have been seen to show preference for marshy ground and gamebirds are known to occupy farmland into which qualifying features may range to feed, it is likely that qualifying features could be at risk of HPAIV transmission via direct contact in shared habitat, or spatial overlap of contaminated environments. Annex

Regarding temporal considerations, breeding shoveler are on site from March to June, but also form part of the overwintering waterbird assemblage. Overwintering wigeon, teal, golden plover, and the overwintering assemblage are present on site from October to March. Overwintering Bewick's swan arrive later than other species and are on site from December to March. The ruff population is present on site through winter, but migrating birds also occupy the site between late February and April, so populations on site during this period can include both overwintering and passage populations, meaning this species is present on the SPA between October and April. As qualifying features are present on site year-round it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for Lower Derwent Ings suggests that several species of gull are present, including black-headed gulls, common gulls, and herring gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk

of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Lower Derwent Valley SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Mersey Estuary

This SPA is designated for non-breeding common shelduck (*Tadorna tadorna)*; eurasian teal (*Anas crecca);* northern pintail (*Anas acuta);* european golden plover (*Pluvialis apricaria*); dunlin (*Calidris alpina alpina);* black-tailed godwit (*Limosa limosa islandica);* common redshank (*Tringa tetanus)* and a waterbird assemblage. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9005131 Mersey Estuary SPA (naturalengland.org.uk).

Regarding spatial considerations, the Mersey Estuary SPA is composed of extensive intertidal mud and sandflats, distinct areas of rocky shore, and areas of saltmarsh. The large areas of intertidal sand and mudflats are submerged at high tide and exposed in the estuary at low tide providing an important feeding habitat for birds. The estuary also provides extensive roosting sites for large populations of waterbirds.

Shelduck feed predominantly along the muddy intertidal areas and also utilise farmland, wetland, and grassland habitats. Teal are shallow water feeders and mostly congregate where the mudflats, creeks and saltmarsh provide suitable feeding grounds. They are also known to occupy marine, intertidal, wetland, and grassland habitats. Pintail roost and feed at high tide on the edges of the saltmarsh within Mersey Estuary SPA. Other supporting habitats include intertidal mud, rock and sand, coastal grazing marsh, marine, intertidal, wetland and grassland. Golden plover are not typically an estuarine species but are known to feed on adjacent inland fields and cropped land and may come to the estuary to roost at night. They may feed on the intertidal mud areas when weather conditions are harsh and the ground too hard to allow inland feeding. Dunlin are known to utilise upland, marine and intertidal, heathland, wetland and grassland habitats. Black-tailed godwit on the Mersey Estuary SPA move between the mudflats and upper marshes and adjacent arable and wet grassland. Redshank require extensive areas of water in which to feed and are known to feed throughout the SPA, moving between the mudflats and upper marshes to adjacent arable and wet grassland. The main components of the non-breeding waterbird assemblage present on the SPA are great crested grebe, shelduck, wigeon, teal, pintail, ringed plover, golden plover, grey plover, lapwing, dunlin, black-tailed godwit, curlew and redshank. Most components of the assemblage utilise the same habitats as gamebirds on the SPA and on farmland outside of the SPA. Whilst many of the SPA features favour marine intertidal and wetland habitats, several also utilise inland fields, arable and grassland habitats, therefore providing potential for direct transmission via contact in shared habitat, or through spatial overlap of contaminated arable land or grassland.

Regarding temporal considerations, all SPA features are non-breeding and overwinter on the SPA. Shelduck are broadly present from October to March, teal from late August onwards, typically reaching peak numbers in December/January and pintail typically arrive in early September to overwinter on the site. Breeding golden plover move from inland moorland breeding to overwinter on the SPA and winter migrants arrive in September/October and stay until February/March. Dunlin are present on the site between April and June on spring passage, and in August and September on autumn passage. The Dunlin that overwinter on the SPA migrate from breeding grounds in western Siberia. Black-tailed godwit start arriving on the SPA in July/August and remain on site in large numbers until September with numbers dropping significantly in October

when birds move further south to winter. Common redshank visit the SPA on passage between their breeding grounds in Iceland and the Faroe Islands and their overwintering grounds. Birds are typically present on site from September, with some early arrivals in July/August. The waterbird assemblage is a non-breeding assemblage of passage and overwintering birds. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for Mersey Estuary SPA suggests that several species of gull are present, including black-headed gulls, lesser black-backed gull, herring gull, common gull and great black-backed gull. Other gull species are present but recorded in very low numbers i.e., average population over the past five years being fewer than 5 individuals. All of the gull species present could act as bridging species and provide an indirect HPAIV transmission route between gamebirds and qualifying features.

If the localised risk assessment for Mersey Estuary SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as

possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Minsmere-Walberswick (copied from M-risk HRA)

This SPA is designated for breeding avocet (*R. avosetta*); bittern (*B. stellaris*); gadwall (*M. strepera*); little tern (*S. albifrons*); marsh harrier (*C. aeruginosus*); nightjar (*C. europaeus*); shoveler (*S. clypeata*); and teal (*A. crecca*) and non-breeding gadwall (*M. strepera*); greater white-fronted goose (*A. albifrons albifrons*); hen harrier (*C. cyaneus*); and shoveler (*S. clypeata*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk).

Regarding spatial considerations, the qualifying features utilise the grazing marsh, estuarine, reedbed, lowland heath, and woodland habitats of the SPA, as well as adjacent habitats like open grassland and arable land. During the breeding season avocet and teal are known to occupy marshland, bittern and marsh harrier breed in reedbeds, breeding gadwall and shoveler occupy wetland habitats, little tern favour sand and shingle habitat for nesting, and nightjar nest in heathland. Overwintering gadwall, hen harrier, and shoveler typically occupy the wetland/marshland habitats, and greater white-fronted geese can be found on wetland and farmland habitats. As SPA features use habitats into which gamebirds could be released this could pose a risk of direct transmission via contact with gamebirds and/or indirect transmission via spatial overlap of contaminated environments. Over winter hen harrier tend to gather in communal roosts. Based on a study of hen harrier in SPAs in Scotland, hen harrier tend to stay within 3-4km of nesting areas, but males have been recorded up to 8.5km from the nest (Arroyo et al. 2014) and can also range widely to hunt in winter. Feeding sources typically comprise small mammals and birds but can include prey as large as grouse, waders, and young rabbits and they could feasibly hunt both RLP and CP (Nota et al. 2019). They are also likely to scavenge dead gamebirds. As such, it is likely that gamebirds would be released into areas where they could encounter hen harrier foraging in proximity to roosting sites. Hen harrier are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging. Marsh harrier could similarly be vulnerable to direct transmission as they could be exposed to HPAIV via predation on infected CP (and potentially scavenging of dead CP, though this is less likely) or indirectly via predation on bridging species (e.g., waterbirds).

Regarding temporal considerations, qualifying features are designated for their breeding and/or non-breeding populations. Breeding features are typically on site until as late as

August, while overwintering features are on site from approximately October to March. This means that both breeding and overwintering features are likely to be present on site at the same time as gamebirds would be pre and/or post-release (i.e., during acclimation prior to release in July/August and then during the October-February shooting season). As such, it is feasible that both breeding and overwintering features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, WeBS data for the SPA suggests that several species of gull are present, including black-headed gulls, greater black-backed gulls, and common gulls.

Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. Corvid species are also a concern as they likely interact with the wetland wildfowl, waders, birds of prey, and little tern. NE advice states that gulls and corvids are likely to range throughout SPA habitats, enabling HPAIV transmission via indirect environmental contamination to habitats that the qualifying SPA features also inhabit. It is also likely that hen harrier would predate upon some of these bridging species.

If the localised risk assessment for Minsmere-Walberswick SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions

should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Morecambe Bay and Duddon Estuary

This SPA is designated for breeding common tern (*Sterna hirundo*), herring gull (*Larus argentatus*), lesser black-backed gull (*Larus fuscus*), little tern (*Sternula albifrons*), sandwich tern (*Thalasseus sandvicensis*), and a seabird assemblage and non-breeding bar-tailed godwit (*Limosa lapponica*), black-tailed godwit (*Limosa limosa islandica*), curlew (*Numenius arquata*), dunlin (*Calidris alpina alpina*), golden plover (*Pluvialis apricaria*), grey plover (*Pluvialis squatarola*), knot (*Calidris canutus*), lesser black-backed gull (*Larus fuscus*), little egret (*Egretta garzetta*), mediterranean gull (*Ichthyaetus melanocephalus*), oystercatcher (*Haematopus ostralegus*), pink-footed goose (*Anser brachyrhynchus*), pintail (*Anas acuta*), redshank (*Tringa totanus*), ringed plover (*Charadrius hiaticula*), ruff (*Calidris pugnax*), sanderling (*Calidris alba*), shelduck (*Tadorna tadorna*), turnstone (*Arenaria interpres*), waterbird assemblage, and whooper swan (*Cygnus cygnus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9020326 Morecambe Bay and Duddon Estuary SPA (naturalengland.org.uk).

Regarding spatial considerations, the site comprises areas for breeding seabirds, foraging breeding seabirds, non-breeding seabirds and waterbirds utilising a range of habitats, and many features can be found throughout the SPA with additional roost sites outside the SPA. Curlew are well distributed around the SPA and can be found on soft estuarine muds, saltmarsh, agricultural land and mussel beds, with nocturnal coastal roosts supplemented by large numbers of birds that spend the day feeding in fields, possibly several miles in land. Golden plover feed on pioneer saltmarsh and favour mudflats within the SPA but also utilise functionally linked land, preferring short sward and bare winter stubble on arable land. Dunlin feed predominately on mud and silty areas but roost on sand, shingle and saltmarsh with additional roost sites outside the SPA. Pink-footed geese often feed inland on surrounding farmland but roost on the estuary on coastal flats and sandbanks. Ruff generally feed outside of the SPA on wet grassland taking invertebrate prey. Frequent aggregations of over 200 whooper swans have been recorded on marshes

and functionally linked coastal grassland, feeding on marshes and coastal fields in and around the SPA. Black-tailed godwits are found throughout the SPA with aadditional roost sites occurring outside the site. Common tern nest and feed close to breeding colonies in inshore waters. Herring gull are frequently found on intertidal mud flats, as well as nearby fields, rubbish dumps and bodies of freshwater. Knot feed on sand banks and mussel beds as well as higher up shore on salt marsh with prey items varying in relation to the state of the tide. Little egret feed in creeks and pools on saltmarsh which have been recharged by the tide. Little tern nest on sand and shingle and have a very limited foraging range when breeding of between 2 and 6 km from the nest site, feeding inshore and in coastal lagoons. Redshank feed on a wide variety of habitats over the whole of the tidal cycle however mud is very important due to the abundance of its main food source. Ringed plover feed on sandy substrates and take associated invertebrate species from the surface. Sanderling feed on open coast taking prey items from the surface in between waves. Ruff generally feed outside of the SPA designated area on wet grassland taking invertebrate prey. Sandwich tern breed on coastal shingle and sand and routinely forage in areas of shallow water along narrow coastal areas. Shelduck are widespread on all estuaries found within the SPA, feeding on intertidal mudflats and roosting on saltmarsh. Turnstone utilise mussel beds and stony scars within the SPA feeding on a variety of marine invertebrate species. Higher concentrations of oystercatchers correlate with the areas containing large mussel beds and they may feed on other prey offsite during high tide. Pink-footed geese feeding habitat can be found to the east of the SPA on surrounding farmland often feeding inland but roosting on the estuary, coastal flats, sandbanks, undisturbed water and sometimes heather moor, mainly remaining within 5-10 km of roosting sites. The SPA has 27 qualifying features with a further 82 species forming the waterbird assemblage, with qualifying features being widely spread throughout the SPA and many also utilising farmland and arable land. As such, based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environment.

Regarding temporal considerations, the SPA has both breeding and non-breeding features meaning qualifying features are present on site all year round. The highest number of bar-tailed godwit are observed at winter roost sites between October and February, coming primarily from north-east Scandinavia and western Siberia to winter in the UK. Black-tailed godwit are present July-May and the site is internationally important for wintering birds. Common tern breed in the SPA in summer between May-August and overwinter in south and west Africa. Morecambe Bay is the most important site in the country for wintering curlew who are present on the site June-April. Nationally important numbers of dunlin are found roosting in the SPA during winter, however they can also be found on site July-May. Golden plover and grey plover are both present on the SPA from August-April. Herring gulls can be found on site March-August breeding between May and July. Overwintering knot in Morecambe Bay arrive on site in September after breeding in Greenland and Canada and are present until April. Lesser black backed gulls are both a breeding and non-breeding feature of the SPA. Some individuals migrate to Portugal and Morocco in winter however some birds remain in the SPA over winter, therefore some of the breeding birds in summer are also contributing to the non-breeding winter population. Little egret are present most of the year from July – May, with little tern being a summer visitor for

breeding between May- August before overwintering in Africa. Mediterranean gull, oystercatcher, pink-footed goose, pintail and redshank are all non-breeding features present on the SPA overwinter from November-March. Ringed plover can be found on site most of the year from August-May. The majority of non-breeding ruff in the SPA are on passage to and from wintering grounds in southern Europe/Africa and breeding grounds in Scandinavia. A small number of the species overwinter in the SPA therefore some birds will be present July-May. Sanderling are also present most of the year from August-May. Sandwich terns are summer visitors to the SPA for breeding between April-August before overwintering in southern Europe and Africa. Non-breeding shelduck and turnstone are on site for most of the year with shelduck present August-June, and turnstone August-May. Whooper swans arrive around autumn time from breeding populations in Iceland and can be found on the SPA September-May. As there are qualifying features present on site year-round it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for the SPA suggests that several other species of gull are present, including black-headed gull, common gull, great black-backed gull, mediterranean gull, and yellow-legged gull. Gulls will forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and make use of wetland within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Morecambe Bay and Duddon Estuary SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

New Forest (copied from M-risk HRA)

This SPA is designated for breeding Dartford warbler (S. undata), hobby (Falco Subbuteo), honey buzzard (*Pernis apivorus*), nightjar (*C. europaeus*), wood warbler (*Phylloscopus sibilatrix*), and woodlark (*L. arborea*) and non-breeding hen harrier (*C. cyaneus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9011031_The New Forest_SPA_Published 14 Sep 2023 (naturalengland.org.uk). Regarding spatial considerations, several of the SPA features (Dartford warbler, nightjar, woodlark, hobby) are known to utilise lowland heathland and woodland throughout the SPA. Breeding nightjar are ground nesting birds typically found on heathlands, moorlands, open woodland, and recently felled conifer plantations. Nightjar typically forage in non-heathland habitat with a preference for woodland and woodland edges and are known to forage up to 2km from nesting areas in open forest and heathland and will make use of land outside of the SPA for foraging. Hobbys in the New Forest breed in open lowland heathland and woodland. Dartford warbler primarily occupy mature lowland heathland, and particularly favour areas of tall, dense gorse and tall mature heather for nesting. Wood warblers occupy broad-leaved woodland and nest on or close to the ground in relatively open ground vegetation, avoiding areas of dense shrub or understorey. Wood warbler are considered unlikely to interact with gamebirds or bridging species. Honey buzzard nest in secluded mature woodland and the home range of breeding birds can extend to 4km from their nests. The principal habitat of overwintering hen harrier is lowland heathland, where they occupy communal roosts in mature dry heath. Based on a study of hen harrier in SPAs in Scotland, male hen harrier have been recorded up to 8.5km from the nest (Arroyo et al. 2014) during the breeding season and can range widely in winter. As RLP often prefer open habitat and CP are more likely to occupy woodland and grassland areas, it is

feasible that the qualifying features could be vulnerable to indirect HPAIV transmission from released gamebirds through spatial overlap of contaminated environments, namely feeding grounds.

Regarding temporal considerations, different breeding features are present throughout the summer months from April to September. The most significant numbers of nightjar are on site from May to September, hobby are on site from May to August, honey buzzard are on site from April to September, wood warbler are present from April to August, Dartford warbler are present in highest numbers from April to June, and woodlark are on site from February to June. Both Dartford warbler and woodlark are known to remain on site over winter. Overwintering hen harrier are present from October to March. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, NE advice has not raised the presence of any bridging species of note at this site. However, as with other heathland and woodland SPAs, it is feasible that farmland birds and other passerines that inhabit the SPA and/or adjacent lowland farmland could interact with gamebirds where they are released as well as habitats throughout the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit.

If the localised risk assessment for New Forest SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following

actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

North Norfolk (copied from M-risk HRA)

This SPA is designated for breeding bittern (B. Stellaris), marsh harrier (C. aeruginosus), Montagu's harrier (Circus pygargus), avocet (R. avosetta), sandwich tern (T. sandvicensis), common tern (*S. hirundo*), and little tern (*S. albifrons*). It is also designated for non-breeding dark-bellied brent goose (*B. bernicla bernicla*), knot (*C. canutus*), pink-footed goose (*Anser brachyrhynchus*), wigeon (*M. penelope*) and an overwintering waterbird assemblage of over 10,000 waterfowl (average over 20,000). In addition to the overwintering species listed above, this winter assemblage includes European white-fronted geese (*Anser albifrons albifrons*), shelducks (*T. tadorna*), grey plovers (*P. squatarola*), ringed plovers (*C. hiaticula*), oystercatchers (*H. ostralegus*), and redshanks (*T. totanus*). The SPA encompasses a variety of coastal habitats, including intertidal mudflats and sandflats, coastal waters, saltmarshes, shingle, sand dunes, freshwater grazing marshes, and reedbeds. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk). Regarding spatial considerations, breeding bittern show a highly localised preference for dense reedbeds and wetland habitat, rarely venturing into open habitats, so are not at risk of direct transmission via contact with gamebirds nor indirect transmission via spatial overlap of contaminated environments. Marsh harrier are wetland raptors and are mainly found nesting on the ground in areas of reed bed and can have home ranges several kilometres from nesting territories, often hunting over nearby arable farmland, saltmarshes, reedbeds, and grasslands. Their diets can be very varied (ranging from insects and amphibians to small mammals) and includes birds, which could bring them into direct contact with gamebirds via predation on smaller gamebirds or indirectly via predation on bridging species.

Montagu's harrier typically occupy farmland, wetland, and grassland habitats, but 2023 advice from NE confirmed that there are no longer any individuals present on the SPA, so impacts are not reviewed here. Breeding avocet are known to occupy marshland and intertidal mudflats and saline lagoons provide feeding habitat, while all three species of

tern favour sand or shingle for nesting, making use of the sand and shingle beaches within the SPA. Overwintering waterbirds utilise a wide range of habitats across the SPA as well as adjacent grassland, lowland farmland, and coastal waters. As RLP often prefer open habitat and CP are more likely to occupy woodland and grassland areas, it is feasible that the qualifying breeding and overwintering features could be vulnerable to indirect HPAIV transmission from released gamebirds through spatial overlap of contaminated environments.

Regarding temporal considerations, breeding birds are present in the spring and summer, though some features are present year-round. Breeding avocet are on site from March to August, bittern breed and then remain on site over winter so are present year-round, marsh harrier are present from March to October, Montagu's harrier (if they were still observed on site) would usually be present from March to September. Common, little and sandwich tern all breed on site from April to August. Overwintering species are generally present from October to March, but some arrive earlier/depart later than other species. For example, dark-bellied brent geese overwinter on site from October to May, knot from August to March, and pink-footed geese and wigeon are on site from September to March. As qualifying features are present on site year-round it is unavoidable that breeding and overwintering features are likely to be present on site at the same time as gamebirds would be pre and/or post-release (i.e., during acclimation prior to release in July/August and then during the October-February shooting season). As such, it is feasible that both breeding and overwintering features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, at North Norfolk Coast WeBS data indicates they likely include gulls, including black-headed gull, herring gull, common gull, and great black-backed gull. Black-headed gulls have been seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species. Wildfowl can also feed in various habitats across the SPA and visit agricultural land to feed, which could bring them into direct contact with released gamebirds or subject them to indirect transmission via spatial overlap of contaminated environments. Wildfowl could then facilitate transmission via environmental contamination of wetlands (where they bathe/roost) occupied by qualifying features. NE has advised that wintering bird species on the North Norfolk Coast are highly likely to interact with gamebirds and/or bridging species. Marsh harrier and Montagu's harrier (if present) may also be susceptible to indirect HPAIV transmission via the bridging species that they prey upon. The typical diet of marsh harrier can be very varied (ranging from insects and amphibians to small mammals) but is known to regularly include birds, such as the chicks of waterbirds. Female harriers, which are larger, can also target larger prey including moorhens, water rails and wading birds.

If the localised risk assessment for North Norfolk SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or

‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

North Pennine Moors (copied from M-risk HRA)

This SPA is designated for breeding golden plover (*P. apricaria*), breeding hen harrier (*C. cyaneus*), breeding merlin (*F. columbarius*), and breeding peregrine falcon (*Falco peregrinus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9006272_North Pennine

Moors_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, golden plover breed on heather moorland, blanket bog, acidic grassland and montane summits, where they typically nest in a shallow scrape on the ground hidden by moorland vegetation. They also utilise pasture and marshy areas for feeding on invertebrates. It is feasible that golden plover and released gamebirds could range into the same habitats on the SPA, which poses the risk of direct interaction and indirect transmission via spatial overlap of contaminated environments. Breeding hen harrier are strongly associated with heather-dominated habitat on upland moorland but may utilise young plantations if suitable. Based on a study of hen harrier in SPAs in Scotland, hen harrier tend to stay within 3-4km of nesting areas, but males have been recorded up to 8.5km from the nest (Arroyo et al. 2014). Hen harrier can also associate with upland sites year-round and can range widely in winter. Feeding sources typically comprise small mammals and birds but can include prey as large as grouse, waders, and young rabbits and they could feasibly hunt both RLP and CP (Nota et al. 2019). They are also likely to scavenge dead gamebirds. As such, it is likely that gamebirds would be released into areas where they could encounter hen harrier foraging in proximity to their moorland breeding sites. Hen harrier are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging. Similarly, breeding merlin also favour heather moorland and sometimes nest in trees, showing nesting site fidelity year to year. Merlin hunt small mammals, birds and insects, but not usually gamebirds, though the risk of predation on smaller gamebirds cannot be ruled out and they could be at risk from direct transmission via predation or scavenging on infected gamebirds where habitats overlap. Peregrine falcon tend to nest on inaccessible cliffs and rock faces so are unlikely to be at risk of indirect transmission via spatial overlap of contaminated environments; however, peregrine falcon are known to take a wide range of avian prey, including CP, so are at risk of direct HPAIV transmission via predation. This species can range around 2km from their nests and typically defend nesting territories 2-9km in size, but rarely hunt birds beyond 6km away. Given their wide-ranging behaviour it is feasible that released gamebirds could enter habitats occupied by peregrines, which poses the risk of direct HPAIV transmission via predation and scavenging.

Regarding temporal considerations, breeding populations of golden plover and merlin are known to be on site from March and depart in late July/early August for lowland areas. Similarly, hen harrier and peregrine falcon also breed from March to August, but hen harrier can remain on upland sites year-round and the presence of overwintering hen harrier in the area has been confirmed by the hen harrier programme. Some peregrine falcon are also known to remain on site year-round if sufficient food is available. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for HPAIV transmission.

Regarding bridging species, on the North Pennine Moors they include small ‘open country’ birds (e.g., meadow pipits, skylarks, wheatears) that may feed on gamebird feed and provide an indirect transmission pathway to the birds of prey, namely merlin, that feed on them. While merlin usually leave the site by early August, there is the potential for gamebirds and this qualifying feature to be present on the SPA at the same time, so there is potential for these bridging species to provide an indirect transmission route between gamebirds and merlin during this time.

If the localised risk assessment for North Pennine Moors SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as hen harrier and peregrine falcon remain on site over winter a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering breeding hen harrier and peregrine falcon occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.
B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

North York Moors (copied from M-risk HRA)

This SPA is designated for breeding golden plover (*P. apricaria*) and breeding merlin (*F.*

columbaris). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9006161_North York Moors_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, golden plover breed on heather moorland, blanket bog, acidic grassland and montane summits, where they typically nest in a shallow scrape on the ground hidden by moorland vegetation. They also utilise pasture and marshy areas for feeding on invertebrates. Post-breeding they typically disperse from the moorland areas to lowland areas e.g. farmland. It is feasible that golden plover and released gamebirds could range into the same habitats on the SPA, which poses the risk of direct interaction and indirect HPAIV transmission via spatial overlap of contaminated environments. Breeding merlin also favour the heather moorland on this SPA and can sometimes nest in trees. Merlin hunt small mammals, birds and insects, but not usually gamebirds, though the risk of predation on smaller gamebirds cannot be ruled out and they could be at risk from direct transmission via predation or scavenging on infected gamebirds where habitats overlap. Merlin typically disperse from uplands into lowland habitats following breeding.

Regarding temporal considerations, the golden plover population is known to be on site from March and departs the SPA by the end of July for lowland areas. Merlin are also considered to be an upland bird during the breeding season, leaving breeding areas to spend winter around lowland saltmarshes. The North York Moors merlin population is known to be on site from April and departs the site by the end of August each year. While breeding features should be off site for much of the time that gamebirds are present on the SPA, there is the potential for overlap if gamebirds are released into pens/onto site in July/August prior to the October-February shooting season, which could allow for transmission.

Regarding bridging species, on the North York Moors they include small ‘open country’ birds (e.g., meadow pipits, skylarks, wheatears) that may feed on gamebird feed and provide an indirect transmission pathway to the birds of prey, namely merlin, that feed on them. While merlin leave the site in August, there is the potential for gamebirds and this qualifying feature to be present on the SPA at the same time, so there is potential for these bridging species to provide an indirect transmission route between gamebirds and merlin during this time.

If the localised risk assessment for North York Moors SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only, that are known to leave the site by the end of August, then a delayed release date of the 7th September could be used to ensure that the features are not at risk of HPAIV transmission, directly or indirectly, from released gamebirds.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP and a delayed release date of the 7th September was added to the licence, Defra could conclude that the release of gamebirds with the delayed release date would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would be included in the new licence with a delayed release date of the 7th September, until such time when the risk score for the site is reduced to 'very low' or 'negligible' and the delayed release date can be removed.

B. If the licence is already published with this site included, Defra will, as soon as possible, modify the licence to add a condition with a delayed release date of the 7th September, until such time when the risk score for the site is reduced to 'very low' or 'negligible' and the delayed release date can be removed.

Action taken under point A or B above will ensure that gamebirds are not released until breeding features have left the site, and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Outer Thames SPA

This SPA is designated for non-breeding red-throated diver (*Gavia stellata*), and breeding common tern (*Sterna hirundo*), and little tern (*Sternula albifrons*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9020309_Outer Thames Estuary_SPA (naturalengland.org.uk).

Regarding spatial considerations, the many sandbanks within the SPA are important foraging grounds for red-throated divers who fish in shallow coastal waters and move between sandy bays, sandbanks and the mouth of the estuary. Common tern and little tern breed on intertidal sandbank and use the shallow coastal waters of the SPA for foraging. Common tern usually forage within 15km of their breeding colony; little tern foraging ranges are limited, with key areas usually within 6km of breeding colonies. Both common tern and little tern also use the SPA for a wide range of maintenance activities, such as bathing and loafing. Based on the different habitat preferences of gamebirds and the qualifying features of the SPA, there is likely to be no risk of transmission through

direct contact in shared habitat.

Regarding temporal considerations, breeding common tern and little tern are present in highest numbers between April and September. Red-throated diver overwinter on the SPA and can be found year-round. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data suggests that several species of gull are present, including black-headed gulls, lesser black-backed gull, herring gull, common gull, mediterranean gull, great black-backed gull, lesser black-backed gull, and yellow-legged gull. All of the gull species present could act as bridging species and provide an indirect HPAIV transmission route between gamebirds and qualifying features.

If the localised risk assessment for Outer Thames SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Peak District Moors (copied from M-risk HRA)

This SPA is designated for breeding golden plover (P. apricaria), breeding merlin (F. columbaris), and breeding short-eared owl (*Asio flammeus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9007021_Peak District Moors (South Pennine Moors Phase 1)_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, and as with other upland moorland sites, golden plover breed on heather moorland, blanket bog, acidic grassland and montane summits, where they nest in a shallow scrape on the ground hidden by moorland vegetation. On this SPA they typically use the blanket bog habitat and are more common on the higher and more remote bogs, with the blanket bogs of the Eastern Peak District Moors supporting good numbers of breeding golden plover. Most breeding pairs are found within the Dark Peak area. Adults can travel up to 4km from nesting areas and are known to feed on marginal or low-intensity agricultural pastures outside of the SPA but close to moorland nesting habitat. It is feasible that golden plover and released gamebirds could range into the same habitats on the SPA and on farmland outside of the SPA, which poses the risk of both direct interaction and indirect transmission via spatial overlap of contaminated environments. Breeding merlin also favour the heather moorland on this SPA and can sometimes nest in trees. Merlin are widespread across the site and utilise an extensive area for hunting. They are known to hunt small mammals, birds and insects, but not usually gamebirds, though the risk of predation on smaller gamebirds cannot be ruled out and they could be at risk from direct transmission via predation or scavenging on infected gamebirds where habitats overlap. Short-eared owl are associated with upland grassland and young forestry during the breeding season, before moving to a range of grassland habitats in winter. Regarding transmission between gamebirds and short-eared owls, NE expert ornithological advice has confirmed that short-eared owl are unlikely to consume pheasant, although scavenging of carcases cannot be ruled out. There is also a risk of indirect HPAIV transmission through the spatial overlap of foraging areas and shared use of contaminated environments (both short-eared owl and pheasant forage on the ground and will use scattered scrub).

As with the North Pennine Moors and North York Moors populations of golden plover and merlin, birds are known to leave the moors by the end of July and August (respectively) to spend winter in lowland areas. As such, while these breeding features should be off site for much of the time that gamebirds are present on the SPA, there is the potential for overlap with some features if gamebirds are released into pens/onto site in July/August prior to the October-February shooting season, which could allow for transmission. The

short-eared owl population is known to breed between April and July before departing the site, though some individuals may remain on site over winter. The population size and likelihood that owls remain on the SPA over winter is known to fluctuate significantly year on year in response to variations in field vole populations, their main prey. In years when voles are abundant, short-eared owls may remain for extended periods and form loose communal roosts over the winter period, whereas in other years the species will leave the SPA after breeding in July. NE advised in 2023 an over-wintering population could be more vulnerable to impacts from HPAIV, the overall risk to this species is low due to the combination of the indirect transmission pathway; the variability in whether the species remains on the SPA over-winter; and if it does, these periods of extended presence will not necessarily persist sufficiently long enough to infect the returning breeding owl population.

Regarding bridging species, on the Peak District Moors they include small 'open country' birds (e.g., meadow pipits, skylarks, wheatears) that may feed on gamebird feed and provide an indirect transmission pathway to merlin, which hunt them. While merlin leave the site in August, there is the potential for gamebirds and this qualifying feature to be present on the SPA at the same time, so there is potential for these bridging species to provide an indirect transmission route between gamebirds and merlin.

If the localised risk assessment for Peak District Moors SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a 'very low' or 'negligible' risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a 'low' or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of 'very low'.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at 'low' or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as short-eared owl individuals may remain on site over winter a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering short-eared owl occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Porton Down

This SPA is designated for breeding stone curlew (*Burhinus oedicnemus*)**.** Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9011101 Porton Down SPA published 18 June 2018 (naturalengland.org.uk).

Regarding spatial considerations, the broad habitat types present within and close to the SPA are lowland calcareous grassland, improved grassland and arable. Stone curlew nest on open, bare ground or areas with short or sparse vegetation height below 2 cm, breeding on the chalk grassland within the SPA and tilled plots within improved grassland and arable outside the SPA. The stone-curlew's preferred feeding habitats within the SPA and surrounding areas are short grassland, both semi-natural and improved, spring tillage, pig fields and manure heaps, favouring large areas of open terrain, in and around nesting, roosting and feeding areas. The habitats associated with the SPA and its qualifying feature means that there is a high probability of released gamebirds directly or indirectly interacting with protected features, and therefore a risk of direct and indirect HPAIV transmission.

Regarding temporal considerations, stone-curlews are migratory, and return from their wintering quarters in southern Spain, southwestern France and north-western Africa to their breeding grounds in England in late March. The breeding season is well spread out, with egg laying starting from April and can continue as late as August with checks fledging at 36-42 days. It is likely that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, the site is also used by non-qualifying hen harrier, merlin and short-eared owl, who are present year-round and also utilise grassland. Therefore, may directly interact with gamebirds and protected features, through shared habitat and predation, providing a direct and indirect HPAIV transmission route.

If the localised risk assessment for Porton Down SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. The site has breeding stone curlew only, present between April – August, however the breeding season is well spread out and egg-laying can continue as late as August with checks fledging at 36-42 days. Therefore, a delayed release date of the 1st October could be used, to allow sufficient time for chicks to fledge, ensuring that the protected features are not at risk of HPAIV transmission, directly or indirectly, from released gamebirds.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP and a delayed release date of the1st October was added to the licence, Defra could conclude that the release of gamebirds with the delayed release date would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would be included in the new licence with a delayed release date of the 1st October, until such time when the risk score for the site is reduced to ‘very low’ or ‘negligible’ and the delayed release date can be removed.

B. If the licence is already published with this site included, Defra will, as soon as possible, modify the licence to add a condition with a delayed release date of the 1st October, until such time when the risk score for the site is reduced to ‘very low’ or ‘negligible’ and the delayed release date can be removed.

Action taken under point A or B above will ensure that gamebirds are not released until breeding features have left the site, and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Salisbury Plain (copied from M-risk HRA)

This SPA is designated for breeding hobby (*F. subbuteo*), quail (*Coturnix coturnix*), and stone curlew (*B. oedicnemus*) and non-breeding hen harrier (*C. cyaneus*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9011102_Salisbury_Plain_SPA_Published_14_Sep_2023 (naturalengland.org.uk).

Regarding spatial considerations, breeding hobby inhabit small woods within and close to the SPA, while quail nest and feed on chalk grassland and arable habitats, particularly meadows and winter cereals. The main supporting habitat for stone-curlew is grassland and arable, and they are known to mainly breed on cultivated plots within grassland and scrapes in military training areas. As RLP often prefer open habitat and CP are more likely to occupy woodland and grassland areas, it is feasible that the qualifying breeding features could be vulnerable to indirect HPAIV transmission from released gamebirds through spatial overlap of contaminated environments. The main supporting habitats for non-breeding hen harrier on the SPA are grasslands and arable land. They are known to forage over a wide area on the SPA, including military training areas, farmland, and winter stubbles. Based on a study of hen harrier in SPAs in Scotland, hen harrier tend to stay within 3-4km of nesting areas during the breeding season, but males have been recorded up to 8.5km from the nest (Arroyo et al. 2014) and they are known to range widely in winter. Feeding sources typically comprise small mammals and birds but can include prey as large as grouse, waders, and young rabbits and they could feasibly hunt both RLP and CP (Nota et al. 2019). They are also likely to scavenge dead gamebirds. As such, it is likely that gamebirds would be released into areas where they could encounter hen harrier foraging. Hen harrier are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging.

Regarding temporal considerations, hen harrier are typically present in highest numbers from October to March. Breeding hobby are present from May to August, quail are present from May to July, and stone-curlew are present in significant numbers from April to August. However, NE expert ornithologists have previously advised that stone-curlew can remain on the SPA into October, where they form post-breeding roosts. The heightened risk for these flocks is that if one bird becomes infected with HPAIV the whole flock could be affected. As some qualifying features are present on site year-round, sometimes in significant numbers, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, at Salisbury Plain species of concern include gulls (WeBS data for a site to the south of the SPA suggests a small population of black-headed gull, and a small number of lesser black-backed gull and herring gull have been sighted in the area) and corvids, which are likely to range throughout SPA and adjacent habitats (e.g. arable land) occupied by gamebirds and qualifying species, enabling HPAIV transmission via indirect environmental contamination to habitats that the qualifying SPA features also inhabit. It is also likely that hen harrier would predate upon small farmland bird species (e.g., passerines) in winter, which may provide an indirect transmission route between gamebirds and birds of prey.

If the localised risk assessment for Salisbury Plain SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Sandlings (copied from M-risk HRA)

This SPA is designated for breeding nightjar (*C. europaeus*) and woodlark (*L. arborea*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9020286_Sandlings_SPA_Published 14 Sep 2023 (naturalengland.org.uk). Regarding spatial considerations, nightjar utilise the open grassland and heather heaths for breeding. More recently, they have taken to nesting within open habitat associated with the system of rotational clear-felling within the conifer plantations, where areas of clear-fell and restocked plantation provides ideal breeding conditions. Outside the confines of the forest nightjar use grasslands, arable land and other habitats for feeding. Breeding woodlark typically prefer open, dry habitats with short grasses and heather, but have adapted to breeding in the large conifer forest blocks at this site, using recent plantation and areas that have recently been felled, as well as managed as open ground. Woodlark are known to forage for insects and seeds in short grassland and bare ground and in winter will gather in small flocks close to their breeding areas, though they can move to farmland stubbles for the autumn and early winter. As RLP often prefer open habitat and CP are more likely to occupy woodland and grassland areas, it is feasible that the qualifying features could be vulnerable to indirect HPAIV transmission from released gamebirds through spatial overlap of contaminated environments, namely feeding grounds.

Regarding temporal considerations, nightjar are present on the SPA between April and August before departing by September to overwinter in Eastern, Sub-Sahara West, and Central Africa. Breeding woodlark are present on the SPA between February and August and while most of the population departs the site by September, some are known to remain overwinter.

Regarding bridging species, NE advice has not raised the presence of any bridging species of note at this site. However, as with other heathland and woodland SPAs, it is feasible that farmland birds and other passerines that inhabit the SPA and/or adjacent lowland farmland could interact with gamebirds where they are released as well as habitats throughout the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit.

If the localised risk assessment for Sandlings SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity

measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as some woodlarks are known to overwinter on the site a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering woodlark occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Solent and Southampton Water (copied from M-risk HRA)

This SPA is designated for breeding common tern (S. hirundo), little tern (S. albifrons), mediterranean gull (Ichthyaetus melanocephalus), roseate tern (Sterna dougallii), and sandwich tern (T. sandvicensis). It is also designated for non-breeding black-tailed godwit (L. limosa *islandica*), dark-bellied brent goose (*B. bernicla bernicla*), ringed plover (*C. hiaticula*), teal (*A. crecca*), and an overwintering waterbird assemblage of over 20,000 waterfowl. The site comprises a series of estuaries and harbours featuring extensive mudflats and saltmarshes, and adjacent coastal habitats include saline lagoons, shingle beaches, reedbeds, damp woodland and grazing marsh. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk).

Regarding spatial considerations, common tern, sandwich tern and little tern nest colonially in simple shallow 'scrapes' on areas of sand or shingle, making use of the beaches within the SPA and foraging alone or in small flocks taking food from the surface of the water. The saline lagoons and saltmarsh located adjacent to the site likely provide additional feeding grounds for these species. Similarly, roseate terns nest in colonies, alongside other terns, on low-lying rocky islets typically in shallow scrapes under

overhanging vegetation. They also feed in shallow coastal waters. Mediterranean gulls nest colonially in short to medium swards of vegetation, and sometimes on vegetated shingle islands. They forage in shallow coastal waters close to their breeding sites as well as in arable fields and intertidal areas along the coastline. Overwintering black-tailed godwit roost in areas with extensive stretches of bare ground or short vegetation and feed mostly on worms in the mudflats whilst the tide is out. Dark-bellied brent geese typically occupy areas of intertidal mudflats, saltmarsh, and grazing marsh and roost on water overnight close to preferred feeding areas. In the Solent and Southampton Water SPA, dark-bellied brent geese show diverse feeding habits and will feed on seagrass beds as well as adjacent farmland, pasture, amenity grasslands, and coastal grazing marsh. Ringed plover prefer to roost on sandbanks, bare arable fields, or in low vegetation and feed on mudflats and saltmarshes. Overwintering teal roost on open water and forage on mudflats, creeks, and saltmarsh. Regarding the overwintering waterbird assemblage, the population is comprised of all native waterbirds that use the site, excluding gulls and terns. The waterbird assemblage roosts in habitats throughout the SPA. Ducks and geese roost mostly on open water whilst waders roost on bare ground or arable fields with low vegetation. The assemblage feeds throughout the site on intertidal sediments, open water, small waterbodies, and on inland fields and grazing marsh. It should be noted that waterbirds (particularly dark-bellied brent geese, mediterranean gulls, and some of the waterbird assemblage) are likely to visit grassland and farmland habitats in proximity to the SPA to forage. As such, based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environment.

Regarding temporal considerations, breeding birds are present in the spring and summer, though some features are present year-round. Breeding common tern, little tern, and sandwich tern are present from April to August, while roseate tern and mediterranean gull generally arriving from May and leave in August. Overwintering features are typically present from October to March, as is the case for dark-bellied brent geese. However, black-tailed godwit are on site from July to April, ringed plover are present for much of the year (August to May) and teal are on site from September to March. As qualifying features are present on site year-round it is unavoidable that breeding and overwintering features are likely to be present on site at the same time as gamebirds would be pre and/or post-release (i.e., during acclimation prior to release in July/August and then during the October-February shooting season). As such, it is feasible that both breeding and overwintering features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, WeBS for part of the SPA (Beaulieu Estuary) suggests this is an important site for gulls, including black-headed gulls and smaller numbers of herring gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Solent and Southampton Water SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

South Pennine Moors (copied from M-risk HRA)

This SPA is designated for breeding golden plover (*P. apricaria*), breeding merlin (*F.*

columbarius), and a breeding bird assemblage, which includes golden plover (*P. apricaria),* common sandpiper *(Actitis hypoleucos*), dunlin (*Calidris alpina schinzii), twite* (*Carduelis flavirostris),* snipe *(Gallinago gallinago)*, curlew (*Numenius arquata)*, wheateater (*Oenanthe oenanthe)*, whinchat (*Saxicola rubetra),* redshank *(Tringa totanus)*, ring ouzel (*Turdus torquatus)*, lapwing (*Vanellus vanellus*), and short-eared owl (*A. flammeus)*. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9007022_South Pennine Moors Phase 2_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, golden plover nest in a shallow scrape on the ground often hidden by moorland vegetation, favouring a mosaic of dense and short vegetation and large open areas for breeding. According to NE, golden plover use the blanket bog habitat within the SPA and are more common on the higher, flatter and more remote bogs with a mosaic of short and dense vegetation. Agricultural pastures, adjacent to or nearby moorland nesting habitat, are also important feeding grounds in the summer. It is feasible that golden plover and released gamebirds could range into the same habitats on the SPA and on farmland outside of the SPA, which poses the risk of direct interaction and indirect HPAIV transmission via spatial overlap of contaminated environments. Upon finishing breeding, golden plover typically disperse from moorland areas into lowland areas, notably farmland. Merlin utilise upland moorland habitat for breeding and successive generations of birds use the same breeding territories year to year, with the majority of birds nesting in a shallow scrape on the ground concealed by heather. Supporting habitat, outside the SPA boundary, is considered critical for breeding success given that merlin hunt in habitats around the moorland edge. Merlin hunt small mammals, birds and insects, but not usually gamebirds, though the risk of direct transmission via predation on smaller gamebirds cannot be ruled out and they could be at risk from scavenging on infected gamebirds where habitats overlap.

The breeding bird assemblage is composed of moorland species, which utilise habitat throughout the SPA. Common sandpiper predominantly use the dense vegetation in close proximity to the major reservoir complexes in the SPA. The central block of the SPA supports the core breeding area for dunlin. Twite predominantly use the southern block of the SPA and may be present on site year-round. Snipe use the eastern side of the central block. Curlew are present throughout the SPA. Redshank can be found in the damp moorland fringe habitat near to Oxenhope Moor and Heptonstall Moor. Lapwing predominantly use the moorland fringe areas with shorter vegetation, with Oxenhope moor supporting the highest breeding pairs on the site. Short-eared owl use the long heather and tall rushes on open moorland to provide cover for the nests predominantly in the central belt of the SPA. Whinchat and ring ouzel are scarce across the SPA and therefore difficult to determine local use across the site. Based on the broad distribution of qualifying features throughout the SPA, it is likely that gamebirds would be release into areas occupied by one or more qualifying features, resulting in the potential for HPAIV transmission through direct contact or indirectly through spatial overlap of contaminated environments. Twite in particular were noted by NE as particularly vulnerable to transmission as they remain over winter, can forage several kilometres from nesting areas, and often visit habitats likely visited by gamebirds (e.g., hay meadows and habitats bordering moorland), posing a risk of indirect HPAIV transmission through the spatial overlap of foraging areas and shared use of

contaminated environments in winter.

Regarding temporal considerations, golden plover are present between March and June with most expected to have completed breeding and left the site by early August. Merlin are present on site from March to June and are known to leave the SPA by the end of June to spend winter in lowland areas. The general breeding assemblage numbers peak from March to June and show a significant reduction in numbers by 1st July.

Regarding bridging species, on the South Pennine Moors they include small 'open country' birds (e.g., meadow pipits, skylarks, wheatears) that may feed on gamebird feed and provide an indirect transmission pathway to merlin, which hunt them. While merlin leave the site by the end of June, there is the potential for gamebirds and this qualifying feature to be present on the SPA at the same time, so there is potential for these bridging species to provide an indirect transmission route between gamebirds and merlin during this time.

If the localised risk assessment for South Pennine Moors SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a 'very low' or 'negligible' risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a 'low' or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of 'very low'.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at 'low' or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only, that are known to leave the site by early August, then a delayed release date of the 7th August could be used to ensure that the features are not at risk of HPAIV transmission, directly or indirectly, from the released gamebirds.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP and a delayed release date of the 7th August was added to the licence, Defra could to conclude that the release of gamebirds with the delayed release date would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would be included in the new licence with a delayed release date of the 7th August, until such time when the risk score for the site is reduced to 'very low' or 'negligible' and the delayed release date can be removed.

B. If the licence is already published with this site included, Defra will, as soon as possible, modify the licence to add a condition with a delayed release date of the 7th August, until such time when the risk score for the site is reduced to 'very low' or 'negligible' and the delayed release date can be removed.

Action taken under point A or B above will ensure that gamebirds are not released until breeding features have left the site, and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Stour & Orwell Estuaries (copied from M-risk HRA)

This SPA is designated for breeding avocet (*R. avosetta)* and non-breeding black-tailed godwit (*L. limosa islandica)* dark-bellied brent goose (*B. bernicla bernicla),* dunlin (*C. alpina alpina),* grey plover (*P. squatarola),* knot (*C. canutus),* pintail (*A. acuta),* redshank (*T. totanus),* and an assemblage of over 20,000 waterbirds. In the non-breeding season, the area regularly supports 63,017 individual waterbirds. In addition to the above non-breeding features this includes great crested grebe (*Podiceps cristatus*), cormorant (*Phalacrocorax carbo*), wigeon (*A. penelope*), gadwall (*A. strepera*), goldeneye (*Bucephala clangula*), ringed plover (*C. hiaticula*), lapwing (*V. vanellus*), curlew (*N. arquata*), and turnstone (*A. interpres*). The SPA estuaries include extensive mudflats, low cliffs, saltmarsh and small areas of vegetated shingle on the lower reaches. The site also includes areas of low-lying grazing marsh and several shallow freshwater pools. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk).

Regarding spatial considerations, breeding avocet nest on grazing marshes and feed on intertidal mudflats and saline lagoons. Many of the overwintering features and waterbird assemblage also make use of the grazing marshes, particularly grey plover, dark-bellied brent geese, dunlin and knot and arable land surrounding the SPA is used by many waders, as well as dark-bellied brent geese, for feeding and roosting. As CP have been seen to show preference for marshy ground and gamebirds are known to occupy arable land into which qualifying features may range to roost and feed, it is likely that qualifying features could be at risk of HPAIV transmission via direct contact in shared habitat, or spatial overlap of contaminated environments.

Regarding temporal considerations, qualifying features are designated for their breeding and/or non-breeding populations. Breeding avocet are typically on site from March to August, while overwintering features are on site from approximately October to March. This means that both breeding and overwintering features are likely to be present on site at the same time as gamebirds would be pre and/or post-release (i.e., during acclimation prior to release in July/August and then during the October-February shooting season). As such, it is feasible that both breeding and overwintering features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying

the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, WeBS data for parts of the SPA (Orwell Estuary and Stour Estuary) suggests that several species of gull are present, including black-headed gulls, lesser black-backed gulls, great black-backed gulls, and herring gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Stour & Orwell Estuaries SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a 'very low' or 'negligible' risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a 'low' or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of 'very low'.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at 'low' or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Tamar Estuaries Complex (copied from M-risk HRA)

This SPA is designated for non-breeding little egret (*Egretta garzetta*) and avocet (*R. avosetta*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk). Regarding spatial considerations, the SPA is composed of extensive intertidal mudflat communities, areas of mixed muddy sediment, and saltmarsh, which provide important feeding and roosting areas for both overwintering avocet and little egret. Both species may also utilise grassland and lowland farmland habitats surrounding the SPA. Based on the habitat preferences of gamebirds and the qualifying features of the SPA, there is potential for direct transmission through contact in shared habitat, or through spatial overlap of contaminated farmland and grassland environments.

Regarding temporal considerations, the typical overwintering period runs from October to February, during which time both little egret and avocet are resident on the SPA. As such, it is unavoidable that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS data for the SPA suggests that several species of gull are present, primarily black-headed gulls and herring gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for Tamar Estuaries Complex SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at 'very low' or 'negligible', Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a 'very low' or 'negligible' risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a 'low' or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of 'very low'.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at 'low' or possibly higher, the application of mandatory

biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at 'low/medium/high or very high' for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at 'low/medium/high or very high' for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to 'very low' or 'negligible'.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to 'very low' or 'negligible' and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Thames Basin Heaths

This SPA is designated for breeding European nightjar (*Caprimulgus europaeus*), woodlark (*Lullula arborea*), and Dartford warbler (*Sylvia undata*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9012141 Thames Basin Heaths SPA published 18 June 2018 (naturalengland.org.uk).

Regarding spatial considerations, Nightjars and woodlark are ground nesting, and favour large areas of open terrain, largely free of obstructions, in and around nesting, roosting and feeding areas. Nightjars are known to forage several kilometers away from their nesting territory in habitats such as open forest and heathland and will also utilise areas of permanent open space and temporary clear-fell within rotationally-managed plantation woodland and sparsely vegetated areas such as former quarry workings. Woodlark often utilise land adjacent to heathland which is outside the SPA boundary for feeding, including areas of grassland, arable fields and golf courses. Dartford Warbler often nest close to the

ground, and particularly favour areas of tall, dense gorse and tall, mature heather for nesting with areas of short but structurally diverse vegetation providing invertebrate prey such as spiders and weevils. The habitats associated with the SPA and its qualifying features means that there is a high probability of released gamebirds directly or indirectly interacting with protected features, and therefore a risk of direct and indirect HPAIV transmission.

Regarding temporal considerations, nightjar are present in significant numbers from May – Sep, woodlark from Feb – June, and Dartford warbler from April – June. However qualifying species may be present in lesser numbers at other times of the year. Therefore it is likely that gamebirds would be released on site while the qualifying features are present, providing the potential for both direct and indirect HPAIV transmission.

Regarding bridging species, WeBS does not record any data for Thames Basin Heaths SPA.

If the localised risk assessment for Thames Basin Heaths SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, although nightjar depart the site by late August/September, some woodlark and Dartford warbler remain on site year-round, therefore a delayed release date alone would not mitigate against the impact of gamebird release to the woodlark and Dartford warbler which remain on site over winter, occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Thames Estuary & Marshes (copied from M-risk HRA)

This SPA is designated for non-breeding populations of avocet (*R. avosetta*), black-tailed godwit (*L. limosa islandica*), dunlin (*C. alpina alpina*), grey plover (*Pluvialis squatarola*), hen harrier (*Circus cyaneus*), knot (*Calidris canutus*), redshank (*T. totanus*), ringed plover (*Charadrius hiaticula*), and a non-breeding waterbird assemblage of over 20,000 birds that includes the species listed above as well as shelduck (*T. tadorna*), Eurasian teal (*Anas crecca*), and pintail (*Anas acuta*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk). Regarding spatial considerations, qualifying features utilise the intertidal mudflats, intertidal saltmarsh, saltmarsh, and intertidal shingle habitats on the SPA, and may utilise grassland and lowland farmland habitats within and adjacent to the SPA. Waterbird use of grassland and farmland habitats (used for moulting, roosting, loafing, and feeding) could pose a risk of direct transmission via contact with gamebirds and/or indirect transmission via spatial overlap of contaminated environments. Over winter hen harrier tend to occupy lowland coastal areas, heathland, and farmland and gather in communal roosts. Based on a study of hen harrier in SPAs in Scotland, hen harrier tend to stay within 3-4km of nesting areas, but males have been recorded up to 8.5km from the nest (Arroyo et al. 2014) and can also range widely to hunt in winter. Feeding sources typically comprise small mammals and birds but can include prey as large as grouse, waders, and young rabbits and they could feasibly hunt both RLP and CP (Nota et al. 2019). They are also likely to scavenge dead gamebirds. As such, it is likely that gamebirds would be released into areas where they could encounter hen harrier foraging in proximity to roosting sites. Hen harrier are considered highly susceptible to HPAIV transmission from gamebirds via direct contact through predation and scavenging.

Regarding temporal considerations, all qualifying features are designated for their non-breeding populations, which overwinter from approximately October to March. This coincides with the period during which gamebirds would be present on the SPA so it is feasible that overwintering features could be exposed to HPAIV transmission from gamebirds both directly through contact with gamebirds and indirectly through shared occupation of contaminated environments.

Regarding bridging species, at Thames Estuary and Marshes species of concern include gulls and farmland bird species (e.g., passerines). In particular, WeBS data for the SPA suggests that several species of gull are present in significant numbers, including black-headed gulls, herring gulls, common gulls, and great black-backed gulls, and lesser black-backed gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Black-headed gulls and other gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species. Farmland birds are also known to visit grassland and lowland farmland where gamebirds are likely to be released as well as habitats throughout the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit. It is also likely that hen harrier would predate upon some of these bridging species.

If the localised risk assessment for Thames Estuary & Marshes SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

The Wash (copied from M-risk HRA)

This SPA is designated for breeding common tern (*S. hirundo)* and little tern *(S. albifrons).* It is also designated for a substantial number of non-breeding birds including bar-tailed godwit (*L. lapponica),* Bewick's swan (*C. columbianus bewickii),* black-tailed godwit (*L. limosa islandica),* common scoter (*Melanitta nigra),* curlew (*N. arquata),* dark-bellied Brent goose (*B. bernicla bernicla),* dunlin (*C. alpina alpina),* gadwall (*M. strepera),* goldeneye (*B. clangula),* grey plover (*P. squatarola),* knot (*C. canutus),* oystercatcher (*H. ostralegus),* pink-footed goose (*A. brachyrhynchus),* pintail (*A. acuta),* redshank (*T. totanus),* sanderling (*C. alba),* shelduck (*T. tadorna),* turnstone (*A. interpres),* wigeon *(M. penelope)* and an overwintering waterbird assemblage. The Wash SPA is composed of a range of coastal and aquatic habitats (including tidal rivers, estuaries, lagoons, mud and sand flats, saltmarsh, sandy and shingle beaches) that provide foraging habitat for a wide range of bird species. Agricultural land and pasture adjacent to the SPA also provides critical supporting habitat and is used for foraging by many of the species. Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: Designated Sites View (naturalengland.org.uk).

Regarding spatial considerations, breeding common tern and little tern nest colonially in simple shallow ‘scrapes’ on areas of sand or shingle, making use of the beaches within the SPA and foraging alone or in small flocks taking food from the surface of the water. Owing to the distinctly different habitat preferences of little tern and gamebirds, there is low risk of direct transmission from contact with gamebirds or indirect transmission via spatial overlap of contaminated environments. Overwintering features utilise habitats throughout the SPA, including the intertidal mudflats, intertidal saltmarsh, saline lagoons, saltmarsh, and intertidal shingle habitats, and many species (e.g., pink-footed goose, curlew, oystercatcher, dunlin and black-tailed godwit) rely on nearby farmland and grassland for foraging. As CP have been seen to show preference for marshy ground and gamebirds are known to occupy arable land and grassland into which waterbirds may range to roost and feed, it is likely that qualifying features could be at risk of HPAIV transmission via direct contact in shared habitat, or spatial overlap of contaminated environments.

Regarding temporal considerations, breeding common tern and little tern are present on site from April to August, and depart in August/September to overwinter on the coast of e.g., West Africa. Overwintering features are typically present from October to March. As

qualifying features are present on site year-round it is unavoidable that breeding and overwintering features are likely to be present on site at the same time as gamebirds would be pre and/or post-release (i.e., during acclimation prior to release in July/August and then during the October-February shooting season). As such, it is feasible that both breeding and overwintering features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, overwintering bird species at The Wash are considered highly likely to interact with gamebirds and/or bridging species. WeBS data suggests that several species of gull are present, including black-headed gulls, herring gulls, common gulls, great black-backed gulls, and lesser-black backed gulls. Black-headed gulls were seriously impacted by HPAIV on their breeding grounds in 2023 and must be considered highly susceptible to HPAIV infection. Gull species forage in grassland and arable land, where they could come into direct contact with gamebirds or be exposed to HPAIV via shared use of contaminated foraging grounds. As gulls will forage in farmland and roost within the SPA, there is an elevated risk of indirect transmission to SPA features from these bridging species.

If the localised risk assessment for The Wash SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. However, as this SPA has both breeding and non-breeding qualifying features, if the risk level remains at low/medium/high or very high, a delayed release date alone would not mitigate against the impact of gamebird release on non-breeding features, occupying the SPA at the time gamebirds are released.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new

licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Thursley, Hankley and Frensham Commons (Wealden Heaths Phase 1) (copied from M-risk HRA)

This SPA is designated for breeding Dartford warbler (*Sylvia undata*), breeding nightjar (*C. europaeus*), and breeding woodlark (*L. arborea*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9012131_Thursley, Hankley & Frensham Commons_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

Regarding spatial considerations, nightjar visit the SPA to breed in lowland heathland and young conifer plantations, but will use open heaths, grasslands and some arable land for feeding. Breeding woodlark are known to nest by digging a shallow scrape, often preferring grassland, heathland and moorland, and will use grassland and arable land for feeding. In winter, woodlark will also gather in small flocks close to their breeding areas, though they can move to farmland stubbles for the autumn and early winter. Dartford warbler show a preference for heathland habitats and gorse, particularly over winter. As RLP often prefer open habitat and CP are more likely to occupy woodland and grassland areas, it is feasible that the qualifying features could be vulnerable to indirect HPAIV transmission from released gamebirds through spatial overlap of contaminated environments, namely feeding grounds.

Regarding temporal considerations, nightjar are summer residents of the SPA, visiting to breed in lowland heathland before departing the SPA during August. Nightjar are off site by the end of September to migrate to overwintering grounds in Eastern, Sub-Sahara West, and Central Africa. However, woodlark and Dartford warbler are known to overwinter on site. Given that gamebirds would be present on site at the same time as breeding nightjar and breeding/overwintering woodlark and are likely to occupy the same habitats, it is feasible that these features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, NE advice has not raised the presence of any bridging species of note at this site. However, as with other heathland and woodland SPAs, it is

feasible that farmland birds and other passerines that inhabit the SPA and/or adjacent lowland farmland could interact with gamebirds where they are released as well as habitats throughout the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit.

If the localised risk assessment for Thursley, Hankley and Frensham Commons SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as woodlark and Dartford warbler are known to overwinter on site a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering woodlark and Dartford warbler occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this

site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Wealden Heaths Phase 2 (copied from M-risk HRA)

This SPA is designated for breeding Dartford warbler (*S. undata*), breeding nightjar (*C. europaeus*), and breeding woodlark (*L. arborea*). Supplementary conservation advice re the site, its conservation objectives, and the status of its qualifying features can be found here: UK9012132_Wealden Heaths Phase II_SPA_Published 14 Sep 2023 (naturalengland.org.uk).

As with Thursley, Hankley and Frensham Commons (Wealden Heaths Phase I), regarding spatial considerations, nightjar visit the SPA to breed in lowland heathland and young conifer plantations, but will use open heaths, grasslands and some arable land for feeding. Breeding woodlark are known to nest by digging a shallow scrape, often preferring grassland, heathland and moorland, and will use grassland and arable land for feeding. In winter, woodlark will also gather in small flocks close to their breeding areas, though they can move to farmland stubbles for the autumn and early winter. Dartford warbler show a preference for heathland habitats and gorse, particularly over winter. As RLP often prefer open habitat and CP are more likely to occupy woodland and grassland areas, it is feasible that the qualifying features could be vulnerable to indirect HPAIV transmission from released gamebirds through spatial overlap of contaminated environments, namely feeding grounds.

Regarding temporal considerations, nightjar are summer residents of the SPA, visiting to breed in lowland heathland before departing the SPA during August. Nightjar are off site by the end of September to migrate to overwintering grounds in Eastern, Sub-Sahara West, and Central Africa. However, woodlark and Dartford warbler are known to overwinter on site. Given that gamebirds would be present on site at the same time as breeding nightjar and breeding/overwintering woodlark and are likely to occupy the same habitats, it is feasible that these features could be exposed to HPAIV transmission from gamebirds directly through contact with gamebirds occupying the same habitat and/or indirectly through shared occupation of contaminated environments.

Regarding bridging species, NE advice has not raised the presence of any bridging species of note at this site. However, as with other heathland and woodland SPAs, it is feasible that farmland birds and other passerines that inhabit the SPA and/or adjacent lowland farmland could interact with gamebirds where they are released as well as habitats throughout the SPA, enabling HPAIV transmission via environmental contamination to habitats that the protected SPA features also inhabit.

If the localised risk assessment for Wealden Heaths Phase 2 SPA, as indicated by the outputs of the GWRAT tool scores the site risk level for either or both CP and RLP at ‘very low’ or ‘negligible’, Defra can conclude that the release of gamebirds at this site, without mitigation measures, will not have an adverse effect on site integrity and as such this SPA can be included in GL45.

Whilst mitigations are not considered necessary at a ‘very low’ or ‘negligible’ risk level, mandatory biosecurity measures will be applied to all SPAs covered by GL45 as a

precautionary measure. At a ‘low’ or higher risk level, mitigation measures will be considered with the aim of bringing the risk level to an acceptable level of ‘very low’.

If the localised risk assessment, from the outputs of the GWRAT tool, scores the site risk level for either or both CP or RLP at ‘low’ or possibly higher, the application of mandatory biosecurity measures would reduce the risk score for disease incursion twofold.

If following the application of a twofold reduction, the risk level for the site remains at ‘low/medium/high or very high’ for either or both CP and RLP, meaning the biosecurity measures alone would not be sufficient to reduce the risk level to an acceptable level, other measures such as delayed release dates would need to be considered to provide additional mitigation. Given that the site has breeding features only a delayed release date could be considered. However, as woodlark and Dartford warbler are known to overwinter on site a delayed release date alone would not mitigate against the impact of gamebird release to the over wintering woodlark and Dartford warbler occupying the SPA at the time gamebirds are released, which could, in-turn, affect their breeding protected status in the summer.

Consequently, if the site risk level remains at ‘low/medium/high or very high’ for either or both CP and RLP Defra would not be able to conclude that the release of gamebirds would not have an adverse effect on site integrity and as such one of the following actions should be taken:

A. In the creation of a new GL45 licence, the site would not be included in the new licence until the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

B. If the licence is already published with this site included, Defra will, as soon as possible, remove this site from the licence, until such time when the GWRAT risk score for the site is reduced to ‘very low’ or ‘negligible’.

Action taken under point A or B above will ensure that gamebirds are not released on the site until the risk level is sufficiently reduced to ‘very low’ or ‘negligible’ and therefore Defra can conclude that, beyond reasonable scientific doubt, there will not be an adverse effect on site integrity.

Practitioners may choose to apply for an individual licence to release gamebirds on this site. Specific conditions would be considered to determine whether the risk level could be reduced sufficiently to conclude no adverse effect on site integrity.

Conclusions on Site Integrity

Regarding the consideration of this project in combination with other plans and projects, Defra is not aware of any plans or projects, other than gamebird releases under GL45 and any individual licences that might be issued for gamebird release in 2025, that would impact HPAIV transmission on SPAs in England during the 2025 gamebird release season. The GWRAT is sensitive to the numbers of gamebirds released into the SPA however after 2,501 birds have been released there is no further effect on the GWRAT site score in regard to the numbers released, therefore Defra has chosen to assume that at least this number

will be released on or around each site to reduce any risk of underestimating the numbers released.

Defra can ascertain that, based on available evidence, under all HPAI local risk scenarios the actions proposed in this HRA GL45 will not have an adverse effect on the integrity of SPA sites listed below, either alone or in combination with other plans and projects. Defra will continue to incorporate the majority of measures recommended by NE in the 2022 and 2023 proposals into the 2025 licence, consistent with GL43, and is content that a conclusion of no adverse effect on the integrity of the SPAs listed below either alone or in combination with other plans and projects can still be made, including over the period of the licence. The risk from HPAIV will be monitored and reviewed over the licence period. GL45

1. Alde-Ore Estuary
2. Ashdown Forest
3. Avon Valley
4. Benacre to Easton Bavents
5. Bowland Fells
6. Breckland
7. Broadland
8. Chesil Beach & the Fleet SPA
9. Chichester and Lanstone Harbours
10. Colne Estuary (Mid-Essex Coast Phase 2)
11. Crouch & Roach Estuaries
12. Deben Estuary
13. Dorset Heathlands
14. Flamborough and Filey Coast
15. Foulness (Mid-Essex Coast Phase 5)
16. Hamford Water
17. Humber Estuary
18. Leighton Moss
19. Lower Derwent Valley
20. Mersey Estuary
21. Minsmere-Walberswick
22. Morecambe Bay and Duddon Estuary
23. New Forest
24. North Norfolk
25. North Pennine Moors
26. North York Moors
27. Outer Thames SPA
28. Peak District Moors
29. Porton Down
30. Salisbury Plain
31. Sandlings
32. Solent and Southampton Water
33. South Pennine Moors
34. Stour & Orwell Estuaries
35. Tamar Estuaries Complex
36. Thames Basin Heaths
37. Thames Estuary & Marshes
38. The Wash
39. Thursley, Hankley and Frensham Commons (Wealden Heaths Phase 1)
40. Wealden Heaths Phase 2

Annex A: SPAs for inclusion in GL45

At the time of publication of GL45, Defra has considered the localised risk scores as determined by the GWRAT shown in Table 1 below.

Table 1

Site name	Current risk to Site: CP	Current risk to site: RLP	Risk to site following biosecurity measures: CP	Risk to site following measures: RLP
Alde-Ore Estuary	Low	Low	Very low	Very low
Ashdown Forest	Very low	Very low	Very low	Very low
Avon Valley	Very low	Very low	Very low	Very low
Benacre to Easton Bavents	Very low	Very low	Very low	Very low
Bowland Fells	Very low	Very low	Very low	Very low
Breckland	Very low	Very low	Very low	Very low
Broadland	Low	Low	Low	Low
Chesil Beach & the Fleet SPA	Very low	Very low	Very low	Very low
Chichester and Langstone Harbours	Very low	Very low	Very low	Very low
Colne Estuary (Mid-Essex Coast Phase 2)	Very low	Very low	Very low	Very low
Crouch & Roach Estuaries	Very low	Very low	Very low	Very low
Deben Estuary	Very low	Very low	Very low	Very low

Site name	Current risk to Site: CP	Current risk to site: RLP	Risk to site following biosecurity measures: CP	Risk to site following measures: RLP
Dorset Heathlands	Very low	Very low	Very low	Very low
Flamborough and Filey Coast	Low	Low	Very low	Very low
Foulness (Mid- Essex Coast Phase 5)	Very low	Very low	Very low	Very low
Hamford Water	Very low	Very low	Very low	Very low
Humber Estuary	Low	Low	Low	Low
Leighton Moss	Very low	Very low	Very low	Very low
Lower Derwent Valley	Low	Low	Low	low
Mersey Estuary	Low	Low	Very low	Very low
Minsmere-Walberswick	Low	Low	Low	Low
Morecambe Bay and Duddon Estuary	Very low	Very low	Very low	Very low
New Forest	Very low	Very low	Very low	Very low
North Norfolk	Low	Low	Very low	Very low
North Pennine Moors	Low	Low	Very low	Very low
North York Moors	Low	Low	Low	Low

Site name	Current risk to Site: CP	Current risk to site: RLP	Risk to site following biosecurity measures: CP	Risk to site following measures: RLP
Outer Thames SPA	Very low	Very low	Very low	Very low
Peak District Moors	Very low	Very low	Very low	Very low
Porton Down	Very low	Very low	Very low	Very low
Salisbury Plain	Very low	Very low	Very low	Very low
Sandlings	Very low	Very low	Very low	Very low
Solent and Southampton Water	Very low	Very low	Very low	Very low
South Pennine Moors	Low	Low	Low	Low
Stour & Orwell Estuaries	Low	Low	Very low	Very low
Tamar Estuaries Complex	Negligible	Negligible	Negligible	Negligible
Thames Basin Heaths	Very low	Very low	Very low	Very low
Thames Estuary & Marshes	Low	Low	Very low	Very low
The Wash	Low	Low	Low	Low
Thursley, Hankley and Frensham Commons	Very low	Very low	Very low	Very low
(Wealden Heaths Phase 1)				

Site name	Current risk to Site: CP	Current risk to site: RLP	Risk to site following biosecurity measures: CP	Risk to site following measures: RLP
Wealden Heaths Phase 2	Very low	Very low	Very low	Very low

At the time of publication of GL45 on 2 February 2025, following application of mandatory biosecurity measures, the risk level for the sites listed below is at ‘very low’ or below, and therefore the following SPAs can be included in GL45:

1. Alde-Ore Estuary
2. Ashdown Forest
3. Avon Valley
4. Benacre to Easton Bavents
5. Bowland Fells
6. Breckland
7. Chesil Beach & the Fleet SPA
8. Chichester and Langstone Harbours
9. Colne Estuary (Mid-Essex Coast Phase 2)
10. Crouch & Roach Estuaries
11. Deben Estuary
12. Dorset Heathlands
13. Flamborough and Filey Coast
14. Foulness (Mid-Essex Coast Phase 5)
15. Hamford Water
16. Leighton Moss
17. Mersey Estuary
18. Morecambe Bay and Duddon Estuary
19. New Forest
20. North Norfolk
21. North Pennine Moors
22. Outer Thames SPA
23. Peak District Moors
24. Porton Down
25. Salisbury Plain
26. Sandlings
27. Solent and Southampton Water
28. Stour & Orwell Estuaries
29. Tamar Estuaries Complex
30. Thames Basin Heaths
31. Thames Estuary & Marshes
32. Thursley, Hankley and Frensham Commons (Wealden Heaths Phase 1)
33. Wealden Heaths Phase 2

The site specific assessments in part D consider whether additional mitigation measures, such as delayed release dates, can be applied to those SPAs where the risk level remains at low/medium/high/very high after application of mandatory biosecurity measures. The assessments for North York Moors and South Pennine Moors conclude that these SPAs can be included in GL45 with the following delayed release dates:

1. North York Moors – 7th September
2. South Pennine Moors – 7th August

Annex B: Mandatory testing and checks, biosecurity measures and other conditions

Condition 4 - Vet checks and mandatory testing	Purpose of the condition	Relevant transmission pathway
Before releasing gamebirds, you must arrange for an experienced poultry or gamebird vet to carry out the following inspection and sampling for signs of notifiable disease. This applies to single or trickle releases. Inspecting gamebirds: Within the 24 hours before release, you must make sure the vet inspects all: – gamebirds to be released – other kept birds (such as poultry) held in the same release pen or release area. You must only release gamebirds if the vet confirms there is no evidence of notifiable disease in any of the gamebirds you plan to release, or the other kept birds. You must get a written statement from the vet confirming this. You must keep this statement and: – produce it for inspection when requested by any wildlife inspector [footnote 10] – send a copy to glenquiries@defra.gov.uk within one week of releasing gamebirds Testing red-legged partridges: If red-legged partridges have not mixed with common pheasants or other indicator species for bird flu, you must make sure the vet takes samples to test for bird flu (highly pathogenic avian influenza (HPAI)) within 48 hours of the intended release. Indicator species for bird flu include chickens and turkeys). You must make sure the vet samples at least 60 of the red-legged partridges you plan to release, or all of the red-legged partridges if you plan to release fewer than 60 red-legged partridges. You must arrange for the vet to send the samples to the APHA National Reference Lab. You must not release the red-legged partridges until the vet receives the test results confirming negative results for HPAI. You must keep the test results and: – produce them for inspection when requested by any wildlife inspector	Detect HPAIV in gamebirds (both symptomatic and asymptomatic) prior to release and prevent gamebirds infected with HPAIV from being released onto the SPA or into the SPA buffer zone.	Reduces the risk of releasing gamebirds with HPAIV onto the SPA by identifying infected gamebirds prior to release. Prevents direct and indirect transmission to wild birds by preventing release of infected gamebirds on/in the buffer of the SPA.

Condition 4 - Vet checks and mandatory testing	Purpose of the condition	Relevant transmission pathway
– - send a copy to glenquiries@defra.gov.uk within one week of releasing gamebirds		

Condition 5: Biosecurity measures	Purpose of the measure	Relevant transmission pathway
Keeping footwear and clothing clean. If birds are in the release pen or release area, you must make sure footwear and clothing is clean when you enter. In this condition, 'release area' refers to the area you release red-legged partridges into if you do not use a release pen. For footwear, you must either: – use a disinfectant foot dip before you enter and when you step out of the release pen or release area – use a Defra-approved disinfectant at the dilution rate for the Diseases of Poultry Order use dedicated footwear inside the release pen or release area – leave your general footwear outside	Prevent transmission of HPAIV between release pens/areas and other pens/areas and the surrounding environment via transmission of virus on contaminated items (e.g., clothing and footwear), which can become contaminated with and deposit contaminated material (e.g., soil, faecal matter), thereby moving the virus between locations. Routine cleaning of footwear and clothing will reduce the risk of transferring contaminated material between locations.	Reduces the risk of indirect HPAIV transmission between gamebirds and wild birds via environmental contamination of release pens/areas and other pens/areas/the surrounding environment with HPAIV.
Cleaning and disinfecting vehicles and equipment. You must clean and disinfect any vehicles that come onto the site for shooting business purposes and will enter a release pen or release area. You must do so: – every time they enter the site where a shoot will take place – weekly if they are kept on the site You must also clean and disinfect equipment before use in a release pen or release area. When disinfecting vehicles and equipment, you must use a Defra-approved disinfectant.	Prevent transmission of HPAIV between release pens/areas and other pens/areas and the surrounding environment via transmission of virus on contaminated items (e.g., vehicles and equipment), which can become contaminated with and deposit contaminated material (e.g., soil, faecal matter), thereby moving the virus between locations. Routine cleaning of vehicles and equipment will reduce the risk of transferring contaminated material between locations.	Reduces the risk of indirect HPAIV transmission between gamebirds and wild birds via environmental contamination of release pens/areas and other pens/areas/the surrounding environment with HPAIV.

Condition 5: Biosecurity measures	Purpose of the measure	Relevant transmission pathway
Maintaining feeding and watering stations. You must: – have at least one feeding station per 60 released gamebirds, to reduce gamebird density per station – remove any spilled feed daily, as this could attract wild birds – only scatter feed when necessary and not within 50 metres of a water body regularly visited by wildfowl You must also do one of the following: – cover feeding and watering stations to avoid contamination from wild bird droppings - clean feeding and watering stations daily to remove droppings and feathers – move feeding and watering stations at least once a week to avoid the build-up of droppings and feathers	Routine cleaning, movement, and covering of stations will reduce the build-up of potentially HPAIV-contaminated material on substrate surrounding stations, will remove potentially contaminated faecal matter from station surfaces, and prevent attraction of wild birds to stations/scattered feed and consequently areas in which gamebirds are being kept/fed, where they could contaminate stations, come into contact with contaminated material, or come into contact with gamebirds.	Reduces the risk of indirect HPAIV transmission between gamebirds and wild birds via environmental contamination of feeding/watering stations, and the ground surrounding stations/scattered feed with HPAIV. Reduces the risk of direct transmission between gamebirds and wild birds visiting the same station/in the same area.
Checking for signs of bird flu. You or anyone acting on your behalf must check gamebirds on a daily basis for signs of bird flu. You or anyone acting on your behalf must consider the welfare of the bird and humanely cull any gamebirds showing signs of bird flu where necessary. Read guidance on bird flu rules if you keep gamebirds in the 'Advice on how to comply with the conditions of this licence' section. Read the 'Code of Practice for the Welfare of Gamebirds Reared for Sporting Purposes' under point 4 of 'information and advice specific to this licence'.	Removal of potentially infected gamebirds via culling reduces likelihood/frequency of contact between sick gamebirds, other gamebirds, and wild birds. This also reduces the risk of environmental contamination by potentially infected gamebirds and/or via potentially HPAIV-infected gamebird carcases should a gamebird die in the pen/surrounding area and go undetected. Removal of potentially infected gamebirds also prevents scavenging by other gamebirds and wild birds on potentially HPAIV-infected gamebird carcases should an infected bird then die.	Reduces the risk of HPAIV transmission from potentially HPAIV-infected gamebirds to other gamebirds and wild birds indirectly via environmental contamination and directly via contact with other gamebirds and wild birds.

Condition 5: Biosecurity measures	Purpose of the measure	Relevant transmission pathway
Disposing of carcases. You must collect common pheasant, red-legged partridge and other wild bird carcases in and around your release pens, release areas and any areas gamebirds are encouraged into. You must dispose of bird carcases safely. Read guidance on disposing of carcases in the 'Advice on how to comply with the conditions of this licence' section.	Removal of potentially infected gamebird carcases from the environment reduces likelihood of contact with and prevents scavenging by gamebirds and wild birds on infectious carcases. Removal also reduces the risk of environmental contamination by potentially HPAIV-infected carcases.	Reduces the risk of direct transmission between potentially infective carcases and gamebirds and wild birds by preventing consumption of highly infective organs before any significant environmental degradation can occur. This is particularly relevant in months (i.e., winter) when the propensity for many species to scavenge during lean/stressful periods suggests significant likelihoods of interaction with infective prey. Also reduced the risk of decomposing infected carcasses contaminating the environment and enabling indirect transmission to gamebirds and wild birds.

Advice re 'catching up' of gamebirds	Purpose of the advice	Relevant transmission pathway
Defra requests you 'catch up' any gamebirds released under this licence that are still in the wild by 1 February 2025. This helps to make sure they cannot pass bird flu to SPA bird species once the shooting season has closed.	Encourage those acting under the licence to 'catch up' (i.e., remove) any gamebirds still on site at the end of the shooting season to make sure that as few birds as possible remain in the wild at the end of the shooting season and into the following breeding season.	Reduces the risk of direct and/or indirect transmission (via direct contact, environmental contamination, and bridging species) to wild birds by reducing the likelihood that a substantial number of gamebirds remain on site after the shooting season has ended.

Advice re numbers of birds to be released	Purpose of the advice	Relevant transmission pathway
This licence specifies a maximum density of gamebirds that you can release. You should also consider the total number of gamebirds you will release. This should not be excessive compared to the number of birds expected to be shot throughout the shooting season. This will help you make sure that as few birds as possible remain in the wild at the end of the shooting season.	Encourage those acting under the general licence not to release excessive numbers of birds in relation to the numbers expected to be shot to reduce the risk of substantial numbers of gamebirds surviving post-shooting season and remaining on site over winter and into the following breeding season.	Reduces the risk of direct and/or indirect transmission (via direct contact, environmental contamination, and bridging species) to wild birds by reducing the likelihood that a substantial number of gamebirds remain on site after the shooting season has ended.

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